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TV Tracking #: 607

November 25, 2022

1. ☐ RECEIVED IN ENFORCEMENT: 11/27/2022

Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale St, Ste 600
San Francisco, CA 94105
Attn: Title V Reports
compliance@baaqmd.gov

Director of the Air Division
USEPA, Region IX
75 Hawthorne Street
San Francisco, CA 94105
Attn: Air-3
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SUBJECT: Combined Title V Semi-Annual and Partial 8-34 Annual Report 40 CFR 63 Subpart AAAA Semi-Annual Report
Redwood Landfill, Inc.
8950 Redwood Highway, Novato, CA 94948
Facility Number A1179

Dear Sir or Madam:

The Redwood Landfill, Inc. (RLI) is submitting this Combined Title V Semi-Annual and Partial 8-34 Annual Report for the period of May 1, 2022 to October 31, 2022, to the Bay Area Air Quality Management District (BAAQMD) and the United States Environmental Protection Agency (USEPA), Region IX. The Semi-Annual Startup, Shutdown and Malfunction (SSM) Report is also enclosed, as required by 40 Code of Federal Regulations (CFR) Part 63 Subpart AAAA. The Combined Title V Semi-Annual and Partial 8-34 Annual Report satisfies the requirements of the Title V Permit listed in Condition Number 19867 Part 32 and Standard Condition I.F.

Based on information and belief formed after reasonable inquiry, I certify under penalty of law that the statements included in this report are true, accurate, and complete.

Sincerely,
Redwood Landfill, Inc.

Ramin Khany
District Manager

Attachments:
Combined Title V Semi-Annual and Partial 8-34 Annual Report

Combined Title V Semi-Annual and Partial 8-34 Annual Report

For the Redwood Landfill
8950 Redwood Highway
Novato, California 94948
Facility Number A1179

May 1, 2022 to October 31, 2022

Prepared for
Redwood Landfill, Inc.
8950 Redwood Highway
Novato, CA

For Submittal to:
The Bay Area Air Quality Management District
375 Beale St, Ste 600
San Francisco, CA 94105

The United States Environmental Protection Agency
Region IX
75 Hawthorne Street
San Francisco, CA 94105

Prepared by:
Redwood Landfill, Inc.
8950 Redwood Highway
Novato, CA

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1 INTRODUCTION

1.1 Purpose

This document is a Title V Combined Semi-Annual Report and Partial 8-34 Annual Report for Redwood Landfill, Inc. (RLI) pursuant to Title V Permit Standard Condition I.F and Condition Number 19867, Part 32. This Combined Report satisfies the requirements of Bay Area Air Quality Management District's (BAAQMD) Regulation 8, Rule 34, Section 411 and Title 40 Code of Federal Regulations (CFR) Part 60 Subpart WWW (40 CFR §60.757[f]), New Source Performance Standards (NSPS) for municipal solid waste (MSW) landfills, and the RLI Title V Standard Condition I.F. This report covers compliance activities conducted from May 1, 2022 to October 31, 2022. This Combined Report also includes the Semi-Annual Start-up, Shutdown, and Malfunction (SSM) Plan Report activities pursuant to National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 63, Subpart AAAA for Landfills.

Section 2 of this Report contains the elements required to satisfy both BAAQMD Regulation 8-34-411 and 40 CFR §60.757(f).

Section 3 of this Combined Report includes a discussion of the data from the most recent source tests, for the A-51 and A-60 Flares, in compliance with BAAQMD Regulation 8-34-412 and Title V Permit Condition Number 19867, Part 30.

Section 4 and Appendices B, D, and E of this Report contain the Semi-Annual Report of SSM Plan activities.

The Semi-Annual Report pursuit to NESHAP 40 CFR part 63 subpart AAAA, section 1981(h) is submitted separately.

1.2 Record Keeping and Reporting

Records are maintained and available for inspection in accordance with BAAQMD Regulation 8-34-501.12 and 40 CFR §60.758. The primary location for records storage is Redwood Landfill. Records are maintained onsite at the Landfill for a minimum of five years.

