

OCTOBER 2025 GAS MONITORING EVENT REPORT - DAYLESFORD LANDFILL

Hepburn Shire Council

16/10/2025

Author:

Lucy Edwards

COMMERCIAL IN CONFIDENCE

Issue/Rev	Date	Revision Description	By	Checked	Approved
Report 0.1	13/10/2025	Draft	Lucy Edwards	Anastasia Wiltshire	Tarin Cummings
Report 1.0	16/10/2025	Final	Lucy Edwards	Anastasia Wiltshire	Tarin Cummings



Table of Contents	
Executive Summary	4
Gas Bores	4
Buildings and Services.....	4
1. Introduction	5
2. Monitoring Program Overview	6
2.1. Site Context.....	6
2.2. Scope of Works	6
3. Monitoring schedule	9
3.1. Subsurface Landfill Gas	9
3.2. Surface Emission Landfill Gas.....	9
4. Monitoring Parameters	11
4.1. Subsurface Landfill Gas Monitoring.....	11
4.2. Surface Emission Landfill Gas Monitoring.....	11
4.2.1. Landfill Gas Bore Action Levels	11
4.2.2. Landfill Gas Surface Emission Action Levels.....	11
4.2.3. Landfill Gas Screening Values (GSV's)	12
5. Reporting	13
5.1. Assessment Criteria (Gas Bores and Buildings and Structures)	13
6. WEATHER CONDITIONS	14
7. Subsurface Gas Bore Monitoring Results.....	16
7.1. Exceedances.....	16
7.2. Internal Flow & Barometric Pressure.....	16
7.3. Water Levels.....	17
7.4. Subsurface Gas Bore Monitoring Results.....	17
7.5. Gas Screening Value (GSV).....	18
8. Surface Emission Monitoring Results	19
8.1. Buildings and Services.....	19
9. Conclusions.....	20
9.1. Gas Bores	20
9.2. Buildings and Services.....	20
9.3. Recommendations	20
9.4. Data Uncertainty and Statement of Limitations	21
10. Declaration	22
11. References	23
Appendices	24
Appendix A – Map and location photos.....	24

Appendix B – Field Record Sheets..... 25
Appendix C – Calibration Documents 26
Appendix D – Exceedance Tables..... 27
Appendix F – GSV Values 28

The information contained in this document is solely for the use of the Hepburn Shire Council. The information may be provided to other third parties. However, Ventia Utility Services Pty Ltd does not guarantee to such third parties the accuracy of any documentation or information provided and makes no representation as to its completeness or accuracy. The use of or reliance on any such information is at the third parties’ risk.

EXECUTIVE SUMMARY

Ventia Utility Services Pty Ltd has been engaged by the Hepburn Shire Council to undertake six separate landfill gas bore and buildings and services monitoring events at the Daylesford landfill site. This report summarises the major findings of the events that took place across the July to September period and provides further interpretation of results.

The current monitoring program is required to satisfy specific environmental conditions as designated in the document titled 'Landfill Gas Risk Assessment' (Landserv, May 2025). The monitoring network consists of seven gas bore monitoring locations and sixteen buildings and services locations. All required sites were located, accessible and were able to be monitored during each event.

GAS BORES

Subsurface landfill gas bore monitoring was conducted fortnightly across three months for a total of six events, from the 18th of July through to the 24th of September. The program originally consisted of four monitoring gas bores, however three more were drilled in the interim and from event three through to event six, seven locations were actively monitored.

Methane was detected within two of the seven subsurface gas monitoring bores (LFG02 and LFG07) above the adopted Landfill BPEM action level of 1 % v/v. The highest reading was noted at LFG07 on the 29th of August 2025 with a value of 3.6 % v/v. Carbon dioxide was found to exceed Landfill BPEM action levels of 1.5 % v/v at all bores during all events, except LFG04 on the 24th of September 2025 (1.2 % v/v). The highest carbon dioxide level was 17.9 % v/v, at LFG02 on the 29th of August 2025.

LFG01 had standing water levels (SWLs) recorded across the program while LFG04 and LF06 had low SWLs noted during one event but were dry throughout the rest. All other locations were dry during all six rounds. At no point were any of the bore screens fully covered so gas readings obtained from all monitoring bores are considered to be valid.

Two bores (LFG01 and LFG03) are drilled directly into the waste material, therefore, comparison of landfill gas concentrations against the adopted action levels is not appropriate, as specified within the Landfill BPEM. Methane levels for the two bores ranged between 31.7 and 68.0 % v/v with carbon dioxide levels between 21.7 and 30.0 % v/v.

Gas Screening Values (GSVs) were calculated for all monitoring gas bores, with positive GSVs noted for both methane and carbon dioxide. The highest GSV at all monitored gas bores (those drilled into the waste mass not included) for methane was 0.0108 at LFG07, and the highest GSV for carbon dioxide was 0.0381 L/hr at LFG02. In accordance with BS8485: 2015 + A1: 2019, all of the sites are classified as CS1 (GSV less than 0.07 L/hr). The CS1 level poses a 'very low' hazard potential and is considered to have a very low possibility of causing harm to a potential receptor.

BUILDINGS AND SERVICES

Buildings and services surface gas monitoring was also conducted across the six events. Sixteen locations were selected across the site, including several underground services. Throughout the program there were no exceedances to any action levels.

1. INTRODUCTION

In November 2024 the Hepburn Shire Council enlisted Australian Environmental Auditors Pty Ltd (AEA) to do a comprehensive review of current and historic documentation relating to Daylesford Landfill to help ascertain where data gaps were most prominent as well as provide recommendations Council could take to fill any informational gaps. During their investigation AEA determined that there were no previous investigations pertaining to landfill gas (including both surface and subsurface gas), and therefore, no available information in relation to the movement of landfill gas, nor the potential risk this may cause to receptors, both on and adjacent to the site. AEA recommended that a Landfill Gas Risk Assessment (LFGRA) be completed at the site to assess landfill gas migration and risk. On this advice the Environmental Protection Agency (EPA) issued a Notice to Investigate (Identification Number NTI-0008200) which required Council to engage a suitability qualified professional to undertake an LFGRA (in accordance with Section 10 of EPA Publication 1950, Landfill Buffer Guidelines).

Consultant group Landserv was engaged to carry out a desktop LFGRA to assess site and ultimately provide a conceptual site model from which to determine gas hazards, movement, pathways and potential on-site and off-site receptors. Once the desktop review was finalised Landserv conducted a site visit and Landfill walkover noting the physical condition and layout of the site and surrounding receptors. The final report was provided to Council in 2025 and outlined in detail the conclusions of their findings (Landfill Gas Risk Assessment, Landserv, May 2025), with the following recommendations made:

- Install a minimum of four (4) landfill gas bores on and adjacent to the site.
- Conduct a survey of buildings, structures and underground service pits
- monitoring landfill gas bores, buildings/structures and underground service pits on a fortnightly basis for an initial three month period (six monitoring events) so as to establish a dataset of sufficient size to assess the risk of landfill gas migration to potential receptors.
- The frequency and scope of any ongoing monitoring to occur thereafter should be based upon the findings and outcomes of the initial three month period.
- Provision of a report including details of field works undertaken and any outcomes/recommendations from these six events.

Ventia Utility Services Pty Ltd (Ventia) was appointed by Hepburn Shire Council to undertake the above works at the former Daylesford Landfill and current Waste Transfer Station located at 16 Ajax Road, Daylesford, Victoria (the site). Across the six events Ventia carried out monitoring of seven gas bores and 16 selected buildings and structures. This report details the findings, outcomes and recommendations from these events.

2. MONITORING PROGRAM OVERVIEW

2.1. SITE CONTEXT

Daylesford Landfill and surrounding land to the west of the site is listed on the Victorian Landfill Register. There are several sensitive receptors located nearby; Boomerang Holiday Ranch is directly West, while Sailers Creek is located 100 m West, and an area of Aboriginal Cultural Heritage sensitivity is situated 180 m West. As well as these, residential properties are noted to be approximately 70 m to the East, while no domestic or stock watering bores are located within 250 m of the site. Daylesford Landfill operated until 2004 and when licensed the landfill could accept a range of wastes including municipal solid waste and was classed as a Type 2 landfill (putrescible waste). The site is now the location of a transfer station.

The current monitoring program is required to satisfy specific environmental conditions as requested by the Hepburn Shire Council. There is currently no aftercare management plan or third-party management plan (audit) available for Daylesford closed Landfill, Ventia provides biannual monitoring of the site, along with Event reports for Hepburn Shire Council.

2.2. SCOPE OF WORKS

Ventia was engaged to undertake subsurface and surface gas monitoring over six events at the Daylesford Landfill comprising:

- Monitoring of seven gas bores;
- Monitoring of 16 building and service locations.

This report includes information from across all six monitoring events.

A map of the landfill site location, gas bores and buildings and services are provided in Figure 1, Figure 2 and Figure 3 below, and in Appendix A.

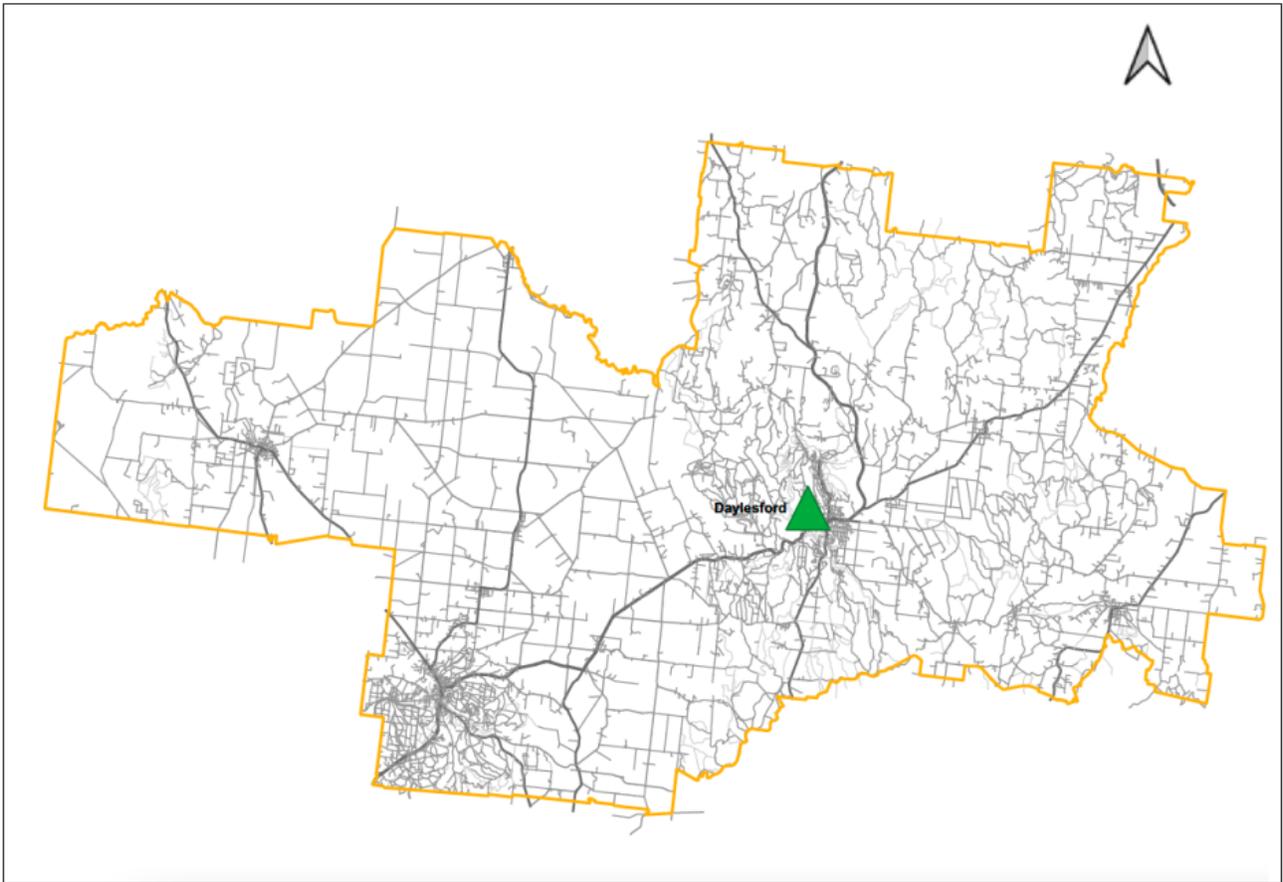


Figure 1 Site location of Daylesford Landfill



Figure 2 Gas Bores at Daylesford Landfill



Figure 3 Buildings and Services Daylesford Landfill

3. MONITORING SCHEDULE

3.1. SUBSURFACE LANDFILL GAS

Dedicated subsurface landfill gas bores included within the monitoring program are detailed in Table 1. Landfill gas monitoring was undertaken across six one day monitoring events in July, August and September 2025. Table 1, below includes Landfill Gas Bore details for the seven locations. During the first two events (18th of July and 1st of August) only LFG01 – LFG04 had been drilled and were able to be monitored. As more knowledge was required to understand the lateral movement of gas at the site it was directed that three more gas bores should be drilled, these works were completed in time for the third of six events.

