2025 Annual Groundwater and Stormwater Monitoring Events

Cleanaway Waste Management Facility, Holtze, Northern Territory

Cleanaway Waste Management Limited

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EXECUTIVE SUMMARY

Background Information

Land & Water Consulting (LWC) was engaged by Cleanaway Waste Management Limited (Cleanaway) to undertake the February 2025 (wet season) and September 2025 (dry season) groundwater and surface water monitoring events at the Cleanaway Waste Management Facility, located at 875 Stuart Highway, Holtze, Northern Territory (the 'Site').

The on-going monitoring of groundwater and stormwater at the Site is a condition of the Northern Territory Environment Protection Authority (NT EPA) Licence No EPL 254, which authorises Cleanaway to operate a waste management facility. Under this licence, Cleanaway is required to maintain and implement both a Groundwater Monitoring Plan (GMP) and a Stormwater Management Plan (SMP) for the Site – as documented in a 2022 Environmental Management Plan (EMP) prepared by Cleanaway. Biannual monitoring of groundwater and surface water is a requirement of this plan and has been undertaken at the Site since 2014.

Objective

The primary objective of the six-monthly groundwater and stormwater monitoring events is to assess potential impacts associated with the operational waste management works – specifically:

- the risk of residual groundwater impacts migrating off-site and potentially adversely impacting human health and/or the environment;
- the risk to off-site receptors from stormwater discharging from the Site; and
- whether current controls for hazardous substance storage are adequate for protecting groundwater and stormwater and are not reducing the potential beneficial use of either, with respect to local receptors.

The objective of the environmental management works undertaken by Cleanaway on the Site is to prevent contamination of groundwater and stormwater through containment of wastes and contaminated waters.

Scope

The February and September 2025 monitoring events included the gauging and sampling of all existing/accessible on- and off-site groundwater monitoring wells and the collection of surface water samples from designated sampling points (where water was present) – the samples were analysed for previously identified key contaminants of potential concern (COPC).

Key Findings – Groundwater

The key findings of the groundwater monitoring events can be summarised as follows:

- The interpreted groundwater elevation contours indicate that groundwater was flowing in a general north-easterly direction beneath the central and north-western portions of the Site, towards the adjoining low-lying swamp land/reserve area in the February 2025 monitoring event. Groundwater elevation contours from the September 2025 monitoring event indicate groundwater flow in a more northerly direction with a groundwater depression observed in the northern corner of the Site. This groundwater flow trend will be confirmed during the February 2026 monitoring event.
- With regards to residual hydrocarbon impacts beneath the Site:
    - An apparent measurable thickness of light non-aqueous phase liquid (LNAPL) has previously been observed within on-Site groundwater monitoring wells MW01, MW02 and MW23, located within the north-western portion of the Site. During the February and September 2025 monitoring events, hydrocarbon sheens were again observed in these wells.

- The residual hydrocarbon impacts identified in monitoring wells MW01, MW02 and MW23 are most likely attributable to spills/leaks from the earthen bunded above-ground storage tank (AST) farm formerly located in the western portion of the Site. It is noted that the area surrounding the former AST farm was remediated in 2014 and subsequently sealed with bitumen.
- During the February and September 2025 monitoring events, the concentrations of hydrocarbons at all sampled groundwater locations were below the laboratory limits of reporting (LOR).
- The reported concentrations of hydrocarbons at all sampled locations (historically and during the 2025 monitoring events) have consistently been below the adopted vapour intrusion health screening levels (HSLs) for commercial/industrial land use – noting that these can only be applied when the depth to water is ≥2 m below ground level (BGL).
- Residual hydrocarbon impacts observed in groundwater beneath the Site do not appear to have migrated beyond the Site boundary in the direction of the hydraulically down-gradient reserve area.

- Consistent with previous results, concentrations of zinc were identified above the ANZG (2018) freshwater guideline in groundwater sampled from off-site wells MW12, MW16, MW17R, MW18 and MW19 during the February 2025 monitoring event. During the September 2025 monitoring event, on-site monitoring well MW09 and off-site wells MW16 and MW17R reported zinc concentrations above the freshwater guideline. All zinc concentrations were observed to be within historical ranges and consistent with previously reported concentrations at all locations except MW12, which reported a concentration above the historic maximum during the February 2025 monitoring event.
- During the September 2025 monitoring event, off-Site well MW17R reported a reported copper concentration above the ANZG (2018) freshwater guideline. This copper concentration was observed to be within historical ranges and consistent with previously reported concentrations at MW17R.
- The main potential on-site source of metals would be within acid wastes stored within the dangerous goods storage shed; however, the concentrations of dissolved metals were not significantly elevated in groundwater monitoring wells located down-hydraulic gradient of this area, when compared with concentrations across the wider groundwater monitoring network. The elevated concentrations of metals have been widespread across the Site and down hydraulic gradient of the Site and were therefore considered likely to be reflective of natural background conditions associated with the mineralisation of the underlying geology. It is noted that the groundwater (and stormwater, to a lesser extent) pH is acidic and could have resulted in geochemical metal dissolution.
- Within all of the groundwater samples, the concentrations of other metals (arsenic, cadmium, chromium, lead, mercury and nickel) were reported below laboratory LOR and/or the adopted guideline criteria (where available).
- During the February 2025 monitoring event, the concentration of nitrate in groundwater sampled from MW09 exceeded the adopted freshwater ecosystem protection value, although the reported concentration was within historical variation. No nitrate exceedances were reported for the September 2025 event. Monitoring well MW09 is located adjacent to the eastern Site boundary, near the earthen drain, and downstream of the eastern stormwater catchment which receives off-Site run-off from the road verge of Stuart Highway. In addition, a septic tank is also present approximately 15 m west of MW09. Nitrate concentrations in groundwater at this location is variable with exceedances for the most part occurring during the wet season.

Key Findings – Stormwater

The key findings of the surface water monitoring events can be summarised as follows:

- A stormwater water sample was able to be collected from the north eastern corner of the Site (SW2) only. There was no stormwater discharging from the eastern site boundary (SW1) or entering the Site (SW3) at the time of the monitoring event.
- Total recoverable hydrocarbons (TRH), BTEXN (benzene, toluene, ethylbenzene, xylene and naphthalene) and polycyclic aromatic hydrocarbons (PAHs) were reported below laboratory LOR in stormwater sample SW2.
- The reported copper and zinc concentration for SW2 exceeded the ANZG (2018) freshwater ecosystem criteria. The results were observed to be within historical variation and consistent with the previous reported concentrations. Based on previous investigations, it is considered possible that elevated concentrations of some metals is a characteristic of background concentrations in rainfall across an unsealed (grassed) area and/or run-off across an industrial site/roadway/carpark and onto the Site.

Conclusions & Recommendations

Based on the results of the February and September 2025 monitoring events, it is considered that there are no gross or significant risks to off-site potential beneficial uses of groundwater or stormwater down hydraulic gradient of the Site. The outcomes of the groundwater and stormwater monitoring events also suggest that the current controls implemented at the Site for hazardous substance storage are adequate.

The following recommendations are based on the outcomes of the February and September 2025 monitoring events:

- The Site should continue to be managed and monitored in accordance with the EMP – it is understood that Cleanaway monitor compliance with the EMP during monthly inspections of the environmental controls in place at the Site.
- Should Site practices change, a review of the current groundwater monitoring network and analytical schedule should be undertaken and the EMP may require revision/updating at that time.
- Since off-site wells MW24 and MW25 are no longer available for sampling, and LNAPL impacts are present in the vicinity of the north-western Site boundary (i.e. wells MW01, MW02 and MW23), a replacement well (completed as a standpipe) should be installed (in consultation with the owner of the neighbouring facility) to assess potential off-site impacts in this area. It is understood that the replacement well may not be able to be installed in the near future due to site access restrictions, however, its installation should be re-considered in the event of any changes to the groundwater flow regime and/ or concentrations in the vicinity of MW01/ MW02/ MW23 (noting that local conditions appear to be fairly stable based on the outcomes of recent monitoring events).
- In addition to nutrient testing in groundwater monitoring wells MW08 and MW09, also undertake testing of faecal coliforms and E.Coli to assess whether the nitrate concentrations in groundwater sampled from MW09 during the wet season is sourced from breaches of the nearby septic tank.

Please refer to the statement of limitations associated with these works (presented as Appendix G).

CONTENTS

EXECUTIVE SUMMARY II

1 INTRODUCTION 1

1.1 OVERVIEW 1
1.2 EPA LICENCE 1
1.3 OBJECTIVE 1
1.4 SCOPE OF WORK 1

2 BACKGROUND INFORMATION 3

2.1 SITE SETTING AND KEY SITE HISTORY DETAILS 3
2.2 CURRENT MONITORING NETWORK 4
2.2.1 Groundwater 4
2.2.2 Stormwater 6
2.3 ENVIRONMENTAL VALUES AND ASSESSMENT CRITERIA 6
2.3.1 Groundwater 6
2.3.2 Surface Water 7

3 SCOPE & METHODOLOGY 8

3.1 GROUNDWATER GAUGING AND SAMPLING 8
3.2 STORMWATER SAMPLING 9
3.3 LABORATORY ANALYTICAL PROGRAM 12

4 RESULTS 13

4.1 MONITORING WELL NETWORK OBSERVATIONS 13
4.2 GROUNDWATER ELEVATIONS AND FLOW DIRECTION 13
4.3 LNAPL IN GROUNDWATER 13
4.4 HYDRO-GEOCHEMICAL CONDITIONS 16
4.4.1 Groundwater 16
4.4.2 Stormwater 17
4.5 GROUNDWATER ANALYTICAL RESULTS 17
4.6 STORMWATER ANALYTICAL RESULTS 18
4.7 DATA QUALITY ASSESSMENT 20

5 DISCUSSION 25

5.1 SUMMARY OF RESULTS 25
5.1.1 Groundwater 25
5.1.2 Stormwater 28
5.2 RISK TO OFF-SITE RECEPTORS – GROUNDWATER 29
5.3 RISK TO OFF-SITE RECEPTORS – STORMWATER DISCHARGE 29
5.4 CURRENT CONTROLS FOR HAZARDOUS SUBSTANCE STORAGE 30

6 CONCLUSIONS & RECOMMENDATIONS 31

7 REFERENCES 32

APPENDICES

Appendix A Well Condition Photos
Appendix B Equipment Calibration Certificates
Appendix C Groundwater and Stormwater Sampling Sheets
Appendix D Certified Laboratory Analytical Reports
Appendix E Data Quality Assessment
Appendix F Groundwater Transect Concentration Plots
Appendix G Statement of Limitations

LIST OF FIGURES (REAR)

Figure 1 – Site Locality Plan
Figure 2 – Site Layout and Monitoring Location Plan
Figure 3a – Interpreted and Inferred Groundwater Contours and Flow Direction (February 2025)
Figure 3b – Interpreted and Inferred Groundwater Contours and Flow Direction (September 2025)
Figure 4a – Summary of Groundwater and Surface Water Results – Metal Exceedances
Figure 4b – Summary of Groundwater and Surface Water Results – Hydrocarbons

LIST OF TABLES (REAR)

Table 1 – Summary of Recent and Historical Groundwater Elevations and Well Details
Table 2a – Salinity Corrected Groundwater Elevations (m AHD) for February 2025
Table 2b – Salinity Corrected Groundwater Elevations (m AHD) for September 2025
Table 3 – Summary of Recent and Historical Field Parameters
Table 4 – Summary of Recent and Historical Groundwater Analytical Results
Table 5 – Summary of Recent and Historical Stormwater Analytical Results

LIST OF TABLES (IN TEXT)

Table 2-1	Summary of Groundwater Monitoring Well Network	4
Table 2-2	Source documents for relevant groundwater assessment criteria	6
Table 2-3	Source documents for relevant surface water assessment criteria	7
Table 3-1	Summary of Groundwater Sampling Methodology	8
Table 3-2	Summary of Laboratory Analytical Program	12
Table 4-1	Summary of Apparent Thicknesses of LNAPL (m) During Wet and Dry Seasons – On-site Wells	14
Table 4-2	Summary of Apparent Thickness of LNAPL (m) During Wet and Dry Seasons – Off-site	15
Table 4-3	Summary of Groundwater Field Parameters	16
Table 4-4	Summary of Groundwater Exceedances during the 2025 Monitoring Events	17
Table 4-5	Summary of Stormwater Exceedances during the February 2025 Monitoring Event	18
Table 4-6	Summary of Data Quality Assessment – February 2025 Monitoring Event	21
Table 4-7	Summary of Data Quality Assessment – September 2025 Monitoring Event	23

LIST OF FIGURES (IN TEXT)

Figure 3-1	Stormwater Sample Collection Point – SW2 (February 2025)	10
Figure 3-2	Stormwater Sample Collection Point (DRY) – SW1 (February 2025)	11
Figure 3-3	Stormwater Sample Collection Point (DRY) – SW3 (February 2025)	11
Figure 5-1	LNAPL/ >C_{10} TRH Concentrations vs. Water Level at Monitoring Well MW01	25

1 INTRODUCTION

1.1 OVERVIEW

Land & Water Consulting (LWC) was engaged by Cleanaway Waste Management Limited (Cleanaway) to undertake the February 2025 (wet season) and September 2025 (dry season) groundwater and surface water monitoring events at the Cleanaway Waste Management Facility, located at 875 Stuart Highway, Holtze, Northern Territory (the 'Site'). A site locality plan is attached as Figure 1.

1.2 EPA LICENCE

The Cleanaway Waste Management facility operates under an Environment Protection Licence (EPL 254 – the Licence) issued by the Northern Territory Environment Protection Authority (NT EPA) pursuant to the *Waste Management and Pollution Control Act 2016*. Under this licence, Cleanaway is required to maintain and implement both a Groundwater Monitoring Plan (GMP) and a Stormwater Management Plan (SMP) for the Site – as documented in the Cleanaway (2022) Environmental Management Plan (EMP). Biannual monitoring of groundwater and surface water is a requirement of this plan and has been undertaken at the Site since 2014.

The Site is licensed to receive wastes for disposal (as per Table 1 of the Licence), including commercial and industrial waste, putrescible waste, sewage waste, domestic waste, municipal solid waste, inert waste, construction and demolition waste, asbestos, used tyres, quarantine waste, treated timber, treatment plant residues and used foundry sand.

1.3 OBJECTIVE

The primary objective of the six-monthly groundwater and stormwater monitoring events is to assess potential impacts associated with the operational waste management works – specifically:

- the risk of residual groundwater impacts migrating off-site and potentially adversely impacting human health and/or the environment;
- the risk to off-site receptors from stormwater discharging from the Site; and
- whether current controls for hazardous substance storage are adequate for protecting groundwater and stormwater and are not reducing the potential beneficial use of either, with respect to local receptors.

The objective of the environmental management works undertaken by Cleanaway on the Site is to prevent contamination of groundwater and stormwater through containment of wastes and contaminated waters.

1.4 SCOPE OF WORK

The six-monthly groundwater and stormwater compliance monitoring programs were undertaken in accordance with the requirements of the Site's GMP and SMP and included the following activities:

- development of a site-specific Work Health and Safety Management Plan (WHSMP), including Job Safety Environmental Analysis (JSEA);
- completion of groundwater elevation gauging across the Site (including all accessible on- and off-site wells) in order to establish groundwater flow conditions and assess potential seasonal fluctuations;

- targeted monitoring of groundwater and stormwater, including the collection of samples from all operational and accessible on- and off-site groundwater monitoring wells in addition to the collection of representative surface water samples from stormwater discharge points on the Site;
- submission of groundwater and stormwater samples for laboratory analysis at National Association of Testing Authorities (NATA) accredited laboratories, consistent with the requirements of the GMP and SMP; and
- preparation of a report, including the following:
    - comparison of groundwater and stormwater data to relevant state and national guidelines, based on the previous assessment of the relevant environmental values of the waters;
    - data evaluation and presentation of conclusions regarding the quality of groundwater and stormwater beneath/on, and down hydraulic gradient/downstream of the Site (including trend assessment, where relevant); and
    - supporting documentation, including field sampling sheets, certified laboratory reports, chain of custody (COC) documents and equipment calibration certificates as well as relevant Site plans and data tables.

2 BACKGROUND INFORMATION

2.1 SITE SETTING AND KEY SITE HISTORY DETAILS

The following is a description of the current Site layout refer also to attached Figure 2:

- The dangerous goods storage shed is located adjacent to the western Site boundary – it is understood to be used to store dangerous goods prior to their transport off-site.
- The material recycling facility is also located adjacent to the western Site boundary – material is brought to the Site, sorted and then processed for off-site management.
- The storage laydown area is located at the rear of the Site (which was previously unsealed) – stored materials are understood to include empty drums and IBCs.
- The current waste oil aboveground storage tank farm (current AST farm) is located in the central-northern part of the Site – it comprises three self-bunded ASTs and a drive-in/drive-off bund housing the transfer manifold.
- A truck wash bay is located adjacent to the eastern Site boundary – it is understood that wastewater from the bay is processed through a separator for off-site management.
- A workshop is present in the central portion of the Site and includes a series of vehicle maintenance pits and a spray paint booth (north-eastern corner of the workshop). Cleanaway advised that no painting has occurred on the site for several years, as the spray booth was re-purposed for the shredding of confidential documents.
- With reference to attached Figure 2, there are three primary stormwater catchments on the Site (as per information provided by Cleanaway). The general topography is a downward gradient towards the north-eastern corner of the Site – the exception to this is the south-western corner, up to the gated entrance, which reports to a depressed drain and discharges to the western Site boundary. An unsealed drainage easement, approximately 0.5 m deep, is present along the eastern Site boundary – it receives stormwater from the front of the Site and potentially also stormwater run-off from the neighbouring commercial facility (Transpacific, 2014b). All roof areas drain onto the ground and then to the north-eastern discharge point.

The following key Site history details are considered relevant to the on-going monitoring at the Site:

- Prior to 2015, a waste oil AST farm (former AST farm), with only earthen bunding, was present in the north-western corner of the Site (refer to Figure 2). It is understood that groundwater monitoring commenced in 2014, as part of a Site contamination assessment and remediation project to address impacts from previous waste storage activities. Following a major spill in 2012 (volume unknown), impacted soils were reportedly removed – Transpacific (2014b) states that the spill may have extended around, and to the east of, the former AST area, as also indicated in Figure 2.
- As part of the replacement of the former AST farm in the north-western portion of the Site, Cleanaway carried out remediation works at the time of its removal. Anecdotal information provided by Cleanaway indicates that the remediation works included excavation of contaminated soils and surface sealing.
- The current self-bunded AST farm was installed in the sealed north-eastern portion of the Site, as shown on Figure 2. In February 2016, the transfer-manifold for that tank farm failed and 37,000 L of waste oil was spilled. The spill reportedly followed the natural Site topography, towards the north-eastern corner of the Site.

- It is understood that the rear yard was excavated to a depth of approximately 1.2 m below ground level (BGL) as part of investigation and remediation works following the February 2016 spill, with the works comprising trenching along the rear of the Site. The area was then backfilled with clean material and re-sealed in early 2018. During these remediation works, monitoring wells MW03 to MW06 were decommissioned and were therefore no longer available for sampling.
- The Transpacific (2014b) report also indicated that the following notable spills had occurred at the Site:
    - In February 2013, following a high rainfall event, oily water flowed across the eastern Site boundary (from the neighbouring facility) into the unlined drain located on the Site (as indicated on attached Figure 2).
    - At the same time, an IBC release of oily water occurred in the central portion of the rear area of the Site (refer to attached Figure 2) – it was reported that the impacted soils were removed from the Site.
- The Transpacific (2015) report mentioned that an underground storage tank (UST) was present adjacent to the former AST farm area. Cleanaway has advised that the UST was removed in 2014, during the demolition of the former AST, followed by remediation and sealing of the area with bitumen.

2.2 CURRENT MONITORING NETWORK

2.2.1 Groundwater

A review of historical groundwater investigation reports indicates that 25 (including one replacement) groundwater monitoring wells have been installed, in both on- and off-site locations, over time (as shown on attached Figure 2).

The well installation and decommissioning works undertaken at the Site are summarised in Table 2-1 – this table also details LWC's interpretation of the targeted Site features and the condition/accessibility of each well at the time of the February and September 2025 monitoring events – photographs of each of the monitoring wells are presented in Appendix A.

Locks are installed at off-site monitoring wells MW12 and MW16 as of February 2020 monitoring event, the codes for which are '174.' During the February 2024 monitoring event, a new combination lock was installed at MW17R (code: '1733'). Locks were not installed at MW18 to MW22 as the headworks for these locations are gatic covers, which are located at ground level and subject to a lower risk of vandalism.

Table 2-1 Summary of Groundwater Monitoring Well Network

Monitoring Well	Interpreted Targeted Feature	Well Installed	Well Decommissioned	February 2025 Condition	September 2025 Condition
On-site wells:					
MW01	Former AST farm area	April 2014		Good condition with the exception of a bend in the inner PVC casing, below ground level – this well was considered suitable for sampling*	
MW02	Former AST farm area			Good condition*	Good condition*
MW03	Former AST farm area		During July 2016 to March 2017 remediation works	-	
MW04	Storage laydown area			-	
MW05	Storage laydown area			-	

Monitoring Well	Interpreted Targeted Feature	Well Installed	Well Decommissioned	February 2025 Condition	September 2025 Condition
MW06	Storage laydown area			-	
MW07	Drainage easement/ off-site migration from neighbouring facility			Not accessible – considered by site staff to have been covered during earthworks as per 2019 monitoring events. It is likely that this well has been destroyed.	
MW08	Truck wash bay			Good condition	Good condition
MW09	Drainage easement/ off-site migration from neighbouring facility			Good condition	Good condition
MW10	Stormwater drain			Fair condition	Fair condition
MW23	Former AST farm area	October 2016		Fair condition*	Fair condition*
MW26	Former AST farm area			Fair condition	Fair condition
Off-site wells:					
MW11	Off-site migration from former AST farm area			Good condition	Good condition
MW12	Off-site migration (down-gradient of Site)	August 2014		Good condition	Good condition
MW13	Storage laydown area/ off-site migration (down - gradient of - Site)			Good condition	Good condition
MW16	Off-site migration of Site stormwater	October 2016		Good condition	Good condition
MW17	Off-site migration of Site stormwater	October 2016		Formerly damaged/destroyed – i.e. standpipe removed and PVC bent/broke at the ground surface	
MW17R	Off-site migration of Site stormwater	November 2022		Replacement for MW17 Good condition	Good condition
MW18	Storage laydown area/ off-site migration	October 2016		Good condition	Good condition
MW19	Storage laydown area/ off-site migration			Good condition	Good condition
MW20	Storage laydown area/ off-site migration			Fair condition	Fair condition
MW21	Storage laydown area/ off-site migration			Good condition	Good condition
MW22	Off-site migration from former AST farm area			Good condition	Good condition
MW24	Off-site migration from former AST farm area			Well covered by over 1 m of rubble – Site owner requested to try and locate the well during regular operations. It is expected that this well has been destroyed.	
MW25	Off-site migration from former AST farm area			Located in laydown area of *Advance Civil Engineering* – area covered by rubble, building materials and heavy	

Monitoring Well	Interpreted Targeted Feature	Well Installed	Well Decommissioned	February 2025 Condition	September 2025 Condition
				machinery. It is anticipated that this well has been destroyed.	

Notes:
Wells in **bold** font were operational/accessible but those marked with an asterisk(*) during one or both monitoring events contained light non-aqueous phase liquid (LNAPL) and were therefore not sampled.

2.2.2 Stormwater

With reference to attached Figure 2 and based on the on-site stormwater catchment information provided by Cleanaway, it appears that stormwater from the majority of the Site flows towards the north-eastern corner. The exception is stormwater from the front western car park area, which appears to be flowing towards the western Site boundary.

Stormwater samples have been historically collected from up to three locations on Site, as follows:

- SW1: stormwater drain leading to the western Site boundary;
- SW2: the off-site swale drain during flow events – in the absence of off-site flow, a sample has been collected from the on-site earthen sump, as an indication of future discharge; and
- SW3: south-eastern corner of the Site (to determine background conditions and the quality of water flowing towards the rear of the Site).

During the February 2025 stormwater sampling event, only sample SW2 was able to be collected as no stormwater was present at the other stormwater locations i.e. no stormwater was flowing off Site from the western site boundary (at SW1) or entering the Site from the southern end (at SW3). It is noted that a rainfall event occurred the day prior to sampling being undertaken at the Site.

During the September 2025 monitoring event, no stormwater was present at the stormwater locations. It is noted that a rainfall event occurred the day prior to sampling being undertaken at the Site.

2.3 ENVIRONMENTAL VALUES AND ASSESSMENT CRITERIA

2.3.1 Groundwater

In accordance with the ASC NEPM (1999), the beneficial uses/environmental values of groundwater are those that can be supported by background groundwater quality and are based on the inherent ability of the aquifer to support those uses.

Based on the outcome of the previous beneficial use assessment (LWC, 2020), the groundwater analytical results have been compared against published guideline values derived from the documents referenced in Table 2-2 – the results have also been compared to the Darwin Cleanaway Groundwater Investigation Criteria, as per Table 3 of the previous Transpacific (2014a) EMP.

Table 2-2 Source documents for relevant groundwater assessment criteria

Environmental value	Reference
Potable	NHMRC/NRMMC (2011) *Australian Drinking Water Guidelines* – health and aesthetic values

Environmental value	Reference
Recreation & aesthetics	NHMRC (2008) *Guidelines for Managing Risks in Recreational Water* – based on NHMRC/NRMMC (2011) *Australian Drinking Water Guidelines* but (with the exception of aesthetic guidelines) multiplied by a factor of 10 to take account of accidental ingestion rates, as opposed to deliberate ingestion
Aquatic ecosystem protection – freshwater	ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* – trigger values for freshwater (95% species protection)
	NIWA (2013) *Updating Nitrate Toxicity Effects in Freshwater Aquatic Species* – nitrate only
Human health in non-use scenarios – vapour flux	ASC NEPM (1999) Groundwater health screening levels (HSLs) for vapour intrusion – commercial/industrial land use (D), sand, 2 to <4 m BGL and 4 to <8 m BGL (i.e. depending on the gauged depth to groundwater*)

Notes: *Since the groundwater levels were <2 m BGL in numerous wells in February 2025, the HSLs were not applicable.

2.3.2 Surface Water

LWC (2020) also detailed a beneficial use assessment for surface water both on- and off-site. The same beneficial uses declared for groundwater within the Darwin Rural Water Control District are also applied to surface water. It is understood that no stormwater discharge criteria have been stipulated under the NT EPA Licence for the Site.

Based on the outcome of the previous beneficial use assessment (LWC, 2020), the stormwater analytical results have been compared against published guideline values derived from the documents referenced in Table 2-3.

Table 2-3 Source documents for relevant surface water assessment criteria

Environmental value	Reference
Recreation & aesthetics	NHMRC (2008) *Guidelines for Managing Risks in Recreational Water* – based on NHMRC/NRMMC (2011) *Australian Drinking Water Guidelines* but (with the exception of aesthetic guidelines) multiplied by a factor of 10 to take account of accidental ingestion rates, as opposed to deliberate ingestion
Aquatic ecosystem protection – freshwater	ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* – trigger values for freshwater (95% species protection)
	NIWA (2013) *Updating Nitrate Toxicity Effects in Freshwater Aquatic Species* – nitrate only

3 SCOPE & METHODOLOGY

3.1 GROUNDWATER GAUGING AND SAMPLING

Table 3-1 details the scope and methodology of the February 2025 groundwater monitoring event – the adopted methodology was consistent with the following guidelines as well as current industry standards:

- *National Environment Protection (Assessment of Site Contamination) Measure 1999* (as amended in 2013) – the ASC NEPM (1999); and
- NT EPA (2017) *Northern Territory Contaminated Land Guideline*.

Table 3-1 Summary of Groundwater Sampling Methodology

Activity/ Item	Details
Water Level and LNAPL Gauging	Prior to the commencement of sampling, groundwater elevation and LNAPL gauging was undertaken at each accessible/operational monitoring well. Gauging was undertaken using a calibrated interface probe (IP) in addition to product detection paste. Dedicated disposable bailers were also used to confirm the presence/absence of product and its apparent thickness (if relevant). Water levels were gauged from the top of the PVC casing – attached Table 1 summarises the groundwater gauging results whereas Tables 2a and 2b summarise the salinity corrected groundwater elevations for the February and September 2025 monitoring events, respectively. The groundwater elevation gauging was undertaken on 17 February and 22 September 2025.
Well Purging and Sampling Process	All targeted groundwater monitoring wells not containing either an apparent measurable thickness of LNAPL or a hydrocarbon sheen were purged using industry standard low flow sampling techniques via the use of a peristaltic pump and dedicated LDPE Teflon tubing (i.e. per location). The low flow sampling method included placement of the pump inlet at the midpoint of the slotted screen interval and pumping at the flow rate where the groundwater level did not decline significantly (i.e. no greater than 10 cm). The pump rate at each location was within the recommended industry standard guidelines (i.e. less than the maximum of 0.5 L/min). Where access was restricted (either due to inundation or the presence of stored equipment restricting vehicle access), monitoring wells were sampled with waterra tubing and a footvalve, mimicking the low flow sampling methodology. During the six monthly monitoring events, samples from MW01, MW02 and MW23 were not collected due to the presence of LNAPL sheen which was considered to indicate hydrocarbon impact. Groundwater well MW25 was unable to be located during the February and September 2025 monitoring events, as this well location is present within a laydown area of *Advance Civil Engineering* which is currently covered by rubble, building materials and heavy machinery. It is possible that this well has been destroyed. Wells MW07 and MW24 were not located/sampled during either the Februrary and September 2025 monitoring events and are considered to have been destroyed.
Field Parameters	Groundwater elevation gauging was undertaken during purging/sampling to ensure groundwater extracted from the well was fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. The measurement of field parameters was undertaken until they had stabilised (i.e. within 3% for electrical conductivity (EC), 0.05 pH units, 10% for dissolved oxygen (DO), 10 mV for redox potential and 0.5°C for temperature). Parameter readings were obtained every five minutes until field parameters had stabilised over three consecutive readings, following which sampling commenced. A minimum of four sets of readings were recorded at each monitoring well to ensure stable geochemical conditions existed prior to the collection of the groundwater sample. Attached Table 3 summarises the stabilised field parameters. The water quality meters were calibrated prior to the commencement of purging – i.e. at the start of each day of purging/sampling. The equipment calibration certificates are presented in Appendix B whereas the groundwater purge/sampling sheets are presented in Appendix C.
Decontamination Procedure	The decontamination of reusable groundwater sampling equipment was undertaken between locations. The IP was decontaminated away from the sampling location in accordance with the following procedure:

Activity/ Item	Details
	▪ wash with Decon 90 solution and rinse; ▪ triple wash with laboratory supplied clean deionised water; and ▪ air dried before re-use. As a matter of course the flow cell used during the measurement of the field parameters (but not involved in the actual sampling procedure) was also rinsed with clean water between locations.
Sample Method and Preservation	Targeted monitoring wells were purged and sampled using a peristaltic pump with dedicated low flow LDPE Teflon tubing (per monitoring well) prior to sampling. Following stabilisation of field parameters, samples were placed into laboratory supplied bottles containing appropriate preservatives for the selected analytical testing. Groundwater samples analysed for metals were filtered in the field using dedicated 0.45 micron filters (per sample) prior to being placed into a pre-acidified container. Disposable nitrile gloves were worn during sampling and changed between locations. Samples were immediately chilled and stored at a temperature of 4°C or less prior to transit to the analytical laboratories.
Analytical Laboratories	The groundwater samples were collected into laboratory cleaned bottles containing appropriate preservatives and then placed into a chilled esky for transport to the primary and secondary laboratories – i.e. Australian Laboratory Services (ALS) and Eurofins, respectively. Certified laboratory reports and chain of custody (COC) documents are included in Appendix D.
Quality Assurance/ Quality Control (QA/QC)	Field QA procedures included the collection of the following QC samples: ▪ minimum of 1:20 intra-laboratory field duplicate samples; ▪ minimum of 1:20 inter-laboratory field triplicate samples; and ▪ one trip blank per batch of samples transported to an analytical laboratory. Note that, since dedicated tubing was used at each sampling location, no equipment rinsate blanks were required as the potential for cross contamination was considered to have been mitigated – i.e. no equipment parts came into contact with sampled groundwater from more than one location.

3.2 STORMWATER SAMPLING

Stormwater samples were only able to be collected from a single stormwater discharge point during the February 2025 monitoring event. All stormwater locations were observed to be dry during the September 2025 (dry season) monitoring event.

Samples were collected from each location using a dedicated disposable bailer and rope. Field parameters including pH, EC, redox, DO and temperature were recorded prior to sampling. Because total metals include both mobile/biologically available and dissolved forms, samples for metal analysis were not filtered in the field, unlike groundwater samples.

A stormwater sample was only able to be collected from one stormwater discharge point during the February 2025 monitoring event – i.e. sample SW2 was collected from the earthen stormwater pit located at the north eastern corner of the Site (refer to Figure 3-1).

During the February 2025 monitoring event, the following stormwater sampling locations were dry:

- Sample point SW1 located at the grated stormwater drain leading to the western site boundary (refer to Figure 3-2).
- Sample point SW3 located at the south eastern corner of the Site in an unsealed, grassed area which was up gradient of the stormwater drain along the eastern Site boundary (refer to Figure 3-3).

Stormwater samples were only able to be collected from one stormwater discharge point during the February 2025 monitoring event:

- Sample SW2 was collected adjacent from the earthen stormwater pit located at the northeastern corner of the Site (refer to Figure 3-1).

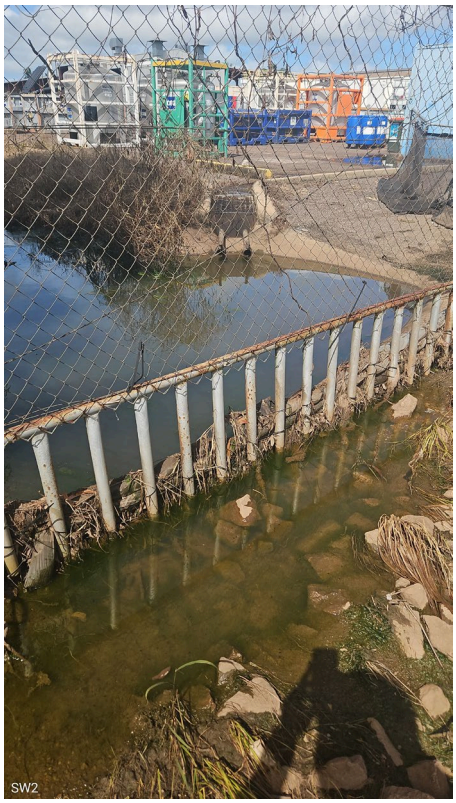

Figure 3-1 Stormwater Sample Collection Point – SW2 (February 2025)



Figure 3-2 Stormwater Sample Collection Point (DRY) – SW1 (February 2025)



Figure 3-3 Stormwater Sample Collection Point (DRY) – SW3 (February 2025)

3.3 LABORATORY ANALYTICAL PROGRAM

The laboratory analytical program undertaken during the February and September 2025 groundwater and stormwater monitoring events is detailed in Table 3-2.

Table 3-2 Summary of Laboratory Analytical Program

Media	Parameters
Groundwater	▪ dissolved metals (arsenic, cadmium, chromium (total), copper, lead, mercury, nickel, zinc); ▪ total recoverable hydrocarbons (TRH); ▪ benzene, toluene, ethylbenzene, xylenes, naphthalene (BTEXN); ▪ polycyclic aromatic hydrocarbons (PAH); and ▪ nutrients (ammonia, nitrite, nitrate, nitrite + nitrate, total nitrogen, total kjeldahl nitrogen (TKN), total phosphorus) – selected samples only.
Stormwater	▪ total metals (arsenic, cadmium, chromium (total), copper, lead, mercury, nickel, zinc); ▪ TRH; ▪ BTEXN; ▪ PAH; ▪ total suspended solids (TSS); and ▪ nutrients (ammonia, nitrite, nitrate, nitrite + nitrate, total nitrogen, total kjeldahl nitrogen (TKN), total phosphorus).

4 RESULTS

4.1 MONITORING WELL NETWORK OBSERVATIONS

Although not all of the on- and off-site groundwater wells installed over time are currently operational/ accessible, those that are were observed to be generally in good condition, as detailed in Table 2-1.

4.2 GROUNDWATER ELEVATIONS AND FLOW DIRECTION

Groundwater elevation gauging was undertaken at each operational/accessible groundwater monitoring well during the February and September 2025 monitoring events – a summary of the well information and recent and historical groundwater elevation data is presented in attached Table 1.

The groundwater elevation data was reduced relative to Australian Height Datum (AHD), density corrected for salinity levels and used to assess groundwater contours and flow directions – refer to attached Tables 2a and 2b.

Key findings were as follows:

- Based on the available information, it appears that the water table in some of the monitoring wells was above the screened section during the February 2025 monitoring event – as a result, the flow of LNAPL (if present) into the well may have been inhibited. This included on-site locations MW23 and MW26 as well as off-site locations MW11, MW12, MW13, MW16, MW17R, MW18, MW19, MW20, MW21 and MW22. During sampling, although an effort was made to reduce the water level to below the top of the screened interval, the aquifer flow rate was such that this was not achieved sufficiently at all locations.
- During the February and September 2025 monitoring events, off-site wells MW24 and MW25 were inaccessible due to this area (to the west of the Site) currently being used as a laydown area for supplies and heavy machinery. It is expected that these wells have been destroyed. Therefore, these wells were unable to be considered when deriving groundwater elevation contours and flow direction.
- Groundwater elevations (salinity corrected) for the water table aquifer unit beneath the Site and surrounds were observed to range between 27.797 m AHD (MW17R) and 28.803 m AHD (MW10) in February 2025 and between 25.237 m AHD (MW22) and 25.598 m AHD (MW10) in September 2025.
- Salinity corrected groundwater elevation contours for the water table aquifer beneath the Site are presented in Figures 3a (February 2025) and 3b (September 2025). The interpreted groundwater elevation contours indicate that groundwater was flowing in a general north-easterly direction beneath the central and north-western portions of the Site, towards the adjoining low-lying swamp land/reserve area in the February 2025 monitoring event. In contrast, groundwater elevation contours from the September 2025 monitoring event indicate groundwater flow in a more northerly direction towards the with a groundwater depression observed in the northern corner of the Site. This flow trend will be confirmed in subsequent groundwater monitoring events.

4.3 LNAPL IN GROUNDWATER

Summaries of recent and historically observed LNAPL (as an apparent measurable thickness or a hydrocarbon sheen) are presented in Tables 4-1 (on-site wells) and 4-2 (off-site wells). The following key observations have been made:

- Apparent measurable thicknesses of LNAPL and LNAPL sheens have been observed in on-Site wells, predominantly in the area of the former AST farm in the western portion of the Site (i.e. MW01, MW02

and MW23). It is considered possible that the residual apparent product thickness is reducing over time although it is also noted that greater thicknesses are generally observed during the dry season when lower groundwater elevations are observed.

- During the February and September 2025 monitoring events, hydrocarbon sheens were again observed in on-Site wells MW01, MW02 and MW23, consistent with previous monitoring events. No LNAPL was observed in any off-Site groundwater monitoring wells.

New absorbent socks are installed by Site staff on a monthly basis in monitoring wells MW01, MW02, and MW23 as passive LNAPL recovery measures. Socks present in these monitoring wells were removed and observed to be in good condition, with minimal staining. Socks were squeezed of liquid and reinserted into the well during the monitoring events.

Table 4-1 Summary of Apparent Thicknesses of LNAPL (m) During Wet and Dry Seasons – On-site Wells

Date	MW01	MW02	MW03	MW04	MW05	MW06	MW08	MW09	MW23
Wet Season									
Apr 2014	0.001	Sheen	Sheen	-	-	-	-	-	NA
Feb 2015	0.053	0.002	-	-	-	-	-	-	NA
Feb 2016	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	-	-	<0.0005	NA
Mar 2017	Sheen	Sheen	NA - Decommissioned				Sheen	Sheen	-
Apr 2018	Sheen	Sheen	NA - Decommissioned				-	-	Sheen
Feb 2019	Sheen	Sheen	NA - Decommissioned				-	-	Sheen
Feb 2020	Sheen	Sheen	NA - Decommissioned				-	-	Sheen
Feb 2021	-	-	NA - Decommissioned				-	-	-
Feb 2022	Sheen/ black globules of LNAPL	Sheen	NA - Decommissioned				-	-	Sheen
Feb 2023	Sheen	Sheen	NA - Decommissioned						Sheen
Feb 2024	Sheen	Sheen	NA - Decommissioned				-	-	Sheen
Feb 2025	Sheen	Sheen	NA - Decommissioned				-	-	Sheen
Dry Season									
Aug 2014	NA	NA	NA	NA	NA	NA	NA	NA	NA
Jul 2015	0.592	0.016	-	-	-	-	-	-	NA
Jul 2016	0.720	0.150	0.150	0.200	0.400	0.150	-	-	
Oct 2016	NA	NA	NA - Decommissioned				NA	NA	Sheen
Oct 2017	0.001	0.015	NA - Decommissioned				-	-	0.001
Oct 2018	LNAPL thickness not recorded	LNAPL thickness not recorded	NA - Decommissioned				-	-	LNAPL thickness not recorded

Date	MW01	MW02	MW03	MW04	MW05	MW06	MW08	MW09	MW23
Oct 2019	Sheen/ black globules of LNAPL	0.010	NA - Decommissioned				-	-	Sheen/ black globules of LNAPL
Oct 2020	Sheen	Sheen	NA - Decommissioned				-	-	-
Sept 2021	Sheen/ black globules of LNAPL	Sheen/ black globules of LNAPL	NA - Decommissioned				-	-	-
Oct 2022	Sheen	Sheen	NA - Decommissioned				-	-	Sheen
Sept 2023	Sheen	Sheen	NA - Decommissioned				-	-	Sheen
Sept 2024	Sheen	Sheen	NA - Decommissioned				-	-	Sheen
Sept 2025	Sheen	Sheen	NA - Decommissioned				-	-	Sheen

Notes:
NA indicates that the well was not sampled during the monitoring event
- indicates that no LNAPL/sheen was observed

Table 4-2 Summary of Apparent Thickness of LNAPL (m) During Wet and Dry Seasons – Off-site

Date	MW11	MW17R	MW18	MW19	MW21	MW24	MW25
Wet Season							
Apr 2014	NA	NA	NA	NA	NA	NA	NA
Feb 2015	-	NA	NA	NA	NA	NA	NA
Feb 2016	<0.0005	NA	NA	NA	NA	NA	NA
Mar 2017	-	NA	NA	NA	-	-	Sheen
Apr 2018	-	NA	-	NA	-	Sheen	Sheen
Feb 2019	-	NA	-	NA	Sheen*	NA	-
Feb 2020	-	NA	-	NA	-	NA	-
Feb 2021	-	NA	-	NA	-	NA	-
Feb 2022	-	NA	-	NA	-	NA	-
Mar 2023	-	-	-	-	-	NA	-
Feb 2024	-	NA	-	-	-	NA	-
Feb 2025	-	-	-	-	-	NA	NA
Dry Season							
Aug 2014	-	-	NA	NA	NA	NA	NA
Jul 2015	-	-	NA	NA	NA	NA	NA
Jul 2016	NA	-	NA	NA	NA	NA	NA
Oct 2016	NA	-	-	-	-	-	-

Date	MW11	MW17R	MW18	MW19	MW21	MW24	MW25
Oct 2017	-	-	-	-	-	-	Sheen
Oct 2018	-	-	-	-	NA	-	-
Oct 2019	-	-	-	-	-	NA	-
Oct 2020	-	-	-	-	-	NA	-
Sept 2021	-	-	-	-	-	NA	-
Oct 2022	-	-	-	-	-	NA	-
Sept 2023	-	-	-	-	-	NA	-
Sept 2024	-	-	-	-	-	NA	NA
Sept 2025	-	-	-	-	-	NA	NA

Notes:
NA indicates that the well was not sampled/ not accessible during the monitoring event
- indicates that no LNAPL/sheen was observed
* considered likely to be biogenic in origin – i.e. given that a sheen has not been observed during any other monitoring event

4.4 HYDRO-GEOCHEMICAL CONDITIONS

4.4.1 Groundwater

A summary of the groundwater field parameter results for the 2025 monitoring events is presented in attached Table 3, as recorded on the field sampling sheets in Appendix C.

Field parameters measured during the groundwater sampling programs indicate that the hydro-geochemical conditions discussed in Table 4-3 are present within the water table aquifer beneath the Site.

Table 4-3 Summary of Groundwater Field Parameters

Field Parameter	Reported Range – February 2025	Reported Range – September 2025	Comments
pH	3.75 (MW13) to 5.29 (MW16)	3.93 (MW09) to 5.21 (MW17R)	The pH values are indicative of acidic conditions and were generally consistent with previously levels.
EC / TDS	46 µS/cm (MW10) to 106.5 µS/cm (MW16), corresponding to a TDS range of approximately 30 to 69 mg/L	42.5 µS/cm (MW26) to 389.7 µS/cm (MW17R), corresponding to a TDS range of approximately 28 to 253 mg/L	The EC readings were indicative of low salinity groundwater and the concentrations were generally within historical ranges.
Redox Potential	-329.9 mV (MW16) to 184.2 mV (MW13)	176.3 mV (MW18) to 251.2 mV (MW11)	By converting the redox values to the Standard Hydrogen Electrode (SHE – i.e. addition of 199 mV), positive oxidation-reduction potentials were mostly observed and were considered indicative of largely oxidising conditions. The redox values were within historical ranges although some historical variations (between monitoring events) is noted.

Field Parameter	Reported Range – February 2025	Reported Range – September 2025	Comments
DO	0.68 ppm (MW17R) to 4.33 ppm (MW09)	0.20 ppm (MW08) to 3.83 ppm (MW11)	Measured DO values varied between the previous and latest monitoring events.
Temperature	30.4°C (MW12) to 34.1°C (MW18)	31.2°C (MW17R) to 32.8°C (MW19)	The temperature range was as expected for shallow groundwater throughout the Darwin region.

4.4.2 Stormwater

A stormwater sample was only able to be collected at SW2 during the February 2025 monitoring event. Stormwater locations SW1 and SW3 were dry during both monitoring events. A summary of field parameter results collected from the stormwater sample points is presented in Table 3 with field sheets presented as Appendix C. Field parameters measured indicate that the following hydro-geochemical conditions exist in stormwater leaving the Site:

- the measured pH value (6.42) was indicative of slightly acidic conditions;
- the field EC value (63.3 µS/cm) corresponded to a calculated TDS concentration of 41 mg/L;
- a positive redox value of 28.4 mV was obtained – converting this value to the SHE confirmed a positive oxidation-reduction potential;
- the measured DO concentration was 9.41 ppm; and
- the temperature of the sampled stormwater was 32.2°C.

Compared to the available historical results, the reported pH, salinity, DO and temperature values appear to be within historical ranges, whereas the redox reading was lower than the historical minimum.

4.5 GROUNDWATER ANALYTICAL RESULTS

The analytical data reported for the February and September 2025 groundwater monitoring events are presented in attached Table 4, relative to the adopted guideline criteria and historical results (i.e. 2014 onwards), whereas the certified laboratory reports are presented in Appendix D.

A summary of the 2025 results that exceeded adopted guideline criteria is presented in Table 4-4.

All remaining analyte concentrations were below the laboratory limit of reporting (LOR) and/or the adopted guideline criteria.

Table 4-4 Summary of Groundwater Exceedances during the 2025 Monitoring Events

Chemical	Guideline Exceeded	February 2025 Wet Season Monitoring Event	September 2025 Dry Season Monitoring Event
Zinc	ANZG (2018) Freshwater protection – 0.008 mg/L Darwin Cleanaway Groundwater Investigation Criteria – 0.008 mg/L	On-Site ▪ DUP1* (inter-laboratory duplicate of MW09, on site along south-eastern boundary at corner of carpark) – 0.009 mg/L Off-site ▪ MW12 (across from north-western corner of site boundary on opposite side of the dirt road) – 0.024 mg/L	On-Site ▪ MW09 (on site along south-eastern boundary at corner of carpark) – 0.010 mg/L Off-site ▪ MW16 (down gradient of stormwater discharge point in north-eastern corner of Site) – 0.107 mg/L

Chemical	Guideline Exceeded	February 2025 Wet Season Monitoring Event	September 2025 Dry Season Monitoring Event
		▪ MW16 (down gradient of stormwater discharge point in north-eastern corner of Site) – 0.161 mg/L ▪ MW17R (further down gradient of stormwater discharge point in north-eastern corner of Site) – 0.064 mg/L ▪ MW18 (on side of dirt road approaching north-eastern site boundary) - 0.009 mg/L ▪ MW19 (on side of dirt road towards north-eastern site boundary) – 0.009 mg/L With exception of MW12 which reported a historic maximum zinc concentration, these results were generally consistent with, or marginally higher than, the historical concentration ranges. * Although DUP1 exceeded guidelines MW09 did not.	▪ MW17R (further down gradient of stormwater discharge point in north-eastern corner of Site) – 0.034 mg/L
Copper	ANZG (2018) Freshwater protection – 0.0014 mg/L Darwin Cleanaway Groundwater Investigation Criteria – 0.0014 mg/L		Off-site ▪ MW17R (further down gradient of stormwater discharge point in north-eastern corner of Site) – 0.002 mg/L
Nitrate	NIWA (2013) Freshwater protection – 2.4 mg/L	On-site ▪ MW09 (on site along south-eastern boundary at corner of carpark) – 2.95 mg/L ▪ DUP1 (intra-laboratory duplicate of MW09) – 2.81 mg/L ▪ DUP1 (inter-laboratory duplicate of MW09) – 3.6 mg/L These results were slightly higher than the previous years yet still generally consistent with long term historical values.	

4.6 STORMWATER ANALYTICAL RESULTS

The analytical data reported for the February 2025 stormwater monitoring event is presented in attached Table 5, relative to the adopted guideline criteria and historical results (i.e. 2016 onwards), whereas the certified laboratory reports are presented in Appendix D. A summary of the February 2025 results that exceeded adopted guideline criteria is presented in Table 4-5.

Table 4-5 Summary of Stormwater Exceedances during the February 2025 Monitoring Event

Chemical	Guideline Exceedance	Stormwater locations/ Comments – February 2025
Copper	ANZG (2018) Freshwater protection – 0.0014 mg/L	▪ SW2 (north eastern corner of the Site) – 0.002 mg/L ▪ DUP1_SW (Intra-laboratory duplicate of SW2) – 0.002 mg/L ▪ DUP1_SW (Inter-laboratory duplicate of SW2) – 0.002 mg/L Results were observed to be within historical variation and consistent with the previous reported concentrations.

Chemical	Guideline Exceedance	Stormwater locations/ Comments – February 2025
Zinc	ANZG (2018) Freshwater protection –0.008 mg/L	▪ SW2 (north eastern corner of the Site) – 0.098 mg/L ▪ DUP1_SW (Intra-laboratory duplicate of SW2) – 0.099 mg/L ▪ DUP1_SW (Inter-laboratory duplicate of SW2) – 0.11 mg/L Results were observed to be within historical variation and consistent with the previous reported concentrations.

4.7 DATA QUALITY ASSESSMENT

The quality of analytical data produced for this project has been assessed with reference to the following:

- sampling technique;
- preservation and storage of samples upon collection and during transport to the laboratory;
- sample holding times;
- laboratory analytical procedures;
- laboratory LOR;
- field quality control (QC) sample results;
- laboratory quality assurance (QA) procedures and QC results; and
- the possible occurrence of apparently unusual or anomalous results.

With respect to duplicate QC sample pairs, relative percentage differences (RPDs) were calculated where the reported concentrations were greater than the laboratory LOR in both samples – the results were compared to the following acceptance criteria:

- where both reported concentrations are greater than 20 times the LOR: RPD <30%;
- where the higher of the two concentrations is between 10 and 20 times the LOR: RPD <50%; and
- where both concentrations are less than 10 time the LOR: RPD has no limit.

The overall assessment of data quality was undertaken in accordance with the Data Quality Objective (DQO) and Data Quality Indicator (DQI) processes.

The laboratory QA procedures and QC results are detailed in the certified laboratory reports presented in Appendix D. Summary of the data quality assessment are presented in Tables 4-6 (February 2025) and 4-7 (September 2025), whereas the field QC sample results have been tabulated in Appendix E.

The laboratory analytical data are considered to be suitably robust for the purposes of the assessment, subject to any comments and/or limitations identified during the data quality assessment process.

Table 4-6 Summary of Data Quality Assessment – February 2025 Monitoring Event

Component	Frequency	Frequency Acceptable?	Acceptance Criteria	Criteria met?	Reference/ Appendix
Field QC:					
Field duplicate (intra)	1 in 20 primary samples or 1 per batch	✓	RPD <30% if results >20 LOR or RPD <50% if results between 10-20 LOR	✓	Appendix E
Secondary duplicate (inter)	1 in 20 primary samples or 1 per batch	✓	RPD <30% if results >20 LOR or RPD <50% if results between 10-20 LOR	✓	Appendix E
Rinsate Blanks	1 per day per item of field equipment interfacing with environmental media.	Since dedicated tubing/equipment was used at each sampling location, rinsate blanks were not required to be collected.	<LOR		Appendix E
Trip Blanks	1 per esky or 1 per batch	✓	<LOR	The trip blank results were all below the laboratory LOR.	Appendix E
Laboratory QC:					
Primary Laboratory Batch Reference					ES2504852
Secondary Laboratory Batch Reference					1189824
Analysis undertaken within specific holding times			Variable depending on the chemical substance.	✓	Appendix D
Method Blanks	1 analysed per process batch of 20 samples	✓	<LOR	✓	Appendix D
Duplicates	1 in 10 primary samples or 2	**ALS Report ES2504852** The actual rates of laboratory duplicate sample analysis for TRH semi-volatile fraction and	RPD <50% if results >10 LOR	✓	Appendix D

Component	Frequency	Frequency Acceptable?	Acceptance Criteria	Criteria met?	Reference/ Appendix
	per batch of 20 samples.	PAH/phenols were less than the expected rates. This is not considered to be of concern given that the laboratory QC samples are generally analysed in batches that correspond to multiple projects and are not all necessarily reported for each individual project. Further, all reported concentrations of TRH and PAHs were below laboratory LOR.			
Matrix spikes	1 analysed per process batch of 20 samples.	**ALS Report ES2504852** The actual rates of laboratory matrix spike analysis for TRH semi-volatile fraction and PAH/phenols were less than the expected rates. This is not considered to be of concern given that the laboratory QC samples are generally analysed in batches that correspond to multiple projects and are not all necessarily reported for each individual project. Further, all reported concentrations of TRH and PAHs were below laboratory LOR.	Recovery 70 - 130% (phenols 30 – 130%)	**ALS Report ES2504852** The matrix spike recovery was not determined for ammonia as N and Nitrite + Nitrate in anonymous samples as the background level was ≥four times the spike level. This was not considered to be significant as acceptable results were obtained for the laboratory control samples and the reported concentrations were within historical variation/ consistent with previous results.	Appendix D
Laboratory control sample spikes	1 analysed per process batch of 20 samples.	✓	Recovery 70 - 130% (phenols 30 – 130%)	✓	Appendix D
Surrogate spikes	Each analysis undertaken by GC-MS (all organics except TRH >C10).	✓	Recovery 50 – 150% (phenols 20 – 130%)	✓	Appendix D

Table 4-7 Summary of Data Quality Assessment – September 2025 Monitoring Event

Component	Frequency	Frequency Acceptable?	Acceptance Criteria	Criteria met?	Reference/ Appendix
Field QC:					
Field duplicate (intra)	1 in 20 primary samples or 1 per batch	✓	RPD <30% if results >20 LOR or RPD <50% if results between 10-20 LOR	✓	Appendix E
Secondary duplicate (inter)	1 in 20 primary samples or 1 per batch	✓	RPD <30% if results >20 LOR or RPD <50% if results between 10-20 LOR	✓	Appendix E
Rinsate Blanks	1 per day per item of field equipment interfacing with environmental media.	Since dedicated tubing/equipment was used at each sampling location, rinsate blanks were not required to be collected.	<LOR		Appendix E
Trip Blanks	1 per esky or 1 per batch	✓	<LOR	The trip blank results were all below the laboratory LOR.	Appendix E
Laboratory QC:					
Primary Laboratory Batch Reference					ES2529708 ES2529915
Secondary Laboratory Batch Reference					1271963
Analysis undertaken within specific holding times			Variable depending on the chemical substance.	✓	Appendix D
Method Blanks	1 analysed per process batch of 20 samples	✓	<LOR	✓	Appendix D
Duplicates	1 in 10 primary samples or 2 per batch of 20 samples.	**ALS Report ES2529708 & ES2529915** The actual rates of laboratory duplicate sample analysis for TRH semi-volatile fraction and	RPD <50% if results >10 LOR	✓	Appendix D

Component	Frequency	Frequency Acceptable?	Acceptance Criteria	Criteria met?	Reference/ Appendix
		PAH/phenols were less than the expected rates. This is not considered to be of concern given that the laboratory QC samples are generally analysed in batches that correspond to multiple projects and are not all necessarily reported for each individual project. Further, all reported concentrations of TRH and PAHs were below laboratory LOR.			
Matrix spikes	1 analysed per process batch of 20 samples.	**ALS Report ES2529708 & ES2529915** The actual rates of laboratory matrix spike analysis for TRH semi-volatile fraction and PAH/phenols were less than the expected rates. This is not considered to be of concern given that the laboratory QC samples are generally analysed in batches that correspond to multiple projects and are not all necessarily reported for each individual project. Further, all reported concentrations of TRH and PAHs were below laboratory LOR.	Recovery 70 - 130% (phenols 30 – 130%)	**ALS Report ES2529915** The matrix spike recovery was not determined for TRH C6-C9/C10 in anonymous samples as the background level was ≥four times the spike level. This was not considered to be significant as acceptable results were obtained for the laboratory control samples and the reported concentrations reported below LOR and within historical variation/ consistent with previous results.	Appendix D
Laboratory control sample spikes	1 analysed per process batch of 20 samples.	✓	Recovery 70 - 130% (phenols 30 – 130%)	✓	Appendix D
Surrogate spikes	Each analysis undertaken by GC-MS (all organics except TRH >C10).	✓	Recovery 50 – 150% (phenols 20 – 130%)	✓	Appendix D

5 DISCUSSION

5.1 SUMMARY OF RESULTS

5.1.1 Groundwater

The following are noted with respect to the outcomes of the 2025 monitoring events:

- During the February 2025 wet season monitoring event, hydrocarbon sheen was observed in water sampled from monitoring wells MW01, MW02 and MW23, all of which had previously also exhibited either a sheen or an apparent measurable thickness of LNAPL.
- Consistent with previous dry season monitoring events, a hydrocarbon sheen was observed in groundwater purged from MW01, MW02 and MW23 in September 2025.

Generally, the concentrations of >C_{10} TRH and/or the apparent measurable thicknesses of LNAPL are greater during the dry season (lower water levels), with LNAPL sheen/only minor thicknesses of LNAPL and lower >C_{10} TRH concentrations observed during the wet season (higher water levels). The same pattern is observed for C_6-C_9 TRH, benzene and total PAH. This is likely to be due to the higher water levels trapping the LNAPL within the soil pore spaces, inhibiting it from entering the well. Figure 5-1 shows the variation in >C_{10} TRH concentrations/ presence of LNAPL with the fluctuating water level observed between wet and dry seasons in MW01.