2 SEMI-ANNUAL MONITORING REPORT

In accordance with RLI Title V Permit Standard Conditions I.F and 19867, Part 32; BAAQMD Regulation 8-34-411; and 40 CFR §60.757(f) of the NSPS for landfills, this report is a Title V Combined Semi-Annual Report and Partial 8-34 Annual Report that is required to be submitted by RLI. This Report contains monitoring data for the operation of the gas collection and control system (GCCS). The operational records have been reviewed and summarized. The timeframe included in this Report is May 1, 2022 to October 31, 2022. The following table lists the rules and regulations that are required to be included in this Combined Report:

Table 2-1 Semi-Annual Report Requirements

RULE	REQUIREMENT	LOCATION IN REPORT
8-34-501.1, §60.757(f)(4)	All collection system downtime, including individual well shutdown times and the reason for the shutdown.	Section 2.1, Appendices B & D
8-34-501.2, §60.757(f)(3)	All emission control system downtime and the reason for the shutdown.	Section 2.2, Appendix B
8-34-501.3, 8-34-507, §60.757(f)(1)	Continuous temperature for all operating flares and any enclosed combustor subject to Section 8-34-507.	Section 2.3, Appendices E & F
8-34-501.4, 8-34-505, 8-34-510	Testing performed to satisfy any of the requirements of this rule.	Sections 2.4 & 2.10, Appendices G & I
8-34-501.5	Monthly landfill gas (LFG) flow rates and well concentration readings for facilities subject to 8-34-404.	Sections 2.5 & 2.11, Appendix K
8-34-501.6, 8-34-503, 8-34-506, §60.757(f)(5)	For operations subject to Section 8-34-503 and 8-34-506, records of all monitoring dates, leaks in excess of the limits in Section 8-34-301.2 or 8-34-303 that are discovered by the operator, including the location of the leak, leak concentration in parts per million by volume (ppm_v), date of discovery, the action taken to repair the leak, date of the repair, date of any required re-monitoring, and the re-monitored concentration in ppm_v.	Sections 2.6 & 2.7, Appendix H
8-34-501.7	Annual waste acceptance rate and current amount of waste in-place.	Section 2.8
8-34-501.8	Records of the nature, location, amount, and date of deposition of non-degradable wastes, for any landfill areas excluded from the collection system requirement as documented in the GCCS Design Plan.	Section 2.9
8-34-501.9, 8-34-505, §60.757(f)(1)	For operations subject to Section 8-34-505, records of all monitoring dates and any excesses of the limits stated in Section 8-34-305 that are discovered by the operator, including well identification number, the measured excess, the action taken to repair the excess, and the date of repair.	Section 2.10, Appendices I & J
8-34-501.10, 8-34-508, §60.757(f)(1)	Continuous gas flow rate records for any site subject to Section 8-34-508.	Section 2.11, Appendix K

RULE	REQUIREMENT	LOCATION IN REPORT
8-34-501.11, 8-34-509	For operations subject to Section 8-34-509, records or key emission control system operating parameters.	Section 2.2.2
8-34-501.12	The records required above shall be made available and retained for a period of five years.	Section 1.2
§60.757(f)(2)	Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756.	Section 2.2.1
§60.757(f)(6)	The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), (c)(4) of §60.755.	Section 2.12
§60.10 (d)(5)(i)	Start-up, Shutdown, Malfunction Events	Section 4, Appendices B, D, and E

2.1 COLLECTION SYSTEM OPERATION [BAAQMD 8-34-501.1& §60.757(F)(4)]

Appendix A contains a map of the GCCS at RLI. Section 2.1.1 includes all collection system downtimes. The information contained in Appendix B, A-51 and A-60 Flares SSM Logs and GCCS Downtime Summary, S-64 and S-65 Landfill Gas Engine SSM logs, and S-71 Gas Treatment System Downtime Log, includes the individual well shutdown times and the reason for each shutdown.

2.1.1 FLARE SYSTEM DOWNTIME

The A-51 Flare commenced operation in June 2005, and the A-60 Flare commenced operation on April 1, 2009. Table 2-2 summarizes the A-51 and A-60 Flares' downtimes for the reporting period.