Table 1 Landfill Gas Bore Details

Bore	Installation Date	Location	Bore Depth (m BGL)	Screened Interval (m BGL)
LFG01	30/06/2025	located central to the waste mass to assess the maximum gas generation potential of the landfill	12.0	2.0 - 12.0
LFG02	30/06/2025	located between the inferred filling extent and residential property located approximately 100 m to the east	7.0	1.0 - 7.0
LFG03	1/07/2025	located between the inferred filling extent and enclosed site office/shed buildings onsite. Landfill noted in this location	7.0	0.5 - 5.5
LFG04	1/07/2025	located between the inferred filling extent and Boomerang Holiday Camp located approximately 155 m to the west	7.0	1.0 - 7.0
LFG05	7/08/2025	170m south of MRF on Ajax Rd / Ranch Rd intersection	9.5	1.0 - 9.5
LFG06	7/08/2025	South of MRF sheds at southern boundary	10.0	2.6 - 10.0
LFG07	7/08/2025	Within MRF facility adjacent driveway entrance	10.2	2.0 - 10.2

Notes: mBGL – metres Below Ground Level

3.2. SURFACE EMISSION LANDFILL GAS

Surface emission landfill gas monitoring included monitoring of selected buildings, structures and underground services on site, as per Table 2 below. Surface gas monitoring was undertaken across six one day monitoring events across July, August and September 2025.

Areas targeted during surface emission monitoring include:

- Areas where people frequent;
- Pathways where pipework may be buried in trenches;
- Storage areas;
- Cracks/holes/openings at the included locations.

Table 2 Landfill Gas Bore Details

Location ID	Details
Site Office - Inside	Kitchen area, in sink
Site Office - Outside	East side near entry/exit, at tap/drain
Open Shed 1	Between bookcases
Open Shed 2	Among shelves
Enclosed Shed	Around bins, underneath pallet
Enclosed Storage Shed 1	SE corner inside building

Location ID	Details
Enclosed Storage Shed 2	Measured though hole in wall AND at white electrical box on exterior (see below)
Open Shed 2 - north end	Next to oil drop-off bin
Open Shed 2 - south end	Near doors in homewares section
Water meter pit	Between entry/exit of compound, within concrete pit
Drain at entrance	South culvert/drainage point
North drain pit	Northern most drainage point, inside compound
White electrical box	Attached to Enclosed Storage Shed 2
Electrical box in Open Shed 2 (south)	Inside Open Shed 2 on southern wall
Septic Pit	north side of the Exit, on the lawn fully sealed concrete pad
Enclosed shed side Pit	west side of the enclosed storage shed near the door

4. MONITORING PARAMETERS

4.1. SUBSURFACE LANDFILL GAS MONITORING

All landfill gas bore monitoring was conducted in accordance with Ventia’s Landfill Gas Bore Monitoring procedures which are based on *EPA Landfill Gas Fugitive Emissions Monitoring Guidelines (Publication 1684, 2018)* and Landfill BPEM guidelines. Landfill Gas Monitoring was conducted with the use of a factory calibrated gas analyser (GeoTech, GA5000). The gas analyser was calibrated against a known calibration standard, certificates can be found in the Appendix C. Field observations that were noted throughout the monitoring program include:

- Concentrations, peak and stabilised;
- Pressure, atmospheric and differential;
- Pump time;
- Stabilised flow; and
- Weather conditions.

Parameters utilised for reporting on landfill gas concentrations include: Methane (CH₄), Carbon Dioxide (CO₂); Carbon Monoxide (CO); Oxygen (O₂) and Hydrogen Sulfide (H₂S).

4.2. SURFACE EMISSION LANDFILL GAS MONITORING

All surface emissions methane monitoring was conducted in accordance with the Ventia Landfill Gas Walkover standard operating procedure which are based on the *EPA Landfill Gas Fugitive Emissions Monitoring Guidelines (Publication 1684, 2018)*; and Landfill BPEM guidelines.

A calibrated Inspectra-Laser methane detector was used for the surface emissions monitoring of buildings and enclosed structures. Works were focused on those areas where gas is likely to accumulate including, cupboards, water pipes, cracks in brickwork and gaps in flooring. The peak readings were recorded on field sheets which can be found in Appendix A.

4.2.1. Landfill Gas Bore Action Levels

Action levels for methane and carbon dioxide have been adopted from the 2015 EPA document titled the Best Practice Environmental Management, Siting, Design, Operation and Rehabilitation of Landfills (BPEM guidelines). Methane levels are set at 1% v/v within the subsurface geology at the landfill boundary and the carbon dioxide action level is set at results that exceed 1.5% v/v.

4.2.2. Landfill Gas Surface Emission Action Levels

The Landfill BPEM guidelines outline surface emission action levels for methane concentrations according to their location. Relevant action levels are provided in Table 3.

Table 3 Surface Emission Action Levels

Location	Parameters	Action Level
Landfill surface final cap	Methane concentration in air ¹	100 ppm
Within 50 mm of penetrations through the final cap	Methane concentration in air ²	100 ppm

Landfill surface intermediate cover areas ³	Methane concentration in air ¹	200 ppm
Within 50 mm of penetrations through the intermediate cover	Methane concentration in air ²	1,000 ppm
Building/structures on and adjacent to the landfill site	Methane concentration in air	5,000 ppm

Notes:

- 1 - Point of measurement is 50 mm above the landfill surface.
- 2 - Point of measurement is 50 mm from the point of discharge.
- 3 - Intermediate cover areas are those that do not have an engineered landfill cap and are not scheduled to receive waste during the next three months.

4.2.3. Landfill Gas Screening Values (GSV's)

Gas Screening Values (GSVs) are used to quantify the potential risk posed by ground gases such as methane (CH₄) and carbon dioxide (CO₂). In accordance with British Standard BS 8485, Gas Screening Values (GSVs) are calculated by multiplying the maximum borehole flow rate (L/h) by the maximum gas concentration (% v/v). GSVs are calculated for both methane and carbon dioxide and are expressed in litres per hour (L/h). These values are used to assign a Characteristic Situation (CS) score, ranging from CS1 (very low risk) to CS6 (very high risk).

Gas Screening Values were calculated for each measurement recorded from the landfill gas bore monitoring at Daylesford Landfill. The GSVs were then compared to Table 7.6 of *Code of Practice for the Design of Protective Measures for Methane and Carbon Dioxide Ground Gases for New Buildings (BS 8485: 2015 +A1:2019, The British Standards Institution, 2015 and 2019)* (reflected in Table 4). Results are used to quantify gas movement through soil across the site and the potential hazard risk to structures. Full GSV results are located in Appendix F.

Table 4 British Standards BS 8485

Site Gas Characterisation	Hazard Potential	Site Characteristic GSV (L/hr)	Additional Factors
CS1	Very Low	<0.07	Typically <1% methane concentration and <5% carbon dioxide concentration (otherwise consider an increase to CS2)
CS2	Low	0.07 to <0.7	Typical measured flow rate <70 L/ hr (otherwise consider an increase to CS3)
CS3	Moderate	0.7 to <3.5	
CS4	Moderate to High	3.5 to <15	
CS5	High	15 to <70	
CS6	Very High	>70	

Source: Table 2 British Standard BS 8485

Shaded cells indicate Site Gas Characterisation using calculated GSV

Gas screening value: (Litres of gas/hour) is calculated by multiplying the maximum gas concentration (%) by the maximum measured borehole flow rate (L/hr).

5. REPORTING

5.1. ASSESSMENT CRITERIA (GAS BORES AND BUILDINGS AND STRUCTURES)

During each monitoring event Field Technicians filled out provided monitoring field sheets as readings were taken from gas bores and surface monitoring locations. At the end of each event these were sent through to the Data Management team. Data was then compiled into an exceedance document and any results exceeding the expected criteria noted above (Section 4.2.1 and 4.2.2) were sent through to the Hepburn Shire Council within 24 hours to allow them time to organise and submit to the EPA.

Once all six required events were finalised this overall report was produced. Information contained within includes all details obtained during the monitoring rounds, including monitoring locations, exceedances, field sheets, calibration documents and GSV data. Full documents are located within the Appendices of this report.

6. WEATHER CONDITIONS

Temperature, rainfall and barometric data were taken from the Bureau of Meteorology (BOM) Weather Station Ballarat Aerodrome (station 089002), located at Ballarat (approximately 30 km south-west of the Site).

Figure 4 and Figure 5 depict the climate and barometric pressure readings leading up to and during the monitoring event, which took place across six days in July, August and September 2025.

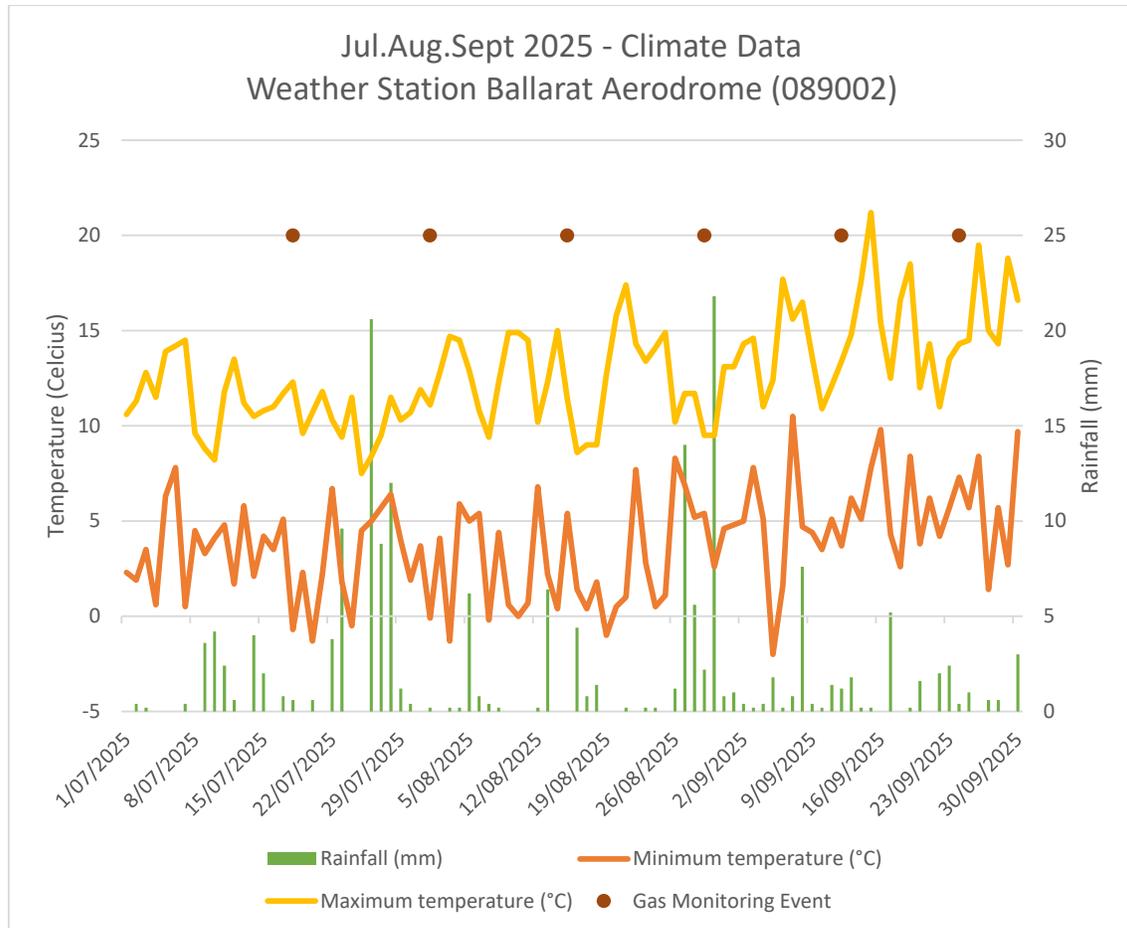


Figure 4 Temperature and rainfall readings corresponding with Ventia site visits

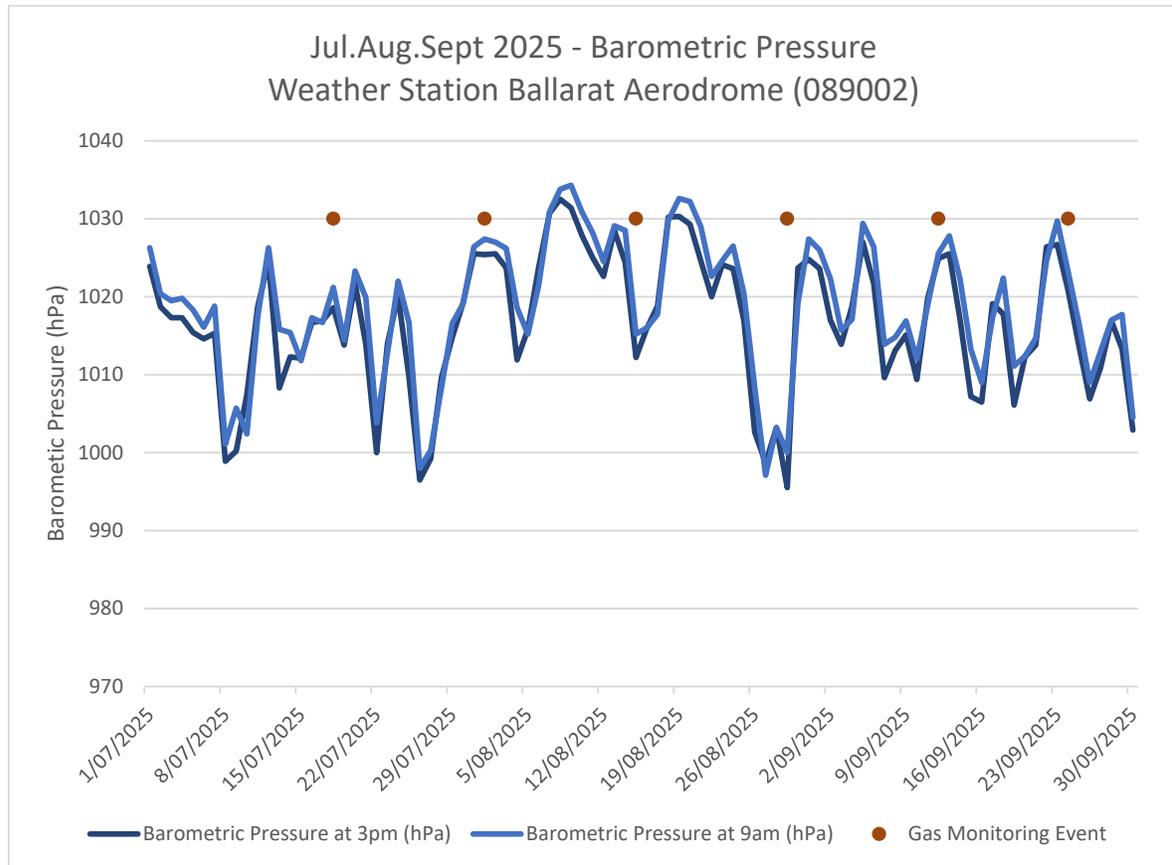


Figure 5 Daily barometric pressure readings corresponding with Ventia site visits

Rainfall was recorded to have fallen during five out of six events, with 0 mm recorded on the 15th of August 2025 and a maximum of 2.2 mm of rainfall recorded on the 29th of August. Overall 4.6 mm was recorded on gas monitoring days across the six events. A total of 178.6 mm fell across the three months over which monitoring was carried out.

