



Monitoring Report

February 2026 Monitoring Event Report Creswick Closed Landfill – Hepburn Shire Council

Prepared for: Hepburn Shire Council
15 July 2026
Client Reference No. TER447-CR

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Acronyms

ANZECC	Australian and New Zealand Environment and Conservation Council
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
ANZG	Australia and New Zealand Guidelines for Fresh and Marine Waters
BOM	Bureau of Meteorology
C&D	Construction and Demolition
CH ₄	Methane
EH&S	Environmental Health & Safety
EPAV	Environment Protection Authority Victoria
ERS	Environment Reference Standard
GED	General Environmental Duty
H ₂ S	Hydrogen Sulfide
OH&S	Occupational Health & Safety
Ppm	Parts per million
NHMRC	National Health and Medical Research Council
NIRV	Noise in Regional Victoria
NRMMC	Natural Resource Management Ministerial Council
RMMP	Risk Management and Monitoring Program
SDS	Safety Data Sheet
TDS	Total Dissolved Solids

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1. Introduction

Terralis Pty Ltd (Terralis) was engaged by Hepburn Shire Council (the Client) to undertake groundwater, surface water, leachate and landfill gas monitoring and event reporting at the former Creswick Landfill, located at 32 Anne Street, Creswick, Victoria (the Site). The landfill operated from the 1960s until its closure in 2001 and was constructed within the void of a former gold mine and gravel quarry, accepting municipal solid waste and other approved waste streams during its operational period. The landfill was capped in 2001 and the Site currently operates as a waste transfer station.

This report summarises the February 2026 monitoring event, conducted on 3 and 4 February 2026, and provides assessment of results against adopted guidelines.

2. Monitoring Program Overview

2.1 Site Context

The Site is located approximately one kilometre north-west of the Creswick township centre. Surrounding land uses include unoccupied land to the west and north-west (including a flooded former mine void), Creswick Creek approximately 70 m to the north, and privately owned semi-rural land to the south.

The landfill operated from the 1960s until its closure in 2001 and accepted municipal solid waste and other approved waste streams. The Site is now the location of a transfer station. Monitoring at the Site is undertaken in accordance with the Creswick Landfill Aftercare Management Plan Part 2: Environmental Risk Assessment and Monitoring Program (Mackenzie Environmental, 2015) and in response to EPA Pollution Abatement Notices (PANs) issued in relation to site rehabilitation works.

Site location and bore location figures are provided in Appendix A.

2.2 Scope of Works

Terralis was engaged to undertake groundwater, surface water, leachate and landfill gas monitoring at the Creswick Landfill, in accordance with the Creswick Landfill Aftercare Management Plan (Mackenzie Environmental, 2015), comprising:

- Ten groundwater monitoring bores (BH1, BH2, BH3, BH4, BH6, BH7, BH8, BH9, BH10 and BH14);
- Five surface water locations (Upstream, At Site and Downstream Creswick Creek, the Dredge Hole and the Wetland);
- Three leachate bores (LB1, LB2 and LB3) and one leachate pond;
- Four landfill gas monitoring bores, surface emissions monitoring and subsurface services;
- Seven on-site buildings / structures.

This report covers the February 2026 monitoring event.

3. Sampling Analysis and Schedule

3.1 Groundwater

Ten groundwater bores were monitored during the February 2026 event (Table 3-1). Bores were sampled using low-flow techniques; BH4 and BH9 were dry, and BH2 could not be sampled (kinked tubing).

Table 3-1: Groundwater Monitoring Well Sites

Groundwater Well	Date Sampled	Northing (MGA94Z54)	Easting (MGA94Z54)	Total Depth (mBTC)	Lab Report
BH1	3 – 4/2/2026			7.26	
BH2	3 – 4/2/2026			7.90	
BH3	3 – 4/2/2026			3.90	
BH4	3 – 4/2/2026			7.03	
BH6	3 – 4/2/2026			15.80	
BH7	3 – 4/2/2026			6.68	
BH8	3 – 4/2/2026			5.25	
BH9	3 – 4/2/2026			6.93	
BH10	3 – 4/2/2026			6.26	
BH14	3 – 4/2/2026			5.87	

Total depths are gauged depths from top of casing (3–4 February 2026). Coordinates and laboratory report numbers to be inserted. BH2 not sampled (kinked tubing); BH4 and BH9 dry.

3.2 Leachate

LB1 and the leachate pond were sampled during the February 2026 event (Table 3-2).

Table 3-2: Leachate Site

Location	Date Sampled	Northing (MGA94Z54)	Easting (MGA94Z54)	Method	Elevation (mAHD)	Lab Report
LB1	4/2/2026			Interface probe / grab		
LB2	4/2/2026			Dry – not sampled		
LB3	4/2/2026			Blocked – not sampled		
Leachate Pond	4/2/2026			Grab		

Coordinates and elevations to be inserted.

3.3 Landfill Gas

Landfill gas was monitored at four perimeter bores on 4 February 2026 (Table 3-3).

Table 3-3: Landfill Gas Monitoring Bores

Bore	Date Sampled	Northing (MGA94Z54)	Easting (MGA94Z54)	Notes
BH09	4/2/2026			
BH10	4/2/2026			
BH11	4/2/2026			
BH12	4/2/2026			Within waste mass – exempt from BPEM boundary assessment
<i>Coordinates to be inserted.</i>				

3.4 Buildings and Services

Landfill gas was monitored at seven buildings / structures on 4 February 2026 (Table 3-4).

Table 3-4: Buildings and Structures Monitoring Locations

Location ID	Date Monitored
Gatehouse	4/2/2026
Site Office	4/2/2026
Front Shed	4/2/2026
Shed 2	4/2/2026
Large Warehouse	4/2/2026
Shipping Containers 1	4/2/2026
Shipping Containers 2	4/2/2026
Site Bins	4/2/2026
Recycle Bins	4/2/2026
Main Bins	4/2/2026
Green Waste Building	4/2/2026

4. Sampling Methodology

4.1 Field Measurements

Field parameters were measured and recorded at each groundwater bore using a calibrated YSI Pro Plus multi-parameter meter (Serial No. 12J101715) prior to sample collection. Parameters recorded included: standing water level (SWL, mBTOC), electrical conductivity (EC, $\mu\text{S}/\text{cm}$), pH, temperature ($^{\circ}\text{C}$), oxidation-reduction potential (ORP, mV), and dissolved oxygen (DO, mg/L). Instrument calibration was confirmed prior to and following the sampling event, with records provided in Appendix C.

4.2 Low Flow Sampling

Groundwater bore sampling was conducted using low-flow techniques in accordance with EPA Victoria Groundwater Sampling Guidelines (Publication 669, 2000) and EPA Victoria Industrial Waste Resource Guidelines (IWRG701, 2009). Bores were purged at a low flow rate to minimise drawdown and disturbance of the water column. Field parameters were monitored throughout purging and samples were collected once three consecutive readings of pH, EC, ORP, and DO were within the stabilisation criteria (± 1 unit pH; $\pm 3\%$ EC; ± 10 mV ORP; ± 0.1 mg/L DO).

All samples were collected into laboratory-prepared containers, immediately stored on ice at $\leq 4^{\circ}\text{C}$, and transported to the laboratory under chain of custody.

4.3 Grab Sampling

Accessible leachate (LB1 and the leachate pond) and surface water samples were collected by grab using a pre-cleaned sample vessel, or directly into laboratory-prepared containers, then stored on ice and dispatched to the laboratory under chain of custody. Leachate bores were gauged with an interface probe prior to sampling; LB2 was dry and LB3 was blocked, so no samples were collected from those locations.

4.4 Surface Water Monitoring

Surface water samples were collected using a decontaminated sampling cup or directly into laboratory-supplied bottles, 100 mm below the surface and away from the water-body edge, avoiding disturbance of sediment. A calibrated water quality meter recorded pH, electrical conductivity, dissolved oxygen, redox potential and temperature. Samples were placed on ice and delivered to the primary laboratory (Eurofins) under chain of custody.

4.5 Landfill Gas Monitoring

Landfill gas monitoring was conducted in accordance with EPA Victoria Landfill Gas Fugitive Emissions Monitoring Guideline (Publication 1684, February 2018). Each bore was purged prior to measurement to ensure representative gas readings. Gas concentrations (CH_4 , CO_2 , O_2 , balance gas) were measured using a calibrated GA5000 gas analyser. Barometric pressure, wind speed, and weather conditions were recorded at the time of monitoring. The GA5000 was calibrated using certified calibration gas prior to use.

4.6 Buildings and Services Monitoring

Buildings and structures on site were screened on 4 February 2026 using an inspectra laser methane analyser to assess potential fugitive gas migration. Monitoring was undertaken where readings collected around accessible building perimeters and potential ingress points.

5. Reporting

5.1 Assessment Criteria

5.1.1 Groundwater Quality Objectives

Groundwater environmental values at the Site are assessed under the Environment Reference Standard (ERS, 2021). Background salinity (total dissolved solids) places the Site within Segment F (>10,001 mg/L TDS), based on the October 2024 monitoring results (6,700–39,000 mg/L). The adopted groundwater investigation levels for the relevant environmental values are summarised in Table 5-1.

Table 5-1: Adopted Groundwater Investigation Levels

Environmental Value	Adopted Criteria
Water dependent ecosystems and species	ERS (2021); ANZG (2018) 95% freshwater toxicant default guideline values
Water-based recreation (primary contact)	Australian Drinking Water Guidelines (NHMRC 2011, updated 2022) health values
Traditional Owner cultural values	WDES objectives adopted in the absence of specific indicators, per ERS (2021)
Buildings and structures	pH, sulphate, chloride, redox and salinity per AS2159-2009 and ASC NEPM (2013)
Geothermal properties	Not applicable (groundwater temperature insufficient for geothermal use)

Table 5-2: Adopted Assessment Criteria

Analyte	Criterion	Source
Ammonia as N	0.9 mg/L	ANZECC 2000 FW 95%
Nitrate as N	0.16 mg/L	Creswick GWQO
pH	6.5 – 8.5	Creswick GWQO
Sodium	115 mg/L	Creswick GWQO
Total Dissolved Solids	2,000 mg/L	Creswick GWQO
Cadmium (filtered)	0.0002 mg/L	ANZECC 2000 FW 95%
Copper (filtered)	1.4 µg/L	ANZECC 2000 FW 95%
Iron (filtered)	0.2 mg/L	ANZECC 2000 Irrigation LT
Manganese (filtered)	1.9 / 0.2 / 0.008 mg/L	ANZECC FW 95% / Irrig LT / Creswick GWQO
Nickel (filtered)	0.011 mg/L	ANZECC 2000 FW 95%
Zinc (filtered)	0.008 mg/L	ANZECC 2000 FW 95%

Criteria applied in the assessment of groundwater results. GWQO = Creswick site-specific Groundwater Quality Objective.

5.1.2 Surface Water Assessment Criteria

Surface water at the Site is assessed under the ERS (2021) for inland waters (Murray and Western Plains segment), supplemented by ANZECC 2000 guidelines (Freshwater 95% and Irrigation) and the Creswick site-specific Surface Water Quality Objectives. Tabulated surface water results and assessment criteria are provided in Appendix D.

5.2 Landfill Gas Assessment Criteria

Landfill gas monitoring results are assessed against relevant Action Levels as presented in the BPEM (EPA, 2015) and as summarised in Table 5-3.

Table 5-3: Landfill Gas Assessment Criteria - as per BPEM

Location	Unit	Parameter	Action Level
Landfill surface final cap	ppm	Methane concentration in air	100
Within 50 mm of penetrations through the final cap	ppm	Methane concentration in air	100
Landfill surface intermediate cover areas	ppm	Methane concentration in air	200
Within 50 mm of penetrations through the intermediate cover	ppm	Methane concentration in air	1,000
Subsurface geology at the landfill boundary	% v/v	Methane	1.0
		Carbon dioxide	1.5 above background
Subsurface services on and adjacent to the landfill site	ppm	Methane concentration	10,000
Buildings/structures on and adjacent to the landfill site	ppm	Methane concentration in air	5,000

¹A site-specific background CO₂ concentration has not yet been established for the Creswick Landfill. Hepburn Shire Council is undertaking an assessment of background CO₂ concentrations at the site. In the interim, the generic BPEM boundary action level of 1.5% v/v has been adopted for this monitoring event.

5.3 Buildings, Structures and Services Monitoring

Methane concentrations were screened at on-site buildings and structures and at accessible subsurface services using a landfill gas analyser, as shown in Appendix A, Figure 3.

Recorded methane concentrations ranged from 0 to 65.5 ppm, well below the relevant BPEM action levels (5,000 ppm for buildings and structures; 10,000 ppm for subsurface services). No exceedances were recorded.

See Appendix C for field records.

6. Weather Conditions

Temperature, rainfall, and barometric pressure data were sourced from the Bureau of Meteorology (BOM) Ballarat Aerodrome weather station (Station 089002, approximately 55 km south-west of the Site). Ballarat Aerodrome was adopted as the primary reference station due to data completeness for the February 2026 monitoring period. A summary of weather conditions during the monitoring event and preceding days is provided in Table 6-1.

Table 6-1: Weather Conditions - February 2026 (Ballarat Aerodrome, Station 089002)

Date	Day	Rain (mm)	Min Temp (°C)	Max Temp (°C)	Wind 9am (Dir / km/h)	MSLP 9am (hPa)	Wind 3pm (Dir / km/h)	MSLP 3pm (hPa)
2 February 2026		0.2			20		26	
3 February 2026		0			31		28	
4 February 2026*		0			28		20	

Source: Bureau of Meteorology, Ballarat Aerodrome (Station 089002). * Day of landfill gas monitoring. Wind speeds in km/hr; temperature and pressure data to be inserted.

Barometric pressure was recorded at Ballarat Aerodrome (BOM Station 089002). On 4 February 2026, pressure increased from approximately 10am until midday, after which it decreased. Landfill gas monitoring conducted under decreasing atmospheric pressure is considered suitable in accordance with EPA Publication 1684.



Figure 6-1: Barometric Pressure - February 2026 (Ballarat Aerodrome, Station 089002)

7. Environmental Monitoring Results

7.1 Groundwater Monitoring Results

7.1.1 Groundwater Field Measurements

A summary of groundwater field measurements recorded during the February 2026 monitoring event is provided in Table 7-1.

Table 7-1: Groundwater Field Measurements - February 2026

Groundwater Well	Date	TD (mBTOC)	SWL (mBTOC)	EC (µS/cm)	pH	Temp (°C)	ORP (mV)	DO (mg/L)
BH1	3/2/2026	7.26	3.307	392.4	6.05	17.6	83	1.62
BH3	3/2/2026	3.90	1.124	2,442	6.42	18.1	-70	1.19
BH6	4/2/2026	15.80	12.506	516	5.03	15.7	202.5	0.37
BH7	3/2/2026	6.68	2.826	949	5.97	15.7	6.7	0.89
BH8	3/2/2026	5.25	2.851	959	6.61	17.5	-80.3	2.18
BH10	3/2/2026	6.26	2.608	666	5.87	17.0	15.3	1.58
BH14	4/2/2026	5.87	3.923	911	6.51	14.0	-59	1.46

TD = gauged total well depth from top of casing (3–4 February 2026). BH2 was gauged but not sampled (kinked tubing); BH4 and BH9 were dry.

7.1.2 Light Non-Aqueous Phase Liquid (LNAPL)

No Light Non-Aqueous Phase Liquid (LNAPL) or sheen was observed at any location. No hydrocarbon odour was noted during gauging, purging or sampling.

7.1.3 Standing Water Levels

Standing water levels were measured at each bore prior to sampling. A summary is provided below.

Table 7-2: Reduced Water Levels - February 2026

Well ID	SWL (m BTOC)
BH1	3.307
BH2	3.053
BH3	1.124
BH4	Dry
BH6	12.506
BH7	2.826
BH8	2.851
BH9	Dry

BH10	2.608
BH14	3.923

SWL: Standing Water Level. BH4 and BH9 were dry; BH2 was gauged but not sampled (kinked tubing).

7.1.4 Groundwater Analytical Results

Table 7-2 provides a summary of groundwater exceedances against the adopted assessment criteria. A complete analytical results table is provided in Appendix D, while laboratory certificates are provided in Appendix E.

Table 7-3: Groundwater Exceedances - February 2026

Analyte	Sample ID	Concentration	Criterion	Source
Ammonia as N	BH8; BH10	8.7; 1.3	0.9	ANZECC 2000 FW 95%
Nitrate as N	BH1; BH6	10; 1.2	0.16	Creswick GWQO
pH (Lab)	BH1; BH10	6.4; 6.2	6.5 – 8.5	Creswick GWQO
pH (Lab)	BH6	5.7	6 – 8.5	ANZECC 2000 Irrigation LT
Sodium	BH3; BH7	350; 140	115	Creswick GWQO
Total Dissolved Solids (Lab)	BH1	2,100	2,000	Creswick GWQO
Cadmium (filtered)	BH10	0.0008	0.0002	ANZECC 2000 FW 95%
Copper (filtered, µg/L)	BH1; BH6; BH8; BH10	4; 2; 2; 2	1.4	ANZECC 2000 FW 95%
Iron (filtered)	BH3; BH7; BH8; BH10; BH14	56; 50; 26; 8.3; 18	0.2	ANZECC 2000 Irrigation LT
Manganese (filtered)	BH1; BH3; BH7; BH8; BH10; BH6; BH14	3.6; 3.6; 2.0; 3.1; 4.8; 0.62; 1.1	1.9 / 0.2 / 0.008	ANZECC FW 95% / Irrig LT / Creswick GWQO
Nickel (filtered)	BH1; BH6; BH10	0.015; 0.013; 0.090	0.011	ANZECC 2000 FW 95%
Zinc (filtered)	BH1; BH3; BH6; BH7; BH8; BH10; BH14	0.046; 0.009; 0.034; 0.015; 0.029; 0.42; 0.026	0.008	ANZECC 2000 FW 95%

Concentrations in mg/L unless otherwise stated. GWQO = Creswick site-specific Groundwater Quality Objective.

All groundwater bores exceeded at least one adopted assessment criterion during the February 2026 monitoring event, consistent with the historical record at this site.

A number of analytes exceeded the adopted assessment criteria during the February 2026 event, as summarised in the exceedance table above. Filtered iron and manganese exceeded the ANZECC 2000 Irrigation Long Term guideline at multiple bores, consistent with the reducing groundwater conditions across the network. Ammonia, nitrate, sodium and total dissolved solids exceeded the adopted criteria at individual bores.

Filtered cadmium, copper, nickel and zinc exceeded the ANZECC 2000 Freshwater 95% guideline at individual bores, and laboratory pH was below the adopted range at BH1, BH6 and BH10. These results are broadly consistent with the historical dataset for the Site. Full analytical results and assessment criteria are provided in Appendix D.

7.2 Surface Water Monitoring Results

7.2.1 Surface Water Field Observations

A summary of the February 2026 surface water field observations is provided below. Field records are provided in Appendix B.

Table 7-4: Surface Water Field Observations - February 2026

Location ID	pH	EC (µS/cm)	Redox (mV)	DO (mg/L)	Temp (°C)
Dredge Hole	6.96	673	53.8	0.17	20.3
Upstream Creek	6.70	463.4	64.4	0.26	15.0
At Site Creek	6.42	754	5.3	0.36	16.1
Downstream Creek	6.61	453.1	0.4	0.25	17.2

ERS inland-waters guidance: pH 6.8–7.8; EC ≤2,000 µS/cm. The Wetland was dry and was not sampled.

7.2.2 Surface Water Analytical Results

A summary of surface water guideline exceedances is provided below. Tabulated analytical results are provided in Appendix D.

Table 7-5: Surface Water Exceedances - February 2026

Analyte	Range	Exceeded Guideline	Location
Chromium (III+VI)	0.004 mg/L	Creswick Surface Water Quality Objective (0.001 mg/L)	At Site Creek
Copper	3 µg/L	ANZECC 2000 FW 95% (1.4 µg/L)	At Site Creek
Iron	1.4–93 mg/L	ANZECC 2000 Irrigation LT (0.2 mg/L); Short Term (10 mg/L) at At Site Creek	Dredge Hole; Upstream; At Site; Downstream
Manganese	0.52–1.1 mg/L	ANZECC 2000 Irrigation LT	Dredge Hole; Upstream; At Site; Downstream
Zinc	0.011–0.038 mg/L	ANZECC 2000 FW 95%	Dredge Hole; At Site Creek

Iron at At Site Creek (93 mg/L) also exceeded the ANZECC 2000 Irrigation Short Term value (10 mg/L).

7.3 Leachate Monitoring Results

7.3.1 Leachate Field Measurements

Table 7-6: Leachate Field Measurements - February 2026

Location	Date	SWL (mBTOC)	Elevation (mAHD)	EC (μ S/cm)	pH	Temp (°C)	ORP (mV)	DO (mg/L)
LB1	4/2/2026	13.609		1,379	7.21	17.6	-158.3	0.89
Leachate Pond	4/2/2026			1,107	6.93	21.0	-92.4	8.31

SWL reported as Standing Leachate Level (m BTOC). LB2 was dry and LB3 was blocked; not sampled.

7.3.2 Leachate Quality

Leachate was sampled at LB1 and the leachate pond; LB2 was dry and LB3 was blocked. Total dissolved solids were 1,040 mg/L at LB1 and 780 mg/L at the leachate pond. Field parameters are summarised above, and tabulated leachate analytical results are provided in Appendix D.

7.4 Landfill Gas Monitoring Results

7.4.1 Atmospheric Pressure

Barometric pressure data were sourced from Ballarat Aerodrome (BOM Station 089002). On 4 February 2026, pressure increased from approximately 10am until midday, after which it decreased. Landfill gas monitoring conducted under decreasing atmospheric pressure is considered suitable in accordance with EPA Publication 1684.



Figure 7-1: Barometric Pressure During Monitoring - 4 February 2026

7.4.2 LFG Monitoring Results

Landfill gas monitoring results for the February 2026 event are provided in Table 7-4. Results are assessed against the BPEM boundary action levels of 1.0 %v/v CH₄ and 1.5 %v/v CO₂ (EPA 2015, Table 6.4).

Table 7-7: Landfill Gas Monitoring Results - February 2026

Bore	Date	CH ₄ (%v/v)	CH ₄ Limit	CO ₂ (%v/v)	CO ₂ Limit	O ₂ (%v/v)	Balance (%v/v)	Assessment
BH09	4/2/2026	0.1	1.0	2.0	1.5	19.3	78.6	Background CO ₂
BH10	4/2/2026	0.1	1.0	1.1	1.5	20.1	78.7	No exceedance
BH11	4/2/2026	0.0	1.0	0.3	1.5	18.4	81.3	No exceedance
BH12*	4/2/2026	26.3	1.0	10.0	1.5	6.1	57.6	Waste mass – exempt

The Landfill Gas Risk Assessment (Landserv, 2025) identifies the Creswick landfill gas network as comprising four bores (BH9–BH12), of which BH12 is located near the centre of the waste mass and screened within the upper waste to assess maximum gas generation, while BH9, BH10 and BH11 are perimeter bores intended to detect lateral gas migration. As BH12 is screened within the waste mass, it is exempt from BPEM boundary Action Level assessment; during the February 2026 event it recorded methane of 26.3% v/v and carbon dioxide of 10.0% v/v, confirming ongoing gas generation within the waste. These findings are adopted for the purposes of this report (Landserv, 2025).