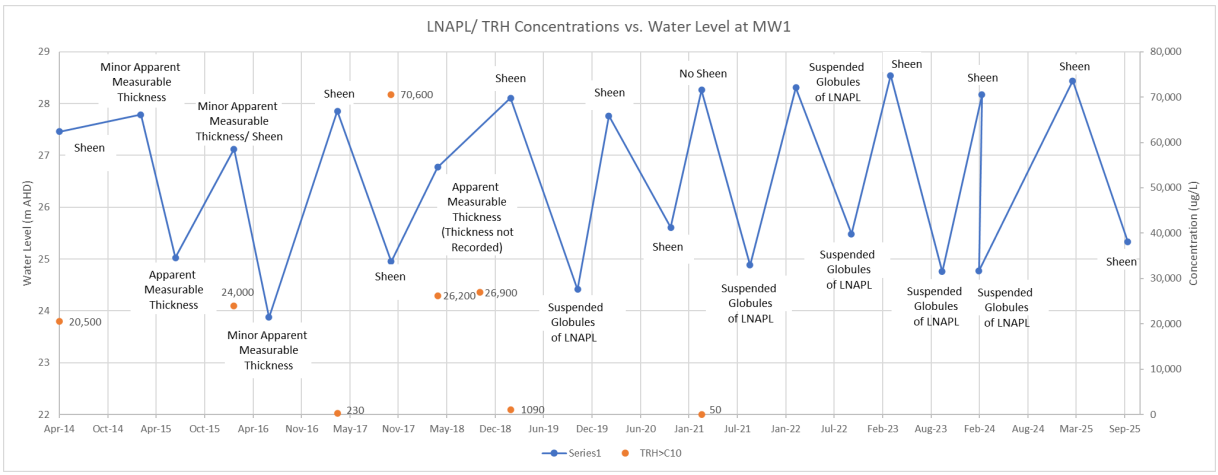

Figure 5-1 LNAPL/ >C_{10} TRH Concentrations vs. Water Level at Monitoring Well MW01

- Previously, the residual groundwater hydrocarbon impacts identified in monitoring wells MW01, MW02 and MW23 were considered most likely attributable to spills/leaks from the earthen bunded AST farm formerly present in the western portion of the Site (i.e. adjacent to these wells). The area surrounding the former AST farm was remediated in 2014 and subsequently sealed with bitumen.
- Reported concentrations of hydrocarbons at all sampled locations (historically and during the 2025 monitoring events) have been below the adopted ASC NEPM (1999) vapour intrusion HSLs for commercial/industrial land use (noting that these can only be applied when the depth to water is ≥2 m BGL).
- Due to the fluctuating nature of observable hydrocarbon impacts between wet and dry seasons, it is considered that Mann-Kendall statistical trend analysis would not be a suitable tool to adopt for the interpretation of these results. Rather, to determine the potential off-site impacts from the migration of hydrocarbon contamination, concentrations of TRH along three key flow transects, each originating from the former AST area (i.e. as the key source area) have been considered – as follows:

- Transect 1 – MW01, MW25 and MW11
- Transect 2 – MW23, MW2 and MW12
- Transect 3 – MW26 and MW13

With reference to Appendix F, the measured concentrations of C_{10}-C_{36} TRH and C_6-C_9 TRH over time are detailed in Plates 1 to 3 and Plates 4 to 6, respectively. Consistent with previous results, the following has been observed:

- The reported concentrations of TRH have decreased compared to historical results (where previously reported above laboratory LOR), indicating that potential impacts may be decreasing over time (noting concentrations are subject to some seasonal fluctuation).
- The migration of residual C_6-C_9 TRH and C_{10}-C_{36} TRH) in groundwater appears to be predominantly occurring along Transect 1. Historical concentrations of both short and long chain TRH have been identified in off-site well MW25 (located adjacent to the *Advance Civil Engineering* property); however, these appear to have been delineated, with concentrations of these analytes (as well as PAH and BTEX) reported below laboratory LOR in groundwater sampled from MW11 (located further along the transect, at the rear of the *Advance Civil Engineering* property).
- Only monitoring well MW12 along Transect 2 was able to be sampled (during the February and September 2025 monitoring events), due to the presence of sheen in monitoring wells MW02 and MW23. Reported concentrations of TRH in MW12 have both recently and historically been below LOR.

- With reference to Figure 3a, the interpreted groundwater elevation contours from the February 2025 monitoring event indicate that off-site groundwater monitoring wells MW11 to MW13, MW16, MW17R and MW18 to MW22 are generally located down-hydraulic gradient of the Site. Concentrations of TRH, BTEX and PAH reported below laboratory LOR in groundwater sampled from these locations during the February 2025 monitoring event. As such, the available data indicate that the residual hydrocarbon impacts observed in groundwater beneath the Site have not migrated beyond the Site boundary in the direction of the reserve[1].
- With reference to Figure 3b, the interpreted groundwater elevation contours from the September 2025 monitoring event indicate that off-site MW21, MW12 and MW22 were observed to be generally located down-hydraulic gradient of the Site. The elevation contours show groundwater flow to the north (rather than the northeast observed in the February 2025 monitoring event), however groundwater is still flowing towards the direction of the reserve. This groundwater flow trend will be confirmed during the February 2026 monitoring event. Concentrations of TRH, BTEX and PAH reported below laboratory LOR in groundwater sampled from these locations during the September 2025 monitoring event. As such, the available data indicate that the residual hydrocarbon impacts observed in groundwater beneath the Site have not migrated beyond the Site boundary in the direction of the reserve[2].

[1] During the October 2019 monitoring event, concentrations of toluene were reported above laboratory LOR, but below the adopted guideline criteria, in off-site wells MW11 (13 µg/L) and MW12 (14 µg/L) – these concentrations were checked and confirmed by the laboratory at the time. Concentrations of toluene were not previously detected at these locations nor in up-hydraulic gradient wells MW02 and MW25 in recent years. It was considered possible that these results may be anomalous and required confirmation during following groundwater monitoring events. During the 2020 and 2021 monitoring events, groundwater sampled from MW11 and MW12 reported toluene below laboratory LOR, thereby supporting the hypothesis that the previous results were anomalous. Previously reported concentrations of hydrocarbons in groundwater sampled from monitoring well MW18 (during October 2020) were not confirmed during either of the 2021 monitoring events.

[2] During the October 2019 monitoring event, concentrations of toluene were reported above laboratory LOR, but below the adopted guideline criteria, in off-site wells MW11 (13 µg/L) and MW12 (14 µg/L) – these concentrations were checked and confirmed by the laboratory at the time. Concentrations of toluene were not previously detected at these locations nor in up-hydraulic gradient wells MW02 and MW25 in recent years. It was considered possible that these results may be anomalous and required confirmation during following groundwater monitoring events. During the 2020 and 2021 monitoring events, groundwater sampled from MW11 and MW12 reported toluene below laboratory LOR, thereby supporting the hypothesis that the previous results were anomalous. Previously reported concentrations of hydrocarbons in groundwater sampled from monitoring well MW18 (during October 2020) were not confirmed during either of the 2021 monitoring events.

- Consistent with previous results, concentrations of zinc were identified above the ANZG (2018) freshwater guideline in groundwater sampled from off-site wells MW12, MW16, MW17R, MW18 and MW19 during the February 2025 monitoring event. During the September 2025 monitoring event, on-site monitoring well MW09 and off-site wells MW16 and MW17R reported zinc concentrations above the freshwater guideline. All zinc concentrations were observed to be within historical ranges and consistent with previously reported concentrations at all locations except MW12, which reported a concentration above the historic maximum during the February 2025 monitoring event.
- During the September 2025 monitoring event, off-Site well MW17R reported a reported copper concentration above the ANZG (2018) freshwater guideline. This copper concentration was observed to be within historical ranges and consistent with previously reported concentrations at MW17R.
- With reference to Figures 2 and 4a, the main potential on-site source of metals would be within acid wastes stored within the dangerous goods storage shed; however, the concentrations of dissolved metals were not significantly elevated in groundwater monitoring wells located down-hydraulic gradient of this area, when compared with concentrations across the wider groundwater monitoring network. The elevated concentrations of metals were, in fact, widespread across the Site and were considered likely to be reflective of natural background conditions associated with the mineralisation of the underlying geology. It is noted that the groundwater (and stormwater, to a lesser extent) pH is acidic and could have resulted in geochemical metal dissolution.
- Within all of the groundwater samples, the concentrations of other metals (arsenic, cadmium, chromium, lead, mercury and nickel) were reported below laboratory LOR and/or the adopted guideline criteria (where available).
- During the February 2025 monitoring event, the concentration of nitrate in groundwater sampled from MW09 exceeded the adopted freshwater ecosystem protection value, although the reported concentration was within historical variation. No nitrate exceedances were reported for the September 2025 event. Monitoring well MW09 is located adjacent to the eastern Site boundary, near the earthen drain, and downstream of the eastern stormwater catchment which receives off-Site run-off from the road verge of Stuart Highway. In addition, a septic tank is also present approximately 15 m west of MW09 (refer to Figure 2 and Figure 5-2). No information on the septic tank set-up, structure or age is known.



Figure 5-2 Septic Tank infrastructure proximity in relation to Monitoring Well MW09

Nitrate concentrations in groundwater sampled from MW09 are variable with exceedances for the most part occurring during the wet season. A strong positive correlation was observed between nitrate concentration and groundwater level at MW09 during the wet season, as presented in Figure 5-3 below. Suggesting that higher groundwater levels are associated with increased nitrate concentrations, possibly due to interaction with surface waters and/ or septic wastewater(not confirmed). In contrast, a much weaker correlation is evident during the dry season. This weaker correlation likely reflects reduced recharge to groundwater. Overall, nitrate concentrations in groundwater sampled from MW09 is influenced by seasonal recharge dynamics, with wet-season conditions showing greater concentrations of nitrate in groundwater.

Groundwater monitoring well MW08 located around 33 m down gradient and north of MW09 has reported nitrate concentrations of similar magnitude but generally lower than that observed in groundwater sampled from MW08. Ongoing monitoring of nitrate concentrations in this portion of the Site will assist in confirming trends and potential migration of nitrate in groundwater beneath the Site. Other indicator species could be tested in February 2026 to confirm whether the source of nitrate is associated with the septic tank (i.e., faecal coliforms, E. coli).

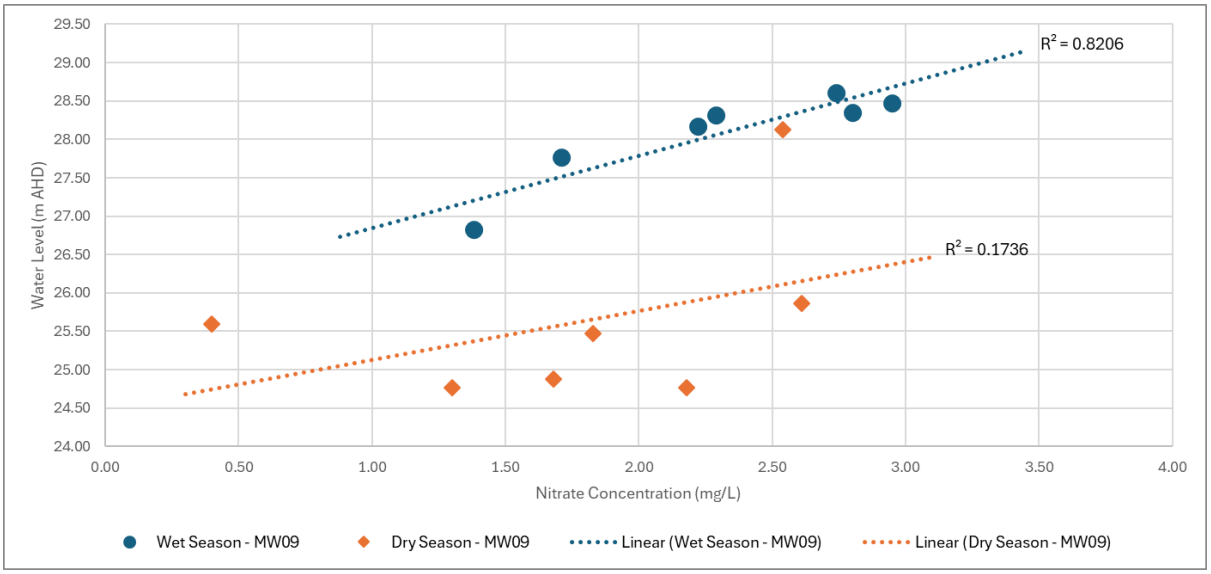

Figure 5-3 XY plot presenting nitrate concentrations vs water level at MW09 during both the wet and dry seasons

5.1.2 Stormwater

The key findings of the surface water monitoring events can be summarised as follows:

- A stormwater water sample was able to be collected during the February 2025 monitoring event from the north eastern corner of the Site (SW2) only. There was no stormwater discharging from the eastern site boundary (SW1) or entering the Site (SW3) at the time of the monitoring event.
- Total recoverable hydrocarbons (TRH), BTEXN (benzene, toluene, ethylbenzene, xylene and naphthalene) and polycyclic aromatic hydrocarbons (PAHs) were reported below laboratory LOR in stormwater sample SW2.
- The reported copper and zinc concentration for SW2 exceeded the ANZG (2018) freshwater ecosystem criteria. The results were observed to be within historical variation and consistent with the previous reported concentrations. Based on previous investigations, it is considered possible that elevated concentrations of some metals is a characteristic of background concentrations in rainfall across an unsealed (grassed) area and/or run-off across an industrial site/roadway/carpark and onto the Site.

5.2 RISK TO OFF-SITE RECEPTORS – GROUNDWATER

During the LWC (2020) groundwater beneficial use assessment for the Site and surrounds (2 km radius), the following were considered to be potentially relevant:

- environment (fresh surface water and groundwater dependant ecosystems);
- cultural (aesthetics/recreational);
- industrial;
- domestic; and
- public water supply.

Based on the February and September 2025 monitoring results, it is considered that:

- there are no significant risks to off-site potential beneficial uses of groundwater down hydraulic gradient of the Site (i.e. in the direction of the reserve); and
- the reported concentrations of residual hydrocarbons in groundwater beneath the Site were within historical ranges – as such, the risk profile for the Site/to off-site receptors has not significantly changed since the previous monitoring events.

5.3 RISK TO OFF-SITE RECEPTORS – STORMWATER DISCHARGE

During the LWC (2020) surface water beneficial use assessment for the Site and surrounds (2 km radius), the following were considered to be potentially relevant:

- environment (fresh surface water and groundwater dependant ecosystems);
- cultural (aesthetics/recreational);
- industrial; and
- domestic.

Based on the February 2025 monitoring results, it is considered that the quality of stormwater leaving the Site is of an acceptable quality in regard to potential off-site receptors. Reported concentrations of chemical substances of concern in stormwater were below laboratory LOR/the adopted guideline criteria with exception of minor concentrations of copper and zinc which exceeded the criteria for the protection of freshwater ecosystems. As samples were collected during/following a period of relatively high rainfall, it is considered that the elevated concentrations may be characteristic of rainfall run-off in the wider regional area. To better assess this, previous investigations included the collection of an upstream sample – since similar concentrations were reported in the upstream sample, this was considered to indicate that the elevated concentrations of metals are most likely characteristic of background concentrations in rainfall run-off across an unsealed (grassed) area and/or across an industrial site/roadway/carpark leading onto the Site.

The previous assessment of major cations and anions in groundwater sampled from MW16 and surface water sampled from the north-eastern corner of the Site indicated that the surface water ionic composition is similar to that of groundwater, thereby indicating some interaction/ mixing of stormwater and groundwater at the north-eastern outlet.

5.4 CURRENT CONTROLS FOR HAZARDOUS SUBSTANCE STORAGE

As per the Site's licence conditions, the key objective of the on-going monitoring program is to assess whether current controls for hazardous substance storage are adequate for protecting groundwater and stormwater and are not adversely impacting local receptors. Since it is considered that groundwater and stormwater monitoring alone does not address this objective, the following have therefore also been considered:

- The groundwater monitoring network is extensive across the northern portion of the Site and, considering groundwater flow direction, allows for the assessment of potential off-site migration of chemical substances. Should Site practices change (for example, liquid waste storage areas are relocated on the Site), a review of the current groundwater monitoring network and analytical schedule should be undertaken to ensure that all potential sources of contamination are targeted.
- The analytical laboratory schedule should be reviewed regularly to ensure it covers all potential liquid waste streams being stored at the Site. A review of NT EPA licence for the Site identified a significant number of listed wastes which may be received; however, it is understood that some wastes are rarely received and current storage comprises mostly solid wastes. As Site operations change, details should be sought from the Site manager to determine if the potential chemical substances of concern are included in the current analytical schedule. Also noting that, where waste streams are not relevant, these chemicals could be removed from the on-going monitoring analytical schedule. Since the time of the previous groundwater monitoring event, it is understood that Site operations have not significantly changed.
- The Site is to continue to be managed in accordance with the EMP (including groundwater and stormwater management plans) to limit potential 'new' impacts to groundwater beneath the Site.

6 CONCLUSIONS & RECOMMENDATIONS

Based on the results of the February and September 2025 monitoring events, it is considered that there are no gross or significant risks to off-site potential beneficial uses of groundwater or stormwater down hydraulic gradient of the Site. The outcomes of the groundwater and stormwater monitoring events also suggest that the current controls implemented at the Site for hazardous substance storage are adequate.

The following recommendations are based on the outcomes of the February and September 2025 monitoring events:

- The Site should continue to be managed and monitored in accordance with the EMP – it is understood that Cleanaway monitor compliance with the EMP during monthly inspections of the environmental controls in place at the Site.
- Should Site practices change, a review of the current groundwater monitoring network and analytical schedule should be undertaken and the EMP may require revision/updating at that time.
- Since off-site wells MW24 and MW25 are no longer available for sampling, and LNAPL impacts are present in the vicinity of the north-western Site boundary (i.e. wells MW01, MW02 and MW23), a replacement well (completed as a standpipe) should be installed (in consultation with the owner of the neighbouring facility) to assess potential off-site impacts in this area. It is understood that the replacement well may not be able to be installed in the near future due to site access restrictions, however, its installation should be re-considered in the event of any changes to the groundwater flow regime and/ or concentrations in the vicinity of MW01/ MW02/ MW23 (noting that local conditions appear to be fairly stable based on the outcomes of recent monitoring events).
- In addition to nutrient testing in groundwater monitoring wells MW08 and MW09, also undertake testing of faecal coliforms and E.Coli to assess whether the nitrate concentrations in groundwater sampled from MW09 during the wet season is sourced from breaches of the nearby septic tank.

Please refer to the statement of limitations associated with these works (presented as Appendix G).

7 REFERENCES

ANZECC/ARMCANZ (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*.

ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*: http://www.waterquality.gov.au/anz-guidelines.

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LWC (2020) *February 2020 Groundwater and Stormwater Monitoring Events Cleanaway Waste Management Facility, Holtze, Northern Territory*, report prepared for Cleanaway Waste Management Limited on 3 September 2020.

National Environment Protection (Assessment of Site Contamination) Measure 1999 (amended in 2013).

NHMRC (2008) *Guidelines for Managing Risks in Recreational Water*.

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Transpacific (2014a) *Transpacific Industries Northern Territory Environmental Management Plan*.

Transpacific (2014b) C*ombined Phase 1 & 2 Environmental Site Assessment – Cleanaway Darwin*, report dated 11 July 2014.

Transpacific (2015) *Supplementary Contamination Assessment (SCA) Assessment – Cleanaway Darwin,* report dated 15 May 2015.

Waste Management and Pollution Control Act 2016.

FIGURES

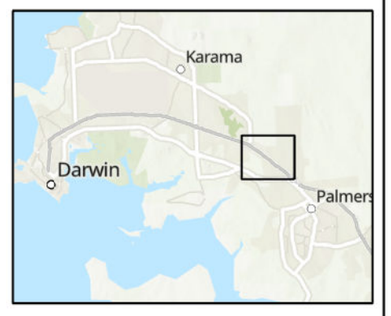


Legend

- Site Boundary

Generalised Land Use

- Cropping
- Grazing modified pastures
- Intensive horticulture
- Land in transition
- Mining
- Other minimal use
- Plantation forests
- Reservoir/dam
- Residential and farm infrastructure
- Services
- Transport and communication
- Utilities



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Metres

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Project: Cleanaway Transpacific Industries - Holtze 2025

Figure Title:

Site Locality Plan

Date: September 2025	Projection: GDA 2020 - MGA 52
Scale: See Plan	Figure in Set: 1 of 6

Site Address: 875 Stuart Highway, Holtze, NT 0829

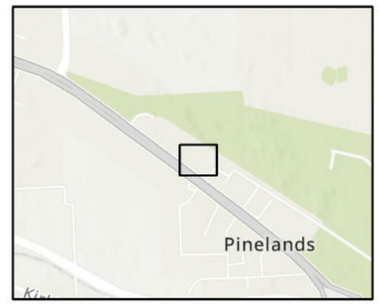
Figure 1 Revision A

Drawing Reference BE-78



Legend

- Site Boundary
- Site Features
- Groundwater Monitoring Well
- Destroyed/ Not Accessible Groundwater Monitoring Well
- Surface Water Sampling Location
- Catchment 1 - Drains to Western Boundary
- Catchment 2 - Drains to Northeastern Boundary
- Catchment 3 - Drains to Northeastern Boundary along drainage Easement



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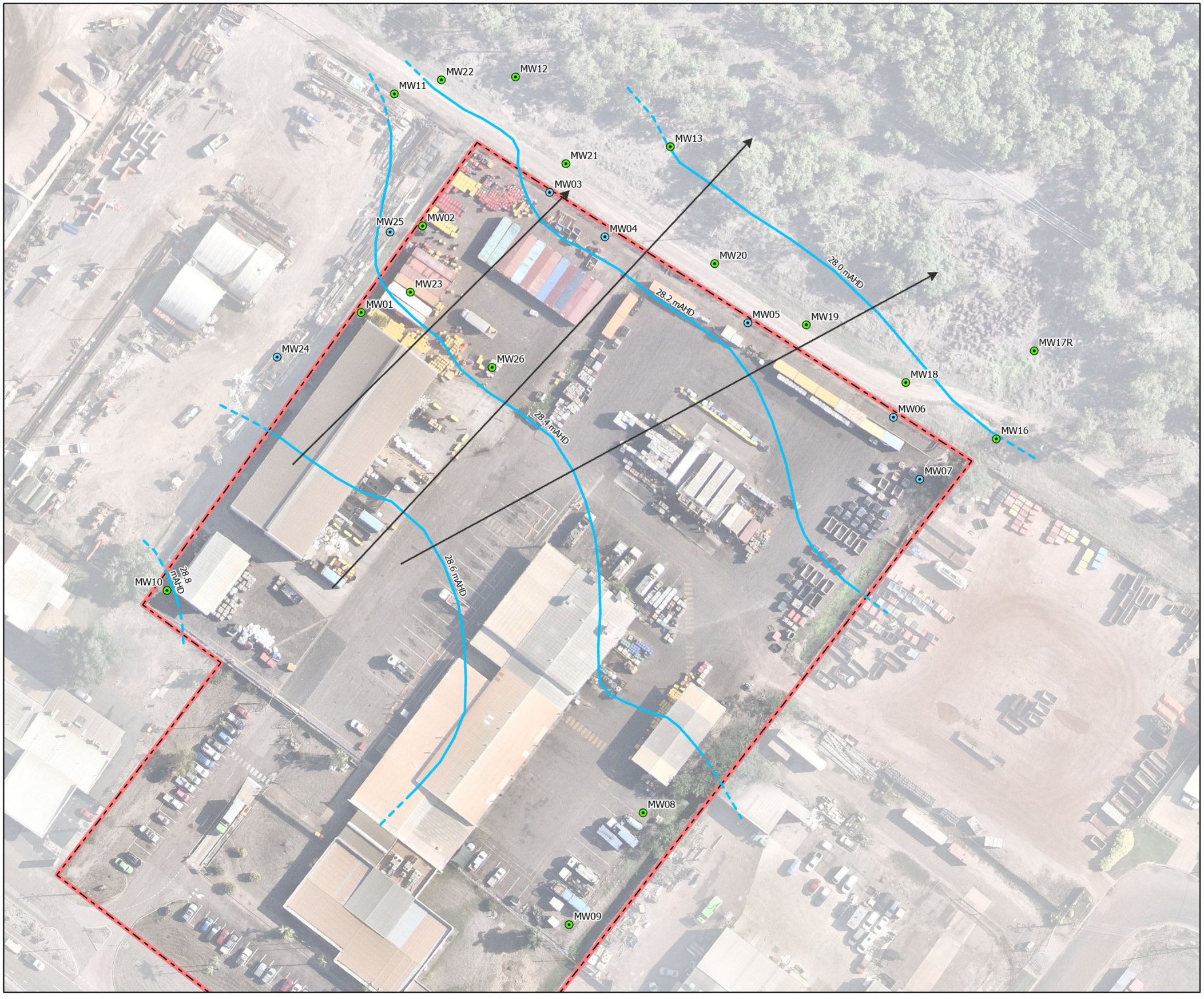
Project: Cleanaway Transpacific Industries - Holtze 2025

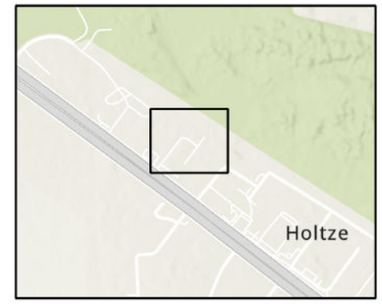
Figure Title:
Site Layout and Monitoring Location Plan

Date: September 2025	Projection: GDA 2020 - MGA 52
Scale: See Plan	Figure in Set: 2 of 6
Site Address: 875 Stuart Highway, Holtze, NT 0829	Figure 2 Revision A
Drawing Reference BE-78	



Legend

- Site Boundary
- Groundwater Monitoring Well
- Destroyed/ Not Accessible Groundwater Monitoring Well
- Interpreted Groundwater Contour
- Inferred Groundwater Contours
- Inferred Groundwater Flow Direction



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Project: Cleanaway Transpacific Industries - Holtze 2025

Figure Title:
Interpreted and Inferred Groundwater Contours and Flow Direction - February 2025

Date: February 2025

Projection: GDA 2020 - MGA 52

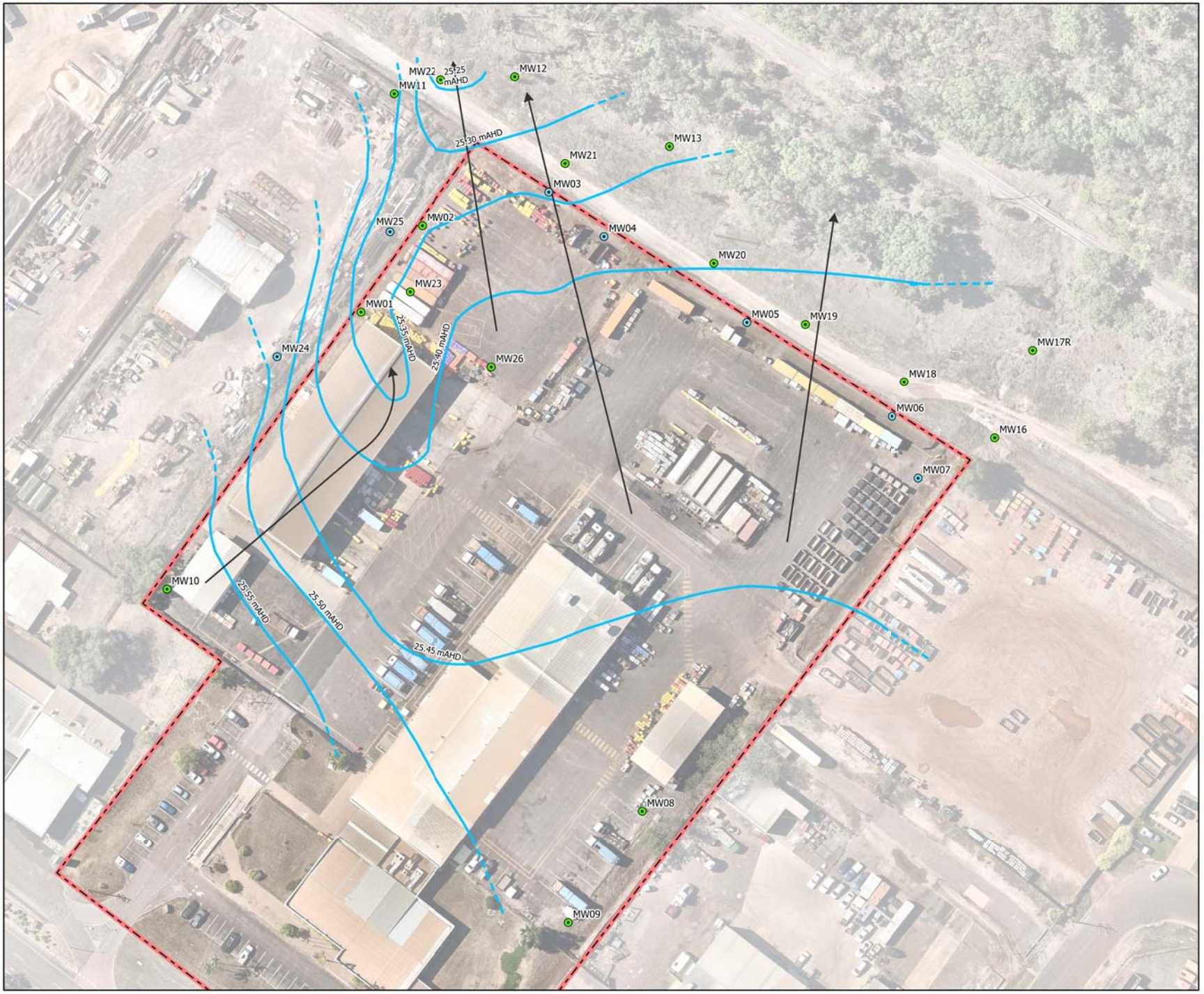
Scale: See Plan

Figure in Set: 3 of 6

Site Address: 875 Stuart Highway, Holtze, NT 0829

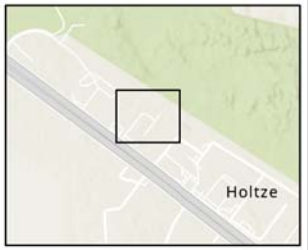
Figure 3a Revision A

Drawing Reference BE-78



Legend

- Site Boundary
- Groundwater Monitoring Well
- Destroyed/ Not Accessible Groundwater Monitoring Well
- Interpreted Groundwater Contour
- Inferred Groundwater Contours
- Inferred Groundwater Flow Direction
- Links



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Project: Cleanaway Transpacific Industries - Holtze 2025

Figure Title:
Interpreted and Inferred Groundwater Contours and Flow Direction - September 2025

Date: September 2025

Projection: GDA 2020 - MGA 52

Scale: See Plan

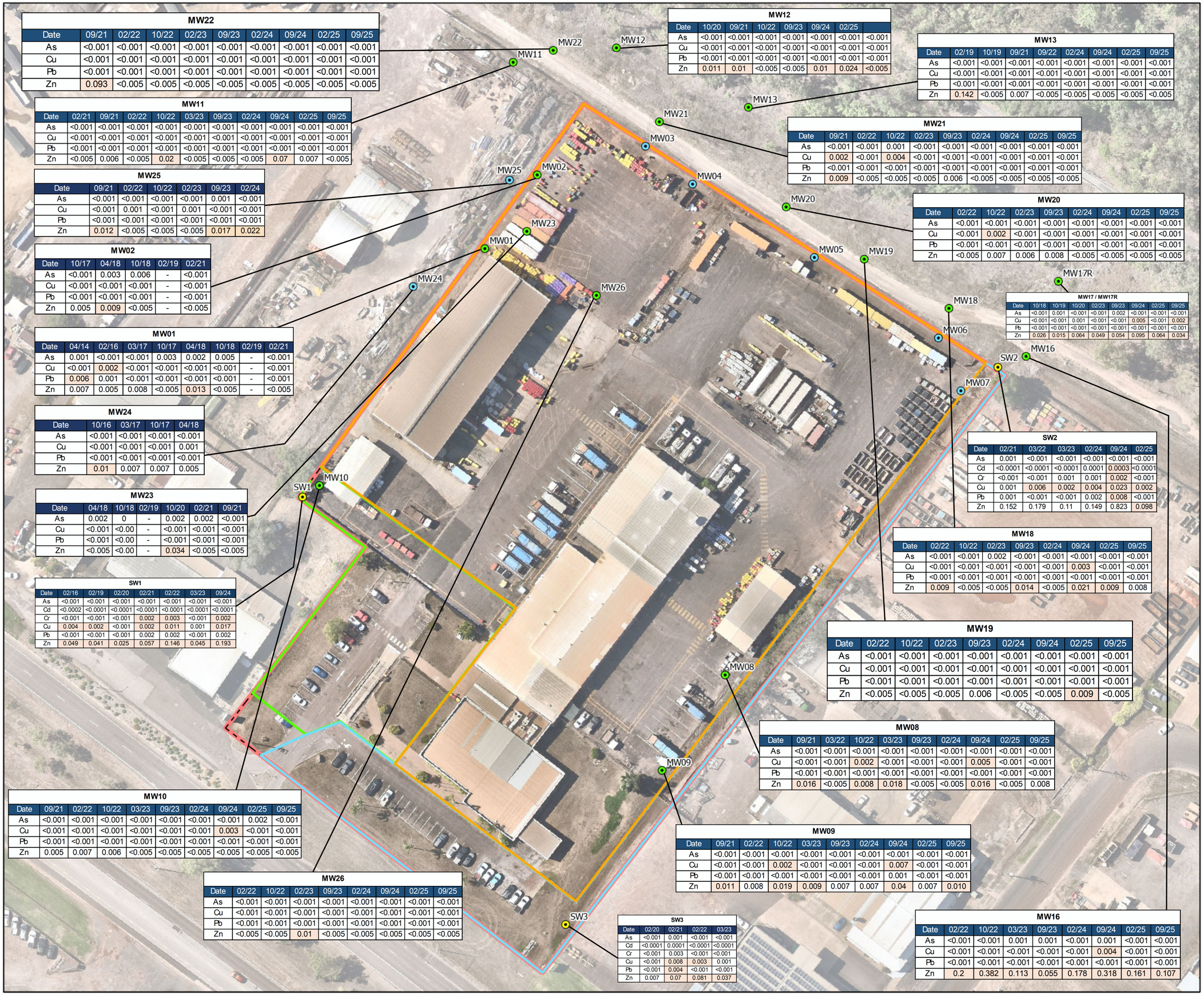
Figure in Set: 4 of 6

Site Address: 875 Stuart Highway, Holtze, NT 0829

Figure 3b

Revision A

Drawing Reference BE-78



MW22

Date	09/21	02/22	10/22	02/23	09/23	02/24	09/24	02/25	09/25
As	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cu	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	0.093	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

MW12

Date	10/20	09/21	10/22	09/23	09/24	02/25	
As	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cu	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	0.011	0.01	<0.005	<0.005	0.01	0.024	<0.005

MW13

Date	02/19	10/19	09/21	09/22	02/24	09/24	02/25	09/25
As	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cu	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	0.142	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005

MW11

Date	02/21	09/21	02/22	10/22	03/23	09/23	02/24	09/24	02/25	09/25
As	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cu	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	<0.005	0.006	<0.005	0.02	<0.005	<0.005	<0.005	0.07	0.007	<0.005

MW21

Date	09/21	02/22	10/22	02/23	09/23	02/24	09/24	02/25	09/25
As	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cu	0.002	<0.001	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	0.009	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005

MW25

Date	09/21	02/22	10/22	02/23	09/23	02/24
As	<0.001	<0.001	<0.001	<0.001	0.001	<0.001
Cu	<0.001	0.001	<0.001	0.001	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	0.012	<0.005	<0.005	<0.005	0.017	0.022

MW20

Date	02/22	10/22	02/23	09/23	02/24	09/24	02/25	09/25
As	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cu	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	<0.005	0.007	0.006	0.008	<0.005	<0.005	<0.005	<0.005

MW02

Date	10/17	04/18	10/18	02/19	02/21
As	<0.001	0.003	0.006	-	<0.001
Cu	<0.001	<0.001	<0.001	-	<0.001
Pb	<0.001	<0.001	<0.001	-	<0.001
Zn	0.005	0.009	<0.005	-	<0.005

MW17 / MW17R

Date	10/18	10/19	10/20	02/23	09/23	09/24	02/25	09/25
As	<0.001	0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001
Cu	<0.001	<0.001	0.001	<0.001	<0.001	0.005	<0.001	0.002
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	0.026	0.015	0.064	0.049	0.054	0.095	0.064	0.034

MW01

Date	04/14	02/16	03/17	10/17	04/18	10/18	02/19	02/21
As	0.001	<0.001	<0.001	0.003	0.002	0.005	-	<0.001
Cu	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	-	<0.001
Pb	0.006	0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001
Zn	0.007	0.005	0.008	<0.005	0.013	<0.005	-	<0.005

SW2

Date	02/21	03/22	03/23	02/24	09/24	02/25
As	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cd	<0.0001	<0.0001	<0.0001	0.0001	0.0003	<0.0001
Cr	<0.001	<0.001	0.001	0.001	0.002	<0.001
Cu	0.001	0.006	0.002	0.004	0.023	0.002
Pb	0.001	<0.001	<0.001	0.002	0.008	<0.001
Zn	0.152	0.179	0.11	0.149	0.823	0.098

MW24

Date	10/16	03/17	10/17	04/18
As	<0.001	<0.001	<0.001	<0.001
Cu	<0.001	<0.001	<0.001	0.001
Pb	<0.001	<0.001	<0.001	<0.001
Zn	0.01	0.007	0.007	0.005

MW18

Date	02/22	10/22	02/23	09/23	02/24	09/24	02/25	09/25
As	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001
Cu	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	0.009	<0.005	<0.005	0.014	<0.005	0.021	0.009	0.008

MW23

Date	04/18	10/18	02/19	10/20	02/21	09/21
As	0.002	0	-	0.002	0.002	<0.001
Cu	<0.001	<0.00	-	<0.001	<0.001	<0.001
Pb	<0.001	<0.00	-	<0.001	<0.001	<0.001
Zn	<0.005	<0.00	-	0.034	<0.005	<0.005

MW19

Date	02/22	10/22	02/23	09/23	02/24	09/24	02/25	09/25
As	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cu	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	0.009	<0.005

SW1

Date	02/16	02/19	02/20	02/21	02/22	03/23	09/24
As	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cd	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cr	<0.001	<0.001	<0.001	0.002	0.003	<0.001	0.002
Cu	0.004	0.002	<0.001	0.002	0.011	0.001	0.017
Pb	<0.001	<0.001	<0.001	0.002	0.002	<0.001	0.002
Zn	0.049	0.041	0.025	0.057	0.146	0.045	0.193

MW08

Date	09/21	03/22	10/22	03/23	09/23	02/24	09/24	02/25	09/25
As	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cu	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	0.005	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	0.016	<0.005	0.008	0.018	<0.005	<0.005	0.016	<0.005	0.008

MW10

Date	09/21	02/22	10/22	03/23	09/23	02/24	09/24	02/25	09/25
As	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001
Cu	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.003	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	0.005	0.007	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005

MW09

Date	09/21	02/22	10/22	03/23	09/23	02/24	09/24	02/25	09/25
As	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cu	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	0.007	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	<0.001
Zn	0.011	0.008	0.019	0.009	0.007	0.007	0.04	0.007	0.010

MW26

Date	02/22	10/22	02/23	09/23	02/24	09/24	02/25	09/25
As	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cu	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	<0.005	<0.005	0.01	<0.005	<0.005	<0.005	<0.005	<0.005

SW3

Date	02/20	02/21	02/22	03/23
As	<0.001	0.001	<0.001	<0.001
Cd	<0.0001	0.0001	<0.0001	<0.0001
Cr	<0.001	0.003	<0.001	<0.001
Cu	<0.001	0.008	0.003	0.001
Pb	<0.001	0.004	<0.001	<0.001
Zn	0.007	0.07	0.081	0.037

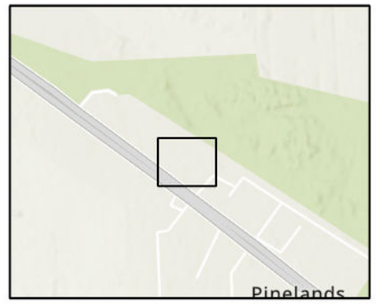
MW16

Date	02/22	10/22	03/23	09/23	02/24	09/24	02/25	09/25
As	<0.001	<0.001	0.001	0.001	<0.001	0.001	<0.001	<0.001
Cu	<0.001	<0.001	<0.001	<0.001	<0.001	0.004	<0.001	<0.001
Pb	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zn	0.2	0.382	0.113	0.055	0.178	0.318	0.161	0.107

Legend

- Site Boundary
- Site Features
- Groundwater Monitoring Well
- Destroyed/ Not Accessible Groundwater Monitoring Well
- Surface Water Sampling Location
- Catchment 1 - Drains to Western Boundary
- Catchment 2 - Drains to Northeastern Boundary
- Catchment 3 - Drains to Northeastern Boundary along drainage Easement

ADWG (Health) (2011)
ADWG (Aesthetic) (2011)
NHMRC (2008) Recreational Water - Health (Primary Contact)
NHMRC (2008) Recreational Water - Aesthetics
ANZECC 2000 FW 95%
Darw in Cleanaw ay Groundw ater Investigation Criteria



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LWC Land & Water Consulting
Land & Water Consulting
Email: enquiries@lwconsulting.com.au
Web: www.lwconsulting.com.au

Project: Cleanaway Transpacific Industries - Holtze 2025

Figure Title:
Summary of Groundwater and Surface Water Results - Metal Exceedances

Date: September 2025

Projection: GDA 2020 - MGA 52

Scale: See Plan

Figure in Set: 4 of 6

Site Address: 875 Stuart Highway, Holtze, NT 0829

Figure 4a Revision A

Drawing Reference BE-78



MW22

Date	09/21	02/22	10/22	02/23	09/23	02/24	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	<50	<50	<50	<50	<50	<50	<50
PAHs	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

MW12

Date	10/20	09/21	10/22	09/23	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	100	<50	<50	<50	<50	<50	<50
PAHs	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

MW13

Date	02/19	10/19	09/21	09/22	02/24	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	<50	<50	<50	<50	<50	<50
PAHs	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

MW11

Date	02/21	09/21	02/22	10/22	03/23	09/23	02/24	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
PAHs	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

MW21

Date	09/21	02/22	10/22	02/23	09/23	02/24	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	<50	<50	<50	<50	<50	<50	<50
PAHs	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

MW20

Date	02/22	10/22	02/23	09/23	02/24	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	<50	<50	<50	<50	<50	<50
PAHs	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

MW25

Date	09/21	02/22	10/22	02/23	09/23	02/24
B	1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	<50	<50	<50	<50
PAHs	<0.5	<0.5	-	<0.5	<0.5	<0.5

MW02

Date	10/17	04/18	10/18	02/19	02/21
B	5	<1	4	<1	<1
T	<2	<2	<2	<2	<2
E	7	<2	3	<2	<2
X	2	<2	<2	<2	<2
N	9	<5	7	<5	<5
C_6-C_9	60	<20	40	<20	<20
C_{10}-C_{36}	42,100	9670	3110	810	<50
PAHs	10	<0.5	4.3	<0.5	<0.5

MW01

Date	04/14	02/16	03/17	10/17	04/18	10/18	02/19	02/21
B	14	<1	<1	28	<1	29	<1	<1
T	138	<1	<2	4	<2	3	<2	<2
E	30	<1	<2	33	<2	30	<2	<2
X	150	6	<2	70	<2	13	<2	<2
N	20	10	<5	20	<5	16	<5	<5
C_6-C_9	720	<20	<20	250	<20	190	<20	<20
C_{10}-C_{36}	20,500	24,000	230	70,600	26,200	26,900	1090	<50
PAHs	10	-	<0.5	19.7	<0.5	16.2	<0.5	<0.5

MW24

Date	10/16	03/17	10/17	04/18
B	<1	<1	<1	<1
T	6	<2	<2	<2
E	<1	<2	<2	<2
X	<3	<2	<2	<2
N	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20
C_{10}-C_{36}	<100	<50	<50	<50
PAHs	<0.5	<0.5	<0.5	<0.5

MW23

Date	04/18	10/18	02/19	10/20	02/21	09/21
B	2	13	4	4	<1	4
T	<2	<2	<2	<2	<2	<2
E	2	8	2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5
C_6-C_9	20	80	20	<20	<20	<20
C_{10}-C_{36}	60	4590	280	1010	<50	440
PAHs	<0.5	1.8	<0.5	<0.5	<0.5	<0.5

SW1

Date	02/16	02/19	02/20	02/21	02/22	03/23	09/24
B	<1	<1	<1	<1	<1	<1	<1
T	<1	<2	<2	<2	<2	<2	<2
E	<1	<2	<2	<2	<2	<2	<2
X	<3	<2	<2	<2	<2	<2	<2
N	<10	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<100	<50	<50	<50	<50	<50	<50
PAHs	<0.5	-	-	-	-	<0.5	<0.5

MW10

Date	09/21	02/22	10/22	03/23	09/23	02/24	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	<50	<50	<50	<50	<50	<50	<50
PAHs	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

MW26

Date	02/22	10/22	02/23	09/23	02/24	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	<50	<50	<50	<50	<50	<50
PAHs	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

MW17 / MW17R

Date	10/18	10/19	10/20	02/23	09/23	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2	<2
NI	<5	<5	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	230	<50	<50	<50	<50	<50
PAHs	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

MW16

Date	02/22	10/22	03/23	09/23	02/24	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	<50	<50	<50	<50	<50	<50
PAHs	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

SW2

Date	02/21	03/22	03/23	02/24	09/24	02/25
B	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	<50	<50	<50	<50
PAHs	-	-	<0.5	<0.5	<0.5	<0.5

MW18

Date	02/22	10/22	02/23	09/23	02/24	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	<50	<50	<50	<50	<50	<50
PAHs	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

MW19

Date	02/22	10/22	02/23	09/23	02/24	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	<50	<50	<50	<50	<50	<50
PAHs	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

MW08

Date	09/21	03/22	10/22	03/23	09/23	02/24	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5	<5	<5	<5
C_6-C_9	<20	<20	<20	<20	<20	<20	<20	<20	<20
C_{10}-C_{36}	<50	<50	<50	<50	<50	<50	<50	<50	<50
PAHs	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

SW3

Date	02/20	02/21	02/22	03/23
B	<1	<1	<1	<1
T	<2	<2	<2	<2
E	<2	<2	<2	<2
X	<2	<2	<2	<2
N	<5	<5	<1	<1
C_6-C_9	<20	<20	<5	<5
C_{10}-C_{36}	<50	<50	<50	<50
PAHs	-	-	-	<0.5

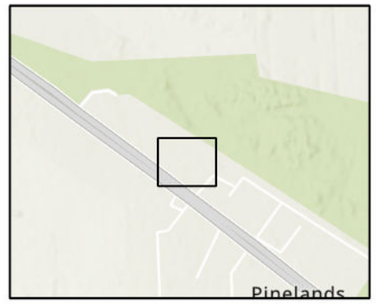
MW09

Date	09/21	02/22	10/22	03/23	09/23	02/24	09/24	02/25	09/25
B	<1	<1	<1	<1	<1	<1	<1	<1	<1
T	<2	<2	<2	<2	<2	<2	<2	<2	<2
E	<2	<2	<2	<2	<2	<2	<2	<2	<2
X	<2	<2	<2	<2	<2	<2	<2	<2	<2
N	<5	<5	<5	<5	<5	<5	<5	<5	<5
C6-C9	<20	<20	<20	<20	<20	<20	<20	<20	<20
C10-C36	390	<50	<50	<50	<50	<50	<50	<50	<50
PAHs	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Legend

- Site Boundary
- Site Features
- Groundwater Monitoring Well
- Destroyed/ Not Accessible Groundwater Monitoring Well
- Surface Water Sampling Location
- Catchment 1 - Drains to Western Boundary
- Catchment 2 - Drains to Northeastern Boundary
- Catchment 3 - Drains to Northeastern Boundary along drainage Easement

ADWG (Health) (2011)
ADWG (Aesthetic) (2011)
NHMRC (2008) Recreational Water - Health (Primary Contact)
NHMRC (2008) Recreational Water - Aesthetics
ANZECC 2000 FW 95%
Darw in Cleanaw ay Groundw ater Investigation Criteria



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Metres

LWC
Land & Water Consulting
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Project: Cleanaway Transpacific Industries - Holtze 2025

Figure Title:
Summary of Groundwater and Surface Water Results - Hydrocarbons

Date: September 2025

Projection: GDA 2020 - MGA 52

Scale: See Plan

Figure in Set: 6 of 6

Site Address: 875 Stuart Highway, Holtze, NT 0829

Figure 4b Revision A

Drawing Reference BE-78

TABLES

Table 1. Summary of Recent and Historical Groundwater Elevations and Well Details

Client: Cleanaway
Project: Annual 2025 Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

Monitoring Well	Easting	Northing	Reduced Level - Top of Casing (mAHD)	Reduced Level - Top of Casing (mAHD) - Feb 2020	Standpipe/ Gatic	Measured Standpipe Height*	Reduced Level - Top of PVC (mAHD) - Sep 2021	Screen interval (m BGL)	Screen Length (m)	Top of screen accounting for Stanpipe (m TOC)	Bore Depth (m TOC)	April 2014 - Wet Season				August 2014 - Dry Season				February 2015 - Wet Season			July 2015 - Dry Season				February 2016 - Wet Season			
												Water Level m TOC	LNAPL m TOC	Corrected Water Level (m bTOC)	Corrected Water Level (m bAHD)	Water Level m TOC	LNAPL m TOC	Corrected Water Level (m bTOC)	Corrected Water Level (m bAHD)	Water Level m TOC	Corrected Water Level (m TOC)	Corrected Water Level (m bAHD)	Water Level m TOC	LNAPL m TOC	Corrected Water Level (m bTOC)	Corrected Water Level (m bAHD)	Water Level m BGL	LNAPL m TOC	Corrected Water Level (m bTOC)	Corrected Water Level (m bAHD)*
Onsite																														
MW1^	713465.5	8622758.2	30.694	30.756	Pipe	0.87	30.749	1 to 6m	5	1.87	6.49	3.234	3.233	3.234	27.460	-	-	-	-	2.909	-	-	5.670	5.078	5.670	25.024	3.570	<0.5 mm	Not Corrected	27.120
MW2	713481.6	8622778.8	29.694	-	Pipe	0.58	29.733	1 to 6m	5	1.58	6.48	2.271	Sheen	-	27.423	-	-	-	-	1.970	-	-	4.098	4.082	4.098	25.596	1.880	<0.5 mm	Not Corrected	27.810
MW3	713513.2	8622785.6	29.528	-	Pipe	0.88	-	1 to 6m	5	1.88	6.27	2.153	Sheen	-	27.375	-	-	-	-	1.899	-	27.629	3.978	-	-	25.550	1.310	<0.5 mm	Not Corrected	28.220
MW4	713526.6	8622774.0	29.351	-	Pipe	0.8	-	1 to 6m	5	1.8	6.347	1.971	-	-	27.380	-	-	-	-	1.709	-	27.642	3.792	-	-	25.559	1.290	<0.5 mm	Not Corrected	28.060
MW5	713560.4	8622751.3	29.370	-	Pipe	0.8	-	1 to 6m	5	1.8	6.51	1.976	-	-	27.394	-	-	-	-	1.728	-	27.642	3.811	-	-	25.559	2.17	<0.5 mm	Not Corrected	27.200
MW6	713595.1	8622726.5	28.692	-	Gatic	-	-	1 to 6m	5	1	4.859	1.252	-	-	27.440	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW6	713595.1	8622726.5	converted to gatic, no survey data	-	Gatic replaced with pipe in 2015	-	-	1 to 6m	5	-	?	-	-	-	-	-	-	-	-	1.082	-	?	4.149	-	-	?	1.37	-	-	27.320
MW7	713600.9	8622711.0	28.505	-	Gatic	-	-	0.9 to 6 m	5	0.9	5.11	1.067	-	-	27.438	-	-	-	-	0.892	-	27.613	2.990	-	-	25.515	1.200	-	-	27.310
MW8	713520.0	8622621.0	29.888	-	Gatic	-	29.904	1 to 6 m	5	1	5.29	2.478	-	-	27.410	-	-	-	-	2.016	-	27.872	4.299	-	-	25.589	2.580	-	-	27.310
MW9	713509.7	8622605.6	29.997	-	Gatic	-	30.027	0.6 to 5.9	5	0.6	5.77	2.621	-	-	27.376	-	-	-	-	1.181	-	28.816	4.427	-	-	25.570	2.630	<0.5 mm	Not Corrected	27.370
MW10	713414.7	8622692.2	30.206	-	Gatic	-	30.413	1 to 6 m	5	1	5.671	2.697	-	-	27.509	-	-	-	-	Not located			Not located				2.78	-	-	27.430
MW23	713477.8	8622762.6	29.339	-	Gatic	-	28.487	2 to 6 m	4	2	6.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW26	713497.1	8622743.3	29.396	-	Gatic	-	29.412	2 to 6 m	4	2	6.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Offsite																														
MW11	713476.4	8622809.9	29.366	-	Pipe	0.48	29.49	3 to 6m	3	-	6.00	-	-	-	-	4.06	-	4.059	25.307	1.674	-	27.692	3.760	-	-	25.606	2.330	<0.5 mm	Not Corrected	27.040
MW12	713506.1	8622814.3	29.193	-	Pipe	0.43	29.198	3 to 6m	3	3.43	6.00	-	-	-	-	3.91	-	3.912	25.281	1.610	-	27.583	3.604	-	-	25.589	1.380	-	-	27.810
MW13	713542.3	8622795.4	28.773	-	Pipe	0.73	28.765	2.5 to 5.5m	3	3.23	5.50	-	-	-	-	3.54	-	3.538	25.235	1.278	-	27.495	3.401	-	-	25.372	1.770	-	-	27.000
MW16^	713620.1	8622720.1	28.683	28.643	Pipe	0.63	28.668	1.5 to 5.5 m	4	2.13	5.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW17	713630.3	8622741.4	28.34	-	Pipe	0.75	28.398	1.5 to 5.5 m	4	?	5.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW17R	713630.4	8622741.2	28.672	-	Pipe	-	28.672	1.5 to 5.5 m	4	-	5.50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW18^	713598.5	8622734.9	28.125	28.104	Gatic	-	28.107	2.1 to 6.1 m	4	2.1	6.10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW19	713574.7	8622750.2	28.272	-	Gatic	-	28.277	2 to 6 m	4	2	6.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW20	713552.9	8622766.2	28.278	-	Gatic	-	28.262	2 to 6 m	4	2	6.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW21	713517.5	8622792.4	28.364	-	Gatic	-	28.346	2 to 6 m	4	2	6.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW22	713487.8	8622814.4	28.629	-	Gatic	-	28.592	2 to 6 m	4	2	6.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW24	713444.3	8622748.2	29.363	-	Gatic	-	-	2 to 6 m	4	2	6.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW25	713473.5	8622777.6	28.963	-	Gatic	-	29.009	2 to 6 m	4	2	6.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Monitoring Well	July 2016 - Dry Season				October 2016 - Dry Season			March 2017 - Wet Season			October 2017 - Dry Season				April 2018 - Wet Season			October 2018 - Dry Season			February 2019 - Wet Season			October 2019 - Dry Season			February 2020 - Wet Season		
	Water Level m TOC	LNAPL m TOC	Corrected Water Level (m bTOC)	Corrected Water Level (m bAHD)	Water Level m TOC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m TOC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m TOC	LNAPL m TOC	Corrected Water Level (m bTOC)	Corrected Water Level (m bAHD)	Water Level m TOC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m TOC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m TOC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m TOC	Corrected Water Level (m bTOC)	Corrected Water Level (m bAHD)	Water Level m TOC	LNAPL m TOC	Corrected Water Level (m bAHD)
Onsite																													
MW1^	6.82	6.100	6.820	23.874	-	-	-	2.84	Sheen	2.160	5.745	5.744	5.745	24.949	3.92	Sheen	26.774	6.05	Thickness Not Recorded		2.588	Sheen	28.106	6.280	-	24.414	2.931	Sheen	27.825
MW2	5.65	5.500	5.650	24.044	-	-	-	1.87	Sheen	3.130	4.804	4.789	4.804	24.890	2.33	Sheen	27.364	5.12	Thickness Not Recorded		1.682	Sheen	28.012	5.480	-	24.214	1.971	Sheen	27.723
MW3	5.25	5.100	5.250	24.278	-	-	-	Damaged/ Destroyed			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW4	5.60	5.400	5.600	23.751	-	-	-	Damaged/ Destroyed			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW5	5.90	5.5	5.900	23.470	-	-	-	Damaged/ Destroyed			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW6	-	-	-	-	-	-	-	Damaged/ Destroyed			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW6	5.25	5.1	5.250	-	-	-	-	Damaged/ Destroyed			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW7	3.650	-	-	24.855	-	-	-	0.720	-	4.280	3.552	-	-	24.953	1.700	-	26.805	-	-	-	Not located			Not located			Not located		
MW8	4.930	-	-	24.958	-	-	-	1.910	Sheen	3.090	4.827	-	-	25.061	3.040	-	26.848	5.180	-	24.708	1.740	-	28.148	5.373	-	24.515	2.100	-	27.788
MW9	5.070	-	-	24.927	-	-	-	2.010	Sheen	2.990	4.959	-	-	25.038	3.170	-	26.827	5.850	-	24.147	1.870	-	28.127	5.500	-	24.497	2.231	-	27.766
MW10	5.24	-	-	24.966	-	-	-	2.100	-	2.900	5.162	-	-	25.044	3.28	-	26.926	5.52	-	24.686	1.981	-	28.225	DRY	-	-	2.205	-	-
MW23	-	-	-	-	4.450	Sheen	24.889	1.350	-	2.650	4.393	4.392	4.393	24.946	2.400	Sheen	26.939	4.870	Thickness Not Recorded		1.262	Sheen		4.950	-	24.389	1.601	Sheen	27.738
MW26	-	-	-	-	4.470		24.926	1.440	-	2.560	4.404	-	-	24.992	3.250	-	26.146	4.720	-	24.676	1.335	-	28.061	4.920	-	24.476	1.651	-	27.745
Offsite																													
MW11	-	-	-	-	-	-	-	1.780	-	1.220	4.525	-	-	24.841	2.660	-	26.706	4.810	-	24.556	1.490	-	27.876	5.235	-	24.131	1.701	-	27.665
MW12	4.440	-	-	24.753	-	-	-	1.590	-	1.410	4.373	-	-	24.820	2.370	-	26.823	4.690	-	24.503	1.330	-	27.863	5.170	-	24.023	1.621	-	27.572
MW13	4.200	-	-	24.573	-	-	-	1.340	-	1.660	3.962	-	-	24.811	2.100	-	26.673	4.290	-	24.483	0.943	-	27.830	4.725	-	24.048	Not located		
MW16^	-	-	-	-	3.860	-	24.823	1.060	-	2.940	3.817	-	-	24.866	1.880	-	26.803	4.250	-	24.433	0.905	-	27.778	4.445	-	24.238	1.220	-	27.423
MW17	-	-	-	-	3.555	-	24.785	Not located			3.543	-	-	24.797	1.560	-	26.780	3.960	-	24.380	Not located			4.245	-	24.095	Not located		
MW17R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW18^	-	-	-	-	3.245	Sheen	24.880	Not located			3.225	-	-	24.900	1.740	-	26.385	3.550	-	24.575	0.325	-	27.800	3.800	-	24.325	0.562	-	27.542
MW19	-	-	-	-	3.385	-	24.887	0.260	-	3.740	3.396	-	-	24.876	1.850	-	26.422	3.680	-	24.592	0.343	-	27.929	3.930	-	24.342	0.675	-	27.597
MW20	-	-	-	-	3.395	-	24.883	0.660	-	3.340	3.311	-	-	24.967	1.820	-	26.458	3.630	-	24.648	0.349	-	27.929	3.955	-	24.323	0.665	-	27.613
MW21	-	-	-	-	3.590	-	24.774	0.720	-	3.280	3.476	-	-	24.888	1.880	-	26.484	3.800	-	24.564	0.430	Possible Sheen	27.934	4.229	-	24.135	0.740	-	27.624
MW22	-	-	-	-	3.845	-	24.784	0.910	-	3.090	3.777	-	-	24.852	1.670	-	26.959	4.070	-	24.559	0.700	-	27.929	4.506	-	24.123	0.977	-	27.652
MW24	-	-	-	-	4.480	-	24.883	1.350	-	2.650	4.366	-	-	24.997	2.430	Sheen	26.933	Not located			Not located			Not located			Not located		
MW25	-	-	-	-	4.155	-	24.808	1.030	Sheen	2.970	4.056	Sheen	-	24.907	2.020	Sheen	26.943	4.360	-	24.603	0.982	-	27.981	4.695	-	24.268	1.205	-	27.758