The mean temperature for July, August and September (based on historic and current data) was 10.1 °C, 11.5 °C and 13.9 °C, respectively. Mean minimum and maximum temperatures over these periods were 7.5 °C and 14.5 °C in July, 8.6 °C and 17.4 °C in August and 10.9 °C and 21.2 °C in September 2025.

The barometric pressure was seen to be falling over three days of monitoring (the 15th of August, 29th of August and the 24th of September) and rising across the other three days (18th of July, 1st of August and the 12th of September).

7. SUBSURFACE GAS BORE MONITORING RESULTS

7.1. EXCEEDANCES

There are seven landfill gas monitoring bores that require monitoring located at the site. Of these two are drilled directly into the waste mass: LFG01 and LFG03. Due to their location within the waste mass these bores are indicators of the landfill gas source concentration and should not be used to monitor fugitive gas emissions.

Exceedance results of landfill gas across the six monitoring events undertaken in 2025 is presented below in Table 5. Peak methane and carbon dioxide results that are highlighted red exceed the allowable concentration for these gases. Results at LFG01 and LFG03 are not included within the table as they are not classed as site exceedances.

Table 5 Landfill Gas Monitoring Bore Results

Site	Date	Peak Methane	Peak Carbon Dioxide
		% v/v	% v/v
Assessment Criteria		1	1.5
LFG02	18/07/2025	0.0	9.8
	1/08/2025	1.3	7.9
	15/08/2025	0.3	12.7
	29/08/2025	0.0	17.9
	12/09/2025	0.0	15.7
	24/09/2025	0.3	16.5
LFG04	18/07/2025	0.0	4
	1/08/2025	0.3	3.3
	15/08/2025	0.0	5.0
	29/08/2025	0.0	4.7
	12/09/2025	0.0	5.2
LFG05	15.08.2025	0.0	4.5
	29/08/2025	0.0	8.9
	12/09/2025	0.0	7.6
	24/09/2025	0.0	8.7
LFG06	15.08.2025	0.0	10.7
	29/08/2025	0.0	15.2
	12/09/2025	0.0	12.6
	24/09/2025	0.1	12.7
LFG07	15.08.2025	1.7	10.0
	29/08/2025	3.6	6.4
	12/09/2025	0.9	9.5
	24/09/2025	0.3	4.5

* Bore is drilled into the waste mass and is therefore not used to monitor fugitive emissions

7.2. INTERNAL FLOW & BAROMETRIC PRESSURE

Internal flow and barometric pressure readings were taken immediately after connecting the gas analyser to the monitoring bore, prior to purging with negligible flows observed across the site. Internal flow readings and Barometric pressure readings during the monitoring events ranged from - 0.1 to 0.3 L/h and 940 to 962 hPa respectively.

7.3. WATER LEVELS

SWLs were recorded after gas concentration measurements had been completed. All subsurface gas bores were recorded as being dry except for those detailed in Table 6 below. There were 8 occasions where the presence of water was measured inside the gas bores. At no point were any of the bore screens fully submerged. If a screen becomes fully submerged, it can no longer detect subsurface gas movement, and the results cannot be relied upon for interpretation.

Table 6 Subsurface Gas Bore Standing Water Levels

LFG ID	Date	Water Level (mBTOC)	Depth (mBTOC)	Screen Information (mBTOC)
LFG01	18/07/2025	6.00	15.00	2.0 - 12.0
	1/08/2025	5.24	15.00	
	15/08/2025	7.58	12.00	
	29/08/2025	7.28	12.00	
	12/09/2025	7.28	12.00	
	24/09/2025	7.31	14.70	
LFG04	24/09/2025	6.02	6.72	1.0 - 7.0
LFG06	29/08/2025	10.00	10.00	2.6 - 10.0

7.4. SUBSURFACE GAS BORE MONITORING RESULTS

A complete summary of the subsurface landfill gas bore results from across the six events is located in Appendix B.

Methane was detected within the subsurface gas monitoring bores above the adopted Landfill BPEM action level of 1 % v/v. LFG02 exceeded during one event (1.3 % v/v on the 1st of August) and LFG07 exceeded during two events (1.7 % v/v and 3.6 % v/v on the 15th of August and the 29th of August, respectively).

Carbon dioxide concentrations exceeded the adopted Landfill BPEM action level (1.5 % v/v) at all locations, at all gas bores, besides LFG04 during the final event undertaken on the 24th of September 2025 (1.2 % v/v). The highest carbon dioxide levels for each bore are as follows: LFG02 (17.9 % v/v), LFG04 (5.2 % v/v), LFG05 (8.9 % v/v), LFG06 (15.2 % v/v) and LFG07 (10 % v/v).

Two of the seven gas bores were drilled directly into the Landfill waste (LFG01 and LFG03). Given their location within the Landfill mass, and not at the site boundary, their results against the adopted action levels are not applicable. Throughout all six events both bores had methane and carbon dioxide levels above the action levels. Methane in LFG01 ranged from 45.1 % v/v to 68 % v/v, while carbon dioxide had results between 22.0 % v/v and 28.7 % v/v. LFG03 had similar concentrations, with methane ranging between 31.7 % v/v and 47.1 % v/v and carbon dioxide concentrations from 21.7 % v/v through to 30 % v/v.

7.5. GAS SCREENING VALUE (GSV)

Gas screening values (GSVs) were calculated at all gas bores using the BS8485: 2015 + A1: 2019 method outlined in section 4.2.3 of this report.

Final values corresponding to the six levels of hazard potential (ranging from very low to very high) have been highlighted, with each level represented by a specific colour listed below the table. GSVs were calculated for the two gas bores that were drilled into the waste mass (LFG01 and LFG03), however, these have not been included in the below table as they were not included in determining the site characteristic gas situation (CS) due to their proximity in the landfill.

A complete table of GSV results for the subsurface landfill gas bore results from six monitoring events is provided in Appendix F.

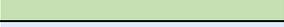
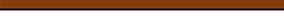
The GSV value for Methane was calculated to be zero across 23 of the 36 results, while carbon dioxide returned results of zero at 17 of the 36 calculated GSVs. The remainder of the results (besides those for LFG01 and LFG03) are shown in Table 7. The highest methane result was 0.0108 at LFG07 on the 12th of September, while the highest carbon dioxide result was 0.0381 at LFG02 on the 15th of August. In accordance with BS8485: 2015 + A1: 2019, all sites are classified as CS1 (GSV less than 0.07 L/hr), bores in level CS1 pose a ‘very low’ hazard potential.

Based on the monitoring conducted by Ventia to date, the hazard potential associated with landfill gas at Daylesford Landfill has been assessed as very low. However, this is based on a limited dataset comprised of six rounds of monitoring and is primarily attributed to the absence of gas flow or consistently low flow measurements. GSVs should continue to be calculated and reviewed for future landfill gas monitoring events.

Table 7 Gas Screening Levels

ID	DATE	PEAKCH4	PEAKCO2	INTERNAL FLOW	GSV CH4	GSV CO2
		%	%	l/h	l/h	l/h
LFG02	1/08/2025	1.3	7.9	0.1	0.0013	0.0079
LFG02	15/08/2025	0.3	12.7	0.3	0.0009	0.0381
LFG04	15/08/2025	0	5	0.2	0	0.01
LFG05	15/08/2025	0	4.5	0.1	0	0.0045
LFG06	15/08/2025	0	10.7	0.1	0	0.0107
LFG07	15/08/2025	1.7	10	0.2	0.0034	0.02
LFG02	29/08/2025	0	17.9	0.1	0	0.0179
LFG04	29/08/2025	0	4.7	-0.1	0	-0.0047
LFG06	29/08/2025	0	15.2	0.1	0	0.0152
LFG07	29/08/2025	3.6	6.4	0.3	0.0108	0.0192
LFG07	12/09/2025	0.9	9.5	0.1	0.0009	0.0095

Note: Leachate bores are not assessed by the adopted British Standard (BS) 8485.

Hazard Potential Key (Range, Hazard level, Colour)		
<0.07	Very Low	
0.07 to <0.7	Low	
0.7 to <3.5	Moderate	
3.5 to <15	Moderate to High	
15 to <70	High	
>70	Very High	

8. SURFACE EMISSION MONITORING RESULTS

The buildings and services were monitored across the same six events as the gas bores and surface emission monitoring results are located within the field sheets in Appendix B of this report.

8.1. BUILDINGS AND SERVICES

According to the Landfill BPEM guidelines, for buildings and services on and adjacent to the landfill site, the acceptable methane concentration in the air is 5,000 ppm. No exceedances were recorded during any of the events included within the monitoring program. Results ranged between 0.0 ppm and 3.1 ppm, with the highest results noted at the enclosed storage shed.

9. CONCLUSIONS

9.1. GAS BORES

Subsurface landfill gas bore monitoring was conducted fortnightly across three months for a total of six events, from the 18th of July through to the 24th of September. The program originally consisted of four monitoring gas bores, however three more were drilled in the interim and from event three through to event six, seven locations were actively monitored.

Methane was detected within two of the seven subsurface gas monitoring bores (LFG02 and LFG07) above the adopted Landfill BPEM action level of 1 % v/v. The highest reading was noted at LFG07 on the 29th of August 2025 with a value of 3.6 % v/v. Carbon dioxide was found to exceed Landfill BPEM action levels of 1.5 % v/v at all bores during all events, except LFG04 on the 24th of September 2025 (1.2 % v/v). The highest carbon dioxide level was 17.9 % v/v, at LFG02 on the 29th of August 2025.

Two bores (LFG01 and LFG03) are drilled directly into the waste material, therefore, comparison of landfill gas concentrations against the adopted action levels is not appropriate, as specified within the Landfill BPEM. Methane levels for the two bores ranged between 31.7 and 68.0 % v/v with carbon dioxide levels between 21.7 and 30.0 % v/v.

LFG01 had standing water levels (SWLs) recorded across the program while LFG04 and LFG06 had low standing water levels recorded during one event but were dry throughout the rest. All other locations were noted to be dry during all six rounds. At no point were any of the bore screens fully submerged so gas readings obtained from all monitoring bores are considered to be valid.

Gas Screening Values (GSVs) were calculated for all monitoring gas bores, with positive GSVs noted for both methane and carbon dioxide. The highest GSV at all monitored gas bores (those drilled into the waste mass not included) for methane was 0.0108 at LFG07, and the highest GSV for carbon dioxide was 0.0381 L/hr at LFG02. In accordance with BS8485: 2015 + A1: 2019, all of the sites are classified as CS1 (GSV less than 0.07 L/hr). The CS1 level poses a 'very low' hazard potential and is considered to have a very low possibility of causing harm to a potential receptor.

9.2. BUILDINGS AND SERVICES

Buildings and services surface gas monitoring was also conducted across the six events. Sixteen locations were selected across the site, including several underground services. Throughout the program there were no exceedances to any action levels.

9.3. RECOMMENDATIONS

Due to the recorded exceedance across the gas bore network it is recommended that monitoring of both subsurface gas bores and surface gas monitoring across the buildings and structures continue to be carried out at Daylesford Landfill.

Along with further monitoring events there are several other recommendations that could be considered, including:

- Update the landfill gas Risk Assessment based on the monitoring data from the initial six events, including:
 - Reviewing the frequency requirements of the landfill gas monitoring program.
 - Reviewing the need for installation of additional LFG bores to delineate lateral landfill gas migration, particularly in the direction of LFG07.
 - Ascertain the suitability of bores to assess the background carbon dioxide concentrations.

- Carrying out a gas bore assessment (hydrological assessment) to determine if any of the bores could be used as a background bore. This could provide a background carbon dioxide % v/v exceedance level other than that as described in the Landfill BPEM.
- Perform continuous monitoring to obtain real time and long-term data (eg: Gas Clam devices).
- Carrying out plume modelling to better understand the movement of landfill gases.
- Including a Landfill cap walkover to determine if there are any areas where gas build-up or release is occurring.
- Continue to calculate and review gas screening values across future monitoring events.