A carbon dioxide exceedance against the BPEM boundary Action Level (1.5% v/v) was recorded at one perimeter bore, BH9 (2.0% v/v), with the remaining perimeter bores (BH10 and BH11) below the Action Level. The absence of corresponding methane and the negligible flow rates suggests that the elevated carbon dioxide is more likely the result of natural subsurface geochemical processes such as carbonate dissolution or biological respiration in surrounding soils rather than landfill gas migration. This is consistent with the site Landfill Gas Risk Assessment (Landserv, 2025), which attributed the elevated carbon dioxide to natural origin, such as biological respiration or carbonate-rich geology and recommended BH9 and BH11 be adopted as background bores with site-specific carbon dioxide Action Levels. BH9 has historically recorded carbon dioxide above background, which Hepburn Shire Council has confirmed (9 February 2026) to be naturally occurring.

7.4.3 Buildings, Structure, Services Results

Landfill gas monitoring results for the buildings and structures during the February 2026 event are provided in Table 7-5. Results are assessed against the BPEM boundary action levels of 5,000 ppm CH₄ (EPA 2015, Table 6.4).

8. Quality Control / Quality Assurance

8.1 Program

A summary of the QA/QC procedures adopted for the February 2026 monitoring program is provided in Table 8-1.

Table 8-1: Quality Assurance and Quality Control Program

Item	Description
Laboratory accreditation	All primary samples were submitted to Eurofins Environment Testing (NATA Accreditation No. 1261, Site No. 1254). Secondary (split) samples were submitted to ALS Environmental (NATA Accreditation No. 825). All testing methods are NATA accredited.
Sample collection and transport	All samples were collected by suitably qualified Terralis personnel in accordance with EPA Victoria Publication 669. Samples were sealed into laboratory-prepared containers, immediately stored on ice at $\leq 4^{\circ}\text{C}$, and transported to the laboratory under chain of custody.
Field and inter-laboratory duplicates	Field duplicate and triplicate samples (QC1A and QC1B) were collected from BH06, with the inter-laboratory duplicate analysed at ALS, meeting the NEPM (2013) minimum rate of 1 per 20 primary samples. Two rinsate blanks (RB01, RB02) and a trip blank (TB01) were also collected.
Relative Percentage Difference (RPD)	RPDs were calculated for all field duplicate and inter-laboratory comparison pairs using the formula: $RPD = \frac{ R_1 - R_2 }{\left(\frac{R_1 + R_2}{2}\right)} \times 100\%$ RPDs are only assessed where concentrations exceed $1 \times \text{EQL}$. Acceptance criteria: $\leq 80\%$ ($1-10 \times \text{EQL}$); $\leq 50\%$ ($10-30 \times \text{EQL}$); $\leq 20\%$ ($< 30 \times \text{EQL}$).
Sample blanks	Rinsate blanks (RB01, RB02) were collected during the monitoring event. All analytes were below LOR, confirming no equipment contamination. pH reflects deionised water CO_2 equilibration and is acceptable. A trip blank (TB01) was also collected, with all results $< \text{LOR}$.
Laboratory QC	All Eurofins internal QC (method blanks, LCS recoveries, duplicates, matrix spikes) passed acceptance criteria (surrogates 75–125%; matrix spikes 70–130%; LCS 75–125%; lab duplicates: see acceptance limits in Appendix E).

8.2 Results

The QA/QC program for the February 2026 monitoring event comprised field duplicate and triplicate samples (QC1A and QC1B, collected from BH06), two rinsate blanks (RB01 and RB02), and one trip blank (TB01). Primary samples were analysed by Eurofins, with an inter-laboratory duplicate analysed by ALS. Both laboratories are NATA accredited.

All field duplicate relative percent differences (RPDs) were within acceptable ranges, and all analytes in the rinsate blanks were reported below their respective limits of reporting, indicating no cross-contamination during sampling or transport. Full RPD results are provided in Appendix D.

Laboratory QA/QC results were within acceptable ranges, with minor exceptions noted in the Laboratory QA/QC Summary above (holding-time, matrix-spike and surrogate exceptions associated with sample QC1B). These exceptions are attributed to sample matrix effects and the remoteness of the sampling location, and are not considered to affect the validity of the results or the conclusions drawn.

Table 8-2: Laboratory QA/QC Summary

Laboratory DQI	Comment
Receipt of samples under completed Chain of Custody (COC)	Samples were received by the analysing laboratories under a signed COC. A copy is provided in Appendix E.
Samples extracted within holding time	All analytes were extracted within prescribed holding times, except QC1B (VFAs). Holding-time exceedances are attributed to the remoteness of the sampling location and are not considered to affect data validity.
Laboratory accreditation and methods	Samples were analysed by NATA-accredited laboratories (Eurofins primary; ALS secondary). Analytical methods are described in the laboratory certificates in Appendix E.
Containers, preservatives and sample condition	All samples were received in appropriate pre-treated/preserved containers and in good condition.
Laboratory Control Spike (LCS) recoveries (70–130%)	Within the acceptable range.
Matrix Spike recoveries (70–130%)	Within range, except QC1B (calcium, magnesium, potassium, sodium).
Method Blank (MB)	Less than the laboratory detection limit.
Surrogate recoveries (60–140%)	Within range, with minor exceptions noted for QC1B due to sample matrix effects.
Laboratory duplicates	Analysed at the required rate.
<i>QC1 field duplicate/triplicate collected from BH06. All field duplicate RPDs were within acceptable ranges ($\leq 50\%$, or unlimited where results $< 10 \times \text{LOR}$).</i>	

9. Conclusions

9.1 Groundwater

Groundwater was sampled at seven of the ten monitoring bores during the February 2026 event. BH4 and BH9 were dry, and BH2 could not be sampled (kinked tubing). Exceedances of the adopted criteria (ANZECC 2000 Freshwater 95% and Irrigation guidelines, and the Creswick Groundwater Quality Objectives) were recorded for ammonia (BH8, BH10), nitrate (BH1, BH6), pH (BH1, BH6, BH10), sodium (BH3, BH7), total dissolved solids (BH1), and filtered cadmium, copper, iron, manganese, nickel and zinc at various bores.

No Light Non-Aqueous Phase Liquid (LNAPL) or hydrocarbon sheen was observed at any location during gauging, purging or sampling. The exceedances recorded are broadly consistent with the reducing, saline groundwater conditions across the monitoring network and the historical record at this site.

All accessible groundwater bores were sampled using low-flow techniques. No bore access or infrastructure issues were noted, other than BH4 and BH9 being dry/blocked at the time of monitoring.

9.2 Leachate

Leachate was sampled at LB1 and the leachate pond during the February 2026 event. LB2 was dry and LB3 was blocked, and could not be sampled. Field parameters were recorded at the accessible locations.

9.3 Landfill Gas

A carbon dioxide exceedance against the BPEM boundary action level (1.5 % v/v) was recorded at BH9 (2.0 % v/v); BH9 has historically recorded carbon dioxide above background. BH12, located within the waste mass and therefore exempt from boundary assessment, recorded methane of 26.3 % v/v and carbon dioxide of 10.0 % v/v. No other methane or carbon dioxide Action Level exceedances were recorded at the perimeter landfill gas bores. Monitoring was conducted under suitable barometric pressure conditions, consistent with EPA Publication 1684.

Buildings, structures and subsurface services are included in the monitoring scope; results for these components were not available for inclusion in this event report and will be reported separately.

9.4 Data Uncertainty and Statement of Limitations

Terralis has exercised a degree of skill and care ordinarily expected of reputable members of our profession practising in the same or similar locality. The conclusions presented in this report are relevant to conditions at the Site and the state of applicable legislation as at the date of this report. Terralis does not make any representation that the conclusions will remain applicable in the future, as Site conditions, applicable legislation, or other factors may change. This report should be read in conjunction with the full historical monitoring dataset and associated laboratory certificates.

10. Declaration

This declaration acknowledges that Terralis Pty Ltd has been requested by Hepburn Shire Council to undertake an Environmental Monitoring Program in accordance with sampling and analysis as delegated by Hepburn Shire Council under contract TER447.

Terralis sampling procedures were adopted for all environmental monitoring undertaken. All groundwater and leachate monitoring was conducted in accordance with EPA Victoria's Groundwater Sampling Guidelines (Publication 669, April 2000) and Sampling and Analysis of Waters, Wastewaters, Soils and Wastes (IWRG701, EPA, 2009). Landfill gas monitoring was conducted in accordance with EPA Victoria's Landfill Gas Fugitive Emissions Monitoring Guideline (Publication 1684, February 2018).

This report provides a summary of analyses conducted under the monitoring program, an assessment of results against adopted guidelines, and recommendations for follow-up actions. Terralis is of the opinion that this report, prepared on behalf of Hepburn Shire Council and titled 'February 2026 Monitoring Event Report – Creswick Closed Landfill', contains adequate information of suitable quality to enable the Hepburn Shire Council to fulfil its monitoring obligations under TER 447.

11. References

Australian and New Zealand Environment and Conservation Council, (ANZECC 1992) Australian Water Quality Guidelines for Fresh and Marine Waters, November 1992.

Australian and New Zealand Environment and Conservation Council & Agriculture and Resource Management Council of Australia and New Zealand (ANZECC 2000), National Water Quality Management Strategy Australian and New Zealand Water Quality Guidelines for Fresh and Marine Water Quality, October 2000.

Department of Environment, Land, Water and Planning (DELWP), *Environment Reference Standard (ERS)*, 2021.

EPA Victoria, *Industrial Waste Resource Guidelines – Sampling and Analysis of Waters, Wastewaters, Soils and Wastes (IWRG701)*, June 2009.

EPA Victoria, Post Closure Pollution Abatement Notice, Notice ID: 90004271, as amended 26 October 2017.

EPA Victoria, *Publication 669 – Groundwater Sampling Guidelines*.

EPA Victoria, *Publication 788.3 – Best Practice Environmental Management (BPEM): Siting, Design, Operation and Rehabilitation of Landfills*, August 2015.

EPA Victoria, *Publication 1323.2 – Landfill Licensing Guidelines*, August 2011.

EPA Victoria, *Publication 1684 – Landfill Gas Fugitive Emissions Monitoring Guideline*, February 2018.

Mackenzie Environmental, Creswick Landfill Aftercare Management Plan Part 2: Environmental Risk Assessment and Monitoring Program, 2015.

Meinhardt, Creswick Landfill Hydrogeological Assessment (2019) and 53V Environmental Audit (2022).

12. Limitations

This report has been prepared exclusively in connection with the monitoring program at the Site. It has been produced in accordance with the agreed scope of work outlined in the Terms of Agreement for Professional Services between Terralis Pty Ltd (Terralis) and Hepburn Shire Council, under which Terralis was engaged to perform a specific and defined task.

The contents of this report are confined to the matters explicitly addressed herein and are subject to the assumptions, limitations, and qualifications set out throughout the document. The findings and conclusions should not be extended or applied to other Sites, purposes, or contexts without further advice from Terralis. No assurance is given that the scope or findings presented here are sufficient or appropriate for any purpose other than that for which the report was prepared.

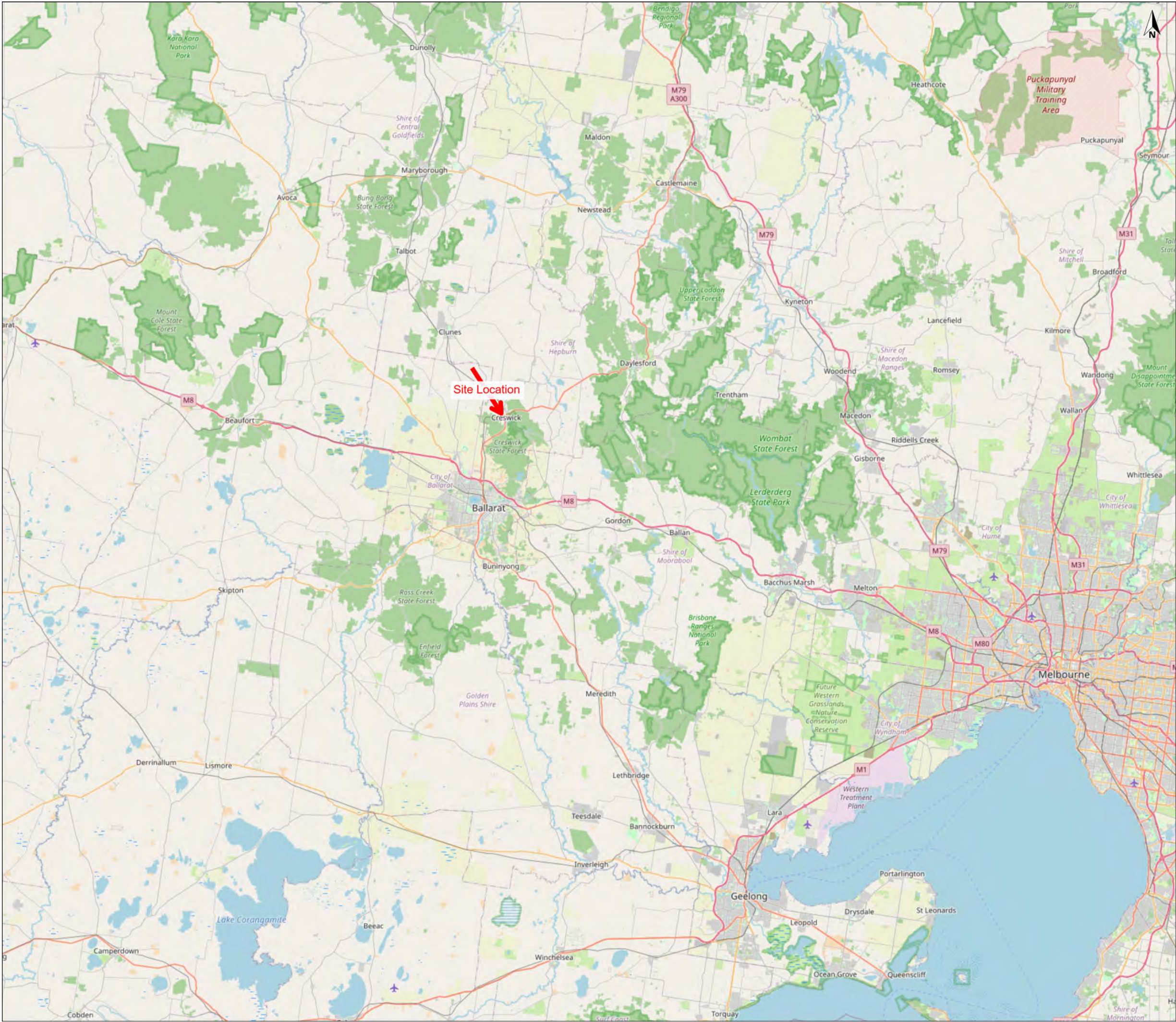
This document should be considered in its entirety. Any executive summary is intended as an overview and must not be relied upon in isolation. Any subsequent documentation is designed to be read alongside this report.

This report replaces all previous versions, whether written or verbal, provided before its issue date. It reflects conditions and information available at the time of reporting. Terralis is under no obligation to revise or update the report in light of subsequent developments, events, or new information that may arise after its release.

Except as explicitly agreed in writing, Terralis accepts no responsibility or liability to any party other than Hepburn Shire Council in relation to the contents of this report, or any advice, inquiries, or services related to it. Any other recipient or party reviewing, discussing, or referencing this report acknowledges that they do so at their own risk and may not rely on its contents or on any advice provided in relation to it.

Appendix A

Figures



Legend

No layers were found.

0 10 km 20 km
© OpenStreetMap contributors



Produced by **Datanest.earth**

Title: Site Location Plan

Client: Hepburn Shire Council

Size: A3

Project:
Creswick Landfill

Drawn: ND

Figure No.: 1

Date:
25-06-2026

Checked:
MC

Proj No:
TER447-CR

Scale:
1:614216

Version:
Final



- Legend**
- Groundwater Monitoring Well
 - Groundwater Monitoring Well & Landfill Gas Bore
 - Landfill Gas Bore
 - Leachate Bore
 - Creswick Creek Sample Location
 - Destroyed Bore
 - Site Boundary

0 50 m 100 m
© Mapbox

TERRALIS

Produced by **Datanest.earth**

Title: Whole Site		
Client: Hepburn Shire Council		Size: A3
Project: Creswick Landfill	Drawn: ND	Figure No.: 2
Date: 25-06-2026	Checked: MC	
Proj No: TER447-CR	Scale: 1:2933	Version: Final



- Legend**
- Site Buildings / Structures
 - Shipping Containers
 - Groundwater Monitoring Well
 - Groundwater Monitoring Well & Landfill Gas Bore
 - Leachate Bore
 - Creswick Creek Sample Location
 - Destroyed Bore
 - Leachate Dam
 - Wetland
 - Site Boundary

0 10 m 20 m
© Mapbox

TERRALIS

Produced by **Datanest.earth**

Title: Site Details		
Client: Hepburn Shire Council		Size: A3
Project: Creswick Landfill	Drawn: ND	Figure No.: 3
Date: 09-02-2026	Checked: MC	
Proj No: TER447-CR	Scale: 1:726	Version: Final

Appendix B Analytical Results

Table 1 - Creswick Groundwater Analytical Results

Analyte	Depth	Sampled Date	Cadmium	Copper	Fluoride	Iron	Manganese	Nickel	pH (Lab)	Sulphate	Zinc	Ammonia as N	Chloride	Kjeldahl Nitrogen Total	Nitrate (as N)	Sodium	Total Dissolved Solids (Lab)	Arsenic	Calcium	Chromium (III+VI)	Lead	Mercury	2,4,5-Trichlorophenoxy-propanoic acid	Acetic Acid	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Butyric Acid	Chemical Oxygen Demand	Electrical Conductivity (Lab)	Heptanoic Acid	Hexanoic Acid	Isobutyric Acid	Isocaproic Acid	Isovaleric Acid	Magnesium	Potassium	Total Organic Carbon	Total Organic Nitrogen (TON)	Valeric Acid	Volatile Fatty Acids (as Acetic Acid)						
			mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L					
			EQL																																													
ANZECC 2000 Freshwater 95%			0.0002 ¹	0.0014 ¹	-	-	1.9 ¹	0.011 ¹	-	-	0.008 ¹	-	-	-	-	-	-	-	-	-	0.0034 ¹	0.0006 ¹	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
ANZECC 2000 Irrigation Long Term			0.01 ²	0.2 ²	1 ²	0.2 ²	0.2 ²	6 - 8.5 ^{2,7}	-	2 ²	-	-	-	-	-	-	-	0.1 ²	-	0.1 ²	2 ²	0.002 ²	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
ANZECC 2000 Irrigation Short Term			0.05 ³	5 ³	2 ³	10 ³	10 ³	2 ³	6 - 8.5 ^{3,7}	-	5 ³	-	-	-	-	-	-	2 ³	-	1 ³	5 ³	0.002 ³	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
ANZECC 2000 Livestock Drinking Water			0.01 ⁴	0.4 ^{4,6}	2 ⁴	-	-	1 ⁴	-	1,000 ⁴	20 ⁴	-	-	-	-	-	-	0.5 ^{4,5}	1,000 ⁴	1 ⁴	0.1 ⁴	0.002 ⁴	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Creswick Groundwater Quality Objective			-	-	-	0.3	0.008	-	6.5, 8.5	-	-	0.9	25, 700	25	0.16	115	2,000	-	1,000	0.001	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
BH1		03-02-2026	< 0.0002	0.004	< 0.5	0.07	3.6	0.015	6.4	27	0.046	0.85	49	3.5	10	67	2,100	< 0.001	3.4	< 0.001	< 0.001	< 0.0001	< 5	< 5	63	< 10	< 20	63	< 5	28	440	< 5	< 5	< 5	< 5	< 5	13	5.4	22	2.65	< 5	< 5						
BH3		03-02-2026	< 0.0002	< 0.001	< 0.5	56	3.6	0.006	6.6	47	0.009	0.2	700	1.4	< 0.2	350	1,400	0.005	42	< 0.001	< 0.001	< 0.0001	< 5	< 5	170	< 10	< 20	170	< 5	66	2,600	< 5	< 5	< 5	< 5	< 5	72	20	67	1.2	< 5	< 5						
BH6		04-02-2026	< 0.0002	0.002	< 0.5	< 0.05	0.62	0.013	5.7	13	0.034	0.02	160	1.1	1.2	81	300	< 0.001	4	< 0.001	< 0.001	< 0.0001	< 5	< 5	< 20	< 10	< 20	< 20	< 5	< 25	610	< 5	< 5	< 5	< 5	< 5	16	1.1	18	1.08	< 5	< 5						
BH7		03-02-2026	< 0.0002	< 0.001	< 0.5	50	2	0.004	6.6	23	0.015	0.9	250	1.5	< 0.2	140	420	0.002	18	< 0.001	< 0.001	< 0.0001	< 5	< 5	130	< 10	< 20	130	< 5	37	1,100	< 5	< 5	< 5	< 5	< 5	27	9.5	46	0.6	< 5	< 5						
BH8		03-02-2026	< 0.0002	0.002	< 0.5	26	3.1	0.01	7.3	9.8	0.029	8.7	81	16	< 0.2	97	560	0.018	22	< 0.001	< 0.001	< 0.0001	< 5	< 5	400	< 10	< 20	400	< 5	120	950	< 5	< 5	< 5	< 5	< 5	28	9.4	120	7.3	< 5	< 5						
BH10		03-02-2026	0.0008	0.002	< 0.5	8.3	4.8	0.09	6.2	15	0.42	1.3	170	3.4	< 0.2	110	540	0.002	10	< 0.001	< 0.001	< 0.0001	< 5	< 5	63	< 10	< 20	63	< 5	28	710	< 5	< 5	< 5	< 5	< 5	43	5.2	34	2.1	< 5	< 5						
BH14		04-02-2026	< 0.0002	< 0.001	< 0.5	18	1.1	0.009	6.8	8.7	0.026	0.37	140	1.4	< 0.2	110	340	0.009	15	< 0.001	< 0.001	< 0.0001	< 5	< 5	190	< 10	< 20	190	< 5	37	770	< 5	< 5	< 5	< 5	< 5	24	2.9	38	1.03	< 5	< 5						

Scenarios:

Shaded

Indicates result exceeds ANZECC 2000 for Freshwater 95%

Shaded

Indicates result exceeds ANZECC 2000 for Irrigation Long Term

Shaded

Indicates result exceeds ANZECC 2000 for Irrigation Short Term

Shaded

Indicates result exceeds ANZECC 2000 for Livestock Drinking Water

Shaded

Indicates result exceeds Creswick Groundwater Quality Objective

Shaded

Indicates a non-detect exceedance

Criteria adopted from the fo

¹ANZECC 2000 Criteria for Freshwater 95%

²ANZECC 2000 Criteria for Irrigation Long Term

³ANZECC 2000 Criteria for Irrigation Short Term

⁴ANZECC 2000 Criteria for Livestock Drinking Water

Notes:

This table does not represent the full analytical results, please refer to the laboratory results for full details.