Table 2-2 A-51 and A-60 Downtimes

Month	A-51 Downtime (Hours)	A-60 Downtime (Hours)
May 2022	743.43	67.73
June 2022	720.00	41.70
July 2022	744.00	9.33
August 2022	744.00	16.73
September 2022	720.00	38.53
October 2022	723.30	107.57
Total Hours:	**4,394.73**	**281.60**

During the period covered in this report, the GCCS was not shut down for more than five days on any one occasion. Appendix B contains the A-51 and A-60 Flare SSM

logs, and GCCS Downtime Summary which lists dates, times, and lengths of shutdowns for the reporting period and year-to-date. A-51 is the backup flare to the A-60 flare.

2.1.2 LANDFILL GAS ENGINE SYSTEM DOWNTIME

The S-64 and S-65 Landfill Gas Engines (with accompanying S-71 Landfill Gas Treatment System) commenced operation on April 27, 2017. Table 2-3 summarizes the S-64 and S-65 Engines' downtimes for the reporting period.

Table 2-3 S-64 and S-65 Downtimes

Month	S-64 Downtime (Hours)	S-65 Downtime (Hours)
May 2022	145.50	132.50
June 2022	170.97	301.75
July 2022	471.42	116.75
August 2022	153.08	613.42
September 2022	49.17	29.17
October 2022	57.25	117.42
Total Hours:	**1,047.38**	**1,311.00**

During the period covered in this report, the S-71 treatment system treated all landfill gasses going to the engines. Appendix B contains the S-64 and S-65 Engine SSM logs, and S-71 Downtime Log which lists dates, times, and lengths of shutdowns for the reporting period.

2.1.3 WELL DISCONNECTION LOG

A Wellfield SSM Log that lists dates, times, and lengths of disconnections for the reporting period is included in Appendix D. In addition, 4 wells (out of a possible 5) remain disconnected at the end of the reporting period, pursuant to BAAQMD Regulation 8-32-116.2 (Limited Exemption, Well Raising).

2.2 EMISSION CONTROL DEVICE DOWNTIME [BAAQMD 8-34-501.2 & §60.757(F)(3)]

No bypassing of the control system or emissions of raw LFG occurred. The Flare SSM Logs that include all downtimes and reasons for each shutdown for the A-51 and A-60 Flares are contained in Appendix B. Device downtime is summarized in Table 2-3.

Table 2-3 GCCS Downtime Summary

January 1, 2022 through April 30, 2022 Total Downtime:	24.83
May 1, 2022 through October 31, 2022 Total Downtime:	14.70
Total 2022 Downtime:	39.53

BAAQMD Breakdown Report (RCA No. 08J98) was submitted on 7/8/22 due to the shutdown of the RLI gas collection and control system (GCCS) from 7/8/22 ~2:51 PM through 7/8/22 ~4:50 PM. The shutdown was caused by a PG&E power outage. The Request for Breakdown Relief letter was submitted on July 15, 2022. Pursuant to Title V section I.F, the 10-day/30-day Deviation Report and 30-day Breakdown Report were submitted on July 15, 2022 (see Appendix C).

BAAQMD Breakdown Report (RCA No. 08L05) was submitted on 8/19/22 due to the shutdown of the RLI gas collection and control system (GCCS) from 8/19/22 ~3:07 PM through 8/19/22 ~8:20 PM. The shutdown was caused by a PG&E power outage. The Request for Breakdown Relief letter was submitted on August 25, 2022. Pursuant to Title V section I.F, the 10-day/30-day Deviation Report and 30-day Breakdown Report were submitted on August 25, 2022 (see Appendix C).

BAAQMD Breakdown Report (RCA No. 08L31) was submitted on 8/30/22 due to the shutdown of the RLI gas collection and control system (GCCS) from 8/30/22 ~4:35 PM through 8/30/22 ~8:10 PM. The shutdown was caused by a PG&E power outage. The Request for Breakdown Relief letter was submitted on September 2, 2022. Pursuant to Title V section I.F, the 10-day/30-day Deviation Report and 30-day Breakdown Report were submitted on September 2, 2022 (see Appendix C).