9.4. DATA UNCERTAINTY AND STATEMENT OF LIMITATIONS

Ventia has used a degree of skill and care ordinarily exercised by reputable members of our profession practising in the same or similar locality. The conclusions presented in this report are relevant to the condition of the site and the state of legislation currently enacted as at the date of this report. Ventia does not make any representation or warranty that the conclusions in this report will be applicable in the future as there may be changes in the condition of the site, applicable legislation or other factors that would affect the conclusions contained in this report.

10. DECLARATION

This declaration acknowledges that Ventia has been requested by Hepburn Shire Council to undertake an Environmental Monitoring Program in accordance with sampling and analysis as delegated by Hepburn Shire.

Ventia internally approved procedures were adopted for all environmental monitoring undertaken. All landfill gas bore and surface emissions monitoring was conducted in accordance with the *EPA Landfill Gas Fugitive Emissions Monitoring Guidelines (Publication 1684,2018)*.

This report provides a summary of the analysis conducted under the monitoring program; an assessment of the likely offsite water quality and air quality impacts associated with the landfill as well as recommendations for improvements to the monitoring program.

Ventia is of the opinion that this report prepared on behalf of Hepburn Shire Council contains adequate information of suitable quality to enable the Hepburn Shire Council to fulfill its monitoring requirements.

11. REFERENCES

Bureau of Meteorology 2025. Mildura Victoria, July, August and September 2025 Daily Weather Observations. Retrieved October 2025 from Bureau of Meteorology:

<https://www.bom.gov.au/climate/dwo/202507/html/IDCJDW3005.202507.shtml>,

<https://www.bom.gov.au/climate/dwo/202508/html/IDCJDW3005.202508.shtml>,

<https://www.bom.gov.au/climate/dwo/202509/html/IDCJDW3005.202509.shtml>

British Standard 8485:2015+A1:2019, Code of practice for the design of protective measures for methane and carbon dioxide ground gases for new buildings (BS8485)

EPA 2018. Landfill Gas Fugitive Emissions Monitoring Guidelines. Publication 1684, February 2018. Authorised and published by EPA Victoria.

EPA 2015. Siting, Design, Operation and Rehabilitation of Landfills Publication 788.3, August 2015. Authorised and published by EPA Victoria.

Landserv 2025. Landfill Gas Risk Assessment, Daylesford Landfill, May 2025

Nation Partners 2022. Hepburn Shire Council Separation Distances Assessment – Daylesford Former Landfill and Current Waste Transfer Station. (Dated 23 December 2022)

SKM 1998. Daylesford Municipal Landfill Site, Hydrogeological Assessment, July 1998.

APPENDICES

APPENDIX A - MAP AND LOCATION PHOTOS



LFG4

LFG1

LFG2

Transfer Station

LFG3

LFG7

MRF

LFG6

LFG5



Leachate Dam

Inferred Filling
Extend

Open Sheds

Site Office

Open Sheds

Enclosed
Sheds

Enclosed
Storage
Sheds

APPENDIX B - FIELD RECORD SHEETS

Ventia Landfill Subsurface Gas Monitoring - Field Sheet



Project	Hepburn Shire Landfills
Client	Hepburn Shire
Job Location	Daylesford Landfill
Sampling Staff	Andrew Moffat
Instrument Type	GA 5000
Instrument Serial Number	G504865
Calibration Record Supplied (Y/N)	Y
Weather & Temperature	Calm, sunny, cool
Site Ground Conditions	Slightly moist, no major puddles
Barometric Pressure	1021hPa

General Comments

Fine conditions, little to no wind, partly cloudy but mostly sunny. All bores were in excellent condition (new). No access issues, but watch footing when walking down the hill to get to LFG04.

LFG ID	Date	Time	CH4	CO2	O2	Balance	PEAK CH4	PEAK CO2	MINO2	BARO	REL > PRES	Peak Flow	Stable Flow	CO	H2S ppm	SWL	Stick Up	Depth	Bore & Headworks Condition	Comments
			%	%	%	%	%	%	%	%	mb	mb	l/hr	l/hr	ppm	ppm	mbTOC	mbTOC		
LFG01*	18/07/2025	10:17	66.2	27.5	0.1	6.2	67.5	28.0	0.1	956	0.05	0.0	0.0	0	2	6.00	0.77	15.00	Good	Odours coming from bore while cap was removed
LFG02	18/07/2025	10:45	0.0	7.7	10.2	82.1	0.0	9.8	10.2	952	-0.03	0.0	0.0	0	0	DRY	0.75	7.62	Good	No odour
LFG03	18/07/2025	11:05	44.3	27.3	0.0	29.3	47.1	30.0	0.0	957	-0.02	0.1	0.0	1	0	DRY	0.81	7.00	Good	Slight odour when cap was removed
LFG04	18/07/2025	11:30	0.0	3.1	17.3	79.5	0.0	4.0	15.5	960	0.00	0.0	0.0	0	0	DRY	0.70	7.70	Good	No odour

*LFG Bore has been installed in the waste mass LFG criteria not applicable to this location

Instrumentation Gas Readings recorded on instrument data export

Ventia Landfill Building Gas Monitoring - Field Sheet



Project	Hepburn Shire Landfills
Client	Hepburn Shire
Job Location	Daylesford Landfill
Sampling Staff	Andrew Moffat
Instrument Type	Laser One
Instrument Serial Number	L41653
Calibration Record Supplied (Y/N)	Y
Weather and Temperature	Calm, sunny, cool
Site Ground Conditions	Slightly moist, no major puddles
Barometric Pressure	1021hPa

General Comments
Fine conditions, little to no wind, partly cloudy but mostly sunny. No access issues, do require keys from office to access Storage Sheds (seperate compound).

Location #	Date	Time	CH ₄ Concentration (ppm)	Building and service condition	Sample Location Notes
Site Office - Inside	18/07/2025	12:23	0.0	Good	Kitchen area, in sink
Site Office - Outside	18/07/2025	12:26	0.0	Good	East side near entry/exit, at tap/drain
Open Shed 1	18/07/2025	12:21	0.1	Good	Between book cases
Open Shed 2	18/07/2025	12:04	0.0	Good	Among shelves
Enclosed Shed	18/07/2025	12:14	0.1	Good - open not closed at time of measurement	Around apint bins, underneath pallet
Enclosed Storage Shed 1	18/07/2025	12:58	0.0	Disrepair, moderate condition, not "enclosed"	SE corner inside building
Enclosed Storage Shed 2	18/07/2025	13:01	0.0	Moderate condition, entirely locked up	Measured though hole in wall AND at white electrical box on exterior (see below)
Underground Service 1					Water meter pit (see below)
Underground Service 2					Drain at entrance (see below)
Underground Service 3					North drain (see below)
Open Shed 2 - north end	18/07/2025	12:03	0.0	Moderate - oil staining expected	Next to oil drop-off bin
Open Shed 2 - south end	18/07/2025	12:05	0.1	Good	Near doors in homewares section
Water meter pit	18/07/2025	12:29	0.0	Good - exposed to the elements	Between entry/exit of compound, within concrete pit
Drain at entrance	18/07/2025	12:31	0.0	Good	South culvert/drainage point
North drain pit	18/07/2025	12:40	0.1	Good	Northern most drainage point, inside compound
White electrical box	18/07/2025	13:03	0.0	Moderate	Attached to Enclosed Storage Shed 2
Electrical box in Open Shed 2 (south)	18/07/2025	13:07	0.0	Good	Inside Open Shed 2 on southern wall

Ventia Landfill Subsurface Gas Monitoring - Field Sheet



Project	Hepburn Shire Landfills
Client	Hepburn Shire
Job Location	Daylesford Landfill
Sampling Staff	Pandula R
Instrument Type	GA 5000
Instrument Serial Number	G508510
Calibration Record Supplied (Y/N)	Y
Weather & Temperature	10C, SUNNY,
Site Ground Conditions	wet, moist over the land cap.
Barometric Pressure	1021hPa

General Comments

purged the instrument and 0 (zero) any residual values prior to start of every bore sample taking. wet ground, bore and casing cap conditions are good.

instruments ID'S record as **DLFDLFG1,2,3,4**

LFG ID	Date	Time	CH4	CO2	O2	Balance	PEAK CH4	PEAK CO2	MINO2	BARO	REL > PRES	Peak Flow	Stable Flow	CO	H2S ppm	SWL	Stick Up	Depth	Bore & Headworks Condition	Comments
			%	%	%	%	%	%	%	%	mb	mb	l/hr	l/hr	ppm	ppm	mbTOC	mBTOC		
LFG01*	1/08/2025	11:48	45.0	22.4	0.1	32.5	45.1	22.4	0.1	960	0.00	0.0	0.0	3	1	5.24	0.77	15.00	good	strong odour
LFG02	1/08/2025	10:31	0.1	7.9	11.5	80.5	1.3	7.9	11.5	961	0.00	0.1	0.1	1	0	dry	0.75	7.62	good	no odour
LFG03	1/08/2025	10:04	32.3	21.7	0.1	45.9	32.4	21.7	0.1	958	-0.01	0.1	0.1	1	0	dry	0.81	7.00	good	odour when open
LFG04	1/08/2025	11:09	0.0	3.3	14.7	82.0	0.3	3.3	14.5	962	0.00	0.0	0.0	0	0	dry	0.70	7.70	good	no odour

*LFG Bore has been installed in the waste mass LFG criteria not applicable to this location

Instrumentation Gas Readings recorded on instrument data export

Ventia Landfill Building Gas Monitoring - Field Sheet



Project	Hepburn Shire
Client	Hepburn Shire
Job Location	Daylesford Landfill
Sampling Staff	Pandula R
Instrument Type	Laser One
Instrument Serial Number	ML 1217
Calibration Record Supplied (Y/N)	Y
Weather and Temperature	10 C , Sunny
Site Ground Conditions	wet , moisture over many spaces
Barometric Pressure	1021hPa

General Comments
site underground services confirmed with the LF staff. Extra 2 underground points added. overall site is in good condition. Access clear. recyclable materials are organised. No odour.

Location #	Date	Time	CH ₄ Concentration (ppm)	Building and service condition	Sample Location Notes
Site Office - Inside	1/08/2025	12:14	1.6	GOOD ,tidy	Kitchen area, in sink
Site Office - Outside	1/08/2025	12:16	2.2	clear , tidy	East side near entry/exit, at tap/drain
Open Shed 1	1/08/2025	12:19	1.0	neat , tidy	Between book cases
Open Shed 2	1/08/2025	12:19	0.8	neat , tidy	Among shelves
Enclosed Shed	1/08/2025	12:22	2.4	clear surrounding	Around apint bins, underneath pallet
Enclosed Storage Shed 1	1/08/2025	12:22	1.8	neat , tidy	SE corner inside building
Enclosed Storage Shed 2	1/08/2025	12:53	2.5	wheel bins are located. Clear land, no rubbish	Measured though hole in wall AND at white electrical box on exterior (see below)
Open Shed 2 - north end	1/08/2025	12:32	2.0	average condition	Next to oil drop-off bin
Open Shed 2 - south end	1/08/2025	12:30	1.4	wet floors , isolated	Near doors in homewares section
Water meter pit	1/08/2025	12:37	0.8	Dry, debris in the pit	Between entry/exit of compound, within concrete pit
Drain at entrance	1/08/2025	12:38	2.3	water presents,	South culvert/drainage point
North drain pit	1/08/2025	12:35	1.8	Dry	Northern most drainage point, inside compound
White electrical box	1/08/2025	12:42	1.8	good	Attached to Enclosed Storage Shed 2
Electrical box in Open Shed 2 (south)	1/08/2025	12:56	0.6	average condition	Inside Open Shed 2 on southern wall
Septic PIT	1/08/2025	12:55	2.1	good, monitor around the concrete sealing	north side of the Exit, on the lawn fully sealed concrete pad
Enclosed shed side Pit	1/08/2025	13:05	1.7	storm water pit, Drill coverd	west side of the enclosed storage shed near the DOOR

Ventia Landfill Subsurface Gas Monitoring - Field Sheet



Project	Hepburn Shire Landfills
Client	Hepburn Shire
Job Location	Daylesford Landfill
Sampling Staff	Pandula R
Instrument Type	GA 5000
Instrument Serial Number	G508509
Calibration Record Supplied (Y/N)	Y
Weather & Temperature	10C, partially sunny , expect rain
Site Ground Conditions	wet, moist over the land cap.dry surface
Barometric Pressure	1021hPa

General Comments

purged the instrument and 0 (zero) any residual values prior to start of every bore sample taking. wet ground, bore and casing cap conditions are good.

instruments ID'S record as LFG1AA,LFG2A,LFG3A,LFG4A,LFG5A,LFG6A,LFG7A

LFG ID	Date	Time	CH4	CO2	O2	Balance	PEAK CH4	PEAK CO2	MINO2	BARO	REL > PRES	Peak Flow	Stable Flow	CO	H2S ppm	SWL	Stick Up	Depth	Bore & Headworks Condition	Comments
			%	%	%	%	%	%	%	%	mb	mb	l/hr	l/hr	ppm	ppm	mbTOC	mbTOC		
LFG01*	15/08/2025	10:40	46.6	22.60	0.00	30.8	47.1	22.6	0.0	949	0.20	0.2	0.2	1	0	7.58	0.77	12.00	good	strong odour
LFG02	15/08/2025	10:22	0.0	12.70	3.80	83.5	0.3	12.7	3.8	949	-0.20	0.3	0.2	0	0	DRY	0.75	7.00	good	no odour
LFG03	15/08/2025	11:00	31.5	22.60	0.00	45.9	31.7	22.7	0.0	948	0.10	0.2	0.1	1	1	DRY	0.81	7.00	good	odour when open
LFG04	15/08/2025	9:12	0.0	4.80	14.00	81.2	0.0	5.0	13.1	952	-0.07	0.2	0.0	0	0	DRY	0.70	7.00	good	no odour
LFG05	15/08/2025	9:31	0.0	4.50	14.50	81.0	0.0	4.5	14.5	948	0.01	0.1	0.1	0	0	DRY	0.75	9.50	good	no odour
LFG06	15/08/2025	9:50	0.0	10.30	3.40	86.4	0.0	10.3	3.4	948	0.00	0.1	0.1	3	0	DRY	0.89	10.00	good	no odour
LFG07	15/08/2025	10:06	1.7	10.00	11.90	76.4	1.7	10.0	11.9	948	0.00	0.2	0.2	5	0	DRY	0.80	10.20	good	no odour

*LFG Bore has been installed in the waste mass LFG criteria not applicable to this location

Instrumentation Gas Readings recorded on instrument data export

Ventia Landfill Building Gas Monitoring - Field Sheet



Project	Hepburn Shire
Client	Hepburn Shire
Job Location	Daylesford Landfill
Sampling Staff	Pandula R
Instrument Type	Laser One
Instrument Serial Number	ML 4881 48812217
Calibration Record Supplied (Y/N)	Y
Weather and Temperature	10 C ,partially sunny
Site Ground Conditions	wet , moisture over many spaces
Barometric Pressure	1021hPa

General Comments
overall site is in good condition. Access clear. recyclable materials are organised. No odour.