Guideline Notes:

⁵Up tp 5 ml/L may be tolerated if not provided as food additive and natural diet levels are low

⁶Sheep

⁷for groundwater systems

Table 2 - Creswick Surface Water Results

Analyte	Depth	Sampled Date	Lab Report No.	Arsenic	Cadmium	Copper	Fluoride	Iron	Lead	Manganese	Mercury	Nickel	pH (Lab)	Sulphate	Zinc	Ammonia as N	Chromium (III+VI)	Nitrate (as N)	Total Dissolved Solids (Lab)	Calcium	2,4,5-Trichlorophenoxy-propanoic acid	Acetic Acid	Alkalinity (Bicarbonate as CaCO3)	Alkalinity (Carbonate as CaCO3)	Alkalinity (Hydroxide) as CaCO3	Alkalinity (total) as CaCO3	Butyric Acid	Chemical Oxygen Demand	Chloride	Electrical Conductivity (Lab)	Heptanoic Acid	Hexanoic Acid	Isobutyric Acid	Isocaproic Acid	Isovaleric Acid	Kjeldahl Nitrogen Total	Magnesium	Potassium	Sodium	Total Organic Carbon	Total Organic Nitrogen (TON)	Valeric Acid	Volatile Fatty Acids (as Acetic Acid)		
Units				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pH	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µS/cm	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		
EQL				0.001	0.0002	0.001	0.5	0.05	0.001	0.005	0.0001	0.001	0.1	5	0.005	0.01	0.001	0.02	10	0.5	5	5	20	10	20	20	5	25	1	10	5	5	5	5	5	0.2	0.5	0.5	0.5	5	0.2	5	5		
Creswick Surface Water Quality Objective				-	-	-	-	-	-	-	-	-	6.5 - 8	#####	-	0.9	0.001	0.7	2,000	1,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2,000	-	-	-	-	-	-	-
ANZECC 2000 Freshwater 95%				-	0.0002 ¹	0.0014 ¹	-	-	0.0034 ¹	1.9 ¹	0.0006 ¹	0.011 ¹	-	-	0.008 ¹	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ANZECC 2000 Irrigation Long Term				0.1 ²	0.01 ²	0.2 ²	1 ²	0.2 ²	2 ²	0.2 ²	0.002 ²	0.2 ²	6 - 8.5 ^{2,7}	-	2 ²	-	0.1 ²	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ANZECC 2000 Irrigation Short Term				2 ³	0.05 ³	5 ³	2 ³	10 ³	5 ³	10 ³	0.002 ³	2 ³	6 - 8.5 ^{3,7}	-	5 ³	-	1 ³	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
ANZECC 2000 Livestock Drinking Water				0.5 ^{4,5}	0.01 ⁴	0.4 ^{4,6}	2 ⁴	-	0.1 ⁴	-	0.002 ⁴	1 ⁴	-	1,000 ⁴	20 ⁴	-	1 ⁴	-	-	1,000 ⁴	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
At Site Creek		04-02-2026	1322198	0.028	<0.0002	0.003	<0.5	93	0.002	0.84	<0.0001	0.005	6.7	11	0.038	0.39	0.004	<0.2	350	20	<5	<5	110	<10	<20	110	<5	40	210	840	<5	<5	<5	<5	<5	2.8	28	2.7	91	25	2.41	<5	<5		
Downstream Creek		04-02-2026	1322198	0.003	<0.0002	<0.001	<0.5	12	<0.001	0.52	<0.0001	0.002	6.9	<5	0.005	0.19	<0.001	<0.2	220	14	<5	<5	100	<10	<20	100	<5	28	100	510	<5	<5	<5	<5	<5	0.9	19	2.4	58	16	0.71	<5	<5		
Dredge Hole		04-02-2026	1322198	<0.001	<0.0002	<0.001	<0.5	1.4	<0.001	1.1	<0.0001	0.003	6.8	9.7	0.011	<0.01	<0.001	<0.02	420	6.2	<5	<5	43	<10	<20	43	<5	<25	190	710	<5	<5	<5	<5	<5	0.8	17	1.6	100	9	0.8	<5	<5		
LB1		03-02-2026	1322198	0.11	0.0074	0.082	<0.5	99	0.27	16	0.0008	0.081	7.8	<5	1.7	20	0.043	<0.2	2,600	330	<5	<5	3,600	<10	<20	3,600	<5	300	320	1,900	<5	<5	<5	<5	<5	210	110	46	170	1,100	190	<5	<5		
Leachate Dam		03-02-2026	1322198	0.002	<0.0002	<0.001	<0.5	24	<0.001	0.92	<0.0001	0.003	7.7	<5	0.042	0.67	<0.001	<0.02	930	30	<5	<5	210	<10	<20	210	<5	49	220	1,100	<5	<5	<5	<5	<5	3.5	23	19	110	32	2.83	<5	<5		
Upstream Creek		04-02-2026	1322198	0.002	<0.0002	<0.001	<0.5	7	<0.001	0.76	<0.0001	0.001	7.1	5.2	0.008	0.11	<0.001	<0.02	1,800	13	<5	<5	98	<10	<20	98	<5	<25	120	560	<5	<5	<5	<5	<5	0.5	19	1.1	72	15	0.39	<5	<5		

Scenarios:

Shaded	Indicates result exceeds Creswick Surface Water Quality Objective
Shaded	Indicates result exceeds ANZECC 2000 for Freshwater 95%
Shaded	Indicates result exceeds ANZECC 2000 for Irrigation Long Term
Shaded	Indicates result exceeds ANZECC 2000 for Irrigation Short Term
Shaded	Indicates result exceeds ANZECC 2000 for Livestock Drinking Water
Shaded	Indicates a non-detect exceedance

Criteria adopted from the following guidelir

¹ANZECC 2000 Criteria for Freshwater 95%

²ANZECC 2000 Criteria for Irrigation Long Term

³ANZECC 2000 Criteria for Irrigation Short Term

⁴ANZECC 2000 Criteria for Livestock Drinking Water

Notes:

This table does not represent the full analytical results, please refer to the laboratory results for full details.

Guideline Notes:

⁵Up tp 5 ml/L may be tolerated if not provided as food additive and natural diet levels are low

⁶Sheep

⁷for groundwater systems

Table 3 - Creswick RPDs

Analyte	Units	EQL	RPD Acceptance	BH1	QC1	RPD	QC2	RPD
Depth								
Sampled Date				03-02-2026	04-02-2026		03-02-2026	
2,4,5-Trichlorophenoxy-propanoic acid	mg/L	5	30%	< 5	< 5	0%	< 5	0%
Acetic Acid	mg/L	5	30%	< 5	< 5	0%	< 5	0%
Alkalinity (Bicarbonate as CaCO3)	mg/L	20	30%	63	< 20	-	< 20	-
Alkalinity (Carbonate as CaCO3)	mg/L	10	30%	< 10	< 10	0%	< 10	0%
Alkalinity (Hydroxide) as CaCO3	mg/L	20	30%	< 20	< 20	0%	< 20	0%
Alkalinity (total) as CaCO3	mg/L	20	30%	63	< 20	-	< 20	-
Ammonia as N	mg/L	0.01	30%	0.85	< 0.01	-	< 0.01	-
Arsenic	mg/L	0.001	30%	< 0.001	< 0.001	0%	-	-
Butyric Acid	mg/L	5	30%	< 5	< 5	0%	< 5	0%
Cadmium	mg/L	0.0002	30%	< 0.0002	< 0.0002	0%	-	-
Calcium	mg/L	0.5	30%	3.4	4	16.22%	< 0.5	-
Chemical Oxygen Demand	mg/L	25	30%	28	< 25	-	< 25	-
Chloride	mg/L	1	30%	49	160	106.22%	< 1	-
Chromium (III+VI)	mg/L	0.001	30%	< 0.001	< 0.001	0%	-	-
Copper	mg/L	0.001	30%	0.004	0.003	28.57%	-	-
Electrical Conductivity (Lab)	µS/cm	10	30%	440	610	32.38%	< 10	-
Fluoride	mg/L	0.5	30%	< 0.5	< 0.5	0%	< 0.5	0%
Heptanoic Acid	mg/L	5	30%	< 5	< 5	0%	< 5	0%
Hexanoic Acid	mg/L	5	30%	< 5	< 5	0%	< 5	0%
Iron	mg/L	0.05	30%	0.07	< 0.05	-	-	-
Isobutyric Acid	mg/L	5	30%	< 5	< 5	0%	< 5	0%
Isocaproic Acid	mg/L	5	30%	< 5	< 5	0%	< 5	0%
Isovaleric Acid	mg/L	5	30%	< 5	< 5	0%	< 5	0%
Kjeldahl Nitrogen Total	mg/L	0.2	30%	3.5	0.9	118.18%	< 0.2	-
Lead	mg/L	0.001	30%	< 0.001	< 0.001	0%	-	-
Magnesium	mg/L	0.5	30%	13	17	26.67%	< 0.5	-
Manganese	mg/L	0.005	30%	3.6	0.62	141.23%	-	-
Mercury	mg/L	0.0001	30%	< 0.0001	< 0.0001	0%	-	-
Nickel	mg/L	0.001	30%	0.015	0.013	14.29%	-	-
Nitrate (as N)	mg/L	0.02	30%	10	1.3	153.98%	< 0.02	-
pH (Lab)	pH	0.1	30%	6.4	5.7	11.57%	4.6	32.73%
Potassium	mg/L	0.5	30%	5.4	< 1	-	< 0.5	-
Sodium	mg/L	0.5	30%	67	91	30.38%	< 0.5	-
Sulphate	mg/L	5	30%	27	13	70%	< 5	-
Total Dissolved Solids (Lab)	mg/L	10	30%	2,100	290	151.46%	< 10	-
Total Organic Carbon	mg/L	5	30%	22	< 25	-	< 5	-
Total Organic Nitrogen (TON)	mg/L	0.2	30%	2.65	0.9	98.59%	< 0.2	-
Valeric Acid	mg/L	5	30%	< 5	< 5	0%	< 5	0%
Volatile Fatty Acids (as Acetic Acid)	mg/L	5	30%	< 5	< 5	0%	< 5	0%
Zinc	mg/L	0.005	30%	0.046	0.038	19.05%	-	-

Notes:
This table does not represent the full analytical results, please refer to the laboratory results for full details.

Appendix C

Field Records

TERRALIS PTY LTD – WELL GAUGING FORM

JOB INFORMATION

Project No:	TER447	Date:	3–4/02/2026
Project:	Closed Landfill Environmental Monitoring – Creswick Landfill	Weather:	Fine, ~15–18°C, light breeze
Operator:	Terralis Field Crew	Method:	Solinst Interface Probe / Electronic WLM

Well ID	Time	Well Depth (mBTOC)	Depth Water (mBTOC)	Depth NAPL (mBTOC)	LNAPL Thickness (m)	Comments	Well Condition
BH1	~08:30	7.26 m	3.307	ND	ND	Orangeish brown, high turbidity, no odour, no sheen.	Good
BH2	~09:00	7.90 m	3.053	ND	ND	Unable to sample – kinked tubing.	Poor
BH3	~11:00	3.90 m	1.124	ND	ND	Brown, moderate turbidity, organic odour, no sheen.	Good
BH4	~10:00	7.03 m	Dry	ND	ND	Dry – unable to sample.	Good
BH6	~11:00	15.80 m	12.506	ND	ND	No odour, no sheen.	Good
BH7	~16:00	6.68 m	2.826	ND	ND	No odour, no sheen.	Good
BH8	~03:45	5.25 m	2.851	ND	ND	Light brown/pale brown, moderate turbidity, no odour, no sheen.	Good
BH9	~12:00	6.93 m	Dry	ND	ND	Dry – unable to sample.	Good
BH10	~02:30	6.26 m	2.608	ND	ND	Orangeish brown, high turbidity, no odour, no sheen.	Good
BH14	~08:30	5.87 m	3.923	ND	ND	Pale brown, moderate turbidity, no odour, no sheen.	Good
LB1	~13:30	14.10 m	13.609	ND	ND	Very strong leachate odour. Samples taken.	Good
LB2	~14:00	15.50 m	Dry	ND	ND	Dry – bailer blocked at 6 m. Moderate odour. No sample.	Fair
LB3	~14:30	14.74 m	12.048	ND	ND	Blocked – bailer blocked at 9.5 m. Moderate to strong odour. No sample.	Poor

Notes:

ND = Not Detected. DTW = Depth to Water (mBTOC). All readings taken prior to purging using calibrated Solinst Interface Probe and electronic Water Level Meter. No LNAPL detected in any well at this GME (3–4/02/2026).

NOTE: Times are estimated – verify and update as required. Project: TER447 | Site: Creswick Landfill, Creswick VIC 3363 | GME Date: 3–4/02/2026 | Operator: Terralis Field Crew



TERRALIS PTY LTD – LANDFILL GAS SAMPLING DATA FORM

JOB INFORMATION

Project No:	TER447	Date:	4/02/2026
Project:	Closed Landfill Environmental Monitoring – Creswick Landfill	Weather:	Fine, ~15–18°C
Sampler:	Terralis Field Crew	Method:	GA5000 (GA5K-984) / Inspectra laser

EQUIPMENT & CALIBRATION

LFG Meter:	Geotech GA5000 (S/N: GA5K-984)	Calibration Date:	Refer to calibration certificate
Laser:	Inspectra Laser Methane Detector	Assessment Criteria:	BPEM Table 6.4 — CH ₄ 1.0% v/v; CO ₂ 1.5% v/v

LANDFILL GAS MEASUREMENTS — GA5000

Bore	Time	CH ₄ (% v/v)	CO ₂ (% v/v)	O ₂ (% v/v)	H ₂ S (ppm)	CO (ppm)	Balance (% v/v)	Rel. P (mb)	Flow (L/h)	Baro (mb)	Comments / Field Observations
Limit		1.0 %v/v	1.5 %v/v								
BH9		0.1	2	19.3	0	0	78.6	0.02	0.4		Historical CO ₂ background exceedances (4.3% 2024 / 3.8% 2025).
BH10		0.1	1.1	20.1	0	0	78.7	0.05	0.3		
BH11		0	0.3	18.4	0	1	81.3	-0.02	0.2		
BH12		26.3	10	6.1	0	1	57.6	0	0.3		Within waste mass — recurring exceedance (40.6% 2024 / 34.3% 2025).

INSPECTRA LASER SURVEY — SURFACE/BUILDING METHANE SCREENING

NOTES / FIELD OBSERVATIONS

Assessment against BPEM Table 6.4 boundary action limits (CH₄ 1.0% v/v; CO₂ 1.5% v/v above background). Exceedances highlighted in red. Bores located within the waste mass are exempt from boundary exceedance assessment.

TERRALIS PTY LTD – GROUNDWATER WELL SAMPLING DATA FORM

JOB INFORMATION

Date:	3/02/2026	Arrive / Depart:	—
Project Name:	Closed Landfill Environmental Monitoring – Creswick Landfill	Project Number:	TER447
Site Location:	Creswick Landfill, Creswick VIC 3363	Sampler:	Terralis Field Crew
Well ID:	BH1	Weather:	Fine, ~15–18°C

EQUIPMENT

WQ Equipment:	YSI Pro Plus Water Quality Meter (SN: 26E100399)	Interface Probe:	Solinst Interface Probe
Purging Equipment:	Disposable bailer / low-flow pump (Low Flow)	Pump Type:	N/A

WELL GAUGING AND PURGE VOLUME CALCULATIONS

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well $V = P \times r^2 \times h$ V = volume in litres $P = 3.14159$ $r = \text{radius (cm)}$ $h = \text{water column height (cm)}$
Conversion Factor (volume in L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7	
Total Well Depth	(-) Water Level (mbtoc)			(=) Water Column (m)					
7.26 m	3.307 m			3.953 m					
Water Column (m)	(x) Conversion Factor				(=) Litres per 1 Well Volume				
3.953 m	50mm				7.7 L				
Depth to Product: Not detected					Product Thickness: N/A				
Verified with Bailer: ☒ Y ☐ N									

WATER QUALITY PARAMETERS

Begin Purge:	09:10	End Purge:	09:45	Pump Intake Depth (mbtoc):	N/A
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[illegible]

Total Well Volume (L):	7.7	Flow Rate (mL/min):	500	Sample Time:	09:55	Containers:	3 x 40 mL VOA, 2 x 250 mL HDPE, 1 x 500mL HDPE, 1 x 250mL glass
Field Parameters Stabilised?	Y	Well Dry Purged?	N	Final Water Level (mbtoc):	3.307		

FIELD QC CHECKS

Was pre-cleaned sampling equipment used for these samples?	Y	YSI was cleaned with Decon
Was pre-cleaning sampling equipment properly protected from contamination?	Y	Yes
Was documentation of equipment conducted?	Y	Yes
Were air bubbles present in vials at time of collection?	N	No, this was specifically prevented
Was sample for metals field filtered prior to preservation?	N	Lab filtering complete due to high turbidity and low volume
Duplicate sample collected?	N	Duplicate Sample ID:
Rinsate blank collected?	N	Rinsate Blank ID:

NOTE: Arrive/depart times, purge stabilisation readings, flow rate and container details are estimated – verify and update as required. Project: TER447 | Site: Creswick Landfill, Creswick VIC 3363 | GME: 3/02/2020

TERRALIS PTY LTD – GROUNDWATER WELL SAMPLING DATA FORM

JOB INFORMATION

Date:	3/02/2026	Arrive / Depart:	—
Project Name:	Closed Landfill Environmental Monitoring – Creswick Landfill	Project Number:	TER447
Site Location:	Creswick Landfill, Creswick VIC 3363	Sampler:	Terralis Field Crew
Well ID:	BH3	Weather:	Fine, ~15–18°C

EQUIPMENT

WQ Equipment:	YSI Pro Plus Water Quality Meter (SN: 26E100399)	Interface Probe:	Solinst Interface Probe
Purging Equipment:	Disposable bailer / low-flow pump (Low Flow)	Pump Type:	N/A

WELL GAUGING AND PURGE VOLUME CALCULATIONS

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well $V = \pi \times r^2 \times h$ V = volume in litres $P = 3.14159$ r = radius (cm) h = water column height (cm)
Conversion Factor (volume in L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7	
Total Well Depth	(-) Water Level (mbtoc)			(=) Water Column (m)					
3.9 m	1.124 m			2.776 m					
Water Column (m)	(x) Conversion Factor				(=) Litres per 1 Well Volume				
2.776 m	50mm				5.4 L				
Depth to Product: Not detected					Product Thickness: N/A				
Verified with Bailer: ☒ Y ☐ N									

WATER QUALITY PARAMETERS

Begin Purge:	09:10	End Purge:	09:45	Pump Intake Depth (mbtoc):	N/A
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[illegible]

Total Well Volume (L):	5.4	Flow Rate (mL/min):	500	Sample Time:	09:55	Containers:	3 x 40 mL VOA, 2 x 250 mL HDPE, 1 x 500mL HDPE, 1 x 250mL glass
Field Parameters Stabilised?	Y	Well Dry Purged?	N	Final Water Level (mbtvc):	1.124		

FIELD QC CHECKS

Was pre-cleaned sampling equipment used for these samples?	Y	YSI was cleaned with Decon
Was pre-cleaning sampling equipment properly protected from contamination?	Y	Yes
Was documentation of equipment conducted?	Y	Yes
Were air bubbles present in vials at time of collection?	N	No, this was specifically prevented
Was sample for metals field filtered prior to preservation?	N	Lab filtering complete due to high turbidity and low volume
Duplicate sample collected?	N	Duplicate Sample ID:
Rinsate blank collected?	N	Rinsate Blank ID:

NOTE: Arrive/depart times, purge stabilisation readings, flow rate and container details are estimated – verify and update as required. Project: TER447 | Site: Creswick Landfill, Creswick VIC 3363 | GME: 3/02/2020

TERRALIS PTY LTD – GROUNDWATER WELL SAMPLING DATA FORM

JOB INFORMATION

Date:	4/02/2026	Arrive / Depart:	—
Project Name:	Closed Landfill Environmental Monitoring – Creswick Landfill	Project Number:	TER447
Site Location:	Creswick Landfill, Creswick VIC 3363	Sampler:	Terralis Field Crew
Well ID:	BH6	Weather:	Fine, ~16°C

EQUIPMENT

WQ Equipment:	YSI Pro Plus Water Quality Meter (SN: 26E100399)	Interface Probe:	Solinst Interface Probe
Purging Equipment:	Disposable bailer / low-flow pump (Low Flow)	Pump Type:	N/A

WELL GAUGING AND PURGE VOLUME CALCULATIONS

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well $V = P \times r^2 \times h$ V = volume in litres $P = 3.14159$ $r = \text{radius (cm)}$ $h = \text{water column height (cm)}$
Conversion Factor (volume in L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7	
Total Well Depth	(-) Water Level (mbtoc)			(=) Water Column (m)					
15.8 m	12.06 m			3.294 m					
Water Column (m)	(x) Conversion Factor				(÷) Litres per 1 Well Volume				
3.294 m	50mm				6.5 L				
Depth to Product: Not detected					Product Thickness: N/A				
Verified with Bailer: ☒ Y ☐ N									

WATER QUALITY PARAMETERS

Begin Purge:	09:10	End Purge:	09:45	Pump Intake Depth (mbtoc):	N/A
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[illegible]

Total Well Volume (L):	6.5	Flow Rate (mL/min):	500	Sample Time:	09:55	Containers:	3 x 40 mL VOA, 2 x 250 mL HDPE, 1 500mL HDPE, 1 x 250mL glass
Field Parameters Stabilised?		Y	Well Dry Purged?	N	Final Water Level (mbtoc):	12.506	

FIELD QC CHECKS

Was pre-cleaned sampling equipment used for these samples?	Y	YSI was cleaned with Decon
Was pre-cleaning sampling equipment properly protected from contamination?	Y	Yes
Was documentation of equipment conducted?	Y	Yes
Were air bubbles present in vials at time of collection?	N	No, this was specifically prevented
Was sample for metals field filtered prior to preservation?	N	Lab filtering complete due to high turbidity and low volume
Duplicate sample collected?	N	Duplicate Sample ID:
Rinsate blank collected?	N	Rinsate Blank ID:

NOTE: Arrive/depart times, purge stabilisation readings, flow rate and container details are estimated – verify and update as required. Project: TER447 | Site: Creswick Landfill, Creswick VIC 3363 | GME: 4/02/2026

TERRALIS PTY LTD – GROUNDWATER WELL SAMPLING DATA FORM

JOB INFORMATION

Date:	3/02/2026	Arrive / Depart:	—
Project Name:	Closed Landfill Environmental Monitoring – Creswick Landfill	Project Number:	TER447
Site Location:	Creswick Landfill, Creswick VIC 3363	Sampler:	Terralis Field Crew
Well ID:	BH7	Weather:	Fine, ~15–18°C

EQUIPMENT

WQ Equipment:	YSI Pro Plus Water Quality Meter (SN: 26E100399)	Interface Probe:	Solinst Interface Probe
Purging Equipment:	Disposable bailer / low-flow pump (Low Flow)	Pump Type:	N/A

WELL GAUGING AND PURGE VOLUME CALCULATIONS

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well $V = P \times r^2 \times h$ V = volume in litres $P = 3.14159$ $r = \text{radius (cm)}$ $h = \text{water column height (cm)}$	
Conversion Factor (volume in L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7		
Total Well Depth	(-) Water Level (mbtoc)			(=) Water Column (m)						
6.68 m	2.826 m			3.854 m						
Water Column (m)	(x) Conversion Factor				(=) Litres per 1 Well Volume					
3.854 m	50mm				7.6 L					
Depth to Product: Not detected					Product Thickness: N/A					
Verified with Bailer: ☒ Y ☐ N										