BAAQMD Breakdown Report (RCA No. 08L51) was submitted on 9/6/22 due to the shutdown of the RLI gas collection and control system (GCCS) from 9/6/22 ~12:09 PM through 9/6/22 ~3:25 PM. The shutdown was caused by a PG&E power outage. The Request for Breakdown Relief letter was submitted on September 12, 2022. Pursuant to Title V section I.F, the 10-day/30-day Deviation Report and 30-day Breakdown Report were submitted on September 12, 2022 (see Appendix C).

2.2.1 LFG BYPASS OPERATIONS (§60.757(f)(2))

Title 40 CFR §60.757(f)(2*)* is not applicable at RLI because no bypass line is installed. LFG cannot be diverted around the control equipment.

2.2.2 KEY EMISSION CONTROL OPERATING PARAMETERS (BAAQMD 8-34-501.11 & 8-34-509)

The A-51 and A-60 Flares are subject to continuous temperature monitoring as required in BAAQMD Regulation 8-34-507 and 40 CFR §60.757(f)(1).

2.3 TEMPERATURE MONITORING RESULTS [(BAAQMD 8-34-501.3, 8-34-507, & §60.757(f)(1)]

The RLI has two flares used to destroy LFG collected by the GCCS (A-51 and A-60). Combustion zone temperatures of the flares are monitored with thermocouples and recorded with Yokogawa DX100 paperless chart recorders. There were no continuous recorder device SSM events during the reporting period. As shown in Appendix F, there were no periods of missing temperature data for the flares during the reporting period.

Title V Permit Condition Number 19867 Part 22 states that the minimum combustion zone temperature shall be equal to the average combustion zone temperature determined during the most recent complying source test minus 50°F, provided that the minimum combustion zone temperature is not less than 1,400°F. Pursuant to Part 22, the following temperature limits applied during the reporting period:

Table 2-4 Applicable Temperature Limits

Device	Test Date	Report Submitted	Average Temperature During Test (°F)	3-hr Minimum Temperature (°F)
A-51	1/12/2022	3/11/2022	1,509	1,459
A-60 Zone A	7/13/2021	9/10/2021	1,575	1,525
A-60 Zone A	7/13/2022	9/11/2022	1,582	1,532
A-60 Zone B	7/17/2018	9/14/2018	1,605	1,555

The three-hour minimum temperature applies upon submittal of the source test report. Operating records for the flares indicate all flares operated in compliance with the applicable three-hour average minimum temperatures from May 1, 2022 to October 31, 2022.

Pursuant to Title V Permit Condition Number 19867, Part 30g, the annual source test at A-60 may be conducted while A-60 is operating in either zone, provided that each operating zone is tested at least once every five years. The most recent source test for Zone A was completed in July 2022. Zone B was tested in July 2018, meeting the obligation to test each zone every five years.

2.4 MONTHLY COVER INTEGRITY MONITORING [BAAQMD 8-34-501.3, 8-34-507, & §60.757(f)(1)]

The Monthly Cover Integrity Monitoring Reports are included in Appendix G. The cover integrity monitoring was performed on the following dates:

- May 26, 2022
- June 20, 2022
- July 28, 2022
- August 31, 2022
- September 29, 2022
- October 24, 2022

No breaches of cover integrity (e.g., cover cracks or exposed garbage) were found during the reporting period.

2.5 LESS THAN CONTINUOUS OPERATION (BAAQMD 8-34-501.5)

The RLI does not operate under BAAQMD Regulation 8-34-404 (Less Than Continuous Operation) and therefore is not required to submit monthly LFG flow rates.

2.6 SURFACE EMISSIONS MONITORING [BAAQMD 8-34-501.6, 8-34-506, & §60.757(f)(5)]

Quarterly Surface Emissions Monitoring (SEM), pursuant to BAAQMD Regulation 8-34-506, was conducted during the reporting period. A flame ionization detector (FID) was used during the SEM events to monitor the path along the landfill surface according to the Landfill SEM Map. Any areas suspected of having emission problems by visible observations also were monitored. Immediately prior to both monitoring events, the FID was zeroed and calibrated using zero air and a 500-ppm_v methane calibration gas.