Location #	Date	Time	CH ₄ Concentration (ppm)	Building and service condition	Sample Location Notes
Site Office - Inside	15/08/2025	11:08	1.6	GOOD ,tidy	Kitchen area, in sink
Site Office - Outside	15/08/2025	11:10	1.7	clear , tidy	East side near entry/exit, at tap/drain
Open Shed 1	15/08/2025	11:11	1.8	well maintained	Between book cases
Open Shed 2	15/08/2025	11:16	1.7	neat , tidy	Among shelves
Enclosed Shed	15/08/2025	11:13	1.9	clear surrounding	Around apint bins, underneath pallet
Enclosed Storage Shed 1	15/08/2025	11:38	1.8	neat , tidy	SE corner inside building
Enclosed Storage Shed 2	15/08/2025	11:39	1.6	wheel bins are located. Clear land, no rubbish	Measured though hole in wall AND at white electrical box on exterior (see below)
Open Shed 2 - north end	15/08/2025	11:16	2.0	crowded, but organised	Next to oil drop-off bin
Open Shed 2 - south end	15/08/2025	11:17	1.8	isolated	Near doors in homewares section
Water meter pit	15/08/2025	11:20	1.8	Dry, debris in the pit	Between entry/exit of compound, within concrete pit
Drain at entrance	15/08/2025	11:20	2.0	dry	South culvert/drainage point
North drain pit	15/08/2025	11:21	1.8	Dry	Northern most drainage point, inside compound
White electrical box	15/08/2025	11:24	1.7	good	Attached to Enclosed Storage Shed 2
Electrical box in Open Shed 2 (south)	15/08/2025	11:40	1.8	average condition	Inside Open Shed 2 on southern wall
Septic PIT	15/08/2025	11:19	1.6	good, monitor around the concrete sealing	north side of the Exit, on the lawn fully sealed concrete pad
Enclosed shed side Pit	15/08/2025	11:42	1.6	storm water pit, Drill coverd	west side of the enclosed storage shed near the DOOR

Ventia Landfill Subsurface Gas Monitoring - Field Sheet



Project	Hepburn Shire Landfills
Client	Hepburn Shire
Job Location	Daylesford Landfill
Sampling Staff	Pandula R
Instrument Type	GA 5000
Instrument Serial Number	G505870
Calibration Record Supplied (Y/N)	Y
Weather & Temperature	Raining and 6 degrees
Site Ground Conditions	Wet
Barometric Pressure	1021hPa

General Comments

purged the instrument and 0 (zero) any residual values prior to start of every bore sample taking.
 Wind 22 km/hr
 7mm Rainfall

LFG ID	Date	Time	CH4	CO2	O2	Balance	PEAK CH4	PEAK CO2	MINO2	BARO	REL > PRES	Peak Flow	Stable Flow	CO	H2S ppm	SWL	Stick Up	Depth	Bore & Headworks Condition	Comments
			%	%	%	%	%	%	%	%	mb	mb	l/hr	l/hr	ppm	ppm	mbTOC	mBTOC		
LFG01*	29/08/2025	10:07	67.9	28.6	0.1	3.4	68.0	28.7	0.1	937	0.20	0.2	0.2	0	0	7.28	0.77	12.00	Good	High reading, strong odour
LFG02	29/08/2025	9:53	0.0	17.8	1.8	80.5	0.0	17.9	1.8	937	0.00	0.1	0.1	0	0	Dry	0.75	7.00	Good	no concern
LFG03	29/08/2025	10:22	45.6	29.6	0.1	24.7	45.7	29.7	0.1	936	0.00	0.1	0.1	0	0	Dry	0.81	7.00	Good	odour when open
LFG04	29/08/2025	9:01	0.0	4.7	8.3	87.0	0.0	4.7	8.3	940	0.00	-0.1	-0.1	0	0	Dry	0.70	7.00	Good	no concern
LFG05	29/08/2025	8:45	0.0	8.8	12.6	78.6	0.0	8.9	12.6	936	0.01	0.0	0.0	0	0	Dry	0.75	9.50	Good	no concern
LFG06	29/08/2025	9:18	0.0	15.2	0.2	84.6	0.0	15.2	0.2	936	0.00	0.1	0.1	0	0	10.00	0.89	10.00	Good	no concern
LFG07	29/08/2025	9:37	3.5	6.4	4.3	85.8	3.6	6.4	4.3	936	0.00	0.3	0.1	0	0	Dry	0.80	10.20	Good	minor CH4 detected

*LFG Bore has been installed in the waste mass LFG criteria not applicable to this location

Instrumentation Gas Readings recorded on instrument data export

Ventia Landfill Building Gas Monitoring - Field Sheet



Project	Hepburn Shire
Client	Hepburn Shire
Job Location	Daylesford Landfill
Sampling Staff	Pandula R
Instrument Type	Laser One
Instrument Serial Number	50345.25
Calibration Record Supplied (Y/N)	Y
Weather and Temperature	rainy, wet 60C windy
Site Ground Conditions	wet
Barometric Pressure	1080hpa

General Comments
measured under rainy condition. Windy, no exceedence found

Location #	Date	Time	CH ₄ Concentration (ppm)	Building and service condition	Sample Location Notes
Site Office - Inside	29.08.2025	10:53	0.1	good tidy	Kitchen area, in sink
Site Office - Outside	29.08.2025	10:55	0.4	wet muddy	East side near entry/exit, at tap/drain
Open Shed 1	29.08.2025	10:58	0.0	crowded with hardware , tidy	Between book cases
Open Shed 2	29.08.2025	10:58	0.0	tidy	Among shelves
Enclosed Shed	29.08.2025	11:08	0.1	garbage container parked	Around apint bins, underneath pallet
Enclosed Storage Shed 1	29.08.2025	11:11	0.1	average	SE corner inside building
Enclosed Storage Shed 2	29.08.2025	11:12	0.3	good tidy	Measured though hole in wall AND at white electrical box on exterior (see below)
Open Shed 2 - north end	29.08.2025	10:40	0.0	crowded with disposal items	Next to oil drop-off bin
Open Shed 2 - south end	29.08.2025	10:40	0.1	organised	Near doors in homewares section
Water meter pit	29.08.2025	10:50	0.0	good tidy	Between entry/exit of compound, within concrete pit
Drain at entrance	29.08.2025	10:51	0.0	good tidy	South culvert/drainage point
North drain pit	29.08.2025	10:52	0.0	good tidy	Northern most drainage point, inside compound
White electrical box	29.08.2025	10:50	0.0	good tidy	Attached to Enclosed Storage Shed 2
Electrical box in Open Shed 2 (south)	29.08.2025	11:13	0.1	average	Inside Open Shed 2 on southern wall
Septic PIT	29.08.2025	11:00	0	good tidy	north side of the Exit, on the lawn fully sealed concrete pad
Enclosed shed side Pit	29.08.2025	11:13	0	good tidy	west side of the enclosed storage shed near the DOOR

Ventia Landfill Subsurface Gas Monitoring - Field Sheet



Project	Hepburn Shire Landfills
Client	Hepburn Shire
Job Location	Daylesford Landfill
Sampling Staff	Pandula R
Instrument Type	GA 5000
Instrument Serial Number	G508510
Calibration Record Supplied (Y/N)	Y
Weather & Temperature	8°C ,Sunny max up to 13°C
Site Ground Conditions	partially wet
Barometric Pressure	1021hPa

General Comments

purged the instrument and 0 (zero) any residual values prior to start of every bore sample taking.

LFG ID	Date	Time	CH4	CO2	O2	Balance	PEAK CH4	PEAK CO2	MINO2	BARO	REL > PRES	Peak Flow	Stable Flow	CO	H2S ppm	SWL	Stick Up	Depth	Bore & Headworks Condition	Comments
			%	%	%	%	%	%	%	%	%	mb	mb	l/hr	l/hr	ppm	ppm	mbTOC		
LFG01*	12.09.2025	10:56	49.0	22.4	0.0	28.6	49.3	22.4	0.0	960	0.20	0.0	0.0	0	1	7.28	0.77	12.00	ODOUR	
LFG02	12.09.2025	10:25	0.0	15.7	0.4	83.9	0.0	15.7	0.4	960	0.10	0.0	0.1	0	0	DRY	0.75	7.00	NO CONCERN	
LFG03	12.09.2025	10:39	33.5	22.8	0.0	43.7	35.4	23.1	0.0	959	-0.60	0.1	0.1	0	1	DRY	0.81	7.00	mild odour	
LFG04	12.09.2025	9:19	0.0	5.1	13.0	81.9	0.0	5.2	12.2	961	0.0	0.0	0.0	0	0	DRY	0.70	7.00	NO CONCERN	
LFG05	12.09.2025	9:37	0.0	7.6	11.4	81.0	0.0	7.6	11.4	958	0.0	0.0	0.0	0	0	DRY	0.75	9.50	NO CONCERN	
LFG06	12.09.2025	9:52	0.0	12.6	0.6	86.8	0.0	12.6	0.6	958	0.10	0.1	0.0	0	1	dry	0.89	10.00	NO CONCERN	
LFG07	12.09.2025	10:09	0.8	8.8	8.7	81.8	0.9	9.5	7.5	958	0.00	0.3	0.1	0	1	DRY	0.80	10.20	MINOR CH4	

Instrumentation Gas Readings recorded on instrument data export

Ventia Landfill Building Gas Monitoring - Field Sheet



Project	Hepburn Shire
Client	Hepburn Shire
Job Location	Daylesford Landfill
Sampling Staff	Pandula R
Instrument Type	Laser One
Instrument Serial Number	9210116
Calibration Record Supplied (Y/N)	Y
Weather and Temperature	11C , no wind
Site Ground Conditions	Partially dry
Barometric Pressure	1025hpa

General Comments

overall landfill and the transfer station in good condition. No odour, large amount of trash around the site. site is organised according to the disposable category, no large cracks noticed on the ground

Location #	Date	Time	CH ₄ Concentration (ppm)	Building and service condition	Sample Location Notes
Site Office - Inside	12.09.2025	11:13	0.7	GOOD	Kitchen area, in sink
Site Office - Outside	12.09.2025	11:12	0.8	GOOD , ORGANISED	East side near entry/exit, at tap/drain
Open Shed 1	12.09.2025	11:10	1.3	good , tidy'	Between book cases
Open Shed 2	12.09.2025	11:07	2.0	good	Among shelves
Enclosed Shed	12.09.2025	11:08	2.2	organised electrical, and paint disposal area	Around apint bins, underneath pallet
Enclosed Storage Shed 1	12.09.2025	11:20	3.1	avaerage , some trash present	SE corner inside building
Enclosed Storage Shed 2	12.09.2025	11;21	2.0	closed shed	Measured though hole in wall AND at white electrical box on exterior (see below)
Open Shed 2 - north end	12.09.2025	11:06	2.4	no odour, greasy floors, no odour	Next to oil drop-off bin
Open Shed 2 - south end	12.09.2025	11:07	2.2	avarage	Near doors in homewares section
Water meter pit	12.09.2025	11:15	0.8	avaerage condition	Between entry/exit of compound, within concrete pit
Drain at entrance	12.09.2025	11:14	0.6	good no trash	South culvert/drainage point
North drain pit	12.09.2025	11;15	1.1	good	Northern most drainage point, inside compound
White electrical box	12.09.2025	11;17	0.9	good	Attached to Enclosed Storage Shed 2
Electrical box in Open Shed 2 (south)	12.09.2025	11:23	2.0	average condition	Inside Open Shed 2 on southern wall
Septic PIT	12.09.2025	11:16	1.3	no odour, no cracks	north side of the Exit, on the lawn fully sealed concrete pad
Enclosed shed side Pit	12.09.2025	11:23	2.6	grassy, no trash,	west side of the enclosed storage shed near the DOOR

Ventia Landfill Subsurface Gas Monitoring - Field Sheet



Project	Hepburn Shire Landfills
Client	Hepburn Shire
Job Location	Daylesford Landfill
Sampling Staff	AM
Instrument Type	GA 5000
Instrument Serial Number	G504479
Calibration Record Supplied (Y/N)	Y
Weather & Temperature	Overcast, 12C, mild winds, scat. rain
Site Ground Conditions	Wet
Barometric Pressure	1023.3hPa

General Comments

Landfill closed on Wednesdays - require spare key from Pandula or contact Hepburn Shire Council (Daylesford) for access.