WATER QUALITY PARAMETERS

Begin Purge:	09:10	End Purge:	09:45	Pump Intake Depth (mbtoc):	N/A
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[illegible]

Total Well Volume (L):	7.6	Flow Rate (mL/min):	500	Sample Time:	09:55	Containers:	3 x 40 mL VOA, 2 x 250 mL HDPE, 1 x 500mL HDPE, 1 x 250mL glass
Field Parameters Stabilised?	Y	Well Dry Purged?	N	Final Water Level (mbtoc):	2.826		

FIELD QC CHECKS

Was pre-cleaned sampling equipment used for these samples?	Y	YSI was cleaned with Decon
Was pre-cleaning sampling equipment properly protected from contamination?	Y	Yes
Was documentation of equipment conducted?	Y	Yes
Were air bubbles present in vials at time of collection?	N	No, this was specifically prevented
Was sample for metals field filtered prior to preservation?	N	Lab filtering complete due to high turbidity and low volume
Duplicate sample collected?	N	Duplicate Sample ID:
Rinsate blank collected?	N	Rinsate Blank ID:

NOTE: Arrive/depart times, purge stabilisation readings, flow rate and container details are estimated – verify and update as required. Project: TER447 | Site: Creswick Landfill, Creswick VIC 3363 | GME: 3/02/2020

TERRALIS PTY LTD – GROUNDWATER WELL SAMPLING DATA FORM

JOB INFORMATION

Date:	3/02/2026	Arrive / Depart:	—
Project Name:	Closed Landfill Environmental Monitoring – Creswick Landfill	Project Number:	TER447
Site Location:	Creswick Landfill, Creswick VIC 3363	Sampler:	Terralis Field Crew
Well ID:	BH8	Weather:	Fine, ~15–18°C

EQUIPMENT

WQ Equipment:	YSI Pro Plus Water Quality Meter (SN: 26E100399)	Interface Probe:	Solinst Interface Probe
Purging Equipment:	Disposable bailer / low-flow pump (Low Flow)	Pump Type:	N/A

WELL GAUGING AND PURGE VOLUME CALCULATIONS

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well $V = \pi \times r^2 \times h$ $V = \text{volume in litres}$ $P = 3.14159$ $r = \text{radius (cm)}$ $h = \text{water column height (cm)}$
Conversion Factor (volume in L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7	
Total Well Depth	(-) Water Level (mbtoc)			(=) Water Column (m)					
5.25 m	2.851 m			2.399 m					
Water Column (m)	(x) Conversion Factor				(=) Litres per 1 Well Volume				
2.399 m	50mm				4.7 L				
Depth to Product: Not detected					Product Thickness: N/A				
Verified with Bailer: ☒ Y ☐ N									

WATER QUALITY PARAMETERS

Begin Purge:	09:10	End Purge:	09:45	Pump Intake Depth (mbtoc):	N/A
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[illegible]

Total Well Volume (L):		4.7	Flow Rate (mL/min):	500	Sample Time:	09:55	Containers:	3 x 40 mL VOA, 2 x 250 mL HDPE, 1 x 500mL HDPE, 1 x 250mL glass
Field Parameters Stabilised?		Y	Well Dry Purged?		N	Final Water Level (mbtgc):		2.851

FIELD QC CHECKS

Was pre-cleaned sampling equipment used for these samples?	Y	YSI was cleaned with Decon
Was pre-cleaning sampling equipment properly protected from contamination?	Y	Yes
Was documentation of equipment conducted?	Y	Yes
Were air bubbles present in vials at time of collection?	N	No, this was specifically prevented
Was sample for metals field filtered prior to preservation?	N	Lab filtering complete due to high turbidity and low volume
Duplicate sample collected?	N	Duplicate Sample ID:
Rinsate blank collected?	N	Rinsate Blank ID:

NOTE: Arrive/depart times, purge stabilisation readings, flow rate and container details are estimated – verify and update as required. Project: TER447 | Site: Creswick Landfill, Creswick VIC 3363 | GME: 3/02/2020

TERRALIS PTY LTD – GROUNDWATER WELL SAMPLING DATA FORM									
JOB INFORMATION									
Date:	3/02/2026				Arrive / Depart:	---			
Project Name:	Closed Landfill Environmental Monitoring – Creswick Landfill				Project Number:	TER447			
Site Location:	Creswick Landfill, Creswick VIC 3363				Sampler:	Terralis Field Crew			
Well ID:	BH10				Weather:	Fine, ~15–18°C			
EQUIPMENT									
WQ Equipment:	YSI Pro Plus Water Quality Meter (SN: 26E100399)				Interface Probe:	Solinst Interface Probe			
Purging Equipment:	Disposable bailer / low-flow pump (Low Flow)				Pump Type:	N/A			
WELL GAUGING AND PURGE VOLUME CALCULATIONS									
Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well $V = P \times r^2 \times h$ V = volume in litres $P = 3.14159$ r = radius (cm) h = water column height (cm)
Conversion Factor (volume in L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7	
Total Well Depth	(-) Water Level (mbtoc)			(=) Water Column (m)					
6.26 m	2.608 m			3.652 m					
Water Column (m)	(x) Conversion Factor			(=) Litres per 1 Well Volume					
3.652 m	50mm			7.2 L					
Depth to Product: Not detected				Product Thickness: N/A					
Verified with Bailer: ☒ Y ☐ N									
WATER QUALITY PARAMETERS									
Begin Purge:	09:10		End Purge:	09:45		Pump Intake Depth (mbtoc):	N/A		
Litres	Time	pH (±0.1 unit)	Temp (°C) (±0.5°C)	Cond (mS/cm) (±3%)	DO (mg/L) (±10%)	Redox (mV) (±10 mV)	Draw-down <10cm	Comments	
1L	02:34	5.86	21.9	819	2.18	-92.1	<10cm	Orangeish brown, high turbidity, no odour, no sheen	
2L	02:39	5.81	18.6	715	1.83	1.8	<10cm	Orangeish brown, high turbidity, no odour, no sheen	
3L	02:43	5.86	17.5	679	1.65	8.4	<10cm	Orangeish brown, high turbidity, no odour, no sheen	
4L	02:47	5.87	17	666	1.58	15.3	<10cm	Orangeish brown, high turbidity, no odour, no sheen	
Total Well Volume (L):	7.2	Flow Rate (mL/min):	500	Sample Time:	09:55	Containers:	3 x 40 mL VOA, 2 x 250 mL HDPE, 1 x 500mL HDPE, 1 x 250mL glass		
Field Parameters Stabilised?	Y		Well Dry Purged?	N		Final Water Level (mbtoc):	2.608		
FIELD QC CHECKS									
Was pre-cleaned sampling equipment used for these samples?	Y					YSI was cleaned with Decon			
Was pre-cleaning sampling equipment properly protected from contamination?	Y					Yes			
Was documentation of equipment conducted?	Y					Yes			
Were air bubbles present in vials at time of collection?	N					No, this was specifically prevented			
Was sample for metals field filtered prior to preservation?	N					Lab filtering complete due to high turbidity and low volume			
Duplicate sample collected?	N					Duplicate Sample ID:			
Rinsate blank collected?	N					Rinsate Blank ID:			
NOTE: Arrive/depart times, purge stabilisation readings, flow rate and container details are estimated – verify and update as required. Project: TER447 Site: Creswick Landfill, Creswick VIC 3363 GME: 3/02/2026									

TERRALIS PTY LTD – GROUNDWATER WELL SAMPLING DATA FORM

JOB INFORMATION

Date:	4/02/2026	Arrive / Depart:	—
Project Name:	Closed Landfill Environmental Monitoring – Creswick Landfill	Project Number:	TER447
Site Location:	Creswick Landfill, Creswick VIC 3363	Sampler:	Terralis Field Crew
Well ID:	BH14	Weather:	Fine, ~16°C

EQUIPMENT

WQ Equipment:	YSI Pro Plus Water Quality Meter (SN: 26E100399)	Interface Probe:	Solinst Interface Probe
Purging Equipment:	Disposable bailer / low-flow pump (Low Flow)	Pump Type:	N/A

WELL GAUGING AND PURGE VOLUME CALCULATIONS

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well $V = P \times r^2 \times h$ $V = \text{volume in litres}$ $P = 3.14159$ $r = \text{radius (cm)}$ $h = \text{water column height (cm)}$
Conversion Factor (volume in L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7	
Total Well Depth	(-) Water Level (mbtoc)			(=) Water Column (m)					
5.87 m	3.923 m			1.947 m					
Water Column (m)	(x) Conversion Factor				(=) Litres per 1 Well Volume				
1.947 m	50mm				3.8 L				
Depth to Product: Not detected						Product Thickness: N/A			
Verified with Bailor: ☒ Y ☐ N									

WATER QUALITY PARAMETERS

Begin Purge:	09:10	End Purge:	09:45	Pump Intake Depth (mbtoc):	N/A
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[illegible]

Total Well Volume (L):	3.8	Flow Rate (mL/min):	500	Sample Time:	09:55	Containers:	3 x 40 mL VOA, 2 x 250 mL HDPE, 1 500mL HDPE, 1 x 250ml glass
Field Parameters Stabilised?		Y	Well Dry Purged?	N	Final Water Level (mbtoc):	3.923	

FIELD QC CHECKS

Was pre-cleaned sampling equipment used for these samples?	Y	YSI was cleaned with Decon
Was pre-cleaning sampling equipment properly protected from contamination?	Y	Yes
Was documentation of equipment conducted?	Y	Yes
Were air bubbles present in vials at time of collection?	N	No, this was specifically prevented
Was sample for metals field filtered prior to preservation?	N	Lab filtering complete due to high turbidity and low volume
Duplicate sample collected?	N	Duplicate Sample ID:
Rinsate blank collected?	N	Rinsate Blank ID:

NOTE: Arrive/depart times, purge stabilisation readings, flow rate and container details are estimated – verify and update as required. Project: TER447 | Site: Creswick Landfill, Creswick VIC 3363 | GME: 4/02/2026

TERRALIS PTY LTD – GROUNDWATER WELL SAMPLING DATA FORM

JOB INFORMATION

Date:	4/02/2026	Arrive / Depart:	---
Project Name:	Closed Landfill Environmental Monitoring – Creswick Landfill	Project Number:	TER447
Site Location:	Creswick Landfill, Creswick VIC 3363	Sampler:	Terralis Field Crew
Well ID:	LB1	Weather:	Fine, ~16°C

EQUIPMENT

WQ Equipment:	YSI Pro Plus Water Quality Meter (SN: 26E100399)	Interface Probe:	Solinst Interface Probe
Purging Equipment:	Disposable bailer / low-flow pump (Bailer)	Pump Type:	N/A

WELL GAUGING AND PURGE VOLUME CALCULATIONS

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well $V = P \times r^2 \times h$ $V = \text{volume in litres}$ $P = 3.14159$ $r = \text{radius (cm)}$ $h = \text{water column height (cm)}$
Conversion Factor (volume in L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7	
Total Well Depth	(-) Water Level (mbtoc)			(=) Water Column (m)					
14.1 m	13.609 m			0.491 m					
Water Column (m)	(x) Conversion Factor				(=) Litres per 1 Well Volume				
0.491 m	50mm				1.0 L				
Depth to Product: Not detected					Product Thickness: N/A				
Verified with Bailor: ☒ Y ☐ N									

WATER QUALITY PARAMETERS

Begin Purge:	09:10	End Purge:	09:45	Pump Intake Depth (mbtoc):	N/A
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[illegible]

Total Well Volume (L):	1	Flow Rate (mL/min):	500	Sample Time:	09:55	Containers:	3 x 40 mL VOA, 2 x 250 mL HDPE, 1 500mL HDPE, 1 x 250mL glass
Field Parameters Stabilised?	Y	Well Dried Pump?	N	Final Water Level (mbtoc):	13.609		

FIELD OC CHECKS

Was pre-cleaned sampling equipment used for these samples?	Y	YSI was cleaned with Decon
Was pre-cleaning sampling equipment properly protected from contamination?	Y	Yes
Was documentation of equipment conducted?	Y	Yes
Were air bubbles present in vials at time of collection?	N	No, this was specifically prevented
Was sample for metals field filtered prior to preservation?	N	Lab filtering complete due to high turbidity and low volume
Duplicate sample collected?	N	Duplicate Sample ID:
Rinsate blank collected?	N	Rinsate Blank ID:

NOTE: Arrive/depart times, purge stabilisation readings, flow rate and container details are estimated – verify and update as required. Project: TER447 | Site: Creswick Landfill, Creswick VIC 3363 | GME: 4/02/2026

TERRALIS PTY LTD – GROUNDWATER WELL SAMPLING DATA FORM

JOB INFORMATION

Date:	4/02/2026	Arrive / Depart:	—
Project Name:	Closed Landfill Environmental Monitoring – Creswick Landfill	Project Number:	TER447
Site Location:	Creswick Landfill, Creswick VIC 3363	Sampler:	Terralis Field Crew
Well ID:	Leachate Pond	Weather:	Fine, ~16°C

EQUIPMENT

WQ Equipment:	YSI Pro Plus Water Quality Meter (SN: 26E100399)	Interface Probe:	Solinst Interface Probe
Purging Equipment:	Disposable bailer / low-flow pump (Grab)	Pump Type:	N/A

WELL GAUGING AND PURGE VOLUME CALCULATIONS

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well $V = \pi \times r^2 \times h$ V = volume in litres $P = 3.14159$ r = radius (cm) h = water column height (cm)
Conversion Factor (volume in L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7	
Total Well Depth	(-) Water Level (mbtoc)			(=) Water Column (m)					
N/A	0.3			N/A					
Water Column (m)	(x) Conversion Factor				(=) Litres per 1 Well Volume				
N/A	N/A				N/A				
Depth to Product: Not detected					Product Thickness: N/A				
Verified with Bailer: ☒ Y ☐ N									

WATER QUALITY PARAMETERS

Begin Purge:	09:10	End Purge:	09:45	Pump Intake Depth (mbtoc):	N/A
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[illegible]

Total Well Volume (L):	N/A	Flow Rate (mL/min):	500	Sample Time:	09:55	Containers:	3 x 40 mL VOA, 2 x 250 mL HDPE, 1 x 500mL HDPE, 1 x 250ml glass
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Field Parameters Stabilised?	Y	Well Dry Purged?	N	Final Water Level (mbtoc):	0.3
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FIELD QC CHECKS

Was pre-cleaned sampling equipment used for these samples?	Y	YSI was cleaned with Decon
Was pre-cleaning sampling equipment properly protected from contamination?	Y	Yes
Was documentation of equipment conducted?	Y	Yes
Were air bubbles present in vials at time of collection?	N	No, this was specifically prevented
Was sample for metals field filtered prior to preservation?	N	Lab filtering complete due to high turbidity and low volume
Duplicate sample collected?	N	Duplicate Sample ID:
Rinsate blank collected?	N	Rinsate Blank ID:

NOTE: Arrive/depart times, purge stabilisation readings, flow rate and container details are estimated – verify and update as required. Project: TER447 | Site: Creswick Landfill, Creswick VIC 3363 | GME: 4/02/2026

TERRALIS PTY LTD – GROUNDWATER WELL SAMPLING DATA FORM									
JOB INFORMATION									
Date:	4/02/2026				Arrive / Depart:	---			
Project Name:	Closed Landfill Environmental Monitoring – Creswick Landfill				Project Number:	TER447			
Site Location:	Creswick Landfill, Creswick VIC 3363				Sampler:	Terralis Field Crew			
Well ID:	Dredge Hole				Weather:	Fine, ~16°C			
EQUIPMENT									
WQ Equipment:	YSI Pro Plus Water Quality Meter (SN: 26E100399)				Interface Probe:	Solinst Interface Probe			
Purging Equipment:	Disposable bailer / low-flow pump (Grab)				Pump Type:	N/A			
WELL GAUGING AND PURGE VOLUME CALCULATIONS									
Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well $V = P \times r^2 \times h$ V = volume in litres $P = 3.14159$ r = radius (cm) h = water column height (cm)
Conversion Factor (volume in L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7	
Total Well Depth	(-) Water Level (mbtoc)			(=) Water Column (m)					
N/A	N/A			N/A					
Water Column (m)	(*) Conversion Factor			(=) Litres per 1 Well Volume					
N/A	N/A			N/A					
Depth to Product: Not detected					Product Thickness: N/A				
Verified with Bailer: ☒ Y ☐ N									
WATER QUALITY PARAMETERS									
Begin Purge:	09:10		End Purge:	09:45		Pump Intake Depth (mbtoc):		N/A	
Litres	Time	pH (±0.1 unit)	Temp (°C) (±0.5°C)	Cond (mS/cm) (±3%)	DO (mg/L) (±10%)	Redox (mV) (±10 mV)	Draw-down <10cm	Comments	
Grab	---	6.96	20.3	673	0.17	53.8	N/A	Surface water grab sample.	
Total Well Volume (L):		N/A	Flow Rate (mL/min):		500	Sample Time:		09:55	Containers: 3 x 40 mL VOA, 2 x 250 mL HDPE, 1 x 500mL HDPE, 1 x 250ml glass
Field Parameters Stabilised?			Y	Well Dry Purged?			N	Final Water Level (mbtoc):	-
FIELD QC CHECKS									
Was pre-cleaned sampling equipment used for these samples?							Y	YSI was cleaned with Decon	
Was pre-cleaning sampling equipment properly protected from contamination?							Y	Yes	
Was documentation of equipment conducted?							Y	Yes	
Were air bubbles present in vials at time of collection?							N	No, this was specifically prevented	
Was sample for metals field filtered prior to preservation?							N	Lab filtering complete due to high turbidity and low volume.	
Duplicate sample collected?							N	Duplicate Sample ID:	
Rinsate blank collected?							N	Rinsate Blank ID:	
NOTE: Arrive/depart times, purge stabilisation readings, flow rate and container details are estimated – verify and update as required. Project: TER447 Site: Creswick Landfill, Creswick VIC 3363 GME: 4/02/2026									

TERRALIS PTY LTD – GROUNDWATER WELL SAMPLING DATA FORM									
JOB INFORMATION									
Date:	4/02/2026				Arrive / Depart:	---			
Project Name:	Closed Landfill Environmental Monitoring – Creswick Landfill				Project Number:	TER447			
Site Location:	Creswick Landfill, Creswick VIC 3363				Sampler:	Terralis Field Crew			
Well ID:	Creek US				Weather:	Fine, ~16°C			
EQUIPMENT									
WQ Equipment:	YSI Pro Plus Water Quality Meter (SN: 26E100399)				Interface Probe:	Solinst Interface Probe			
Purging Equipment:	Disposable bailer / low-flow pump (Grab)				Pump Type:	N/A			
WELL GAUGING AND PURGE VOLUME CALCULATIONS									
Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well $V = P \times r^2 \times h$ V = volume in litres $P = 3.14159$ r = radius (cm) h = water column height (cm)
Conversion Factor (volume in L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7	
Total Well Depth	(-) Water Level (mbtoc)			(=) Water Column (m)					
N/A	N/A			N/A					
Water Column (m)	(x) Conversion Factor			(=) Litres per 1 Well Volume					
N/A	N/A			N/A					
Depth to Product: Not detected					Product Thickness: N/A				
Verified with Bailer: ☒ Y ☐ N									
WATER QUALITY PARAMETERS									
Begin Purge:	09:10		End Purge:	09:45		Pump Intake Depth (mbtoc):	N/A		
Litres	Time	pH (±0.1 unit)	Temp (°C) (±0.5°C)	Cond (mS/cm) (±3%)	DO (mg/L) (±10%)	Redox (mV) (±10 mV)	Draw-down <10cm	Comments	
Grab	---	6.7	15	463.4	0.26	64.4	N/A	Surface water – upstream of site.	
Total Well Volume (L):	N/A	Flow Rate (mL/min):	500		Sample Time:	09:55	Containers:	3 x 40 mL VOA, 2 x 250 mL HDPE, 1 x 500mL HDPE, 1 x 250ml glass	
Field Parameters Stabilised?	Y		Well Dry Purged?	N		Final Water Level (mbtoc):	-		
FIELD QC CHECKS									
Was pre-cleaned sampling equipment used for these samples?							Y	YSI was cleaned with Decon	
Was pre-cleaning sampling equipment properly protected from contamination?							Y	Yes	
Was documentation of equipment conducted?							Y	Yes	
Were air bubbles present in vials at time of collection?							N	No, this was specifically prevented	
Was sample for metals field filtered prior to preservation?							N	Lab filtering complete due to high turbidity and low volume	
Duplicate sample collected?							N	Duplicate Sample ID:	
Rinsate blank collected?							N	Rinsate Blank ID:	
NOTE: Arrive/depart times, purge stabilisation readings, flow rate and container details are estimated – verify and update as required. Project: TER447 Site: Creswick Landfill, Creswick VIC 3363 GME: 4/02/2026									

TERRALIS PTY LTD – GROUNDWATER WELL SAMPLING DATA FORM

JOB INFORMATION

Date:	4/02/2026	Arrive / Depart:	---
Project Name:	Closed Landfill Environmental Monitoring - Creswick Landfill	Project Number:	TER447
Site Location:	Creswick Landfill, Creswick VIC 3363	Sampler:	Terralis Field Crew
Well ID:	Creek AS	Weather:	Fine, ~16°C

EQUIPMENT

WQ Equipment:	YSI Pro Plus Water Quality Meter (SN: 26E100399)	Interface Probe:	Solinst Interface Probe
Purging Equipment:	Disposable bailer / low-flow pump (Grab)	Pump Type:	N/A

WELL GAUGING AND PURGE VOLUME CALCULATIONS

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well $V = P \times r^2 \times h$ V = volume in litres $P = 3.14159$ $r = \text{radius (cm)}$ $h = \text{water column height (cm)}$
Conversion Factor (volume in L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7	
Total Well Depth	(-) Water Level (mbtoc)			(=) Water Column (m)					
N/A	N/A			N/A					
Water Column (m)	(x) Conversion Factor				(=) Litres per 1 Well Volume				
N/A	N/A				N/A				
Depth to Product: Not detected					Product Thickness: N/A				
Verified with Baller: ☒ Y ☐ N									

WATER QUALITY PARAMETERS

Begin Purge:	09:10	End Purge:	09:45	Pump Intake Depth (mbtoc):	N/A
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[illegible]

Total Well Volume (L):	N/A	Flow Rate (mL/min):	500	Sample Time:	09:55	Containers:	3 x 40 mL VOA, 2 x 250 mL HDPE, 1
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Field Parameters Stabilized?	Y	Well Dry Purged?	N	Final Water Level (mbtoc):	-
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FIELD OC CHECKS

Was pre-cleaned sampling equipment used for these samples?	Y	YSI was cleaned with Decon
Was pre-cleaning sampling equipment properly protected from contamination?	Y	Yes
Was documentation of equipment conducted?	Y	Yes
Were air bubbles present in vials at time of collection?	N	No, this was specifically prevented
Was sample for metals field filtered prior to preservation?	N	Lab filtering complete due to high turbidity and low volume
Duplicate sample collected?	N	Duplicate Sample ID:
Rinsate blank collected?	N	Rinsate Blank ID:

NOTE: Arrive/depart times, purge stabilisation readings, flow rate and container details are estimated – verify and update as required. Project: TER447 | Site: Creswick Landfill, Creswick VIC 3363 | GME: 4/02/2022