Notes:
* July 2016 GME and calculated from well logs for MW16 to MW26
ǂ Survey data for MW06 does not appear to have been confirmed following conversion to a gatic
Water level corrected for the presence of LNAPL using a density converstion factor of 0.85
Survey data for MW1 to MW13 sourced from Fyfe plans
Survey data for MW16 to MW26 sourced from well construction logs (original survey data not sighted)
April 2018 and October 2018 groundwater elevation gauging results were not included here due to uncertainty in the values
^ Wells were re-surveyed in February 2020 following repair works
~ MW17R was surveyed in March 2023

Table 1. Summary of Recent and Historical Groundwater Elevations and Well Details

Client: Cleanaway
Project: Annual 2025 Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

Monitoring Well	October 2020 - Dry Season			February 2021 - Wet Season			September 2021 - Dry Season			February 2022 - Wet Season			October 2022 - Dry Season			March 2023 - Wet Season			September 2023 -Dry Season			February 2024 -Wet Season			September 2024 -Dry Season			February 2025 -Wet Season		
	Water Level m TOC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m PVC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m PVC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m PVC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m PVC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m PVC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m PVC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m PVC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m PVC	LNAPL m TOC	Corrected Water Level (m bAHD)	Water Level m PVC	LNAPL m TOC	Corrected Water Level (m bAHD)
Onsite																														
MW1^	5.085	Sheen	25.671	2.434	-	28.322	5.869	-	24.880	2.440	-	28.309	5.266	-	25.483	2.207	-	28.542	5.995	-	24.754	2.581	-	28.168	5.973	-	24.776	2.313	-	28.436
MW2	4.041	Sheen	25.653	1.552	-	28.142	4.850	-	24.883	1.540	-	28.193	4.234	-	25.499	1.348	-	28.385	4.992	-	24.741	1.630	-	28.103	4.940	-	24.793	1.395	-	28.338
MW3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW6	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW7	Not located			Not located			Not located			Not located			Not located			Not located			Not located			Not located			Not located			Not located		
MW8	3.990	-	25.898	1.560	-	28.328	5.021	-	24.883	1.549	-	28.355	4.300	-	25.604	1.297	-	28.607	5.135	-	24.769	1.718	-	28.186	5.137	-	24.767	1.435	-	28.469
MW9	4.135	-	25.862	1.683	-	28.314	5.153	-	24.874	1.681	-	28.346	4.438	-	25.589	1.420	-	28.607	5.261	-	24.766	1.850	-	28.177	5.266	-	24.761	1.557	-	28.470
MW10	4.355	-	25.851	1.714	-	28.492	5.312	-	25.101	1.709	-	28.704	4.639	-	25.774	1.397	-	29.016	5.417	-	24.996	1.878	-	28.535	5.399	-	25.014	1.610	-	28.803
MW23	3.664	-	25.675	1.050	-	28.289	4.450	-	24.037	1.051	-	27.436	3.835	-	24.652	0.822	-	27.665	4.550	-	23.937	1.190	-	27.297	4.555	-	23.932	0.935	-	27.552
MW26	3.630	-	25.766	1.159	-	28.237	4.541	-	24.871	1.163	-	28.249	3.857	-	25.555	0.950	-	28.462	4.656	-	24.756	1.293	-	28.119	4.647	-	24.765	1.039	-	28.373
Offsite																														
MW11	3.736	-	25.630	1.281	-	28.085	4.545	-	24.945	1.286	-	28.204	3.955	-	25.535	1.126	-	28.364	4.693	-	24.797	1.370	-	28.120	4.620	-	24.870	1.094	-	28.396
MW12	3.549	-	25.644	Not located		-	4.379		24.819	Not located		-	3.797		-	Not located		-	4.545		-	-		-	4.480		24.718	1.108		28.090
MW13	Not located		-	Not located		-	3.989		24.776	Not located		-	3.335		-	Not located		-	4.160		-	-		-	4.122		24.643	0.775		27.990
MW16^	2.030	-	26.613	0.740	-	27.903	3.904	-	24.764	0.755	-	27.913	3.177	-	25.491	0.655	-	28.013	4.037	-	24.631	0.835	-	27.833	4.055	-	24.613	0.654	-	28.014
MW17	1.456	-	26.884	-	-	-	Damaged		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW17R	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.840	-	27.832	4.185	-	24.487	-	-	-	4.157	-	24.515	0.875	-	27.797
MW18^	1.651	-	26.453	0.140	-	27.964	3.321	-	24.786	0.151	-	27.956	2.015	-	26.092	Inaccessible			3.455	-	24.652	0.237	-	27.870	3.461	-	24.646	0.065	-	28.042
MW19	2.310	-	25.962	0.254	-	28.018	3.460	-	24.817	0.261	-	28.016	2.755	-	25.522	0.125	-	28.152	3.586	-	24.691	0.348	-	27.929	3.583	-	24.694	0.155	-	28.122
MW20	2.460	-	25.818	0.254	-	28.024	3.453	-	24.809	0.268	-	27.994	2.785	-	25.477	0.120	-	28.142	3.584	-	24.678	0.350	-	27.912	3.573	-	24.689	0.141	-	28.121
MW21	2.586	-	25.778	0.356	-	28.008	3.528	-	24.818	0.367	-	27.979	2.900	-	25.446	0.225	-	28.121	3.684	-	24.662	0.444	-	27.902	3.645	-	24.701	0.219	-	28.127
MW22	2.961	-	25.668	0.576	-	28.053	3.784	-	24.808	0.584	-	28.008	3.205	-	25.387	0.443	-	28.149	3.937	-	24.655	0.675	-	27.917	3.877	-	24.715	0.462	-	28.130
MW24	Not located			Not located			Not located			Not located			Not located			Not located			Not located			Not located			Not located			Not located		
MW25	3.322	-	25.641	0.735	-	28.228	4.099	-	24.910	0.728	-	28.281	3.491	-	25.518	0.529	-	28.480	4.212	-	24.797	0.841	-	28.168	Not located			Not located		

Monitoring Well	September 2025 -Dry Season		
	Water Level m PVC	LNAPL m TOC	Corrected Water Level (m bAHD)
Onsite			
MW1^	5.420	-	25.329
MW2	4.382	-	25.351
MW3	-	-	-
MW4	-	-	-
MW5	-	-	-
MW6	-	-	-
MW6	-	-	-
MW7	Not located		
MW8	4.422	-	25.482
MW9	4.560	-	25.467
MW10	4.815	-	25.598
MW23	3.973	-	24.514
MW26	3.976	-	25.436
Offsite			
MW11	4.113	-	25.377
MW12	3.935		25.263
MW13	3.420		25.345
MW16^	3.227	-	25.441
MW17	-	-	-
MW17R	3.246	-	25.426
MW18^	2.686	-	25.421
MW19	2.840	-	25.437
MW20	2.864	-	25.398
MW21	3.022	-	25.324
MW22	3.355	-	25.237
MW24	Not located		
MW25	Not located		

Notes:
* July 2016 GME and calculated from well logs for MW16 to MW26
ᵍ Survey data for MW06 does not appear to have been confirmed following conversion to a gatic
Water level corrected for the presence of LNAPL using a density converstion factor of 0.85
Survey data for MW1 to MW13 sourced from Fyfe plans
Survey data for MW16 to MW26 sourced from well construction logs (original survey data not sighted)
April 2018 and October 2018 groundwater elevation gauging results were not included here due to uncertainty in the values
^ Wells were re-surveyed in February 2020 following repair works
~ MW17R was surveyed in March 2023

Table 2a - Salinity Corrected Groundwater Elevations (mAHD) for February 2025

Client: Cleanaway
Project: February 2025 Monitoring Event - 875 Stuart Highway, Holtze
Job Number: BE-78

Monitoring Well Locations	Monitoring Well Details			Gauging from Top of PVC		Relative Levels						Water Column Thickness	Salinity		Density Calcs.	Salinity
	PVC Casing	Type of Completion	Ground Level	February 2025 (Hs)	Bore Depth	Screen Length	Top of Screen	Base of Screen	Measured rSWL	Bore Depth	Slotted Interval Midpoint (Hp)		EC	TDS	Ps	Corrected rSWL
	(mAHD)*	(P or G)	(mAHD)	(m)	(m)	(m)	(mAHD)	(mAHD)	(mAHD)	(mAHD)	(mAHD)	(m)	(mS/cm)	(mg/L)		(mAHD)
Onsite																
MW1	30.749	Pipe	-	2.313	6.49	5	29.255	24.255	28.436	24.255	26.3455	4.181	0.046	30	1.000	28.436
MW2	29.733	Pipe	-	1.395	6.48	5	28.254	23.254	28.338	23.254	25.754	5.084	0.045	29	1.000	28.338
MW7	-	Gatic	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW8	29.904	Gatic	-	1.435	5.29	5	29.610	24.61	28.469	24.61	26.5395	3.859	0.059	38	1.000	28.469
MW9	30.027	Gatic	-	1.557	5.77	5	29.260	24.26	28.470	24.26	26.365	4.210	0.075	49	1.000	28.470
MW10	30.413	Gatic	-	1.610	5.67	5	29.742	24.742	28.803	24.742	26.7725	4.061	0.046	30	1.000	28.803
MW23	29.487	Gatic	-	0.935	6.00	4	27.487	23.487	28.552	23.487	25.487	5.065	0.170	111	1.000	28.552
MW26	29.412	Gatic	-	1.039	6.00	4	27.412	23.412	28.373	23.412	25.412	4.961	0.055	36	1.000	28.373
Offsite																
MW11	29.490	Pipe	-	1.094	6.00	3	26.490	23.49	28.396	23.49	24.99	4.906	0.0541	35	1.000	28.396
MW12	29.198	Pipe	-	1.108	6.00	3	26.198	23.198	28.090	23.198	24.698	4.892	0.055	36	1.000	28.090
MW13	28.765	Pipe	-	0.775	5.50	3	26.265	23.265	27.990	23.265	24.765	4.725	0.049	32	1.000	27.990
MW16	28.668	Pipe	-	0.654	5.50	4	27.168	23.168	28.014	23.168	25.168	4.846	0.107	69	1.000	28.014
MW17	28.398	Gatic	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW17R	28.672	Pipe	-	0.875	5.500	4	27.172	23.172	27.797	23.172	25.172	4.625	0.081	52	1.000	27.797
MW18	28.107	Gatic	-	0.065	6.10	4	26.007	22.007	28.042	22.007	24.007	6.035	0.062	40	1.000	28.042
MW19	28.277	Gatic	-	0.155	6.00	4	26.277	22.277	28.122	22.277	24.277	5.845	0.055	35	1.000	28.122
MW20	28.262	Gatic	-	0.141	6.00	4	26.262	22.262	28.121	22.262	24.262	5.859	0.052	34	1.000	28.121
MW21	28.346	Gatic	-	0.219	6.00	4	26.346	22.346	28.127	22.346	24.346	5.781	0.051	33	1.000	28.127
MW22	28.592	Gatic	-	0.462	6.00	4	26.592	22.592	28.130	22.592	24.592	5.538	0.053	34	1.000	28.130
MW24	-	Gatic	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW25	29.009	Gatic	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note:

$Hf = Hs + ((Ps-Pf)/ Pf)(Hs-Hp)$ where

Hf Equivalent freshwater head (mAHD)
Hs Level of saline groundwater measured in peizometer (mAHD)
Hp if RSWL > Top of Screen (mAHD, Screen is fully Saturated): Relative Level of the Midpoint of the Screen (mAHD
if RSWL < Top of Screen (mAHD, screen intersects SWL): mid-point between the SWL and the base of the screen (m AHD
Pf Density of fresh water (=1, kg/L)
Ps density of saline groundwater (as a rule of thumb: TDS (mg/L) * $7.5x10^{7}$ + 1)

mAHD = metres relative to Australian Height Datum
SWL = Standing Water Level

Density of FRESH Water (Pf) 1
Conversion factor (EC to TDS) : 650

Note - MW1, MW2 and MW23 salinity inferred from previous results
* September 2021 survey data utilised

Table 2b - Salinity Corrected Groundwater Elevations (mAHD) for September 2025

Client: Cleanaway
Project: September 2025 Monitoring Event - 875 Stuart Highway, Holtze
Job Number: BE-78

Monitoring Well Locations	Monitoring Well Details			Gauging from Top of PVC		Relative Levels						Water Column Thickness	Salinity		Density Calcs.	Salinity
	PVC Casing	Type of Completion	Ground Level	September 2025 (Hs)	Bore Depth	Screen Length	Top of Screen	Base of Screen	Measured rSWL	Bore Depth	Slotted Interval Midpoint (Hp)		EC	TDS	Ps	Corrected rSWL
	(mAHD)*	(P or G)	(mAHD)	(m)	(m)	(m)	(mAHD)	(mAHD)	(mAHD)	(mAHD)	(mAHD)	(m)	(mS/cm)	(mg/L)		(mAHD)
Onsite																
MW1	30.749	Pipe	-	5.420	6.49	5	29.255	24.255	25.329	24.255	24.792	1.074	0.046	30	1.000	25.329
MW2	29.733	Pipe	-	4.382	6.48	5	28.254	23.254	25.351	23.254	24.3025	2.097	0.045	29	1.000	25.351
MW7	-	Gatic	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW8	29.904	Gatic	-	4.422	5.29	5	29.610	24.61	25.482	24.61	25.046	0.872	0.045	29	1.000	25.482
MW9	30.027	Gatic	-	4.560	5.77	5	29.260	24.26	25.467	24.26	24.8635	1.207	0.128	83	1.000	25.467
MW10	30.413	Gatic	-	4.815	5.67	5	29.742	24.742	25.598	24.742	25.17	0.856	0.044	28	1.000	25.598
MW23	29.487	Gatic	-	3.973	6.00	4	27.487	23.487	25.514	23.487	24.5005	2.027	0.170	111	1.000	25.514
MW26	29.412	Gatic	-	3.976	6.00	4	27.412	23.412	25.436	23.412	24.424	2.024	0.043	28	1.000	25.436
Offsite																
MW11	29.490	Pipe	-	4.113	6.00	3	26.490	23.49	25.377	23.49	24.4335	1.887	0.3789	246	1.000	25.377
MW12	29.198	Pipe	-	3.935	6.00	3	26.198	23.198	25.263	23.198	24.2305	2.065	0.209	136	1.000	25.263
MW13	28.765	Pipe	-	3.420	5.50	3	26.265	23.265	25.345	23.265	24.305	2.080	0.156	101	1.000	25.345
MW16	28.668	Pipe	-	3.227	5.50	4	27.168	23.168	25.441	23.168	24.3045	2.273	0.570	371	1.000	25.441
MW17	28.398	Gatic	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW17R	28.672	Pipe	-	3.246	5.500	4	27.172	23.172	25.426	23.172	24.299	2.254	0.390	253	1.000	25.426
MW18	28.107	Gatic	-	2.686	6.10	4	26.007	22.007	25.421	22.007	23.714	3.414	0.199	129	1.000	25.421
MW19	28.277	Gatic	-	2.840	6.00	4	26.277	22.277	25.437	22.277	23.857	3.160	0.226	147	1.000	25.437
MW20	28.262	Gatic	-	2.864	6.00	4	26.262	22.262	25.398	22.262	23.83	3.136	0.242	157	1.000	25.398
MW21	28.346	Gatic	-	3.022	6.00	4	26.346	22.346	25.324	22.346	23.835	2.978	0.267	174	1.000	25.324
MW22	28.592	Gatic	-	3.355	6.00	4	26.592	22.592	25.237	22.592	23.9145	2.645	0.049	32	1.000	25.237
MW24	-	Gatic	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW25	29.009	Gatic	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Note:

$Hf = Hs + ((Ps-Pf)/ Pf)(Hs-Hp)$ where

Hf Equivalent freshwater head (mAHD)
Hs Level of saline groundwater measured in peizometer (mAHD)
Hp if RSWL > Top of Screen (mAHD, Screen is fully Saturated): Relative Level of the Midpoint of the Screen (mAHD)
if RSWL < Top of Screen (mAHD, screen intersects SWL): mid-point between the SWL and the base of the screen (m AHD)
Pf Density of fresh water (=1, kg/L)
Ps density of saline groundwater (as a rule of thumb: TDS (mg/L) * $7.5x10^{-7}$ + 1)

mAHD = metres relative to Australian Height Datum
SWL = Standing Water Level

Density of FRESH Water (Pf) : 1
Conversion factor (EC to TDS) : 650

Note - MW1, MW2 and MW23 salinity inferred from previous results
* September 2021 survey data utilised

Table 3. Summary of Recent and Historical Field Parameters

Client: Cleanaway-Transpacific
Project: 2025 Annual Monitoring Events, 875 Stuart Highway, Holtze
Job Number: BE-78

Monitoring Wells	Sample Date	pH	Electrical Conductivity (µS/cm)	TDS^ (mg/L)	Redox (mV)	Temperature (°C)	Dissolved Oxygen (ppm)
On Site							
MW01	Apr-14	5.17	33.0	21	190.0	27.5	1.82
	Feb-15	Not Sampled Due to LNAPL					
	Jun-15	Not Sampled Due to LNAPL					
	Feb-16	4.78	35.7	23	175.0	32.1	22*
	Jul-16	Not Sampled Due to LNAPL					
	Mar-17	4.83	33.0	21	144.0	30.8	2.48
	Oct-17	5.55	180.8	118	-22.6	31.0	1.90
	Apr-18	4.92	31.2	20	176.0	31.1	25.9*
	Oct-18	Not Recorded					
	Feb-19	Grab Sample Collected Only					
	Oct-19	Not Sampled Due to LNAPL					
	Feb-20	Not Sampled Due to LNAPL					
	Oct-20	Not Sampled Due to LNAPL					
	Feb-21	4.47	46.1	30	213.2	30.4	0.20
	Sep-21	Not Sampled Due to LNAPL					
	Feb-22	Not Sampled Due to LNAPL					
	Oct-22	Not Sampled Due to LNAPL					
	Mar-23	Not Sampled Due to LNAPL					
	Sep-23	Not Sampled Due to LNAPL					
	Feb-24	Not Sampled Due to LNAPL					
	Sep-24	Not Sampled Due to LNAPL					
	Feb-25	Not Sampled Due to LNAPL					
	Sep-25	**Not Sampled Due to LNAPL**					
MW02	Apr-14	5.69	106.0	69	87.0	25.7	1.73
	Feb-15	Not Sampled Due to LNAPL					
	Jun-15	Not Sampled Due to LNAPL					
	Feb-16	5.11	63.5	41	139.0	32.3	15*
	Jul-16	Not Sampled Due to LNAPL					
	Mar-17	5.61	48.0	31	-107.0	31.3	1.90
	Oct-17	4.97	93.0	60	-24.0	31.9	1.43
	Apr-18	5.39	56.4	37	90.6	31.1	30.6*
	Oct-18	5.04	48.8	32	86.0	31.0	31.2*
	Feb-19	4.14	72.0	47	-76.20	31.30	0.83
	Oct-19	Not Sampled Due to LNAPL					
	Feb-20	Not Sampled Due to LNAPL					
	Oct-20	Not Sampled Due to LNAPL					
	Feb-21	5.01	45.4	30	-56.0	29.3	0.47
	Sep-21	Not sampled Due to LNAPL					
	Feb-22	Not Sampled Due to LNAPL					
	Oct-22	Not Sampled Due to LNAPL					
	Mar-23	Not Sampled Due to LNAPL					
	Sep-23	Not Sampled Due to LNAPL					
	Feb-24	Not Sampled Due to LNAPL					
	Sep-24	Not Sampled Due to LNAPL					
	Feb-25	Not Sampled Due to LNAPL					
	Sep-25	**Not Sampled Due to LNAPL**					
MW03	Apr-14	6.05	248.0	161	112.0	23.6	1.62
	Feb-15	5.11	164.8	107	223.0	32.5	0.61
	Jul-15	5.08	111.0	72	61.3	29.3	0.72
	Feb-16	4.93	109.5	71	167.0	33.2	23*
	Jul-16	Not Sampled Due to LNAPL					
MW04	Apr-14	5.97	65.2	42	301.0	34.2	1.43
	Feb-15	4.79	69.8	45	190.6	32.2	0.46
	Jul-15	4.71	65.2	42	133.3	29.5	1.33
	Feb-16	4.77	88.7	58	350.0	33.3	25*
	Jul-16	Not Sampled Due to LNAPL					
MW05	Apr-14	4.60	34.2	22	429.00	29.80	2.14
	Feb-15	4.36	61.5	40	224.00	32.60	1.03
	Jun-15	4.46	51.1	33	118.60	30.30	1.94

Table 3. Summary of Recent and Historical Field Parameters

Client: Cleanaway-Transpacific
Project: 2025 Annual Monitoring Events, 875 Stuart Highway, Holtze
Job Number: BE-78

Monitoring Wells	Sample Date	pH	Electrical Conductivity (µS/cm)	TDS^ (mg/L)	Redox (mV)	Temperature (°C)	Dissolved Oxygen (ppm)
	Feb-16	4.28	84.2	55	370.00	33.70	33*
	Jul-16	Not Sampled Due to LNAPL					
	Apr-14	4.56	53.7	35	451.0	28.0	2.04
	Feb-15	4.57	97.9	64	202.0	32.3	1.17
MW06	Jun-15	4.65	64.2	42	120.6	31.0	2.56
	Feb-16	4.84	135.0	88	379.0	33.4	32*
	Jul-16	Not Sampled Due to LNAPL					
	Apr-14	4.89	82.1	53	360.0	29.6	2.27
	Feb-15	4.46	49.7	32	129.0	31.4	0.55
	Jun-15	4.69	113.3	74	115.8	30.7	0.71
	Feb-16	4.42	110.1	72	330.0	32.9	20*
MW07	Jul-16	4.92	123.9	81	64.5	32.5	1.75
	Mar-17	5.13	51.0	33	229.0	32.0	1.39
	Oct-17	4.33	282.3	183	-18.5	32.2	4.51
	Apr-18	4.82	50.7	33	199.0	33.6	36.9*
	Oct-18	Not Located					
	Apr-14	4.49	26.6	17	418.0	31.7	2.59
	Mar-15	4.94	33.0	21	-	-	-
	Jun-15	4.78	47.7	31	118.0	30.2	1.36
	Feb-16	4.24	87.6	57	364.0	32.5	33*
	Jul-16	4.66	40.0	26	97.5	30.9	2.25
	Mar-17	4.68	37.0	24	257.0	32.2	2.81
	Oct-17	4.30	50.7	33	4.5	32.4	4.10
	Apr-18	4.52	41.8	27	258.0	32.2	34.1*
	Oct-18	4.62	39.4	26	112.0	31.5	22.1*
	Feb-19	3.43	57.0	37	147.20	33.70	2.21
	Oct-19	4.32	47.0	31	367.6	32.5	2.31
MW08	Feb-20	4.80	108.7	71	134.0	29.2	2.15
	Oct-20	3.66	59.0	38	-105.2	32.6	2.02
	Feb-21	4.28	46.9	30	254.6	32.6	2.13
	Sep-21	4.40	48.5	32	129.0	33.3	1.29
	Feb-22	4.27	48.6	32	307.1	33.0	3.07
	Oct-22	3.86	45.1	29	197.5	33.0	2.36
	Mar-23	4.51	27.9	18	179.0	31.5	4.10
	Sep-23	4.25	151.8	99	231.7	31.8	0.63
	Feb-24	4.22	51.2	33	93.1	32.5	2.64
	Sep-24	4.01	77.3	50	45.0	31.7	0.35
	Feb-25	4.10	59.2	38	168.9	34.0	2.81
	Sep-25	**3.97**	**45.3**	**29**	**188.6**	**32.3**	**0.20**
	Apr-14	4.53	30.7	20	377.0	33.6	3.10
	Feb-15	4.48	64.8	42	204.2	31.6	2.09
	Jun-15	4.62	44.1	29	120.0	29.7	3.11
	Feb-16	4.12	66.7	43	405.0	32.4	44*
	Jul-16	4.65	40.9	27	100.0	30.1	4.21
	Mar-17	4.63	40.0	26	273.0	31.7	3.30
	Oct-17	4.16	95.6	62	-0.3	31.7	4.58
	Apr-18	4.55	45.5	30	235.0	32.1	37.6*
	Oct-18	Dry					
	Feb-19	3.60	65.0	42	134.30	33.50	3.09
	Oct-19	Insufficient Water to Sample					
MW09	Feb-20	4.70	96.5	63	162.9	29.7	2.65
	Oct-20	3.88	73.9	48	-146.2	31.9	1.86
	Feb-21	4.23	57.0	37	237.3	31.8	2.75
	Sep-21	4.50	54.9	36	172.1	32.4	1.42
	Feb-22	4.22	66.2	43	324.1	32.2	2.71
	Oct-22	3.79	43.7	28	193.0	31.8	2.18
	Mar-23	3.97	57.4	37	201.7	31.3	3.20
	Sep-23	4.24	148.3	96	248.8	32.3	3.01
	Feb-24	4.13	63.6	41	103.6	32.1	2.95
	Sep-24	4.05	66.3	43	90.1	32.0	2.21

Table 3. Summary of Recent and Historical Field Parameters

Client: Cleanaway-Transpacific
Project: 2025 Annual Monitoring Events, 875 Stuart Highway, Holtze
Job Number: BE-78

Monitoring Wells	Sample Date	pH	Electrical Conductivity (µS/cm)	TDS^ (mg/L)	Redox (mV)	Temperature (°C)	Dissolved Oxygen (ppm)
	Feb-25	3.97	74.7	49	134.8	33.0	4.33
	Sep-25	**3.93**	**127.9**	**83**	**205.9**	**32.2**	**1.42**
MW10	Apr-14	5.25	54.7	36	153.0	24.6	2.23
	Feb-15	Not Located					
	Jun-15	Not Located					
	Feb-16	4.77	75.8	49	332.0	29.9	26*
	Jul-16	4.99	40.8	27	107.6	29.7	3.13
	Mar-17	5.29	36.0	23	140.0	30.1	2.49
	Oct-17	4.53	49.6	32	-41.2	30.8	3.56
	Apr-18	4.97	40.1	26	277.0	30.3	24.7*
	Oct-18	Insufficient Water to Sample					
	Feb-19	3.69	68.0	44	81.50	31.20	0.92
	Oct-19	Dry					
	Feb-20	4.65	97.3	63	248.1	30.6	1.48
	Oct-20	3.87	62.9	41	-106.7	31.3	1.51
	Feb-21	4.75	49.5	32	208.3	31.0	1.69
	Sep-21	4.59	49.8	32	115.9	31.8	0.07
	Feb-22	4.76	47.0	31	305.1	31.0	1.02
	Oct-22	3.93	69.1	45	204.5	31.7	1.32
	Mar-23	4.39	41.1	27	177.3	30.7	1.16
	Sep-23	4.42	165.5	108	240.3	30.6	0.53
	Feb-24	4.60	43.3	28	53.8	30.4	0.67
	Sep-24	4.30	49.5	32	81.1	30.8	1.38
	Feb-25	4.30	46.0	30	150.9	31.4	1.40
	Sep-25	**4.18**	**43.5**	**28**	**189.4**	**31.3**	**0.55**
MW23	Oct-16	5.88	289.0	188	-37.70	31.20	2.25
	Mar-17	6.27	97.0	63	-79.0	30.4	2.00
	Oct-17	5.40	220.5	143	-28.5	31.0	2.39
	Apr-18	5.99	120.0	78	8.1	29.6	14.3*
	Oct-18	5.72	177.0	115	46.0	30.6	17*
	Feb-19	Grab Sample Collected Only					
	Oct-19	Not Sampled Due to LNAPL					
	Feb-20	Not Sampled Due to LNAPL					
	Oct-20	5.39	131.0	85	-157.9	30.1	0.00
	Feb-21	5.70	86.9	56	-57.5	29.8	0.21
	Sep-21	6.10	170.0	111	-150.0	30.4	0.03
	Feb-22	Not Sampled Due to LNAPL					
	Oct-22	Not Sampled Due to LNAPL					
	Mar-23	Not Sampled Due to LNAPL					
	Sep-23	Not Sampled Due to LNAPL					
	Feb-24	Not Sampled Due to LNAPL					
	Sep-24	Not Sampled Due to LNAPL					
	Feb-25	Not Sampled Due to LNAPL					
	Sep-25	**Not Sampled Due to LNAPL**					
MW26	Oct-16	4.63	242.0	157	316.1	31.3	4.71
	Mar-17	4.78	40.0	26	84.0	31.5	2.67
	Oct-17	4.21	53.5	35	-28.8	31.3	2.27
	Apr-16	5.76	70.7	46	78.0	30.1	18.4*
	Oct-18	5.18	42.4	28	76.0	30.3	-
	Feb-19	4.30	50.0	33	30.5	33.4	0.83
	Oct-19	4.36	46.1	30	361.7	31.8	2.93
	Feb-20	4.39	84.5	55	302.6	31.3	1.41
	Oct-20	3.90	58.4	38	-141.1	32.1	1.23
	Feb-21	4.34	48.0	31	252.3	30.8	1.40
	Sep-21	4.42	44.2	29	141.7	31.5	1.16
	Feb-22	4.38	46.2	30	314.8	31.2	1.82
	Oct-22	3.62	49.6	32	198.9	31.0	0.27
	Mar-23	4.25	43.7	28	155.0	31.0	3.75
	Sep-23	4.22	164.4	107	269.1	30.5	1.17
	Feb-24	4.10	57.2	37	90.4	31.3	1.33

Table 3. Summary of Recent and Historical Field Parameters

Client: Cleanaway-Transpacific
Project: 2025 Annual Monitoring Events, 875 Stuart Highway, Holtze
Job Number: BE-78

Monitoring Wells	Sample Date	pH	Electrical Conductivity (µS/cm)	TDS^ (mg/L)	Redox (mV)	Temperature (°C)	Dissolved Oxygen (ppm)
	Sep-24	4.03	48.7	32	52.9	31.6	0.80
	Feb-25	3.84	55.2	36	175.7	31.9	2.24
	Sep-25	**3.96**	**42.5**	**28**	**199.3**	**31.6**	**1.20**
Off Site							
MW11	Aug-14	5.63	52.0	34	223.0	29.5	3.00
	Feb-15	4.43	49.6	32	191.2	30.1	2.60
	Jun-15	4.88	76.8	50	123.6	28.1	2.44
	Feb-16	4.07	87.8	57	367.0	31.8	48*
	Jul-16	Not Accessible/ Damaged					
	Mar-17	4.57	43.0	28	269.0	31.6	5.13
	Oct-17	4.10	49.9	32	-42.3	30.8	5.11
	Apr-18	Not Accessible					
	Oct-18	Not Accessible					
	Feb-19	3.02	57.0	37	194.7	31.4	3.18
	Oct-19	4.18	44.7	31	368.8	31.2	7.90
	Feb-20	4.27	66.9	43	175.1	31.2	9.71
	Oct-20	3.77	47.5	31	49.8	31.0	2.29
	Feb-21	4.29	52.9	34	239.1	30.6	3.72
	Sep-21	4.60	75.9	49	170.7	21.2	2.00
	Feb-22	4.55	48.1	31	243.7	31.5	4.47
	Oct-22	3.36	49.9	32	241.0	29.8	4.68
	Mar-23	3.75	75.1	49	208.1	32.0	3.30
	Sep-23	4.14	132.9	86	336.6	30.0	5.02
	Feb-24	4.28	56.9	37	88.6	31.9	3.27
	Sep-24	4.00	43.0	28	165.1	30.5	7.70
	Feb-25	4.47	54.1	35	156.1	31.8	3.77
	Sep-25	**4.03**	**378.9**	**246**	**251.2**	**31.6**	**3.83**
MW12	Aug-14	5.10	123.0	80	200.0	29.8	1.10
	Feb-15	4.82	55.9	36	125.3	31.7	1.01
	Jun-15	4.87	39.5	26	105.5	27.6	1.12
	Feb-16	4.57	71.9	47	275.0	31.6	24*
	Jul-16	4.75	32.5	21	99.0	29.6	2.12
	Mar-17	4.95	41.0	27	154.0	30.2	1.73
	Oct-17	4.33	53.5	35	13.0	29.9	4.93
	Apr-18	4.73	23.4	15	267.0	30.2	36.9*
	Oct-18	4.31	35.4	23	127.0	29.9	-
	Feb-19	3.74	49.0	32	123.1	30.7	1.15
	Oct-19	4.61	39.6	26	305.9	30.6	6.64
	Feb-20	4.40	71.7	47	313.8	22.8	4.92
	Oct-20	3.97	45.2	29	-52.30	30.40	0.89
	Feb-21	Not Located					
	Sep-21	4.63	44.9	29	198.1	30.9	2.53
	Feb-22	Not Located					
	Oct-22	4.07	43.2	28	241.9	30.1	3.04
	Mar-23	Not Located					
	Sep-23	5.60	114.0	74	105.1	28.9	5.99
	Feb-24	Inaccessible (thick vegetation to shoulder height)					
	Sep-24	4.42	52.6	34	217.2	30.3	4.07
	Feb-25	5.13	54.8	36	124.4	30.4	1.38
	Sep-25	**4.39**	**209.4**	**136**	**198.4**	**31.6**	**0.50**
	Aug-14	4.36	102.0	66	218.0	29.5	1.84
	Feb-15	4.42	65.9	43	196.8	31.9	1.32
	Jun-15	4.52	75.8	49	112.7	27.7	0.64
	Feb-16	4.03	89.3	58	326.0	33.1	19*
	Jul-16	4.47	64.6	42	95.2	30.6	1.90
	Mar-17	4.61	41.0	27	122.0	30.8	1.53
	Oct-17	4.25	50.1	33	-50.2	29.8	3.57
	Apr-18	4.52	52.7	34	283.0	30.7	27*
	Oct-18	4.24	46.6	30	134.0	29.3	-

Table 3. Summary of Recent and Historical Field Parameters

Client: Cleanaway-Transpacific
Project: 2025 Annual Monitoring Events, 875 Stuart Highway, Holtze
Job Number: BE-78

Monitoring Wells	Sample Date	pH	Electrical Conductivity (µS/cm)	TDS^ (mg/L)	Redox (mV)	Temperature (°C)	Dissolved Oxygen (ppm)
MW13	Feb-19	3.49	46.0	30	161.7	30.9	1.80
	Oct-19	4.36	51.2	33	323.2	31.8	3.44
	Feb-20	Not Located					
	Oct-20	Not Located					
	Feb-21	Not Located					
	Sep-21	4.46	45.1	29	201.9	30.2	0.16
	Feb-22	Not Located					
	Oct-22	3.86	45.3	29	222.1	29.6	0.77
	Mar-23	Not Located					
	Sep-23	4.30	149.00	96.85	212.90	30.10	0.13
	Feb-24	Inaccessible (thick vegetation to shoulder height)					
	Sep-24	4.18	41.00	26.65	6.20	29.20	0.00
	Feb-25	3.75	48.50	31.53	184.20	32.80	1.26
	Sep-25	**4.14**	**155.7**	**101**	**213.7**	**32.4**	**0.74**
MW16	Oct-16	5.48	319.0	207	70.5	31.2	3.16
	Mar-17	6.06	206.0	134	56.0	31.0	1.90
	Oct-17	5.13	350.4	228	-54.8	30.5	2.83
	Apr-18	6.23	331.0	215	-32.0	30.5	17*
	Oct-18	5.71	161.7	105	47.0	30.5	-
	Feb-19	4.78	376.0	244	22.7	30.3	2.17
	Oct-19	5.66	265.1	172	53.4	31.3	1.35
	Feb-20	6.05	394.0	256	-2.1	29.2	1.26
	Oct-20	5.13	108.3	70	-216.3	30.5	0.49
	Feb-21	4.95	160.0	104	168.8	30.6	1.47
	Sep-21	5.75	111.1	72	11.7	30.0	0.33
	Feb-22	5.43	127.1	83	72.5	29.6	0.03
	Oct-22	4.59	85.0	55	133.0	30.5	0.05
	Mar-23	5.24	83.3	54	9.8	30.0	0.08
	Sep-23	5.54	210.9	137	3.7	31.3	0.00
	Feb-24	5.18	88.9	58	50.6	31.0	0.22
	Sep-24	5.21	1251	813	4.1	32.1	0.03
	Feb-25	5.29	106.5	69	-329.9	30.9	0.78
	Sep-25	**5.03**	**570**	**371**	**185.6**	**31.8**	**0.69**
MW17	Oct-16	4.85	256.0	166	176.9	29.9	3.23
	Mar-17	Not Accessible					
	Oct-17	4.59	152.9	99	-56.6	29.5	3.30
	Apr-18	5.98	173.0	112	64.7	30.4	41.9*
	Oct-18	5.38	115.6	75	66.0	29.4	-
	Feb-19	Not Accessible					
	Oct-19	5.28	141.7	92	189.0	31.2	3.81
	Feb-20	Not Located					
	Oct-20	5.15	87.8	57	-135.9	29.7	2.53
	Feb-21	Not Accessible					
	Sep-21	Well Damaged					
	Feb-22	Well Damaged					
MW17R	Mar-23	5.06	77.2	50	89.5	30.5	0.11
	Sep-23	5.14	176.6	115	81.0	30.5	0.00
	Feb-24	Inaccessible (thick vegetation/high surface water)					
	Sep-24	4.95	94.7	62	55.5	31.2	1.85
	Feb-25	5.12	80.6	52	-89.1	30.8	0.68
	Sep-25	**5.21**	**389.7**	**253**	**226.6**	**31.2**	**1.14**
	Oct-16	4.81	73.0	47	202.5	31.9	8.91
	Mar-17	Not Accessible					
	Oct-17	4.39	60.8	40	-61.4	31.8	3.80
	May-18	5.01	45.9	30	298.0	31.1	32.7*
	Oct-18	4.62	43.7	28	111.0	31.5	-
	Feb-19	3.37	59.0	38	-74.7	32.2	0.80
	Oct-19	4.63	59.4	39	232.1	33.4	1.46
	Feb-20	4.77	98.9	64	292.2	22.3	3.44
	Oct-20	4.73	66.9	43	-189.7	32.3	1.40

Table 3. Summary of Recent and Historical Field Parameters

Client: Cleanaway-Transpacific
Project: 2025 Annual Monitoring Events, 875 Stuart Highway, Holtze
Job Number: BE-78

Monitoring Wells	Sample Date	pH	Electrical Conductivity (µS/cm)	TDS^ (mg/L)	Redox (mV)	Temperature (°C)	Dissolved Oxygen (ppm)
MW18	Feb-21	4.76	47.8	31	176.4	34.0	0.93
	Sep-21	4.74	45.1	29	240.7	32.2	0.05
	Feb-22	5.11	48.8	32	186.4	33.9	0.12
	Oct-22	6.33	171.0	111	42.1	30.2	1.35
	Mar-23	5.71	125.8	82	-74.8	32.8	0.15
	Sep-23	5.05	160.5	104	96.1	32.2	0.00
	Feb-24	5.72	151.8	99	68.8	33.3	0.06
	Sep-24	4.82	58.1	38	-8.5	32.6	0.00
	Feb-25	5.01	61.8	40	-38.4	34.1	1.53
	Sep-25	**4.86**	**198.5**	**129**	**176.3**	**32.5**	**0.39**
MW19	Oct-16	4.75	99.0	64	259.5	32.2	3.61
	Apr-17	6.44	94.0	61	77.0	26.6	4.91
	Oct-17	4.06	52.5	34	-29.8	31.7	4.10
	May-18	4.79	45.6	30	282.0	29.9	38*
	Oct-18	4.62	40.7	26	112.0	31.0	-
	Feb-19	3.64	50.0	33	113.9	32.1	1.30
	Oct-19	4.38	48.7	32	259.8	32.4	1.14
	Feb-20	4.69	80.3	52	301.5	22.8	4.50
	Oct-20	4.31	50.8	33	-124.0	32.3	1.16
	Feb-21	4.68	46.5	30	180.3	32.9	0.70
	Sep-21	4.76	46.5	30	222.1	32.3	1.43
	Feb-22	5.08	55.4	36	190.4	33.3	0.77
	Oct-22	4.19	47.2	31	183.0	32.2	0.28
	Mar-23	5.46	78.5	51	119.6	33.0	2.20
	Sep-23	4.86	153.4	100	132.4	32.0	0.29
	Feb-24	4.75	57.0	37	44.6	33.6	0.42
	Sep-24	4.50	43.6	28	0.4	32.1	0.10
	Feb-25	4.68	54.6	35	8.4	33.9	1.73
	Sep-25	**4.44**	**226.0**	**147**	**185.8**	**32.8**	**0.65**
MW20	Oct-16	4.74	46.0	30	241.6	31.7	3.33
	Apr-17	7.36	420.0	273	86.0	27.3	3.96
	Oct-17	3.84	48.0	31	-6.3	31.1	2.98
	May-18	4.93	33.9	22	266.0	30.4	30.8*
	Oct-18	4.69	35.3	23	105.0	31.1	-
	Feb-19	3.86	47.0	31	18.8	33.5	0.83
	Oct-19	4.33	45.6	30	274.2	32.1	2.11
	Feb-20	4.44	66.4	43	300.8	22.9	3.36
	Oct-20	4.00	44.6	29	-97.6	31.9	0.74
	Feb-21	5.52	80.8	53	146.5	33.5	0.33
	Sep-21	5.22	54.0	35	-141.3	31.9	0.25
	Feb-22	6.04	105.9	69	126.9	33.7	0.25
	Oct-22	4.87	89.0	58	162.7	31.6	0.39
	Mar-23	4.29	46.9	30	93.4	33.0	0.48
	Sep-23	4.49	143.7	93	172.1	31.6	0.06
	Feb-24	4.39	54.8	36	51.6	34.0	0.25
	Sep-24	4.22	43.8	28	38.8	31.6	1.21
	Feb-25	4.13	51.9	34	30.1	33.9	1.46
	Sep-25	**4.25**	**242.2**	**157**	**198.0**	**32.7**	**0.83**
MW21	Oct-16	5.15	208.0	135	84.2	31.7	3.55
	Mar-17	5.09	79.0	51	155.0	32.2	1.81
	Oct-17	4.17	79.8	52	-1.2	31.4	5.07
	May-18	5.67	96.7	63	91.8	30.1	35*
	Oct-18	5.01	68.0	44	86.0	30.8	-
	Feb-19	Grab Sample Collected Only					
	Oct-19	4.66	71.1	46	242.2	30.9	1.47
	Feb-20	4.57	97.5	63	311.2	22.9	3.95
	Oct-20	5.30	136.8	89	-96.1	32.0	2.06
	Feb-21	5.12	61.1	40	34.1	32.7	0.82
	Sep-21	5.03	66.7	43	122.7	31.1	0.06
	Feb-22	5.36	73.2	48	98.5	32.6	0.04

Table 3. Summary of Recent and Historical Field Parameters

Client: Cleanaway-Transpacific
Project: 2025 Annual Monitoring Events, 875 Stuart Highway, Holtze
Job Number: BE-78

Monitoring Wells	Sample Date	pH	Electrical Conductivity (µS/cm)	TDS^ (mg/L)	Redox (mV)	Temperature (°C)	Dissolved Oxygen (ppm)
	Oct-22	4.93	108.2	70	89.0	31.4	0.06
	Feb-23	5.14	79.0	51	-186.0	31.4	0.04
	Sep-23	4.84	146.2	95	109.3	30.1	0.00
	Feb-24	5.21	76.6	50	58.5	32.6	0.18
	Sep-24	4.68	50.5	33	-20.9	30.2	0.04
	Feb-25	4.57	50.5	33	-207.1	33.1	1.30
	Sep-25	**4.48**	**267.4**	**174**	**191.9**	**31.8**	**0.46**
MW22	Oct-16	4.65	49.0	32	254.2	30.4	3.41
	Mar-17	4.59	40.0	26	249.0	31.2	1.52
	Oct-17	4.04	48.9	32	-28.2	30.5	4.50
	Apr-18	4.45	46.6	30	226.0	32.4	34.9*
	Oct-18	4.34	40.6	26	127.0	26.5	-
	Feb-19	3.72	50.0	33	109.9	31.3	1.46
	Oct-19	4.25	46.4	30	309.8	30.6	2.87
	Feb-20	4.86	78.3	51	310.1	22.8	3.67
	Oct-20	4.52	59.0	38	-88.2	30.9	2.42
	Feb-21	4.70	41.7	27	235.8	31.0	3.37
	Sep-21	4.36	46.6	30	199.2	31.0	1.36
	Feb-22	4.61	43.4	28	247.3	31.3	2.23
	Oct-22	4.16	45.8	30	268.9	30.3	1.67
	Mar-23	4.24	44.7	29	110.7	31.7	2.51
	Sep-23	4.23	148.5	97	250.4	30.1	2.17
	Feb-24	4.27	54.4	35	84.1	32.4	2.59
	Sep-24	4.01	46.6	30	116.0	29.8	2.34
	Feb-25	4.21	52.6	34	101.4	32.2	2.40
	Sep-25	**3.98**	**48.7**	**32**	**217.0**	**32.2**	**2.07**
MW23	Sep-21	6.10	170.0	111	-150.0	30.4	0.03
MW24	Oct-16	3.93	44.0	29	348.6	31.0	4.35
	Mar-17	4.51	41.0	27	243.0	30.9	3.80
	Oct-17	3.92	50.2	33	-27.2	30.6	6.12
	Apr-18	4.35	42.8	28	238.0	31.3	29.8*
	Oct-18	Not Accessible					
	Feb-19	Not Accessible					
	Oct-19	Not Accessible					
	Feb-20	Not Accessible					
	Feb-21	Not Accessible/ Well Buried					
	Sep-21	Not Accessible/ Well Buried					
	Feb-22	Not Accessible/ Well Buried					
	Oct-22	Not Accessible/ Well Buried					
	Mar-23	Not Accessible/ Well Buried					
	Sep-23	Not Accessible/ Well Buried					
	Feb-24	Not Accessible/ Well Buried					
	Sep-24	Not Accessible/ Well Buried					
	Feb-25	Not Accessible/ Well Buried					
	Sep-25	**Not Accessible/ Well Buried**					
MW25	Oct-16	5.18	70.0	46	197.9	30.7	3.86
	Mar-17	5.28	37.0	24	-12.0	31.0	3.64
	Oct-17	4.70	40.1	26	-53.5	31.1	3.63
	Apr-18	4.81	40.7	26	204.0	30.9	17*
	Oct-18	4.78	34.8	23	105.0	30.7	-
	Feb-19	3.92	37.0	24	-46.7	31.3	0.51
	Oct-19	4.69	36.3	24	264.4	32.5	3.94
	Feb-20	5.38	82.1	53.37	294.40	31.30	4.38
	Oct-20	5.05	109.3	71	-115.5	30.6	1.10
	Feb-21	5.58	54.1	35	144.8	29.3	0.24
	Sep-21	5.55	82.9	54	76.6	30.6	2.40
	Feb-22	6.79	125.0	81	100.3	29.7	0.07
	Oct-22	6.25	143.5	93	61.2	29.5	1.50
	Mar-23	5.71	113.2	74	83.5	30.3	0.98
	Sep-23	5.28	154.2	100	91.3	30.3	0.00

Table 3. Summary of Recent and Historical Field Parameters

Client: Cleanaway-Transpacific
Project: 2025 Annual Monitoring Events, 875 Stuart Highway, Holtze
Job Number: BE-78

Monitoring Wells	Sample Date	pH	Electrical Conductivity (µS/cm)	TDS^ (mg/L)	Redox (mV)	Temperature (°C)	Dissolved Oxygen (ppm)
	Feb-24	5.30	69.7	45	50.9	32.3	0.03
	Sep-24	Not Accessible/ Well Buried					
	Feb-25	Not Accessible/ Well Buried					
	Sep-25	**Not Accessible/ Well Buried**					
Surface Water							
SW1	Feb-16	5.36	48.8	32	281.0	27.3	44*
	Feb-19	4.98	20.0	13	40.2	26.4	4.50
	Feb-20	5.43	20.0	13	263.8	26.8	6.92
	Feb-22	6.33	58.2	38	193.2	28.9	4.84
	Mar-23	8.75	95.1	62	160.5	31.1	6.83
	Sep-24	6.14	124.0	81	156.0	27.1	2.36
SW2	Feb-16	6.47	109.9	71	280.0	27.2	48*
	Apr-18	6.32	147.0	96	80.0	25.4	27.1*
	Feb-19	5.98	43.0	28	36.7	26.4	6.17
	Feb-20	8.87	235.0	153	87.4	29.1	5.30
	Feb-21	7.29	87.9	57	131.6	29.1	1.90
	Feb-22	6.64	94.5	61	160.9	30.1	4.28
	Mar-23	6.85	86.9	56	212.8	30.5	7.66
	Feb-24	8.20	74.9	49	71.7	36.6	6.28
	Sep-24	4.03	48.7	32	52.9	28.2	0.43
	Feb-25	**6.42**	**63.3**	**41**	**28.4**	**32.2**	**9.41**
SW2-2	Feb-20	6.14	53.9	35	265.3	26.4	5.39
SW2-Downstream	Feb-20	6.78	388.0	252	236.1	24.6	4.42
SW3	Feb-20	6.16	32.0	21	234.4	25.4	6.74
	Feb-22	Sampled by Site Staff - No Parameters Taken					
	Mar-23	7.30	50.7	33	188.3	30.0	6.11

Note:

^Total Dissolved Solids (mg/L) calculated as 0.650 x Electrical Conductivity (µS/cm)

* Dissolved Oxygen reported as %saturation

SW2-2 Taken during day of heavy downpour Feb-20

SW2-Downstream taken outside Site boundary, downstream from SW2

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	*ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand*	*ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand*	Darwin Cleanaway Groundwater Investigation Criteria	Sample Location	MW01	MW01	MW01	MW01	MW01	MW01	MW01	MW01	MW02	MW02	MW02	MW02
												Date	2/04/2014	15/02/2016	27/03/2017	23/10/2017	24/04/2018	8/10/2018	5/02/2019	23/02/2021	2/04/2014	15/02/2016	28/03/2017	24/10/2017
												Laboratory							ALS	ALS				
												Report							ES1903574	ES2106464010				
												Duplicate												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	**0.001**	<0.001	<0.001	**0.003**	**0.002**	**0.005**	-	<0.001	**0.005**	**0.003**	**0.002**	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	**0.006**	**0.001**	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.007**	**0.005**	**0.008**	<0.005	**0.013**	<0.005	-	<0.005	**0.008**	**0.005**	**0.007**	**0.005**
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	**14**	<1	<1	**28**	<1	**29**	<1	<1	**21**	**3**	**1**	**5**
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	**138**	<1	<2	**4**	<2	**3**	<2	<2	**90**	<1	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	**30**	<1	<2	**33**	<2	**30**	<2	<2	**41**	**4**	<2	**7**
	Xylene (m & p)	µg/L	2					**75**			**75**	**92**	**2**	<2	**63**	<2	**13**	<2	<2	**113**	**4**	<2	**2**
	Xylene (o)	µg/L	2					**350**			**350**	**58**	**3**	<2	**7**	<2	<2	<2	<2	**67**	**3**	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		**150**	**6**	<2	**70**	<2	**13**	<2	<2	**180**	**7**	<2	**2**
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	**20**	**10**	<5	**20**	<5	**16**	<5	<5	**23**	<10	<5	**9**
	BTEX (Sum of Total) - Lab Calc	µg/L	1									**332**	-	<1	**135**	<1	**75**	<1	<1	**332**	-	**1**	**14**
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		**640**	<20	<20	**260**	<20	**180**	<20	<20	**600**	**300**	<20	**110**
	C6 - C10 Fraction	µg/L	20									**970**	<20	<20	**390**	<20	**260**	<20	<20	**930**	**400**	**20**	**120**
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	**3240**	**1400**	<100	**6960**	**1590**	**3080**	<100	<100	**780**	**2000**	<100	**4390**
	>C10 - C16 Fraction	µg/L	100								**600**	**3260**	**1400**	<100	**6980**	**1590**	**3100**	<100	<100	**800**	**2000**	<100	**4400**
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	**14,900**	**20,000**	**200**	**56,500**	**22,700**	**21,600**	**1020**	<100	**3270**	**20,000**	**140**	**33,000**
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	**3140**	**4100**	<100	**11,000**	**4340**	**3560**	**350**	<100	**650**	**42,000**	<100	**6140**
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	**21,300**	**25,500**	**200**	**74,500**	**28,630**	**28,260**	**1370**	<100	**4720**	**64,000**	**140**	**43,500**
	C6 - C 9 Fraction	µg/L	20									**720**	<20	<20	**250**	<20	**190**	<20	<20	**660**	**30**	<20	**60**
	C10 - C14 Fraction	µg/L	50								**600**	**2230**	**710**	<50	**6270**	**750**	**1750**	<50	<50	**630**	**1000**	<50	**4660**
	C15 - C28 Fraction	µg/L	100								**600**	**12,000**	**12,000**	**150**	**40,600**	**15,200**	**16,400**	**550**	<100	**2710**	**12,000**	<100	**23,600**
	C29 - C36 Fraction	µg/L	50								**600**	**6250**	**11,000**	**80**	**23,700**	**10,200**	**8770**	**540**	<50	**1500**	**11,000**	**90**	**13,800**
	C10 - C36 (Sum of Total)	µg/L	50								**600**	**20,500**	**24,000**	**230**	**70,600**	**26,200**	**26,900**	**1090**	<50	**4840**	**24,000**	**90**	**42,100**
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<2	-	<1	<1	<1.0	<1.0	<1	<1.0	<2	-	<1	<1
	Acenaphthylene	µg/L	1									<2	-	<1	<1	<1.0	<1.0	<1	<1.0	<2	-	<1	<1
	Anthracene	µg/L	1					**0.01**			**0.01**	<2	-	<1	<1	<1.0	<1.0	<1	<1.0	<2	-	<1	<1
	Benz(a)anthracene	µg/L	1									<2	-	<1	<1	<1.0	<1.0	<1	<1.0	<2	-	<1	<1
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									-	-	<1	<1	<1.0	<1.0	<1	<1.0	-	-	<1	<1
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<2	-	<1	<1	<1.0	<1.0	<1	<1.0	<2	-	<1	<1
	Benzo(k)fluoranthene	µg/L	1									-	-	<1	<1	<1.0	<1.0	<1	<1.0	-	-	<1	<1
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									<4	-	-	-	-	-	-	-	<4	-	-	-
	Chrysene	µg/L	1									<2	-	<1	<1	<1.0	<1.0	<1	<1.0	<2	-	<1	<1
	Dibenz(a,h)anthracene	µg/L	1									<2	-	<1	<1	<1.0	<1.0	<1	<1.0	<2	-	<1	<1
	Fluoranthene	µg/L	1					**1**			**1**	<2	-	<1	<1	<1.0	<1.0	<1	<1.0	<2	-	<1	<1
	Fluorene	µg/L	1									<2	-	<1	<1	<1.0	<1.0	<1	<1.0	<2	-	<1	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<2	-	<1	<1	<1.0	<1.0	<1	<1.0	<2	-	<1	<1
	Naphthalene-PAH	µg/L	1					**16**			**16**	**10**	**10**	<1	**14.6**	<1.0	**14.5**	<1	<1.0	**13**	<10	**1.8**	**6.9**
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<2	-	<1	**3.2**	<1.0	**1.7**	<1	<1.0	<2	-	<1	**2**
	Pyrene	µg/L	1									<2	-	<1	**1.9**	<1.0	<1.0	<1	<1.0	<2	-	<1	**1.1**
	PAHs (Sum of total) - Lab calc	µg/L	0.5									**10**	-	<0.5	**19.7**	<0.5	**16.2**	<0.5	<0.5	**13**	-	**1.8**	**10**
	2-methylnaphthalene	µg/L	2									**12**	-	-	-	-	-	-	-	**11**	-	-	-
	3-methylcholanthrene	µg/L	2									<2	-	-	-	-	-	-	-	<2	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									<2	-	-	-	-	-	-	-	<2	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									<2	-	-	-	-	-	-	-	<2	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÂºC	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	*ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand*	*ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand*	Darwin Cleanaway Groundwater Investigation Criteria	Sample Location	MW02	MW02	MW02	MW02	MW03	MW03	MW03	MW03	MW04	MW04	MW04	MW04
												Date	24/04/2018	8/10/2018	5/02/2019	23/02/2021	2/04/2014	4/02/2015	1/07/2015	15/02/2016	2/04/2014	4/02/2015	1/07/2015	15/02/2016
												Laboratory			ALS	ALS								
												Report			ES1903574	ES2106464011								
												Duplicate												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**		<0.001	**0.006**	-	<0.001	**0.002**	**0.002**	**0.005**	**0.001**	**0.001**	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**		<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	**0.001**	<0.001	<0.001	**0.001**
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**		<0.001	<0.001	-	<0.001	**0.001**	<0.001	<0.001	<0.001	**0.057**	**0.001**	**0.001**	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**		**0.009**	<0.005	-	<0.005	**0.011**	<0.001	<0.005	**0.011**	**0.006**	<0.005	<0.005	**0.004**
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**		<1	**4**	<1	<1	**21**	**6**	**2**	**3**	<1	<1	**2**	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**		<2	<2	<2	<2	**14**	<2	<2	<1	<2	<2	<2	<1
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**		<2	**3**	<2	<2	**36**	**7**	**5**	**4**	<2	<2	<2	<1
	Xylene (m & p)	µg/L	2					**75**			**75**		<2	<2	<2	<2	**29**	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**		<2	<2	<2	<2	**15**	<2	<2	<1	<2	<2	<2	<1
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*			<2	<2	<2	<2	**44**	<2	<2	<3	<2	<2	<2	<3
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**		<5	**7**	<5	<5	**20**	**10**	**8**	**10**	<5	<5	<5	<10
	BTEX (Sum of Total) - Lab Calc	µg/L	1										<1	**7**	<1	<1	**115**	**13**	**7**	-	<1	<1	**2**	-
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*			**20**	**50**	<20	<20	**300**	**60**	**70**	**20**	<20	<20	**30**	<20
	C6 - C10 Fraction	µg/L	20										**20**	**60**	<20	<20	**410**	**70**	**80**	**30**	<20	<20	**30**	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**		**370**	**330**	<100	<100	**850**	**220**	**190**	**70**	<100	<100	**110**	<50
	>C10 - C16 Fraction	µg/L	100								**600**		**370**	**340**	<100	<100	**870**	**230**	**200**	**80**	<100	<100	**110**	<50
	>C16 - C34 Fraction (F3)	µg/L	100								**600**		**8450**	**2460**	**750**	<100	**770**	**100**	<100	<100	<100	<100	**130**	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**		**2120**	**520**	**220**	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**		**10,940**	**3320**	**970**	<100	**1640**	**330**	**200**	**80**	<100	**130**	**110**	-
	C6 - C 9 Fraction	µg/L	20										<20	**40**	<20	<20	**260**	**40**	**40**	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**		**130**	**220**	<50	<50	**630**	**180**	**170**	**60**	<50	<50	**80**	<50
	C15 - C28 Fraction	µg/L	100								**600**		**5230**	**1830**	**470**	<100	**1060**	**170**	**110**	<100	<100	**130**	**130**	<100
	C29 - C36 Fraction	µg/L	50								**600**		**4310**	**1060**	**340**	<50	**70**	<50	<50	<100	<50	<50	<50	<100
	C10 - C36 (Sum of Total)	µg/L	50								**600**		**9670**	**3110**	**810**	<50	**1760**	**350**	**280**	<100	<50	**130**	**80**	<100
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<2	<1	<1	-	<2	<1	<1	-
	Acenaphthylene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<2	<1	<1	-	<2	<1	<1	-
	Anthracene	µg/L	1					**0.01**			**0.01**		<1.0	<1.0	<1.0	<1.0	<2	<1	<1	-	<2	<1	<1	-
	Benz(a)anthracene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<2	<1	<1	-	<2	<1	<1	-
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**		<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	-	<2	<0.5	<0.5	-
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5										<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	-	<2	<0.5	<0.5	-
	Benzo[b+j]fluoranthene	µg/L	1										<1.0	<1.0	<1.0	<1.0	-	<1	<1	-	-	<1	<1	-
	Benzo(e)pyrene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<2	<1	<1	-	<2	<1	<1	-
	Benzo(k)fluoranthene	µg/L	1										<1.0	<1.0	<1.0	<1.0	-	<1	<1	-	-	<1	<1	-
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2										-	-	-	-	<4	-	-	-	<4	-	-	-
	Chrysene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<2	<1	<1	-	<2	<1	<1	-
	Dibenz(a,h)anthracene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<2	<1	<1	-	<2	<1	<1	-
	Fluoranthene	µg/L	1					**1**			**1**		<1.0	<1.0	<1.0	<1.0	<2	<1	<1	-	<2	<1	<1	-
	Fluorene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<2	<1	<1	-	<2	<1	<1	-
	Indeno(1,2,3-c,d)pyrene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<2	<1	<1	-	<2	<1	<1	-
	Naphthalene-PAH	µg/L	1					**16**			**16**		<1.0	**4.3**	<1.0	<1.0	**12**	**7.2**	**5.2**	-	<2	<1	**3**	-
	Phenanthrene	µg/L	1					**0.6**			**0.6**		<1.0	<1.0	<1.0	<1.0	<2	<1	<1	-	<2	<1	<1	-
	Pyrene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<2	<1	<1	-	<2	<1	<1	-
	PAHs (Sum of total) - Lab calc	µg/L	0.5										<0.5	**4.3**	<0.5	<0.5	**12**	**7.2**	**5.2**	-	<2	<0.5	**3**	-
	2-methylnaphthalene	µg/L	2										-	-	-	-	**7**	-	-	-	<2	-	-	-
	3-methylcholanthrene	µg/L	2										-	-	-	-	<2	-	-	-	<2	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2										-	-	-	-	<2	-	-	-	<2	-	-	-
	Coronene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1										-	-	-	-	<2	-	-	-	<2	-	-	-
	Perylene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**						-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**						-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5										-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**						-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**						-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**						-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5										-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01										-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01										-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01										-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**					-	-	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**					-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**							-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01										-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01										-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