The Second Quarter 2022 SEM event was conducted by Roberts Environmental Services (RES) personnel on May May 3, 2022. Five exceedances were identified. Corrective action and re-monitoring are described below:

- Corrective actions were completed within 5-days for all locations.
- 1st 10-day re-monitoring was completed on May 12, 2022 with all locations cleared.
- 1-month remonitoring was completed on May 31, 2022. All locations cleared.

The Third Quarter 2022 SEM was conducted by RES on July 20, 2022. Four exceedances were identified. Corrective action and re-monitoring are described below:

- Corrective actions were completed within five days and the 1st 10-day re-monitoring was completed on July 22, 2022. All locations were cleared.
- 1-month remonitoring was completed August 18, 2022. All locations were cleared.

SEM Reports are included in Appendix H.

2.7 COMPONENT LEAK TESTING [BAAQMD 8-34-501.6, 8-34-503)

Quarterly component leak testing, pursuant to BAAQMD Regulation 8-34-503, occurred during the reporting period on the following dates:

Second Quarter 2022 – May 3, 2022
Third Quarter 2022 – July 20, 2022

No exceedances were identified during the 2nd quarter monitoring event.

No exceedances were identified during the 3rd quarter monitoring event.

The Component Leak Testing results are included with the SEM reports in Appendix H.

2.8 SOLID WASTE PLACEMENT RECORDS (BAAQMD 8-34-501.7)

The solid waste placement total was calculated for the period of May 1, 2022 to October 31, 2022. The current waste in-place figure includes solid waste placed in the landfill through the end of the reporting period. Table 2-5 summarizes the RLI solid waste placement records for the reporting period.

Table 2-5 Solid Waste Placement

Waste Placement (May 1, 2022 to October 31, 2022)	106,642 tons
Current Waste In-Place as of November 1, 2022	14.97 million tons

2.9 NON-DEGRADABLE WASTE ACCEPTANCE RECORDS (BAAQMD 8-34-501.8)

RLI does not have non-degradable waste areas that are excluded from the collection system. Therefore, BAAQMD Regulation 8-34-501.8 is not applicable.

2.10 WELLHEAD MONITORING DATA (BAAQMD 8-34-501.4 & 8-34-505)

Wellhead monitoring was performed monthly pursuant to BAAQMD Regulation 8-34-505. The well data for May 1, 2022 to October 31, 2022 are included in Appendix I. Each well was monitored in accordance with the following requirements:

- 8-34-305.1 – Each wellhead shall operate under a vacuum.
- 8-34-305.2 – The LFG temperature in each wellhead shall be less than 55 degrees Celsius (131 °F).
- 8-34-305.4 – The oxygen concentration in each wellhead shall be less than 5 percent by volume.

The wellhead monitoring was performed on the following dates:

- May 2, 3, 5, 6, 9, and 10, 2022
- June 1, 2, 3, 6 and 8, 2022
- July 6, 7, 8, 22, 26, 27, and 28, 2022
- August 8, 16, 17, 18, and 19, 2022
- September 13, 14, 21, 22, 23, 28, and 29, 2022
- October 6, 7, 12, 14, 17, 19, 20, 21, 25, and 26, 2022

WELLHEAD DEVIATIONS [BAAQMD 8-34-501.9 & §60.757(f)(1)]

A total of 17 deviations from the wellhead standards in 8-34-305 occurred during the reporting period. All exceedances were corrected prior to issuance of this report.

The Wellfield Deviation Log is included in Appendix J.

2.11 GAS FLOW MONITORING RESULTS [BAAQMD 8-34-501.10, 8-34-508 & §60.757(f)(1)]

The LFG flow rates from both the A-51 and A-60 flares are measured with Veris flow meters. The S-64 and S65 LFG engines are measured with ABB flow meters. The flow meters meet the requirements of BAAQMD Regulation 8-34-508 by recording fuel flow at least every 15 minutes.