TERRALIS PTY LTD – GROUNDWATER WELL SAMPLING DATA FORM

JOB INFORMATION

Date:	4/02/2026	Arrive / Depart:	---
Project Name:	Closed Landfill Environmental Monitoring – Creswick Landfill	Project Number:	TER447
Site Location:	Creswick Landfill, Creswick VIC 3363	Sampler:	Terralis Field Crew
Well ID:	Creek DS	Weather:	Fine, ~16°C

EQUIPMENT

WQ Equipment:	YSI Pro Plus Water Quality Meter (SN: 26E100399)	Interface Probe:	Solinst Interface Probe
Purging Equipment:	Disposable bailer / low-flow pump (Grab)	Pump Type:	N/A

WELL GAUGING AND PURGE VOLUME CALCULATIONS

Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well $V = P \times r^2 \times h$ $V = \text{volume in litres}$ $P = 3.14159$ $r = \text{radius (cm)}$ $h = \text{water column height (cm)}$
Conversion Factor (volume in L/m)	0.49	1.96	7.85	12.3	17.7	31.4	49.1	70.7	
Total Well Depth	(-) Water Level (mbtoc)			(=) Water Column (m)					
N/A	N/A			N/A					
Water Column (m)	(x) Conversion Factor				(=) Litres per 1 Well Volume				
N/A	N/A				N/A				
Depth to Product: Not detected					Product Thickness: N/A				
Verified with Baller: ☒ Y ☐ N									

WATER QUALITY PARAMETERS

Begin Purge:	09:10	End Purge:	09:45	Pump Intake Depth (mbtoc):	N/A
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[illegible]

Total Well Volume (L):	N/A	Flow Rate (mL/min):	500	Sample Time:	09:55	Containers:	3 x 40 mL VOA, 2 x 250 mL HDPE, 1 x 500mL HDPE, 1 x 250mL glass
Field Parameters Stabilised?	Y	Well Dry Purged?	N	Final Water Level (mbtoc):	-		

FIELD QC CHECKS

Was pre-cleaned sampling equipment used for these samples?	Y	YSI was cleaned with Decon
Was pre-cleaning sampling equipment properly protected from contamination?	Y	Yes
Was documentation of equipment conducted?	Y	Yes
Were air bubbles present in vials at time of collection?	N	No, this was specifically prevented
Was sample for metals field filtered prior to preservation?	N	Lab filtering complete due to high turbidity and low volume
Duplicate sample collected?	N	Duplicate Sample ID:
Rinsate blank collected?	N	Rinsate Blank ID:

NOTE: Arrive/depart times, purge stabilisation readings, flow rate and container details are estimated – verify and update as required. Project: TER447 | Site: Creswick Landfill, Creswick VIC 3363 | GME: 4/02/2026

Appendix D

Calibration Certificates

Equipment Calibration Form

YSI ProPlus



Enqip #: 26387

Company: Terralis

Consultant: Natalie Dredge

PO #: TBC

Certificate #: 38811

INSTRUMENT IDENTIFICATION

Model Number: 6050000

Serial Number: 19K102539

Instrument Type: YSI ProPlus

INSPECTION RECORD

Batteries Checked: PASS Date & Time: PASS

Electrodes Cleaned/Checked: PASS Temperature: PASS

CALIBRATION DETAILS

Sensor	Cal Solution	Value			Reading
pH	Buffer 4.00	4.00 pH			4.00 pH
	Buffer 7.00	7.00 pH			7.00 pH
Redox	Standard ORP	234.5	mV @	20 °C	234.5 mV
O ₂	Zero Dissolved Oxygen	0.0 %			0.0 %
	Air	100.0 %			100.0 %
Conductivity	Standard Conductivity	2.76 mS/cm			2.76 mS/cm

Calibration Successful: YES

Calibrated By: Phuong Tran

Test Date: 2/02/2026



Equipment Calibration Form

GA5000



Enqip #: 26387
Company: Terralis
Consultant: Natalie Dredge
PO #: TBC
Certificate #: 38812

INSTRUMENT IDENTIFICATION

Model Number: GA5KA0F-100
Serial Number: K-234888
Instrument Type: GTI - GA5000

INSPECTION RECORD

Date & Time: PASS
Flow Rate: 913 mL/min

CALIBRATION DETAILS

Sensor	Standard	Reading	Traceability Lot #
CH ₄	N ₂ UHP	0 %	11589-16
	2.5 %	2.5 %	11452-5
	60 %	60.0 %	10963-3
CO ₂	5 %	5.0 %	11028-4
	40 %	40.0 %	10963-3
O ₂	N ₂ UHP	0 %	11589-16
	18.0 %	18.0 %	11452-5
	20.9 %	20.9 %	N/A
CO	N ₂ UHP	0 ppm	11589-16
	100 ppm	100 ppm	11452-5
H ₂ S	N ₂ UHP	0 ppm	11589-16
	25 ppm	25 ppm	11878-1

Calibration Successful: YES

Calibrated By: Phuong Tran

Test Date: 2/02/2026



116 Thistlethwaite St, South Melbourne 3205

P 1300 218 987

E bookings@enqip.com.au | W www.enqip.com.au

Equipment Calibration Check
Inspectra Laser



Enqip #: 26387
Company: Terralis
Consultant: Natalie Dredge
PO #: TBC
Certificate #: 38810

UNIT IDENTIFICATION

Model Number: Inspectra Laser
Serial Number: CH46031014
Unit Type: Methane Analyser

INSPECTION RECORD/CONDITION REPORT

Flow Rate: PASS
Alarms: PASS

CALIBRATION DETAILS

Gas	Reading	Traceability Lot #
Nitrogen UHP	0.0 ppm	11589-16
Methane 100 ppm	94.7 ppm	11453-4
Methane 2.5 %	2.5 %	11024-11

Calibration Successful: YES

Calibrated By: Phuong Tran

Test Date: 2/02/2026

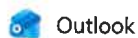


Appendix E

Laboratory Certificates

Chain of Custody Documentation																					
LAB: Eurofins						SAMPLER: Natalie Dredge															
LAB ADDRESS : 6 Monterey Rd, Dandenong South VIC 3175						MOBILE: 0409135737															
PROJECT MANAGER (PM): Mick Condon						PHONE: 0425 741 022															
PROJECT ID: TER447-CR						EMAIL REPORT TO: info@terralis.com.au, natalie@terralis.com.au															
SITE: Creswick						Primary Lab Quote: # 251014TERV						EMAIL INVOICE TO: info@terralis.com.au									
RESULTS REQUIRED (Date): 13/2/26						Secondary Lab Quote:						ANALYSIS REQUIRED Including SUITES									
FOR LABORATORY USE ONLY COOLER SEAL (circle appropriate) Intact: Yes No N/A SAMPLE TEMPERATURE CHILLED: Yes No			COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: 			Primary (filtered metals) Primary (total metals) Blanks (total metals) Trip blank Notes: Standard TAT															
SAMPLE INFORMATION (note: S = Soil, W=Water)			CONTAINER INFORMATION																		
LAB ID	SAMPLE ID	MATRIX	DATE	Time	Bottles	Type/Code															
	BH1	W	3/02/2026		5	3 plastic, 2 glass	X														
	BH3	W	3/02/2026		5	3 plastic, 2 glass	X														
	BH6	W	4/02/2026		5	3 plastic, 2 glass	X														
	BH7	W	3/02/2026		5	3 plastic, 2 glass	X														
	BH8	W	3/02/2026		5	3 plastic, 2 glass	X														
	BH10	W	3/02/2026		5	3 plastic, 2 glass	X														
	BH14	W	4/02/2026		5	3 plastic, 2 glass	X														
	Downstream Creek	W	4/02/2026		5	3 plastic, 2 glass		X													
	At Site Creek	W	4/02/2026		5	3 plastic, 2 glass		X													
	Upstream Creek	W	4/02/2026		5	3 plastic, 2 glass		X													
	Dredge Hole	W	4/02/2026		5	3 plastic, 2 glass		X													
	Leachate Dam	L	3/02/2026		5	3 plastic, 2 glass		X													
	LB1	L	3/02/2026		5	3 plastic, 2 glass		X													
	QC1	W	4/02/2026		5	3 plastic, 2 glass	X														
	QC1A	W	4/02/2026		5	3 plastic, 2 glass				Please forward to ALS for analysis						Please forward to ALS for analysis					
	QC2	W	3/02/2026		5	3 plastic, 2 glass			X												
	QC3	W	4/02/2026		5	3 plastic, 2 glass			X												
	QC4	W	4/02/2026		5	3 plastic, 2 glass			X												
	QC5	W	4/02/2026		1	1 vial				X											
	Total:						8	6	3	1											
RELINQUISHED BY:						RECEIVED BY						METHOD OF SHIPMENT									
Name: Natalie Dredge			Date: 5/2/2025			Name:			Date:			Con' Note No:									
Of: Terralis			Time: 8:00am			Of:			Time:			Transport Co:									
Name:			Date:			Name:			Date:												
Of:			Time:			Of:			Time:												

#1322198
Horn C.
11/02.



Outlook

RE: TER447 - COCs for analysis

From Savini Suduweli Kondage <Savini.SuduweliKondage@eurofinsanz.com>

Date Wed 11/02/26 10:50 AM

To Natalie Dredge <natalie@terralis.com.au>; SH_AU_CAU001_EnviroSampleVic <EnviroSampleVic@eurofinsanz.com>

Cc Mick Condon <mick@terralis.com.au>; Scott Bradshaw <scott@terralis.com.au>

4 attachments (562 KB)

TER447-Clunes - COC.xlsx; TER447-Creswick - COC.xlsx; TER447-Daylesford - COC.xlsx; 251014TERV.pdf;

Verified Sender: This email is from an internal and/or verified domain which passed security verifications. Remember to still be cautious with personal data and follow company policies.

Hi Natalie,

Thanks for sending that through, we will action as per the attached and below.

[@SH_AU_CAU001_EnviroSampleVic](#) – Please see attached for analysis on samples already with us.

Kind Regards,

Savini Suduweli

Phone : +61 3 8564 5051

Mobile : +61 447 222 760

Email : Savini.Suduwelikondage@eurofinsanz.com

From: Natalie Dredge <natalie@terralis.com.au>

Sent: Wednesday, 11 February 2026 9:50 AM

To: Savini Suduweli Kondage <Savini.SuduweliKondage@eurofinsanz.com>

Cc: Mick Condon <mick@terralis.com.au>; Scott Bradshaw <scott@terralis.com.au>

Subject: TER447 - COCs for analysis

Unverified Sender: The sender of this email has not been verified. Review the content of the message carefully and verify the identity of the sender before acting on this email: replying, opening attachments or clicking links.

Hi Savini,

Please see attached COC for analysis for TER447 water samples from last week. Please use quote 251014TEV.

Could you also please add to the analysis: Fluoride (F), Iron (Fe) and Manganese (Mn) as I don't think these were included in the quote.

Just to confirm the analysis is as follows:

Sodium (Na), Potassium (K), Calcium (Ca), Magnesium (Mg),
Chloride (Cl),
Sulfate (SO₄ as SO₄),
Alkalinity (CO₃, HCO₃, OH⁻, Total as CaCO₃),
Fluoride (F),
Volatile Fatty Acids (VFA),
Total Dissolved Solids (TDS),
Chemical Oxygen Demand (COD),
pH,
Total Organic Carbon (TOC),
Nitrate (NO₃ as N),
Organic Nitrogen Set: Total Kjeldahl Nitrogen (TKN), Ammonia (NH₃),
Organic Nitrogen (Org-N),
Iron (Fe),
Manganese (Mn),
Zinc (Zn)

Thanks!

Kind regards,

Natalie Dredge

Senior Environmental Scientist



A: Wadawurrung Country, RS&S Mills, 17 Rutland St, Newtown VIC 3220

M: +61-409 135 737 **E:** natalie@terralis.com.au **W:** www.terralis.com.au





Outlook

Re: TER447 - COCs for analysis

From Natalie Dredge <natalie@terralis.com.au>
Date Wed 11/02/26 11:28 AM
To SH_AU_CAU001_EnviroSampleVic <EnviroSampleVic@eurofinsanz.com>; Savini Suduweli Kondage <Savini.SuduweliKondage@eurofinsanz.com>
Cc Mick Condon <mick@terralis.com.au>; Scott Bradshaw <scott@terralis.com.au>

Unverified Sender: The sender of this email has not been verified. Review the content of the message carefully and verify the identity of the sender before acting on this email: replying, opening attachments or clicking links.

Hi Savini,

Apologies the COCs are from last week, please analyse on standard TAT please!

Thanks,

Natalie Dredge

Senior Environmental Scientist



A: Wadawurrung Country, RS&S Mills, 17 Rutland St, Newtown VIC 3220

M: +61-409 135 737 **E:** natalie@terralis.com.au **W:** www.terralis.com.au



From: SH_AU_CAU001_EnviroSampleVic <EnviroSampleVic@eurofinsanz.com>
Sent: 11 February 2026 11:26
To: Savini Suduweli Kondage <Savini.SuduweliKondage@eurofinsanz.com>; Natalie Dredge <natalie@terralis.com.au>
Cc: Mick Condon <mick@terralis.com.au>; Scott Bradshaw <scott@terralis.com.au>
Subject: Re: TER447 - COCs for analysis

Hi Natalie,

The COC's specify results by 13/02/26 (Friday), but also say Standard TAT. Which should we log it in for?

Thank you!

Kind Regards,

Sam Ralph

Please see COC emailed from Terralid.

DATE: 5/2	JA
TIME: 12:35	
COURIER: ☒	
TEMPERATURE: 4.7	
ATTEMPT TO CHILL: ☒ YES ☐ NO	

6 eskys

Samples:

Daylesford:	Clunes	Cheswick
BH0	BH 1	BH 1
BH 2	BH 2	LB1
BH 3	QC 1	QC 1
BH 4	QC 1A - please forward to ALS	QC 1A - please forward to ALS
Leachate Pond	QC 2	QC 2
QC 1	QC 3	QC 3
QC 2 - forward to ALS	QC 4	QC 4
QC 3		QC 5
QC 4		
QC 5		
Total: 9	Total: 6	Total: 18
		DS creek
		AS Creek
		US creek
		Dredge Hole
		Leachate Dam

Eurofins Environment Testing Australia Pty Ltd

ABN: 50 005 085 521

Eurofins ARL Pty Ltd

ABN: 91 05 0159 898

Melbourne 6 Monterey Road Dandenong South VIC 3175 +61 3 8564 5000 NATA# 1261 Site# 1254	Geelong 19/8 Lewalan Street Grovedale VIC 3216 +61 3 8564 5000 NATA# 1261 Site# 25403	Sydney 179 Magowar Road Girraween NSW 2145 +61 2 9900 8400 NATA# 1261 Site# 18217	Newcastle 1/2 Frost Drive Mayfield West NSW 2304 +61 2 4968 8448 NATA# 1261 Site# 25079	Canberra Unit 1,2 Dacre Street Mitchell ACT 2911 +61 2 6113 8091 NATA# 1261 Site# 25466	Brisbane 1/21 Smallwood Place Murarrie QLD 4172 +61 7 3902 4600 NATA# 1261 Site# 20794 & 2780	Hobart 282A Argyle Street North Hobart TAS 7000 +61 3 8564 5000 NATA# 1261 Site# 1254	Perth 46-48 Banksia Road Welshpool WA 6106 +61 8 6253 4444 NATA# 2377 Site# 2370 & 2554
---	--	--	--	--	--	--	--

Sample Receipt Advice

Company name:	Terralis Pty Ltd
Contact name:	Natalie Dredge
Project name:	Creswick
Project ID:	TER447-CR
Turnaround time:	5 Day
Date/Time received	Feb 11, 2026 10:50 AM
Eurofins reference	1322198

Sample Information

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

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Savini Suduweli on phone : +61 3 8564 5051 or by email: Savini.Suduwelikondage@eurofinsanz.com

Results will be delivered electronically via email to Natalie Dredge - natalie@terralis.com.au.



web: www.eurofins.com.au
email: EnviroSales@eurofinsanz.com

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
+61 3 8564 5000
NATA# 1261
Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
+61 3 8564 5000
NATA# 1261
Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
+61 2 9900 8400
NATA# 1261
Site# 18217

Newcastle
1/2 Frost Drive
Mayfield West
NSW 2304
+61 2 4968 8448
NATA# 1261
Site# 25079

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
+61 2 6113 8091
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Site# 25466

Brisbane
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Murarrie
QLD 4172
+61 7 3902 4600
NATA# 1261
Site# 20794 & 2780

Hobart
282A Argyle Street
North Hobart
TAS 7000
+61 3 8564 5000
NATA# 1261
Site# 1254

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

Company Name: Terralis Pty Ltd
Address: PO Box 7031
Highton
VIC 3216

Project Name: Creswick
Project ID: TER447-CR

Order No.:
Report #: 1322198
Phone: 0425 741 022
Fax:

Received: Feb 11, 2026 10:50 AM
Due: Feb 18, 2026
Priority: 5 Day
Contact Name: Natalie Dredge

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Chemical Oxygen Demand (COD)	Fluoride	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Split - External Lab*	Total Organic Carbon	Alkalinity (speciated)	Metals M8	Metals M8 filtered	Organic Nitrogen Set (as N)	Eurofins Suite B11B	BTEXN and Volatile TRH	Total Dissolved Solids Dried at 180 °C ± 2 °C	Volatile Fatty Acids (VFA) by GC-MS
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X
External Laboratory													X									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	QC1A	Feb 04, 2026		Water	M26-Fe0031485								X									
2	BH1	Feb 03, 2026		Water	M26-Fe0031486	X	X		X		X	X		X	X		X	X	X		X	X
3	BH3	Feb 03, 2026		Water	M26-Fe0031487	X	X		X		X	X		X	X		X	X	X		X	X
4	BH6	Feb 04, 2026		Water	M26-Fe0031488	X	X		X		X	X		X	X		X	X	X		X	X
5	BH7	Feb 03, 2026		Water	M26-Fe0031489	X	X		X		X	X		X	X		X	X	X		X	X
6	BH8	Feb 03, 2026		Water	M26-Fe0031490	X	X		X		X	X		X	X		X	X	X		X	X
7	BH10	Feb 03, 2026		Water	M26-Fe0031491	X	X		X		X	X		X	X		X	X	X		X	X
8	BH14	Feb 04, 2026		Water	M26-Fe0031492	X	X		X		X	X		X	X		X	X	X		X	X
9	Downstream Creek	Feb 04, 2026		Water	M26-Fe0031493	X	X	X		X		X		X	X	X		X	X		X	X
10	At Site Creek	Feb 04, 2026		Water	M26-Fe0031494	X	X	X		X		X		X	X	X		X	X		X	X
11	Upstream Creek	Feb 04, 2026		Water	M26-Fe0031495	X	X	X		X		X		X	X	X		X	X		X	X
12	Dredge Hole	Feb 04, 2026		Water	M26-Fe0031496	X	X	X		X		X		X	X	X		X	X		X	X
13	Leachate Dam	Feb 03, 2026		Water	M26-Fe0031497	X	X	X		X		X		X	X	X		X	X		X	X



web: www.eurofins.com.au

email: EnviroSales@eurofinsanz.com

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6 Monterey Road
Dandenong South
VIC 3175
+61 3 8564 5000
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Geelong
19/8 Lewalan Street
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VIC 3216
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NATA# 1261
Site# 1254

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Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

Company Name: Terralis Pty Ltd
Address: PO Box 7031
Highton
VIC 3216

Project Name: Creswick
Project ID: TER447-CR

Order No.:
Report #: 1322198
Phone: 0425 741 022
Fax:

Received: Feb 11, 2026 10:50 AM
Due: Feb 18, 2026
Priority: 5 Day
Contact Name: Natalie Dredge

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Chemical Oxygen Demand (COD)	Fluoride	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Split - External Lab*	Total Organic Carbon	Alkalinity (speciated)	Metals M8	Metals M8 filtered	Organic Nitrogen Set (as N)	Eurofins Suite B11B	BTEXN and Volatile TRH	Total Dissolved Solids Dried at 180 °C ± 2 °C	Volatile Fatty Acids (VFA) by GC-MS
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X
14	LB1	Feb 03, 2026		Water	M26-Fe0031498	X	X	X		X		X		X	X	X		X	X		X	X
15	QC1	Feb 04, 2026		Water	M26-Fe0031499	X	X		X		X	X		X	X		X	X	X		X	X
16	QC2	Feb 03, 2026		Water	M26-Fe0031500	X	X	X		X		X		X	X	X		X	X		X	X
17	QC3	Feb 04, 2026		Water	M26-Fe0031501	X	X	X		X		X		X	X	X		X	X		X	X
18	QC4	Feb 04, 2026		Water	M26-Fe0031502	X	X	X		X		X		X	X	X		X	X		X	X
19	QC5	Feb 04, 2026		Trip Blank (liquid)	M26-Fe0031503															X		
Test Counts						17	17	9	8	9	8	17	1	17	17	9	8	17	17	1	17	17

Terralis Pty Ltd
PO Box 7031
Highton
VIC 3216



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: **Natalie Dredge**

Report **1322198-W**
Project name **Creswick**
Project ID **TER447-CR**
Received Date **Feb 11, 2026**

Client Sample ID			BH1	BH3	BH6	BH7
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M26- Fe0031486	M26- Fe0031487	M26- Fe0031488	M26- Fe0031489
Date Sampled			Feb 03, 2026	Feb 03, 2026	Feb 04, 2026	Feb 03, 2026
Test/Reference	LOR	Unit				
Volatile Fatty Acids (VFA) by GC-MS						
Acetic Acid	5	mg/L	< 5	< 5	< 5	< 5
Propionic acid	5	mg/L	< 5	< 5	< 5	< 5
Isobutyric acid	5	mg/L	< 5	< 5	< 5	< 5
Butyric acid	5	mg/L	< 5	< 5	< 5	< 5
Isovaleric acid	5	mg/L	< 5	< 5	< 5	< 5
Valeric acid	5	mg/L	< 5	< 5	< 5	< 5
4-Methylvaleric acid	5	mg/L	< 5	< 5	< 5	< 5
Hexanoic acid	5	mg/L	< 5	< 5	< 5	< 5
Heptanoic acid	5	mg/L	< 5	< 5	< 5	< 5
Total VFA as Acetic Acid Equivalents	5	mg/L	< 5	< 5	< 5	< 5
Ammonia (as N)	0.01	mg/L	0.85	0.20	0.02	0.90
Chemical Oxygen Demand (COD)	25	mg/L	28	66	< 25	37
Chloride	1	mg/L	49	700	160	250
Conductivity (at 25 °C)	10	uS/cm	440	2600	610	1100
Fluoride	0.5	mg/L	< 0.5	< 0.5	< 0.5	< 0.5
Nitrate (as N)	0.02	mg/L	10	< 0.2	1.2	< 0.2
Organic Nitrogen (as N)*	0.2	mg/L	2.65	1.2	1.08	0.6
pH (at 25 °C)	0.1	pH Units	6.4	6.6	5.7	6.6
Sulphate (as SO4)	5	mg/L	27	47	13	23
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	2100	1400	300	420
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	3.5	1.4	1.1	1.5
Total Organic Carbon	5	mg/L	22	67	18	46
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	63	170	< 20	130
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	63	170	< 20	130
Alkali Metals						
Calcium	0.5	mg/L	3.4	42	4.0	18
Magnesium	0.5	mg/L	13	72	16	27
Potassium	0.5	mg/L	5.4	20	1.1	9.5
Sodium	0.5	mg/L	67	350	81	140