										Sample Location		MW05	MW05	MW05	MW05	MW06	MW06	MW06	MW06	MW07	MW07	MW07	MW07
										Date		2/04/2014	4/02/2015	1/07/2015	15/02/2016	2/04/2014	4/02/2015	1/07/2015	15/02/2016	2/04/2014	4/02/2015	1/07/2015	15/02/2016
										Laboratory													
										Report													
										Duplicate													
	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	*ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand*	*ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand*	Darwin Cleanaway Groundwater Investigation Criteria												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.003**	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	**0.005**	<0.001	<0.001	<0.001	**0.001**	<0.001	<0.001	<0.001	**0.004**	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.007**	<0.005	<0.005	**0.004**	**0.039**	**0.036**	**0.025**	**0.021**	**0.071**	**0.372**	**0.212**	**0.11**
BTEX:N	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<1	<2	<2	<2	<1	<2	<2	<2	<1
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<1	<2	<2	<2	<1	<2	<2	<2	<1
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<1	<2	<2	<2	<1	<2	<2	<2	<1
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<3	<2	<2	<2	<3	<2	<2	<2	<3
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<10	<5	<5	<5	<10	<5	<5	<5	<10
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	-
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<50	<100	<100	<100	<50	<100	<100	<100	<50
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<50	<100	<100	<100	<50	<100	<100	<100	<50
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	-	<100	<100	<100	-	<100	< 100	<100	-
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<100	<50	<50	<50	<100	<50	<50	<50	<100
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<100	<50	<50	<50	<100	<50	<50	<50	<100
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<2	<1	<1	-	<2	<1	<1	-	<2	<1	<1	-
	Acenaphthylene	µg/L	1									<2	<1	<1	-	<2	<1	<1	-	<2	<1	<1	-
	Anthracene	µg/L	1					**0.01**			**0.01**	<2	<1	<1	-	<2	<1	<1	-	<2	<1	<1	-
	Benz(a)anthracene	µg/L	1									<2	<1	<1	-	<2	<1	<1	-	<2	<1	<1	-
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<2	<0.5	<0.5	-	<2	<0.5	<0.5	-	<2	<0.5	<0.5	-
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<2	<0.5	<0.5	-	<2	<0.5	<0.5	-	<2	<0.5	<0.5	-
	Benzo[b+j]fluoranthene	µg/L	1									-	<1	<1	-	-	<1	<1	-	-	<1	<1	-
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<2	<1	<1	-	<2	<1	<1	-	<2	<1	<1	-
	Benzo(k)fluoranthene	µg/L	1									-	<1	<1	-	-	<1	<1	-	-	<1	<1	-
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									<4	-	-	-	<4	-	-	-	<4	-	-	-
	Chrysene	µg/L	1									<2	<1	<1	-	<2	<1	<1	-	<2	<1	<1	-
	Dibenz(a,h)anthracene	µg/L	1									<2	<1	<1	-	<2	<1	<1	-	<2	<1	<1	-
	Fluoranthene	µg/L	1					**1**			**1**	<2	<1	<1	-	<2	<1	<1	-	<2	<1	<1	-
	Fluorene	µg/L	1									<2	<1	<1	-	<2	<1	<1	-	<2	<1	<1	-
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<2	<1	<1	-	<2	<1	<1	-	<2	<1	<1	-
	Naphthalene-PAH	µg/L	1					**16**			**16**	<2	<1	<1	-	<2	<1	<1	-	<2	<1	<1	-
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<2	<1	<1	-	<2	<1	<1	-	<2	<1	<1	-
	Pyrene	µg/L	1									<2	<1	<1	-	<2	<1	<1	-	<2	<1	<1	-
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<2	<0.5	<0.5	-	<2	<0.5	<0.5	-	<2	<0.5	<0.5	-
	2-methylnaphthalene	µg/L	2									<2	-	-	-	<2	-	-	-	<2	-	-	-
	3-methylcholanthrene	µg/L	2									<2	-	-	-	<2	-	-	-	<2	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									<2	-	-	-	<2	-	-	-	<2	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									<2	-	-	-	<2	-	-	-	<2	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	*ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand*	*ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand*	Darwin Cleanaway Groundwater Investigation Criteria	Sample Location	MW07	MW07	MW07	MW07	MW08	MW08	MW08	MW08	MW08	MW08	MW08	MW08
												Date	27/07/2016	28/03/2017	24/10/2017	24/04/2018	2/04/2014	25/03/2015	1/07/2015	15/02/2016	27/07/2016	28/03/2017	24/10/2017	26/04/2018
												Laboratory												
												Report												
												Duplicate												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	**0.003**	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	**0.002**	<0.001	-	<0.001	<0.001	**0.001**	<0.001	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.099**	**0.031**	**0.339**	**0.043**	-	<0.005	**0.005**	**0.004**	**0.006**	<0.005	**0.011**	**0.007**
BTEX:N	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<1	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<2	<2	<2	<2	<1	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<2	<2	<1	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<2	<2	<2	<2	<3	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1						<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<100	<100	<100	<100	<50	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<50	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	-	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1	<1	<1	<1,0	<2	<1	<1	-	<1	<1,0	<1,0	<1,0
	Acenaphthylene	µg/L	1									<1	<1	<1	<1,0	<2	<1	<1	-	<1	<1,0	<1,0	<1,0
	Anthracene	µg/L	1					**0.01**			**0.01**	<1	<1	<1	<1,0	<2	<1	<1	-	<1	<1,0	<1,0	<1,0
	Benz(a)anthracene	µg/L	1									<1	<1	<1	<1,0	<2	<1	<1	-	<1	<1,0	<1,0	<1,0
	Benzo(a)pyrene	µg/L	0,5					**0.1**			**0.1**	<0,5	<0,5	<0,5	<0,5	<2	<0,5	<0,5	-	<0,5	<0,5	<0,5	<0,5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<2	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1	<1	<1	<1,0	-	<1	<1	-	<1	<1,0	<1,0	<1,0
	Benzo(e)pyrene	µg/L	0,1									-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1	<1	<1	<1,0	<2	<1	<1	-	<1	<1,0	<1,0	<1,0
	Benzo(k)fluoranthene	µg/L	1									<1	<1	<1	<1,0	-	<1	<1	-	<1	<1,0	<1,0	<1,0
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	<4	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1	<1	<1	<1.0	<2	<1	<1	-	<1	<1.0	<1.0	<1.0
	Dibenz(a,h)anthracene	µg/L	1									<1	<1	<1	<1.0	<2	<1	<1	-	<1	<1.0	<1.0	<1.0
	Fluoranthene	µg/L	1					**1**			**1**	<1	<1	<1	<1.0	<2	<1	<1	-	<1	<1.0	<1.0	<1.0
	Fluorene	µg/L	1									<1	<1	<1	<1.0	<2	<1	<1	-	<1	<1.0	<1.0	<1.0
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1	<1	<1	<1.0	<2	<1	<1	-	<1	<1.0	<1.0	<1.0
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1	<1	<1	<1.0	<2	<1	<1	-	<1	<1.0	<1.0	<1.0
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1	<1	<1	<1.0	<2	<1	<1	-	<1	<1.0	<1.0	<1.0
	Pyrene	µg/L	1									<1	<1	<1	<1.0	<2	<1	<1	-	<1	<1.0	<1.0	<1.0
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<2	<0,5	<0.5	-	<0,5	<0,5	<0,5	<0,5
	2-methylnaphthalene	µg/L	2									-	-	-	-	<2	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	<2	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	<2	-	-	-	-	-	-	-
	Coronene	µg/L	0,1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0,1									-	-	-	-	<2	-	-	-	-	-	-	-
	Perylene	µg/L	0,1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	-	-	-	-	**0.02**
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	**1.14**
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	**0.01**
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	**1.15**
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	**0.2**
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	**1.4**
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	**0.02**

Notes:
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	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand	ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand	Darwin Cleanaway Groundwater Investigation Criteria	Sample Location	MW08	MW08	MW08	MW08	MW08	MW08	MW08	MW08	MW08	MW08	MW08	MW08
												Date	8/10/2018	5/02/2019	22/10/2019	22/10/2019	22/10/2019	26/02/2020	28/10/2020	23/02/2021	29/09/2021	1/03/2022	4/10/2022	7/03/2023
												Laboratory		ALS	ALS	ALS	Eurofins MGT	ALS	ALS	ALS	ALS	ALS	ALS	ALS
												Report		ES1903290	ES1933804	ES1933804	684015	ES2007150	EM2019329	ES2106464007	ES2134949	ES2207245	ES2235364	ES2307495
												Duplicate			Primary	Intra-Laboratory	Inter-Laboratory							
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**		<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**		**0.007**	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	**0.002**	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**		<0.001	<0.001	<0.001	-	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**		**0.006**	**0.013**	<0.005	-	-	<0.005	**0.007**	**0.011**	**0.016**	<0.005	**0.008**	**0.018**
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**		<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**		<2	<2	<2	-	-	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**		<2	<2	<2	-	-	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**		<2	<2	<2	-	-	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**		<2	<2	<2	-	-	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*			<2	<2	<2	-	-	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**		<5	<5	<5	-	-	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1										<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*			<20	<20	<20	-	-	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20										<20	<20	<20	-	-	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**		<100	<100	<100	-	-	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**		<100	<100	<100	-	-	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**		<100	<100	<100	-	-	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**		<100	<100	<100	-	-	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**		<100	<100	<100	-	-	<100	<100	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20										<20	<20	<20	-	-	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**		<50	<50	<50	-	-	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**		<100	<100	<100	-	-	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**		<50	<50	<50	-	-	<50	<50	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**		<50	<50	<50	-	-	<50	<50	<50	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1										<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Acenaphthylene	µg/L	1										<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Anthracene	µg/L	1					**0.01**			**0.01**		<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Benz(a)anthracene	µg/L	1										<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**		<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5										<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1										<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(e)pyrene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	<1.0	-
	Benzo(g,h,i)perylene	µg/L	1										<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(k)fluoranthene	µg/L	1										<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2										-	-	-	-	-	-	-	-	-	-	<1.0	-
	Chrysene	µg/L	1										<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Dibenz(a,h)anthracene	µg/L	1										<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Fluoranthene	µg/L	1					**1**			**1**		<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Fluorene	µg/L	1										<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Indeno(1,2,3-c,d)pyrene	µg/L	1										<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Naphthalene-PAH	µg/L	1					**16**			**16**		<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Phenanthrene	µg/L	1					**0.6**			**0.6**		<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	<0.5	<1.0
	Pyrene	µg/L	1										<1.0	<1.0	<1.0	-	-	-	-	<1.0	<1.0	<1.0	-	<1.0
	PAHs (Sum of total) - Lab calc	µg/L	0.5										<0.5	<0.5	<0.5	-	-	-	-	<0.5	<0.5	<0.5	-	<0.5
	2-methylnaphthalene	µg/L	2										-	-	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2										-	-	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2										-	-	-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÅºC	mg/L	10		*600*		**600**						-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**						-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5										-	-	-	-	-	-	-	-	**18**	-	-	-
	Calcium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**						-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**						-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**						-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5										-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01										-	-	-	-	-	-	-	-	-	-	**0.11**	-
	Anions Total	meq/L	0.01										-	-	-	-	-	-	-	-	-	-	**1.25**	-
	Ionic Balance	%	0.01										-	-	-	-	-	-	-	-	-	-	<0.01	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**					**0.05**	<0.01	**0.02**	<0.01	< 0.01	**0.19**	<0.01	<0.01	<0.01	**0.02**	**1.25**	**0.01**
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**					**1.06**	**1.81**	**1.2**	**1.21**	**1.3**	**1.38**	**1.50**	**1.43**	**1.31**	**1.55**	**0.4**	**0.88**
	Nitrite as N	mg/L	0.01	**0.9**		**9**							<0.01	<0.01	<0.01	<0.01	< 0.02	<0.01	<0.01	<0.01	<0.01	<0.01	**1.6**	<0.01
	Nitrite + Nitrate as N	mg/L	0.01										**1.06**	**1.81**	**1.2**	**1.21**	**1.3**	**1.38**	**1.5**	**1.43**	**1.31**	**1.55**	**0.02**	**0.88**
	Total Kjeldahl Nitrogen as N	mg/L	0.1										**0.2**	<0.1	**0.2**	<0.1	< 0.2	**0.4**	**0.9**	<0.1	**0.8**	**0.3**	<1	**0.2**
	Total Nitrogen as N	mg/L	0.1										**1.3**	**1.8**	**1.4**	**1.2**	**1.3**	**1.8**	**2.4**	**1.4**	**2.1**	**1.8**	-	**1.1**
	Total Phosphorus as P	mg/L	0.01										**0.03**	<0.01	<0.01	<0.01	**0.01**	**0.09**	**0.14**	**0.01**	<0.01	**0.01**	<2	**0.02**

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

										Sample Location	MW08	MW08	MW08	MW08	MW08	MW08	MW08	MW08	**MW08**	**DUP1**	**DUP1**	MW09
										Date	26/09/2023	26/09/2023	26/09/2023	27/02/2024	17/09/2024	17/09/2024	17/09/2024	19/02/2025	**23/09/2025**	**23/09/2025**	**23/09/2025**	2/04/2014
										Laboratory	ALS	ALS	Eurofins	ALS	ALS	ALS	Eurofins	ALS	**ALS**	**ALS**	**Eurofins**	
										Report	ES2333127	ES2333127	1029609	ES2406408	ES2430498	ES2430498	1140318	ES2504852	**ES2529708**	**ES2529708**	**1271963**	
										Duplicate	Primary	Intra-Laboratory	Inter-Laboratory		Primary	Intra-Laboratory	Inter-Laboratory		**Primary**	**Intra-Laboratory**	**Inter-Laboratory**	
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	< 0.001	<0.001	<0.001	<0.001	< 0.001	<0.001	<0.001	<0.001	< 0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	< 0.001	<0.001	**0.005**	**0.005**	**0.007**	<0.001	<0.001	<0.001	< 0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	< 0.001	<0.001	<0.001	<0.001	**0.001**	<0.001	<0.001	<0.001	< 0.001	**0.004**
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	<0.005	<0.005	< 0.005	<0.005	**0.016**	**0.015**	**0.026**	<0.005	**0.008**	**0.007**	**0.013**	**0.023**
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	***5000***	***5000***	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	***NL***	***NL***	**180**	<2	<2	<1	<2	<2	<2	<1	<2	<2	<2	<1	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	***NL***	***NL***	**80**	<2	<2	<1	<2	<2	<2	<1	<2	<2	<2	<1	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<1	<2	<2	<2	<1	<2	<2	<2	<1	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		***NL***	***NL***		<2	<2	<3	<2	<2	<2	<3	<2	<2	<2	<3	<2
	Naphthalene-MAH	µg/L	5					**16**	***NL***	***NL***	**16**	<5	<5	<10	<5	<5	<5	<10	<5	<5	<5	-	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	-	<1	<1	<1	-	<1	<1	<1	-	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						***6000***	***6000***		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						***NL***	***NL***	**600**	<100	<100	< 50	<100	**110**	<100	**260**	<100	<100	<100	<50	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	< 50	<100	**110**	<100	**260**	<100	<100	<100	<50	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	**320**	**200**	**200**	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	**430**	**200**	**460**	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	**70**	**70**	**190**	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	**330**	**250**	**300**	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<100	<50	<50	<50	<100	<50	<50	<50	<100	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<100	<50	**400**	**320**	**490**	<50	<50	<50	<100	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	<100	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	<100	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	<100	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	<100	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	<50	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	<100	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	<50	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	<50	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Acenaphthylene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Anthracene	µg/L	1					**0.01**			**0.01**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Benz(a)anthracene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<1.0	-
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	-
	Benzo[b+j]fluoranthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Benzo(k)fluoranthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Dibenz(a,h)anthracene	µg/L	1									<1.0	<1.0	<1.1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Fluoranthene	µg/L	1					**1**			**1**	<1.0	<1.0	<1.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Fluorene	µg/L	1									<1.0	<1.0	<1.3	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1.0	<1.0	<1.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1.0	<1.0	<1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1.0	<1.0	<1.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	Pyrene	µg/L	1									<1.0	<1.0	<1.7	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	<1.8	<0.5	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<1.0	-
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	<2
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	<2
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	<2
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	<2
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÂºC	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				**0.04**	**0.01**	**0.08**	**0.15**	**0.19**	**0.12**	**0.09**	**0.02**	**0.04**	**0.04**	**0.03**	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				**1.29**	**1.34**	**1.2**	**1.51**	**1.90**	**5.98**	**2.4**	**1.72**	**1.61**	**1.56**	**1.7**	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						<0.01	<0.01	< 0.02	<0.01	**0.06**	**0.06**	**0.06**	<0.01	<0.01	<0.01	< 0.02	-
	Nitrite + Nitrate as N	mg/L	0.01									**1.29**	**1.34**	**1.2**	**1.51**	**1.96**	**6.04**	**2.4**	**1.72**	**1.61**	**1.56**	**1.7**	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									**0.4**	**0.2**	< 0.2	**0.4**	**1.5**	**1.3**	**1.2**	**32.9**	**0.5**	**0.4**	**0.8**	-
	Total Nitrogen as N	mg/L	0.1									**1.7**	**1.5**	**1.2**	**1.9**	**3.5**	**7.3**	**3.6**	**34.6**	**2.1**	**2.0**	**2.5**	-
	Total Phosphorus as P	mg/L	0.01									**0.03**	**0.03**	< 0.01	<0.01	**0.04**	**0.03**	**0.01**	<0.01	**0.02**	**0.01**	**0.01**	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	*ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand*	*ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand*	Darwin Cleanaway Groundwater Investigation Criteria	Sample Location	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09
												Date	4/02/2015	1/07/2015	15/02/2016	27/07/2016	28/03/2017	23/10/2017	26/04/2018	5/02/2019	5/02/2019	5/02/2019	22/10/2019	26/02/2020
												Laboratory								ALS	ALS	Eurofins	ALS	ALS
												Report								ES1903290	ES1903290	639180	ES1933804	ES2007150
												Duplicate								Primary	Intra-Laboratory	Inter-Laboratory		
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	-	-	-	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	**0.009**	**0.002**	**0.003**	**0.002**	<0.001	**0.001**	**0.002**	**0.001**	-	-	-	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.007**	**0.005**	**0.004**	**0.009**	**0.008**	**0.06**	**0.008**	**0.03**	-	-	-	<0.005
BTEX'N	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<1	<2	<2	<2	<2	<2	-	-	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<1	<2	<2	<2	<2	<2	-	-	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<1	<2	<2	<2	<2	<2	-	-	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<3	<2	<2	<2	<2	<2	-	-	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	-	<5	<5	<5	<5	<5	-	-	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1						<1	<1	-	<1	<1	-	<1	<1	<1	<1	<1	-	-	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	-	-	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	-	-	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<50	<100	<100	<100	<100	<100	-	-	-	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<50	<100	<100	<100	<100	<100	-	-	-	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	-	-	-	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	-	-	-	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	-	<100	<100	<100	<100	<100	-	-	-	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	-	-	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	-	-	-	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	-	-	-	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<100	<50	<50	<50	<50	<50	-	-	-	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	-	-	-	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Acenaphthylene	µg/L	1									<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Anthracene	µg/L	1					**0.01**			**0.01**	<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Benz(a)anthracene	µg/L	1									<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-
	Benzo[b+j]fluoranthene	µg/L	1									<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Benzo(k)fluoranthene	µg/L	1									<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Dibenz(a,h)anthracene	µg/L	1									<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Fluoranthene	µg/L	1					**1**			**1**	<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Fluorene	µg/L	1									<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	Pyrene	µg/L	1									<1	<1	-	<1	<1	<1	<1.0	<1.0	-	-	-	-
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	-	-
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	**0.02**	<0.01	<0.01	< 0.01	-	**0.01**
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	**1.38**	**2.54**	**2.48**	**2.6**	-	**1.71**
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	<0.01	<0.01	<0.01	< 0.02	-	<0.01
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	**1.38**	**2.54**	**2.48**	**2.6**	-	**1.71**
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	**0.3**	**0.2**	**0.4**	**0.6**	-	**0.3**
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	**1.7**	**2.7**	**2.9**	**3.2**	-	**2**
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	**0.02**	<0.01	<0.01	**0.04**	-	**0.08**

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

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Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
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	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	*ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand*	*ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand*	Darwin Cleanaway Groundwater Investigation Criteria	Sample Location	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09
												Date	28/10/2020	28/10/2020	28/10/2020	23/02/2021	23/02/2021	23/02/2021	29/09/2021	29/09/2021	29/09/2021	1/03/2022	1/03/2022	1/03/2022
												Laboratory	ALS	ALS	Eurofins MGT	ALS	ALS	Eurofins	ALS	ALS	Eurofins	ALS	ALS	Eurofins
												Report	EM2019329	EM2019329	753475	ES2106464008	ES2106464014	776498	ES2134949	ES2134949	828519	ES2207245	ES2207245	867910
												Duplicate	Primary	Intra-Laboratory	Inter-Laboratory	Primary	Intra-Laboratory	Inter-Laboratory	Primary	Intra-Laboratory	Inter-Laboratory	Primary	Intra-Laboratory	Inter-Laboratory
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	-	-	<0.001	<0.001	< 0.001	<0.001	<0.001	< 0.001	<0.001	**0.001**	< 0.001	
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	-	-	<0.001	<0.001	< 0.001	<0.001	<0.001	< 0.001	<0.001	<0.001	< 0.001	
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	-	-	<0.001	<0.001	< 0.001	<0.001	<0.001	< 0.001	<0.001	<0.001	< 0.001	
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.015**	-	-	<0.005	<0.005	< 0.005	**0.011**	**0.012**	**0.017**	**0.008**	**0.005**	**0.009**	
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	-	-	<1	<1	< 1	<1	<1	<1	<1	<1	<1	
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	-	-	<2	<2	< 1	<2	<2	<1	<2	<2	<1	
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	-	-	<2	<2	< 1	<2	<2	<2	<2	<2	<1	
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	-	-	<2	<2	< 2	<2	<2	<1	<2	<2	<2	
	Xylene (o)	µg/L	2					**350**			**350**	<2	-	-	<2	<2	< 1	<2	<2	<1	<2	<2	<1	
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	-	-	<2	<2	< 3	<2	<2	<3	<2	<2	<3	
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	-	-	<5	<5	-	<5	<5	<10	<5	<5	<10	
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	-	-	<1	<1	-	<1	<1	-	<1	<1	-	
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	-	-	<20	<20	< 20	<20	<20	<20	<20	<20	<20	
	C6 - C10 Fraction	µg/L	20									<20	-	-	<20	<20	< 20	<20	<20	<20	<20	<20	<20	
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	-	-	<100	<100	< 50	<100	<100	<50	<100	<100	<50	
	>C10 - C16 Fraction	µg/L	100								**600**	<100	-	-	<100	<100	< 50	<100	<100	<50	<100	<100	<50	
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	-	-	<100	<100	< 100	**330**	<100	<100	<100	<100	<100	
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	-	-	<100	<100	< 100	<100	<100	<100	<100	<100	<100	
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	-	-	<100	<100	< 100	**330**	<100	<100	<100	<100	<100	
	C6 - C 9 Fraction	µg/L	20									<20	-	-	<20	<20	< 20	<20	<20	<20	<20	<20	<20	
	C10 - C14 Fraction	µg/L	50								**600**	<50	-	-	<50	<50	< 50	<50	<50	<50	<50	<50	<50	
	C15 - C28 Fraction	µg/L	100								**600**	<100	-	-	<100	<100	< 100	**210**	<100	<100	<100	<100	<100	
	C29 - C36 Fraction	µg/L	50								**600**	<50	-	-	<50	<50	< 100	**180**	<50	<100	<50	<50	<100	
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	-	-	<50	<50	< 100	**390**	<50	<100	<50	<50	<100	
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	<100	-	-	-	-	-	
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	<100	-	-	-	-	-	
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	<100	-	-	-	-	-	
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	<100	-	-	-	-	-	
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	<50	-	-	-	-	-	
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	<100	-	-	-	-	-	
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	<50	-	-	-	-	-	
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	<50	-	-	-	-	-	
PAH	Acenaphthene	µg/L	1									-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Acenaphthylene	µg/L	1									-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Anthracene	µg/L	1					**0.01**			**0.01**	-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Benz(a)anthracene	µg/L	1									-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	-	-	-	<0.5	<0.5	<1	<0.5	-	<1	<0.5	<0.5	<1	
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									-	-	-	<0.5	<0.5	-	<0.5	-	-	<0.5	<0.5	-	
	Benzo[b+j]fluoranthene	µg/L	1									-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-	
	Benzo(g,h,i)perylene	µg/L	1									-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Benzo(k)fluoranthene	µg/L	1									-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-	
	Chrysene	µg/L	1									-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Dibenz(a,h)anthracene	µg/L	1									-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Fluoranthene	µg/L	1					**1**			**1**	-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Fluorene	µg/L	1									-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Indeno(1,2,3-c,d)pyrene	µg/L	1									-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Naphthalene-PAH	µg/L	1					**16**			**16**	-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Phenanthrene	µg/L	1					**0.6**			**0.6**	-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	Pyrene	µg/L	1									-	-	-	<1	<1	<1	<1.0	-	<1	<1.0	<1.0	<1	
	PAHs (Sum of total) - Lab calc	µg/L	0.5									-	-	-	<0.5	<0.5	<1	<0.5	-	<1	<0.5	<0.5	<1	
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-	
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-	
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-	
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-	
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-	
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-	
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-	
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-	
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-	
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-	
Cations & Anions	Total Dissolved Solids @180ÃºC	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-	
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-	
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	**148**	**147**	**110**	-	-	-	
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-	
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-	
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-	
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-	
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-	
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-	
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-	
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-	
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-	
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-	
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				<0.01	<0.01	**0.09**	<0.01	<0.01	<0.01	**0.02**	**0.01**	< 0.01	**0.06**	**0.02**	< 0.01	
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				**2.61**	**1.49**	**1.60**	**2.29**	**2.35**	**2.30**	**1.68**	**1.67**	**1.60**	**2.80**	**2.81**	-	
	Nitrite as N	mg/L	0.01	**0.9**		**9**						<0.01	<0.01	< 0.02	<0.01	<0.01	< 0.02	<0.01	<0.01	< 0.02	<0.01	<0.01	-	
	Nitrite + Nitrate as N	mg/L	0.01									**2.61**	**1.49**	-	**2.29**	**2.35**	**2.3**	**1.68**	**1.67**	-	**2.8**	**2.81**	**2.5**	
	Total Kjeldahl Nitrogen as N	mg/L	0.1									**0.3**	**0.9**	**0.5**	**0.1**	<0.1	**1.7**	**0.3**	**0.3**	< 0.2	**0.6**	**0.4**	< 0.2	
	Total Nitrogen as N	mg/L	0.1									**2.9**	**2.4**	**2.1**	**2.4**	**2.4**	**4**	**2**	**2**	**1.7**	**3.4**	**3.2**	**2.5**	
	Total Phosphorus as P	mg/L	0.01									**0.04**	**0.14**	**1.1**	<0.01	<0.01	**0.01**	<0.01	**0.01**	< 0.01	<0.01	**0.01**	< 0.05	

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand	ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand	Darwin Cleanaway Groundwater Investigation Criteria	Sample Location	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09	MW09	DUP1
												Date	4/10/2022	4/10/2022	5/10/2022	7/03/2023	7/03/2023	7/03/2023	26/09/2023	27/02/2024	27/02/2024	17/09/2024	19/02/2025	19/02/2025
												Laboratory	ALS	ALS	Eurofins	ALS	ALS	Eurofins	ALS	ALS	ALS	ALS	ALS	ALS
												Report	ES2235364	ES2235364	928810	ES2307495	ES2307495	969554	ES2333127	ES2406408	ES2406408	ES2430498	ES2504852	ES2504852
												Duplicate		Primary	Secondary	Primary	Intra-Laboratory	Inter-Laboratory		Primary	Intra-Labratory		Primary	Intra-Laboratory
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**		<0.001	<0.001	< 0.001	<0.001	**0.002**	< 0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**		**0.002**	**0.002**	**0.002**	<0.001	**0.001**	**0.002**	<0.001	<0.001	<0.001	**0.007**	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**		<0.001	<0.001	< 0.001	<0.001	<0.001	< 0.001	<0.001	<0.001	<0.001	**0.001**	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**		**0.019**	**0.019**	**0.019**	**0.009**	**0.009**	**0.009**	**0.007**	<0.005	<0.005	**0.040**	**0.007**	**0.008**
BTEX'N	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**		<2	<2	<1	<2	<2	<1	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**		<2	<2	<1	<2	<2	<1	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**		<2	<2	<1	<2	<2	<1	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*			<2	<2	<3	<2	<2	<3	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**		<5	<5	<1	<5	<5	<10	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1										<1	<1	-	<1	<1	-	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20										<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**		<100	<100	<50	<100	<100	<50	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**		<100	<100	<50	<100	<100	<50	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	**110**	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	**110**	<100	<100
	C6 - C 9 Fraction	µg/L	20										<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	**140**	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**		<50	<50	<100	<50	<50	<100	<50	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**		<50	<50	<100	<50	<50	<100	<50	<50	<50	**140**	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	<100	-	-
	>C16 - C34 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	<100	-	-
	>C34 - C40 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	<100	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	<100	-	-
	C10 - C14 Fraction	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	<50	-	-
	C15 - C28 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	<100	-	-
	C29 - C36 Fraction	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	<50	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	<50	-	-
PAH	Acenaphthene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Acenaphthylene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Anthracene	µg/L	1					**0.01**			**0.01**		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benz(a)anthracene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**		<0.5	<0.5	<1.0	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5										<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(e)pyrene	µg/L	0.1										<1.0	<1.0	<1.0	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(k)fluoranthene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2										<1.0	<1.0	<1.0	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Dibenz(a,h)anthracene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Fluoranthene	µg/L	1					**1**			**1**		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Fluorene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Indeno(1,2,3-c,d)pyrene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Naphthalene-PAH	µg/L	1					**16**			**16**		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Phenanthrene	µg/L	1					**0.6**			**0.6**		<0.5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Pyrene	µg/L	1										-	-	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	PAHs (Sum of total) - Lab calc	µg/L	0.5										-	-	-	<0.5	<0.5	<1.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2										-	-	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2										-	-	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2										-	-	-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**						-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**						-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5										-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**						-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**						-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**						-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5										-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01										**0.15**	**0.18**	**0.12**	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01										**1.50**	**1.50**	**1.50**	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01										<0.01	<0.01	<0.02	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**					**1.50**	**1.50**	**1.60**	**0.36**	**0.15**	< 0.01	**0.01**	**0.29**	**0.04**	**0.07**	**0.02**	**0.05**
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**					**0.4**	**0.4**	**0.5**	**2.74**	**2.71**	**3.1**	**1.30**	**2.22**	**2.23**	**2.18**	**2.95**	**2.81**
	Nitrite as N	mg/L	0.01	**0.9**		**9**							**1.9**	**1.9**	**2.1**	<0.01	<0.01	< 0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Nitrite + Nitrate as N	mg/L	0.01										**0.03**	**0.03**	**0.04**	**2.74**	**2.71**	**3.1**	**1.3**	**2.22**	**2.23**	**2.18**	**2.95**	**2.81**
	Total Kjeldahl Nitrogen as N	mg/L	0.1										-	-	<1	**0.6**	**0.3**	**0.4**	**0.2**	**0.6**	**0.3**	**1.2**	**0.4**	**0.4**
	Total Nitrogen as N	mg/L	0.1										-	-	-	**3.3**	**3**	**3.5**	**1.5**	**2.8**	**2.5**	**3.4**	**3.4**	**3.2**
	Total Phosphorus as P	mg/L	0.01										-	-	<2	<0.01	<0.01	**0.08**	**0.03**	<0.01	**0.02**	**0.04**	<0.01	<0.01

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

										Sample Location	DUP1	**MW09**	MW10	MW10	MW10	MW10	MW10	MW10	MW10	MW10	MW10	MW10
										Date	19/02/2025	**23/09/2025**	2/04/2014	15/02/2016	27/07/2016	28/03/2017	23/10/2017	26/04/2018	5/02/2019	5/02/2019	5/02/2019	27/02/2020
										Laboratory	Eurofins	**ALS**							ALS	ALS	Eurofins	ALS
										Report	16/08/5157	**ES2529708**							ES1903290	ES1903290	639180	ES2007151
										Duplicate	Inter-Laboratory								Primary	Intra-Laboratory	Inter-Laboratory	
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	< 0.001	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	< 0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	< 0.001	<0.001	**0.002**	**0.008**	<0.001	<0.001	<0.001	**0.002**	<0.001	<0.001	< 0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	< 0.001	<0.001	**0.008**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	< 0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.009**	**0.010**	**0.211**	**0.006**	**0.008**	**0.005**	**0.011**	**0.008**	**0.008**	**0.008**	**0.008**	**0.011**
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<1	<2	**6**	<1	<2	<2	<2	<2	<2	<2	<1	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<1	<2	**2**	<1	<2	<2	<2	<2	<2	<2	<1	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	**12**	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<1	<2	**5**	<1	<2	<2	<2	<2	<2	<2	<1	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<3	<2	**17**	<3	<2	<2	<2	<2	<2	<2	<3	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<10	<5	<5	<10	<5	<5	<5	<5	<5	<5	-	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									-	<1	**25**	<1	<1	<1	<1	<1	<1	<1	-	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<50	<100	**40**	<50	<100	<100	<100	<100	<100	<100	<50	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<50	<100	<100	<50	<100	<100	<100	<100	<100	<100	<50	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	-	<100	<100	<100	<100	<100	<100	-	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	**40**	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<100	<50	<50	<100	<50	<50	<50	<50	<50	<50	<100	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<100	<50	<50	<100	<50	<50	<50	<50	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1.0	<1.0	<2	-	<1	<1	<1	<1	<1	<1	<1	-
	Acenaphthylene	µg/L	1									<1.0	<1.0	<2	-	<1	<1	<1	<1	<1	<1	<1	-
	Anthracene	µg/L	1					**0.01**			**0.01**	<1.0	<1.0	<2	-	<1	<1	<1	<1	<1	<1	<1	-
	Benz(a)anthracene	µg/L	1									<1.0	<1.0	<2	-	<1	<1	<1	<1	<1	<1	<1	-
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<1.0	<0.5	<2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1	-
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									-	<0.5	<2	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-
	Benzo[b+j]fluoranthene	µg/L	1									<1.0	<1.0	-	-	<1	<1	<1	<1	<1	<1	<1	-
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1.0	<1.0	<2	-	<1	<1	<1	<1	<1	<1	<1	-
	Benzo(k)fluoranthene	µg/L	1									<1.0	<1.0	-	-	<1	<1	<1	<1	<1	<1	<1	-
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	<4	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1.0	<1.0	<2	-	<1	<1	<1	<1	<1	<1	<1	-
	Dibenz(a,h)anthracene	µg/L	1									<1.0	<1.0	<2	-	<1	<1	<1	<1	<1	<1	<1	-
	Fluoranthene	µg/L	1					**1**			**1**	<1.0	<1.0	<2	-	<1	<1	<1	<1	<1	<1	<1	-
	Fluorene	µg/L	1									<1.0	<1.0	<2	-	<1	<1	<1	<1	<1	<1	<1	-
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1.0	<1.0	<2	-	<1	<1	<1	<1	<1	<1	<1	-
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1.0	<1.0	<2	-	<1	<1	<1	<1	<1	<1	<1	-
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1.0	<1.0	<2	-	<1	<1	<1	<1	<1	<1	<1	-
	Pyrene	µg/L	1									<1.0	<1.0	<2	-	<1	<1	<1	<1	<1	<1	<1	-
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<1.0	<0.5	<2	-	<0,5	<0,5	<0.5	<0.5	<0.5	<0.5	<1	-
	2-methylnaphthalene	µg/L	2									-	-	<2	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	<2	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	<2	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	<2	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÂºC	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				**0.08**	**0.02**	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				**3.60**	**1.83**	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						< 0.02	<0.01	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									**3.6**	**1.83**	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									**0.4**	**0.4**	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									**4**	**2.2**	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									< 0.01	<0.01	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand	ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand	Darwin Cleanaway Groundwater Investigation Criteria	Sample Location	MW10	MW10	MW10	MW10	MW10	MW10	MW10	MW10	MW10	MW10	MW11
												Date	28/10/2020	23/02/2021	28/09/2021	1/03/2022	4/10/2022	7/03/2023	25/09/2023	27/02/2024	17/09/2024	19/02/2025	25/08/2014
												Laboratory	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	
												Report	EM2019329	ES2106464009	ES2134949	ES2207245	ES2235364	ES2307495	ES2333127	ES2406408	ES2430498	ES2504852	
												Duplicate											
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.002**	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.003**	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**		**0.009**	**0.006**	**0.005**	**0.007**	**0.006**	<0.005	<0.005	<0.005	<0.005	<0.005	**0.007**
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1										<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20										<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20										<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1										-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Acenaphthylene	µg/L	1										-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Anthracene	µg/L	1					**0.01**			**0.01**		-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Benz(a)anthracene	µg/L	1										-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**		-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5										-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05
	Benzo[b+j]fluoranthene	µg/L	1										-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Benzo(e)pyrene	µg/L	0.1										-	-	-	-	<1.0	-	-	-	-	-	<0.1
	Benzo(g,h,i)perylene	µg/L	1										-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Benzo(k)fluoranthene	µg/L	1										-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2										-	-	-	-	<1.0	-	-	-	-	-	-
	Chrysene	µg/L	1										-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Dibenz(a,h)anthracene	µg/L	1										-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Fluoranthene	µg/L	1					**1**			**1**		-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Fluorene	µg/L	1										-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Indeno(1,2,3-c,d)pyrene	µg/L	1										-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Naphthalene-PAH	µg/L	1					**16**			**16**		-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Phenanthrene	µg/L	1					**0.6**			**0.6**		-	<1	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	Pyrene	µg/L	1										-	<1	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1
	PAHs (Sum of total) - Lab calc	µg/L	0.5										-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05
	2-methylnaphthalene	µg/L	2										-	-	-	-	-	-	-	-	-	-	<0.1
	3-methylcholanthrene	µg/L	2										-	-	-	-	-	-	-	-	-	-	<0.1
	7,12-dimethylbenz(a)anthracene	µg/L	2										-	-	-	-	-	-	-	-	-	-	<0.1
	Coronene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	<0.1
	N-2-Fluorenyl Acetamide	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	<0.1
	Perylene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	<0.1
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**						-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**						-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5										-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**						-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**						-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**						-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5										-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01										-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01										-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01										-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**					-	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**					-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**							-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01										-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1										-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1										-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01										-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand	ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand	Darwin Cleanaway Groundwater Investigation Criteria	Sample Location	MW11	MW11	MW11	MW11	MW11	MW11	MW11	MW11	MW11	MW11	MW11	MW11
												Date	3/02/2015	1/07/2015	15/02/2016	28/03/2017	24/10/2017	6/02/2019	22/10/2019	25/02/2020	27/10/2020	24/02/2021	28/09/2021	2/03/2022
												Laboratory						ALS	ALS	ALS	ALS	ALS	ALS	ALS
												Report						ES1903574	ES1933804	ES2007150	EM2019315	ES2106464017	ES2134949	ES2207245
												Duplicate												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	**0.001**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	**0.005**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.037**	<0.005	**0.003**	**0.006**	**0.005**	**0.007**	<0.005	**0.006**	**0.008**	<0.005	**0.006**	<0.005
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<1	<2	<2	<2	<2	**13**	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<3	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<10	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	-	<1	<1	<1	<1	**13**	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<50	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<50	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	-	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<100	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<100	<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Acenaphthylene	µg/L	1									<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Anthracene	µg/L	1					**0.01**			**0.01**	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Benz(a)anthracene	µg/L	1									<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Benzo(k)fluoranthene	µg/L	1									<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Dibenz(a,h)anthracene	µg/L	1									<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Fluoranthene	µg/L	1					**1**			**1**	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Fluorene	µg/L	1									<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Pyrene	µg/L	1									<1	<1	-	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÂºC	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

										Sample Location		MW11	MW11	MW11	MW11	MW11	MW11	**MW11**	MW12	MW12	MW12	MW12	MW12
										Date		4/10/2022	7/03/2023	26/09/2023	27/02/2024	17/09/2024	20/02/2025	**23/09/2025**	25/08/2014	3/02/2015	1/07/2015	15/02/2016	27/07/2016
										Laboratory		ALS	ALS	ALS	ALS	ALS	ALS	**ALS**					
										Report		ES2235364	ES2307495	ES2333127	ES2406408	ES2430498	ES2504852	**ES2529708**					
										Duplicate													
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.005**	<0.001	<0.001	**0.002**	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.003**	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.002**	<0.001	<0.001	**0.005**	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.02**	<0.005	<0.005	<0.005	**0.070**	**0.007**	<0.005	**0.007**	<0.005	<0.005	**0.008**	**0.006**
BTEX'N	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<1	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<1	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<1	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<3	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<10	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<50	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	-	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<100	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<100	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Acenaphthylene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Anthracene	µg/L	1					**0.01**			**0.01**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Benz(a)anthracene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	-	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	-	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Benzo(e)pyrene	µg/L	0.1									<1.0	-	-	-	-	-	-	<0.1	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Benzo(k)fluoranthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									<1.0	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Dibenz(a,h)anthracene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Fluoranthene	µg/L	1					**1**			**1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Fluorene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1										<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	Pyrene	µg/L	1									-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.1	<1	<1	-	<1
	PAHs (Sum of total) - Lab calc	µg/L	0.5									-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.05	<0.5	<0.5	-	<0.5
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	<0.1	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	<0.1	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	<0.1	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	<0.1	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	<0.1	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	<0.1	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

										Sample Location			MW12	MW12	MW12	MW12	MW12	MW12	MW12	MW12	MW12	MW12	MW12	MW12
										Date			30/03/2017	24/10/2017	24/04/2018	8/10/2018	6/02/2019	22/10/2019	25/02/2020	27/10/2020	28/09/2021	6/10/2022	28/09/2023	17/09/2024
										Laboratory							ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS
										Report							ES1903574	ES1933804	ES2007150	EM2019315/ EM2021275	ES2134949	ES2235715	ES2333333	ES2430498
										Duplicate														
	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	*ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand*	*ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand*	Darwin Cleanaway Groundwater Investigation Criteria													
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	**0.005**	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.006**	**0.008**	**0.009**	<0.005	<0.005	<0.005	**0.008**	**0.011**	**0.01**	<0.005	<0.005	**0.010**
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	**14**	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	<1	<1	<1	<1	**14**	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	**120**	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	**120**	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	**100**	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	**100**	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	<100	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	<100	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	<100	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	<100	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	<50	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	<100	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	<50	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	<50	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0	<1.0
	Acenaphthylene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0	<1.0
	Anthracene	µg/L	1					**0.01**			**0.01**	<1	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0	<1.0
	Benz(a)anthracene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0	<1.0
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0	<1.0
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	<1.0	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0	<1.0
	Benzo(k)fluoranthene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0	<1.0
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	-	-	<1.0	-	-
	Chrysene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0	<1.0
	Dibenz(a,h)anthracene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0	<1.0
	Fluoranthene	µg/L	1					**1**			**1**	<1	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0	<1.0
	Fluorene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0	<1.0
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0	<1.0
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0	<1.0
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1	<1	<1	<1	<1	<1	<1	-	<1.0	<0.5	<1.0	<1.0
	Pyrene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	-	<1.0	-	<1.0	<1.0
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	-	<0.5	<0.5
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÅºC	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

										Sample Location		MW12	**MW12**	MW13	MW13	MW13	MW13	MW13	MW13	MW13	MW13	MW13	MW13
										Date		20/02/2025	**24/09/2025**	25/08/2014	3/02/2015	1/07/2015	15/02/2016	27/07/2016	30/03/2017	25/10/2017	24/04/2018	8/10/2018	6/02/2019
										Laboratory		ALS	**ALS**										ALS
										Report		ES2504852	**ES2529915**										ES1903574
										Duplicate													
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	**0.003**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	<0.001	<0.001	**0.001**	<0.001	<0.001	<0.001	<0.001	**0.002**	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	**0.004**	<0.001	**0.004**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.024**	<0.005	<0.005	<0.005	<0.005	**0.003**	<0.005	**0.008**	**0.006**	**0.011**	<0.005	**0.142**
BTEX	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	**2**	<1	<1	<1	**2**	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<1	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<2	<2	<1	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<1	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<2	<2	<3	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<10	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	**2**	<1	<1	-	**2**	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	**120**	<100	<100	<50	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	**120**	<100	<100	<50	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	**120**	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	**240**	<100	<100	-	<100	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	**90**	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	**140**	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<100	<50	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	**230**	<50	<50	<100	<50	<50	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Acenaphthylene	µg/L	1									<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Anthracene	µg/L	1					**0.01**			**0.01**	<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Benz(a)anthracene	µg/L	1									<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.05	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.05	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Benzo(e)pyrene	µg/L	0.1									-	-	<0.1	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Benzo(k)fluoranthene	µg/L	1									<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Dibenz(a,h)anthracene	µg/L	1									<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Fluoranthene	µg/L	1					**1**			**1**	<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Fluorene	µg/L	1									<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	Pyrene	µg/L	1									<1.0	<1.0	<0.1	<1	<1	-	<1	<1	<1	<1	<1	<1
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	**1.7**	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2									-	-	<0.1	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	<0.1	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	<0.1	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	<0.1	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	<0.1	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	<0.1	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÅºC	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

										Sample Location	MW13	MW13	MW13	MW13	MW13	MW13	**MW13**	MW16	MW16	MW16	MW16	MW16
										Date	22/10/2019	28/09/2021	4/10/2022	28/09/2023	17/09/2024	20/02/2025	**24/09/2025**	11/10/2016	29/03/2017	25/10/2017	24/04/2018	1/10/2018
										Laboratory	ALS	ALS	ALS	ALS	ALS	ALS	**ALS**					
										Report	ES1933804	ES2134949	ES2235364	ES2333333	ES2430498	ES2504852	**ES2529915**					
										Duplicate												
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**											
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.002**	**0.002**	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	<0.005	**0.007**	<0.005	<0.005	<0.005	<0.005	<0.005	**0.545**	**0.22**	**0.25**	<0.005	<0.005
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Acenaphthylene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Anthracene	µg/L	1					**0.01**			**0.01**	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benz(a)anthracene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benzo(e)pyrene	µg/L	0.1									-	-	<1.0	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benzo(k)fluoranthene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	<1.0	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Dibenz(a,h)anthracene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Fluoranthene	µg/L	1					**1**			**1**	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Fluorene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Pyrene	µg/L	1									<1	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	<2	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	<2	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	<2	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	<1	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	**15**	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	<1	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	**15**	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÂºC	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	**2**	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	**2**	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	**2**	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	**40**	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	**59**	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	**4**	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	**2.06**	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	**2.05**	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	**0.23**	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

											Sample Location		MW16	MW16	MW16	MW16	MW16	MW16	MW16	MW16	MW16	MW16	MW16	MW16
											Date		5/02/2019	21/10/2019	26/02/2020	27/10/2020	22/02/2021	28/09/2021	1/03/2022	4/10/2022	9/03/2023	26/09/2023	27/02/2024	19/09/2024
											Laboratory		ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS
											Report		ES1903290	ES1933804	ES2007150	EM2019315	ES2106464001	ES2134949	ES2207245	ES2235364	ES2307811	ES2333127	ES2406408	ES2430709
											Duplicate													
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**													
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**		<0.001	<0.001	**0.001**	<0.001	<0.001	<0.001	<0.001	<0.001	**0.001**	**0.001**	<0.001	**0.001**
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.004**
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**		<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**		**0.278**	<0.005	**0.2**	**0.239**	**0.284**	**0.143**	**0.2**	**0.382**	**0.113**	**0.055**	**0.178**	**0.318**
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1										<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20										<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**250**
	>C34 - C40 Fraction (F4)	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**250**
	C6 - C 9 Fraction	µg/L	20										<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**200**
	C29 - C36 Fraction	µg/L	50								**600**		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	**110**
	C10 - C36 (Sum of Total)	µg/L	50								**600**		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	**310**
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	<100
	>C16 - C34 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	<100
	>C34 - C40 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	<100
	>C10 - C40 Fraction (sum)	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	<100
	C10 - C14 Fraction	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	-	-	<50
	C15 - C28 Fraction	µg/L	100								**600**		-	-	-	-	-	-	-	-	-	-	-	<100
	C29 - C36 Fraction	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	-	-	<50
	C10 - C36 Fraction (sum)	µg/L	50								**600**		-	-	-	-	-	-	-	-	-	-	-	<50
PAH	Acenaphthene	µg/L	1										<1	<1	-	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Acenaphthylene	µg/L	1										<1	<1	-	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Anthracene	µg/L	1					**0.01**			**0.01**		<1	<1	-	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benz(a)anthracene	µg/L	1										<1	<1	-	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**		<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5										<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1										<1	<1	-	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(e)pyrene	µg/L	0.1										-	-	-	-	-	-	-	<1.0	<1.0	-	-	-
	Benzo(g,h,i)perylene	µg/L	1										<1	<1	-	<1	<1	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0
	Benzo(k)fluoranthene	µg/L	1										<1	<1	-	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2										-	-	-	-	-	-	-	<1.0	-	-	-	-
	Chrysene	µg/L	1										<1	<1	-	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Dibenz(a,h)anthracene	µg/L	1										<1	<1	-	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Fluoranthene	µg/L	1					**1**			**1**		<1	<1	-	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Fluorene	µg/L	1										<1	<1	-	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Indeno(1,2,3-c,d)pyrene	µg/L	1										<1	<1	-	<1	<1	<1.0	<1.0		<1.0	<1.0	<1.0	<1.0
	Naphthalene-PAH	µg/L	1					**16**			**16**		<1	<1	-	<1	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Phenanthrene	µg/L	1					**0.6**			**0.6**		<1	<1	-	<1	<1	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
	Pyrene	µg/L	1										<1	<1	-	<1	<1	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0
	PAHs (Sum of total) - Lab calc	µg/L	0.5										<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2										-	-	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2										-	-	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2										-	-	-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1										-	-	<1	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1										-	-	**13**	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1										-	-	<1	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1										-	-	**13**	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÂºC	mg/L	10		*600*		**600**						-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**						-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5										-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1										-	-	**3**	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1										-	-	**1**	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1										-	-	**2**	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**						-	-	**24**	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**						-	-	**35**	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**						-	-	**4**	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5										-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01										-	-	**1.33**	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01										-	-	**1.33**	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01										-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**					-	-	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**					-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**							-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01										-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01										-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

	Sample Location									MW16	**MW16**	MW17	MW17	MW17	MW17	MW17	MW17	MW17	MW17	MW17	MW17R
	Date									19/02/2025	**23/09/2025**	11/10/2016	25/10/2017	26/04/2018	8/10/2018	22/10/2019	27/10/2020	9/03/2023	26/09/2023	19/09/2024	19/02/2025
	Laboratory									ALS	**ALS**					ALS	ALS	ALS	ALS	ALS	ALS
	Report									ES2504852	**ES2529708**					ES1933804	EM2019315/ EM2021275	ES2307811	ES2333127	ES2504852	ES2504852
	Duplicate																				
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**											
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	**0.001**	<0.001	**0.002**	<0.001	**0.001**	<0.001	<0.001	**0.002**	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.001**	<0.001	<0.001	**0.005**	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.161**	**0.107**	**0.248**	**0.154**	**0.026**	**0.026**	**0.015**	**0.064**	**0.049**	**0.054**	**0.095**	**0.064**
BTEX	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	**200**	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	**200**	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	**130**	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	**100**	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	**230**	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	<100	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	<100	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	<100	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	<100	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	<50	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	<100	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	<50	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	<50	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Acenaphthylene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Anthracene	µg/L	1					**0.01**			**0.01**	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Benz(a)anthracene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1.0	<1.0	-	-	-	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(e)pyrene	µg/L	0.1									-	-	<1	<1	<1	<1	<1	-	<1.0	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	-	<1.0	<1.0	<1.0
	Benzo(k)fluoranthene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Dibenz(a,h)anthracene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Fluoranthene	µg/L	1					**1**			**1**	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Fluorene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Pyrene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2									-	-	<2	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	<2	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	<2	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	<1	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	**2**	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	<1	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	**2**	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÂºC	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	**3**	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	**1**	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	**2**	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	**33**	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	**52**	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	**4**	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	**1.72**	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	**1.59**	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	**0.22**	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

										Sample Location		MW17R	MW18	MW18	MW18	MW18	MW18	MW18	MW18	MW18	MW18	MW18	MW18
										Date		23/09/2025	11/10/2016	25/10/2017	15/05/2018	1/10/2018	6/02/2019	21/10/2019	25/02/2020	27/10/2020	22/02/2021	28/09/2021	28/02/2022
										Laboratory		ALS					ALS	ALS	ALS	ALS	ALS	ALS	ALS
										Report		ES2529708					ES1903574	ES1933804	ES2007150	EM2019315/ EM2021275	ES2106464002	ES2134949	ES2207245
										Duplicate													
	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	*ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand*	*ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand*	Darwin Cleanaway Groundwater Investigation Criteria												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	**0.002**	<0.001	<0.001	<0.001	**0.001**	<0.001	<0.001	<0.001	**0.001**	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.034**	**0.02**	**0.015**	**0.017**	**0.014**	**0.014**	**0.01**	**0.013**	**0.02**	**0.012**	**0.095**	**0.009**
BTEX'N	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	**2**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	**4**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	**11**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	**8**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	**19**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	**25**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	**40**	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	**60**	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	**1080**	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	**470**	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	**1550**	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	**40**	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	**570**	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	**720**	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	**1290**	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	<100	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	**1000**	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	**400**	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	**1400**	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	<50	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	**490**	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	**680**	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	**1170**	-	-	-
PAH	Acenaphthene	µg/L	1									<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Acenaphthylene	µg/L	1									<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Anthracene	µg/L	1					**0.01**			**0.01**	<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Benz(a)anthracene	µg/L	1									<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Benzo(k)fluoranthene	µg/L	1									<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Dibenz(a,h)anthracene	µg/L	1									<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Fluoranthene	µg/L	1					**1**			**1**	<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Fluorene	µg/L	1									<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	Pyrene	µg/L	1									<1.0	<1	<1	<1	<1	<1	<1	<1	-	<1	<1.0	<1.0
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2									-	<2	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	<2	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	<2	-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	<1	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	<1	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	<1	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	<1	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	<1	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	<1	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	<1	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	**11**	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	**13**	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	**20**	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	**0.48**	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	**0.78**	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	**0.06**	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand	ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand	Darwin Cleanaway Groundwater Investigation Criteria	MW18	MW18	MW18	MW18	MW18	MW18	MW18	MW19	MW19	MW19	MW19	MW19
	Sample Location											MW18	MW18	MW18	MW18	MW18	MW18	**MW18**	MW19	MW19	MW19	MW19	MW19
	Date											5/10/2022	9/03/2023	26/09/2023	27/02/2024	26/09/2024	19/02/2025	**24/09/2025**	11/10/2016	11/04/2017	24/10/2017	15/05/2018	1/10/2018
	Laboratory											ALS	ALS	ALS	ALS	ALS	ALS	**ALS**					
	Report											ES2235715	ES2307811	ES2333127	ES2406408	ES2333127	ES2504852	**ES2529915**					
	Duplicate																						
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	<0.001	**0.003**	<0.001	<0.001	<0.001	<0.001	<0.001	**0.001**	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	<0.005	<0.005	**0.014**	<0.005	**0.021**	**0.009**	**0.008**	**0.015**	**0.01**	**0.007**	**0.011**	**0.007**
BTEX/N	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<1	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<2	<2	<2	<2	<1	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<2	<2	<1	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<2	<2	<2	<2	<3	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<100	<100	<100	<100	<50	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<50	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<100	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Acenaphthylene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Anthracene	µg/L	1					**0.01**			**0.01**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benz(a)anthracene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benzo(e)pyrene	µg/L	0.1									<1.0	<1.0	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benzo(k)fluoranthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									<1.0	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Dibenz(a,h)anthracene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Fluoranthene	µg/L	1					**1**			**1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Fluorene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Pyrene	µg/L	1									-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	PAHs (Sum of total) - Lab calc	µg/L	0.5									-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	<2	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	<2	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	<2	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	<1	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	**3**	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	<1	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	**3**	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÂºC	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	<1	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	<1	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	<1	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	**13**	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	**14**	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	<1	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	**0.56**	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	**0.45**	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	**0.07**	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