Appendix K contains a summary of the daily and monthly LFG flow rates and heat input for the flares and engine plant. The A-51 flare is utilized as a backup for the A-60 flares. These flow rates are summarized in Table 2-6:

Table 2-6 Total LFG Flow

Emission Control Device	Total Runtime (hours)	Average Flow Rate (scfm)	Average Methane (%)[1]	Total LFG Flow (scf)	12-Month Total LFG Flow (scf) Corrected to 500 BTU/scf	Max Daily Flow (scf) Corrected to 500 BTU/scf
A-51	21	2,532	47.8	3,231,225	3,827,123	1,880,284
A-60	4,134	1,202	46.2	298,184,673	525,569,983	2,418,901
S-64	3,369	495	48.8	99,970,523	257,750,418	927,093
S-65	3,105	477	45.7	88,915,131	219,689,701	847,073
Total	4,401	1,857	46.6	490,301,551	1,006,837,225	--

[1]Methane content was determined from the 7/17/18, 1/14/21, 7/13/21, 7/14/21, 7/15/21, 1/12/22, 7/13/22, 7/14/22, and 7/15/22 Source Tests. Heating value of methane used in heat input calculations is 1,013 BTU/scf
scfm = standard cubic feet per minute
scf= standard cubic feet
MMBTU = million British thermal units

Pursuant to Title V Condition Number 19867, Part 20, the total LFG throughput to the either flare did not exceed 4,320,000 scf during any one day. The A-51 and A-60 Flares combined total LFG throughput did not exceed 2,207,520,000 scf during any consecutive 12-month period.

Appendix K contains a summary of the combined daily LFG flow rates for the A-51 and A-60 Flares and the consecutive 12-month summaries.

There were no periods of missing data or chart recorder non-operation for the A-51 or A-60 Flares or the landfill gas engine plant (S-64 and S-65 engines) during the reporting period. The Flare Missing Data Report Forms are included in Appendix F.

2.12 COMPLIANCE WITH §60.757(f)(6)

"The date of installation and the location of each well or collection system expansion added pursuant to (a)(3), (b), (c)(4) of §60.755."

Routine GCCS maintenance occurred during the reporting period. The Wellfield SSM Log is included in Appendix D, Wellfield SSM Log.

13 wells were added to and 0 wells were removed from the collection system during the reporting period (May 1, 2022 to October 31, 2022).

As of the end of this reporting period, 143 total collectors (136 vertical wells and 7 horizontal collectors) were in service at RLI. A map of the LFG collection system showing the positioning of all vertical wells, horizontal collectors, and other LFG extraction devices is included in Appendix A.

2.13 COMPLIANCE WITH TITLE V PERMIT CONDITION 13123 (S-34 & S-39)

The S-34 Compost Facility Operations and S-39 Screening Operations were utilized during the reporting period. The total amount of material processed did not exceed 160,368 tons during any consecutive 12-month period during the reporting period of May 1, 2022 to October 31, 2022. Monthly and 12-month rolling throughputs are summarized in Table 2-7.

Table 2-7 Composting and Screening Operations Throughput

Month	Total Throughput (tons)	Rolling 12-Month Throughput (tons)
May 2022	10,359	123,735
June 2022	9,967	123,050
July 2022	9,775	122,544
August 2022	11,295	124,247
September 2022	9,854	124,153
October 2022	6,972	121,122

Pursuant to Title V Permit Condition Number 13123 Part 7, all yard waste material was processed within 72 hours of receipt. In addition, pursuant to Title V Permit Condition Number 13123 Part 8, the plant received no public nuisance notices of violation during the reporting period of May 1, 2022 to October 31, 2022.

2.14 COMPLIANCE WITH TITLE V PERMIT CONDITIONS 14098 AND 16516 (S-55)

Pursuant to Title V Permit Condition Number 14098, the annual gasoline throughput for the S-55 Non-Retail Gasoline Dispensing Facility Number 8573 did not exceed 940,000 gallons in any consecutive 12-month period during the timeframe of this report. Monthly gasoline throughput totals for the reporting period are listed in Table 2-8:

Table 2-8 Unleaded Gasoline Throughput

Month	Total Throughput (gallons)	Rolling 12-Month Fuel Usage (gallons)
May 2022	274	3,031
June 2022	301	3,077
July 2022	265	3,272
August 2022	442	3,247
September 2022	280	3,403
October 2022	290	3,201

Pursuant to Title V Permit Condition Number 16516, the Static Pressure Performance Test (Leak Test) for S-55 was performed on March 21, 2022. S-55 passed the Leak Test. The Static Pressure Performance Test results are included in Appendix O.