Client Sample ID			BH1	BH3	BH6	BH7
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M26-Fe0031486	M26-Fe0031487	M26-Fe0031488	M26-Fe0031489
Date Sampled			Feb 03, 2026	Feb 03, 2026	Feb 04, 2026	Feb 03, 2026
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	< 0.001	0.005	< 0.001	0.002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	0.004	< 0.001	0.002	< 0.001
Iron (filtered)	0.05	mg/L	0.07	56	< 0.05	50
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Manganese (filtered)	0.005	mg/L	3.6	3.6	0.62	2.0
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.015	0.006	0.013	0.004
Zinc (filtered)	0.005	mg/L	0.046	0.009	0.034	0.015

Client Sample ID			BH8	BH10	BH14	Downstream Creek
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M26-Fe0031490	M26-Fe0031491	M26-Fe0031492	M26-Fe0031493
Date Sampled			Feb 03, 2026	Feb 03, 2026	Feb 04, 2026	Feb 04, 2026
Test/Reference	LOR	Unit				
Volatile Fatty Acids (VFA) by GC-MS						
Acetic Acid	5	mg/L	< 5	< 5	< 5	< 5
Propionic acid	5	mg/L	< 5	< 5	< 5	< 5
Isobutyric acid	5	mg/L	< 5	< 5	< 5	< 5
Butyric acid	5	mg/L	< 5	< 5	< 5	< 5
Isovaleric acid	5	mg/L	< 5	< 5	< 5	< 5
Valeric acid	5	mg/L	< 5	< 5	< 5	< 5
4-Methylvaleric acid	5	mg/L	< 5	< 5	< 5	< 5
Hexanoic acid	5	mg/L	< 5	< 5	< 5	< 5
Heptanoic acid	5	mg/L	< 5	< 5	< 5	< 5
Total VFA as Acetic Acid Equivalents	5	mg/L	< 5	< 5	< 5	< 5
Ammonia (as N)	0.01	mg/L	8.7	1.3	0.37	0.19
Chemical Oxygen Demand (COD)	25	mg/L	120	28	37	28
Chloride	1	mg/L	81	170	140	100
Conductivity (at 25 °C)	10	uS/cm	950	710	770	510
Fluoride	0.5	mg/L	< 0.5	< 0.5	< 0.5	< 0.5
Nitrate (as N)	0.02	mg/L	< 0.2	< 0.2	< 0.2	< 0.2
Organic Nitrogen (as N)*	0.2	mg/L	7.3	2.1	1.03	0.71
pH (at 25 °C)	0.1	pH Units	7.3	6.2	6.8	6.9
Sulphate (as SO4)	5	mg/L	9.8	15	8.7	< 5
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	560	540	340	220
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	16	3.4	1.4	0.9
Total Organic Carbon	5	mg/L	120	34	38	16
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	400	63	190	100
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	400	63	190	100

Client Sample ID			BH8	BH10	BH14	Downstream Creek
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M26-Fe0031490	M26-Fe0031491	M26-Fe0031492	M26-Fe0031493
Date Sampled			Feb 03, 2026	Feb 03, 2026	Feb 04, 2026	Feb 04, 2026
Test/Reference	LOR	Unit				
Alkali Metals						
Calcium	0.5	mg/L	22	10	15	14
Magnesium	0.5	mg/L	28	43	24	19
Potassium	0.5	mg/L	9.4	5.2	2.9	2.4
Sodium	0.5	mg/L	97	110	110	58
Heavy Metals						
Arsenic	0.001	mg/L	-	-	-	0.003
Arsenic (filtered)	0.001	mg/L	0.018	0.002	0.009	-
Cadmium	0.0002	mg/L	-	-	-	< 0.0002
Cadmium (filtered)	0.0002	mg/L	< 0.0002	0.0008	< 0.0002	-
Chromium	0.001	mg/L	-	-	-	< 0.001
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Copper	0.001	mg/L	-	-	-	< 0.001
Copper (filtered)	0.001	mg/L	0.002	0.002	< 0.001	-
Iron	0.05	mg/L	-	-	-	12
Iron (filtered)	0.05	mg/L	26	8.3	18	-
Lead	0.001	mg/L	-	-	-	< 0.001
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Manganese	0.005	mg/L	-	-	-	0.52
Manganese (filtered)	0.005	mg/L	3.1	4.8	1.1	-
Mercury	0.0001	mg/L	-	-	-	< 0.0001
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	-	-	-	0.002
Nickel (filtered)	0.001	mg/L	0.010	0.090	0.009	-
Zinc	0.005	mg/L	-	-	-	0.005
Zinc (filtered)	0.005	mg/L	0.029	0.42	0.026	-

Client Sample ID			At Site Creek	Upstream Creek	Dredge Hole	Leachate Dam
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M26-Fe0031494	M26-Fe0031495	M26-Fe0031496	M26-Fe0031497
Date Sampled			Feb 04, 2026	Feb 04, 2026	Feb 04, 2026	Feb 03, 2026
Test/Reference	LOR	Unit				
Volatile Fatty Acids (VFA) by GC-MS						
Acetic Acid	5	mg/L	< 5	< 5	< 5	< 5
Propionic acid	5	mg/L	< 5	< 5	< 5	< 5
Isobutyric acid	5	mg/L	< 5	< 5	< 5	< 5
Butyric acid	5	mg/L	< 5	< 5	< 5	< 5
Isovaleric acid	5	mg/L	< 5	< 5	< 5	< 5
Valeric acid	5	mg/L	< 5	< 5	< 5	< 5
4-Methylvaleric acid	5	mg/L	< 5	< 5	< 5	< 5
Hexanoic acid	5	mg/L	< 5	< 5	< 5	< 5
Heptanoic acid	5	mg/L	< 5	< 5	< 5	< 5
Total VFA as Acetic Acid Equivalents	5	mg/L	< 5	< 5	< 5	< 5

Client Sample ID			At Site Creek	Upstream Creek	Dredge Hole	Leachate Dam
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M26-Fe0031494	M26-Fe0031495	M26-Fe0031496	M26-Fe0031497
Date Sampled			Feb 04, 2026	Feb 04, 2026	Feb 04, 2026	Feb 03, 2026
Test/Reference	LOR	Unit				
Ammonia (as N)	0.01	mg/L	0.39	0.11	< 0.01	0.67
Chemical Oxygen Demand (COD)	25	mg/L	40	< 25	< 25	49
Chloride	1	mg/L	210	120	190	220
Conductivity (at 25 °C)	10	uS/cm	840	560	710	1100
Fluoride	0.5	mg/L	< 0.5	< 0.5	< 0.5	< 0.5
Nitrate (as N)	0.02	mg/L	< 0.2	< 0.02	< 0.02	< 0.02
Organic Nitrogen (as N)*	0.2	mg/L	2.41	0.39	0.8	2.83
pH (at 25 °C)	0.1	pH Units	6.7	7.1	6.8	7.7
Sulphate (as SO4)	5	mg/L	11	5.2	9.7	< 5
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	350	1800	420	930
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	2.8	0.5	0.8	3.5
Total Organic Carbon	5	mg/L	25	15	9.0	32
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	110	98	43	210
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	110	98	43	210
Alkali Metals						
Calcium	0.5	mg/L	20	13	6.2	30
Magnesium	0.5	mg/L	28	19	17	23
Potassium	0.5	mg/L	2.7	1.1	1.6	19
Sodium	0.5	mg/L	91	72	100	110
Heavy Metals						
Arsenic	0.001	mg/L	0.028	0.002	< 0.001	0.002
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.004	< 0.001	< 0.001	< 0.001
Copper	0.001	mg/L	0.003	< 0.001	< 0.001	< 0.001
Iron	0.05	mg/L	93	7.0	1.4	24
Lead	0.001	mg/L	0.002	< 0.001	< 0.001	< 0.001
Manganese	0.005	mg/L	0.84	0.76	1.1	0.92
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	0.005	0.001	0.003	0.003
Zinc	0.005	mg/L	0.038	0.008	0.011	0.042

Client Sample ID			LB1	QC1	QC2	QC3
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			M26-Fe0031498	M26-Fe0031499	M26-Fe0031500	M26-Fe0031501
Date Sampled			Feb 03, 2026	Feb 04, 2026	Feb 03, 2026	Feb 04, 2026
Test/Reference	LOR	Unit				
Volatile Fatty Acids (VFA) by GC-MS						
Acetic Acid	5	mg/L	< 5	< 5	< 5	< 5
Propionic acid	5	mg/L	< 5	< 5	< 5	< 5
Isobutyric acid	5	mg/L	< 5	< 5	< 5	< 5
Butyric acid	5	mg/L	< 5	< 5	< 5	< 5
Isovaleric acid	5	mg/L	< 5	< 5	< 5	< 5
Valeric acid	5	mg/L	< 5	< 5	< 5	< 5

Client Sample ID Sample Matrix Eurofins Sample No. Date Sampled Test/Reference	LOR	Unit	LB1 Water M26- Fe0031498 Feb 03, 2026	QC1 Water M26- Fe0031499 Feb 04, 2026	QC2 Water M26- Fe0031500 Feb 03, 2026	QC3 Water M26- Fe0031501 Feb 04, 2026
Volatile Fatty Acids (VFA) by GC-MS						
4-Methylvaleric acid	5	mg/L	< 5	< 5	< 5	< 5
Hexanoic acid	5	mg/L	< 5	< 5	< 5	< 5
Heptanoic acid	5	mg/L	< 5	< 5	< 5	< 5
Total VFA as Acetic Acid Equivalents	5	mg/L	< 5	< 5	< 5	< 5
Ammonia (as N)	0.01	mg/L	20	< 0.01	< 0.01	< 0.01
Chemical Oxygen Demand (COD)	25	mg/L	300	< 25	< 25	< 25
Chloride	1	mg/L	320	160	< 1	< 1
Conductivity (at 25 °C)	10	uS/cm	1900	610	< 10	< 10
Fluoride	0.5	mg/L	< 0.5	< 0.5	< 0.5	< 0.5
Nitrate (as N)	0.02	mg/L	< 0.2	1.3	< 0.02	< 0.02
Organic Nitrogen (as N)*	0.2	mg/L	190	0.9	< 0.2	< 0.2
pH (at 25 °C)	0.1	pH Units	7.8	5.7	4.6	5.2
Sulphate (as SO4)	5	mg/L	< 5	13	< 5	< 5
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	2600	290	< 10	< 10
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	210	0.9	< 0.2	< 0.2
Total Organic Carbon	5	mg/L	1100	< 25	< 5	< 5
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	3600	< 20	< 20	< 20
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	< 20	< 20	< 20
Total Alkalinity (as CaCO3)	20	mg/L	3600	< 20	< 20	< 20
Alkali Metals						
Calcium	0.5	mg/L	330	4.0	< 0.5	< 0.5
Magnesium	0.5	mg/L	110	17	< 0.5	< 0.5
Potassium	0.5	mg/L	46	< 1	< 0.5	< 0.5
Sodium	0.5	mg/L	170	91	< 0.5	< 0.5
Heavy Metals						
Arsenic	0.001	mg/L	0.11	-	< 0.001	< 0.001
Arsenic (filtered)	0.001	mg/L	-	< 0.001	-	-
Cadmium	0.0002	mg/L	0.0074	-	< 0.0002	< 0.0002
Cadmium (filtered)	0.0002	mg/L	-	< 0.0002	-	-
Chromium	0.001	mg/L	0.043	-	< 0.001	< 0.001
Chromium (filtered)	0.001	mg/L	-	< 0.001	-	-
Copper	0.001	mg/L	0.082	-	< 0.001	< 0.001
Copper (filtered)	0.001	mg/L	-	0.003	-	-
Iron	0.05	mg/L	99	-	< 0.05	< 0.05
Iron (filtered)	0.05	mg/L	-	< 0.05	-	-
Lead	0.001	mg/L	0.27	-	< 0.001	< 0.001
Lead (filtered)	0.001	mg/L	-	< 0.001	-	-
Manganese	0.005	mg/L	16	-	< 0.005	< 0.005
Manganese (filtered)	0.005	mg/L	-	0.62	-	-
Mercury	0.0001	mg/L	0.0008	-	< 0.0001	< 0.0001
Mercury (filtered)	0.0001	mg/L	-	< 0.0001	-	-
Nickel	0.001	mg/L	0.081	-	< 0.001	< 0.001
Nickel (filtered)	0.001	mg/L	-	0.013	-	-
Zinc	0.005	mg/L	1.7	-	< 0.005	< 0.005
Zinc (filtered)	0.005	mg/L	-	0.038	-	-

Client Sample ID			QC4	QC5
Sample Matrix			Water	Trip Blank (liquid)
Eurofins Sample No.			M26-Fe0031502	M26-Fe0031503
Date Sampled			Feb 04, 2026	Feb 04, 2026
Test/Reference	LOR	Unit		
Volatile Fatty Acids (VFA) by GC-MS				
Acetic Acid	5	mg/L	< 5	-
Propionic acid	5	mg/L	< 5	-
Isobutyric acid	5	mg/L	< 5	-
Butyric acid	5	mg/L	< 5	-
Isovaleric acid	5	mg/L	< 5	-
Valeric acid	5	mg/L	< 5	-
4-Methylvaleric acid	5	mg/L	< 5	-
Hexanoic acid	5	mg/L	< 5	-
Heptanoic acid	5	mg/L	< 5	-
Total VFA as Acetic Acid Equivalents	5	mg/L	< 5	-
Ammonia (as N)	0.01	mg/L	< 0.01	-
Chemical Oxygen Demand (COD)	25	mg/L	< 25	-
Chloride	1	mg/L	< 1	-
Conductivity (at 25 °C)	10	uS/cm	< 10	-
Fluoride	0.5	mg/L	< 0.5	-
Nitrate (as N)	0.02	mg/L	< 0.02	-
Organic Nitrogen (as N)*	0.2	mg/L	< 0.2	-
pH (at 25 °C)	0.1	pH Units	4.7	-
Sulphate (as SO4)	5	mg/L	< 5	-
Total Dissolved Solids Dried at 180 °C ± 2 °C	10	mg/L	< 10	-
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	< 0.2	-
Total Organic Carbon	5	mg/L	< 5	-
Alkalinity (speciated)				
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	< 20	-
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	-
Hydroxide Alkalinity (as CaCO3)	20	mg/L	< 20	-
Total Alkalinity (as CaCO3)	20	mg/L	< 20	-
Alkali Metals				
Calcium	0.5	mg/L	< 0.5	-
Magnesium	0.5	mg/L	< 0.5	-
Potassium	0.5	mg/L	< 0.5	-
Sodium	0.5	mg/L	< 0.5	-
Heavy Metals				
Arsenic	0.001	mg/L	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	-
Chromium	0.001	mg/L	< 0.001	-
Copper	0.001	mg/L	< 0.001	-
Iron	0.05	mg/L	< 0.05	-
Lead	0.001	mg/L	< 0.001	-
Manganese	0.005	mg/L	< 0.005	-
Mercury	0.0001	mg/L	< 0.0001	-
Nickel	0.001	mg/L	< 0.001	-
Zinc	0.005	mg/L	< 0.005	-
Total Recoverable Hydrocarbons				
TRH C6-C9	0.02	mg/L	-	< 0.02
TRH C6-C10	0.02	mg/L	-	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	-	< 0.02
Naphthalene ^{N02}	0.01	mg/L	-	< 0.01

Client Sample ID			QC4	QC5
Sample Matrix			Water	Trip Blank (liquid)
Eurofins Sample No.			M26-Fe0031502	M26-Fe0031503
Date Sampled			Feb 04, 2026	Feb 04, 2026
Test/Reference	LOR	Unit		
BTEX				
Benzene	0.001	mg/L	-	< 0.001
Toluene	0.001	mg/L	-	< 0.001
Ethylbenzene	0.001	mg/L	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	< 0.002
o-Xylene	0.001	mg/L	-	< 0.001
Xylenes - Total*	0.003	mg/L	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	56

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
Volatile Fatty Acids (VFA) by GC-MS - Method: LTM-ORG-2360 Determination of Volatile Fatty Acids in Water by GC-MS	Melbourne	Feb 11, 2026	28 Day
Chemical Oxygen Demand (COD) - Method: LTM-INO-4220 Determination of COD in Water	Melbourne	Feb 11, 2026	28 Days
Fluoride - Method: LTM-INO-4270 Anions by Ion Chromatography	Melbourne	Feb 11, 2026	28 Days
pH (at 25 °C) - Method: LTM-GEN-7090 pH in water by ISE	Melbourne	Feb 11, 2026	6 Hours
Total Organic Carbon - Method: LTM-INO-4060 Total Organic Carbon in water and soil	Melbourne	Feb 11, 2026	28 Days
Alkalinity (speciated) - Method: LTM-INO-4250 Alkalinity by Electrometric Titration	Melbourne	Feb 11, 2026	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Feb 11, 2026	28 Days
Metals M8 filtered - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Feb 11, 2026	28 Days
Heavy Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Feb 11, 2026	28 Days
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Feb 11, 2026	180 Days
Eurofins Suite B11B			
Ammonia (as N) - Method: LTM-INO-4450 Determination of Nitrogen Species by Discrete Analyser	Melbourne	Feb 11, 2026	28 Days
Chloride - Method: LTM-INO-4090 Chloride by Discrete Analyser	Melbourne	Feb 11, 2026	28 Days
Conductivity (at 25 °C) - Method: LTM-INO-4030 Conductivity	Melbourne	Feb 11, 2026	28 Days
Nitrate (as N) - Method: LTM-INO-4450 Nitrogens by Discrete Analyser	Melbourne	Feb 11, 2026	28 Days
Sulphate (as SO ₄) - Method: LTM-INO-4110 Sulfate by Discrete Analyser	Melbourne	Feb 11, 2026	28 Days
Alkali Metals - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Feb 11, 2026	180 Days
Total Kjeldahl Nitrogen (as N) - Method: APHA 4500-Norg B,D Total Kjeldahl Nitrogen by FIA	Melbourne	Feb 11, 2026	28 Days
Total Dissolved Solids Dried at 180 °C ± 2 °C - Method: LTM-INO-4170 Total Dissolved Solids in Water	Melbourne	Feb 11, 2026	28 Days
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Feb 11, 2026	7 Days
Total Recoverable Hydrocarbons - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Feb 11, 2026	7 Days
BTEX - Method: LTM-ORG-2010 BTEX and Volatile TRH	Melbourne	Feb 11, 2026	14 Days

web: www.eurofins.com.au
email: EnviroSales@eurofinsanz.com

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
+61 3 8564 5000
NATA# 1261
Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
+61 3 8564 5000
NATA# 1261
Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
+61 2 9900 8400
NATA# 1261
Site# 18217

Newcastle
1/2 Frost Drive
Mayfield West
NSW 2304
+61 2 4968 8448
NATA# 1261
Site# 25079

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
+61 2 6113 8091
NATA# 1261
Site# 25466

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
+61 7 3902 4600
NATA# 1261
Site# 20794 & 2780

Hobart
282A Argyle Street
North Hobart
TAS 7000
+61 3 8564 5000
NATA# 1261
Site# 1254

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

Company Name: Terralis Pty Ltd
Address: PO Box 7031
Highton
VIC 3216

Project Name: Creswick
Project ID: TER447-CR

Order No.:
Report #: 1322198
Phone: 0425 741 022
Fax:

Received: Feb 11, 2026 10:50 AM
Due: Feb 18, 2026
Priority: 5 Day
Contact Name: Natalie Dredge

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Chemical Oxygen Demand (COD)	Fluoride	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Split - External Lab*	Total Organic Carbon	Alkalinity (speciated)	Metals M8	Metals M8 filtered	Organic Nitrogen Set (as N)	Eurofins Suite B11B	BTEXN and Volatile TRH	Total Dissolved Solids Dried at 180 °C ± 2 °C	Volatile Fatty Acids (VFA) by GC-MS
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X
External Laboratory													X									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																	
1	QC1A	Feb 04, 2026		Water	M26-Fe0031485								X									
2	BH1	Feb 03, 2026		Water	M26-Fe0031486	X	X		X		X	X		X	X		X	X	X		X	X
3	BH3	Feb 03, 2026		Water	M26-Fe0031487	X	X		X		X	X		X	X		X	X	X		X	X
4	BH6	Feb 04, 2026		Water	M26-Fe0031488	X	X		X		X	X		X	X		X	X	X		X	X
5	BH7	Feb 03, 2026		Water	M26-Fe0031489	X	X		X		X	X		X	X		X	X	X		X	X
6	BH8	Feb 03, 2026		Water	M26-Fe0031490	X	X		X		X	X		X	X		X	X	X		X	X
7	BH10	Feb 03, 2026		Water	M26-Fe0031491	X	X		X		X	X		X	X		X	X	X		X	X
8	BH14	Feb 04, 2026		Water	M26-Fe0031492	X	X		X		X	X		X	X		X	X	X		X	X
9	Downstream Creek	Feb 04, 2026		Water	M26-Fe0031493	X	X	X		X		X		X	X	X		X	X		X	X
10	At Site Creek	Feb 04, 2026		Water	M26-Fe0031494	X	X	X		X		X		X	X	X		X	X		X	X
11	Upstream Creek	Feb 04, 2026		Water	M26-Fe0031495	X	X	X		X		X		X	X	X		X	X		X	X
12	Dredge Hole	Feb 04, 2026		Water	M26-Fe0031496	X	X	X		X		X		X	X	X		X	X		X	X
13	Leachate Dam	Feb 03, 2026		Water	M26-Fe0031497	X	X	X		X		X		X	X	X		X	X		X	X

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Melbourne
6 Monterey Road
Dandenong South
VIC 3175
+61 3 8564 5000
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Geelong
19/8 Lewalan Street
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VIC 3216
+61 3 8564 5000
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Site# 25403

Sydney
179 Magowar Road
Girraween
NSW 2145
+61 2 9900 8400
NATA# 1261
Site# 18217

Newcastle
1/2 Frost Drive
Mayfield West
NSW 2304
+61 2 4968 8448
NATA# 1261
Site# 25079

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
+61 2 6113 8091
NATA# 1261
Site# 25466

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1/21 Smallwood Place
Murarrie
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+61 7 3902 4600
NATA# 1261
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Hobart
282A Argyle Street
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Order No.:
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Phone: 0425 741 022
Fax:

Received: Feb 11, 2026 10:50 AM
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Priority: 5 Day
Contact Name: Natalie Dredge

Eurofins Analytical Services Manager : Savini Suduweli

Sample Detail						Chemical Oxygen Demand (COD)	Fluoride	Iron	Iron (filtered)	Manganese	Manganese (filtered)	pH (at 25 °C)	Split - External Lab*	Total Organic Carbon	Alkalinity (speciated)	Metals M8	Metals M8 filtered	Organic Nitrogen Set (as N)	Eurofins Suite B11B	BTEXN and Volatile TRH	Total Dissolved Solids Dried at 180 °C ± 2 °C	Volatile Fatty Acids (VFA) by GC-MS
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X	X	X	X	X		X	X	X	X	X	X	X	X	X
14	LB1	Feb 03, 2026		Water	M26-Fe0031498	X	X	X		X		X		X	X	X		X	X		X	X
15	QC1	Feb 04, 2026		Water	M26-Fe0031499	X	X		X		X	X		X	X		X	X	X		X	X
16	QC2	Feb 03, 2026		Water	M26-Fe0031500	X	X	X		X		X		X	X	X		X	X		X	X
17	QC3	Feb 04, 2026		Water	M26-Fe0031501	X	X	X		X		X		X	X	X		X	X		X	X
18	QC4	Feb 04, 2026		Water	M26-Fe0031502	X	X	X		X		X		X	X	X		X	X		X	X
19	QC5	Feb 04, 2026		Trip Blank (liquid)	M26-Fe0031503															X		
Test Counts						17	17	9	8	9	8	17	1	17	17	9	8	17	17	1	17	17