											Sample Location	MW19	MW19	MW19	MW19	MW19	MW19	MW19	MW19	MW19	MW19	MW19	MW19
											Date	6/02/2019	21/10/2019	25/02/2020	27/10/2020	22/02/2021	28/09/2021	28/02/2022	4/10/2022	9/03/2023	26/09/2023	27/02/2024	17/09/2024
											Laboratory	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS
											Report	ES1903574	ES1933804	ES2007150	EM2019315	ES2106464003	ES2134949	ES2207245	ES2235364	ES2307811	ES2333127	ES2406408	ES2430498
											Duplicate												
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.01**	<0.005	**0.007**	**0.008**	**0.011**	**0.007**	<0.005	<0.005	<0.005	**0.006**	<0.005	<0.005
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1	<1	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Acenaphthylene	µg/L	1									<1	<1	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Anthracene	µg/L	1					**0.01**			**0.01**	<1	<1	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benz(a)anthracene	µg/L	1									<1	<1	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1	<1	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	<1.0	<1.0	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1	<1	<1	-	<1	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0
	Benzo(k)fluoranthene	µg/L	1									<1	<1	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	<1.0	-	-	-	-
	Chrysene	µg/L	1									<1	<1	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Dibenz(a,h)anthracene	µg/L	1									<1	<1	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Fluoranthene	µg/L	1					**1**			**1**	<1	<1	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Fluorene	µg/L	1									<1	<1	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1	<1	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1	<1	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1	<1	<1	-	<1	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0
	Pyrene	µg/L	1									<1	<1	<1	-	<1	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

	Sample Location									MW19	**MW19**	MW20	MW20	MW20	MW20	MW20	MW20	MW20	MW20	MW20	MW20
	Date									19/02/2025	**24/09/2025**	11/10/2016	11/04/2017	24/10/2017	15/05/2018	8/10/2018	6/02/2019	21/10/2019	25/02/2020	27/10/2020	22/02/2021
	Laboratory									ALS	**ALS**						ALS	ALS	ALS	ALS	ALS
	Report									ES2504852	**ES2529915**						ES1903574	ES1933804	ES2007150	EM2019315/ EM2021275	ES2106464004
	Duplicate																				
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**											
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	**0.003**	<0.001	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.009**	<0.005	**0.013**	**0.009**	**0.01**	<0.005	<0.005	**0.007**	<0.005	**0.006**	**0.008**	<0.005
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**210**	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**210**	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**120**	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	**110**	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	**230**	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	<100	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	<100	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	<100	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	<100	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	<50	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	<100	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	<50	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	<50	-
PAH	Acenaphthene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Acenaphthylene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Anthracene	µg/L	1					**0.01**			**0.01**	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Benz(a)anthracene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Benzo(k)fluoranthene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Dibenz(a,h)anthracene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Fluoranthene	µg/L	1					**1**			**1**	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Fluorene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	Pyrene	µg/L	1									<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1	<1	-	<1
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
	2-methylnaphthalene	µg/L	2									-	-	<2	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	<2	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	<2	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	<1	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	**2**	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	<1	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	**2**	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	**7**	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	<1	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	<1	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	<1	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	**6**	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	**7**	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	<1	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	**0.26**	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	**0.24**	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	**0.06**	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

										Sample Location	MW20	MW20	MW20	MW20	MW20	MW20	MW20	MW20	**MW20**	MW21	MW21	MW21
										Date	28/09/2021	28/02/2022	4/10/2022	7/03/2023	26/09/2023	27/02/2024	17/09/2024	19/02/2025	**24/09/2025**	11/10/2016	29/03/2017	24/10/2017
										Laboratory	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	**ALS**			
										Report	ES2134949	ES2207245	ES2235364	ES2307811	ES2333127	ES2406408	ES2430498	ES2504852	**ES2529915**			
										Duplicate												
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.008**	<0.005	**0.007**	**0.006**	**0.008**	<0.005	<0.005	<0.005	<0.005	**0.014**	**0.015**	**0.01**
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	**1**	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	**1**	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**120**
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**120**
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**120**
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	**110**
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	**110**
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	Acenaphthylene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	Anthracene	µg/L	1					**0.01**			**0.01**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	Benz(a)anthracene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	Benzo(e)pyrene	µg/L	0.1									-	-	<1.0	<1.0	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	Benzo(k)fluoranthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	<1.0	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	Dibenz(a,h)anthracene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	Fluoranthene	µg/L	1					**1**			**1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	Fluorene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	**1.4**	**1.2**
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	Pyrene	µg/L	1									<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**1.4**	**1.2**
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	-	-	<2	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	-	-	<2	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	-	-	<2	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	<1	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	**8**	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	<1	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	**8**	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	**9**
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	**3**	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	<1	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	**1**	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	**18**	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	**31**	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	**2**	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	**0.96**	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	**1.08**	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	-	-	**0.09**	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	*ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand*	*ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand*	Darwin Cleanaway Groundwater Investigation Criteria	Sample Location	MW21	MW21	MW21	MW21	MW21	MW21	MW21	MW21	MW21	MW21	MW21	MW21
												Date	15/05/2018	24/02/2021	8/10/2018	6/02/2019	22/10/2019	25/02/2020	28/10/2020	22/02/2021	28/09/2021	28/02/2022	4/10/2022	7/03/2023
												Laboratory		ALS		ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS
												Report		ES2106466		ES1903574	ES1933804	ES2007150	EM2019329/ EM2021275	ES2106464005	ES2134949	ES2207245	ES2235364	ES2307811
												Duplicate												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**		**0.004**	<0.001	**0.001**	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.001**	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**		<0.001	**0.002**	<0.001	-	<0.001	<0.001	**0.002**	<0.001	**0.002**	<0.001	**0.004**	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**		<0.001	**0.002**	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**		**0.014**	**0.057**	**0.008**	-	**0.006**	**0.006**	**0.009**	<0.005	**0.009**	<0.005	<0.005	<0.005
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*			<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**		<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1										<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*			<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20										<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	**220**	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	**220**	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20										<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**		<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**		<50	<50	<50	<50	<50	<50	**130**	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**		<50	<50	<50	<50	<50	<50	**130**	<50	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**		-	-	-	-	-	-	<100	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**		-	-	-	-	-	-	<100	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**		-	-	-	-	-	-	<100	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**		-	-	-	-	-	-	<100	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**		-	-	-	-	-	-	<50	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**		-	-	-	-	-	-	<100	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**		-	-	-	-	-	-	<50	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**		-	-	-	-	-	-	<50	-	-	-	-	-
PAH	Acenaphthene	µg/L	1										<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Acenaphthylene	µg/L	1										<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Anthracene	µg/L	1					**0.01**			**0.01**		<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Benz(a)anthracene	µg/L	1										<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**		<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5										<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1										<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Benzo(e)pyrene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	<1.0	<1.0
	Benzo(g,h,i)perylene	µg/L	1										<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	-
	Benzo(k)fluoranthene	µg/L	1										<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2										-	-	-	-	-	-	-	-	-	-	<1.0	-
	Chrysene	µg/L	1										<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Dibenz(a,h)anthracene	µg/L	1										<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Fluoranthene	µg/L	1					**1**			**1**		<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Fluorene	µg/L	1										<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Indeno(1,2,3-c,d)pyrene	µg/L	1										<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Naphthalene-PAH	µg/L	1					**16**			**16**		<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1.0	<1.0
	Phenanthrene	µg/L	1					**0.6**			**0.6**		<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<0.5	<1.0
	Pyrene	µg/L	1										<1	-	<1	<1	<1	<1	<1	<1	<1.0	<1.0	-	<1.0
	PAHs (Sum of total) - Lab calc	µg/L	0.5										<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<0.5
	2-methylnaphthalene	µg/L	2										-	-	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2										-	-	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2										-	-	-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**						-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**						-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5										**17**	**77**	-	**68**	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1										-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1										-	**0.11**	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**						-	**0.1**	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**						-	<0.01	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**						-	**0.1**	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5										-	**0.3**	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01										-	**0.4**	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01										-	**0.05**	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01										-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**					-	-	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**					-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**							-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01										-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1										-	-	-	-	-	-	-	-	-	-	<1	-
	Total Nitrogen as N	mg/L	0.1										-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01										-	-	-	-	-	-	-	-	-	-	<2	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

										Sample Location		MW21	MW21	MW21	MW21	**MW21**	MW22	MW22	MW22	MW22	MW22	MW22	MW22
										Date		26/09/2023	27/02/2024	17/09/2024	19/02/2025	**24/09/2025**	11/10/2016	29/03/2017	23/10/2017	24/04/2018	1/10/2018	6/02/2019	22/10/2019
										Laboratory		ALS	ALS	ALS	ALS	**ALS**						ALS	ALS
										Report		ES2333127	ES2406408	ES2430498	ES2504852	**ES2529915**						ES1903574	ES1933804
										Duplicate													
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.005**	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.006**	<0.005	<0.005	<0.005	<0.005	**0.012**	**0.008**	**0.008**	**0.008**	**0.005**	**0.006**	<0.005
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Acenaphthylene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Anthracene	µg/L	1					**0.01**			**0.01**	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Benz(a)anthracene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Benzo(k)fluoranthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Dibenz(a,h)anthracene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Fluoranthene	µg/L	1					**1**			**1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Fluorene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	Pyrene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1	<1	<1
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	<2	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	<2	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	<2	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	<1	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	**2**	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	<1	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	**2**	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÂºC	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	<1	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	<1	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	<1	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	**6**	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	**5**	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	<1	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	**0.26**	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	**0.18**	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	**0.06**	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

									Sample Location			MW22	MW22	MW22	MW22	MW22	MW22	MW22	MW22	MW22	MW22	MW22	**MW22**
									Date			25/02/2020	27/10/2020	22/02/2021	28/09/2021	28/02/2022	5/10/2022	7/03/2023	28/09/2023	27/02/2024	17/09/2024	20/02/2025	**24/09/2025**
									Laboratory			ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	ALS	**ALS**
									Report			ES2007150	EM2019315	ES2106464006	ES2134949	ES2207245	ES2235715	ES2307811	ES2333333	ES2406408	ES2430498	ES2504852	**ES2529915**
									Duplicate														
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.007**	**0.009**	**0.006**	**0.093**	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Acenaphthylene	µg/L	1									<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Anthracene	µg/L	1					**0.01**			**0.01**	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benz(a)anthracene	µg/L	1									<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	<1.0	<1.0	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1	-	<1	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(k)fluoranthene	µg/L	1									<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	<1.0	-	-	-	-	-	-
	Chrysene	µg/L	1									<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Dibenz(a,h)anthracene	µg/L	1									<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Fluoranthene	µg/L	1					**1**			**1**	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Fluorene	µg/L	1									<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1	-	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1	-	<1	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Pyrene	µg/L	1									<1	-	<1	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÅºC	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

										Sample Location			MW23	MW23	MW23	MW23	MW23	MW23	MW23	MW23	MW23	MW24	MW24	MW24
										Date			11/10/2016	28/03/2017	23/10/2017	26/04/2018	1/10/2018	5/02/2019	29/10/2020	23/02/2021	28/09/2021	11/10/2016	28/03/2017	24/10/2017
										Laboratory								ALS	ALS	ALS	ALS			
										Report								ES1903574	EM2019329/ EM2021275	ES2106464012	ES2134949 / ES2138742			
										Duplicate														
	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	*ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand*	*ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand*	Darwin Cleanaway Groundwater Investigation Criteria													
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	**0.003**	**0.002**	<0.001	**0.002**	**0.002**	-	**0.002**	**0.002**	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.018**	**0.006**	<0.005	<0.005	<0.005	-	**0.034**	<0.005	<0.005	**0.01**	**0.007**	**0.007**
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	**24**	**2**	**12**	**2**	**13**	**4**	**4**	<1	**4**	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<2	<2	**6**	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	**22**	<2	**10**	**2**	**8**	**2**	<2	<2	<2	<1	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	**28**	<2	**3**	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	**12**	<2	<2	<2	<2	<2	<2	<2	<2	<1	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		**40**	<2	**3**	<2	<2	<2	<2	<2	<2	<3	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	**12**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									**92**	**2**	**25**	**4**	**21**	**6**	**4**	<1	**4**	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		**190**	<20	**60**	**30**	**80**	**20**	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									**280**	**20**	**80**	**30**	**100**	**30**	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	**2600**	<100	**1370**	<100	**590**	**100**	**210**	<100	**180**	<50	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	**2610**	<100	**1370**	<100	**590**	**160**	**210**	<100	**180**	<50	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	**14,000**	<100	**9070**	<100	**3690**	**130**	**790**	<100	**250**	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	**2230**	<100	**1720**	<100	**510**	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	**18,800**	<100	**12200**	<100	-	**290**	**1000**	<100	**430**	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									**190**	<20	**70**	**20**	**80**	**20**	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	**1690**	<50	**720**	**60**	**270**	**100**	<50	<50	**100**	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	**10,600**	<100	**6840**	<100	**2900**	**180**	**730**	<100	**280**	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	**6220**	<50	**3700**	<50	**1420**	<50	**280**	<50	**60**	<100	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	**18,500**	<50	**11300**	**60**	**4590**	**280**	**1010**	<50	**440**	<100	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	<100	-	<100	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	**460**	-	<100	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	<100	-	<100	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	**460**	-	<100	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	<50	-	<50	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	**300**	-	<100	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	**200**	-	<50	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	**500**	-	<50	-	-	-
PAH	Acenaphthene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	Acenaphthylene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	Anthracene	µg/L	1					**0.01**			**0.01**	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	Benz(a)anthracene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	Benzo(k)fluoranthene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	Dibenz(a,h)anthracene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	Fluoranthene	µg/L	1					**1**			**1**	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	Fluorene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	Naphthalene-PAH	µg/L	1					**16**			**16**	**2.2**	**1.3**	**2.8**	<1	**1.8**	<1	<1	<1	<1.0	<1	<1	<1
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	Pyrene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1	<1	<1
	PAHs (Sum of total) - Lab calc	µg/L	0.5									**2.2**	**1.3**	**2.8**	<0.5	**1.8**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2									**3**	-	-	-	-	-	-	-	-	<2	-	<2
	3-methylcholanthrene	µg/L	2									<2	-	-	-	-	-	-	-	-	<2	-	<2
	7,12-dimethylbenz(a)anthracene	µg/L	2									<2	-	-	-	-	-	-	-	-	<2	-	<2
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									<1	-	-	-	-	-	-	-	-	<1	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									**9**	-	-	-	-	-	-	-	-	**2**	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									<1	-	-	-	-	-	-	-	-	<1	-	-
	Alkalinity (total as CaCO3)	mg/L	1									**9**	-	-	-	-	-	-	-	-	**2**	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	**40.1**	-
	Calcium (Filtered)	mg/L	1									**3**	-	-	-	-	-	-	-	-	<1	-	-
	Magnesium (Filtered)	mg/L	1									**2**	-	-	-	-	-	-	-	-	<1	-	-
	Potassium (Filtered)	mg/L	1									<1	-	-	-	-	-	-	-	-	<1	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					**13**	-	-	-	-	-	-	-	-	**4**	-	-
	Chloride	mg/L	1		*250*		**250**					**25**	-	-	-	-	-	-	-	-	**3**	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					**2**	-	-	-	-	-	-	-	-	<1	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									**0.88**	-	-	-	-	-	-	-	-	**0.17**	-	-
	Anions Total	meq/L	0.01									**0.93**	-	-	-	-	-	-	-	-	**0.12**	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				**0.31**	-	-	-	-	-	-	-	-	**0.06**	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

	Analyte	Units	EQL	NHMRC/ NRMMC (2011) Potable (Health)	NHMRC/ NRMMC (2011) Potable (Aesthetic)	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	*ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand*	*ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand*	Darwin Cleanaway Groundwater Investigation Criteria	MW24	MW25	MW25	MW25	MW25	MW25	MW25	MW25	MW25	MW25	MW25	MW25
	Sample Location											MW24	MW25	MW25	MW25	MW25	MW25	MW25	MW25	MW25	MW25	MW25	MW25
	Date											26/04/2018	11/10/2016	28/03/2017	24/10/2017	26/04/2018	1/10/2018	5/02/2019	22/10/2019	25/02/2020	28/10/2020	28/10/2020	28/10/2020
	Laboratory																	ALS	ALS	ALS	ALS	ALS	Eurofins MGT
	Report																	ES1903290	ES1933804	ES2007150	EM2019329/ EM2021275	EM2019329	753475
	Duplicate																				Primary	Intra-Laboratory	Inter-Laboratory
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	< 0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	**0.001**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.001**
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	< 0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.005**	**0.008**	**0.007**	**0.007**	**0.01**	<0.005	**0.009**	<0.005	**0.011**	**0.009**	**0.009**	**0.011**
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	**14**	**18**	**14**	**13**	**23**	**19**	**20**	**5**	<1	**4**	**7**
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<1.0
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	**2**	**2**	<2	<2	<2	<2	<2	<2	<2	<2	<1.0
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	**5**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	**4**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<1.0
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	**9**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<3
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	**6**	**6**	**6**	**10**	**6**	**8**	<5	<5	<5	<10
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	**25**	**20**	**14**	**13**	**23**	**19**	**20**	**5**	<1	**4**	-
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	**60**	**50**	**40**	**40**	**60**	**50**	**40**	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	**80**	**70**	**50**	**50**	**80**	**70**	**60**	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	**150**	**150**	<100	<100	**110**	<100	<100	<100	<100	<100	**240**
	>C10 - C16 Fraction	µg/L	100								**600**	<100	**150**	**160**	**100**	<100	**120**	<100	<100	<100	<100	<100	**240**
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	**240**	<100	**220**	<100	<100	<100	**240**	**240**	**300**
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	**150**	**160**	**340**	<100	**340**	<100	<100	<100	**240**	**240**	**540**
	C6 - C 9 Fraction	µg/L	20									<20	**60**	**60**	**40**	**40**	**70**	**60**	**60**	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	**120**	**140**	**70**	**80**	**80**	<50	<50	<50	<50	<50	**260**
	C15 - C28 Fraction	µg/L	100								**600**	<100	**120**	<100	**200**	<100	**190**	<100	<100	<100	**130**	**130**	**300**
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	**90**	<50	**90**	<50	<50	<50	**130**	**130**	<100
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	**240**	**140**	**360**	**80**	**360**	<50	<50	<50	**260**	**260**	**560**
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	<100	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	<100	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	<100	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	<100	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	<50	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	<100	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	<50	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	<50	-	-
PAH	Acenaphthene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Acenaphthylene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Anthracene	µg/L	1					**0.01**			**0.01**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benz(a)anthracene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
	Benzo[b+j]fluoranthene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(k)fluoranthene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Dibenz(a,h)anthracene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Fluoranthene	µg/L	1					**1**			**1**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Fluorene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1	**1.7**	**3.8**	**3.1**	**3.3**	**7.2**	<1	<1	<1	<1	<1	<1
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Pyrene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	**1.7**	**3.8**	**3.1**	**3.3**	**7.2**	<0.5	<0.5	<0.5	<0.5	<0.5	<1
	2-methylnaphthalene	µg/L	2									-	<2	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	<2	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	<2	-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	<1	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	**5**	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	<1	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	**5**	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	**55.1**	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	**2**	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	<1	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	<1	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	**8**	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	**8**	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	<1	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	**0.45**	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	**0.32**	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	**0.06**	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

										Sample Location	MW25	MW25	MW25	MW25	MW25	MW25	MW25	MW26	MW26	MW26	MW26	MW26
										Date	23/02/2021	28/09/2021	2/03/2022	6/10/2022	7/03/2023	26/09/2023	27/02/2024	11/10/2016	28/03/2017	23/10/2017	26/04/2018	8/10/2018
										Laboratory	ALS	ALS	ALS	ALS	ALS	ALS	ALS					
										Report	ES21064640l3	ES2134949	ES2207245	ES2235715	ES2307495	ES2333127	ES2504852					
										Duplicate												
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**												
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	<0.001	**0.001**	<0.001	<0.001	<0.001	<0.001	**0.002**	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	**0.001**	<0.001	**0.001**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.006**	**0.012**	<0.005	<0.005	<0.005	**0.017**	**0.022**	**0.016**	**0.006**	**0.014**	<0.005	**0.011**
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	**1**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	**1**	<1	<1	<1	<1	<1	<1	<1	<1	<2	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Acenaphthylene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Anthracene	µg/L	1					**0.01**			**0.01**	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benz(a)anthracene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benzo(e)pyrene	µg/L	0.1									-	-	-	<1.0	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benzo(k)fluoranthene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	<1.0	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Dibenz(a,h)anthracene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Fluoranthene	µg/L	1					**1**			**1**	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Fluorene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	Pyrene	µg/L	1									<1	<1.0	<1.0	-	<1.0	<1.0	<1.0	<1	<1	<1	<1	<1
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	<2	<2	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	<2	<2	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	<2	<2	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	<1	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	**5**	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	<1	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	**5**	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	<1	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	<1	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	<1	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	**20**	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	**22**	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	<1	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	**0.87**	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	**0.72**	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	**0.08**	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 4. Summary of Recent and Historical Groundwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

										Sample Location	MW26	MW26	MW26	MW26	MW26	MW26	MW26	MW26	MW26	MW26	MW26	MW26
										Date	5/02/2019	22/10/2019	22/10/2019	22/10/2019	27/02/2020	27/02/2020	27/02/2020	28/10/2020	23/02/2021	28/09/2021	28/09/2021	28/09/2021
										Laboratory	ALS	ALS	ALS	Eurofins MGT	ALS	ALS	Eurofins	ALS	ALS	ALS	ALS	Eurofins
										Report	ES1903574	ES1933804	ES1933804	684015	ES2007151	ES2007151	705067	EM2019329/ EM2021275	ES2106464013	ES2134949	ES2134949	
										Duplicate		Primary	Intra-laboratory	Inter-laboratory	Primary	Inter-Laboratory	Intra-Laboratory			Primary	Inter-Laboratory	Intra-Laboratory
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**											
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	< 0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	-
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	< 0.001	<0.001	-	-	**0.002**	<0.001	<0.001	-	-
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	< 0.001	<0.001	-	-	<0.001	<0.001	<0.001	-	-
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	**0.015**	**0.008**	**0.007**	**0.014**	<0.005	-	-	**0.018**	<0.005	**0.008**	-	-
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	*5000*	*5000*	**950**	<1	<1	<1	<1	<1	-	-	<1	<1	<1	-	-
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	*NL*	*NL*	**180**	<2	<2	<2	<1	<2	-	-	<2	<2	<2	-	-
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	*NL*	*NL*	**80**	<2	<2	<2	<1	<2	-	-	<2	<2	<2	-	-
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	-	-	<2	<2	<2	-	-
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<1	<2	-	-	<2	<2	<2	-	-
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		*NL*	*NL*		<2	<2	<2	<3	<2	-	-	<2	<2	<2	-	-
	Naphthalene-MAH	µg/L	5					**16**	*NL*	*NL*	**16**	<5	<5	<5	<10	<5	-	-	<5	<5	<5	-	-
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	<1	-	<1	-	-	<1	<1	<1	-	-
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						*6000*	*6000*		<20	<20	<20	<20	<20	-	-	<20	<20	<20	-	-
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	-	-	<20	<20	<20	-	-
	>C10-C16 minus Naphthalene (F2)	µg/L	100						*NL*	*NL*	**600**	<100	<100	<100	<50	<100	-	-	<100	<100	<100	-	-
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<50	<100	-	-	<100	<100	<100	-	-
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	-	-	<100	<100	<100	-	-
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	-	-	<100	<100	<100	-	-
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	-	-	<100	<100	<100	-	-
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	-	-	<20	<20	<20	-	-
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	-	-	<50	<50	<50	-	-
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	-	-	<100	<100	<100	-	-
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<100	<50	-	-	<50	<50	<50	-	-
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<100	<50	-	-	<50	<50	<50	-	-
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	Acenaphthylene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	Anthracene	µg/L	1					**0.01**			**0.01**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	Benz(a)anthracene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<1
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	-	<0.5	<0.5	-	<0.5	<0.5	<0.5	<0.5	-
	Benzo[b+j]fluoranthene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	Benzo(e)pyrene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	Benzo(k)fluoranthene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	Dibenz(a,h)anthracene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	Fluoranthene	µg/L	1					**1**			**1**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	Fluorene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1	<1	<1	<1	<1	<1	<1	**3.8**	<1	<1.0	<1.0	<1
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	Pyrene	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1	<1	<1.0	<1.0	<1
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	<0.5	<0.5	<1	<0.5	<0.5	<1	**3.8**	<0.5	<0.5	<0.5	<1
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180ÅºC	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		*600*		**600**					-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		*180*		**180**					-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		*250*		**250**					-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		*0.41*		**0.41**	**0.90**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

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Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Events - 875 Stuart Highway, Holtze
Job Number: BE-78

									Sample Location		MW26	MW26	MW26	MW26	MW26	MW26	MW26	**MW26**
									Date		1/03/2022	4/10/2022	7/03/2023	25/09/2023	27/02/2024	17/09/2024	19/02/2025	**23/09/2025**
									Laboratory		ALS	ALS	ALS	ALS	ALS	ALS	ALS	**ALS**
									Report		ES2207245	ES2235364	ES2307495	ES2333127	ES2406408	ES2430498	ES2504852	**ES2529708**
									Duplicate									
	Analyte	**Units**	**EQL**	**NHMRC/ NRMMC (2011) Potable (Health)**	**NHMRC/ NRMMC (2011) Potable (Aesthetic)**	**NHMRC (2008) Recreational Water - Health**	**NHMRC (2008) Recreational Water - Aesthetics**	**ANZG (2018) Freashwater 95% Protection**	***ASC NEPM (1999) Health Screening Levels 2 m to <4 m, Sand***	***ASC NEPM (1999) Health Screening Levels 4 m to <8 m, Sand***	**Darwin Cleanaway Groundwater Investigation Criteria**								
Metals	Arsenic (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.013#**			**0.024**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	**2**	*1*	**20**	**1**	**0.0014**			**0.0014**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	**0.01**		**0.1**		**0.0034**			**0.0034**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005		*3*		**3**	**0.008**			**0.008**	<0.005	<0.005	**0.01**	<0.005	<0.005	<0.005	<0.005	<0.005
BTEXN	Benzene	µg/L	1	**1**		**1**		**950**	***5000***	***5000***	**950**	<1	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	*25*	**800**	**25**	**180**	***NL***	***NL***	**180**	<2	<2	<2	<2	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	*3*	**300**	**3**	**80**	***NL***	***NL***	**80**	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2					**75**			**75**	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2					**350**			**350**	<2	<2	<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	*20*	**600**	**20**		***NL***	***NL***		<2	<2	<2	<2	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5					**16**	***NL***	***NL***	**16**	<5	<5	<5	<5	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1									<1	<1	<1	<1	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20						***6000***	***6000***		<20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100						***NL***	***NL***	**600**	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20									<20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100								**600**	<100	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50								**600**	<50	<50	<50	<50	<50	<50	<50	<50
Total Petroleum Hydrocarbons (Silica Gel Clean-up)	>C10 - C16 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100								**600**	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100								**600**	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50								**600**	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50								**600**	-	-	-	-	-	-	-	-
PAH	Acenaphthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Acenaphthylene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Anthracene	µg/L	1					**0.01**			**0.01**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benz(a)anthracene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(a)pyrene	µg/L	0.5					**0.1**			**0.1**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5									<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	Benzo[b+j]fluoranthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(e)pyrene	µg/L	0.1									-	<1.0	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(k)fluoranthene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2									-	<1.0	-	-	-	-	-	-
	Chrysene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Dibenz(a,h)anthracene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Fluoranthene	µg/L	1					**1**			**1**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Fluorene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Indeno(1,2,3-c,d)pyrene	µg/L	1									<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Naphthalene-PAH	µg/L	1					**16**			**16**	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Phenanthrene	µg/L	1					**0.6**			**0.6**	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	Pyrene	µg/L	1									<1.0	-	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
	PAHs (Sum of total) - Lab calc	µg/L	0.5									<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	2-methylnaphthalene	µg/L	2									-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2									-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2									-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1									-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1									-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1									-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1									-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		***600***		**600**					-	-	-	-	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		***600***		**600**					-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5									-	-	-	-	-	-	-	-
	Calcium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1									-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		***180***		**180**					-	-	-	-	-	-	-	-
	Chloride	mg/L	1		***250***		**250**					-	-	-	-	-	-	-	-
	Sulfate as SO4 - Turbidimetric	mg/L	1		***250***		**250**					-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5									-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01									-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01									-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01									-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		***0.41***		**0.41**	**0.90**				-	-	-	-	-	-	-	-
	Nitrate (as N)	mg/L	0.01	**11.3**		**113**		**2.40**				-	-	-	-	-	-	-	-
	Nitrite as N	mg/L	0.01	**0.9**		**9**						-	-	-	-	-	-	-	-
	Nitrite + Nitrate as N	mg/L	0.01									-	-	-	-	-	-	-	-
	Total Kjeldahl Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-
	Total Nitrogen as N	mg/L	0.1									-	-	-	-	-	-	-	-
	Total Phosphorus as P	mg/L	0.01									-	-	-	-	-	-	-	-

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI was

Table 5. Summary of Recent and Historical Stormwater Analytical Results

Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Event - 875 Stuart Highway, Holtze
Job Number: BE-78

	Analyte	Units	EQL	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	Sample Location	SW1	SW1	SW1	SW1	SW1	SW1	SW1	SW2	SW2	SW2	DUP1_SW	DUP1_SW	SW2	DUP1_SW	DUP1_SW	SW2	SW2	DUP1_SW	DUP1_SW	SW2	DUP1_SW	DUP1_SW	SW2	DUP1_SW	DUP1_SW	SW2	DUP1_SW	DUP1_SW
							Date	25/02/2016	4/02/2019	27/02/2020	24/02/2021	1/03/2022	7/03/2023	17/09/2024	25/02/2016	26/04/2018	4/02/2019	4/02/2019	4/02/2019	< 0.0001	4/02/2019	26/02/2020	26/02/2020	26/02/2020	27/02/2020	24/02/2021	24/02/2021	24/02/2021	1/03/2022	1/03/2022	1/03/2022	7/03/2023	7/03/2023	7/03/2023	28/02/2024	28/02/2024	28/02/2024
							Laboratory		ALS	ALS	ALS	ALS	ALS	ALS			ALS	ALS	Eurofins	Eurofins	ALS	ALS	Eurofins	Sample obtained downstream	ALS	ALS	Eurofins	ALS	ALS	Eurofins	ALS	ALS	Eurofins	ALS	ALS	Eurofins
							Report		ES1903290	ES2007151	ES2106466	ES2207245	ES2307495	ES2430498			ES1903290	ES1903290	639180	< 0.0001	ES2007150	ES2007150	705067	< 0.0001	ES2007151	ES2106464	ES2106464	776498	ES2207245	ES2207245	867910	ES2307495	ES2307495	969554	ES2406576	ES2406576	1073536
							Duplicate		Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Primary	Intra-Laboratory	Inter-Laboratory		Primary	Inter-Laboratory	Intra-Laboratory		Primary	Primary	Intra-Laboratory	Inter-laboratory	Primary	Intra-Laboratory	Inter-Laboratory	Primary	Intra-Laboratory	Inter-Laboratory	Primary	Intra-lab	Inter-lab
Metals	Arsenic	mg/L	0.001	**0.1**		**0.013#**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	< 0.001	**0.001**	<0.001	**0.001**	<0.001	**0.001**	**0.001**	**0.003**	<0.001	<0.001	**0.002**	<0.001	<0.001	**0.001**	<0.001	<0.001	< 0.001
	Cadmium	mg/L	0.0001	**0.02**		**0.0002**	<0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0002	<0.0001	<0.0001	<0.0001	< 0.0002	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	< 0.0002	<0.0001	<0.0001	< 0.0002	<0.0001	<0.0001	< 0.0002	**0.0001**	**0.0002**	< 0.0002
	Chromium (III+VI)	mg/L	0.001	**0.5**		**0.001***	<0.001	<0.001	<0.001	**0.002**	**0.003**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.003**	**0.003**	<0.001	**0.001**	**0.001**	<0.001	<0.001	< 0.001	**0.001**	**0.001**	**0.002**	**0.001**	**0.001**	< 0.001
	Copper	mg/L	0.001	**20**	**1**	**0.0014**	**0.004**	**0.002**	<0.001	**0.002**	**0.011**	**0.001**	**0.017**	**0.003**	**0.001**	**0.002**	**0.002**	**0.006**	**0.004**	**0.004**	**0.006**	**0.007**	**0.007**	**0.001**	**0.002**	**0.003**	**0.006**	**0.006**	**0.005**	**0.002**	**0.002**	**0.005**	**0.004**	**0.005**	**0.003**
	Lead	mg/L	0.001	**0.1**		**0.0034**	<0.001	<0.001	<0.001	**0.002**	**0.002**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001	**0.001**	**0.001**	**0.002**	**0.002**	**0.006**	**0.001**	**0.002**	**0.002**	<0.001	<0.001	< 0.001	<0.001	<0.001	**0.002**	**0.002**	**0.003**	< 0.001
	Mercury	mg/L	0.0001	**0.01**		**0.00006**	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	< 0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	< 0.0001	<0.0001	<0.0001	< 0.0001	<0.0001	<0.0001	< 0.0001	<0.0001	<0.0001	< 0.0001
	Nickel	mg/L	0.001	**0.2**		**0.011**	<0.001	<0.001	<0.001	**0.001**	**0.001**	<0.001	**0.002**	<0.001	<0.001	<0.001	<0.001	**0.002**	**0.002**	**0.004**	**0.004**	**0.003**	**0.001**	**0.002**	**0.002**	**0.001**	**0.001**	**0.002**	**0.001**	**0.001**	**0.001**	**0.001**	**0.002**	**0.001**
	Zinc	mg/L	0.005		**3**	**0.008**	**0.049**	**0.041**	**0.025**	**0.057**	**0.146**	**0.045**	**0.193**	**0.094**	**0.006**	**0.047**	**0.047**	**0.052**	**0.188**	**0.212**	**0.22**	**0.199**	**0.152**	**0.157**	**0.16**	**0.179**	**0.175**	**0.17**	**0.11**	**0.102**	**0.17**	**0.149**	**0.171**	**0.14**
BTEXN	Benzene	µg/L	1	**1**		**950**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	< 1	<1	<1	<1	<1	<1	<1	<1	<1	< 0.001
	Toluene	µg/L	2	**800**	**25**	**180**	<1	<2	<2	<2	<2	<2	<2	**18**	<2	<2	<2	<1	<2	<2	<1	<2	<2	<2	<2	< 1	<2	<2	<1	<2	<2	<1	<2	<2	< 0.001
	Ethylbenzene	µg/L	2	**300**	**3**	**80**	<1	<2	<2	<2	<2	<2	<2	**3**	<2	<2	<2	<1	<2	<2	<1	<2	<2	<2	<2	< 1	<2	<2	<1	<2	<2	<1	<2	<2	< 0.001
	Xylene (m & p)	µg/L	2			**75**	<2	<2	<2	<2	<2	<2	<2	**9**	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	< 2	<2	<2	<2	<2	<2	< 2	<2	<2	< 0.002
	Xylene (o)	µg/L	2			**350**	<1	<2	<2	<2	<2	<2	<2	**4**	<2	<2	<2	<1	<2	<2	<1	<2	<2	<2	<2	< 1	<2	<2	<1	<2	<2	<1	<2	<2	< 0.001
	Xylene Total	µg/L	2	**600**	**20**		<3	<2	<2	<2	<2	<2	<2	**13**	<2	<2	<2	<3	<2	<2	<3	<2	<2	<2	< 3	<2	<2	<3	<2	<2	< 3	<2	<2	< 0.003
	Naphthalene-MAH	µg/L	5			**16**	<10	<5	<5	<5	<5	<5	<5	<10	<5	<5	<5	-	<5	<5	<10	<5	<5	<5	-	<5	<5	<10	<5	<5	< 10	<5	<5	< 0.01
	BTEX (Sum of Total) - Lab Calc	µg/L	1				-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	-	<1	<1	<1	-	<1	<1	-	<1	<1	-	<1	<1	-
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20				**20**	<20	<20	<20	<20	<20	<20	**30**	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	< 20	<20	<20	<20	<20	<20	<20	<20	<20	< 0.02
	C6 - C10 Fraction	µg/L	20				**20**	<20	<20	<20	<20	<20	<20	**60**	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	< 20	<20	<20	<20	<20	<20	<20	<20	<20	< 0.02
	>C10-C16 minus Naphthalene (F2)	µg/L	100				<50	<100	<100	<100	<100	<100	<100	**660**	<100	<100	<100	<50	<100	<100	<50	<100	<100	<100	< 50	<100	<100	<50	<100	<100	< 50	<100	<100	< 0.05
	>C10 - C16 Fraction	µg/L	100				<50	<100	<100	<100	<100	<100	<100	**660**	<100	<100	<100	<50	<100	<100	<50	<100	<100	<100	< 50	<100	<100	<50	<100	<100	< 50	<100	<100	< 0.05
	>C16 - C34 Fraction (F3)	µg/L	100				<100	<100	<100	<100	<100	<100	**470**	**8500**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	< 100	<100	<100	<100	<100	<100	< 100	<100	<100	< 0.1
	>C34 - C40 Fraction (F4)	µg/L	100				<100	<100	<100	<100	<100	<100	<100	**1500**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	< 100	<100	<100	<100	<100	<100	< 100	<100	<100	< 0.1
	>C10 - C40 (Sum of Total)	µg/L	100				-	<100	<100	<100	<100	<100	**470**	**10660**	<100	<100	<100	-	<100	<100	<100	<100	<100	<100	< 100	<100	<100	<100	<100	<100	< 100	<100	<100	< 0.1
	C6 - C 9 Fraction	µg/L	20				<20	<20	<20	<20	<20	<20	<20	**50**	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	< 20	<20	<20	<20	<20	<20	<20	<20	<20	< 0.02
	C10 - C14 Fraction	µg/L	50				<50	<50	<50	<50	<50	<50	<50	**280**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	< 50	<50	<50	<50	<50	<50	<50	<50	<50	< 0.05
	C15 - C28 Fraction	µg/L	100				<100	<100	<100	<100	<100	<100	**360**	**5500**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	< 100	<100	<100	<100	<100	<100	<100	<100	<100	< 0.1
	C29 - C36 Fraction	µg/L	50				<100	<50	<50	<50	<50	<50	**170**	**4300**	<50	<50	<50	<100	<50	<50	<50	<100	<50	<50	< 100	<50	<50	<50	<100	<50	<50	<100	<50	<50	< 0.1
	C10 - C36 (Sum of Total)	µg/L	50				<100	<50	<50	<50	<50	<50	**530**	**10000**	<50	<50	<50	<50	<50	<50	<50	<100	<50	<50	< 100	<50	<50	<50	<100	<50	<50	<100	<50	<50	< 0.1
Total Recoverable Hydrocarbons (SG)	>C10 - C16 Fraction	µg/L	100				-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100				-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100				-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100				-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50				-	-	-	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100				-	-	-	-	-	-	<100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50				-	-	-	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50				-	-	-	-	-	-	<50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PAHs	Acenaphthene	µg/L	1				<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Acenaphthylene	µg/L	1				<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Anthracene	µg/L	1			**0.01**	<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Benz[a]anthracene	µg/L	1				<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Benzo(a)pyrene	µg/L	0.5			**0.1**	<0,5	-	-	-	-	<0,5	<0,5	<0,5	<0,5	-	-	-	-	-	<1	-	-	-	-	-	-	-	<0,5	<0,5	<1,0	<0,5	<0,5	< 0,001
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5				<0,5	-	-	-	-	<0,5	<0,5	<0,5	<0,5	-	-	-	-	-	-	-	-	-	-	-	-	-	<0,5	<0,5	-	<0,5	<0,5	-
	Benzo[b+j]fluoranthene	µg/L	1				<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Benzo(e)pyrene	µg/L	0.1				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1				<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Benzo(k)fluoranthene	µg/L	1				<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Benzo (b) & Benzo(k)fluoranthene	µg/L	2				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1				<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Dibenz(a,h)anthracene	µg/L	1				<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Fluoranthene	µg/L	1			**1**	<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Fluorene	µg/L	1				<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Indeno(1,2,3-c,d)pyrene	µg/L	1				<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Naphthalene-PAH	µg/L	1			**16**	<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Phenanthrene	µg/L	1			**0.6**	<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	Pyrene	µg/L	1				<1	-	-	-	-	<1,0	<1,0	<1	<1,0	-	-	-	-	-	<1	-	-	-	-	-	-	-	<1,0	<1,0	<1,0	<1,0	<1,0	< 0,001
	PAHs (Sum of total) - Lab calc	µg/L	0.5				<0,5	-	-	-	-	<0,5	<0,5	<0,5	<0,5	-	-	-	-	-	<1	-	-	-	-	-	-	-	<0,5	<0,5	<1,0	<0,5	<0,5	< 0,001
	2-methylnaphthalene	µg/L	2				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1				-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1				-	-	-	-	-	-	-	-	-	-	-	-	-	**40**	**38**	-	**9**	-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1				-	-	-	-	-	-	-	-	-	-	-	-	-	<1	<1	-	<1	-	-	-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1				-	-	-	-	-	-	-	-	-	-	-	-	-	**40**	**38**	-	**9**	-	-	-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		**600**		-	-	-	-	-	-	-	-	-	-	-	-	-	**121**	**121**	-	**57**	-	-	-	-	-	-	**62**	**59**	-	-	-	-
	Total Dissolved Solids (Inorganic)	mg/L	10		**600**		-	-	-	-	-	-	-	-	-	-	-	-	-	**52**	**51**	-	**23**	-	-	-	-	-	-	-	-	-	-	-	-
	Total Suspended Solids	mg/L	5				-	-	-	**7**	**33**	**51**	**42**	-	-	**6**	**7**	**5.9**	-	-	-	-	-	**9**	**17**	**77**	**12**	**8**	**5.4**	-	-	**8.7**	**24**	**13**	-
	Calcium (Filtered)	mg/L	1				-	-	**26**	-	-	-	-	-	-	-	-	-	**14**	**14**	-	**3**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1				-	-	<10	-	-	-	-	-	-	-	-	-	**1**	**1**	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1				-	-	-	-	-	-	-	-	-	-	-	-	**4**	**4**	-	<1	-	-	-	-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		**180**		-	-	-	-	-	-	-	-	-	-	-	-	**8**	**8**	-	**3**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chloride	mg/L	1		**250**		-	-	-	-	-	-	-	-	-	-	-	-	**11**	**11**	-	**4**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 (Filtered)	mg/L	1		**250**		-	-	-	-	-	-	-	-	-	-	-	-	**4**	**4**	-	**1**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cations Total	meq/L	0.01				-	-	-	-	-	-	-	-	-	-	-	-	**1.23**	**1.23**	-	**0.28**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01				-	-	-	-	-	-	-	-	-	-	-	-	**1.19**	**1.15**	-	**0.31**	-	-	-	-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01				-	-	-	-	-	-	-	-	-	-	-	-	**1.58**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		**0.41**	**0.90**	**0.11**	**0.02**	**0.02**	**0.11**	**0.12**	**0.05**	**0.57**	<0.02	**1.39**	**0.07**	**0.07**	**0.02**	**0.06**	**0.04**	**0.05**	**0.06**	**0.01**	**0.02**	-	**0.05**	**0.02**	< 0.01	**0.03**	**0.03**	**0.01**	**0.30**	**0.24**	**0.23**
	Nitrate (as N)	mg/L	0.01	**113**		**2.40**	<0.02	**0.14**	**0.11**	**0.1**	**0.20**	**0.2**	**0.50**	<0.02	<0.01	**0.07**	**0.08**	**0.06**	<0.01	<0.01	< 0.02	**0.15**	<0.01	<0.01	-	**0.03**	**0.03**	-	**0.08**	**0.08**	**0.04**	**0.03**	<0.01	**0.08**
	Nitrite as N	mg/L	0.01	**9**			-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	**0.07**	-	**0.02**	<0.01	<0.01	< 0.02	<0.01	<0.01	< 0.02	<0.01	<0.01	<0.01	-	<0.01	<0.01	-	<0.01	<0.01	< 0.02	<0.01	<0.01	< 0.02
	Nitrite + Nitrate as N	mg/L	0.01				-	**0.14**	**0.11**	**0.1**	**0.2**	**0.2**	**0.57**	-	<0.01	**0.07**	**0.08**	**0.06**	<0.01	<0.01	< 0.05	**0.15**	<0.01	<0.01	-	**0.03**	**0.03**	< 0.05	**0.08**	**0.08**	< 0.05	**0.03**	<0.01	**0.08**
	Total Kjeldahl Nitrogen as N	mg/L	0.1				-	**0.2**	**0.2**	**0.3**	**1**	**0.6**	**2.3**	-	**2.5**	**0.3**	**0.3**	< 0.2	**1.3**	**1**	**0.9**	**0.2**	**1.3**	**1.3**	-	**0.6**	**0.5**	**0.3**	**0.5**	**0.5**	**0.3**	**0.9**	**0.8**	**0.6**
	Total Nitrogen as N	mg/L	0.1				-	**0.3**	**0.3**	**0.4**	**1.2**	**0.8**	**2.9**	-	**2.5**	**0.4**	**0.4**	< 0.2	**1.3**	**1**	**0.9**	**0.4**	**1.3**	**1.3**	-	**0.6**	**0.5**	**0.3**	**0.6**	**0.6**	**0.3**	**0.9**	**0.8**	**0.7**
	Total Phosphorus as P	mg/L	0.01				-	**0.03**	**0.03**	**0.05**	**0.1**	**0.04**	**0.15**	-	**0.21**	**0.09**	**0.07**	**0.25**	**0.15**	**0.13**	**0.11**	**0.1**	**0.29**	**0.26**	-	**0.06**	**0.05**	< 0.05	**0.12**	**0.13**	**0.17**	**0.11**	**0.08**	**0.02**

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI

Table 5. Summary of Recent and Historical Stormwater Analytical Results

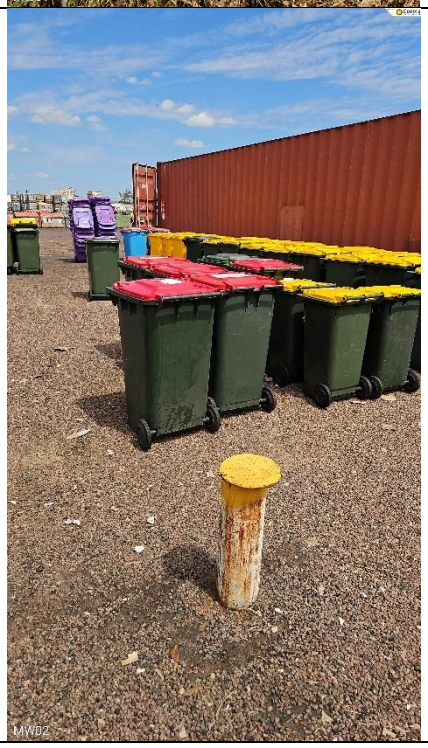
Client: Cleanaway Operations Pty Ltd
Project: 2025 Annual Monitoring Event - 875 Stuart Highway, Holtze
Job Number: BE-78

	Analyte	Units	EQL	NHMRC (2008) Recreational Water - Health	NHMRC (2008) Recreational Water - Aesthetics	ANZG (2018) Freashwater 95% Protection	Sample Location	SW2	DUP1_SW	DUP1_SW	SW2	DUP1_SW	DUP1-SW	SW3	SW3	SW3	SW3
							Date	17/09/2024	17/09/2024	17/09/2024	**19/02/2025**	**19/02/2025**	**19/02/2025**	27/02/2020	24/02/2021	28/03/2022	7/03/2023
							Laboratory	ALS	ALS	Eurofins	**ALS**	**ALS**	**Eurofins**	ALS	ALS	ALS	ALS
							Report	ES2430498	ES2430498	1140318	**ES2504852**	**ES2504852**	**16/08/5157**	ES2007151	ES2106466	ES2210810	ES2307495
							Duplicate	Primary	Intra-lab	Inter-lab	**Primary**	**Intra-lab**	**Inter-lab**	Primary	Primary	Primary	Primary
Metals	Arsenic	mg/L	0.001	**0.1**		**0.013#**	<0.001	<0.001	**0.001**	<0.001	<0.001	< 0.001	<0.001	**0.001**	<0.001	<0.001
	Cadmium	mg/L	0.0001	**0.02**		**0.0002**	**0.0003**	**0.0003**	**0.0004**	<0.0001	<0.0001	< 0.0002	<0.0001	**0.0001**	<0.0001	<0.0001
	Chromium (III+VI)	mg/L	0.001	**0.5**		**0.001***	**0.002**	**0.002**	**0.004**	<0.001	<0.001	< 0.001	<0.001	**0.003**	<0.001	<0.001
	Copper	mg/L	0.001	**20**	**1**	**0.0014**	**0.023**	**0.020**	**0.03**	**0.002**	**0.002**	**0.002**	<0.001	**0.008**	**0.003**	**0.001**
	Lead	mg/L	0.001	**0.1**		**0.0034**	**0.008**	**0.006**	**0.012**	<0.001	<0.001	< 0.001	<0.001	**0.004**	<0.001	<0.001
	Mercury	mg/L	0.0001	**0.01**		**0.00006**	<0.0001	<0.0001	< 0.0001	<0.0001	<0.0001	< 0.0001	<0.0001	<0.0001	<0.0001	<0.0001
	Nickel	mg/L	0.001	**0.2**		**0.011**	**0.008**	**0.007**	**0.011**	**0.001**	<0.001	**0.001**	<0.001	**0.003**	<0.001	<0.001
	Zinc	mg/L	0.005		**3**	**0.008**	**0.823**	**0.739**	**1.2**	**0.098**	**0.099**	**0.11**	**0.007**	**0.07**	**0.081**	**0.037**
BTEXN	Benzene	µg/L	1	**1**		**950**	<1	<1	< 0.001	<1	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	2	**800**	**25**	**180**	<2	<2	< 0.001	<2	<2	<1	<2	<2	<2	<2
	Ethylbenzene	µg/L	2	**300**	**3**	**80**	<2	<2	< 0.001	<2	<2	<1	<2	<2	<2	<2
	Xylene (m & p)	µg/L	2			**75**	<2	<2	< 0.002	<2	<2	<2	<2	<2	<2	<2
	Xylene (o)	µg/L	2			**350**	<2	<2	< 0.001	<2	<2	<1	<2	<2	<2	<2
	Xylene Total	µg/L	2	**600**	**20**		<2	<2	< 0.003	<2	<2	<3	<2	<2	<2	<2
	Naphthalene-MAH	µg/L	5			**16**	<5	<5	< 0.01	<5	<5	-	<5	<5	<5	<5
	BTEX (Sum of Total) - Lab Calc	µg/L	1				<1	<1	-	<1	<1	-	<1	<1	<1	<1
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20				<20	<20	< 20	<20	<20	<20	<20	<20	<20	<20
	C6 - C10 Fraction	µg/L	20				<20	<20	< 20	<20	<20	<20	<20	<20	<20	<20
	>C10-C16 minus Naphthalene (F2)	µg/L	100				**150**	**140**	**330**	<100	<100	<50	<100	<100	<100	<100
	>C10 - C16 Fraction	µg/L	100				**150**	**140**	**330**	<100	<100	<50	<100	<100	<100	<100
	>C16 - C34 Fraction (F3)	µg/L	100				**860**	**950**	**1100**	<100	<100	<100	<100	<100	<100	<100
	>C34 - C40 Fraction (F4)	µg/L	100				**140**	**110**	**200**	<100	<100	<100	<100	<100	<100	<100
	>C10 - C40 (Sum of Total)	µg/L	100				**1150**	**1200**	**1630**	<100	<100	<100	<100	<100	<100	<100
	C6 - C 9 Fraction	µg/L	20				<20	<20	< 20	<20	<20	<20	<20	<20	<20	<20
	C10 - C14 Fraction	µg/L	50				**110**	**80**	**200**	<50	<50	<50	<50	<50	<50	<50
	C15 - C28 Fraction	µg/L	100				**800**	**750**	**1000**	<100	<100	<100	<100	<100	<100	<100
	C29 - C36 Fraction	µg/L	50				**250**	**330**	**500**	<50	<50	<100	<50	<50	<50	<50
	C10 - C36 (Sum of Total)	µg/L	50				**1160**	**1160**	**1700**	<50	<50	<100	<50	<50	<50	<50
Total Recoverable Hydrocarbons (SG)	>C10 - C16 Fraction	µg/L	100				<100	-	-	-	-	-	-	-	-	-
	>C16 - C34 Fraction	µg/L	100				<100	-	-	-	-	-	-	-	-	-
	>C34 - C40 Fraction	µg/L	100				<100	-	-	-	-	-	-	-	-	-
	>C10 - C40 Fraction (sum)	µg/L	100				<100	-	-	-	-	-	-	-	-	-
	C10 - C14 Fraction	µg/L	50				<50	-	-	-	-	-	-	-	-	-
	C15 - C28 Fraction	µg/L	100				<100	-	-	-	-	-	-	-	-	-
	C29 - C36 Fraction	µg/L	50				<50	-	-	-	-	-	-	-	-	-
	C10 - C36 Fraction (sum)	µg/L	50				<50	-	-	-	-	-	-	-	-	-
PAHs	Acenaphthene	µg/L	1				<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Acenaphthylene	µg/L	1				<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Anthracene	µg/L	1			**0.01**	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Benz[a]anthracene	µg/L	1				<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Benzo(a)pyrene	µg/L	0.5			**0.1**	<0.5	<0.5	< 1.0	<0.5	<0.5	<1.0	-	-	-	<0.5
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5				<0.5	<0.5	-	<0.5	<0.5	-	-	-	-	<0.5
	Benzo[b+j]fluoranthene	µg/L	1				<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Benzo(e)pyrene	µg/L	0.1				-	-	-	-	-	-	-	-	-	-
	Benzo(g,h,i)perylene	µg/L	1				<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Benzo(k)fluoranthene	µg/L	1				<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Benzo(b) & Benzo(k)fluoranthene	µg/L	2				-	-	-	-	-	-	-	-	-	-
	Chrysene	µg/L	1				<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Dibenz(a,h)anthracene	µg/L	1				<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Fluoranthene	µg/L	1			**1**	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Fluorene	µg/L	1				<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Indeno(1,2,3-c,d)pyrene	µg/L	1				<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Naphthalene-PAH	µg/L	1			**16**	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Phenanthrene	µg/L	1			**0.6**	<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	Pyrene	µg/L	1				<1.0	<1.0	< 1.0	<1.0	<1.0	<1.0	-	-	-	<1.0
	PAHs (Sum of total) - Lab calc	µg/L	0.5				<0.5	<0.5	< 1.0	<0.5	<0.5	<1.0	-	-	-	<0.5
	2-methylnaphthalene	µg/L	2				-	-	-	-	-	-	-	-	-	-
	3-methylcholanthrene	µg/L	2				-	-	-	-	-	-	-	-	-	-
	7,12-dimethylbenz(a)anthracene	µg/L	2				-	-	-	-	-	-	-	-	-	-
	Coronene	µg/L	0.1				-	-	-	-	-	-	-	-	-	-
	N-2-Fluorenyl Acetamide	µg/L	0.1				-	-	-	-	-	-	-	-	-	-
	Perylene	µg/L	0.1				-	-	-	-	-	-	-	-	-	-
Alkalinity	Alkalinity (Carbonate as CaCO3)	mg/L	1				-	-	-	-	-	-	-	-	-	-
	Alkalinity (Bicarbonate as CaCO3)	mg/L	1				-	-	-	-	-	-	-	-	-	-
	Alkalinity (Hydroxide as CaCO3)	mg/L	1				-	-	-	-	-	-	-	-	-	-
	Alkalinity (total as CaCO3)	mg/L	1				-	-	-	-	-	-	-	-	-	-
Cations & Anions	Total Dissolved Solids @180Â°C	mg/L	10		**600**		-	-	-	-	-	-	**46**	-	**56**	**47**
	Total Dissolved Solids (Inorganic)	mg/L	10		**600**		-	-	-	-	-	-	**15**	-	**13**	-
	Total Suspended Solids	mg/L	5				**40**	**35**	**40**	<5	<5	**6.5**	-	**68**	-	-
	Calcium (Filtered)	mg/L	1				-	-	-	-	-	-	-	-	-	-
	Magnesium (Filtered)	mg/L	1				-	-	-	-	-	-	-	-	-	-
	Potassium (Filtered)	mg/L	1				-	-	-	-	-	-	-	-	-	-
	Sodium (Filtered)	mg/L	1		**180**		-	-	-		-	-	-	-	-	-
	Chloride	mg/L	1		**250**		-	-	-	-	-	-	-	-	-	-
	Sulfate as SO4 (Filtered)	mg/L	1		**250**		-	-	-	-	-	-	-	-	-	-
	Sulphate as S	mg/L	5				-	-	-			-	-	-	-	-
	Cations Total	meq/L	0.01				-	-	-	-	-	-	-	-	-	-
	Anions Total	meq/L	0.01				-	-	-	-	-	-	-	-	-	-
	Ionic Balance	%	0.01				-	-	-	-	-	-	-	-	-	-
Nutrients	Ammonia as N	mg/L	0.01		**0.41**	**0.90**	**0.25**	**0.26**	**0.12**	**0.08**	**0.11**	**0.04**	**0.02**	**0.45**	**0.1**	**0.05**
	Nitrate (as N)	mg/L	0.01	**113**		**2.40**	**0.52**	**0.45**	**0.57**	<0.01	<0.01	< 0.02	**0.02**	**0.08**	**1.21**	**0.52**
	Nitrite as N	mg/L	0.01	**9**			**0.04**	**0.06**	**0.05**	<0.01	<0.01	< 0.02	<0.01	<0.01	**0.02**	<0.01
	Nitrite + Nitrate as N	mg/L	0.01				**0.56**	**0.51**	**0.62**	<0.01	<0.01	< 0.05	**0.02**	**0.08**	**1.23**	**0.52**
	Total Kjeldahl Nitrogen as N	mg/L	0.1				**3.6**	**4.2**	**4.2**	**0.5**	**0.5**	**0.3**	**0.4**	**1.5**	**1.4**	**0.5**
	Total Nitrogen as N	mg/L	0.1				**4.2**	**4.7**	**4.8**	**0.5**	**0.5**	**0.3**	**0.4**	**1.6**	**2.6**	**1**
	Total Phosphorus as P	mg/L	0.01				**0.54**	**0.54**	< 0.01	**0.20**	**0.07**	-	**0.02**	**0.13**	**0.17**	**0.05**