2.15 COMPLIANCE WITH TITLE V PERMIT CONDITIONS 22820 (S-49)

The permit for S-49 was surrendered to BAAQMD on November 4, 2013. The equipment is on longer on site.

2.16 COMPLIANCE WITH TITLE V PERMIT CONDITION 19865 (S-41)

Pursuant to Title V Permit Condition 19865, the total of waste processed at the S-41 Yard and Green Waste Shredding Operation did not exceed 820 tons per day or 200,000 tons per year. Table 2-9 summarizes the amount of waste processed at S-41 during the reporting period:

Table 2-9 Waste Processed at S-41

Month	Total Throughput (tons)	Rolling 12-Month Throughput (tons)
May 2022	10,359	123,735
June 2022	9,967	123,050
July 2022	9,775	122,544
August 2022	11,295	124,247
September 2022	9,854	124,153
October 2022	6,972	121,122

2.17 COMPLIANCE WITH TITLE V PERMIT CONDITION 19866 (S-42)

The total amount of material received at the S-42 Soil and Cover Stockpiles did not exceed 1,160 tons per day and 105,500 tons per year.

2.18 COMPLIANCE WITH TITLE V PERMIT CONDITION 19867, PARTS 6-10

The following is a summary of vehicle activity at the RLI:

- The mean vehicle fleet weight for all off-site vehicles traveling on paved roads was 15.00 tons, which is below the permit limit of 15.31 tons.
- Mean vehicle fleet weight for all off-site vehicles traveling on gravel or dirt roads was 16.29 tons, which is below the permit limit of 16.63 tons
- The mean vehicle fleet weight for all on-site landfilling and construction related vehicles was 12.3 tons, which is below the permit limit of 28.37 tons.
- During the reporting period, the vehicle miles travelled (VMT) per day on gravel roads did not exceed the permit limit of 280 VMT per day. 2022 partial calendar year VMT on gravel roads was 21,954 VMT, below the limit of 87,080 VMT.
- During the reporting period, the VMT per day on dirt roads did not exceed the permit limit of 639 VMT per day. 2022 partial calendar year VMT on dirt roads was 103,173 VMT, below the limit of 198,650 VMT.
- During the reporting period, the VMT per day on paved roads did not exceed the permit limit of 622 VMT per day. 2022 partial calendar year VMT on paved roads was 64,274 VMT, below the limit of 205,880 VMT.
- During the reporting period, the VMT per day on dirt roads for the on-site vehicle fleet did not exceed the permit limit of 61 VMT per day. 2022 partial calendar year VMT on dirt roads is 14,458 VMT, below the limit of 19,080 VMT.

The records for VMT and average vehicle fleet weights are available for review at RLI.

2.19 COMPLIANCE WITH TITLE V PERMIT CONDITION 19867, PARTS 14 AND 15

No contaminated soil containing volatile organic compound (VOC) concentrations greater than 50 parts per million (ppm) was received during this reporting period. The total VOC emission rate for the reporting period (May 1, 2022 to October 31, 2022) is 0.00 lbs. The VOC soil log is included in Appendix L.

2.20 COMPLIANCE WITH TITLE V PERMIT CONDITION 19867, PARTS 31 AND 33

WEEKLY H_2S MONITORING

Pursuant to Title V Permit Condition Number 19867, Part 31b, weekly hydrogen sulfide (H_2S) readings were taken using Draeger tubes. This sampling frequency was increased to twice weekly starting November 22, 2016 per the Compliance Agreement between RLI and BAAQMD. This agreement is in effect and all terms of the agreement have been complied with.

The twice weekly H_2S readings and quarterly averages are summarized in Appendix M, H_2S Twice Weekly and Quarterly Monitoring.

QUARTERLY H_2S CHARACTERIZATION

Pursuant to Title V Permit Condition Number 19867, Part 31a, RLI collected the quarterly characterization of the LFG for analysis of sulfur compounds. The results are included in Tables 2-10 (LFG), 2-11 (Engine Inlet before pre-treatment), and Appendix M. As previously discussed, RLI has obtained a Compliance Agreement with BAAQMD covering the concentration limits of H_2S in the landfill gas. This agreement is in effect and all terms of the agreement have been complied with.