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 (<i>bis</i> -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							
Volatile Fatty Acids (VFA) by GC-MS							
Acetic Acid	mg/L	< 5			5	Pass	
Propionic acid	mg/L	< 5			5	Pass	
Isobutyric acid	mg/L	< 5			5	Pass	
Butyric acid	mg/L	< 5			5	Pass	
Isovaleric acid	mg/L	< 5			5	Pass	
Valeric acid	mg/L	< 5			5	Pass	
4-Methylvaleric acid	mg/L	< 5			5	Pass	
Hexanoic acid	mg/L	< 5			5	Pass	
Heptanoic acid	mg/L	< 5			5	Pass	
Total VFA as Acetic Acid Equivalents	mg/L	< 5			5	Pass	
Method Blank							
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO ₃)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO ₃)	mg/L	< 20			20	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	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
Method Blank							
Sulphate (as SO ₄)	mg/L	< 5			5	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO ₃)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Fluoride	mg/L	< 0.5			0.5	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloride	mg/L	< 1			1	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Method Blank							
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO ₃)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO ₃)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Total Organic Carbon	mg/L	< 5			5	Pass	
Method Blank							
Chemical Oxygen Demand (COD)	mg/L	< 25			25	Pass	
Conductivity (at 25 °C)	uS/cm	< 10			10	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C	mg/L	< 10			10	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO ₃)	mg/L	< 10			10	Pass	
Hydroxide Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Total Alkalinity (as CaCO ₃)	mg/L	< 20			20	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Naphthalene	mg/L	< 0.01			0.01	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	
LCS - % Recovery							
Chloride	%	94			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic (filtered)	%	105			80-120	Pass	
Cadmium (filtered)	%	101			80-120	Pass	
Chromium (filtered)	%	109			80-120	Pass	
Copper (filtered)	%	105			80-120	Pass	
Iron (filtered)	%	113			80-120	Pass	
Lead (filtered)	%	101			80-120	Pass	
Manganese (filtered)	%	112			80-120	Pass	
Mercury (filtered)	%	100			80-120	Pass	
Nickel (filtered)	%	107			80-120	Pass	
Zinc (filtered)	%	110			80-120	Pass	
LCS - % Recovery							
Volatile Fatty Acids (VFA) by GC-MS							
Acetic Acid	%	87			70-130	Pass	
Propionic acid	%	82			70-130	Pass	
Isobutyric acid	%	86			70-130	Pass	
Butyric acid	%	96			70-130	Pass	
Isovaleric acid	%	73			70-130	Pass	
Valeric acid	%	78			70-130	Pass	
4-Methylvaleric acid	%	70			70-130	Pass	
Hexanoic acid	%	71			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptanoic acid	%	75			70-130	Pass	
Total VFA as Acetic Acid Equivalents	%	79			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	101			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	90			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO ₃)	%	127			70-130	Pass	
Total Alkalinity (as CaCO ₃)	%	129			70-130	Pass	
LCS - % Recovery							
Conductivity (at 25 °C)	%	89			70-130	Pass	
LCS - % Recovery							
Chloride	%	92			70-130	Pass	
Nitrate (as N)	%	107			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	90			70-130	Pass	
Sulphate (as SO ₄)	%	91			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	99			70-130	Pass	
Fluoride	%	94			70-130	Pass	
LCS - % Recovery							
Chloride	%	102			70-130	Pass	
Nitrate (as N)	%	83			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	98			80-120	Pass	
Magnesium	%	99			80-120	Pass	
Potassium	%	114			80-120	Pass	
Sodium	%	100			80-120	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	117			80-120	Pass	
Cadmium	%	109			80-120	Pass	
Chromium	%	110			80-120	Pass	
Copper	%	114			80-120	Pass	
Iron	%	111			80-120	Pass	
Lead	%	104			80-120	Pass	
Manganese	%	111			80-120	Pass	
Mercury	%	104			80-120	Pass	
Nickel	%	116			80-120	Pass	
Zinc	%	120			80-120	Pass	
LCS - % Recovery							
Conductivity (at 25 °C)	%	85			70-130	Pass	
LCS - % Recovery							
Conductivity (at 25 °C)	%	95			70-130	Pass	
Sulphate (as SO ₄)	%	90			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	96			80-120	Pass	
Magnesium	%	98			80-120	Pass	
Potassium	%	115			80-120	Pass	
Sodium	%	99			80-120	Pass	
LCS - % Recovery							

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Sulphate (as SO4)			%	82			70-130	Pass	
Total Organic Carbon			%	122			70-130	Pass	
LCS - % Recovery									
Chemical Oxygen Demand (COD)			%	110			70-130	Pass	
Chloride			%	93			70-130	Pass	
Nitrate (as N)			%	104			70-130	Pass	
Total Dissolved Solids Dried at 180 °C ± 2 °C			%	99			70-130	Pass	
LCS - % Recovery									
Total Kjeldahl Nitrogen (as N)			%	95			70-130	Pass	
LCS - % Recovery									
Total Recoverable Hydrocarbons									
TRH C6-C9		%	107				70-130	Pass	
TRH C6-C10		%	109				70-130	Pass	
Naphthalene		%	75				70-130	Pass	
LCS - % Recovery									
BTEX									
Benzene		%	103				70-130	Pass	
Toluene		%	105				70-130	Pass	
Ethylbenzene		%	108				70-130	Pass	
m&p-Xylenes		%	105				70-130	Pass	
Xylenes - Total*		%	110				70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Iron (filtered)	M26-Fe0030396	NCP	%	102			75-125	Pass	
Manganese (filtered)	M26-Fe0030396	NCP	%	108			75-125	Pass	
Spike - % Recovery									
				Result 1					
Chloride	M26-Fe0031487	CP	%	90			70-130	Pass	
Sulphate (as SO4)	M26-Fe0031487	CP	%	94			70-130	Pass	
Spike - % Recovery									
				Result 1					
Total Kjeldahl Nitrogen (as N)	M26-Fe0031488	CP	%	92			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	M26-Fe0031492	CP	%	105			75-125	Pass	
Cadmium (filtered)	M26-Fe0031492	CP	%	98			75-125	Pass	
Chromium (filtered)	M26-Fe0031492	CP	%	107			75-125	Pass	
Copper (filtered)	M26-Fe0031492	CP	%	100			75-125	Pass	
Lead (filtered)	M26-Fe0031492	CP	%	92			75-125	Pass	
Mercury (filtered)	M26-Fe0031492	CP	%	89			75-125	Pass	
Nickel (filtered)	M26-Fe0031492	CP	%	101			75-125	Pass	
Zinc (filtered)	M26-Fe0031492	CP	%	100			75-125	Pass	
Spike - % Recovery									
				Result 1					
Chemical Oxygen Demand (COD)	M26-Fe0031493	CP	%	102			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	M26-Fe0031494	CP	%	94			75-125	Pass	
Magnesium	M26-Fe0031494	CP	%	96			75-125	Pass	
Potassium	M26-Fe0031494	CP	%	96			75-125	Pass	
Sodium	M26-Fe0031494	CP	%	93			75-125	Pass	
Spike - % Recovery									
Volatile Fatty Acids (VFA) by GC-MS				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Isobutyric acid	M26-Fe0031437	NCP	%	79			70-130	Pass	
Isovaleric acid	M26-Fe0031437	NCP	%	80			70-130	Pass	
Valeric acid	M26-Fe0031437	NCP	%	82			70-130	Pass	
4-Methylvaleric acid	M26-Fe0031437	NCP	%	88			70-130	Pass	
Hexanoic acid	M26-Fe0031437	NCP	%	91			70-130	Pass	
Heptanoic acid	M26-Fe0031437	NCP	%	81			70-130	Pass	
Total VFA as Acetic Acid Equivalents	M26-Fe0031437	NCP	%	79			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M26-Fe0031432	NCP	%	92			70-130	Pass	
Nitrate (as N)	M26-Fe0031432	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Manganese	M26-Fe0031941	NCP	%	113			75-125	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	M26-Fe0031496	CP	%	91			75-125	Pass	
Magnesium	M26-Fe0031496	CP	%	93			75-125	Pass	
Potassium	M26-Fe0031496	CP	%	109			75-125	Pass	
Sodium	M26-Fe0031496	CP	%	90			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M26-Fe0031496	CP	%	107			75-125	Pass	
Cadmium	M26-Fe0031496	CP	%	100			75-125	Pass	
Chromium	M26-Fe0031496	CP	%	110			75-125	Pass	
Copper	M26-Fe0031496	CP	%	103			75-125	Pass	
Iron	M26-Fe0031496	CP	%	95			75-125	Pass	
Lead	M26-Fe0031496	CP	%	92			75-125	Pass	
Mercury	M26-Fe0031496	CP	%	98			75-125	Pass	
Nickel	M26-Fe0031496	CP	%	105			75-125	Pass	
Zinc	M26-Fe0031496	CP	%	110			75-125	Pass	
Spike - % Recovery									
				Result 1					
Chloride	M26-Fe0031497	CP	%	76			70-130	Pass	
Sulphate (as SO ₄)	M26-Fe0031497	CP	%	77			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	M26-Fe0031498	CP	%	82			70-130	Pass	
Sulphate (as SO ₄)	M26-Fe0031498	CP	%	86			70-130	Pass	
Spike - % Recovery									
				Result 1					
Fluoride	M26-Fe0031499	CP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M26-Fe0034875	NCP	%	117			70-130	Pass	
TRH C6-C10	M26-Fe0034875	NCP	%	115			70-130	Pass	
Naphthalene	M26-Fe0030744	NCP	%	113			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M26-Fe0034875	NCP	%	93			70-130	Pass	
Toluene	M26-Fe0034875	NCP	%	81			70-130	Pass	
Ethylbenzene	M26-Fe0034875	NCP	%	121			70-130	Pass	
m&p-Xylenes	M26-Fe0034875	NCP	%	103			70-130	Pass	
o-Xylene	M26-Fe0034875	NCP	%	117			70-130	Pass	
Xylenes - Total*	M26-Fe0034875	NCP	%	108			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Total Dissolved Solids Dried at 180 °C ± 2 °C	M26-Fe0030530	NCP	mg/L	4300	3400	23	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Kjeldahl Nitrogen (as N)	M26-Fe0031487	CP	mg/L	1.4	1.3	7.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Total Organic Carbon	M26-Fe0031488	CP	mg/L	18	19	6.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chemical Oxygen Demand (COD)	M26-Fe0031492	CP	mg/L	37	32	14	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	M26-Fe0031492	CP	mg/L	0.009	0.009	<1	30%	Pass	
Cadmium (filtered)	M26-Fe0031492	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	M26-Fe0031492	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	M26-Fe0031492	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iron (filtered)	M26-Fe0031492	CP	mg/L	18	18	3.0	30%	Pass	
Lead (filtered)	M26-Fe0031492	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Manganese (filtered)	M26-Fe0031492	CP	mg/L	1.1	1.1	6.0	30%	Pass	
Mercury (filtered)	M26-Fe0031492	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	M26-Fe0031492	CP	mg/L	0.009	0.008	3.0	30%	Pass	
Zinc (filtered)	M26-Fe0031492	CP	mg/L	0.026	0.029	11	30%	Pass	
Duplicate									
Volatile Fatty Acids (VFA) by GC-MS				Result 1	Result 2	RPD			
Acetic Acid	M26-Fe0031493	CP	mg/L	< 5	< 5	<1	30%	Pass	
Propionic acid	M26-Fe0031493	CP	mg/L	< 5	< 5	<1	30%	Pass	
Isobutyric acid	M26-Fe0031493	CP	mg/L	< 5	< 5	<1	30%	Pass	
Butyric acid	M26-Fe0031493	CP	mg/L	< 5	< 5	<1	30%	Pass	
Isovaleric acid	M26-Fe0031493	CP	mg/L	< 5	< 5	<1	30%	Pass	
Valeric acid	M26-Fe0031493	CP	mg/L	< 5	< 5	<1	30%	Pass	
4-Methylvaleric acid	M26-Fe0031493	CP	mg/L	< 5	< 5	<1	30%	Pass	
Hexanoic acid	M26-Fe0031493	CP	mg/L	< 5	< 5	<1	30%	Pass	
Heptanoic acid	M26-Fe0031493	CP	mg/L	< 5	< 5	<1	30%	Pass	
Total VFA as Acetic Acid Equivalents	M26-Fe0031493	CP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chloride	M26-Fe0031493	CP	mg/L	100	100	<1	30%	Pass	
Sulphate (as SO4)	M26-Fe0031493	CP	mg/L	< 5	< 5	<1	30%	Pass	
Duplicate									
Volatile Fatty Acids (VFA) by GC-MS				Result 1	Result 2	RPD			
Acetic Acid	M26-Fe0031494	CP	mg/L	< 5	< 5	<1	30%	Pass	
Propionic acid	M26-Fe0031494	CP	mg/L	< 5	< 5	<1	30%	Pass	
Isobutyric acid	M26-Fe0031494	CP	mg/L	< 5	< 5	<1	30%	Pass	
Butyric acid	M26-Fe0031494	CP	mg/L	< 5	< 5	<1	30%	Pass	
Isovaleric acid	M26-Fe0031494	CP	mg/L	< 5	< 5	<1	30%	Pass	
Valeric acid	M26-Fe0031494	CP	mg/L	< 5	< 5	<1	30%	Pass	
4-Methylvaleric acid	M26-Fe0031494	CP	mg/L	< 5	< 5	<1	30%	Pass	
Hexanoic acid	M26-Fe0031494	CP	mg/L	< 5	< 5	<1	30%	Pass	
Heptanoic acid	M26-Fe0031494	CP	mg/L	< 5	< 5	<1	30%	Pass	
Total VFA as Acetic Acid Equivalents	M26-Fe0031494	CP	mg/L	< 5	< 5	<1	30%	Pass	

Duplicate								
				Result 1	Result 2	RPD		
Conductivity (at 25 °C)	M26-Fe0031494	CP	uS/cm	840	840	<1	30%	Pass
pH (at 25 °C)	M26-Fe0031494	CP	pH Units	6.7	6.7	PASS	30%	Pass
Duplicate								
Alkalinity (speciated)				Result 1	Result 2	RPD		
Bicarbonate Alkalinity (as CaCO ₃)	M26-Fe0031494	CP	mg/L	110	97	10	30%	Pass
Carbonate Alkalinity (as CaCO ₃)	M26-Fe0031494	CP	mg/L	< 10	< 10	<1	30%	Pass
Hydroxide Alkalinity (as CaCO ₃)	M26-Fe0031494	CP	mg/L	< 20	< 20	<1	30%	Pass
Total Alkalinity (as CaCO ₃)	M26-Fe0031494	CP	mg/L	110	97	10	30%	Pass
Duplicate								
Alkali Metals				Result 1	Result 2	RPD		
Calcium	M26-Fe0031494	CP	mg/L	20	21	4.0	30%	Pass
Magnesium	M26-Fe0031494	CP	mg/L	28	29	3.0	30%	Pass
Potassium	M26-Fe0031494	CP	mg/L	2.7	3.0	11	30%	Pass
Sodium	M26-Fe0031494	CP	mg/L	91	92	1.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chloride	M26-Fe0031434	NCP	mg/L	920	890	2.0	30%	Pass
Conductivity (at 25 °C)	M26-Fe0033495	NCP	uS/cm	2700	2500	7.0	30%	Pass
Fluoride	M26-Fe0030266	NCP	mg/L	1.2	1.2	1.0	30%	Pass
pH (at 25 °C)	M26-Fe0033495	NCP	pH Units	7.8	7.8	PASS	30%	Pass
Sulphate (as SO ₄)	M26-Fe0031434	NCP	mg/L	1000	1100	5.0	30%	Pass
Total Dissolved Solids Dried at 180 °C ± 2 °C	M26-Fe0036727	NCP	mg/L	2100	2100	2.3	30%	Pass
Total Kjeldahl Nitrogen (as N)	M26-Fe0031477	NCP	mg/L	< 0.4	< 0.4	<1	30%	Pass
Total Organic Carbon	M26-Fe0030482	NCP	mg/L	44	44	1.0	30%	Pass
Duplicate								
Alkalinity (speciated)				Result 1	Result 2	RPD		
Bicarbonate Alkalinity (as CaCO ₃)	M26-Fe0033495	NCP	mg/L	560	590	5.0	30%	Pass
Carbonate Alkalinity (as CaCO ₃)	M26-Fe0033495	NCP	mg/L	< 10	< 10	<1	30%	Pass
Hydroxide Alkalinity (as CaCO ₃)	M26-Fe0033495	NCP	mg/L	< 20	< 20	<1	30%	Pass
Total Alkalinity (as CaCO ₃)	M26-Fe0033495	NCP	mg/L	560	590	5.0	30%	Pass
Duplicate								
Alkali Metals				Result 1	Result 2	RPD		
Calcium	M26-Fe0031496	CP	mg/L	6.2	5.8	7.0	30%	Pass
Magnesium	M26-Fe0031496	CP	mg/L	17	18	5.0	30%	Pass
Potassium	M26-Fe0031496	CP	mg/L	1.6	1.6	4.0	30%	Pass
Sodium	M26-Fe0031496	CP	mg/L	100	110	5.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	M26-Fe0031496	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium	M26-Fe0031496	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	M26-Fe0031496	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	M26-Fe0031496	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Iron	M26-Fe0031496	CP	mg/L	1.4	1.4	2.0	30%	Pass
Lead	M26-Fe0031496	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese	M26-Fe0031496	CP	mg/L	1.1	1.1	2.0	30%	Pass
Mercury	M26-Fe0031496	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	M26-Fe0031496	CP	mg/L	0.003	0.003	4.0	30%	Pass
Zinc	M26-Fe0031496	CP	mg/L	0.011	0.011	3.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	M26-Fe0031498	CP	mg/L	20	24	22	30%	Pass
Fluoride	M26-Fe0031498	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass
Nitrate (as N)	M26-Fe0031498	CP	mg/L	< 0.2	< 0.2	<1	30%	Pass

Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	M26-Fe0031500	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Chemical Oxygen Demand (COD)	M26-Fe0031500	CP	mg/L	< 25	< 25	<1	30%	Pass
Nitrate (as N)	M26-Fe0031500	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Chemical Oxygen Demand (COD)	M26-Fe0031502	CP	mg/L	< 25	< 25	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD		
TRH C6-C9	M26-Fe0030442	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
TRH C6-C10	M26-Fe0030442	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Naphthalene	M26-Fe0030442	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	M26-Fe0030442	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Toluene	M26-Fe0030442	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Ethylbenzene	M26-Fe0030442	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
m&p-Xylenes	M26-Fe0030442	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
o-Xylene	M26-Fe0030442	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Xylenes - Total*	M26-Fe0030442	NCP	mg/L	< 0.003	< 0.003	<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
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.

Authorised by:

Catherine Wilson	Analytical Services Manager
Edward Lee	Senior Analyst-Organic
Emily Rosenberg	Senior Analyst-Metal
Joseph Edouard	Senior Analyst-Organic
Joseph Edouard	Senior Analyst-Volatile
Luke Holt	Senior Analyst-Inorganic
Mary Makarios	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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CERTIFICATE OF ANALYSIS

Work Order : EM2602303
Client : CASH SALES MELBOURNE
Contact : TERRALIS - MICK CONDON
Address : 25 Research Drive, Croydon South VIC 3136
3136
Telephone : ----
Project : TER447-CR
Order number : ----
C-O-C number : ----
Sampler : Natalie Dredge
Site : Creswick
Quote number : EN/444
No. of samples received : 1
No. of samples analysed : 1

Page : 1 of 4
Laboratory : Environmental Division Melbourne
Contact : Customer Services EM
Address : 4 Westall Rd Springvale VIC Australia 3171
Telephone : +61 3 8549 9600
Date Samples Received : 12-Feb-2026 11:40
Date Analysis Commenced : 16-Feb-2026
Issue Date : 20-Feb-2026 17:01



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC



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.

- As per QWI – EN55-3 Data Interpreting Procedures, Ionic balances are typically calculated using Major Anions - Chloride, Alkalinity and Sulfate; and Major Cations - Calcium, Magnesium, Potassium and Sodium. Where applicable and dependent upon sample matrix, the Ionic Balance may also include the additional contribution of Ammonia, Dissolved Metals by ICPMS and H⁺ to the Cations and Nitrate, SiO₂ and Fluoride to the Anions.
- Ionic Balance out of acceptable limits for sample #1 due to analytes not quantified in this report.
- Sodium Adsorption Ratio (where reported): Where results for Na, Ca or Mg are <LOR, a concentration at half the reported LOR is incorporated into the SAR calculation. This represents a conservative approach for Na relative to the assumption that <LOR = zero concentration and a conservative approach for Ca & Mg relative to the assumption that <LOR is equivalent to the LOR concentration.
- ED045G: The presence of Thiocyanate, Thiosulfate and Sulfite can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC1A	----	----	----	----
Sampling date / time				04-Feb-2026 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	EM2602303-001	-----	-----	-----	-----	
				Result	----	----	----	----	
EA005P: pH by PC Titrator									
pH Value	----	0.01	pH Unit	5.37	----	----	----	----	
EA015: Total Dissolved Solids dried at 180 ± 5 °C									
Total Dissolved Solids @180°C	----	10	mg/L	677	----	----	----	----	
ED037P: Alkalinity by PC Titrator									
Hydroxide Alkalinity as CaCO3	----	1	mg/L	<1	----	----	----	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	7	----	----	----	----	
Total Alkalinity as CaCO3	----	1	mg/L	7	----	----	----	----	
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	19	----	----	----	----	
ED045G: Chloride by Discrete Analyser									
Chloride	16887-00-6	1	mg/L	193	----	----	----	----	
ED093F: Dissolved Major Cations									
Calcium	7440-70-2	1	mg/L	4	----	----	----	----	
Magnesium	7439-95-4	1	mg/L	16	----	----	----	----	
Sodium	7440-23-5	1	mg/L	87	----	----	----	----	
Potassium	7440-09-7	1	mg/L	1	----	----	----	----	
EG020F: Dissolved Metals by ICP-MS									
Manganese	7439-96-5	0.001	mg/L	0.496	----	----	----	----	
Zinc	7440-66-6	0.005	mg/L	0.033	----	----	----	----	
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----	
EK040P: Fluoride by PC Titrator									
Fluoride	16984-48-8	0.1	mg/L	<0.1	----	----	----	----	
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L	<0.01	----	----	----	----	
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									



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC1A	----	----	----	----
Sampling date / time					04-Feb-2026 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EM2602303-001	-----	-----	-----	-----
				Result		----	----	----	----
EK058G: Nitrate as N by Discrete Analyser - Continued									
Nitrate as N	14797-55-8	0.01	mg/L		1.01	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		1.01	----	----	----	----
EK060G: Organic Nitrogen as N (TKN-NH3) By Discrete Analyser									
Organic Nitrogen as N	----	0.1	mg/L		0.6	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		0.6	----	----	----	----
EN055: Ionic Balance									
∅ Total Anions	----	0.01	meq/L		5.98	----	----	----	----
∅ Total Cations	----	0.01	meq/L		5.33	----	----	----	----
∅ Ionic Balance	----	0.01	%		5.78	----	----	----	----
EP005: Total Organic Carbon (TOC)									
Total Organic Carbon	----	1	mg/L		4	----	----	----	----
EP026SP: Chemical Oxygen Demand (Spectrophotometric)									
Chemical Oxygen Demand	----	10	mg/L		78	----	----	----	----
EP045: Volatile Acids as CH3COOH									
Volatile Acids as Acetic Acid	----	5	mg/L		9	----	----	----	----



QUALITY CONTROL REPORT

Work Order	: EM2602303	Page	: 1 of 7
Client	: CASH SALES MELBOURNE	Laboratory	: Environmental Division Melbourne
Contact	: TERRALIS - MICK CONDON	Contact	: Customer Services EM
Address	: 25 Research Drive, Croydon South VIC 3136	Address	: 4 Westall Rd Springvale VIC Australia 3171
Telephone	: ----	Telephone	: +61 3 8549 9600
Project	: TER447-CR	Date Samples Received	: 12-Feb-2026
Order number	: ----	Date Analysis Commenced	: 16-Feb-2026
C-O-C number	: ----	Issue Date	: 20-Feb-2026
Sampler	: Natalie Dredge		
Site	: Creswick		
Quote number	: EN/444		
No. of samples received	: 1		
No. of samples analysed	: 1		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, 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
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC

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 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.