Notes:
Criterion for As(V) adopted
* Where no criterion for total chromium was available, CrVI

APPENDIX A
WELL CONDITION PHOTOS

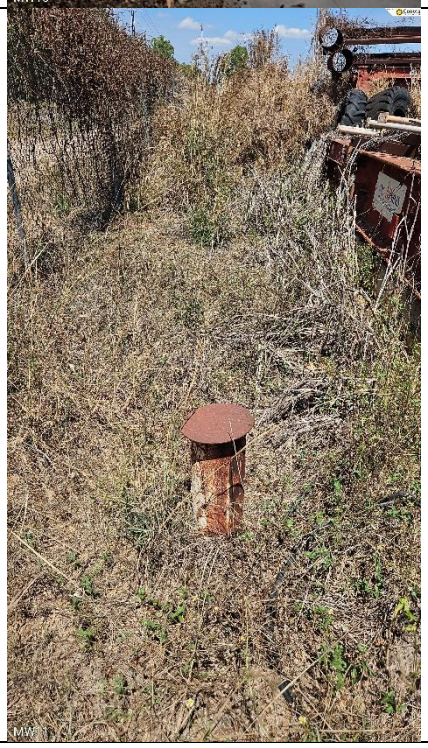
Groundwater Monitoring Well Conditions

Well ID	Photo of Condition
MW01	
MW02	

Groundwater Monitoring Well Conditions

Well ID	Photo of Condition
MW08	
MW09	

Groundwater Monitoring Well Conditions

Well ID	Photo of Condition
MW10	
MW11	

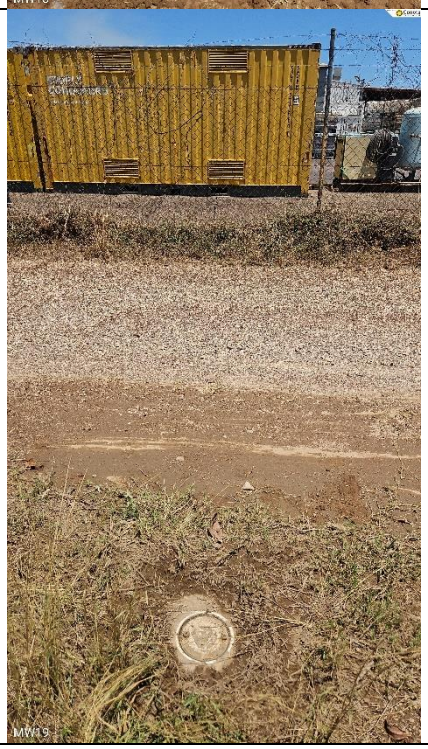
Groundwater Monitoring Well Conditions

Well ID	Photo of Condition
MW12	
MW13	

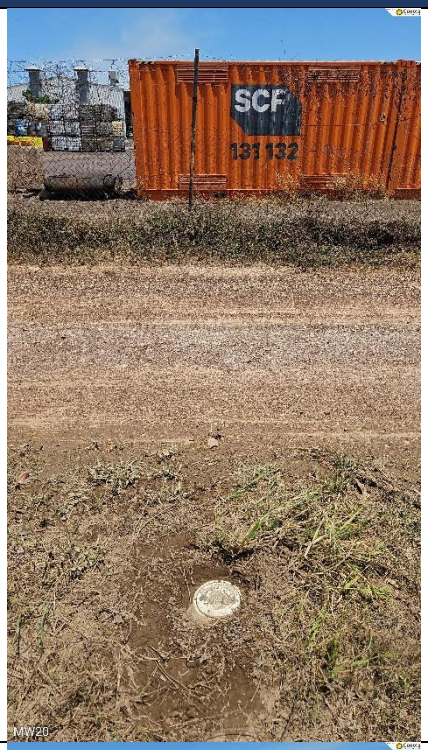
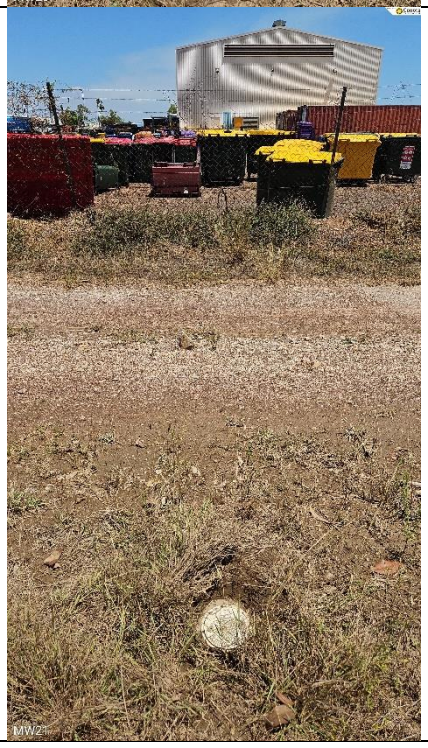
Groundwater Monitoring Well Conditions

Well ID	Photo of Condition
MW16	
MW17R	

Groundwater Monitoring Well Conditions

Well ID	Photo of Condition
MW18	
MW19	

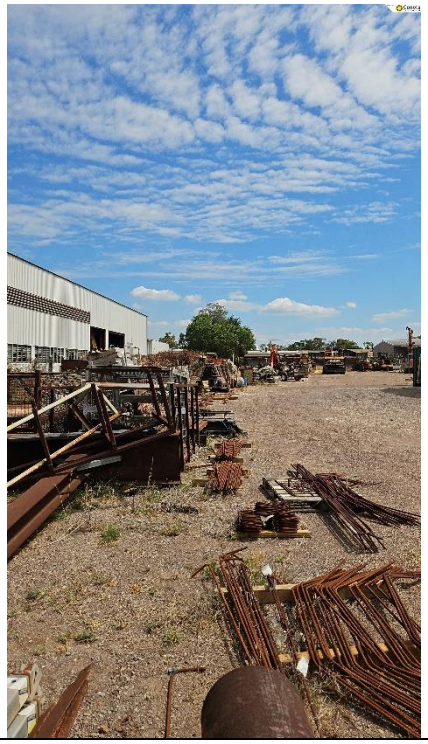
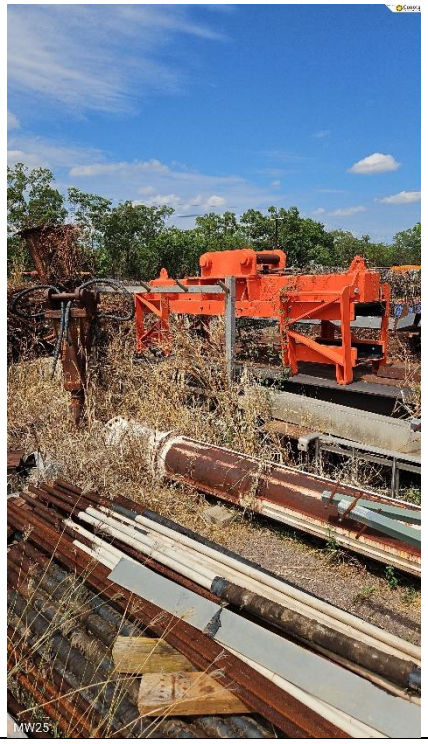
Groundwater Monitoring Well Conditions

Well ID	Photo of Condition
MW20	
MW21	

Groundwater Monitoring Well Conditions

Well ID	Photo of Condition
MW22	
MW23	

Groundwater Monitoring Well Conditions

Well ID	Photo of Condition
MW24	Inaccessible due to construction materials 
MW25	Inaccessible due to construction materials 

Groundwater Monitoring Well Conditions

Well ID	Photo of Condition
MW26	

APPENDIX B
EQUIPMENT CALIBRATION CERTIFICATES

Oil / Water Interface Meter 5.0 1122025A

Instrument **Geotech Interface Meter (60m)**
Serial No. **6374**

airmet
Air-Met Scientific Pty Ltd
1800 000 744

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by: Jaspher Olanio

Calibration date: **11/02/2025**

Next calibration due: **10/08/2025**

Multi Parameter Water Meter 36.0 1122025A

Instrument **YSI Pro Quatro**
Serial No. **23E102249**

airmet
Air-Met Scientific Pty Ltd
1800 000 744

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. D.O		0ppm		432901	0ppm
2. Conductivity		2760µS		429463	2760µS
3. pH7		pH 7		426181	pH 7
4. pH4		pH 4		422643	pH 4
5. Temp °C		24°C		MultTherm	24°C
6. ORP mV		225.2mV		430896/429283	225.2mV

Calibrated by: Jaspher Olanio

Calibration date: **11-Feb-25**

Next calibration due: **10-Aug-25**

Air-Met Scientific
7-11 Ceylon Street
Nunawading
VIC 3131, Australia
Tel: 1800 000 744
Fax: 03 8878 3344

CERTIFICATE OF CALIBRATION

This document certifies that the instrument detailed has been calibrated to the parameters listed below

Certificate Number : 18J104313-R-3-20250916
Calibration Date: 16/09/2025
Next Calibration Due: 16/09/2026

Customer: Air-Met Scientific (National Rental)
Address: Unit 9, 130-132 Frederick Street , , WELLAND , 5007
Equipment No: EP020226
Unit Under Test: YSI ProPlus Water Quality Meter
Serial No: 18J104313
Service Order No: CAL04394

Test Results

Item	Test	Pass	Comments
BATTERY		Pass	
DISPLAY		Pass	
PCB		Pass	
CASE		Pass	
KEYPAD		Pass	
SENSOR(S)		Pass	

Reference Equipment :

Equipment ID	Description	Expiry Date	Reference Certificate Number
SACOND	Conductivity Solution 2760		
SACOND	Conductivity (2760 us/cm @ 25 deg)	14/08/2026	
SAPH7	pH7.00@25 deg celcius		
SAPH7	PH7 (pH = 7.00 +/- 0.02 @ 25 deg)	25/07/2026	
SAPH4	pH 4.0 @ 25 deg celcius		
SAPH4	pH4.01 @ 25 degrees celsius	25/07/2026	
SAORP	ORP Solution (234 @ 20 deg)	1/07/2026	
SADO	DO Powder (Sodium Sulphite Solution)	25/08/2026	

Results :

Sensor	Units	Applied Value	Results		Pass/ Fail	Comments
			As Found	As Left		
CONDUCTIVITY	µS/cm	2760	4032	2760	Pass	
PH7	pH	7	7.02	7	Pass	

Certified System
Quality
ISO 9001
SAI GLOBAL

PH4	pH	4	3.99	4	Pass	
DISSOLVED OXYGEN	%	0	-0.8	0	Pass	
ORP	ORP	243.3	232.46	243.3	Pass	
TEMPERATURE	°C	20.7	20.7	20.7	Pass	

Notes :

Calibrated By: DESHENG.LI

Signed: *DESHENG.LI*

Certified System
Quality
ISO 9001
SAI GLOBAL

APPENDIX C
GROUNDWATER AND STORMWATER SAMPLING SHEETS

February 2025 Groundwater Monitoring Event

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW01	Bore Locked	No
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	6.49
Depth to Groundwater (mPVC):	2.313	Depth to Apparent Free Thickness (mPVC)	No measurable thickness
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	" "
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	1 - 6 m
Gatic Cover: Y / (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	Good.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By: AV	Temperature: 26°C	Wind Speed: -
		Cloud Cover: 10%	Upwind Activities: -

Location Conditions
Comments:
(Circle) Sealed (Gravel) / (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | Low Flow Sampling | Passive Sampler

Equipment (Circle): Disposable | Dedicated Tubing | Decontaminated | Tubing Left in Well

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 19 / 2 / 2025 | Name: A Vaughan

Start Time: - | Finish Time: - | Pump Depth: -

Purge Volume (L): - | No times purged: - | Pumping Details: -

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
NOT SAMPLED DUE TO LNAPL								clear, low turbidity, strong hydrocarbon odour, sheen present

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan Signature AV Date 19 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW02	Bore Locked	No
Depth to Groundwater (m-TOSC):	–	Well depth (m-PVC)	6.48
Depth to Groundwater (mPVC):	1.395	Depth to Apparent Free Thickness (mPVC)	No measurable thickness
Depth to Groundwater (m-BGL):	–	Apparent Free Product Thickness (m)	" "
Bore Radius (m)/ PVC Casing Radius (m)	0.05 / 0.025	Screen Interval (m)	1 - 6m
Gatic Cover: Y / (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: (Y) / N	Rain: –	Wind Direction: –
Comments: Rental	Signed Off By: AV	Temperature: 26°C	Wind Speed: –
		Cloud Cover: 20%	Upwind Activities: –

Location Conditions
Comments:
(Circle) (Sealed) / (Gravel) Grassed Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | Low Flow Sampling | Passive Sampler

Equipment (Circle): Disposable | Dedicated Tubing | Decontaminated | Tubing Left in Well

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 19 / 2 / 2025 | Name: A Vaughan

Start Time: – | Finish Time: – | Pump Depth: –

Purge Volume (L): – | No times purged: – | Pumping Details: –

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
NOT SAMPLED DUE TO LNAPL								Clear, low turbidity, strong hydrocarbon odour, sheen present

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan Signature AV Date 19 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW08	Bore Locked	No - Allen Key
Depth to Groundwater (m-TOSC):	–	Well depth (m-PVC)	5.82
Depth to Groundwater (mPVC):	1.435	Depth to Apparent Free Thickness (mPVC)	–
Depth to Groundwater (m-BGL):	–	Apparent Free Product Thickness (m)	–
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	1-6 m
Gatic Cover: (Y) / N	Standpipe: Y (N)	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: (Y) / N	Rain: –	Wind Direction: –
Comments: Rental	Signed Off By:	Temperature: 32°C	Wind Speed: –
		Cloud Cover: 40%	Upwind Activities: –

Location Conditions
Comments:
(Circle) (Sealed) Gravel Grassed Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 19/2 / 2025 | Name: A Vaughan

Start Time: 2:44 | Finish Time: 3:13 | Pump Depth: ~ 3.6 m

Purge Volume (L): 10 | No times purged: 4 | Pumping Details: 0.4L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
2:54	4	3.39	59.1	194.0	33.7	3.12	1.451	clear, low turbidity
2:59	2	4.01	58.8	241.8	33.8	2.89	" "	no odour or
3:04	2	4.09	59.5	171.8	33.9	2.78	" "	Sheen.
3:09	2	4.10	59.2	168.9	34.0	2.81	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan Signature Date 19/2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW09	Bore Locked	No - Allen key
Depth to Groundwater (m-TOSC):	–	Well depth (m-PVC)	5.055
Depth to Groundwater (mPVC):	1.558	Depth to Apparent Free Thickness (mPVC)	–
Depth to Groundwater (m-BGL):	–	Apparent Free Product Thickness (m)	–
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	0.6 – 5.9 m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ○ / N	Rain: –	Wind Direction: –
Comments: Rental	Signed Off By:	Temperature: 32°C	Wind Speed: –
		Cloud Cover: 10%	Upwind Activities: –

Location Conditions
Comments:
(Circle) (Sealed) Gravel Grassed Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 19/2/2025 Name: A Vaughan

Start Time: 1:57 Finish Time: 2:25 Pump Depth: ~2.65 m

Purge Volume (L): 10 No times purged: 4 Pumping Details: 0.4 L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
2:07	4	4.03	72.9	126.0	32.9	4.58	1.559	clear, low turbidity, no odour or sheen.
2:12	2	4.01	74.1	127.4	32.9	3.33	" "	
2:17	2	3.97	74.9	132.1	33.0	3.59	" "	
2:22	2	3.97	74.7	134.8	33.0	4.33	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: (Y) / N

If so, QAQC Sample ID: DUP1

Checked by: A Vaughan Signature Date 19 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW10	Bore Locked	No - Allen Key
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	5.67
Depth to Groundwater (mPVC):	1.610	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	1-6 m
Gatic Cover: (Y) / N	Standpipe: Y (N)	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By: AV	Temperature: 31°C	Wind Speed: -
		Cloud Cover: 60%	Upwind Activities: -

Location Conditions
Comments:
(Circle) (Sealed) Gravel Grassed Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable)

Purging Information

Date: 19 / 2 / 2025 | Name: A Vaughan

Start Time: 3:23 | Finish Time: 3:52 | Pump Depth: ~3.5m

Purge Volume (L): 10 | No times purged: 4 | Pumping Details: 0.4L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
3:33	4	4.39	46.1	145.2	31.2	1.19	1.611	clear, low turbidity
3:38	2	4.34	46.6	149.5	31.4	1.31	" "	no odour or sheen
3:43	2	4.32	46.0	150.4	31.4	1.33	" "	
3:48	2	4.30	46.0	150.9	31.4	1.40	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan Signature AV Date 19 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW11	Bore Locked	No
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	5.55
Depth to Groundwater (mPVC):	1.094	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	3-6 m
Gatic Cover: Y / (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	Good.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ○ / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By:	Temperature: 30 °C	Wind Speed: -
		Cloud Cover: 50%	Upwind Activities: -

Location Conditions
Comments:
(Circle) Sealed Gravel (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer (Waterra Tubing/ Footvalve) Low Flow Sampling Passive Sampler

Equipment (Circle): Disposable (Dedicated Tubing) Decontaminated (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 20 / 2 / 2025 Name: A Vaughan

Start Time: 10:30 Finish Time: 11:00 Pump Depth: 4.5 m

Purge Volume (L): 10 No times purged: 4 Pumping Details: 0.4 L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
10:40	4	4.56	57.1	142.8	32.1	3.76	1.10	light brown, low
10:45	2	4.46	54.4	157.8	31.8	4.39	" "	turbidity, no
10:50	2	4.49	54.4	155.2	31.8	3.94	" "	odour or sheen.
10:55	2	4.47	54.1	156.1	31.8	3.77	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan Signature Date 20 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW12	Bore Locked	No - Allen Key
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	5.62
Depth to Groundwater (mPVC):	1.108	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	3-6 m
Gatic Cover: Y / (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	Good.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: 731 PRO	Chem Kit Calibrated: ○ / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By:	Temperature: 30°C	Wind Speed: -
		Cloud Cover: 50%	Upwind Activities: -

Location Conditions
Comments:
(Circle) Sealed Gravel (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 20/2/2025 Name: A Vaughan

Start Time: ~~9:25~~ 9:30 Finish Time: 9:58 Pump Depth: ~4.5m

Purge Volume (L): 10 No times purged: 4 Pumping Details: 0.4 L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
9:40	4	5.37	135.0	129.1	30.7	1.03	1.11	clear low turbidity,
9:45	2	5.47	134.5	115.6	30.7	0.86	" "	no odour or
9:50	2	5.19	~~54.7~~ 54.7	121.8	30.5	1.95	" "	sheen.
9:55	2	5.13	54.8	124.4	30.4	1.38	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan Signature Date 20 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW13	Bore Locked	No
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	5.81
Depth to Groundwater (mPVC):	0.775	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	2.5 ~ 5.5
Gatic Cover: Y (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By:	Temperature: 26°C	Wind Speed: -
		Cloud Cover: 20%	Upwind Activities: -

Location Conditions
Comments:
(Circle) Sealed Gravel (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 20/ 2 / 2025	Name: A Vaughan		
Start Time: 9:06	Finish Time: 9:30	Pump Depth: ~4 m	
Purge Volume (L): 10	No times purged: 4	Pumping Details: 0.4L/min	

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
9:10	4	3.82	48.9	179.9	32.7	1.07	0.790	clear, low turbidity,
9:15	2	3.83	48.5	180.7	32.7	1.21	" "	no odour or sheen.
9:20	2	3.78	48.5	184.7	32.7	1.27	" "	
9:25	2	3.75	48.5	184.2	32.8	1.26	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan Signature Date 20 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW16	Bore Locked	Yes - combo lock 174
Depth to Groundwater (m-TOSC):	–	Well depth (m-PVC)	5.955
Depth to Groundwater (mPVC):	0.654	Depth to Apparent Free Thickness (mPVC)	–
Depth to Groundwater (m-BGL):	–	Apparent Free Product Thickness (m)	–
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	1.5-5.5m
Gatic Cover: Y (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI PRO	Chem Kit Calibrated: ( ) / N	Rain: –	Wind Direction: –
Comments: Rental	Signed Off By:	Temperature: 30°C	Wind Speed: –
		Cloud Cover: 80%	Upwind Activities: –

Location Conditions
Comments:
(Circle) Sealed (Gravel) / (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable)

Purging Information

Date: 19/2/2025	Name: A Vaughan		
Start Time: 10:11	Finish Time: 10:38	Pump Depth: ~3.5m	
Purge Volume (L): 10	No times purged: 4	Pumping Details: 0.4L/min	

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
10:21	4	5.44	117.0	-335.3	30.8	0.12	0.66	clear, low turbidity,
10:26	2	5.40	113.5	-332.7	30.9	0.50	" "	no odour or sheen.
10:31	2	5.33	111.2	-326.4	30.9	0.74	" "	
10:36	2	5.29	106.5	-329.9	30.9	0.78	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan Signature Date 19 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW17R	Bore Locked	Yes - combo lock 1744
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	6.715
Depth to Groundwater (mPVC):	0.955	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	1.5-5.5 m
Gatic Cover: Y / (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	Excellent

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By:	Temperature: 29°C	Wind Speed: -
		Cloud Cover: 70%	Upwind Activities: -

Location Conditions					
Comments:					
(Circle)	Sealed	Gravel	(Grassed)	Other (specify)	In creek

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) | R = Bore Radius (m)

h = thickness of saturated filterpack (m) | r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 19 / 2 / 2025	Name: A Vaughan		
Start Time: 9:36	Finish Time: 10:10	Pump Depth: ~3.5 m	
Purge Volume (L): 10	No times purged: 4	Pumping Details: 0.4 L/min	

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
9:46	4	5.11	83.8	-2.7	30.8	0.09	0.96	clear, low turbidity,
9:51	2	5.11	83.3	-35.9	30.9	0.14	" "	no odour or
9:56	2	5.12	82.3	-79.7	30.9	0.47	" "	sheen.
10:01	2	5.12	80.6	-89.1	30.8	0.68	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan | Signature | Date 19 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW18	Bore Locked	No - Allenkey
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	5.050
Depth to Groundwater (mPVC):	0.065	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	2.1 - 6.1 m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Ok.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By:	Temperature: 32°C	Wind Speed: -
		Cloud Cover: 70%	Upwind Activities: -

Location Conditions
Comments:
(Circle) Sealed (Gravel) / (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 19 / 2 / 2025 | Name: A Vaughan

Start Time: 11:00 | Finish Time: 11:27 | Pump Depth: ~4.1m

Purge Volume (L): 10 | No times purged: 4 | Pumping Details: 0.4L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
11:10	4	5.15	68.9	-12.8	34.0	0.75	0.066	clear, low turbidity,
11:15	2	5.08	65.9	-22.2	34.0	1.32	" "	no odour or sheen.
11:20	2	5.05	63.5	-33.1	34.1	1.45	" "	
11:25	2	5.01	61.8	-38.4	34.1	1.53	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan | Signature | Date 9 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW19	Bore Locked	No - Allen Key
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	5.84
Depth to Groundwater (mPVC):	0.155	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	2-6m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Good.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI PRO	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By:	Temperature: 30°C	Wind Speed: -
		Cloud Cover: 60%	Upwind Activities: -

Location Conditions
Comments:
(Circle) Sealed (Gravel) / (Grassed) Other (specify)

Sampling Methodology				
Sampling Method (Circle):	Disposable Bailer	Waterra Tubing/ Footvalve	(Low Flow Sampling)	Passive Sampler
Equipment (Circle):	Disposable	(Dedicated Tubing)	Decontaminated	(Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 19/2/2025 Name: A Vaughan

Start Time: 11:33 Finish Time: 12:00 Pump Depth: ~4 m

Purge Volume (L): 10 No times purged: 4 Pumping Details: 0.4 L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
11:43	4	4.81	60.1	31.6	33.9	1.56	0.16	clear, low turbidity
11:48	2	4.74	56.6	19.8	34.0	1.57	" "	no odour or sheen
11:53	2	4.67	54.7	9.1	33.9	1.63	" "	↓
11:58	2	4.68	54.6	8.4	33.9	1.73	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes
QAQC Sample Collected: Y / (N)
If so, QAQC Sample ID:
Checked by: A Vaughan Signature Date 19 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW20	Bore Locked	No - Allen Key
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	5.49
Depth to Groundwater (mPVC):	0.141	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05 / 0.029	Screen Interval (m)	2 - 6 m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Good.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By:	Temperature: 31 °C	Wind Speed: -
		Cloud Cover: 20%	Upwind Activities: -

Location Conditions
Comments:
(Circle) Sealed (Gravel) / (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 19 / 2 / 2025	Name: A Vaughan		
Start Time: 12:03	Finish Time: 12:30	Pump Depth: ~4m	
Purge Volume (L): 10	No times purged: 4	Pumping Details: 0.4L/min	

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
12:13	4	4.20	53.1	59	34.1	1.10	0.143	clear, low turbidity,
12:18	2	4.18	53.4	32.1	34.1	1.12	" "	no odour or sheen.
12:23	2	4.17	52.5	32.4	34.1	1.40	" "	
12:28	2	4.13	51.9	30.1	33.9	1.46	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan Signature Date 19 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW21	Bore Locked	No - Allen Key
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	5.88 m
Depth to Groundwater (mPVC):	0.219	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	2-6 m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI PRO	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By:	Temperature: 31°C	Wind Speed: -
		Cloud Cover: 40%	Upwind Activities: -

Location Conditions
Comments:
(Circle) Sealed (Gravel) / (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 19/2 / 2025 | Name: A Vaughan

Start Time: 12:33 | Finish Time: 1:00 | Pump Depth: 4.0 m

Purge Volume (L): 10 | No times purged: 4 | Pumping Details: 0.4 L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
12:43	4	4.60	51.1	-43.6	33.4	0.70	0.22	clear, low turbidity,
12:48	2	4.64	50.1	-158.7	33.3	1.01	" "	no odour or
12:53	2	4.60	50.3	-200.3	33.2	1.15	" "	sheen.
12:58	2	4.57	50.5	-207.1	33.1	1.30	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan Signature Date 19 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW22	Bore Locked	No - Allen Key
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	5.96
Depth to Groundwater (mPVC):	0.462	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.075	Screen Interval (m)	2-6m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Good.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI PRO	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By:	Temperature: 31°C	Wind Speed: -
		Cloud Cover: 30%	Upwind Activities: -

Location Conditions
Comments:
(Circle) Sealed (Gravel) / (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) | R = Bore Radius (m)

h = thickness of saturated filterpack (m) | r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 20 / 2 / 2025	Name: A Vaughan		
Start Time: 1:08	Finish Time: 1:36	Pump Depth: 4 m	
Purge Volume (L): 10	No times purged: 4	Pumping Details: 0.4 L/min	

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
1:18	4	4.43	51.6	88.7	32.0	2.33	0.466	clear, low turbidity,
1:23	2	4.27	51.8	103.8	32.2	2.36	" "	No odour or sheen
1:28	2	4.25	51.9	105.6	32.2	2.38	" "	
1:33	2	4.21	52.6	101.4	32.2	2.40	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan | Signature | Date 19 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW23	Bore Locked	No
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	6.00
Depth to Groundwater (mPVC):	0.935	Depth to Apparent Free Thickness (mPVC)	No measurable thickness
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	" "
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	2-6 m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	OK.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By: AV	Temperature: 26°C	Wind Speed: -
		Cloud Cover: 20%	Upwind Activities: -

Location Conditions
Comments:
(Circle) (Sealed) Gravel Grassed Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | Low Flow Sampling | Passive Sampler

Equipment (Circle): Disposable | Dedicated Tubing | Decontaminated | Tubing Left in Well

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 19 / 2 / 2025	Name: A Vaughan	
Start Time: -	Finish Time: -	Pump Depth: -
Purge Volume (L): -	No times purged: -	Pumping Details: -

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
								Clear, low turbidity, strong hydrocarbon odour and sheen present
NOT SAMPLED DUE TO LNAPL								

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan Signature AV Date 19 / 2 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	February 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW26	Bore Locked	No - Allen Key
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	6.090
Depth to Groundwater (mPVC):	1.039	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0025	Screen Interval (m)	2-6 m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	OK.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By:	Temperature: 30°C	Wind Speed: -
		Cloud Cover: 60%	Upwind Activities: -

Location Conditions
Comments:
(Circle) (Sealed) Gravel Grassed Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) | R = Bore Radius (m)

h = thickness of saturated filterpack (m) | r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 20 / 2 / 2025	Name: A Vaughan		
Start Time: 8:19	Finish Time: 8:53	Pump Depth: 4m	
Purge Volume (L): 10	No times purged: 4	Pumping Details: 0.4L/min	

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
8:29	4	3.70	55.4	168.4	31.8	1.86	1.05	clear, low turbidity,
8:34	2	3.77	55.6	170.0	31.9	1.98	" "	No odour or sheen.
8:39	2	3.86	54.8	172.2	31.9	1.99	" "	
8:44	2	3.84	55.2	175.7	31.9	2.24	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: A Vaughan | Signature | Date 20 / 3 / 2025

Surface Water Sampling Data Sheet

General Information			
Project:	Sep 2024 Monitoring Event		
Job Number:	BE-78	Site Locked (Y/N):	No
Client:	Cleanaway	Sample ID:	SW2
Location:	875 Stuart Highway, Holtze, NT	Equip Calibrated:	Yes

Weather Conditions			
Rain:	–	Wind Direction:	–
Temperature:	32°C	Wind Speed:	–
Cloud Cover:	70%	Upwind Activities:	–
Location Conditions:	Site SW outlet.		

Purging Information							
Date: 19/2/25		Name:	A Vaughan				
Method: Low flow		Sampling Material:	Surface water			Pump Depth: –	
Start Time: 10:49		Finish Time:	10:57			Pumping Details: –	
Sample Volume (L): 4		No Times Sampled:	4			Total Volumes (litres): 4	
Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Dissolved Oxygen (ppm)	Temp (°C)	Appearance (Colour / Odour / Turbidity)
10:49	1	6.20	63.9	26.3	9.95	32.2	clear, low turbidity,
10:51	1	6.30	63.9	27.3	9.62	32.2	no odour or sheen
10:53	1	6.34	64.0	27.9	9.53	32.2	
10:55	1	6.42	63.3	28.4	9.41	32.2	- Algae observed within surface water
							* DUP1_SW

Purging should continue until measurements for pH are within 0.05 pH unit; conductivity within 3%, DO within 10%, Redox within 10 mV and Temperature is within 0.5 degC over three successive measurements

General Information			
Project:	Sep 2024 Monitoring Event		
Job Number:	BE-78	Site Locked (Y/N):	
Client:	Cleanaway	Sample ID:	
Location:	875 Stuart Highway, Holtze, NT	Equip Calibrated:	

Weather Conditions			
Rain:		Wind Direction:	
Temperature:		Wind Speed:	
Cloud Cover:		Upwind Activities:	
Location Conditions:			

Purging Information							
Date:		Name:	A Vaughan				
Method:		Sampling Material:				Pump Depth:	
Start Time:		Finish Time:				Pump Speed:	
Sample Volume (L)		No Times Sampled:				Total Volumes (litres):	
Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Dissolved Oxygen (ppm)	Temp (°C)	Appearance (Colour / Odour / Turbidity)

September 2025 Groundwater Monitoring Event

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW01	Bore Locked	No
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	6.49
Depth to Groundwater (mPVC):	5.420	Depth to Apparent Free Thickness (mPVC)	No measurable thickness
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	1-6m
Gatic Cover: Y / (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By:	Temperature: 26°C	Wind Speed: -
		Cloud Cover: 5%	Upwind Activities: -

Location Conditions
Comments:
(Circle) Sealed Gravel / Grassed Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | Low Flow Sampling | Passive Sampler

Equipment (Circle): Disposable | Dedicated Tubing | Decontaminated | Tubing Left in Well

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable)

Purging Information

Date: 27/ 9 / 2025	Name: A Vaughan		
Start Time: -	Finish Time: -	Pump Depth: -	
Purge Volume (L): -	No times purged: -	Pumping Details: -	

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
								Clear, low turbidity,
NOT SAMPLED DUE TO LNAPL								Strong Hydrocarbon odour, sheen present.

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: CS Signature Date 29 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW02	Bore Locked	No
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	6.48
Depth to Groundwater (mPVC):	4.382	Depth to Apparent Free Thickness (mPVC)	No measurable thickness
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	"
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	1-6 m
Gatic Cover: Y / (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By: AV	Temperature: 29°C	Wind Speed: -
		Cloud Cover: 10%	Upwind Activities: -

Location Conditions
Comments:
(Circle) (Sealed) / (Gravel) Grassed Other (specify)

Sampling Methodology	
Sampling Method (Circle): Disposable Bailer; Waterra Tubing/ Footvalve; Low Flow Sampling; Passive Sampler	
Equipment (Circle): Disposable; Dedicated Tubing; Decontaminated; Tubing Left in Well	
Bore Volume Calculation: $PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$	**Low Flow Methodology:** The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable)
where H = height of water column (m); R = Bore Radius (m); h = thickness of saturated filterpack (m); r = PVC Radius (m)	

Purging Information								
Date: 22/9 / 2025		Name: A Vaughan						
Start Time: -		Finish Time: -			Pump Depth: -			
Purge Volume (L): -		No times purged: -			Pumping Details: -			
Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
								Clear, low turbidity
NOT	SAMPLED	DUE	TO	LNAPL				strong hydrocarbon odour, no sheen present

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes
QAQC Sample Collected: Y / (N)
If so, QAQC Sample ID:
Checked by: CS Signature [signature] Date 29 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW08	Bore Locked	No - Allen key
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	5.82
Depth to Groundwater (mPVC):	4.422	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	1-6m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: XSI Pro	Chem Kit Calibrated: (Y) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By:	Temperature: 27°C	Wind Speed: -
		Cloud Cover: 5%	Upwind Activities: -

Location Conditions
Comments:
(Circle) (Sealed) Gravel Grassed Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler | Peristaltic

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) | R = Bore Radius (m)

h = thickness of saturated filterpack (m) | r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable)

Purging Information

Date: 23/9 / 2025 | Name: A Vaughan

Start Time: 11:05 | Finish Time: 11:35 | Pump Depth: ~5.2 m

Purge Volume (L): 10 | No times purged: 4 | Pumping Details: 0.4L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
11:15	4	3.99	46.3	189.4	32.3	0.17	4.45	clear, low turbidity,
11:20	2	4.00	46.0	187.3	32.3	0.19	" "	no odour or sheen.
11:25	2	3.99	45.7	187.4	32.3	0.18	" "	
11:30	2	3.97	45.3	188.6	32.3	0.20	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: (Y) / N

If so, QAQC Sample ID: DUP1

Checked by: CS | Signature | Date 29 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW09	Bore Locked	No - Allen Key
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	5.055
Depth to Groundwater (mPVC):	4.680	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	0.6-5.9m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI PVO	Chem Kit Calibrated: (Y) / N	Rain: -	Wind Direction: Northerly
Comments: Rental	Signed Off By: [signature]	Temperature: 28°C	Wind Speed: Low
		Cloud Cover: 5%	Upwind Activities: -

Location Conditions
Comments:
(Circle) (Sealed) Gravel Grassed Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well) | Peristaltic

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable)

Purging Information

Date: 23/9/2025	Name: A Vaughan	
Start Time: 11:56	Finish Time: 12:30	Pump Depth: w 4.8 m
Purge Volume (L): 10	No times purged: 4	Pumping Details: 0.4L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
12:06	4	3.92	93.1	201.1	32.2	1.42	4.70	clear low turbidity,
12:11	2	3.91	103.2	203.7	32.2	1.45	" "	no odour or sheen.
12:16	2	3.92	117.8	204.6	32.2	1.40	" "	
12:21	2	3.93	127.9	205.9	32.2	1.420	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: CS Signature [signature] Date 29 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW10	Bore Locked	No - Allen Key
Depth to Groundwater (m-TOSC):	–	Well depth (m-PVC)	5.67
Depth to Groundwater (mPVC):	4.855	Depth to Apparent Free Thickness (mPVC)	–
Depth to Groundwater (m-BGL):	–	Apparent Free Product Thickness (m)	–
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	1-6m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI PRO	Chem Kit Calibrated: ( ) / N	Rain: –	Wind Direction: Northerly
Comments: Rental	Signed Off By: [signature]	Temperature: 27°C	Wind Speed: moderate
		Cloud Cover: 10%	Upwind Activities: –

Location Conditions
Comments:
(Circle) (Sealed) Gravel Grassed Other (specify)

Sampling Methodology					
Sampling Method (Circle):	Disposable Bailer	Waterra Tubing/ Footvalve	(Low Flow Sampling)	Passive Sampler	Peristaltic
Equipment (Circle):	Disposable	(Dedicated Tubing)	Decontaminated	(Tubing Left in Well)	

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable)

Purging Information								
Date: 23/ 9 / 2025		Name: A Vaughan						
Start Time: 10:02		Finish Time: 10:32			Pump Depth: ~5.2m			
Purge Volume (L): 10		No times purged: 4			Pumping Details: 0.4 L/min			
Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
10:12	4	4.17	45.0	197.9	31.3	0.66	4.87	clear, low turbidity,
10:17	2	4.18	44.1	193.9	31.3	0.58	" "	no odour or sheen.
10:22	2	4.18	43.8	192.0	31.3	0.56	" "	
10:27	2	4.18	43.5	189.4	31.3	0.55	" "	* minor organic material noted.

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes
QAQC Sample Collected: Y / (N)
If so, QAQC Sample ID:
Checked by: CS Signature [signature] Date 29 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW11	Bore Locked	No
Depth to Groundwater (m-TOSC):	–	Well depth (m-PVC)	5.55
Depth to Groundwater (mPVC):	4.113	Depth to Apparent Free Thickness (mPVC)	–
Depth to Groundwater (m-BGL):	–	Apparent Free Product Thickness (m)	–
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	3-6 m
Gatic Cover: Y / (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	Good.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI PRO	Chem Kit Calibrated: ( ) / N	Rain: –	Wind Direction: –
Comments: Rental	Signed Off By:	Temperature: 30°C	Wind Speed: –
		Cloud Cover: 5%	Upwind Activities: –

Location Conditions					
Comments:					
(Circle)	Sealed	(Gravel)	(Grassed)	Other (specify)	Along fenceline

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler | Peristaltic

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) | R = Bore Radius (m)

h = thickness of saturated filterpack (m) | r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 23 / 9 / 2025 | Name: A Vaughan

Start Time: 2:52 | Finish Time: 3:22 | Pump Depth: ~4.8 m

Purge Volume (L): 10 | No times purged: 4 | Pumping Details: 0.4L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
3:02	4	4.04	376.3	266.0	31.6	3.74	4.13	Clear, low turbidity,
3:07	2	4.06	379.8	256.9	31.6	3.85	"	no odour or sheen
3:12	2	4.07	382.4	244.1	31.6	3.98	"	
3:17	2	4.03	378.9	251.2	31.6	3.83	"	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: CS | Signature | Date 29 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW12	Bore Locked	No
Depth to Groundwater (m-TOSC):	—	Well depth (m-PVC)	5.62
Depth to Groundwater (mPVC):	3.935	Depth to Apparent Free Thickness (mPVC)	—
Depth to Groundwater (m-BGL):	—	Apparent Free Product Thickness (m)	—
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	3-6 m
Gatic Cover: Y / (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	OK.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI PRO	Chem Kit Calibrated: ( ) / N	Rain: —	Wind Direction: —
Comments: Rental	Signed Off By:	Temperature: 31°C	Wind Speed: —
		Cloud Cover: 15%	Upwind Activities: —

Location Conditions
Comments:
(Circle) Sealed Gravel (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Peristaltic * waterra tubing also present.

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 24/ 9 / 2025	Name: A Vaughan		
Start Time: 1:10	Finish Time: 1:40	Pump Depth: ~4.5 m	
Purge Volume (L): 10	No times purged: 4	Pumping Details: 0.4L/min	

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
1:20	4	4.58	188.1	198.8	31.4	0.35	3.95	Light brown, low turbidity, no odour or sheen.
1:25	2	4.50	199.0	197.1	31.6	0.43	"	"
1:30	2	4.41	203.4	198.3	31.6	0.47	"	"
1:35	2	4.39	209.4	198.4	31.6	0.50	"	"
								* Some fine organic material

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: CG Signature [signature] Date 29 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW13	Bore Locked	No
Depth to Groundwater (m-TOSC):	–	Well depth (m-PVC)	5.81
Depth to Groundwater (mPVC):	3.420	Depth to Apparent Free Thickness (mPVC)	–
Depth to Groundwater (m-BGL):	–	Apparent Free Product Thickness (m)	–
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	2.5-5.5
Gatic Cover: Y / (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI PRO	Chem Kit Calibrated: ( ) / N	Rain: –	Wind Direction: –
Comments: Rental	Signed Off By: AV	Temperature: 29°C	Wind Speed: –
		Cloud Cover: 20%	Upwind Activities: –

Location Conditions
Comments:
(Circle) Sealed Gravel (Grassed) Other (specify)

Sampling Methodology					
Sampling Method (Circle):	Disposable Bailer	Waterra Tubing/ Footvalve	(Low Flow Sampling)	Passive Sampler	Peristaltic
Equipment (Circle):	Disposable	(Dedicated Tubing)	Decontaminated	(Tubing Left in Well)	

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 24 / 9 / 2025 | Name: A Vaughan

Start Time: 2:21 | Finish Time: 2:50 | Pump Depth: ~4m

Purge Volume (L): 10 | No times purged: 4 | Pumping Details: 0.4L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
2:31	4	4.21	143.4	218.3	31.4	0.88	3.42	clear, low turbidity
2:36	2	4.15	151.4	224.2	32.2	0.76	" "	no odour or sheen
2:41	2	4.15	164.4	217.0	32.4	0.75	" "	
2:46	2	4.14	155.7	213.7	32.4	0.74	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: CS Signature [signature] Date 29 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW16	Bore Locked	Yes - combo lock 174
Depth to Groundwater (m-TOSC):	–	Well depth (m-PVC)	5.955
Depth to Groundwater (mPVC):	3.228	Depth to Apparent Free Thickness (mPVC)	–
Depth to Groundwater (m-BGL):	–	Apparent Free Product Thickness (m)	–
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	1.5 - 5.5 m
Gatic Cover: Y / (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ◯ / N	Rain: –	Wind Direction: –
Comments: Rental	Signed Off By: AV	Temperature: 29°C	Wind Speed: –
		Cloud Cover: 5%	Upwind Activities: –

Location Conditions					
Comments:					
(Circle)	Sealed	Gravel	(Grassed)	Other (specify)	Standpipe near creek

Sampling Methodology					
Sampling Method (Circle):	Disposable Bailer	Waterra Tubing/ Footvalve	(Low Flow Sampling)	Passive Sampler	Peristaltic
Equipment (Circle):	Disposable	(Dedicated Tubing)	Decontaminated	(Tubing Left in Well)	

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 23 / 9 / 2025	Name: A Vaughan		
Start Time: 1:58	Finish Time: 2:28	Pump Depth: ~4 m	
Purge Volume (L): 10	No times purged: 4	Pumping Details: 0.4L/min	

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
2:08	4	5.36	592	185.0	31.8	0.90	3.23	clear, low turbidity,
2:13	2	5.25	581	184.3	31.8	0.82	" "	no o/s
2:18	2	5.09	590	187.3	31.9	0.78	" "	
2:23	2	5.03	570	185.6	31.8	0.69	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: CS Signature Chandl. Date 29 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW17R	Bore Locked	Yes - combo lock 1733
Depth to Groundwater (m-TOSC):	–	Well depth (m-PVC)	6.715
Depth to Groundwater (mPVC):	3.246	Depth to Apparent Free Thickness (mPVC)	–
Depth to Groundwater (m-BGL):	–	Apparent Free Product Thickness (m)	–
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	1.5 - 5.5 m
Gatic Cover: Y / (N)	Standpipe: (Y) / N	Bore Condition (integrity of casing/ well caps etc):	Excellent

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: –	Wind Direction: –
Comments: Rental	Signed Off By: [signature]	Temperature: 30°C	Wind Speed: –
		Cloud Cover: 5%	Upwind Activities: –

Location Conditions
Comments:
(Circle) Sealed Gravel (Grassed) Other (specify) In creek.

Sampling Methodology
Sampling Method (Circle): Disposable Bailer / Waterra Tubing/ Footvalve / (Low Flow Sampling) / Passive Sampler — Peristaltic
Equipment (Circle): Disposable / (Dedicated Tubing) / Decontaminated / (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 23/9/2025	Name: A Vaughan		
Start Time: 1:14	Finish Time: 1:43	Pump Depth: ~4m	
Purge Volume (L): ~10	No times purged: 4	Pumping Details: 0.4L/min	

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
1:24	4	5.25	390.0	235.8	31.1	1.51	3.24	light brown, low/
1:29	2	5.23	391.7	233.0	31.1	1.50	" "	moderate turbidity,
1:34	2	5.22	389.4	229.4	31.2	1.31	" "	no odour or sheen
1:39	2	5.21	389.7	226.6	31.2	1.14	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes
QAQC Sample Collected: Y / (N)
If so, QAQC Sample ID:
Checked by: CS. Signature [signature] Date 29 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW18	Bore Locked	No - Allen key
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	5.050
Depth to Groundwater (mPVC):	2.830	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	2.1 - 6.1m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By:	Temperature: 26°C	Wind Speed: -
		Cloud Cover: 5%	Upwind Activities: -

Location Conditions
Comments:
(Circle) Sealed (Gravel) / (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler | Peristaltic

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 24/ 9 / 2025	Name: A Vaughan		
Start Time: 9:15	Finish Time: 9:45	Pump Depth: ~3.5	
Purge Volume (L): 10	No times purged: 4	Pumping Details: 0.4 L/min	

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
9:25	4	5.18	206.9	183.1	32.4	0.41	2.84	clear, low turbidity,
9:30	2	5.01	195.9	177.5	32.5	0.36	" "	no odour or sheen.
9:35	2	4.91	~~196.2~~ 195.5	176.0	32.5	0.38	" "	
9:40	2	4.86	198.5	176.3	32.5	0.39	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: CS Signature [signature] Date 29 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW19	Bore Locked	No - Allen key
Depth to Groundwater (m-TOSC):	–	Well depth (m-PVC)	5.84
Depth to Groundwater (mPVC):	2.840	Depth to Apparent Free Thickness (mPVC)	–
Depth to Groundwater (m-BGL):	–	Apparent Free Product Thickness (m)	–
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	2-6 m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Good

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: (Y) / N	Rain: –	Wind Direction: –
Comments: Rental	Signed Off By: [signature]	Temperature: 27°C	Wind Speed: –
		Cloud Cover: 10%	Upwind Activities: –

Location Conditions
Comments:
(Circle) Sealed (Gravel) / (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well) | Peristaltic

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 24/ 9 / 2025 | Name: A Vaughan

Start Time: 9:51 | Finish Time: 10:22 | Pump Depth: ~4 m

Purge Volume (L): 10 | No times purged: 4 | Pumping Details: 0.4L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
10:01	4	4.50	212.1	188.2	32.5	1.25	2.86	clear, low turbidity,
10:06	2	4.46	222.5	187.4	32.7	0.93	" "	no odour or sheen
10:11	2	4.46	225.7	186.6	32.7	0.76	" "	
10:16	2	4.44	226.0	185.8	32.8	0.65	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: CS Signature [signature] Date 29 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW20	Bore Locked	No - Allen Key
Depth to Groundwater (m-TOSC):	–	Well depth (m-PVC)	5.49
Depth to Groundwater (mPVC):	2.864	Depth to Apparent Free Thickness (mPVC)	–
Depth to Groundwater (m-BGL):	–	Apparent Free Product Thickness (m)	–
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	2-6 m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Good.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI PxD	Chem Kit Calibrated: ( ) / N	Rain: –	Wind Direction: –
Comments: Rental	Signed Off By:	Temperature: 30°C	Wind Speed: –
		Cloud Cover: 10%	Upwind Activities: –

Location Conditions

Comments:

(Circle) Sealed (Gravel) / (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable)

Purging Information

Date: 24/ 9 / 2025 | Name: A Vaughan

Start Time: 11:06 | Finish Time: 11:36 | Pump Depth: ~4m

Purge Volume (L): 10 | No times purged: 4 | Pumping Details: 0.4 L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
11:16	4	4.25	238.8	200.6	32.4	1.18	2.87	light brown, low
11:21	2	4.25	239.5	200.5	32.6	0.96	" "	turbidity, no odour
11:26	2	4.25	240.4	200.3	32.5	1.01	" "	or sheen
11:31	2	4.25	242.2	198.0	32.7	0.83	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: CB Signature [signature] Date 29 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW21	Bore Locked	No - Allen key
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	5.88 m
Depth to Groundwater (mPVC):	3.023	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	2-6 m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Good.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: -
Comments: Rental	Signed Off By: AW	Temperature: 28°C	Wind Speed: -
		Cloud Cover: 5%	Upwind Activities: -

Location Conditions
Comments:
(Circle) Sealed (Gravel) / (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler — Peristaltic

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) — R = Bore Radius (m)

h = thickness of saturated filterpack (m) — r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 24/ 9 / 2025	Name: A Vaughan		
Start Time: 11:44	Finish Time: 12:14	Pump Depth: ~4m	
Purge Volume (L): 10	No times purged: 4	Pumping Details: 0.4L/min	

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
11:54	4	4.51	258.1	201.4	31.6	0.79	3.03	clear, low turbidity
11:59	2	4.49	255.5	197.0	31.8	0.57	"	no odour or sheen
12:04	2	4.47	254.2	194.3	31.8	0.50	"	
12:09	2	4.48	267.4	191.9	31.8	0.46	"	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: CS Signature [signature] Date 24 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW22	Bore Locked	No - Allen Key
Depth to Groundwater (m-TOSC):	–	Well depth (m-PVC)	5.96
Depth to Groundwater (mPVC):	3.355	Depth to Apparent Free Thickness (mPVC)	–
Depth to Groundwater (m-BGL):	–	Apparent Free Product Thickness (m)	–
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	2-6 m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	Good.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ◯ / N	Rain: –	Wind Direction: –
Comments: Rental	Signed Off By:	Temperature: 31°C	Wind Speed: –
		Cloud Cover: 5%	Upwind Activities: –

Location Conditions
Comments:
(Circle) Sealed (Gravel) / (Grassed) Other (specify)

Sampling Methodology

Sampling Method (Circle): Disposable Bailer | Waterra Tubing/ Footvalve | (Low Flow Sampling) | Passive Sampler | Peristaltic

Equipment (Circle): Disposable | (Dedicated Tubing) | Decontaminated | (Tubing Left in Well)

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) | R = Bore Radius (m)

h = thickness of saturated filterpack (m) | r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 24/ 9 / 2025 | Name: A Vaughan

Start Time: 12:30 | Finish Time: 1:00 | Pump Depth: ~4.2 m

Purge Volume (L): 10 | No times purged: 4 | Pumping Details: 0.4 L/min

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
12:40	4	3.94	42.5	221.4	32.0	2.31	3.40	clear, low turbidity,
12:45	2	3.94	43.7	217.9	32.1	2.21	" "	no odour or sheen
12:50	2	3.93	44.9	216.8	32.0	2.03	" "	
12:55	2	3.93	48.7	217.0	32.2	2.07	" "	

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: CS | Signature | Date 24 / 9 / 2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW23	Bore Locked	No
Depth to Groundwater (m-TOSC):	–	Well depth (m-PVC)	6.00
Depth to Groundwater (mPVC):	3.973	Depth to Apparent Free Thickness (mPVC)	No measurable thickness
Depth to Groundwater (m-BGL):	–	Apparent Free Product Thickness (m)	"
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	2-6m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	ok.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI DO	Chem Kit Calibrated: ( ) / N	Rain: –	Wind Direction: –
Comments: Rental	Signed Off By: [signature]	Temperature: 27°C	Wind Speed: –
		Cloud Cover: 5%	Upwind Activities: –

Location Conditions
Comments:
(Circle) (Sealed) Gravel Grassed Other (specify)

Sampling Methodology	
Sampling Method (Circle):	Disposable Bailer / Waterra Tubing/ Footvalve / Low Flow Sampling / Passive Sampler
Equipment (Circle):	Disposable / Dedicated Tubing / Decontaminated / Tubing Left in Well

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 29 / 9 / 2025 Name: A Vaughan

Start Time: – Finish Time: – Pump Depth: –

Purge Volume (L): – No times purged: – Pumping Details: –

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
								clear, low turbidity, strong Hydrocarbon odour, sheen present.
NOT SAMPLED DUE TO LNAPL								

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

Checked by: CS Signature [signature] Date 29/9/2025

Groundwater Sampling Data Sheet

General Information	
Client:	Cleanaway Waste Management Limited
Job Number:	BE-78
Project:	September 2025 Monitoring Event
Location:	875 Stuart Highway, Holtze, NT

Bore Information			
Well ID No.	MW26	Bore Locked	No
Depth to Groundwater (m-TOSC):	-	Well depth (m-PVC)	6.090
Depth to Groundwater (mPVC):	4.080	Depth to Apparent Free Thickness (mPVC)	-
Depth to Groundwater (m-BGL):	-	Apparent Free Product Thickness (m)	-
Bore Radius (m)/ PVC Casing Radius (m)	0.05/0.025	Screen Interval (m)	2-6m
Gatic Cover: (Y) / N	Standpipe: Y / (N)	Bore Condition (integrity of casing/ well caps etc):	OK.

Equipment Calibration Information		Weather Conditions	
Chem Kit Number/ Type: YSI Pro	Chem Kit Calibrated: ( ) / N	Rain: -	Wind Direction: Northerly
Comments: Rental	Signed Off By: ZCK	Temperature: 22°C	Wind Speed: Low
		Cloud Cover: 10%	Upwind Activities: N/A

Location Conditions
Comments:
(Circle) (Sealed) Gravel Grassed Other (specify)

Sampling Methodology					
Sampling Method (Circle):	Disposable Bailer	Waterra Tubing/ Footvalve	(Low Flow Sampling)	Passive Sampler	Peristaltic
Equipment (Circle):	Disposable	(Dedicated Tubing)	Decontaminated	(Tubing Left in Well)	

Bore Volume Calculation:

$$PV = [(H \times \pi \times r^2) + 0.2(h \times \pi \times (R^2 - r^2))] \times 1000$$

where H = height of water column (m) R = Bore Radius (m)

h = thickness of saturated filterpack (m) r = PVC Radius (m)

Low Flow Methodology:

The low flow pump is to be positioned at the mid-point of the saturated well screen. Between sampling locations, dedicated LDPE tubing and internal pump bladders are to be used with the pump decontaminated using Decon90 (decontamination solution) and rinsed through twice, once with tap water and then with distilled water. The water level is to be measured during the micro purging so as to ensure that the water level does not fall by more than 10 cm and that water is being sampled from the targeted depth. This is required to ensure groundwater extracted from the well is fresh groundwater obtained from the adjacent formation and not stagnant water contained in the well water column. Field chemical parameters are to be recorded every five minutes or the time taken to remove one volume of the flow through the cell (whichever is greater) and at least 1 bore volume (screened interval only) should be removed before sampling (if conditions are suitable).

Purging Information

Date: 23/9 / 2025	Name: A Vaughan		
Start Time: 9:16	Finish Time: 9:48	Pump Depth: ~5m	
Purge Volume (L): 10	No times purged: 4	Pumping Details: 0.4L/min	

Time	Volume Removed (L)	pH	E.C. (µS/cm or mS/cm)	Redox (mV)	Temp (°C)	DO (ppm or %)	Water Level (mPVC)	Appearance (Colour, Turbidity, Odour and Appearance of a Sheen)
9:26	4	4.09	42.1	213.6	31.6	0.72	4.09	Clear, low turbidity,
9:31	2	4.01	42.8	213.0	31.6	0.99	" "	no odour or sheen.
9:36	2	3.99	42.6	206.0	31.6	1.12	" "	
9:41	2	3.96	42.5	199.3	31.6	1.20	" "	*some fine organic material noted.

Purging should continue until measurements for pH are within 0.05 pH unit, EC is within 3%, Redox is within 10mV and Temperature is within 0.5 degC of the previous set of parameters.