GA was purged prior to each measurement.

LFG04 experiences a pump overload and failure. Restating the process may have resulted in changed values.

LFG ID	Date	Time	CH4	CO2	O2	Balance	PEAK CH4	PEAK CO2	MINO2	BARO	REL > PRES	Peak Flow	Stable Flow	CO	H2S ppm	SWL	Stick Up	Depth	Bore & Headworks Condition	Comments
			%	%	%	%	%	%	%	%	%	mb	mb	l/hr	l/hr	ppm	ppm	mbTOC		
LFG01*	24/09/2025	12:05	48.4	21.9	0.0	29.7	48.5	22.0	0.0	958	0.23	0.1	0.0	1	0	7.31	0.70	14.70	Good	Moderate odour when cap removed
LFG02	24/09/2025	11:26	0.3	16.5	0.0	83.2	0.3	16.5	0.0	959	0.05	0.0	0.0	0	0	-	0.83	7.62	Good	Minimal muck on probe
LFG03*	24/09/2025	11:43	32.6	23.0	0.0	44.4	32.7	23.1	0.0	958	0.04	0.0	0.0	1	0	-	0.82	7.00	Good	Moderate odour when cap removed
LFG04	24/09/2025	11:06	0.0	0.0	21.2	78.8	0.0	1.2	19.3	961	0.09	0.0	0.0	0	0	6.02	0.73	6.72	Good	Minimal muck on probe
LFG05	24/09/2025	10:37	0.0	8.7	10.3	81.0	0.0	8.7	10.2	957	-0.12	0.0	0.0	0	0	-	0.69	10.20	Good	Minimal muck on probe
LFG06	24/09/2025	10:05	0.0	12.7	1.3	85.9	0.1	12.7	1.3	957	0.05	0.0	0.0	1	0	-	0.90	10.61	Good	Muck on probe
LFG07	24/09/2025	9:45	0.0	4.5	16.0	79.1	0.3	4.5	16.0	957	-0.28	0.0	0.0	0	0	-	0.80	10.93	Good	Muck on probe

*LFG Bore has been installed in the waste mass LFG criteria not applicable to this location

Instrumentation Gas Readings recorded on instrument data export

Ventia Landfill Building Gas Monitoring - Field Sheet



Project	Hepburn Shire
Client	Hepburn Shire
Job Location	Daylesford Landfill
Sampling Staff	AM
Instrument Type	Laser One
Instrument Serial Number	
Calibration Record Supplied (Y/N)	Y
Weather and Temperature	Overcast, 12C, mild winds, scat. rain
Site Ground Conditions	Wet
Barometric Pressure	1023.3hPa

General Comments
Landfill closed on Wednesdays - require spare key from Pandula or contact Hepburn Shire Council (Daylesford) for access.

Location #	Date	Time	CH ₄ Concentration (ppm)	Building and service condition	Sample Location Notes
Site Office - Inside	24/09/2025	12:50	1.9	Good	Kitchen area, in sink
Site Office - Outside	24/09/2025	12:29	1.6	Good	East side near entry/exit, at tap/drain
Open Shed 1	24/09/2025	12:26	1.7	Good	Between book cases
Open Shed 2	24/09/2025	12:35	1.7	Good	Among shelves
Enclosed Shed	24/09/2025	12:51	1.4	Good	Around apint bins, underneath pallet
Enclosed Storage Shed 1	24/09/2025	10:26	1.7	ok	SE corner inside building
Enclosed Storage Shed 2	24/09/2025	10:25	1.6	ok	Measured though hole in wall AND at white electrical box on exterior (see below)
Open Shed 2 - north end	24/09/2025	12:34	1.8	Good	Next to oil drop-off bin
Open Shed 2 - south end	24/09/2025	12:37	1.8	Good	Near doors in homewares section
Water meter pit	24/09/2025	12:30	1.8	ok	Between entry/exit of compound, within concrete pit
Drain at entrance	24/09/2025	12:31	1.7	Good	South culvert/drainage point
North drain pit	24/09/2025	12:41	1.9	ok - minor spike to 15ppm but no lingering effects	Northern most drainage point, inside compound
White electrical box	24/09/2025	10:24	1.8	ok	Attached to Enclosed Storage Shed 2
Electrical box in Open Shed 2 (south)	24/09/2025	12:33	1.6	ok	Inside Open Shed 2 on southern wall
Septic PIT	24/09/2025	12:32	1.7	Good	north side of the Exit, on the lawn fully sealed concrete pad
Enclosed shed side Pit	24/09/2025	10:23	1.7	ok	west side of the enclosed storage shed near the DOOR

APPENDIX C - CALIBRATION DOCUMENTS

CERTIFICATION OF CALIBRATION



Issued by: QED Environmental Systems Inc.

Calibration certificate number **24RA-63117**
 Instrument **Laser One** Serial Number **41653**

Description of the calibration procedure:

The calibration is verified with certified gas bottle. The maximum error of the instrument as specified in the datasheet.

Gas verification from **0-1000ppm CH4**

Full scale (ppm)	Gas concentration (ppm)	Response 1 (ppm)	Response 2 (ppm)	Response 3 (ppm)	Average response (ppm)	Maximum error (ppm)	Maximum error (% F.s.)	Maximum error %
1000	0.0	0	0	0	0.00	0.00	0.00	0.00
1000	3.02	2.8	2.8	2.8	2.80	0.22	0.02	0.02
1000	11	10.7	10.7	10.7	10.70	0.30	0.03	0.03
1000	102.0	108	108	108	108.00	6.00	0.60	0.60
1000	1006	1005	1005	1005	1005.00	1.00	0.10	0.10

Uncertainty	0.60	%
Max % error	0.60	% FS

Gas verification from **0-100% vol CH4**

Full scale (%vol)	Gas concentration (%vol)	Response 1 (%vol)	Response 2 (%vol)	Response 3 (%vol)	Average response (%vol)	Maximum error (%vol)	Maximum error (% F.s.)	Maximum error %
100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	2.18	2.10	2.10	2.10	2.10	0.08	0.08	0.08
100.00	5.00	5.10	5.10	5.10	5.10	0.10	0.10	0.10
100.00	15.00	15.10	15.10	15.10	15.10	0.10	0.10	0.10
100.00	50.00	49.90	49.90	49.90	49.90	0.10	0.10	0.10
100.00	100.00	100.00	100.00	100.00	100.00	0.00	0.00	0.00

Uncertainty	0.10	%
Max % error	0.10	% FS

Gas verification from **0-100% CH4 LEL (0-4.4% VOL)**

Full scale (%vol)	Gas concentration (LEL%)	Response 1 (LEL%)	Response 2 (LEL%)	Response 3 (LEL%)	Average response (%vol)	Maximum error (LEL%)	Maximum error (% F.s.)	Maximum error %
100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	2.18	2.10	2.10	2.10	2.10	0.08	0.08	0.08
100.00	50.00	50.00	50.00	50.00	50.00	0.00	0.00	0.00

Uncertainty	0.08	%
Max % error	0.08	% FS

www.qedenv.com (800) 624-2026 info@qedenv.com

QED Environmental Systems Inc. 2355 Bishop Circle West, Dexter, MI 48130

CERTIFICATION OF CALIBRATION



Issued by: QED Environmental Systems Inc.

Environmental conditions during calibration

Temp.	22.6	C
Pressure	989.5	mBar

Gas bottles used for calibration

Gas	Cylinder number	Expiry date	Gas
Synthetic Air	303802	3/12/2029	Synthetic Air
3 ppm	4405001	02/29/2027	CH4
10 ppm	4225861	9/30/2025	CH4
100ppm	DT0021612	6/6/2029	CH4
1000 ppm	CC64714	9/27/2028	CH4
1.0% Vol	DT0008070	5/24/2029	CH4
2.2% vol	CC81557	9/29/2028	CH4
5.0% vol	TT44360	9/11/2028	CH4
15% vol	481840	6/12/2029	CH4
50% vol	CC708175	1/22/2029	CH4
100% vol	HP-T-105403	8/22/2028	CH4

Calibration results: Pass

Next scheduled calibration: 8/20/2025

Calibration date: 8/20/2024

Issued by: Sarah Schafer

www.qedenv.com (800) 624-2026 info@qedenv.com

QED Environmental Systems Inc. 2355 Bishop Circle West, Dexter, MI 48130

Gas Calibration Certificate

116.0 1672025M

**airmet**

Air-Met Scientific Pty Ltd

1800 000 744

Instrument **GA5000**
 Serial No. **G504865**
 Sensors **O2 CO H2S CH4 CO2**

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	O2	✓	
	CO	✓	
	H2S	✓	
	CH4	✓	
	CO2	✓	
Alarms	Beeper	✓	
	Settings	✓	
Software	Version		
Datalogger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

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

Diffusion mode

Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No	Instrument Reading
O2		20.9% O2		Fresh Air	20.9% O2
CO		100ppm CO	NIST	ME1298	100ppm CO
H2S		25ppm H2S	NIST	ME1298	25ppm H2S
CH4		60% CH4	NIST	ME1126	60% CH4
CO2		40% CO2	NIST	ME1126	40% CO2

Calibrated by: Holly McNaughton

Calibration date: 16/07/2025

Next calibration due: 12/01/2026

EQUIPMENT QUALITY REPORT

Inspectra Laser

Equipment Code: MIL-1217 Serial Number: 4531217

- Equipment is clean
 Pump and battery voltage check
 Clear Data

Calibration Results				Calibration Gas Expiry Date
Parameter	Standard	Result	Error Range	
CH4	Methane by 500ppm	517 ppm	± 25 ppm	96 - W0398764-2 Exp 03/05/2028

Date: 29/07/2025

Calibrated by: George Froomes-Houseman

*For quality control purposes HydroTerra can supply gas calibration data

Please check that the following items are received and all items are returned. Please clean equipment before retuning. **A minimum \$20 service/repair charge applies to any unclean or damaged items.**

Photo Ref.	Checklist Item (See photo at the back of the form)	HT id No.	Sent?	Return?	Comments
1	Carry Case	N/A	✓		
2	Inspectra Laser	MIL-1217	✓		
3	Sampling Probe joint	N/A	✓		
4	Sampling Probe 600mm	N/A	✓		
5	Telescopic rod with Suction cup	N/A	✓		
6	Spare Battery & charger 240/110V to 12V 500mA	N/A	✓		
7	Spare filter	N/A	✓		
8	Tools – Screw driver	N/A	✓		
-	Test & Tag	N/A	✓		

- Equipment voltage
 Pre-delivery Calibration Test Complete

Date: 29/07/2025

Calibrated by: George Froomes-Houseman

HT JOB NO: 24561

CLIENTS REF: P/O No: 4701165513

RETURN DATE: / /	TIME:	CONDITION ON RETURN:
------------------	-------	----------------------



HydroTerra

EQUIPMENT QUALITY REPORT

GA5000

Equipment Code: MLG-8510 Serial Number: G508510

The equipment has been issued as follows:

- Equipment is clean
 Pump and battery voltage check
 Clear Data

Calibration Results					Calibration Gas (Expiry Date)
Parameter	Standard	Result	Error Range		
CH4	Methane by Volume 60%	60%	± 2%		115-WO464639-3 Exp.06/08/2029
CO2	Carbon Dioxide by volume 40%	40%	± 2%		115-WO464639-3 Exp.06/08/2029
H2S	Hydrogen Sulphide 25 ppm	25 ppm	± 2 ppm		117-WO475203-1 Exp.09/10/2026
O2	Oxygen 18%	18%	± 0.2%		117-WO475203-1 Exp.09/10/2026
CO	Carbon Monoxide 50 ppm	50 ppm	± 2ppm		107-A01409 Exp.08/12/2028

Date: 29/07/2025

Calibrated by: George Froomes-Houseman

Please check that the following items are received, and all items are returned. Please clean equipment before returning. **A minimum \$20 service/repair charge applies to any unclean or damaged items.**

Photo Ref.	Checklist Item (See photo at the back of this form)	HT Id No.	Sent?	Returned?	Comments
1	Blue tubing with an inlet barb fitting	N/A	✓		
2	Clear tubing with an inlet Brass Ex-cap Female Fitting (filter attached)	N/A	✓		
3	Spare water trap filter(s) Qty 1	N/A	✓		
4	Yellow tubing with an inlet barb fitting	N/A	✓		
5	Clear tubing	N/A	✓		
6	Charger 240/110V to 12V 500mA	N/A	✓		
7	GA5000 with a carry bag	MLG-8510	✓		
8	Hard case	N/A	✓		
9	Instruction Manual	N/A	✓		
10	Well cap fitting	N/A	✓		
-	Test & Tag	N/A			

- Equipment voltage
 Pre-delivery Calibration Test Complete

Date: 29/07/2025

Checked by: George Froomes-Houseman

HT JOB NO: 24561

CLIENTS REF: P/O No: 4701165513

RETURN DATE: / /	TIME:	CONDITION ON RETURN:
------------------	-------	----------------------



HydroTerra

EQUIPMENT QUALITY REPORT

Inspectra Laser

Equipment Code: MIL-4881 Serial Number: 4881217

- Equipment is clean
 Pump and battery voltage check
 Clear Data

Calibration Results				Calibration Gas Expiry Date
Parameter	Standard	Result	Error Range	
CH4	Methane by 500ppm	513ppm	± 25 ppm	96 - W0398764-2 Exp 03/05/2028