* = 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.

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 (%)
EA005P: pH by PC Titrator (QC Lot: 7202179)									
EM2602156-007	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.56	7.59	0.4	0% - 20%
EM2602298-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	4.06	3.96	2.5	0% - 20%
EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 7202036)									
EM2602109-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	3380	3490	3.2	0% - 20%
EM2602126-004	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	2060	2050	0.7	0% - 20%
EM2602135-009	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	4040	4450	9.7	0% - 20%
EM2602158-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	4650	4580	1.4	0% - 20%
ED037P: Alkalinity by PC Titrator (QC Lot: 7202178)									
EM2602156-007	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	----	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	425	425	0.0	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	425	425	0.0	0% - 20%
EM2602298-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	----	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	<1	<1	0.0	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	<1	<1	0.0	No Limit
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 7207700)									
EM2602255-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	10400	10200	1.8	0% - 20%
EM2602485-003	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2770	2970	6.7	0% - 20%
ED045G: Chloride by Discrete Analyser (QC Lot: 7207701)									

Page : 3 of 7
 Work Order : EM2602303
 Client : CASH SALES MELBOURNE
 Project : TER447-CR



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 (%)
ED045G: Chloride by Discrete Analyser (QC Lot: 7207701) - continued									
EM2602255-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	3310	3280	1.1	0% - 20%
EM2602485-003	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7560	7040	7.2	0% - 20%
ED093F: Dissolved Major Cations (QC Lot: 7207980)									
EM2602377-002	Anonymous	ED093F: Calcium	7440-70-2	1 (10)*	mg/L	562	559	0.5	0% - 20%
		ED093F: Magnesium	7439-95-4	1 (10)*	mg/L	498	492	1.1	0% - 20%
		ED093F: Sodium	7440-23-5	1 (10)*	mg/L	3390	3350	1.3	0% - 20%
		ED093F: Potassium	7440-09-7	1 (10)*	mg/L	24	24	0.0	No Limit
EM2602290-001	Anonymous	ED093F: Calcium	7440-70-2	1 (10)*	mg/L	854	908	6.2	0% - 20%
		ED093F: Magnesium	7439-95-4	1 (10)*	mg/L	1560	1660	6.5	0% - 20%
		ED093F: Sodium	7440-23-5	1 (10)*	mg/L	8770	9130	4.1	0% - 20%
		ED093F: Potassium	7440-09-7	1 (10)*	mg/L	221	234	5.8	0% - 20%
EG020F: Dissolved Metals by ICP-MS (QC Lot: 7207981)									
EM2602485-001	Anonymous	EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.022	0.022	0.0	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.099	0.102	2.6	0% - 20%
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.56	0.54	3.8	0% - 50%
EK040P: Fluoride by PC Titrator (QC Lot: 7202181)									
EM2602298-001	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	0.0	No Limit
EM2602377-006	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.5	0.5	0.0	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 7207382)									
EM2602207-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.02	0.0	No Limit
EM2602377-002	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 7207702)									
EM2602485-003	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: 7207381)									
EM2602207-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.01	<0.01	0.0	No Limit
EM2602377-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.26	0.26	0.0	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 7203392)									
EM2602304-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.6	0.6	0.0	No Limit
EM2602251-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1 (0.2)*	mg/L	1.7	1.7	0.0	No Limit
EP005: Total Organic Carbon (TOC) (QC Lot: 7210513)									
EM2602298-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	4	3	0.0	No Limit
EM2602403-007	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	26	23	11.5	0% - 20%
EP026SP: Chemical Oxygen Demand (Spectrophotometric) (QC Lot: 7211950)									
EM2602202-001	Anonymous	EP026SP: Chemical Oxygen Demand	----	10	mg/L	22	24	9.1	No Limit
EM2602403-002	Anonymous	EP026SP: Chemical Oxygen Demand	----	10	mg/L	22	24	11.4	No Limit
EM2602448-005	Anonymous	EP026SP: Chemical Oxygen Demand	----	10 (50)*	mg/L	95	90	5.4	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 (%)
EP026SP: Chemical Oxygen Demand (Spectrophotometric) (QC Lot: 7211950) - continued									
EM2602485-003	Anonymous	EP026SP: Chemical Oxygen Demand	----	10 (50)*	mg/L	130	140	7.4	No Limit
EP045: Volatile Acids as CH3COOH (QC Lot: 7205052)									
EM2602304-001	Anonymous	EP045: Volatile Acids as Acetic Acid	----	5	mg/L	29	39	28.7	No Limit

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control 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.

Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
	Spike	Spike Recovery (%)	Acceptable Limits (%)	
Result	Concentration	LCS	Low	High
----	4 pH Unit	99.5	98.8	101
----	7 pH Unit	100	99.3	101
<10	2000 mg/L	92.6	91.0	110
<10	2470 mg/L	98.7	80.7	119
<10	293 mg/L	95.6	91.0	110
----	200 mg/L	101	85.0	116
<1	500 mg/L	101	90.0	110
<1	25 mg/L	102	90.0	110
<1	1000 mg/L	100.0	90.0	110
<1	10 mg/L	99.5	90.0	110
<1	50 mg/L	108	80.0	120
<1	50 mg/L	102	80.0	120
<1	50 mg/L	102	80.0	120
<1	50 mg/L	98.9	80.0	120
<0.001	0.1 mg/L	97.4	84.8	110
<0.005	0.1 mg/L	103	86.3	112
<0.05	0.5 mg/L	95.3	91.8	112
<0.1	5 mg/L	97.9	80.8	118
<0.01	0.5 mg/L	97.8	90.0	110
<0.01	0.5 mg/L	103	90.0	110

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Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 7207381) - continued								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	99.1	90.0	110
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 7203392)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	5 mg/L	105	70.0	117
EP005: Total Organic Carbon (TOC) (QCLot: 7210513)								
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	92.9	81.2	110
EP026SP: Chemical Oxygen Demand (Spectrophotometric) (QCLot: 7211950)								
EP026SP: Chemical Oxygen Demand	----	10	mg/L	<10	500 mg/L	102	89.7	111
				<10	25 mg/L	104	80.0	120
EP045: Volatile Acids as CH3COOH (QCLot: 7205052)								
EP045: Volatile Acids as Acetic Acid	----	5	mg/L	<5	201 mg/L	104	85.5	116

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Matrix Spike (MS) Report							
				Spike Concentration	SpikeRecovery(%)	Acceptable Limits (%)	
						Low	High
Laboratory sample ID	Sample ID	Method: Compound	CAS Number				
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 7207700)							
EM2602303-001	QC1A	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	100 mg/L	94.4	70.0	130
ED045G: Chloride by Discrete Analyser (QCLot: 7207701)							
EM2602303-001	QC1A	ED045G: Chloride	16887-00-6	400 mg/L	72.1	70.0	142
EK040P: Fluoride by PC Titrator (QCLot: 7202181)							
EM2602303-001	QC1A	EK040P: Fluoride	16984-48-8	5 mg/L	95.0	70.0	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 7207382)							
EM2602207-002	Anonymous	EK055G: Ammonia as N	7664-41-7	0.5 mg/L	71.3	70.0	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 7207702)							
EM2602303-001	QC1A	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	106	80.0	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 7207381)							
EM2602207-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	103	70.0	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 7203392)							
EM2602251-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	10 mg/L	97.6	70.0	130
EP005: Total Organic Carbon (TOC) (QCLot: 7210513)							
EM2602303-001	QC1A	EP005: Total Organic Carbon	----	100 mg/L	89.5	76.6	125



Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
				Concentration	MS	Low	High
Laboratory sample ID	Sample ID	Method: Compound	CAS Number				
EP026SP: Chemical Oxygen Demand (Spectrophotometric) (QCLot: 7211950)							
EM2602202-002	Anonymous	EP026SP: Chemical Oxygen Demand	----	500 mg/L	106	70.0	130
EM2602448-006	Anonymous	EP026SP: Chemical Oxygen Demand	----	2500 mg/L	105	70.0	130



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM2602303	Page	: 1 of 7
Client	: CASH SALES MELBOURNE	Laboratory	: Environmental Division Melbourne
Contact	: TERRALIS - MICK CONDON	Telephone	: +61 3 8549 9600
Project	: TER447-CR	Date Samples Received	: 12-Feb-2026
Site	: Creswick	Issue Date	: 20-Feb-2026
Sampler	: Natalie Dredge	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, where applicable to the methodology, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural QC1A	----	----	----	17-Feb-2026	05-Feb-2026	12
EA015: Total Dissolved Solids dried at 180 ± 5 °C						
Clear Plastic Bottle - Natural QC1A	----	----	----	16-Feb-2026	11-Feb-2026	5
EK057G: Nitrite as N by Discrete Analyser						
Clear Plastic Bottle - Natural QC1A	----	----	----	18-Feb-2026	06-Feb-2026	12

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)						
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.26	10.00	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	14	7.14	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
Dissolved Metals by ICP-MS - Suite A	EG020A-F	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	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P) QC1A	04-Feb-2026	----	----	----	17-Feb-2026	05-Feb-2026	✖
EA015: Total Dissolved Solids dried at 180 ± 5 °C							
Clear Plastic Bottle - Natural (EA015H) QC1A	04-Feb-2026	----	----	----	16-Feb-2026	11-Feb-2026	✖

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Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
ED037P: Alkalinity by PC Titrator							
Clear Plastic Bottle - Natural (ED037-P) QC1A	04-Feb-2026	----	----	----	17-Feb-2026	18-Feb-2026	✓
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA							
Clear Plastic Bottle - Natural (ED041G) QC1A	04-Feb-2026	----	----	----	18-Feb-2026	04-Mar-2026	✓
ED045G: Chloride by Discrete Analyser							
Clear Plastic Bottle - Natural (ED045G) QC1A	04-Feb-2026	----	----	----	18-Feb-2026	04-Mar-2026	✓
ED093F: Dissolved Major Cations							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) QC1A	04-Feb-2026	----	----	----	18-Feb-2026	04-Mar-2026	✓
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) QC1A	04-Feb-2026	----	----	----	18-Feb-2026	03-Aug-2026	✓
EK040P: Fluoride by PC Titrator							
Clear Plastic Bottle - Natural (EK040P) QC1A	04-Feb-2026	----	----	----	17-Feb-2026	04-Mar-2026	✓
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G) QC1A	04-Feb-2026	----	----	----	18-Feb-2026	04-Mar-2026	✓
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G) QC1A	04-Feb-2026	----	----	----	18-Feb-2026	06-Feb-2026	✗
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) QC1A	04-Feb-2026	----	----	----	18-Feb-2026	04-Mar-2026	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) QC1A	04-Feb-2026	17-Feb-2026	04-Mar-2026	✓	18-Feb-2026	04-Mar-2026	✓
EP005: Total Organic Carbon (TOC)							
Amber Glass Bottle - Sulfuric Acid (EP005) QC1A	04-Feb-2026	----	----	----	20-Feb-2026	04-Mar-2026	✓
EP026SP: Chemical Oxygen Demand (Spectrophotometric)							
Clear Plastic Bottle - Sulfuric Acid (EP026SP) QC1A	04-Feb-2026	----	----	----	19-Feb-2026	04-Mar-2026	✓
EP045: Volatile Acids as CH3COOH							
Clear Plastic Bottle - Natural (EP045) QC1A	04-Feb-2026	----	----	----	17-Feb-2026	18-Feb-2026	✓



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)							
Alkalinity by Auto Titrator	ED037-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chemical Oxygen Demand (COD) (Spectrophotometric)	EP026SP	4	34	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.26	10.00	✗	NEPM 2013 B3 & ALS QC Standard
Fluoride by Auto Titrator	EK040P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	10.00	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	14	7.14	10.00	✗	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	39	10.26	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 Organic Carbon	EP005	2	18	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Acids as CH3COOH	EP045	1	7	14.29	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Alkalinity by Auto Titrator	ED037-P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chemical Oxygen Demand (COD) (Spectrophotometric)	EP026SP	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by Auto Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	5.00	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	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	39	7.69	7.50	✓	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 Organic Carbon	EP005	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Acids as CH3COOH	EP045	1	7	14.29	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
Chemical Oxygen Demand (COD) (Spectrophotometric)	EP026SP	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	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							
Fluoride by Auto Titrator	EK040P	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	5.00	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	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	39	5.13	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 Organic Carbon	EP005	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Acids as CH3COOH	EP045	1	7	14.29	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
Chemical Oxygen Demand (COD) (Spectrophotometric)	EP026SP	2	34	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	0	19	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
Fluoride by Auto Titrator	EK040P	1	20	5.00	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	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	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 Organic Carbon	EP005	1	18	5.56	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
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM Schedule B(3)
Alkalinity by Auto Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. Auto Titrator) on a settled supernatant aliquot of the sample using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM Schedule B(3)
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm.
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM Schedule B(3) Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM Schedule B(3) Hardness parameters are calculated based on APHA 2340 B. 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.
Fluoride by Auto Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. 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 separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM Schedule B(3)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Nitrite and Nitrate as N (NO _x) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO ₃ - F. Combined oxidised Nitrogen (NO ₂ +NO ₃) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM Schedule B(3)
Organic Nitrogen as N (TKN - NH ₃) (discrete analyser)	EK060G	WATER	In house: Referenced to APHA 4500-Norg/4500-NH ₃ . 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)
Ionic Balance by PCT DA and Turbi SO ₄ DA	* EN055 - PG	WATER	In house: Referenced to APHA 1030E. This method is compliant with NEPM Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM Schedule B(3)
Chemical Oxygen Demand (COD) (Spectrophotometric)	EP026SP	WATER	In house: Referenced to APHA 5220 D. Samples are digested with a known excess of an acidic potassium dichromate solution using silver sulfate as a catalyst. The chromium is reduced from the Cr (VI) oxidation state to the Cr (III) state by the oxygen present in the organic material. Both of these chromium species are coloured and absorb in the visible region of (400nm & 600nm) the spectrum. The oxidisable organic matter can be calculated in terms of oxygen equivalents.
Volatile Acids as CH ₃ COOH	EP045	WATER	In house: Referenced to APHA 5560 C. Steam distillable acids are captured in caustic solution and determined titrimetrically. This method is compliant with NEPM Schedule B(3)
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
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)

LAB: Eurofins	SAMPLER: Natalie Dredge
LAB ADDRESS : 6 Monterey Rd, Dandenong South VIC 3175	MOBILE: 0409135737
PROJECT MANAGER (PM): Mick Condon	PHONE: 0425 741 022
PROJECT ID: TER447-CR	EMAIL REPORT TO: info@terralis.com.au, natalie@terralis.com.au
SITE: Creswick	EMAIL INVOICE TO: info@terralis.com.au
RESULTS REQUIRED (Date): 13/2/26	ANALYSIS REQUIRED including SUITES
Primary Lab Quote: # 251014TERV	
Secondary Lab Quote:	



FOR LABORATORY USE ONLY	COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:
COOLER SEAL (circle appropriate)	
Infect: Yes No N/A	
<u>SAMPLE TEMPERATURE</u>	
CHILLED: Yes No	

[illegible]

LAB ID	SAMPLE ID	MATRIX	DATE	Time	Bottles	Type/Code
	BH1	W	3/02/2026		5	3 plastic, 2 glass
	BH3	W	3/02/2026		5	3 plastic, 2 glass
	BH6	W	4/02/2026		5	3 plastic, 2 glass
	BH7	W	3/02/2026		5	3 plastic, 2 glass
	BH8	W	3/02/2026		5	3 plastic, 2 glass
	BH10	W	3/02/2026		5	3 plastic, 2 glass
	BH14	W	4/02/2026		5	3 plastic, 2 glass
	Downstream Creek	W	4/02/2026		5	3 plastic, 2 glass
	At Site Creek	W	4/02/2026		5	3 plastic, 2 glass
	Upstream Creek	W	4/02/2026		5	3 plastic, 2 glass
	Dredge Hole	W	4/02/2026		5	3 plastic, 2 glass
	Leachale Dam	L	3/02/2026		5	3 plastic, 2 glass
	LB1	L	3/02/2026		5	3 plastic, 2 glass
	QC1	W	4/02/2026		5	3 plastic, 2 glass
1	QC1A	W	4/02/2026		5	3 plastic, 2 glass
	QC2	W	3/02/2026		5	3 plastic, 2 glass
	QC3	W	4/02/2026		5	3 plastic, 2 glass
	QC4	W	4/02/2026		5	3 plastic, 2 glass
	QC5	W	4/02/2026		1	1 vial
	Total:					

Prim	Prim	Blank	Top
X			
X			
X			
X			
X			
X			
X			
	X		
	X		
	X		
	X		
	X		
	X		
X			
Please forward to ALS for analysis			
		X	
		X	
		X	
			X
8	6	3	1

RELINQUISHED BY:	
Name: Natalie Dredge	Date: 5/2/2025
Of: Terralis	Time: 8:00am
Name:	Date:
Of:	Time:

RECEIVED BY	
Name: <u>AU</u>	Date: <u>12/2</u>
Of: <u>ALS</u>	Time: <u>11:40</u>
Name:	Date:
Of:	Time:

METHOD OF SHIPMENT	
Con' Note No:	
Transport Co:	

Chain of Custody Documentation																									
LAB: Eurofins						SAMPLER: Natalie Dredge																			
LAB ADDRESS : 6 Monterey Rd, Dandenong South VIC 3175						MOBILE: 0409135737																			
PROJECT MANAGER (PM): Mick Condon						PHONE: 0425 741 022																			
PROJECT ID: TER447-CR						EMAIL REPORT TO: info@terralis.com.au, natalie@terralis.com.au																			
SITE: Creswick Primary Lab Quote: # Z51014TERV						EMAIL INVOICE TO: info@terralis.com.au																			
RESULTS REQUIRED (Date): 13/2/26 Secondary Lab Quote:						ANALYSIS REQUIRED including SUITES																			
FOR LABORATORY USE ONLY COOLER SEAL (circle appropriate)				COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		Primary (blend metals)	Primary (total metals)	Blanks (total metals)	Trip blank												Notes: Standard TAT				
SAMPLE TEMPERATURE																									
CHILLED: Yes No																									
SAMPLE INFORMATION (note: S = Soil, W=Water)						CONTAINER INFORMATION																			
LAB ID	SAMPLE ID	MATRIX	DATE	Time	Bottles	Type/Code																			
	BH1	W	3/02/2026		5	3 plastic, 2 glass	X																		
	BH3	W	3/02/2026		5	3 plastic, 2 glass	X																		
	BH6	W	4/02/2026		5	3 plastic, 2 glass	X																		
	BH7	W	3/02/2026		5	3 plastic, 2 glass	X																		
	BH8	W	3/02/2026		5	3 plastic, 2 glass	X																		
	BH10	W	3/02/2026		5	3 plastic, 2 glass	X																		
	BH14	W	4/02/2026		5	3 plastic, 2 glass	X																		
	Downstream Creek	W	4/02/2026		5	3 plastic, 2 glass		X																	
	At Site Creek	W	4/02/2026		5	3 plastic, 2 glass		X																	
	Upstream Creek	W	4/02/2026		5	3 plastic, 2 glass		X																	
	Dredge Hole	W	4/02/2026		5	3 plastic, 2 glass		X																	
	Leachale Dam	L	3/02/2026		5	3 plastic, 2 glass		X																	
	LB1	L	3/02/2026		5	3 plastic, 2 glass		X																	
	QC1	W	4/02/2026		5	3 plastic, 2 glass	X																		
	QC1A	W	4/02/2026		5	3 plastic, 2 glass	Please forward to ALS for analysis										Please forward to ALS for analysis								
	QC2	W	3/02/2026		5	3 plastic, 2 glass			X																
	QC3	W	4/02/2026		5	3 plastic, 2 glass			X																
	QC4	W	4/02/2026		5	3 plastic, 2 glass			X																
	QC5	W	4/02/2026		1	1 vial				X															
	Total:						B	6	3	1															

Environmental Division
Melbourne
Work Order Reference
EM2602303



Telephone : + 61-3-8549 9600

COC Page of

Report #
1322198



right solutions.
right partner.

Dai Ly

Receptionist -Environmental

Melbourne, Australia

T: +61 3 8549 9600

alsenviromelbourne@alsglobal.com

2-4 Westall Rd, SPRINGVALE, VIC 3171

Monday	Tuesday	Thursday	Friday
Office	Office	Office	Office
9am - 5:15pm	9am - 5:15pm	9am - 5:15pm	9am - 5:15pm

EnviroMail 158 ANZ - Lifting the veil on ultrashort per- and polyfluoroalkyl substances (USC-PFAS)

EnviroMail 159 ANZ - Fluorotelomer alcohols and related volatile and semi-volatile PFAS compounds

EnviroMail 160 Australia - Regulated waste testing for PFAS – meeting Queensland's updated thresholds

From: Natalie Dredge <natalie@terralis.com.au>

Sent: Friday, February 13, 2026 9:28 AM

To: ALS Enviro Melbourne <ALSEnviroMelbourne@ALSGlobal.com>; Mick Condon <mick@terralis.com.au>

Subject: [EXTERNAL] - Re: EM2602298 , EM2602303, EM2602304

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Hi Dai,

Please analyse the following for all three samples:

Sodium (Na), Potassium (K), Calcium (Ca), Magnesium (Mg),

Chloride (Cl),

Sulfate (SO₄ as SO₄),

Alkalinity (CO₃, HCO₃, OH⁻, Total as CaCO₃),

Fluoride (F),

Volatile Fatty Acids (VFA),

Total Dissolved Solids (TDS),

Chemical Oxygen Demand (COD),

pH,

Total Organic Carbon (TOC),

Nitrate (NO₃ as N),

Organic Nitrogen Set: Total Kjeldahl Nitrogen (TKN), Ammonia (NH₃),

Organic Nitrogen (Org-N),

Iron (Fe),

Manganese (Mn),

Zinc (Zn)

Thank you!

Natalie Dredge

Appendix F Historic Data



TERRALIS

Wurundjeri Country

17 Rutland St, Newtown, Victoria 3220

Email: info@terralis.com.au

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