Sampling Notes

QAQC Sample Collected: Y / (N)

If so, QAQC Sample ID:

* Ant nest present in Gatic

Checked by: CG Signature [signature] Date 29 / 9 / 2025

APPENDIX D
CERTIFIED LABORATORY ANALYTICAL REPORTS

February 2025 Groundwater Monitoring Event

CERTIFICATE OF ANALYSIS

Work Order	: **ES2504852**	Page	: 1 of 15
Client	: **LWC MANAGEMENT PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR JAMES FOX	Contact	: Kieren Burns
Address	: SUITE 3 4-8 GOODWOOD ROAD WAYVILLE SOUTH AUSTRALIA 5034	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61881625130
Project	: BE-78	Date Samples Received	: 21-Feb-2025 11:30
Order number	: ----	Date Analysis Commenced	: 21-Feb-2025
C-O-C number	: ----	Issue Date	: 27-Feb-2025 14:33
Sampler	: ALISTAIR VAUGHAN		
Site	: ----		
Quote number	: EN/111		
No. of samples received	: 18		
No. of samples analysed	: 18		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, 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.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW08	MW09	MW10	MW11	MW12
			Sampling date / time	19-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00	20-Feb-2025 00:00	20-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504852-001	ES2504852-002	ES2504852-003	ES2504852-004	ES2504852-005
				Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	**0.002**	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	**0.0001**	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L	<0.005	**0.007**	<0.005	**0.007**	**0.024**
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.02**	**0.02**	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**1.72**	**2.95**	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**1.72**	**2.95**	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**32.9**	**0.4**	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**34.6**	**3.4**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW08	MW09	MW10	MW11	MW12
				Sampling date / time	19-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00	20-Feb-2025 00:00	20-Feb-2025 00:00
Compound	CAS Number	LOR	Unit		ES2504852-001	ES2504852-002	ES2504852-003	ES2504852-004	ES2504852-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW08	MW09	MW10	MW11	MW12
				Sampling date / time	19-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00	20-Feb-2025 00:00	20-Feb-2025 00:00
Compound	CAS Number	LOR	Unit		ES2504852-001	ES2504852-002	ES2504852-003	ES2504852-004	ES2504852-005
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**29.0**	**25.0**	**27.9**	**30.4**	**31.7**
2-Chlorophenol-D4	93951-73-6	1.0	%		**58.0**	**61.8**	**61.0**	**55.9**	**61.0**
2.4.6-Tribromophenol	118-79-6	1.0	%		**48.7**	**50.5**	**53.5**	**50.6**	**55.8**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**59.5**	**69.4**	**71.1**	**64.9**	**65.0**
Anthracene-d10	1719-06-8	1.0	%		**80.1**	**85.3**	**85.3**	**82.8**	**87.5**
4-Terphenyl-d14	1718-51-0	1.0	%		**86.9**	**97.7**	**91.0**	**87.0**	**95.6**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**101**	**100**	**102**	**102**	**108**
Toluene-D8	2037-26-5	2	%		**116**	**113**	**116**	**111**	**117**
4-Bromofluorobenzene	460-00-4	2	%		**130**	**132**	**134**	**121**	**129**

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Sample ID	MW13	MW16	MW17R	MW18	MW19
				Sampling date / time	20-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00
					ES2504852-006	ES2504852-007	ES2504852-008	ES2504852-009	ES2504852-010
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	**0.161**	**0.064**	**0.009**	**0.009**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW13	MW16	MW17R	MW18	MW19
				Sampling date / time	20-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00
Compound	CAS Number	LOR	Unit		ES2504852-006	ES2504852-007	ES2504852-008	ES2504852-009	ES2504852-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**26.7**	**28.3**	**31.4**	**28.6**	**31.8**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW13	MW16	MW17R	MW18	MW19
				Sampling date / time	20-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00
Compound	CAS Number	LOR	Unit		ES2504852-006	ES2504852-007	ES2504852-008	ES2504852-009	ES2504852-010
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2-Chlorophenol-D4	93951-73-6	1.0	%		50.2	69.6	61.6	55.9	61.5
2.4.6-Tribromophenol	118-79-6	1.0	%		51.5	63.3	52.6	56.9	64.3
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		58.8	76.0	64.7	61.5	68.5
Anthracene-d10	1719-06-8	1.0	%		84.3	94.8	81.7	87.6	96.3
4-Terphenyl-d14	1718-51-0	1.0	%		85.3	95.1	86.0	94.2	90.6
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		108	100	105	100.0	99.5
Toluene-D8	2037-26-5	2	%		122	109	114	106	110
4-Bromofluorobenzene	460-00-4	2	%		130	122	126	124	124

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW20	MW21	MW22	MW26	DUP1
			Sampling date / time	19-Feb-2025 00:00	19-Feb-2025 00:00	20-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00
Compound	CAS Number	LOR	Unit	ES2504852-011	ES2504852-012	ES2504852-013	ES2504852-014	ES2504852-015
				Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	**0.008**
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	----	----	----	----	**0.05**
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	----	----	----	----	<0.01
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	----	----	----	----	**2.81**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	----	----	----	----	**2.81**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	----	----	----	----	**0.4**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	----	----	----	----	**3.2**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	----	----	----	----	<0.01
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW20	MW21	MW22	MW26	DUP1
				Sampling date / time	19-Feb-2025 00:00	19-Feb-2025 00:00	20-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00
Compound	CAS Number	LOR	Unit		ES2504852-011	ES2504852-012	ES2504852-013	ES2504852-014	ES2504852-015
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW20	MW21	MW22	MW26	DUP1
				Sampling date / time	19-Feb-2025 00:00	19-Feb-2025 00:00	20-Feb-2025 00:00	19-Feb-2025 00:00	19-Feb-2025 00:00
Compound	CAS Number	LOR	Unit		ES2504852-011	ES2504852-012	ES2504852-013	ES2504852-014	ES2504852-015
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**29.6**	**30.1**	**30.0**	**28.4**	**25.5**
2-Chlorophenol-D4	93951-73-6	1.0	%		**63.6**	**53.7**	**55.4**	**64.7**	**59.9**
2.4.6-Tribromophenol	118-79-6	1.0	%		**55.9**	**57.1**	**51.2**	**57.1**	**54.2**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**63.9**	**59.5**	**59.2**	**67.7**	**64.4**
Anthracene-d10	1719-06-8	1.0	%		**84.7**	**84.2**	**82.4**	**87.0**	**84.0**
4-Terphenyl-d14	1718-51-0	1.0	%		**93.8**	**84.8**	**91.1**	**92.8**	**93.6**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**104**	**99.7**	**107**	**97.6**	**102**
Toluene-D8	2037-26-5	2	%		**116**	**109**	**115**	**108**	**110**
4-Bromofluorobenzene	460-00-4	2	%		**130**	**124**	**127**	**125**	**124**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	SW2	DUP1_SW	Trip Blank	----	----
			Sampling date / time	19-Feb-2025 00:00	19-Feb-2025 00:00	21-Feb-2025 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2504852-016	ES2504852-017	ES2504852-018	--------	--------
				Result	Result	Result	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C								
Suspended Solids (SS)	----	5	mg/L	<5	<5	----	----	----
EG020T: Total Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	**0.002**	**0.002**	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	**0.001**	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	**0.098**	**0.099**	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	**0.08**	**0.11**	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	**0.5**	**0.5**	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	**0.5**	**0.5**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.20**	**0.07**	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SW2	DUP1_SW	Trip Blank	----	----
				Sampling date / time	19-Feb-2025 00:00	19-Feb-2025 00:00	21-Feb-2025 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2504852-016	ES2504852-017	ES2504852-018	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	SW2	DUP1_SW	Trip Blank	----	----
				Sampling date / time	19-Feb-2025 00:00	19-Feb-2025 00:00	21-Feb-2025 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2504852-016	ES2504852-017	ES2504852-018	--------	--------
					Result	Result	Result	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>C16 - C34 Fraction	----	100	µg/L		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**30.6**	**27.7**	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**56.4**	**66.2**	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**58.9**	**69.2**	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**62.7**	**70.6**	----	----	----
Anthracene-d10	1719-06-8	1.0	%		**81.6**	**95.0**	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**85.1**	**92.9**	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**101**	**95.7**	**104**	----	----
Toluene-D8	2037-26-5	2	%		**113**	**102**	**113**	----	----
4-Bromofluorobenzene	460-00-4	2	%		**129**	**114**	**124**	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

QUALITY CONTROL REPORT

Work Order	: **ES2504852**	Page	: 1 of 8
Client	: **LWC MANAGEMENT PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR JAMES FOX	Contact	: Kieren Burns
Address	: SUITE 3 4-8 GOODWOOD ROAD WAYVILLE SOUTH AUSTRALIA 5034	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61881625130
Project	: BE-78	Date Samples Received	: 21-Feb-2025
Order number	: ----	Date Analysis Commenced	: 21-Feb-2025
C-O-C number	: ----	Issue Date	: 27-Feb-2025
Sampler	: ALISTAIR VAUGHAN		
Site	: ----		
Quote number	: EN/111		
No. of samples received	: 18		
No. of samples analysed	: 18		

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
Edwandy Fadjar	Organic Coordinator	Sydney Organics, 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: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 6401702)									
ES2504797-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
ES2504866-006	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	5	<5	0.0	No Limit
ES2505051-001	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
EW2500885-004	Anonymous	EA025H: Suspended Solids (SS)	----	5	mg/L	<5	<5	0.0	No Limit
EG020F: Dissolved Metals by ICP-MS (QC Lot: 6398249)									
ES2504852-001	MW08	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
ES2504931-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.018	0.018	0.0	0% - 50%
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.107	0.106	0.0	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.002	0.003	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.007	0.007	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.044	0.043	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 6397743)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 6397743) - continued									
ES2504812-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
ES2504858-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.002	68.2	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.027	0.028	0.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.026	0.025	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 6398250)									
ES2504852-002	MW09	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2504852-010	MW19	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6397739)									
ES2504668-012	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2504812-009	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 6398366)									
ES2504828-003	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	42.0	41.6	0.9	0% - 20%
ES2504852-016	SW2	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.08	0.08	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 6393977)									
ES2504733-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01 (1.00)*	mg/L	<1.00	<1.00	0.0	No Limit
ES2504747-006	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.03	0.03	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 6393978)									
EW2500976-006	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EW2500976-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 6398365)									
ES2504828-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	47.9	48.1	0.4	0% - 20%
ES2504852-016	SW2	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.01	0.0	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 6398356)									
ES2504812-011	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.2	0.2	0.0	No Limit
ES2504828-006	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1 (2.0)*	mg/L	41.0	38.2	7.0	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 6398357)									

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 6398357) - continued									
ES2504812-011	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.0	No Limit
ES2504828-006	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.19	0.20	7.9	0% - 20%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6394033)									
ES2504852-001	MW08	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2504852-010	MW19	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6394033)									
ES2504852-001	MW08	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2504852-010	MW19	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 6394033)									
ES2504852-001	MW08	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2504852-010	MW19	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	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: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 6401702)								
EA025H: Suspended Solids (SS)	----	5	mg/L	<5	150 mg/L	98.0	83.0	129
				<5	1000 mg/L	93.6	82.0	110
				<5	842 mg/L	94.0	83.0	118
EG020F: Dissolved Metals by ICP-MS (QCLot: 6398249)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.8	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	90.6	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.6	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.6	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	91.6	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	92.2	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.8	81.0	117
EG020T: Total Metals by ICP-MS (QCLot: 6397743)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	100	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	95.0	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	101	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	106	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	97.5	85.0	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.3	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	92.0	79.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 6398250)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.3	83.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6397739)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.7	77.0	111
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6398366)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	106	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 6393977)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	103	82.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 6393978)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6398365)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6398365) - continued								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	100.0	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6398356)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	5 mg/L	109	69.0	123
				<0.1	2.5 mg/L	110	70.0	123
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6398357)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	2.21 mg/L	126	71.3	126
				<0.01	0.5 mg/L	109	71.3	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6393832)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	71.5	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	91.8	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	89.6	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	90.7	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	90.4	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	85.1	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	86.5	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	89.3	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	98.3	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	80.7	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	79.2	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	94.5	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	76.9	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	93.2	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	97.7	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	85.2	59.1	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6393833)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	64.6	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	83.5	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	73.0	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6394033)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	85.3	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6393833)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	54.3	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	76.8	57.8	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6393833) - continued								
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	81.6	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6394033)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	83.6	75.0	127
EP080: BTEXN (QCLot: 6394033)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	102	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	120	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	100	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	105	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	99.1	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	105	75.5	124

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 6398249)							
ES2504852-004	MW11	EG020A-F: Arsenic	7440-38-2	2 mg/L	95.3	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.5 mg/L	90.9	70.0	130
		EG020A-F: Chromium	7440-47-3	2 mg/L	95.8	70.0	130
		EG020A-F: Copper	7440-50-8	2 mg/L	93.1	70.0	130
		EG020A-F: Lead	7439-92-1	2 mg/L	94.7	70.0	130
		EG020A-F: Nickel	7440-02-0	2 mg/L	91.9	70.0	130
		EG020A-F: Zinc	7440-66-6	2 mg/L	95.2	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 6397743)							
ES2504668-012	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	102	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	98.3	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	106	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	101	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	102	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	103	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	103	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 6398250)							
ES2504852-003	MW10	EG035F: Mercury	7439-97-6	0.01 mg/L	90.4	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6397739)							
ES2504812-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	94.8	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6398366)							
ES2504828-003	Anonymous	EK055G: Ammonia as N	7664-41-7	0.5 mg/L	# Not Determined	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 6393977)							
ES2504733-001	Anonymous	EK057G: Nitrite as N	14797-65-0	50 mg/L	101	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 6393978)							
EW2500976-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	99.3	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6398365)							
ES2504828-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6398356)							
ES2504812-012	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	120	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6398357)							
ES2504812-012	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	84.1	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6394033)							
ES2504852-001	MW08	EP080: C6 - C9 Fraction	----	325 µg/L	78.2	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6394033)							
ES2504852-001	MW08	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	73.9	70.0	130
EP080: BTEXN (QCLot: 6394033)							
ES2504852-001	MW08	EP080: Benzene	71-43-2	25 µg/L	88.3	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	108	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	96.3	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	96.0	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	95.1	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	104	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2504852**	Page	: 1 of 10
Client	: **LWC MANAGEMENT PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR JAMES FOX	Telephone	: +61881625130
Project	: BE-78	Date Samples Received	: 21-Feb-2025
Site	: ----	Issue Date	: 27-Feb-2025
Sampler	: ALISTAIR VAUGHAN	No. of samples received	: 18
Order number	: ----	No. of samples analysed	: 18

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.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **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

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EK055G: Ammonia as N by Discrete Analyser	ES2504828--003	Anonymous	**Ammonia as N**	7664-41-7	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ar	ES2504828--003	Anonymous	**Nitrite + Nitrate as N**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	17	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	17	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	17	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	17	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / *Client Sample ID(s)*	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025H)							
SW2, DUP1_SW	**19-Feb-2025**	**----**	----	----	**26-Feb-2025**	26-Feb-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG020A-F)							
MW08, MW09, MW10, MW16, MW17R, MW18, MW19, MW20, MW21, MW26, DUP1	**19-Feb-2025**	**----**	----	----	**25-Feb-2025**	18-Aug-2025	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG020A-F)							
MW11, MW12, MW13, MW22	**20-Feb-2025**	**----**	----	----	**25-Feb-2025**	19-Aug-2025	✓
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG020A-T)							
SW2, DUP1_SW	**19-Feb-2025**	**24-Feb-2025**	18-Aug-2025	✓	**24-Feb-2025**	18-Aug-2025	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
MW08, MW09, MW10, MW16, MW17R, MW18, MW19, MW20, MW21, MW26, DUP1	**19-Feb-2025**	**----**	----	----	**27-Feb-2025**	19-Mar-2025	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
MW11, MW12, MW13, MW22	**20-Feb-2025**	**----**	----	----	**27-Feb-2025**	20-Mar-2025	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
SW2, DUP1_SW	**19-Feb-2025**	**----**	----	----	**26-Feb-2025**	19-Mar-2025	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
MW08, MW09, DUP1, SW2, DUP1_SW	**19-Feb-2025**	**----**	----	----	**26-Feb-2025**	19-Mar-2025	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
MW08, MW09, DUP1, SW2, DUP1_SW	**19-Feb-2025**	**----**	----	----	**21-Feb-2025**	21-Feb-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
MW08, MW09, DUP1, SW2, DUP1_SW	**19-Feb-2025**	**----**	----	----	**26-Feb-2025**	19-Mar-2025	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
MW08, MW09, DUP1, SW2, DUP1_SW	**19-Feb-2025**	**25-Feb-2025**	19-Mar-2025	✓	**25-Feb-2025**	19-Mar-2025	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
MW08, MW09, DUP1, SW2, DUP1_SW	**19-Feb-2025**	**25-Feb-2025**	19-Mar-2025	✓	**25-Feb-2025**	19-Mar-2025	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
MW08, MW09, MW10, MW16, MW17R, MW18, MW19, MW20, MW21, MW26, DUP1, SW2, DUP1_SW	**19-Feb-2025**	**24-Feb-2025**	26-Feb-2025	✓	**26-Feb-2025**	05-Apr-2025	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
MW11, MW12, MW13, MW22	**20-Feb-2025**	**24-Feb-2025**	27-Feb-2025	✓	**26-Feb-2025**	05-Apr-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
MW08, MW09, MW10, MW16, MW17R, MW18, MW19, MW20, MW21, MW26, DUP1, SW2, DUP1_SW	**19-Feb-2025**	**24-Feb-2025**	26-Feb-2025	✓	**27-Feb-2025**	05-Apr-2025	✓
Amber Glass Bottle - Unpreserved (EP071)							
MW11, MW12, MW13, MW22	**20-Feb-2025**	**24-Feb-2025**	27-Feb-2025	✓	**27-Feb-2025**	05-Apr-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW08, MW09, MW10, MW16, MW17R, MW18, MW19, MW20, MW21, MW26, DUP1, SW2, DUP1_SW	**19-Feb-2025**	**25-Feb-2025**	05-Mar-2025	✓	**25-Feb-2025**	05-Mar-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW11, MW12, MW13, MW22	**20-Feb-2025**	**25-Feb-2025**	06-Mar-2025	✓	**25-Feb-2025**	06-Mar-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Trip Blank	**21-Feb-2025**	**25-Feb-2025**	07-Mar-2025	✓	**25-Feb-2025**	07-Mar-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
MW08, MW09, MW10, MW16, MW17R, MW18, MW19, MW20, MW21, MW26, DUP1, SW2, DUP1_SW	**19-Feb-2025**	**24-Feb-2025**	26-Feb-2025	✓	**27-Feb-2025**	05-Apr-2025	✓
Amber Glass Bottle - Unpreserved (EP071)							
MW11, MW12, MW13, MW22	**20-Feb-2025**	**24-Feb-2025**	27-Feb-2025	✓	**27-Feb-2025**	05-Apr-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW08, MW09, MW10, MW16, MW17R, MW18, MW19, MW20, MW21, MW26, DUP1, SW2, DUP1_SW	**19-Feb-2025**	**25-Feb-2025**	05-Mar-2025	✓	**25-Feb-2025**	05-Mar-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW11, MW12, MW13, MW22	**20-Feb-2025**	**25-Feb-2025**	06-Mar-2025	✓	**25-Feb-2025**	06-Mar-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Trip Blank	**21-Feb-2025**	**25-Feb-2025**	07-Mar-2025	✓	**25-Feb-2025**	07-Mar-2025	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
MW08, MW09, MW10, MW16, MW17R, MW18, MW19, MW20, MW21, MW26, DUP1, SW2, DUP1_SW	**19-Feb-2025**	**25-Feb-2025**	05-Mar-2025	✓	**25-Feb-2025**	05-Mar-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW11, MW12, MW13, MW22	**20-Feb-2025**	**25-Feb-2025**	06-Mar-2025	✓	**25-Feb-2025**	06-Mar-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
Trip Blank	**21-Feb-2025**	**25-Feb-2025**	07-Mar-2025	✓	**25-Feb-2025**	07-Mar-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: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	33	**12.12**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	17	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	4	40	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	17	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	33	**6.06**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	5	40	**12.50**	**12.50**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	19	**15.79**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	33	**6.06**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids (High Level)	EA025H	2	40	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Mercury by FIMS	EG035T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	33	**6.06**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	17	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	17	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Suspended Solids (High Level)	EA025H	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2504852**

Client	: **LWC MANAGEMENT PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR JAMES FOX	Contact	: Kieren Burns
Address	: SUITE 3 4-8 GOODWOOD ROAD WAYVILLE SOUTH AUSTRALIA 5034	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: jfox@lwconsulting.com.au	E-mail	: kieren.burns@alsglobal.com
Telephone	: ----	Telephone	: +61881625130
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: BE-78	Page	: 1 of 3
Order number	: ----	Quote number	: EM2023LANWAT0009 (EN/111)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: ALISTAIR VAUGHAN		

Dates

Date Samples Received	: 21-Feb-2025 11:30	Issue Date	: 21-Feb-2025
Client Requested Due Date	: 27-Feb-2025	Scheduled Reporting Date	: **27-Feb-2025**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 9.3'C 15.2'C 12.2'C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 19 / 18

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.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- 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 ± 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.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested
ES2504852-019	21-Feb-2025 00:00	Garden Bed	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EA025H Suspended Solids - Standard Level	WATER - NT-08 Total Nitrogen + NO2 + NO3 + NH3 + Total P	WATER - W-18 TRH(C6 - C9)/BTEXN	WATER - W-26 TRH/BTEXN/PAH/8 Metals	WATER - W-26T TRH/BTEXN/PAH/Total 8 Metals
ES2504852-001	19-Feb-2025 00:00	MW08		✓		✓	
ES2504852-002	19-Feb-2025 00:00	MW09		✓		✓	
ES2504852-003	19-Feb-2025 00:00	MW10				✓	
ES2504852-004	20-Feb-2025 00:00	MW11				✓	
ES2504852-005	20-Feb-2025 00:00	MW12				✓	
ES2504852-006	20-Feb-2025 00:00	MW13				✓	
ES2504852-007	19-Feb-2025 00:00	MW16				✓	
ES2504852-008	19-Feb-2025 00:00	MW17R				✓	
ES2504852-009	19-Feb-2025 00:00	MW18				✓	
ES2504852-010	19-Feb-2025 00:00	MW19				✓	
ES2504852-011	19-Feb-2025 00:00	MW20				✓	
ES2504852-012	19-Feb-2025 00:00	MW21				✓	
ES2504852-013	20-Feb-2025 00:00	MW22				✓	
ES2504852-014	19-Feb-2025 00:00	MW26				✓	
ES2504852-015	19-Feb-2025 00:00	DUP1		✓		✓	
ES2504852-016	19-Feb-2025 00:00	SW2	✓	✓			✓
ES2504852-017	19-Feb-2025 00:00	DUP1_SW	✓	✓			✓
ES2504852-018	21-Feb-2025 00:00	Trip Blank			✓		

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

INVOICES ADDRESS		
- A4 - AU Tax Invoice (INV)	Email	admin@lwconsulting.com.au
JAMES FOX		
- *AU Certificate of Analysis - NATA (COA)	Email	jfox@lwconsulting.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jfox@lwconsulting.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jfox@lwconsulting.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jfox@lwconsulting.com.au
- A4 - AU Tax Invoice (INV)	Email	jfox@lwconsulting.com.au
- Chain of Custody (CoC) (COC)	Email	jfox@lwconsulting.com.au
- EDI Format - XTab (XTAB)	Email	jfox@lwconsulting.com.au
RESULTS/INVOICES ADDRESS		
- *AU Certificate of Analysis - NATA (COA)	Email	laboratoryresults@lwconsulting.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	laboratoryresults@lwconsulting.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	laboratoryresults@lwconsulting.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	laboratoryresults@lwconsulting.com.au
- A4 - AU Tax Invoice (INV)	Email	laboratoryresults@lwconsulting.com.au
- AU Certificate of Analysis - NATA (WRG With MU) (AU_COA_2_A4_ENV_NATA_MU)	Email	laboratoryresults@lwconsulting.com.au
- Chain of Custody (CoC) (COC)	Email	laboratoryresults@lwconsulting.com.au
- EDI Format - ESDAT (ESDAT)	Email	laboratoryresults@lwconsulting.com.au
- EDI Format - XTab (XTAB)	Email	laboratoryresults@lwconsulting.com.au
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)	Email	laboratoryresults@lwconsulting.com.au

CHAIN OF CUSTODY FORM

ALS

From : Land & Water Consulting Pty Ltd
Suite 3, 4-8 Goodwood Road, WAYVILLE, SA, 5034
ph: (08) 8271 5255 fax: (08) 8357 1307

LAB Quote Number: ME-221-18

LWC Contact Information:
Contact Name:
James Fox
Contact Email:
laboratoryresults@lwconsulting.com.au
jfox@lwconsulting.com.au

Phone Number:
08 8271 5255

LWC Project No:
BE-78

Project Manager:
James Fox

Date Samples Sent: 20/2/25

COC Checked by: AVaughan

Sample Analysis

Lab ID	Date	Matrix	Sample ID	No. bottles	Groundwater Suite 1*	Groundwater Suite 2*	Surfacewater Suite*		Triplblank C6-C10/ BTEXN		HOLD		
				Tick required analytes									
	19/2/25	W	MW08	6		X							
	19/2/25		MW09	6		X							
	19/2/25		MW10	4	X								
	20/2/25		MW11	4	X								
	20/2/25		MW12	4	X								
	20/2/25		MW13	4	X								
	19/2/25		MW16	4	X								
			MW17R	4	X								
			MW18	4	X								
			MW19	4	X								
			MW20	4	X								
			MW21	4	X								
			MW22	4	X								
	20/2/25		MW26	4	X								
	19/2/25		DUP1	6		X							
	19/2/25		SW2	6			X						
	19/2/25		~~SW2~~ DUP1_SW	6			X						
	19/2/25		Tripblank	2					X				
	20/2/25	S	Garden Bed	1							X		
			TOTAL	86	12	3	2		1		1		

Environmental Division
Sydney
Work Order Reference
ES2504852

Telephone : +61-2-8784 8555

ADDITIONAL COMMENTS:

Groundwater Suite 1*: TRH/ BTEXN, 8 Dissolved Metals, PAH.

Groundwater Suite 2*: TRH/ BTEXN, 8 Dissolved Metals, PAH, Nutrients (Ammonia, Nitrite, Nitrate, Total Phosphorous (P), Total Nitrogen (N), Total Kjeldahl Nitrogen (TKN).

Surface Water Suite*: TRH/ BTEXN, 8 Total Metals, PAH, Total Suspended Solids (TSS), Nutrients (Ammonia, Nitrite, Nitrate, Total Phosphorous (P), Total Nitrogen (N), Total Kjeldahl Nitrogen (TKN).

Jonathon
21/2/25 1130

Land & Water Consulting
Suite 3/ 4-8 Goodwood Road
Wayville
SA 5034

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **James Fox**

Report **1189824-W**
Project name
Project ID BE-78
Received Date Feb 20, 2025

Client Sample ID			**DUP1**	**DUP1-SW**	**Tripblank**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins Sample No.			**M25-Fe0049312**	**M25-Fe0049313**	**M25-Fe0049314**
Date Sampled			**Feb 19, 2025**	**Feb 19, 2025**	**Feb 19, 2025**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons					
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	< 0.1	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	-
TRH >C10-C16 less Naphthalene (F2)*[N01]	0.05	mg/L	< 0.05	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	-
BTEX					
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	91	88	91
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	-
Polycyclic Aromatic Hydrocarbons					
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	-

Client Sample ID			DUP1	DUP1-SW	Tripblank
Sample Matrix			Water	Water	Water
Eurofins Sample No.			M25-Fe0049312	M25-Fe0049313	M25-Fe0049314
Date Sampled			Feb 19, 2025	Feb 19, 2025	Feb 19, 2025
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	-
Total PAH*	0.001	mg/L	< 0.001	< 0.001	-
2-Fluorobiphenyl (surr.)	1	%	54	84	-
p-Terphenyl-d14 (surr.)	1	%	99	106	-
Ammonia (as N)	0.01	mg/L	0.08	0.04	-
Nitrate & Nitrite (as N)	0.05	mg/L	3.6	< 0.05	-
Nitrate (as N)	0.02	mg/L	3.6	< 0.02	-
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	-
Organic Nitrogen (as N)*	0.2	mg/L	0.32	0.26	-
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.4	0.3	-
Total Nitrogen (as N)*	0.2	mg/L	4.0	0.3	-
Phosphate total (as P)	0.01	mg/L	< 0.01	0.03	-
Total Suspended Solids Dried at 103°C to 105°C	5	mg/L	-	6.5	-
Heavy Metals					
Arsenic (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Copper (filtered)	0.001	mg/L	< 0.001	0.002	-
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-
Nickel (filtered)	0.001	mg/L	< 0.001	0.001	-
Zinc (filtered)	0.005	mg/L	0.009	0.11	-
Volatile Organics					
Naphthalene[N02]	0.01	mg/L	-	-	< 0.01

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Feb 21, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 21, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Melbourne	Feb 21, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Feb 21, 2025	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Eurofins Suite B4			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 21, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Feb 21, 2025	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P			
Ammonia (as N)	Melbourne	Feb 21, 2025	28 Days
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Feb 21, 2025	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrate (as N)	Melbourne	Feb 21, 2025	28 Days
- Method: LTM-INO-4120 Analysis of NOx NO2 NH3 by FIA			
Nitrite (as N)	Melbourne	Feb 21, 2025	2 Days
- Method: LTM-INO-4450 Nitrogens by Discrete Analyser			
Organic Nitrogen (as N)*	Melbourne	Feb 20, 2025	7 Days
- Method: APHA 4500 Organic Nitrogen (N)			
Total Kjeldahl Nitrogen (as N)	Melbourne	Feb 21, 2025	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Phosphate total (as P)	Melbourne	Feb 26, 2025	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Total Suspended Solids Dried at 103°C to 105°C	Melbourne	Feb 21, 2025	7 Days
- Method: LTM-INO-4070 Analysis of Suspended Solids in Water by Gravimetry			
Metals M8 filtered	Melbourne	Feb 21, 2025	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

eurofins

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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	+61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Land & Water Consulting
Address: Suite 3/ 4-8 Goodwood Road
Wayville
SA 5034

Project Name:
Project ID: BE-78

Order No.:
Report #: 1189824
Phone: 08 8271 5255
Fax:

Received: Feb 20, 2025 12:00 PM
Due: Feb 27, 2025
Priority: 5 Day
Contact Name: James Fox

Eurofins Analytical Services Manager : Karl Bulow

Sample Detail						Phosphate total (as P)	Total Suspended Solids Dried at 103°C to 105°C	Metals M8 filtered	Eurofins Suite B4	BTEXN and Volatile TRH	Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	DUP1	Feb 19, 2025		Water	M25-Fe0049312	X		X	X		X
2	DUP1-SW	Feb 19, 2025		Water	M25-Fe0049313	X	X	X	X		X
3	Tripblank	Feb 19, 2025		Water	M25-Fe0049314					X	
Test Counts						2	1	2	2	1	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

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

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Total Suspended Solids Dried at 103°C to 105°C	mg/L	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	90			70-130	Pass	
TRH C10-C14	%	127			70-130	Pass	
TRH C6-C10	%	90			70-130	Pass	
TRH >C10-C16	%	121			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	91			70-130	Pass	
Toluene	%	87			70-130	Pass	
Ethylbenzene	%	86			70-130	Pass	
m&p-Xylenes	%	89			70-130	Pass	
Xylenes - Total*	%	90			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	98			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	110			70-130	Pass	
Acenaphthylene	%	119			70-130	Pass	
Anthracene	%	88			70-130	Pass	
Benz(a)anthracene	%	73			70-130	Pass	
Benzo(a)pyrene	%	130			70-130	Pass	
Benzo(b&j)fluoranthene	%	90			70-130	Pass	
Benzo(g.h.i)perylene	%	123			70-130	Pass	
Benzo(k)fluoranthene	%	129			70-130	Pass	
Chrysene	%	89			70-130	Pass	
Dibenz(a.h)anthracene	%	73			70-130	Pass	
Fluoranthene	%	82			70-130	Pass	
Fluorene	%	87			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	88			70-130	Pass	
Naphthalene	%	83			70-130	Pass	
Phenanthrene	%	99			70-130	Pass	
Pyrene	%	123			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	108			70-130	Pass	
Nitrite (as N)	%	78			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	98			70-130	Pass	
Phosphate total (as P)	%	101			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic (filtered)	%	107			80-120	Pass	
Cadmium (filtered)	%	88			80-120	Pass	
Chromium (filtered)	%	105			80-120	Pass	
Copper (filtered)	%	95			80-120	Pass	
Lead (filtered)	%	84			80-120	Pass	
Mercury (filtered)	%	102			80-120	Pass	
Nickel (filtered)	%	99			80-120	Pass	
Zinc (filtered)	%	103			80-120	Pass	
LCS - % Recovery							

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nitrate & Nitrite (as N)			%	105			70-130	Pass	
Total Suspended Solids Dried at 103°C to 105°C			%	102			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M25-Fe0050788	NCP	%	78			70-130	Pass	
TRH C10-C14	M25-Fe0048310	NCP	%	74			70-130	Pass	
TRH C6-C10	M25-Fe0050788	NCP	%	77			70-130	Pass	
TRH >C10-C16	M25-Fe0048310	NCP	%	71			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M25-Fe0050788	NCP	%	79			70-130	Pass	
Toluene	M25-Fe0050788	NCP	%	76			70-130	Pass	
Ethylbenzene	M25-Fe0050788	NCP	%	75			70-130	Pass	
m&p-Xylenes	M25-Fe0050788	NCP	%	77			70-130	Pass	
o-Xylene	M25-Fe0050788	NCP	%	80			70-130	Pass	
Xylenes - Total*	M25-Fe0050788	NCP	%	78			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	M25-Fe0050788	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M25-Fe0049278	NCP	%	105			70-130	Pass	
Acenaphthylene	M25-Fe0049278	NCP	%	109			70-130	Pass	
Anthracene	M25-Fe0049278	NCP	%	88			70-130	Pass	
Benz(a)anthracene	M25-Fe0049278	NCP	%	99			70-130	Pass	
Benzo(a)pyrene	M25-Fe0049278	NCP	%	80			70-130	Pass	
Benzo(b&j)fluoranthene	M25-Fe0049278	NCP	%	114			70-130	Pass	
Benzo(g.h.i)perylene	M25-Fe0049278	NCP	%	90			70-130	Pass	
Benzo(k)fluoranthene	M25-Fe0049278	NCP	%	102			70-130	Pass	
Chrysene	M25-Fe0049278	NCP	%	92			70-130	Pass	
Dibenz(a.h)anthracene	M25-Fe0049278	NCP	%	110			70-130	Pass	
Fluoranthene	M25-Fe0049278	NCP	%	76			70-130	Pass	
Fluorene	M25-Fe0049278	NCP	%	99			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M25-Fe0049278	NCP	%	110			70-130	Pass	
Naphthalene	M25-Fe0049278	NCP	%	93			70-130	Pass	
Phenanthrene	M25-Fe0049278	NCP	%	74			70-130	Pass	
Pyrene	M25-Fe0049278	NCP	%	73			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M25-Fe0046480	NCP	%	89			70-130	Pass	
Nitrate & Nitrite (as N)	M25-Fe0042680	NCP	%	93			70-130	Pass	
Nitrite (as N)	M25-Fe0042680	NCP	%	103			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	B25-Fe0049317	NCP	%	113			70-130	Pass	
Phosphate total (as P)	M25-Fe0043261	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	M25-Fe0055636	NCP	%	96			75-125	Pass	
Cadmium (filtered)	M25-Fe0055636	NCP	%	86			75-125	Pass	
Chromium (filtered)	M25-Fe0055636	NCP	%	95			75-125	Pass	
Copper (filtered)	M25-Fe0055636	NCP	%	88			75-125	Pass	
Lead (filtered)	M25-Fe0055636	NCP	%	88			75-125	Pass	
Mercury (filtered)	M25-Fe0051958	NCP	%	94			75-125	Pass	
Nickel (filtered)	M25-Fe0055636	NCP	%	88			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Zinc (filtered)	M25-Fe0055636	NCP	%	91			75-125	Pass	
Spike - % Recovery									
				Result 1					
Total Suspended Solids Dried at 103°C to 105°C	M25-Fe0049758	NCP	%	104			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M25-Fe0051983	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C6-C10	M25-Fe0051983	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M25-Fe0051983	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M25-Fe0051983	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M25-Fe0051983	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M25-Fe0051983	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M25-Fe0051983	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	M25-Fe0051983	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	M25-Fe0051983	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M25-Fe0046481	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Total Kjeldahl Nitrogen (as N)	B25-Fe0049316	NCP	mg/L	0.7	0.6	11	30%	Pass	
Phosphate total (as P)	M25-Fe0043260	NCP	mg/L	0.10	0.10	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	M25-Fe0055636	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	M25-Fe0055636	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	M25-Fe0055636	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	M25-Fe0055636	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	M25-Fe0055636	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	M25-Fe0055636	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	M25-Fe0055636	NCP	mg/L	0.006	0.006	2.0	30%	Pass	
Zinc (filtered)	M25-Fe0055636	NCP	mg/L	0.009	0.009	3.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	M25-Fe0049313	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M25-Fe0049313	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M25-Fe0049313	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C10-C16	M25-Fe0049313	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M25-Fe0049313	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M25-Fe0049313	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Chrysene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M25-Fe0049313	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Nitrate & Nitrite (as N)	M25-Fe0049313	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Nitrite (as N)	M25-Fe0049313	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Total Suspended Solids Dried at 103°C to 105°C	M25-Fe0061973	NCP	mg/L	100	99	1.2	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Karl Bulow	Analytical Services Manager
Carroll Lee	Senior Analyst-Volatile
Edward Lee	Senior Analyst-Organic
Joseph Edouard	Senior Analyst-Organic
Luke Holt	Senior Analyst-Inorganic
Mary Makarios	Senior Analyst-Metal
Vivian Wang	Senior Analyst-Metal



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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

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web: www.eurofins.com.au
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Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	+61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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35 O'Rorke Road	Unit C1/4 Pacific Rise	43 Detroit Drive	1277 Cameron Road
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+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: Land & Water Consulting
Address: Suite 3/ 4-8 Goodwood Road
Wayville
SA 5034

Project Name:
Project ID: BE-78

Order No.:
Report #: 1189824
Phone: 08 8271 5255
Fax:

Received: Feb 20, 2025 12:00 PM
Due: Feb 27, 2025
Priority: 5 Day
Contact Name: James Fox

Eurofins Analytical Services Manager : Karl Bulow

Sample Detail						Phosphate total (as P)	Total Suspended Solids Dried at 103°C to 105°C	Metals M8 filtered	Eurofins Suite B4	BTEXN and Volatile TRH	Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	DUP1	Feb 19, 2025		Water	M25-Fe0049312	X		X	X		X
2	DUP1-SW	Feb 19, 2025		Water	M25-Fe0049313	X	X	X	X		X
3	Tripblank	Feb 19, 2025		Water	M25-Fe0049314					X	
Test Counts						2	1	2	2	1	2

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www.eurofins.com.au EnviroSales@eurofinsanz.com

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	+61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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ABN: 91 05 0159 898

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WA 6106
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Site# 2370 & 2554

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Penrose	Mount Wellington	Rolleston	Gate Pa
Auckland 1061	Auckland 1061	Christchurch 7675	Tauranga 3112
+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: Land & Water Consulting
Contact name: James Fox
Project name: Not provided
Project ID: BE-78
Turnaround time: 5 Day
Date/Time received Feb 20, 2025 12:00 PM
Eurofins reference 1189824

Sample Information

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

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Karl Bulow on phone : or by email: Karl.Bulow@eurofinsanz.com

Results will be delivered electronically via email to James Fox - jfox@lwconsulting.com.au.

Note: A copy of these results will also be delivered to the general Land & Water Consulting email address.

Global Leader - Results you can trust

CHAIN OF CUSTODY FORM

eurofins

From : Land & Water Consulting Pty Ltd
Suite 3, 4-8 Goodwood Road, WAYVILLE, SA, 5034
ph: (08) 8271 5255 fax: (08) 8357 1307

LAB Quote Number:

LWC Contact Information:
Contact Name:
James Fox
Contact Email:
laboratoryresults@lwconsulting.com.au
jfox@lwconsulting.com.au

Phone Number:
08 8271 5255

LWC Project No:
BE-78
Project Manager:
James Fox
Date Samples Sent:
20/2/25
COC Checked by:
A Vaughan

Sample Analysis

Lab ID	Date	Matrix	Sample ID	No. Bottles	Groundwater Suite 1*	Groundwater Suite 2*	Surface Water Suite*	Total Suspended Solids (TSS)		B1 - TRH C6-C10/ BTEXN	
					Tick required analytes						
	19/2/25	W	DUP1	6		X					
	19/2/25	W	DUP1_SW	6			X	X			
	19/2/25	W	Tripblank	2						X	
			TOTAL	14		1	1	1		1	

ADDITIONAL COMMENTS:

Groundwater Suite 1*: TRH/ BTEXN/ PAH (B4), 8 Dissolved Metals (M8)

Groundwater Suite 2*: TRH/ BTEXN/ PAH (B4), 8 Dissolved Metals (M8), Nutrients: Total N, TKN, Nox, NO2,NO3, Total P (B19D)

Surface Water Suite*: TRH/ BTEXN/ PAH (B4), 8 Dissolved Metals (M8), Nutrients: Total N, TKN, Nox, NO2,NO3, Total P (B19D)

Nikitas Kuburakis 12:00PM 20/2/25
Temp: 14.2 iced
~~will be logged after~~

#1189824

September 2025 Groundwater Monitoring Event

CERTIFICATE OF ANALYSIS

Work Order	: **ES2529708**	Page	: 1 of 9
Client	: **LWC MANAGEMENT PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR JAMES FOX	Contact	: Kieren Burns
Address	: SUITE 3 4-8 GOODWOOD ROAD WAYVILLE SOUTH AUSTRALIA 5034	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61881625130
Project	: BE-78	Date Samples Received	: 25-Sep-2025 14:00
Order number	: ----	Date Analysis Commenced	: 25-Sep-2025
C-O-C number	: ----	Issue Date	: 01-Oct-2025 14:26
Sampler	: ----		
Site	: ----		
Quote number	: EN/111		
No. of samples received	: 9		
No. of samples analysed	: 9		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, 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.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW08	MW09	MW10	MW11	MW16
				Sampling date / time	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00
Compound	CAS Number	LOR	Unit		ES2529708-001	ES2529708-002	ES2529708-003	ES2529708-004	ES2529708-005
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		**0.008**	**0.010**	<0.005	<0.005	**0.107**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.04**	**0.02**	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**1.61**	**1.83**	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**1.61**	**1.83**	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		**0.5**	**0.4**	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ **Total Nitrogen as N**	----	0.1	mg/L		**2.1**	**2.2**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.02**	<0.01	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW08	MW09	MW10	MW11	MW16
				Sampling date / time	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00
Compound	CAS Number	LOR	Unit		ES2529708-001	ES2529708-002	ES2529708-003	ES2529708-004	ES2529708-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW08	MW09	MW10	MW11	MW16
				Sampling date / time	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00
Compound	CAS Number	LOR	Unit		ES2529708-001	ES2529708-002	ES2529708-003	ES2529708-004	ES2529708-005
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**20.2**	**30.3**	**20.7**	**23.5**	**30.8**
2-Chlorophenol-D4	93951-73-6	1.0	%		**55.5**	**48.2**	**47.7**	**61.3**	**45.3**
2.4.6-Tribromophenol	118-79-6	1.0	%		**44.1**	**49.0**	**48.4**	**44.2**	**53.6**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**64.6**	**70.0**	**52.2**	**65.4**	**47.6**
Anthracene-d10	1719-06-8	1.0	%		**88.2**	**94.8**	**64.9**	**78.8**	**70.2**
4-Terphenyl-d14	1718-51-0	1.0	%		**97.3**	**86.8**	**78.1**	**81.3**	**91.1**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**122**	**131**	**139**	**132**	**137**
Toluene-D8	2037-26-5	2	%		**98.2**	**83.0**	**102**	**93.2**	**101**
4-Bromofluorobenzene	460-00-4	2	%		**98.0**	**98.5**	**105**	**96.4**	**103**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW17R	MW26	DUP1	Trip Blank	----
				Sampling date / time	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00	----
Compound	CAS Number	LOR	Unit		ES2529708-006	ES2529708-007	ES2529708-008	ES2529708-009	--------
					Result	Result	Result	Result	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L		**0.002**	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L		**0.034**	<0.005	**0.007**	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		----	----	**0.04**	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		----	----	<0.01	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		----	----	**1.56**	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		----	----	**1.56**	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		----	----	**0.4**	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ **Total Nitrogen as N**	----	0.1	mg/L		----	----	**2.0**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		----	----	**0.01**	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW17R	MW26	DUP1	Trip Blank	----
				Sampling date / time	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00	----
Compound	CAS Number	LOR	Unit		ES2529708-006	ES2529708-007	ES2529708-008	ES2529708-009	--------
					Result	Result	Result	Result	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW17R	MW26	DUP1	Trip Blank	----
				Sampling date / time	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00	23-Sep-2025 00:00	----
Compound	CAS Number	LOR	Unit		ES2529708-006	ES2529708-007	ES2529708-008	ES2529708-009	--------
					Result	Result	Result	Result	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	----
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	----
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**30.2**	**22.4**	**22.8**	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**42.8**	**50.7**	**49.2**	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**35.4**	**32.1**	**39.6**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**47.4**	**53.6**	**55.9**	----	----
Anthracene-d10	1719-06-8	1.0	%		**54.8**	**69.2**	**61.0**	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**79.1**	**87.4**	**84.9**	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**133**	**129**	**132**	**88.8**	----
Toluene-D8	2037-26-5	2	%		**91.6**	**94.2**	**99.3**	**116**	----
4-Bromofluorobenzene	460-00-4	2	%		**95.4**	**101**	**96.9**	**122**	----

Surrogate Control Limits

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

QUALITY CONTROL REPORT

Work Order	: **ES2529708**	Page	: 1 of 8
Client	: **LWC MANAGEMENT PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR JAMES FOX	Contact	: Kieren Burns
Address	: SUITE 3 4-8 GOODWOOD ROAD WAYVILLE SOUTH AUSTRALIA 5034	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61881625130
Project	: BE-78	Date Samples Received	: 25-Sep-2025
Order number	: ----	Date Analysis Commenced	: 25-Sep-2025
C-O-C number	: ----	Issue Date	: 01-Oct-2025
Sampler	: ----		
Site	: ----		
Quote number	: EN/111		
No. of samples received	: 9		
No. of samples analysed	: 9		

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
Edwandy Fadjar	Organic Coordinator	Sydney Organics, 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: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020F: Dissolved Metals by ICP-MS (QC Lot: 6891952)									
ES2529708-006	MW17R	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.034	0.034	0.0	No Limit
EN2516321-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.1 µg/L	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	3 µg/L	0.003	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<1 µg/L	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	6 µg/L	0.006	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 6891951)									
EN2516321-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.1 µg/L	<0.0001	0.0	No Limit
ES2529708-008	DUP1	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 6888451)									
ES2529887-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.05	0.04	36.7	No Limit
ES2529705-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01 (0.10)*	mg/L	10.8	11.7	8.0	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 6887125)									
ES2529979-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 6888452)									
ES2529895-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.30	0.29	0.0	0% - 20%
ES2529705-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01 (0.10)*	mg/L	1.10	1.19	7.9	0% - 50%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 6888448)									
ES2529705-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	24.9	24.9	0.0	0% - 20%
ES2529895-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1 (2.0)*	mg/L	568	605	6.4	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 6888447)									
ES2529705-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.06	0.06	0.0	No Limit
ES2529895-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01 (0.20)*	mg/L	232	236	1.5	0% - 20%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6889388)									
ES2529708-001	MW08	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2529745-003	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6889390)									
EP2515608-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP2515608-010	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6889388)									
ES2529708-001	MW08	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2529745-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6889390)									
EP2515608-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP2515608-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 6889388)									
ES2529708-001	MW08	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2529745-003	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 6889390)									
EP2515608-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
EP2515608-010	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	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: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 6891952)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	89.3	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	90.3	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.9	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	86.6	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.0	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	84.9	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	92.7	81.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 6891951)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	96.3	83.0	105
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6888451)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	0.5 mg/L	102	90.0	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 6887125)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	95.8	82.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6888452)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	108	91.0	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6888448)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	5 mg/L	96.4	69.0	123
				<0.1	2.5 mg/L	93.7	70.0	123
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6888447)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	2.21 mg/L	98.8	71.3	126
				<0.01	0.5 mg/L	82.0	71.3	126
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6888255)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	70.4	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	68.8	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	77.1	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	65.5	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	67.3	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	69.6	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	89.6	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	88.3	63.1	118

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6888255) - continued								
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	84.3	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	79.1	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	68.0	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	70.3	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	75.8	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	66.3	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	81.5	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	79.4	59.1	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6888256)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	65.1	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	84.6	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	86.2	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6889388)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	89.7	75.0	127
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6889390)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	77.5	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6888256)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	73.9	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	86.8	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	67.7	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6889388)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	95.4	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6889390)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	77.5	75.0	127
EP080: BTEXN (QCLot: 6889388)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	109	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	107	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	102	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	102	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	99.8	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	99.6	75.5	124
EP080: BTEXN (QCLot: 6889390)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	96.8	68.3	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080: BTEXN (QCLot: 6889390) - continued								
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	104	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	105	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	107	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	106	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	98.7	75.5	124

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 6891952)							
EN2516321-002	Anonymous	EG020A-F: Arsenic	7440-38-2	0.1 mg/L	113	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.025 mg/L	107	70.0	130
		EG020A-F: Chromium	7440-47-3	0.1 mg/L	103	70.0	130
		EG020A-F: Copper	7440-50-8	0.1 mg/L	108	70.0	130
		EG020A-F: Lead	7439-92-1	0.1 mg/L	99.5	70.0	130
		EG020A-F: Nickel	7440-02-0	0.1 mg/L	109	70.0	130
		EG020A-F: Zinc	7440-66-6	0.1 mg/L	108	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 6891951)							
EN2516321-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	107	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 6888451)							
ES2529705-001	Anonymous	EK055G: Ammonia as N	7664-41-7	10 mg/L	100	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 6887125)							
ES2529979-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	84.5	70.0	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 6888452)							
ES2529705-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	5 mg/L	78.8	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 6888448)							
ES2529708-001	MW08	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	101	70.0	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 6888447)							
ES2529708-001	MW08	EK067G: Total Phosphorus as P	----	1 mg/L	76.6	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6889388)							
ES2529708-001	MW08	EP080: C6 - C9 Fraction	----	325 µg/L	79.3	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6889390)							
EP2515608-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	99.4	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6889388)							
ES2529708-001	MW08	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	80.8	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6889390)							
EP2515608-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	91.2	70.0	130
EP080: BTEXN (QCLot: 6889388)							
ES2529708-001	MW08	EP080: Benzene	71-43-2	25 µg/L	108	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	101	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	102	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	102	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	99.7	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	112	70.0	130
EP080: BTEXN (QCLot: 6889390)							
EP2515608-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	106	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	111	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	116	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	117	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	114	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	108	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2529708**	Page	: 1 of 8
Client	: **LWC MANAGEMENT PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR JAMES FOX	Telephone	: +61881625130
Project	: BE-78	Date Samples Received	: 25-Sep-2025
Site	: ----	Issue Date	: 01-Oct-2025
Sampler	: ----	No. of samples received	: 9
Order number	: ----	No. of samples analysed	: 9

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

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	14	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	19	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	14	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	19	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)		*Sample Date*	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	*Date analysed*	*Due for analysis*	*Evaluation*
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Filtered; Lab-acidified (EG020A-F)								
MW08,	MW09,	**23-Sep-2025**	**----**	----	----	**29-Sep-2025**	22-Mar-2026	✓
MW10,	MW11,							
MW16,	MW17R,							
MW26,	DUP1							
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)								
MW08,	MW09,	**23-Sep-2025**	**----**	----	----	**30-Sep-2025**	21-Oct-2025	✓
MW10,	MW11,							
MW16,	MW17R,							
MW26,	DUP1							
EK055G: Ammonia as N by Discrete Analyser								
Clear Plastic Bottle - Sulfuric Acid (EK055G)								
MW08,	MW09,	**23-Sep-2025**	**----**	----	----	**30-Sep-2025**	21-Oct-2025	✓
DUP1								
EK057G: Nitrite as N by Discrete Analyser								
Clear Plastic Bottle - Natural (EK057G)								
MW08,	MW09,	**23-Sep-2025**	**----**	----	----	**25-Sep-2025**	25-Sep-2025	✓
DUP1								

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
MW08, MW09, DUP1	**23-Sep-2025**	**----**	----	----	**30-Sep-2025**	21-Oct-2025	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
MW08, MW09, DUP1	**23-Sep-2025**	**26-Sep-2025**	21-Oct-2025	✓	**26-Sep-2025**	21-Oct-2025	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
MW08, MW09, DUP1	**23-Sep-2025**	**26-Sep-2025**	21-Oct-2025	✓	**26-Sep-2025**	21-Oct-2025	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
MW09, MW10	**23-Sep-2025**	**29-Sep-2025**	30-Sep-2025	✓	**29-Sep-2025**	08-Nov-2025	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
MW08, MW11, MW16, MW17R, MW26, DUP1	**23-Sep-2025**	**29-Sep-2025**	30-Sep-2025	✓	**30-Sep-2025**	08-Nov-2025	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
MW08, MW09, MW10, MW11, MW16, MW17R, MW26, DUP1	**23-Sep-2025**	**29-Sep-2025**	30-Sep-2025	✓	**30-Sep-2025**	08-Nov-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW08, MW09, MW10, MW11, MW16, MW17R, MW26, DUP1, Trip Blank	**23-Sep-2025**	**30-Sep-2025**	07-Oct-2025	✓	**30-Sep-2025**	07-Oct-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
MW08, MW09, MW10, MW11, MW16, MW17R, MW26, DUP1	**23-Sep-2025**	**29-Sep-2025**	30-Sep-2025	✓	**30-Sep-2025**	08-Nov-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW08, MW09, MW10, MW11, MW16, MW17R, MW26, DUP1, Trip Blank	**23-Sep-2025**	**30-Sep-2025**	07-Oct-2025	✓	**30-Sep-2025**	07-Oct-2025	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
MW08, MW09, MW10, MW11, MW16, MW17R, MW26, DUP1, Trip Blank	**23-Sep-2025**	**30-Sep-2025**	07-Oct-2025	✓	**30-Sep-2025**	07-Oct-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: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	14	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	19	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	20	**15.00**	**15.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	14	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	19	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	39	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al, Zhang et al. This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2529708**

Client	: **LWC MANAGEMENT PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR JAMES FOX	Contact	: Kieren Burns
Address	: SUITE 3 4-8 GOODWOOD ROAD WAYVILLE SOUTH AUSTRALIA 5034	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: jfox@lwconsulting.com.au	E-mail	: kieren.burns@alsglobal.com
Telephone	: ----	Telephone	: +61881625130
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: BE-78	Page	: 1 of 3
Order number	: ----	Quote number	: EM2023LANWAT0009 (EN/111)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 25-Sep-2025 14:00	Issue Date	: 25-Sep-2025
Client Requested Due Date	: 01-Oct-2025	Scheduled Reporting Date	: **01-Oct-2025**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 8.7'C 14.0'C 8.6'C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 9 / 9

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 ± 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.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - NT-08 Total Nitrogen + NO2 + NO3 + NH3 + Total P	WATER - W-07 TRH/BTEXN/PAH	WATER - W-18 TRH(C6 - C9)/BTEXN	WATER - W-26 TRH/BTEXN/PAH/8 Metals
ES2529708-001	23-Sep-2025 00:00	MW08	✓			✓
ES2529708-002	23-Sep-2025 00:00	MW09	✓			✓
ES2529708-003	23-Sep-2025 00:00	MW10		✓		✓
ES2529708-004	23-Sep-2025 00:00	MW11		✓		✓
ES2529708-005	23-Sep-2025 00:00	MW16		✓		✓
ES2529708-006	23-Sep-2025 00:00	MW17R		✓		✓
ES2529708-007	23-Sep-2025 00:00	MW26		✓		✓
ES2529708-008	23-Sep-2025 00:00	DUP1	✓			✓
ES2529708-009	23-Sep-2025 00:00	Trip Blank			✓	

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

INVOICES ADDRESS		
- A4 - AU Tax Invoice (INV)	Email	admin@lwconsulting.com.au
JAMES FOX		
- *AU Certificate of Analysis - NATA (COA)	Email	jfox@lwconsulting.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jfox@lwconsulting.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jfox@lwconsulting.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jfox@lwconsulting.com.au
- Chain of Custody (CoC) (COC)	Email	jfox@lwconsulting.com.au
- EDI Format - ESDAT (ESDAT)	Email	jfox@lwconsulting.com.au
- EDI Format - XTab (XTAB)	Email	jfox@lwconsulting.com.au
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)	Email	jfox@lwconsulting.com.au
RESULTS/INVOICES ADDRESS		
- *AU Certificate of Analysis - NATA (COA)	Email	laboratoryresults@lwconsulting.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	laboratoryresults@lwconsulting.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	laboratoryresults@lwconsulting.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	laboratoryresults@lwconsulting.com.au
- Chain of Custody (CoC) (COC)	Email	laboratoryresults@lwconsulting.com.au
- EDI Format - ESDAT (ESDAT)	Email	laboratoryresults@lwconsulting.com.au
- EDI Format - XTab (XTAB)	Email	laboratoryresults@lwconsulting.com.au
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)	Email	laboratoryresults@lwconsulting.com.au

CHAIN OF CUSTODY FORM

From : Land & Water Consulting Pty Ltd
Suite 3, 4-8 Goodwood Road, WAYVILLE, SA, 5034
ph: (08) 8271 5255 fax: (08) 8357 1307

LAB Quote Number: ME-221-18

LWC Contact Information:
Contact Name:
James Fox
Contact Email:
laboratoryresults@lwconsulting.com.au
jfox@lwconsulting.com.au

Phone Number:
08 8271 5255

LWC Project No:
BE-78

Project Manager:
James Fox

Date Samples Sent: 24/09/2025

COC Checked by: A Vaughan

ALS

Sample Analysis

Lab ID	Date	Matrix	Sample ID	No. Bottles	Groundwater Suite 1*	Groundwater Suite 2*	Surfacewater Suite*		Tripblank C6-C10/ BTEXN				
					Tick required analytes								
1	23/9/25	W	MW08	6		X							
2	↓	↓	MW09	6		X							
3			MW10	4	X								
4			MW11	4	X								
5			MW16	4	X								
6			MW17R	4	X								
7			MW26	4	X								
8			DUP1	6		X							
9			Tripblanks	2					X				
			TOTAL	40	5	3			1				

Environmental Division
Sydney
Work Order Reference
ES2529708

Telephone : + 61-2-8784 8555

ADDITIONAL COMMENTS:

Groundwater Suite 1*: TRH/ BTEXN, 8 Dissolved Metals, PAH.

Groundwater Suite 2*: TRH/ BTEXN, 8 Dissolved Metals, PAH, Nutrients (Ammonia, Nitrite, Nitrate, Total Phosphorous (P), Total Nitrogen (N), Total Kjeldahl Nitrogen (TKN).

Surface Water Suite*: TRH/ BTEXN, 8 Total Metals, PAH, Total Suspended Solids (TSS), Nutrients (Ammonia, Nitrite, Nitrate, Total Phosphorous (P), Total Nitrogen (N), Total Kjeldahl Nitrogen (TKN).