Date: 13/08/2025

Calibrated by: Ella Cooper

*For quality control purposes HydroTerra can supply gas calibration data

Please check that the following items are received and all items are returned. Please clean equipment before retuning. **A minimum \$20 service/repair charge applies to any unclean or damaged items.**

Photo Ref.	Checklist Item (See photo at the back of the form)	HT id No.	Sent?	Return?	Comments
1	Carry Case	N/A	✓		
2	Inspectra Laser	MIL-4881	✓		
3	Sampling Probe joint	N/A	✓		
4	Sampling Probe 600mm	N/A	✓		
5	Telescopic rod with Suction cup	N/A	✓		
6	Spare Battery & charger 240/110V to 12V 500mA	N/A	✓		
7	Spare filter	N/A	✓		
8	Tools – Screw driver	N/A	✓		
-	Test & Tag	N/A	✓		

- Equipment voltage
 Pre-delivery Calibration Test Complete

Date: 13/08/2025

Calibrated by: Ella Cooper

HT JOB NO: 24617

CLIENTS REF: P/O No: TBC

RETURN DATE: / /	TIME:	CONDITION ON RETURN:
------------------	-------	----------------------



HydroTerra

EQUIPMENT QUALITY REPORT

GA5000

Equipment Code: MLG-8509 Serial Number: G508509

The equipment has been issued as follows:

- Equipment is clean
 Pump and battery voltage check
 Clear Data

Calibration Results					Calibration Gas (Expiry Date)
Parameter	Standard		Result	Error Range	
CH4	Methane by Volume	60%	60%	± 2%	115-WO464639-3 Exp.06/08/2029
CO2	Carbon Dioxide by volume	40%	40%	± 2%	115-WO464639-3 Exp.06/08/2029
H2S	Hydrogen Sulphide	25 ppm	25 ppm	± 2 ppm	117-WO475203-1 Exp.09/10/2026
O2	Oxygen	18%	18%	± 0.2%	117-WO475203-1 Exp.09/10/2026
CO	Carbon Monoxide	50 ppm	50 ppm	± 2ppm	107-A01409 Exp.08/12/2028

Date: 13/08/2025

Calibrated by: Ella Cooper

Please check that the following items are received, and all items are returned. Please clean equipment before returning. **A minimum \$20 service/repair charge applies to any unclean or damaged items.**

Photo Ref.	Checklist Item (See photo at the back of this form)	HT Id No.	Sent?	Returned?	Comments
1	Blue tubing with an inlet barb fitting	N/A	✓		
2	Clear tubing with an inlet Brass Ex-cap Female Fitting (filter attached)	N/A	✓		
3	Spare water trap filter(s) Qty 1	N/A	✓		
4	Yellow tubing with an inlet barb fitting	N/A	✓		
5	Clear tubing	N/A	✓		
6	Charger 240/110V to 12V 500mA	N/A	✓		
7	GA5000 with a carry bag	MLG-8509	✓		
8	Hard case	N/A	✓		
9	Instruction Manual	N/A	✓		
10	Well cap fitting	N/A	✓		
-	Test & Tag	N/A			

- Equipment voltage
 Pre-delivery Calibration Test Complete

Date: 13/08/2025

Checked by: Ella Cooper

HT JOB NO: 24617

CLIENTS REF: P/O No: TBC

RETURN DATE: / / TIME: CONDITION ON RETURN:



HydroTerra

CERTIFICATION OF CALIBRATION



Issued by: QED Environmental Systems Inc.

Calibration certificate number **24R-82793U**
 Instrument **Laser One** Serial Number **50345**

Description of the calibration procedure:

The calibration is verified with certified gas bottle. The maximum error of the instrument as specified in the datasheet.

Gas verification from 0-1000ppm CH4

Full scale (ppm)	Gas concentration (ppm)	Response 1 (ppm)	Response 2 (ppm)	Response 3 (ppm)	Average response (ppm)	Maximum error (ppm)	Maximum error (% F.s.)	Maximum error %
1000	0.0	0.0	0.0	0.0	0.00	0.00	0.00	0.00
1000	2.9	3.1	3.1	3.1	3.10	0.20	0.02	0.02
1000	10.1	10.5	10.5	10.5	10.50	0.40	0.04	0.04
1000	102.0	103.0	103.0	103.0	103.00	1.00	0.10	0.10
1000	1006.0	1070.0	1070.0	1070.0	1070.00	64.00	6.40	6.40
Uncertainty							6.40	%
Max % error							6.40	% FS

Gas verification from 0-100% vol CH4

Full scale (%vol)	Gas concentration (%vol)	Response 1 (%vol)	Response 2 (%vol)	Response 3 (%vol)	Average response (%vol)	Maximum error (%vol)	Maximum error (% F.s.)	Maximum error %
100.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00
100.00	2.19	2.3	2.3	2.3	2.30	0.11	0.11	0.11
100.00	5.00	5.1	5.1	5.1	5.10	0.10	0.10	0.10
100.00	15.00	15.4	15.4	15.4	15.40	0.40	0.40	0.40
100.00	50.00	55.0	55.0	55.0	55.00	5.00	5.00	5.00
100.00	100.00	94.0	94.0	94.0	94.00	6.00	6.00	6.00
Uncertainty							6.00	%
Max % error							6.00	% FS

Gas verification from 0-100% CH4 LEL (0-4.4% VOL)

Full scale (%vol)	Gas concentration (LEL%)	Response 1 (LEL%)	Response 2 (LEL%)	Response 3 (LEL%)	Average response (%vol)	Maximum error (LEL%)	Maximum error (% F.s.)	Maximum error %
100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	2.10	2.10	2.10	2.10	2.10	0.00	0.00	0.00
100.00	50.00	50.00	50.00	50.00	50.00	0.00	0.00	0.00
Uncertainty							0.00	%
Max % error							0.00	% FS

www.qedenv.com (800) 624-2026 info@qedenv.com

QED Environmental Systems Inc. 2355 Bishop Circle West, Dexter, MI 48130

CERTIFICATION OF CALIBRATION



Issued by: QED Environmental Systems Inc.

Environmental conditions during calibration

Temp.	20.0	C
Pressure	991.0	mBar

Gas bottles used for calibration

Gas	Cylinder number	Expiry date	Gas
Synthetic Air	301134	5/10/2029	Synthetic Air
3 ppm	DT0043950	12/19/2032	CH4
10 ppm	DT0011388	1/28/2033	CH4
100ppm	DT0055243	10/18/2028	CH4
1000 ppm	CC64714	9/27/2028	CH4
1.0% Vol	DT0008070	5/24/2029	CH4
2.2% vol	CC499453	6/4/2029	CH4
5.0% vol	4830367Y	5/31/2029	CH4
15% vol	3349204Y	6/12/2029	CH4
50% vol	CC708175	1/22/2029	CH4
100% vol	HP-T-105403	8/22/2028	CH4

Calibration results: **Pass**

Calibration date: 22/2/2025

DD/MM/YYYY

Next scheduled calibration:

22/2/2026

DD/MM/YYYY

Issued by:

Christopher Fleenor

www.qedenv.com (800) 624-2026 info@qedenv.com

QED Environmental Systems Inc. 2355 Bishop Circle West, Dexter, MI 48130

Gas Calibration Certificate

92.0 2972025M

**airmet**

Air-Met Scientific Pty Ltd

1800 000 744

Instrument **GA5000**
 Serial No. **G505870**
 Sensors **O2 CO H2S CH4 CO2**

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	O2	✓	
	CO	✓	
	H2S	✓	
	CH4	✓	
	CO2	✓	
Alarms	Beeper	✓	
	Settings	✓	
Software	Version		
Datalogger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

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

Diffusion mode

Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No	Instrument Reading
O2		20.9% O2		Fresh Air	20.9% O2
CO		100ppm CO	NIST	ME1298	100ppm CO
H2S		25ppm H2S	NIST	ME1298	25ppm H2S
CH4		60% CH4	NIST	ME1126	60% CH4
CO2		40% CO2	NIST	ME1126	40% CO2

Calibrated by: Harrison Meers

Calibration date: 29/07/2025

Next calibration due: 25/01/2026

EQUIPMENT QUALITY REPORT

GA5000

Equipment Code: MLG-8510 Serial Number: G508510

The equipment has been issued as follows:

- Equipment is clean
 Pump and battery voltage check
 Clear Data

Calibration Results					Calibration Gas (Expiry Date)
Parameter	Standard		Result	Error Range	
CH4	Methane by Volume	60%	60%	± 2%	115-WO464639-3 Exp.06/08/2029
CO2	Carbon Dioxide by volume	40%	40%	± 2%	115-WO464639-3 Exp.06/08/2029
H2S	Hydrogen Sulphide	25 ppm	25 ppm	± 2 ppm	117-WO475203-1 Exp.09/10/2026
O2	Oxygen	18%	18%	± 0.2%	117-WO475203-1 Exp.09/10/2026
CO	Carbon Monoxide	50 ppm	50 ppm	± 2ppm	107-A01409 Exp.08/12/2028

Date: 10/09/2025

Calibrated by: Ella Cooper

Please check that the following items are received, and all items are returned. Please clean equipment before returning. **A minimum \$20 service/repair charge applies to any unclean or damaged items.**

Photo Ref.	Checklist Item (See photo at the back of this form)	HT Id No.	Sent?	Returned?	Comments
1	Blue tubing with an inlet barb fitting	N/A	✓		
2	Clear tubing with an inlet Brass Ex-cap Female Fitting (filter attached)	N/A	✓		
3	Spare water trap filter(s) Qty 1	N/A	✓		
4	Yellow tubing with an inlet barb fitting	N/A	✓		
5	Clear tubing	N/A	✓		
6	Charger 240/110V to 12V 500mA	N/A	✓		
7	GA5000 with a carry bag	MLG-8510	✓		
8	Hard case	N/A	✓		
9	Instruction Manual	N/A	✓		
10	Well cap fitting	N/A	✓		
-	Test & Tag	N/A			

- Equipment voltage
 Pre-delivery Calibration Test Complete

Date: 10/09/2025

Checked by: Ella Cooper

HT JOB NO: 24769

CLIENTS REF: P/O No: 4701189543

RETURN DATE: / /	TIME:	CONDITION ON RETURN:
------------------	-------	----------------------



HydroTerra

EQUIPMENT QUALITY REPORT

Inspectra Laser

Equipment Code: MIL-001 Serial Number: 9210116

- Equipment is clean
 Pump and battery voltage check
 Clear Data

Calibration Results				Calibration Gas Expiry Date
Parameter	Standard	Result	Error Range	
CH4	Methane by 500ppm	495 ppm	± 25 ppm	96 - W0398764-2 Exp 03/05/2028

Date: 04/09/2025

Calibrated by: Bella Calder

*For quality control purposes HydroTerra can supply gas calibration data

Please check that the following items are received and all items are returned. Please clean equipment before retuning. **A minimum \$20 service/repair charge applies to any unclean or damaged items.**

Photo Ref.	Checklist Item (See photo at the back of the form)	HT id No.	Sent?	Return?	Comments
1	Carry Case	N/A	✓		
2	Inspectra Laser	MIL-001	✓		
3	Sampling Probe joint	N/A	✓		
4	Sampling Probe 600mm	N/A	✓		
5	Telescopic rod with Suction cup	N/A	✓		
6	Spare Battery & charger 240/110V to 12V 500mA	N/A	✓		
7	Spare filter	N/A	✓		
8	Tools – Screw driver	N/A	✓		
-	Test & Tag	N/A	✓		

- Equipment voltage
 Pre-delivery Calibration Test Complete

Date: 04/09/2025

Calibrated by: Bella Calder

HT JOB NO: 24685

CLIENTS REF: P/O No: 4701178284

RETURN DATE: / /	TIME:	CONDITION ON RETURN:
------------------	-------	----------------------



HydroTerra

EQUIPMENT QUALITY REPORT

Inspectra Laser

Equipment Code: MIL-4881 Serial Number: 4881217

- Equipment is clean
 Pump and battery voltage check
 Clear Data

Calibration Results				Calibration Gas Expiry Date
Parameter	Standard	Result	Error Range	
CH4	Methane by 500ppm	497 ppm	± 25 ppm	96 - W0398764-2 Exp 03/05/2028

Date: 22/09/2025

Calibrated by: Erin Joy

*For quality control purposes HydroTerra can supply gas calibration data

Please check that the following items are received and all items are returned. Please clean equipment before retuning. **A minimum \$20 service/repair charge applies to any unclean or damaged items.**

Photo Ref.	Checklist Item (See photo at the back of the form)	HT id No.	Sent?	Return?	Comments
1	Carry Case	N/A	✓		
2	Inspectra Laser	MIL-4881	✓		
3	Sampling Probe joint	N/A	✓		
4	Sampling Probe 600mm	N/A	✓		
5	Telescopic rod with Suction cup	N/A	✓		
6	Spare Battery & charger 240/110V to 12V 500mA	N/A	✓		
7	Spare filter	N/A	✓		
8	Tools – Screw driver	N/A	✓		
-	Test & Tag	N/A	✓		

- Equipment voltage
 Pre-delivery Calibration Test Complete

Date: 22/09/2025

Calibrated by: Erin Joy

HT JOB NO: 24800

CLIENTS REF: P/O No: 4701193057

RETURN DATE: / /	TIME:	CONDITION ON RETURN:
------------------	-------	----------------------



HydroTerra

EQUIPMENT QUALITY REPORT

GA5000

Equipment Code: MLG-4479 Serial Number: G504479

The equipment has been issued as follows:

- Equipment is clean
 Pump and battery voltage check
 Clear Data

Calibration Results					Calibration Gas (Expiry Date)
Parameter	Standard	Result	Error Range		
CH4	Methane by Volume 60%	60%	± 2%		115-WO464639-3 Exp.06/08/2029
CO2	Carbon Dioxide by volume 40%	40%	± 2%		115-WO464639-3 Exp.06/08/2029
H2S	Hydrogen Sulphide 25 ppm	25 ppm	± 2 ppm		117-WO475203-1 Exp.09/10/2026
O2	Oxygen 18%	18%	± 0.2%		117-WO475203-1 Exp.09/10/2026
CO	Carbon Monoxide 50 ppm	50 ppm	± 2ppm		107-A01409 Exp.08/12/2028

Date: 22/09/2025

Calibrated by: Erin Joy

Please check that the following items are received, and all items are returned. Please clean equipment before returning. **A minimum \$20 service/repair charge applies to any unclean or damaged items.**

Photo Ref.	Checklist Item (See photo at the back of this form)	HT Id No.	Sent?	Returned?	Comments
1	Blue tubing with an inlet barb fitting	N/A	✓		
2	Clear tubing with an inlet Brass Ex-cap Female Fitting (filter attached)	N/A	✓		
3	Spare water trap filter(s) Qty 1	N/A	✓		
4	Yellow tubing with an inlet barb fitting	N/A	✓		
5	Clear tubing	N/A	✓		
6	Charger 240/110V to 12V 500mA	N/A	✓		
7	GA5000 with a carry bag	MLG-4479	✓		
8	Hard case	N/A	✓		
9	Instruction Manual	N/A	✓		
10	Well cap fitting	N/A	✓		
-	Test & Tag	N/A			

- Equipment voltage
 Pre-delivery Calibration Test Complete

Date: 22/09/2025

Checked by: Erin Joy

HT JOB NO: 24800

CLIENTS REF: P/O No: 4701193057

RETURN DATE: / /	TIME:	CONDITION ON RETURN:
------------------	-------	----------------------



HydroTerra

APPENDIX D - EXCEEDANCE TABLES

Subsurface Gas Bore Results

ID	DATE and TIME	CH4	CO2	O2	PEAKCH4	PEAKCO2	MIN O2	BARO	EL.PRESSURE	INTERNAL FLOW	CO	H2S
		%	%	%	%	%	%	mb	mb	l/h	ppm	ppm
LFG01*	18/07/2025 10:17	66.2	27.5	0.1	67.5	28	0.1	956	0.05	0	0	2
LFG02	18/07/2025 10:45	0	7.7	10.2	0	9.8	10.2	952	-0.03	0	0	0
LFG03*	18/07/2025 11:05	44.3	27.3	0	47.1	30	0	957	-0.02	0.1	1	0
LFG04	18/07/2025 11:30	0	3.1	17.3	0	4	15.5	960	0	0	0	0

Notes:

Exceedance of Adopted Assessment Criteria
 Methane 1% v/v, Carbon Dioxide 1.5 % v/v (EPA Victoria, Best Practice Environmental Management, Siting, design, operation and rehabilitation of landfills, 2015)
 * not applicable due to location within waste mass

Subsurface Gas Bore Results

ID	DATE and TIME	CH4	CO2	O2	PEAKCH4	PEAKCO2	MIN O2	BARO	EL.PRESSURE	INTERNAL FLOW	CO	H2S
		%	%	%	%	%	%	mb	mb	l/h	ppm	ppm
LFG01*	1/08/2025 11:48	45.0	22.4	0.1	45.1	22.4	0.1	960	0.1	0.0	3	1
LFG02	1/08/2025 10:31	0.1	7.9	11.5	1.3	7.9	11.5	961	0.0	0.1	1	0
LFG03*	1/08/2025 10:04	32.3	21.7	0.1	32.4	21.7	0.1	958	0.0	0.1	1	0
LFG04	1/08/2025 11:09	0.0	3.3	14.7	0.3	3.3	14.5	962	0.0	0.0	0	0

Notes:

Exceedance of Adopted Assessment Criteria
 Methane 1% v/v, Carbon Dioxide 1.5 % v/v (EPA Victoria, Best Practice Environmental Management, Siting, design, operation and rehabilitation of landfills, 2015)
 * not applicable due to location within waste mass

Subsurface Gas Bore Results

ID	DATE and TIME	CH4	CO2	O2	PEAKCH4	PEAKCO2	MIN O2	BARO	EL.PRESSURE	INTERNAL FLOW	CO	H2S
		%	%	%	%	%	%	mb	mb	l/h	ppm	ppm
LFG01*	15/08/2025 10:46	46.6	22.6	0	47.1	22.6	0	949	0.2	0.2	1	0
LFG02	15/08/2025 10:22	0	12.7	3.8	0.3	12.7	3.8	949	-0.2	0.3	0	0
LFG03*	15/08/2025 11:00	31.5	22.6	0	31.7	22.7	0	948	0.1	0.2	1	1
LFG04	15/08/2025 9:12	0	4.8	14	0	5	13.1	952	-0.07	0.2	0	0
LFG05	15/08/2025 9:31	0	4.5	14.5	0	4.5	14.5	948	0.01	0.1	0	0
LFG06	15/08/2025 9:50	0	10.3	3.4	0	10.7	3.4	948	0	0.1	3	0
LFG07	15/08/2025 10:06	1.7	10	11.9	1.7	10	11.9	948	0	0.2	5	0

Notes:

Exceedance of Adopted Assessment Criteria
 Methane 1% v/v, Carbon Dioxide 1.5 % v/v (EPA Victoria, Best Practice Environmental Management, Siting, design, operation and rehabilitation of landfills, 2015)
 * not applicable due to location within waste mass

Subsurface Gas Bore Results

ID	DATE and TIME	CH4	CO2	O2	PEAKCH4	PEAKCO2	MIN O2	BARO	REL.PRESURE	INTERNAL FLOW	CO	H2S
		%	%	%	%	%	%	mb	mb	l/h	ppm	ppm
LFG01*	29/08/2025 10:07	67.9	28.6	0.1	68.0	28.7	0.1	937	0.20	0.2	0	0
LFG02	29/08/2025 9:53	0.0	17.8	1.8	0.0	17.9	1.8	937	0.00	0.1	0	0
LFG03*	29/08/2025 10:22	45.6	29.6	0.1	45.7	29.7	0.1	936	0.00	0.1	0	0
LFG04	29/08/2025 9:01	0.0	4.7	8.3	0.0	4.7	8.3	940	0.00	-0.1	0	0
LFG05	29/08/2025 8:45	0.0	8.8	12.6	0.0	8.9	12.6	936	0.01	0.0	0	0
LFG06	29/08/2025 9:18	0.0	15.2	0.2	0.0	15.2	0.2	936	0.00	0.1	0	0
LFG07	29/08/2025 9:37	3.5	6.4	4.3	3.6	6.4	4.3	936	0.00	0.3	0	0

Notes:

Exceedance of Adopted Assessment Criteria
 Methane 1% v/v, Carbon Dioxide 1.5 % v/v (EPA Victoria, Best Practice Environmental Management, Siting, design, operation and rehabilitation of landfills, 2015)
 * not applicable due to location within waste mass

Subsurface Gas Bore Results

ID	DATE and TIME	CH4	CO2	O2	PEAKCH4	PEAKCO2	MIN O2	BARO	REL.PRES SURE	INTERNAL FLOW	CO	H2S
		%	%	%	%	%	%	mb	mb	l/h	ppm	ppm
LFG01*	12/09/2025 10:56	49.0	22.4	0.0	49.3	22.4	0.0	960	0.20	0.0	1	0
LFG02	12/09/2025 10:25	0.0	15.7	0.4	0.0	15.7	0.4	960	0.10	0.0	0	0
LFG03*	12/09/2025 10:39	33.5	22.8	0.0	35.4	23.1	0.0	959	-0.60	0.1	1	0
LFG04	12/09/2025 9:19	0.0	5.1	13.0	0.0	5.2	12.2	961	0.00	0.0	0	0
LFG05	12/09/2025 9:37	0.0	7.6	11.4	0.0	7.6	11.4	958	-0.60	0.0	0	0
LFG06	12/09/2025 9:52	0.0	12.6	0.6	0.0	12.6	0.6	958	-0.20	0.0	1	0
LFG07	12/09/2025 10:09	0.8	8.8	8.7	0.9	9.5	7.5	958	-0.40	0.1	1	0

Notes:

[Redacted]

Exceedance of Adopted Assessment Criteria

Methane 1% v/v, Carbon Dioxide 1.5 % v/v (EPA Victoria, Best Practice Environmental Management, Siting, design, operation and rehabilitation of landfills, 2015)

* not applicable due to location within waste mass

Subsurface Gas Bore Results

ID	DATE and TIME	CH4	CO2	O2	PEAKCH4	PEAKCO2	MIN O2	BARO	REL.PRES SURE	INTERNAL FLOW	CO	H2S
		%	%	%	%	%	%	mb	mb	l/h	ppm	ppm
LFG01*	24/09/2025 12:05	48.4	21.9	0.0	48.5	22.0	0.0	958	0.23	0.1	1	0
LFG02	24/09/2025 11:26	0.3	16.5	0.0	0.3	16.5	0.0	959	0.05	0.0	0	0
LFG03*	24/09/2025 11:43	32.6	23.0	0.0	32.7	23.1	0.0	958	0.05	0.0	1	0
LFG04	24/09/2025 11:06	0.0	0.0	21.2	0.0	1.2	19.3	961	0.09	0.0	0	0
LFG05	24/09/2025 10:37	0.0	8.7	10.3	0.0	8.7	10.3	957	-0.12	0.0	0	0
LFG06	24/09/2025 10:05	0.0	12.7	1.3	0.1	12.7	1.3	957	0.05	0.0	1	0
LFG07	24/09/2025 9:45	0.3	4.5	16.0	0.3	4.5	16.0	957	-0.28	0.0	0	0

Notes:

[Redacted]

Exceedance of Adopted Assessment Criteria

Methane 1% v/v, Carbon Dioxide 1.5 % v/v (EPA Victoria, Best Practice Environmental Management, Siting, design, operation and rehabilitation of landfills, 2015)

* not applicable due to location within waste mass

APPENDIX F - GSV VALUES

ID	DATE	PEAKCH4	PEAKCO2	INTERNAL FLOW	GSV CH4	GSV CO2
		%	%	L/hr	L/hr	L/hr
LFG01	18/07/2025	67.5	28	0	0	0
LFG02	18/07/2025	0	9.8	0	0	0
LFG03	18/07/2025	47.1	30	0.1	0.0471	0.03
LFG04	18/07/2025	0	4	0	0	0
LFG01	1/08/2025	45.1	22.4	0	0	0
LFG02	1/08/2025	1.3	7.9	0.1	0.0013	0.0079
LFG03	1/08/2025	32.4	21.7	0.1	0.0324	0.0217
LFG04	1/08/2025	0.3	3.3	0	0	0
LFG01	15/08/2025	47.1	22.6	0.2	0.0942	0.0452
LFG02	15/08/2025	0.3	12.7	0.3	0.0009	0.0381
LFG03	15/08/2025	31.7	22.7	0.2	0.0634	0.0454
LFG04	15/08/2025	0	5	0.2	0	0.01
LFG05	15/08/2025	0	4.5	0.1	0	0.0045
LFG06	15/08/2025	0	10.7	0.1	0	0.0107
LFG07	15/08/2025	1.7	10	0.2	0.0034	0.02
LFG01	29/08/2025	68	28.7	0.2	0.136	0.0574
LFG02	29/08/2025	0	17.9	0.1	0	0.0179
LFG03	29/08/2025	45.7	29.7	0.1	0.0457	0.0297
LFG04	29/08/2025	0	4.7	-0.1	0	-0.0047
LFG05	29/08/2025	0	8.9	0	0	0
LFG06	29/08/2025	0	15.2	0.1	0	0.0152
LFG07	29/08/2025	3.6	6.4	0.3	0.0108	0.0192
LFG01	12/09/2025	49.3	22.4	0	0	0
LFG02	12/09/2025	0	15.7	0	0	0
LFG03	12/09/2025	35.4	23.1	0.1	0.0354	0.0231
LFG04	12/09/2025	0	5.2	0	0	0
LFG05	12/09/2025	0	7.6	0	0	0
LFG06	12/09/2025	0	12.6	0	0	0
LFG07	12/09/2025	0.9	9.5	0.1	0.0009	0.0095
LFG01	24/09/2025	48.5	22	0.1	0.0485	0.022
LFG02	24/09/2025	0.3	16.5	0	0	0
LFG03	24/09/2025	32.7	23.1	0	0	0
LFG04	24/09/2025	0	1.2	0	0	0
LFG05	24/09/2025	0	8.7	0	0	0
LFG06	24/09/2025	0.1	12.7	0	0	0
LFG07	24/09/2025	0.3	4.5	0	0	0

	Site Gas Characterisation	Hazard Potential	Site Characteristic GSV (L/hr)
	CS1	Very Low	<0.07
	CS2	Low	0.07 to <0.7
	CS3	Moderate	0.7 to <3.5
	CS4	Moderate to High	3.5 to <15
	CS5	High	15 to <70
	CS6	Very High	>70