Jonathan
25/9/25 1400

CERTIFICATE OF ANALYSIS

Work Order	: **ES2529915**	Page	: 1 of 9
Client	: **LWC MANAGEMENT PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR JAMES FOX	Contact	: Kieren Burns
Address	: SUITE 3 4-8 GOODWOOD ROAD WAYVILLE SOUTH AUSTRALIA 5034	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61881625130
Project	: BE-78	Date Samples Received	: 26-Sep-2025 11:00
Order number	: ----	Date Analysis Commenced	: 30-Sep-2025
C-O-C number	: ----	Issue Date	: 02-Oct-2025 15:15
Sampler	: ----		
Site	: ----		
Quote number	: EN/111		
No. of samples received	: 8		
No. of samples analysed	: 8		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, 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.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW12	MW13	MW18	MW19	MW20
				Sampling date / time	24-Sep-2025 00:00	24-Sep-2025 00:00	24-Sep-2025 00:00	24-Sep-2025 00:00	24-Sep-2025 00:00
Compound	CAS Number	LOR	Unit		ES2529915-001	ES2529915-002	ES2529915-003	ES2529915-004	ES2529915-005
					Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	**0.008**	<0.005	<0.005
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW12	MW13	MW18	MW19	MW20
				Sampling date / time	24-Sep-2025 00:00	24-Sep-2025 00:00	24-Sep-2025 00:00	24-Sep-2025 00:00	24-Sep-2025 00:00
Compound	CAS Number	LOR	Unit		ES2529915-001	ES2529915-002	ES2529915-003	ES2529915-004	ES2529915-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	2	µg/L		<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**22.9**	**21.0**	**17.2**	**21.2**	**22.2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW12	MW13	MW18	MW19	MW20
				Sampling date / time	24-Sep-2025 00:00	24-Sep-2025 00:00	24-Sep-2025 00:00	24-Sep-2025 00:00	24-Sep-2025 00:00
Compound	CAS Number	LOR	Unit		ES2529915-001	ES2529915-002	ES2529915-003	ES2529915-004	ES2529915-005
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2-Chlorophenol-D4	93951-73-6	1.0	%		42.7	32.6	37.3	43.5	32.6
2.4.6-Tribromophenol	118-79-6	1.0	%		47.0	50.5	36.1	43.6	47.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		52.9	54.0	46.6	51.4	55.0
Anthracene-d10	1719-06-8	1.0	%		68.6	63.2	70.3	62.5	70.0
4-Terphenyl-d14	1718-51-0	1.0	%		71.0	71.0	72.4	71.9	75.2
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		124	127	128	129	120
Toluene-D8	2037-26-5	2	%		117	117	117	111	114
4-Bromofluorobenzene	460-00-4	2	%		112	113	111	107	108

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW21	MW22	Trip Blank	----	----
				Sampling date / time	24-Sep-2025 00:00	24-Sep-2025 00:00	24-Sep-2025 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2529915-006	ES2529915-007	ES2529915-008	--------	--------
					Result	Result	Result	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	<0.005	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	<1.0	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	<1.0	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	<1.0	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	<1.0	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	<1.0	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	<1.0	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	<1.0	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	<1.0	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	<1.0	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	<1.0	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	<1.0	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW21	MW22	Trip Blank	----	----
				Sampling date / time	24-Sep-2025 00:00	24-Sep-2025 00:00	24-Sep-2025 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2529915-006	ES2529915-007	ES2529915-008	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	<0.5	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	<100	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	<100	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L		<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	----	----
^ **Total Xylenes**	----	2	µg/L		<2	<2	<2	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**31.2**	**19.8**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW21	MW22	Trip Blank	----	----
				Sampling date / time	24-Sep-2025 00:00	24-Sep-2025 00:00	24-Sep-2025 00:00	----	----
Compound	CAS Number	LOR	Unit		ES2529915-006	ES2529915-007	ES2529915-008	--------	--------
					Result	Result	Result	----	----
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2-Chlorophenol-D4	93951-73-6	1.0	%		**65.5**	**37.5**	**----**	**----**	**----**
2.4.6-Tribromophenol	118-79-6	1.0	%		**68.7**	**48.7**	**----**	**----**	**----**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**87.1**	**63.7**	**----**	**----**	**----**
Anthracene-d10	1719-06-8	1.0	%		**73.6**	**80.0**	**----**	**----**	**----**
4-Terphenyl-d14	1718-51-0	1.0	%		**96.1**	**82.6**	**----**	**----**	**----**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**128**	**126**	**117**	**----**	**----**
Toluene-D8	2037-26-5	2	%		**120**	**113**	**106**	**----**	**----**
4-Bromofluorobenzene	460-00-4	2	%		**114**	**106**	**103**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	72	143
Toluene-D8	2037-26-5	75	131
4-Bromofluorobenzene	460-00-4	73	137

QUALITY CONTROL REPORT

Work Order	: **ES2529915**	Page	: 1 of 6
Client	: **LWC MANAGEMENT PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR JAMES FOX	Contact	: Kieren Burns
Address	: SUITE 3 4-8 GOODWOOD ROAD WAYVILLE SOUTH AUSTRALIA 5034	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61881625130
Project	: BE-78	Date Samples Received	: 26-Sep-2025
Order number	: ----	Date Analysis Commenced	: 30-Sep-2025
C-O-C number	: ----	Issue Date	: 02-Oct-2025
Sampler	: ----		
Site	: ----		
Quote number	: EN/111		
No. of samples received	: 8		
No. of samples analysed	: 8		

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
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 6894822)									
ES2529921-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.013	0.014	0.0	0% - 50%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.007	0.007	0.0	No Limit
ES2530077-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.016	0.016	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 6894823)									
ES2529915-002	MW13	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2530076-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6889411)									
CA2505768-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	2970	3000	0.9	0% - 20%
ES2530118-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	80	70	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6889411)									
CA2505768-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	3080	3100	0.9	0% - 20%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6889411) - continued									
ES2530118-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	80	70	0.0	No Limit
EP080: BTEXN (QC Lot: 6889411)									
CA2505768-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2530118-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	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: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 6894822)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	89.7	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.0	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	99.4	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	90.7	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	93.2	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	88.9	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.9	81.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 6894823)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.4	83.0	105
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6889265)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	71.8	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	76.5	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	68.6	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	66.0	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	73.3	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	74.6	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	64.0	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	79.9	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	66.7	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	74.5	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	74.2	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	73.7	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	96.4	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	77.3	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	80.7	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	75.2	59.1	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6889264)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	82.6	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	103	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	86.1	58.3	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6889411)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	94.1	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6889264)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	85.4	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	101	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	71.8	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6889411)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	101	75.0	127
EP080: BTEXN (QCLot: 6889411)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	111	68.3	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	109	73.5	120
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	107	73.8	122
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	104	73.0	122
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	105	76.4	123
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	108	75.5	124

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020F: Dissolved Metals by ICP-MS (QCLot: 6894822)							
ES2529915-003	MW18	EG020A-F: Arsenic	7440-38-2	1 mg/L	84.1	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	92.3	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	99.9	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	87.6	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	104	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	86.8	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	128	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 6894823)							
ES2529915-001	MW12	EG035F: Mercury	7439-97-6	0.01 mg/L	87.5	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6889411)							
CA2505768-001	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	# Not Determined	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6889411)							
CA2505768-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	# Not Determined	70.0	130
EP080: BTEXN (QCLot: 6889411)							
CA2505768-001	Anonymous	EP080: Benzene	71-43-2	25 µg/L	77.6	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	89.0	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	85.7	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	84.6	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	82.6	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	78.4	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2529915**	Page	: 1 of 6
Client	: **LWC MANAGEMENT PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR JAMES FOX	Telephone	: +61881625130
Project	: BE-78	Date Samples Received	: 26-Sep-2025
Site	: ----	Issue Date	: 02-Oct-2025
Sampler	: ----	No. of samples received	: 8
Order number	: ----	No. of samples analysed	: 8

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.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **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

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP080/071: Total Petroleum Hydrocarbons	CA2505768--001	Anonymous	**C6 - C9 Fraction**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	CA2505768--001	Anonymous	**C6 - C10 Fraction**	C6_C10	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / ***Container*** / Client Sample ID(s)	***Sample Date***	*Extraction / Preparation*			*Analysis*		
		Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG020A-F)							
MW12, MW13, MW18, MW19, MW20, MW21, MW22	**24-Sep-2025**	**----**	----	----	**30-Sep-2025**	23-Mar-2026	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
MW12, MW13, MW18, MW19, MW20, MW21, MW22	**24-Sep-2025**	**----**	----	----	**02-Oct-2025**	22-Oct-2025	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
MW12, MW13, MW18, MW19, MW20, MW21, MW22	**24-Sep-2025**	**30-Sep-2025**	01-Oct-2025	✓	**01-Oct-2025**	09-Nov-2025	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
MW12, MW13, MW18, MW19, MW21, MW22	**24-Sep-2025**	**30-Sep-2025**	01-Oct-2025	✓	**01-Oct-2025**	09-Nov-2025	✓
Amber Glass Bottle - Unpreserved (EP071)							
MW20	**24-Sep-2025**	**30-Sep-2025**	01-Oct-2025	✓	**02-Oct-2025**	09-Nov-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW13, MW18, MW19, MW20, MW21, MW22, Trip Blank	**24-Sep-2025**	**30-Sep-2025**	08-Oct-2025	✓	**01-Oct-2025**	08-Oct-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW12	**24-Sep-2025**	**30-Sep-2025**	08-Oct-2025	✓	**30-Sep-2025**	08-Oct-2025	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
MW12, MW13, MW18, MW19, MW21, MW22	**24-Sep-2025**	**30-Sep-2025**	01-Oct-2025	✓	**01-Oct-2025**	09-Nov-2025	✓
Amber Glass Bottle - Unpreserved (EP071)							
MW20	**24-Sep-2025**	**30-Sep-2025**	01-Oct-2025	✓	**02-Oct-2025**	09-Nov-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW13, MW18, MW19, MW20, MW21, MW22, Trip Blank	**24-Sep-2025**	**30-Sep-2025**	08-Oct-2025	✓	**01-Oct-2025**	08-Oct-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW12	**24-Sep-2025**	**30-Sep-2025**	08-Oct-2025	✓	**30-Sep-2025**	08-Oct-2025	✓

Matrix: **WATER**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) MW13, MW18, MW19, MW20, MW21, MW22, Trip Blank	**24-Sep-2025**	**30-Sep-2025**	08-Oct-2025	✓	**01-Oct-2025**	08-Oct-2025	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW12	**24-Sep-2025**	**30-Sep-2025**	08-Oct-2025	✓	**30-Sep-2025**	08-Oct-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: **WATER**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	11	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	11	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2529915**

Client	: **LWC MANAGEMENT PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: MR JAMES FOX	Contact	: Kieren Burns
Address	: SUITE 3 4-8 GOODWOOD ROAD WAYVILLE SOUTH AUSTRALIA 5034	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: jfox@lwconsulting.com.au	E-mail	: kieren.burns@alsglobal.com
Telephone	: ----	Telephone	: +61881625130
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: BE-78	Page	: 1 of 3
Order number	: ----	Quote number	: EM2023LANWAT0009 (EN/111)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	:		

Dates

Date Samples Received	: 26-Sep-2025 11:00	Issue Date	: 26-Sep-2025
Client Requested Due Date	: 02-Oct-2025	Scheduled Reporting Date	: **02-Oct-2025**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Not Available
No. of coolers/boxes	: 1	Temperature	: 1.8'C 5.6'C 6.7'C - Ice Bricks present
Receipt Detail	:	No. of samples received / analysed	: 8 / 8

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.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- 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 ± 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.

Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - W-18 TRH(C6 - C9)/BTEXN	WATER - W-26 TRH/BTEXN/PAH/8 Metals
ES2529915-001	24-Sep-2025 00:00	MW12		✓
ES2529915-002	24-Sep-2025 00:00	MW13		✓
ES2529915-003	24-Sep-2025 00:00	MW18		✓
ES2529915-004	24-Sep-2025 00:00	MW19		✓
ES2529915-005	24-Sep-2025 00:00	MW20		✓
ES2529915-006	24-Sep-2025 00:00	MW21		✓
ES2529915-007	24-Sep-2025 00:00	MW22		✓
ES2529915-008	24-Sep-2025 00:00	Trip Blank	✓	

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

INVOICES ADDRESS		
- A4 - AU Tax Invoice (INV)	Email	admin@lwconsulting.com.au
JAMES FOX		
- *AU Certificate of Analysis - NATA (COA)	Email	jfox@lwconsulting.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	jfox@lwconsulting.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	jfox@lwconsulting.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	jfox@lwconsulting.com.au
- Chain of Custody (CoC) (COC)	Email	jfox@lwconsulting.com.au
- EDI Format - ESDAT (ESDAT)	Email	jfox@lwconsulting.com.au
- EDI Format - XTab (XTAB)	Email	jfox@lwconsulting.com.au
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)	Email	jfox@lwconsulting.com.au
RESULTS/INVOICES ADDRESS		
- *AU Certificate of Analysis - NATA (COA)	Email	laboratoryresults@lwconsulting.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	laboratoryresults@lwconsulting.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	laboratoryresults@lwconsulting.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	laboratoryresults@lwconsulting.com.au
- Chain of Custody (CoC) (COC)	Email	laboratoryresults@lwconsulting.com.au
- EDI Format - ESDAT (ESDAT)	Email	laboratoryresults@lwconsulting.com.au
- EDI Format - XTab (XTAB)	Email	laboratoryresults@lwconsulting.com.au
- EPA Waste Classification & Categorisation Guideline Report (COA_GL_EPA_WASTE)	Email	laboratoryresults@lwconsulting.com.au

CHAIN OF CUSTODY FORM

ALS

From : Land & Water Consulting Pty Ltd
Suite 3, 4-8 Goodwood Road, WAYVILLE, SA, 5034
ph: (08) 8271 5255 fax: (08) 8357 1307

LAB Quote Number: ME-221-18

LWC Contact Information:
Contact Name:
James Fox
Contact Email:
laboratoryresults@lwconsulting.com.au
jfox@lwconsulting.com.au

Phone Number:
08 8271 5255

LWC Project No:
BE-78

Project Manager:
James Fox

Date Samples Sent: 25/09/2025

COC Checked by: A Vaughan

Bottles

Sample Analysis

Lab ID	Date	Matrix	Sample ID	No. ~~Jars~~	Tick required analytes	Groundwater Suite 1*	Groundwater Suite 2*	Surfacewater Suite*		Tripblank C6-C10/ BTEXN				
1	24/09/25	W	MW12	4		X								
2	↓	↓	MW13	4		X								
3			MW18	4		X								
4			MW19	4		X								
5			MW20	4		X								
6			MW21	4		X								
7			MW22	4		X								
8			Tripblank	2						X				
					TOTAL	30	7				1				

Environmental Division
Sydney
Work Order Reference
ES2529915

Telephone : + 61-2-8784 8555

ADDITIONAL COMMENTS:

Groundwater Suite 1*: TRH/ BTEXN, 8 Dissolved Metals, PAH.

Groundwater Suite 2*: TRH/ BTEXN, 8 Dissolved Metals, PAH, Nutrients (Ammonia, Nitrite, Nitrate, Total Phosphorous (P), Total Nitrogen (N), Total Kjeldahl Nitrogen (TKN).

Surface Water Suite*: TRH/ BTEXN, 8 Total Metals, PAH, Total Suspended Solids (TSS), Nutrients (Ammonia, Nitrite, Nitrate, Total Phosphorous (P), Total Nitrogen (N), Total Kjeldahl Nitrogen (TKN).

Jonathon
26/9/25 1100

DP 25/9 9:00 am

Land & Water Consulting
Suite 3/ 4-8 Goodwood Road
Wayville
SA 5034

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **James Fox**

Report **1271963-W**
Project name
Project ID BE-78
Received Date Sep 24, 2025

Client Sample ID			**DUP1**	**Tripblank**
Sample Matrix			**Water**	**Water**
Eurofins Sample No.			**M25-Se0073831**	**M25-Se0073832**
Date Sampled			**Sep 23, 2025**	**Sep 23, 2025**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons				
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	-
TRH C10-C36 (Total)	0.1	mg/L	< 0.1	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	-
TRH >C10-C16 less Naphthalene (F2)*[N01]	0.05	mg/L	< 0.05	-
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01
TRH >C16-C34	0.1	mg/L	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	-
BTEX				
Benzene	0.001	mg/L	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	112	107
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.001	mg/L	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	-
Anthracene	0.001	mg/L	< 0.001	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-
Chrysene	0.001	mg/L	< 0.001	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	-
Fluoranthene	0.001	mg/L	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-

Client Sample ID			DUP1	Tripblank
Sample Matrix			Water	Water
Eurofins Sample No.			M25-Se0073831	M25-Se0073832
Date Sampled			Sep 23, 2025	Sep 23, 2025
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Naphthalene	0.001	mg/L	< 0.001	-
Phenanthrene	0.001	mg/L	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	-
Total PAH*	0.001	mg/L	< 0.001	-
2-Fluorobiphenyl (surr.)	1	%	105	-
p-Terphenyl-d14 (surr.)	1	%	133	-
Ammonia (as N)	0.01	mg/L	0.03	-
Nitrate & Nitrite (as N)	0.05	mg/L	1.7	-
Nitrate (as N)	0.02	mg/L	1.7	-
Nitrite (as N)	0.02	mg/L	< 0.02	-
Organic Nitrogen (as N)*	0.2	mg/L	0.77	-
Phosphate total (as P)	0.01	mg/L	0.01	-
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.8	-
Total Nitrogen (as N)*	0.2	mg/L	2.5	-
Phosphate total (as P)	0.01	mg/L	0.01	-
Heavy Metals				
Arsenic (filtered)	0.001	mg/L	< 0.001	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	-
Chromium (filtered)	0.001	mg/L	< 0.001	-
Copper (filtered)	0.001	mg/L	< 0.001	-
Lead (filtered)	0.001	mg/L	< 0.001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	-
Nickel (filtered)	0.001	mg/L	< 0.001	-
Zinc (filtered)	0.005	mg/L	0.013	-

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 25, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 25, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Melbourne	Sep 25, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Sep 25, 2025	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Eurofins Suite B4			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 25, 2025	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 25, 2025	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P			
Ammonia (as N)	Melbourne	Sep 25, 2025	28 Days
- Method: LTM-INO-4450 Determination of Nitrogen Species by Discrete Analyser			
Nitrate & Nitrite (as N)	Melbourne	Sep 25, 2025	28 Days
- Method: LTM-INO-4450 Nitrogens by Discrete Analyser			
Nitrate (as N)	Melbourne	Sep 25, 2025	28 Days
- Method: LTM-INO-4450 Nitrogens by Discrete Analyser			
Nitrite (as N)	Melbourne	Sep 25, 2025	2 Days
- Method: LTM-INO-4450 Nitrogens by Discrete Analyser			
Phosphate total (as P)	Melbourne	Sep 25, 2025	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Total Kjeldahl Nitrogen (as N)	Melbourne	Sep 25, 2025	28 Days
- Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA			
Phosphate total (as P)	Melbourne	Sep 25, 2025	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Metals M8 filtered	Melbourne	Sep 25, 2025	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

eurofins

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NATA# 2377
Site# 2370 & 2554

Company Name: Land & Water Consulting
Address: Suite 3/ 4-8 Goodwood Road
Wayville
SA 5034

Project Name:
Project ID: BE-78

Order No.:
Report #: 1271963
Phone: 08 8271 5255
Fax:

Received: Sep 24, 2025 9:15 AM
Due: Oct 2, 2025
Priority: 5 Day
Contact Name: James Fox

Eurofins Analytical Services Manager : Karl Bulow

Sample Detail						Phosphate total (as P)	Metals M8 filtered	Eurofins Suite B4	BTEXN and Volatile TRH	Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	DUP1	Sep 23, 2025		Water	M25-Se0073831	X	X	X		X
2	Tripblank	Sep 23, 2025		Water	M25-Se0073832				X	
Test Counts						1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follow guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013. They are included in this QC report where applicable. Additional QC data may be available on request.
2. Unless otherwise stated, all soil/sediment/solid results are reported on a dry weight basis.
3. Unless otherwise stated, all biota/food results are reported on a wet weight basis on the edible portion.
4. For CEC results where the sample's origin is unknown or environmentally contaminated, the results should be used advisedly.
5. Actual LORs are matrix dependent. Quoted LORs may be raised where sample extracts are diluted due to interferences.
6. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds where annotated.
7. SVOC analysis on waters is performed on homogenised, unfiltered samples unless noted otherwise.
8. Samples were analysed on an 'as received' basis.
9. Information identified in this report with **blue** colour indicates data provided by customers that may have an impact on the results.
10. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

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

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C10-C14	%	74			70-130	Pass	
TRH >C10-C16	%	73			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	104			70-130	Pass	
Acenaphthylene	%	106			70-130	Pass	
Anthracene	%	84			70-130	Pass	
Benz(a)anthracene	%	98			70-130	Pass	
Benzo(a)pyrene	%	94			70-130	Pass	
Benzo(b&j)fluoranthene	%	107			70-130	Pass	
Benzo(g.h.i)perylene	%	92			70-130	Pass	
Benzo(k)fluoranthene	%	130			70-130	Pass	
Chrysene	%	100			70-130	Pass	
Dibenz(a.h)anthracene	%	76			70-130	Pass	
Fluoranthene	%	82			70-130	Pass	
Fluorene	%	101			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	82			70-130	Pass	
Naphthalene	%	92			70-130	Pass	
Phenanthrene	%	126			70-130	Pass	
Pyrene	%	84			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	105			70-130	Pass	
Nitrate & Nitrite (as N)	%	93			70-130	Pass	
Nitrate (as N)	%	93			70-130	Pass	
Nitrite (as N)	%	93			70-130	Pass	
Phosphate total (as P)	%	101			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	%	90			70-130	Pass	
Phosphate total (as P)	%	101			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic (filtered)	%	97			80-120	Pass	
Cadmium (filtered)	%	96			80-120	Pass	
Chromium (filtered)	%	96			80-120	Pass	
Copper (filtered)	%	87			80-120	Pass	
Lead (filtered)	%	80			80-120	Pass	
Mercury (filtered)	%	115			80-120	Pass	
Nickel (filtered)	%	92			80-120	Pass	
Zinc (filtered)	%	93			80-120	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	126			70-130	Pass	
TRH C6-C10	%	128			70-130	Pass	
Naphthalene	%	99			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	114			70-130	Pass	
Toluene	%	120			70-130	Pass	
Ethylbenzene	%	121			70-130	Pass	
m&p-Xylenes	%	120			70-130	Pass	
Xylenes - Total*	%	122			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	M25-Se0077626	NCP	%	82			70-130	Pass	
TRH >C10-C16	M25-Se0077626	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M25-Se0083748	NCP	%	87			70-130	Pass	
Acenaphthylene	M25-Se0083748	NCP	%	92			70-130	Pass	
Anthracene	M25-Se0083748	NCP	%	78			70-130	Pass	
Benz(a)anthracene	M25-Se0083748	NCP	%	92			70-130	Pass	
Benzo(a)pyrene	M25-Se0083748	NCP	%	80			70-130	Pass	
Benzo(b&j)fluoranthene	M25-Se0083748	NCP	%	82			70-130	Pass	
Benzo(g.h.i)perylene	M25-Se0083748	NCP	%	84			70-130	Pass	
Benzo(k)fluoranthene	M25-Se0083748	NCP	%	70			70-130	Pass	
Chrysene	M25-Se0083748	NCP	%	100			70-130	Pass	
Dibenz(a.h)anthracene	M25-Se0083748	NCP	%	90			70-130	Pass	
Fluoranthene	M25-Se0083748	NCP	%	90			70-130	Pass	
Fluorene	M25-Se0083748	NCP	%	86			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M25-Se0083748	NCP	%	73			70-130	Pass	
Naphthalene	M25-Se0083748	NCP	%	86			70-130	Pass	
Phenanthrene	M25-Se0083748	NCP	%	84			70-130	Pass	
Pyrene	M25-Se0083748	NCP	%	72			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M25-Se0077421	NCP	%	99			70-130	Pass	
Nitrate & Nitrite (as N)	M25-Se0077421	NCP	%	89			70-130	Pass	
Nitrate (as N)	M25-Se0077421	NCP	%	91			70-130	Pass	
Nitrite (as N)	M25-Se0077421	NCP	%	86			70-130	Pass	
Phosphate total (as P)	M25-Se0077959	NCP	%	105			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	B25-Se0079190	NCP	%	89			70-130	Pass	
Phosphate total (as P)	M25-Se0077959	NCP	%	105			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	M25-Se0077990	NCP	%	120			75-125	Pass	
Cadmium (filtered)	M25-Se0077990	NCP	%	124			75-125	Pass	
Chromium (filtered)	M25-Se0077961	NCP	%	125			75-125	Pass	
Copper (filtered)	M25-Se0077961	NCP	%	108			75-125	Pass	
Lead (filtered)	M25-Se0077990	NCP	%	102			75-125	Pass	
Mercury (filtered)	M25-Se0077990	NCP	%	81			75-125	Pass	
Nickel (filtered)	M25-Se0077990	NCP	%	118			75-125	Pass	
Zinc (filtered)	M25-Se0077961	NCP	%	124			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M25-Se0073832	CP	%	116			70-130	Pass	
TRH C6-C10	M25-Se0073832	CP	%	116			70-130	Pass	
Naphthalene	M25-Se0073832	CP	%	86			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M25-Se0073832	CP	%	109			70-130	Pass	
Toluene	M25-Se0073832	CP	%	113			70-130	Pass	
Ethylbenzene	M25-Se0073832	CP	%	113			70-130	Pass	
m&p-Xylenes	M25-Se0073832	CP	%	112			70-130	Pass	
o-Xylene	M25-Se0073832	CP	%	117			70-130	Pass	
Xylenes - Total*	M25-Se0073832	CP	%	114			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	M25-Se0077522	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M25-Se0086154	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M25-Se0086154	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M25-Se0086154	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	M25-Se0077522	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M25-Se0086154	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Naphthalene	M25-Se0077522	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH >C16-C34	M25-Se0086154	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M25-Se0086154	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M25-Se0077522	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M25-Se0077522	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M25-Se0077522	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M25-Se0077522	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M25-Se0077522	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	M25-Se0077522	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M25-Se0073879	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S25-Se0072783	NCP	mg/L	0.20	0.22	8.0	30%	Pass	
Nitrate & Nitrite (as N)	S25-Se0072783	NCP	mg/L	0.47	0.47	<1	30%	Pass	
Nitrate (as N)	S25-Se0072783	NCP	mg/L	0.46	0.47	1.0	30%	Pass	
Nitrite (as N)	S25-Se0072783	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phosphate total (as P)	M25-Se0075956	NCP	mg/L	0.90	0.92	2.0	30%	Pass	
Total Kjeldahl Nitrogen (as N)	B25-Se0079188	NCP	mg/L	0.8	1.0	19	30%	Pass	
Phosphate total (as P)	M25-Se0075956	NCP	mg/L	0.90	0.92	2.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	M25-Se0077990	NCP	mg/L	0.003	0.003	1.0	30%	Pass	
Cadmium (filtered)	M25-Se0077990	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	M25-Se0077990	NCP	mg/L	0.001	0.001	5.0	30%	Pass	
Copper (filtered)	M25-Se0077990	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	M25-Se0077990	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel (filtered)	M25-Se0077990	NCP	mg/L	0.002	0.002	3.0	30%	Pass	
Zinc (filtered)	M25-Se0077990	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Karl Bulow	Analytical Services Manager
Carroll Lee	Senior Analyst-Volatile
Edward Lee	Senior Analyst-Organic
Emily Rosenberg	Senior Analyst-Inorganic
Emily Rosenberg	Senior Analyst-Metal
Luke Holt	Senior Analyst-Inorganic
Mary Makarios	Senior Analyst-Metal



Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

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Site# 2370 & 2554

Company Name: Land & Water Consulting
Address: Suite 3/ 4-8 Goodwood Road
Wayville
SA 5034

Project Name:
Project ID: BE-78

Order No.:
Report #: 1271963
Phone: 08 8271 5255
Fax:

Received: Sep 24, 2025 9:15 AM
Due: Oct 2, 2025
Priority: 5 Day
Contact Name: James Fox

Eurofins Analytical Services Manager : Karl Bulow

Sample Detail						Phosphate total (as P)	Metals M8 filtered	Eurofins Suite B4	BTEXN and Volatile TRH	Eurofins Suite B19D: Total N, TKN, NOx, NO2, NO3, NH3, Total P
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	DUP1	Sep 23, 2025		Water	M25-Se0073831	X	X	X		X
2	Tripblank	Sep 23, 2025		Water	M25-Se0073832				X	
Test Counts						1	1	1	1	1

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Sample Receipt Advice

Company name: Land & Water Consulting
Contact name: James Fox
Project name: Not provided
Project ID: BE-78
Turnaround time: 5 Day
Date/Time received Sep 24, 2025 9:15 AM
Eurofins reference 1271963

Sample Information

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

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Karl Bulow on phone : +61 3 8564 5000 or by email: Karl.Bulow@eurofinsanz.com

Results will be delivered electronically via email to James Fox - jfox@lwconsulting.com.au.

Note: A copy of these results will also be delivered to the general Land & Water Consulting email address.

CHAIN OF CUSTODY FORM

eurofins

From : Land & Water Consulting Pty Ltd
Suite 3, 4-8 Goodwood Road, WAYVILLE, SA, 5034
ph: (08) 8271 5255 fax: (08) 8357 1307

LAB Quote Number:

LWC Contact Information:
Contact Name:
James Fox
Contact Email:
laboratoryresults@lwconsulting.com.au
jfox@lwconsulting.com.au

Phone Number:
08 8271 5255

LWC Project No:
BE-78
Project Manager:
James Fox
Date Samples Sent: 24/09/2025
COC Checked by: A Vaughan

Lab ID	Date	Matrix	Sample ID	No. Bottles	Sample Analysis: Groundwater Suite 1*	Groundwater Suite 2*	Surface Water Suite*	Total Suspended Solids (TSS)		B1 - TRH C6-C10/ BTEXN	
					Tick required analytes						
	23/09/25	W	DUP1	6		X					
	23/09/25	W	Tripblank	2						X	
			TOTAL	8		1				1	

ADDITIONAL COMMENTS:

Groundwater Suite 1*: TRH/ BTEXN/ PAH (B4), 8 Dissolved Metals (M8)

Groundwater Suite 2*: TRH/ BTEXN/ PAH (B4), 8 Dissolved Metals (M8), Nutrients: Total N, TKN, Nox, NO2,NO3, Total P (B19D)

Surface Water Suite*: TRH/ BTEXN/ PAH (B4), 8 Dissolved Metals (M8), Nutrients: Total N, TKN, Nox, NO2,NO3, Total P (B19D)

24/9/25 9:15AM Temp: 11.6 #1271963

APPENDIX E
DATA QUALITY ASSESSMENT

Summary of Groundwater and Stormwater RPD Results

Client: Cleanaway Operations Pty Ltd
Project: 875 Stuart Highway, Holtze, NT - February 2025 GME
Job Number: BE-78

Exceedance of RPD% Criterion of 30% of mean concentration where higher concentration >20 x EQL													
Exceedance of RPD% Criterion of 50% of mean concentration where higher concentration 10-20 x EQL													
			Field ID	MW09	DUP1	*RPD%*	DUP1	***RPD%***	SW2	DUP1_SW	***RPD%***	DUP1_SW	***RPD%***
			Lab Report	19/02/2025	19/02/2025		19/02/2025		19/02/2025	19/02/2025		19/02/2025	
			Date	ES2504852	ES2504852		1189824		ES2504852	ES2504852		1189824	
			Lab Name	ALS	ALS		Eurofins		ALS	ALS		Eurofins	
			Duplicate	Primary	Intra-Labratory		Inter-Laboratory		Primary	Intra-Laboratory		Inter-Laboratory	
	Analyte	Unit	ALS LOR										
Metals	Arsenic (Filtered)	mg/L	0.001	<0.001	<0.001	-	< 0.001	-	<0.001	<0.001	-	< 0.001	-
	Cadmium (Filtered)	mg/L	0.0001	<0.0001	<0.0001	-	< 0.0002	-	<0.0001	<0.0001	-	< 0.0002	-
	Chromium (III+VI) (Filtered)*	mg/L	0.001	<0.001	<0.001	-	< 0.001	-	<0.001	<0.001	-	< 0.001	-
	Copper (Filtered)	mg/L	0.001	<0.001	<0.001	-	< 0.001	-	**0.002**	**0.002**	***0***	**0.002**	***0***
	Lead (Filtered)	mg/L	0.001	<0.001	<0.001	-	< 0.001	-	<0.001	<0.001	-	< 0.001	-
	Mercury (Filtered)	mg/L	0.0001	<0.0001	<0.0001	-	< 0.0001	-	<0.0001	<0.0001	-	< 0.0001	-
	Nickel (Filtered)	mg/L	0.001	<0.001	<0.001	-	< 0.001	-	**0.001**	<0.001	-	**0.001**	**0**
	Zinc (Filtered)	mg/L	0.005	**0.007**	**0.008**	**13**	**0.009**	***25***	**0.098**	**0.099**	***1***	**0.11**	***12***
BTEXN	Benzene	µg/L	1	<1	<1	-	<1	-	<1	<1	-	<1	-
	Toluene	µg/L	2	<2	<2	-	<1	-	<2	<2	-	<1	-
	Ethylbenzene	µg/L	2	<2	<2	-	<1	-	<2	<2	-	<1	-
	Xylene (m & p)	µg/L	2	<2	<2	-	<2	-	<2	<2	-	<2	-
	Xylene (o)	µg/L	2	<2	<2	-	<1	-	<2	<2	-	<1	-
	Xylene Total	µg/L	2	<2	<2	-	<3	-	<2	<2	-	<3	-
	Naphthalene-MAH	µg/L	5	<5	<5	-	<10	-	<5	<5	-	<10	-
	BTEX (Sum of Total) - Lab Calc	µg/L	1	<1	<1	-	-	-	<1	<1	-	**-**	-
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20	<20	<20	-	<20	-	<20	<20	-	<20	-
	C6 - C10 Fraction	µg/L	20	<20	<20	-	<20	-	<20	<20	-	<20	-
	>C10-C16 minus Naphthalene (F2)	µg/L	100	<100	<100	**-**	<50	**-**	<100	<100	-	<50	**-**
	>C10 - C16 Fraction	µg/L	100	<100	<100	**-**	<50	**-**	<100	<100	-	<50	**-**
	>C16 - C34 Fraction (F3)	µg/L	100	<100	<100	**-**	<100	**-**	<100	<100	-	<100	**-**
	>C34 - C40 Fraction (F4)	µg/L	100	<100	<100	-	<100	-	<100	<100	-	<100	**-**
	>C10 - C40 (Sum of Total)	µg/L	100	<100	<100	**-**	<100	**-**	<100	<100	-	<100	**-**
	C6 - C 9 Fraction	µg/L	20	<20	<20	-	<20	-	<20	<20	-	<20	-
	C10 - C14 Fraction	µg/L	50	<50	<50	**-**	<50	**-**	<50	<50	-	<50	**-**
	C15 - C28 Fraction	µg/L	100	<100	<100	**-**	<100	**-**	<100	<100	-	<100	**-**
	C29 - C36 Fraction	µg/L	50	<50	<50	-	<100	**-**	<50	<50	**-**	<100	**-**
	C10 - C36 (Sum of Total)	µg/L	50	<50	<50	**-**	<100	**-**	<50	<50	**-**	<100	**-**
PAHs	Acenaphthene	µg/L	1	<1.0	<1.0	-	<1.0	-	<1.0	<1.0	-	<1.0	-
	Acenaphthylene	µg/L	1	<1.0	<1.0	-	<1.0	-	<1.0	<1.0	-	<1.0	-
	Anthracene	µg/L	1	<1.0	<1.0	-	<1.0	-	<1.0	<1.0	-	<1.0	-
	Benz(a)anthracene	µg/L	1	<1.0	<1.0	-	<1.0	-	<1.0	<1.0	-	<1.0	-
	Benzo(a)pyrene	µg/L	0.5	<0.5	<0.5	-	<1.0	-	<0.5	<0.5	-	<1.0	-
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5	<0.5	<0.5	-	**-**	-	<0.5	<0.5	-	-	-
	Benzo[b+j]fluoranthene	µg/L	1	<1.0	<1.0	-	<1.0	-	<1.0	<1.0	-	<1.0	-
	Benzo(g,h,i)perylene	µg/L	1	<1.0	<1.0	-	<1.0	-	<1.0	<1.0	-	<1.0	-
	Benzo(k)fluoranthene	µg/L	1	<1.0	<1.0	-	<1.0	-	<1.0	<1.0	-	<1.0	-
	Chrysene	µg/L	1	<1.0	<1.0	-	<1.0	-	<1.0	<1.0	-	<1.0	-
	Pyrene	µg/L	1	<1.0	<1.0	-	<1.0	-	<1.0	<1.0	-	<1.0	-
	PAHs (Sum of total) - Lab calc	µg/L	0.5	<0.5	<0.5	-	<1.0	-	<0.5	<0.5	-	<1.0	-
Nutrients	Ammonia as N	mg/L	0.01	**0.02**	**0.05**	***86***	**0.08**	**120**	**0.08**	**0.11**	***32***	**0.04**	**67**
	Nitrate (as N)	mg/L	0.01	**2.95**	**2.81**	**5**	**3.6**	***20***	<0.01	<0.01	**-**	< 0.02	**-**
	Nitrite as N	mg/L	0.01	<0.01	<0.01	**-**	< 0.02	**-**	<0.01	<0.01	**-**	< 0.02	-
	Nitrite + Nitrate as N	mg/L	0.01	**2.95**	**2.81**	**5**	**3.6**	***20***	<0.01	<0.01	**-**	< 0.05	**-**
	Total Kjeldahl Nitrogen as N	mg/L	0.1	**0.4**	**0.4**	***0***	**0.4**	***0***	**0.5**	**0.5**	**0**	**0.3**	***50***
	Total Nitrogen as N	mg/L	0.1	**3.4**	**3.2**	***6***	**4**	***16***	**0.5**	**0.5**	**0**	**0.3**	***50***
	Total Phosphorus as P	mg/L	0.01	<0.01	<0.01	**-**	< 0.01	**-**	**0.20**	**0.07**	***96***	**-**	**-**
Other	Total Suspended Solids	mg/L	5	-	-	-	-	-	<5	<5	**-**	**6.5**	***26***

Summary of Tripblank Results

Client: Cleanaway Operations Pty Ltd
Project: 875 Stuart Highway, Holtze, NT - February 2025 GME
Job Number: BE-78

				February	
				Tripblank	Tripblank
				19/02/2025	19/02/2025
				ES2504852	1189824
				ALS	Eurofins
Analyte		Units	ALS LOR	EUR LOR		
BTEX						
	Benzene	mg/L	0.001	0.001	<0.001	<0.001
	Ethylbenzene	mg/L	0.002	0.001	<0.002	<0.001
	Meta&Para-Xylene	mg/L	0.002	0.002	<0.002	<0.002
	Ortho- Xylene	mg/L	0.002	0.001	<0.002	<0.001
	Toluene	mg/L	0.001	0.001	<0.002	<0.001
	Xylenes - Total	mg/L	0.002	0.003	<0.002	<0.003
	Sum of BTEX	mg/L	0.001	-	<0.001	-
TRH						
	TRH C6-C9	mg/L	0.02	0.02	<0.02	<0.02
	TRH C6-C10	mg/L	0.02	0.02	<0.02	<0.02
	TRH C6-C10 Fraction F1	mg/L	0.02	0.02	<0.02	<0.02
	Naphthalene	mg/L	0.005	0.01	<0.05	<0.010

Summary of Groundwater and Stormwater RPD Results

Client: Cleanaway Operations Pty Ltd
Project: 875 Stuart Highway, Holtze, NT - September 2025 GME
Job Number: BE-78

Exceedance of RPD% Criterion of 30% of mean concentration where higher concentration >20 x EQL								
Exceedance of RPD% Criterion of 50% of mean concentration where higher concentration 10-20 x EQL								
		Field ID	MW08	DUP1	*RPD%*	DUP1	***RPD%***
		Lab Report	23/09/2025	23/09/2025		23/09/2025	
		Date	ES2529708	ES2529708		1271963	
		Lab Name	ALS	ALS		Eurofins	
		Duplicate	Primary	Intra-Labratory		Inter-Laboratory	
Analyte		**Unit**	**ALS LOR**				
Metals	Arsenic (Filtered)	mg/L	0.001	<0.001	<0.001	-	< 0.001	-
	Cadmium (Filtered)	mg/L	0.0001	<0.0001	<0.0001	-	< 0.0002	-
	Chromium (III+VI) (Filtered)*	mg/L	0.001	<0.001	<0.001	-	< 0.001	-
	Copper (Filtered)	mg/L	0.001	<0.001	<0.001	-	< 0.001	-
	Lead (Filtered)	mg/L	0.001	<0.001	<0.001	-	< 0.001	-
	Mercury (Filtered)	mg/L	0.0001	<0.0001	<0.0001	-	< 0.0001	-
	Nickel (Filtered)	mg/L	0.001	<0.001	<0.001	-	< 0.001	-
	Zinc (Filtered)	mg/L	0.005	**0.008**	**0.007**	**13**	**0.013**	***48***
BTEXN	Benzene	µg/L	1	<1	<1	-	<1	-
	Toluene	µg/L	2	<2	<2	-	<1	-
	Ethylbenzene	µg/L	2	<2	<2	-	<1	-
	Xylene (m & p)	µg/L	2	<2	<2	-	<2	-
	Xylene (o)	µg/L	2	<2	<2	-	<1	-
	Xylene Total	µg/L	2	<2	<2	-	<3	-
	Naphthalene-MAH	µg/L	5	<5	<5	-	<10	-
	BTEX (Sum of Total) - Lab Calc	µg/L	1	<1	<1	-	-	-
Total Recoverable Hydrocarbons	C6-C10 minus BTEX (F1)	µg/L	20	<20	<20	-	<20	-
	C6 - C10 Fraction	µg/L	20	<20	<20	-	<20	-
	>C10-C16 minus Naphthalene (F2)	µg/L	100	<100	<100	-	<50	-
	>C10 - C16 Fraction	µg/L	100	<100	<100	-	<50	-
	>C16 - C34 Fraction (F3)	µg/L	100	<100	<100	-	<100	-
	>C34 - C40 Fraction (F4)	µg/L	100	<100	<100	-	<100	-
	>C10 - C40 (Sum of Total)	µg/L	100	<100	<100	-	<100	-
	C6 - C 9 Fraction	µg/L	20	<20	<20	-	<20	-
	C10 - C14 Fraction	µg/L	50	<50	<50	-	<50	-
	C15 - C28 Fraction	µg/L	100	<100	<100	-	<100	-
	C29 - C36 Fraction	µg/L	50	<50	<50	-	<100	-
	C10 - C36 (Sum of Total)	µg/L	50	<50	<50	-	<100	-
PAHs	Acenaphthene	µg/L	1	<1.0	<1.0	-	<1.0	-
	Acenaphthylene	µg/L	1	<1.0	<1.0	-	<1.0	-
	Anthracene	µg/L	1	<1.0	<1.0	-	<1.0	-
	Benz(a)anthracene	µg/L	1	<1.0	<1.0	-	<1.0	-
	Benzo(a)pyrene	µg/L	0.5	<0.5	<0.5	-	<1.0	-
	Benzo(a)pyrene TEQ (zero) - Lab Calc	µg/L	0.5	<0.5	<0.5	-	-	-
	Benzo[b+j]fluoranthene	µg/L	1	<1.0	<1.0	-	<1.0	-
	Benzo(g,h,i)perylene	µg/L	1	<1.0	<1.0	-	<1.0	-
	Benzo(k)fluoranthene	µg/L	1	<1.0	<1.0	-	<1.0	-
	Chrysene	µg/L	1	<1.0	<1.0	-	<1.0	-
	Pyrene	µg/L	1	<1.0	<1.0	-	<1.0	-
	PAHs (Sum of total) - Lab calc	µg/L	0.5	<0.5	<0.5	-	<1.0	-
Nutrients	Ammonia as N	mg/L	0.01	**0.04**	**0.04**	***0***	**0.03**	***29***
	Nitrate (as N)	mg/L	0.01	**1.61**	**1.56**	**3**	**1.7**	***5***
	Nitrite as N	mg/L	0.01	<0.01	<0.01	-	< 0.02	-
	Nitrite + Nitrate as N	mg/L	0.01	**1.61**	**1.56**	**3**	**1.7**	***5***
	Total Kjeldahl Nitrogen as N	mg/L	0.1	**0.5**	**0.4**	***22***	**0.8**	***46***
	Total Nitrogen as N	mg/L	0.1	**2.1**	**2.0**	***5***	**2.5**	***17***
	Total Phosphorus as P	mg/L	0.01	**0.02**	**0.01**	***67***	**0.01**	***67***

Summary of Tripblank Results

Client: Cleanaway Operations Pty Ltd
Project: 875 Stuart Highway, Holtze, NT - September 2025 GME
Job Number: BE-78

				September		
				Trip blank	Tripblank	Trip blank
				23/09/2025	23/09/2025	24/09/2025
				ES2529708	1271963	ES2529915
				ALS	Eurofins	ALS
Analyte	**Units**	**ALS LOR**	**EUR LOR**			
BTEX						
Benzene	mg/L	0.001	0.001	<0.001	<0.001	<0.001
Ethylbenzene	mg/L	0.002	0.001	<0.002	<0.001	<0.002
Meta&Para-Xylene	mg/L	0.002	0.002	<0.002	<0.002	<0.002
Ortho- Xylene	mg/L	0.002	0.001	<0.002	<0.001	<0.002
Toluene	mg/L	0.001	0.001	<0.002	<0.001	<0.002
Xylenes - Total	mg/L	0.002	0.003	<0.002	<0.003	<0.002
Sum of BTEX	mg/L	0.001	-	<0.001	-	<0.001
TRH						
TRH C6-C9	mg/L	0.02	0.02	<0.02	<0.02	<0.02
TRH C6-C10	mg/L	0.02	0.02	<0.02	<0.02	<0.02
TRH C6-C10 Fraction F1	mg/L	0.02	0.02	<0.02	<0.02	<0.02
Naphthalene	mg/L	0.005	0.01	<0.05	<0.010	<0.05

APPENDIX F
GROUNDWATER TRANSECT CONCENTRATION PLOTS

Concentrations of TRH Fraction C_{10}-C_{36} Along Key Flow Transects

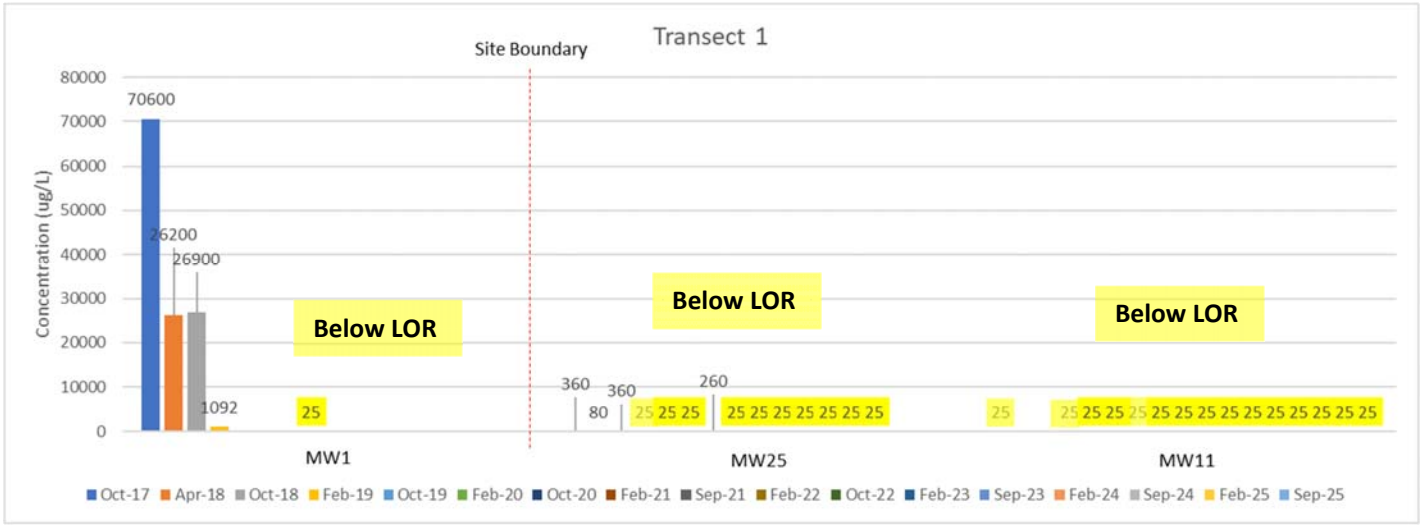

Plate 1 – Transect 1 - TRH Fraction C_{10}-C_{36}

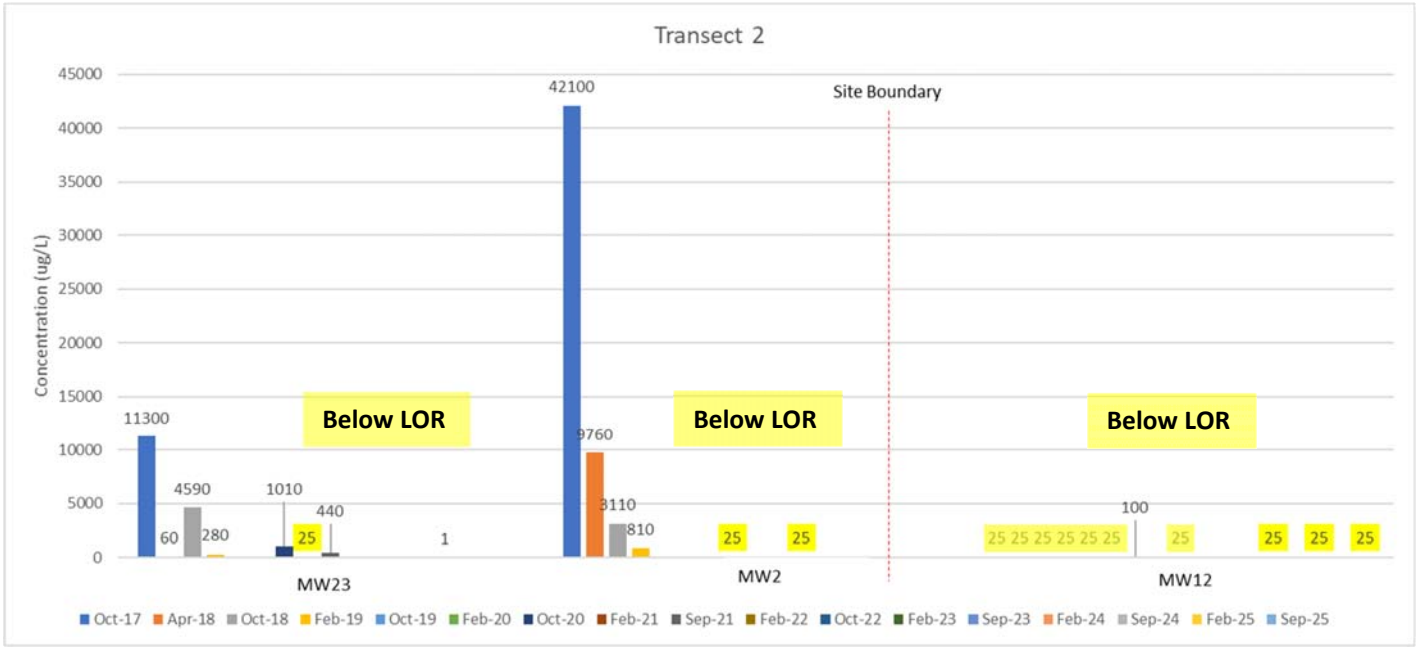

Plate 2 – Transect 2 - TRH Fraction C_{10}-C_{36}



Plate 3 – Transect 3 - TRH Fraction C_{10}-C_{36}

Concentrations of TRH Fraction C_6-C_9 Along Key Flow Transects

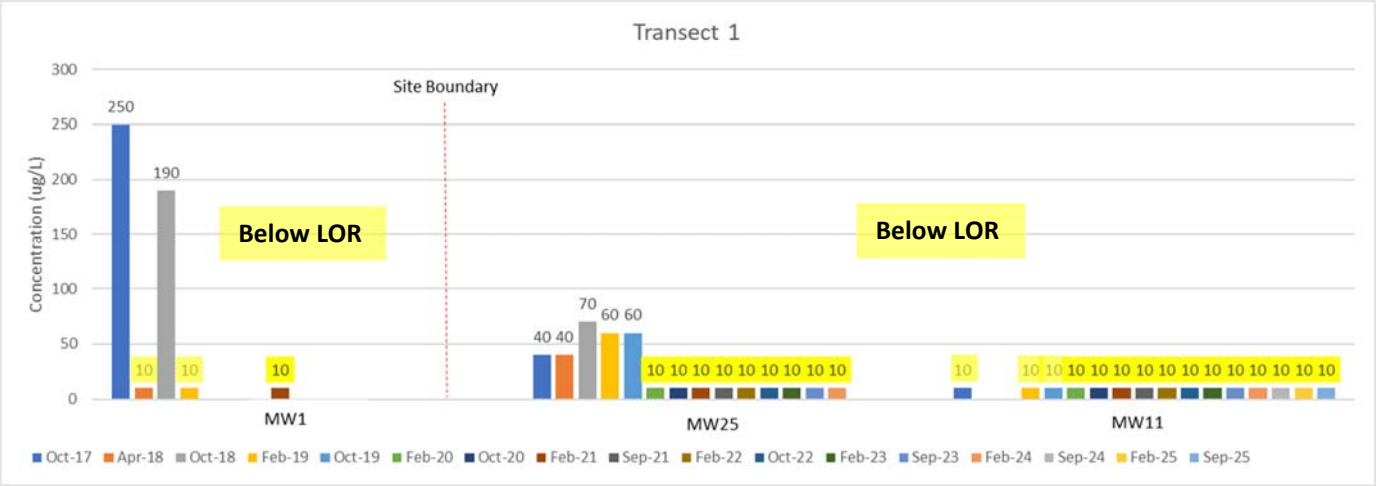

Plate 4 – Transect 1 - TRH Fraction C_6-C_9

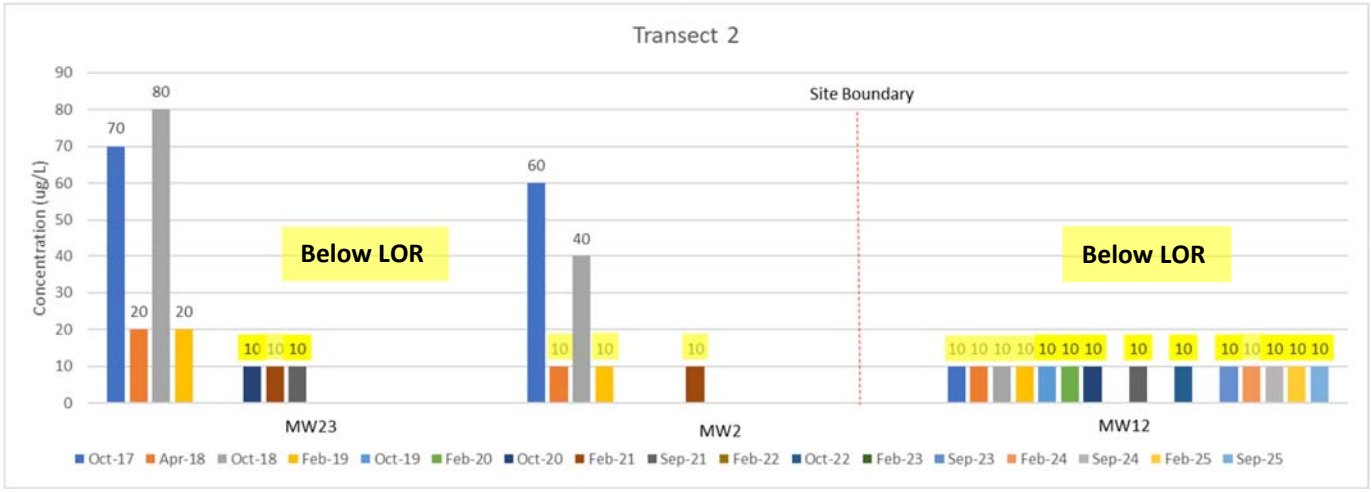

Plate 5 – Transect 2 - TRH Fraction C_6-C_9

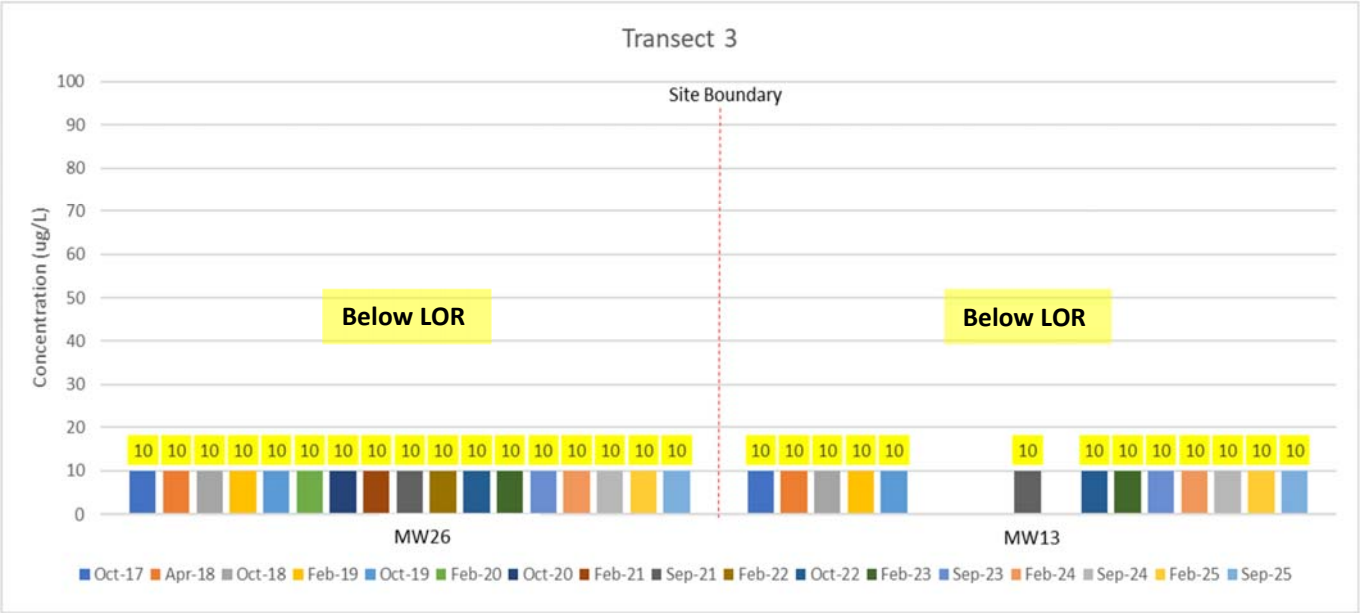

Plate 6 – Transect 3 - TRH Fraction C_6-C_9

APPENDIX G
STATEMENT OF LIMITATIONS

STATEMENT OF LIMITATIONS & IMPORTANT INFORMATION REGARDING YOUR REPORT

INTRODUCTION

This report has been prepared by Land & Water Consulting for you, as Land & Water Consulting's client, in accordance with our agreed purpose, scope, schedule and budget.

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

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

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

No warranty or guarantee of the site conditions is intended.

This report was prepared for the sole use of you, the Client and may not contain sufficient information for purposes of other parties or for other uses. Any reliance on this report by third parties shall be at such parties sole risk. This report shall only be presented in full and may not be used to support any other objectives than those set out in the report, except where written approval with comments are provided by Land & Water Consulting.

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

LIMITATIONS OF THE REPORT

The scope of works undertaken and the report prepared to complete the assessment was in accordance with the information provided by the client and the specifications for works required under the contract. As such, works undertaken and statements made are based on those specifications (such as levels of risks and significance of any contamination) and should be considered and interpreted within this context. The analyses, evaluations, opinions and conclusions presented in this report are based on that purpose and scope, requirements, data or information, and they could change if such requirements or data are inaccurate or incomplete.

Your environmental report should not be used without reference to Land & Water Consulting in the first instance:

- When the nature of the proposed development is changed, for example if a residential development is proposed instead of a commercial one;
- When the size or configuration of the proposed development is altered;
- When the location or orientation of the proposed structures are modified;
- When there is a change in ownership;
- For application to an adjacent site.

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

ENVIRONMENTAL ASSESSMENT "FINDINGS" ARE PROFESSIONAL ESTIMATES

The information in this report is considered to be accurate with respect to conditions encountered at the site at the time of investigation and considering the inherent limitations associated with extrapolating information from a sample set. Note however that site assessment identifies actual subsurface conditions only at those specific points where samples are taken, when they are taken. Environmental data derived through sampling and analysis are interpreted by consultants who then render an opinion about overall subsurface conditions, the nature and extent of contamination and potential impacts on the use of the land. Actual conditions may differ from those inferred to exist as no professional and no subsurface assessment program can reveal every detail within the ground across a site. Subsurface conditions can vary across a particular site and no practical degree of sampling can ever eliminate the possibility that conditions may be present at a site that have not been represented though sampling.

SUBSURFACE CONDITIONS CAN CHANGE

This report is valid as of the date of preparation. The condition of the site (including subsurface conditions) and extent or nature of contamination or other environmental hazards can change over time, as a result of either natural processes or human influence. Land & Water Consulting should be kept appraised of any such events and should be consulted for further investigations if any changes are noted, particularly during construction activities where excavations often reveal subsurface conditions. Since subsurface conditions (including contamination concentrations) can change within a limited period of time and space, this inherent limitation to the representation of site conditions provided by this report should always be taken into consideration particularly if the report is used after a delay in time.

DATA SHOULD NOT BE SEPARATED FROM THE REPORT

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

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

RESPONSIBILITY

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