Table 2-10 LFG Characterization Results

Compound	First Quarter 2022 A60 Result (ppm_v)	Second Quarter 2022 A60 Result (ppm_v)	Third Quarter 2022 A60 Result (ppm_v)
Hydrogen Sulfide	680	600	52
Carbonyl Sulfide	0.89	0.48	0.75
Methyl Mercaptan	1.50	1.90	0.32
Ethyl Mercaptan	0.23	0.20	0.05
Dimethyl Sulfide	1.00	0.79	0.45
Carbon Disulfide	0.13	0.09	0.14
Total Reduced Sulfur	688	607	56

ND = not detected
N/A = not applicable

Table 2-11 Engine Inlet (pre-treatment) Characterization Results

Compound	First Quarter 2022 Result (ppm_v)	Second Quarter 2022 Result (ppm_v)	Third Quarter 2022 Result (ppm_v)
Hydrogen Sulfide	800	600	250
Carbonyl Sulfide	0.59	0.40	0.88
Methyl Mercaptan	1.20	1.10	0.81
Ethyl Mercaptan	0.25	0.18	0.11
Dimethyl Sulfide	0.42	0.34	0.50
Carbon Disulfide	0.10	0.09	0.17
Total Reduced Sulfur	810	608	256

ND = not detected
N/A = not applicable

ROLLING 4-QUARTER TRS LIMIT

The rolling 4-quarter average TRS concentration was calculated at the end of each quarter using data collected from twice weekly tube samples and quarterly analytical samples per Condition 19867, Part 31b. Results are shown in Table 2-12. As shown in the table, at the end of all the Quarters, the calculated TRS concentration was in excess of the 350 ppm_v limit. The Compliance Agreement also covers this limit. Follow-up actions are discussed later in this section.

Table 2-12 Rolling 4-Quarter TRS Concentration

Quarter	Calculated TRS (ppmv)	Rolling Quarterly Average Annual TRS (ppmv)
2021 Q4	696	810.4
2022 Q1	643	681.7
2022 Q2	540	599.7
2022 Q3	581	615.1

ANNUAL LFG CHARACTERIZATION

LFG characterization sampling was conducted concurrently with the A-51 annual source test as required by Title V Permit Condition Number 19867, Part 31 on January 12, 2022. The LFG sample was collected from the main LFG header and analyzed for the organic and sulfur compounds listed in Part 31. The results were included in the Annual Source Test report submitted on March 11, 2022.

Results for Toxic Air Contaminants (TACs) are presented in Table 2-13 and indicate that the LFG collected by S-5 did not exceed the limits listed in Title V Permit Condition 19867, Part 18.b.

Table 2-13 Annual LFG Characterization: Toxic Air Contaminants

Compound	Result (ppb_v)	Concentration Limit* (ppb_v)
Acrylonitrile	<167	300
Benzene	1,093	1,500
Benzyl Chloride	<41.7	500
Carbon Tetrachloride	<41.7	200
Chlorobenzene	<41.7	200
Chloroethane	<112.6	500
Chloroform	<41.7	200
1,4-Dichlorobenzene	179.7	1,000
Ethylbenzene	3,867	4,000
Ethylene Dibromide	<41.7	200
Ethylene Dichloride	448	200
Ethylidene Dichloride	<41.7	500
Hexane	1,480	2,000
Isopropyl Alcohol	8,977	10,000
Methyl Alcohol	30,533	300,000
Methyl Ethyl Ketone	7,860	15,000
Methylene Chloride	<156.9	1,000
Methyl tert-Butyl Ether	<41.7	500

Compound	Result (ppb_v)	Concentration Limit* (ppb_v)
Perchloroethylene	238	1,000
Styrene	278	500
1,1,2,2-Tetrachloroethane	<41.7	200
Toluene	3720	20,000
1,1,1-Trichloroethane	<41.7	200
Trichloroethylene	<41.7	500
Vinyl Chloride	<41.7	2,000
Vinylidene Chloride	<41.7	500
Xylenes	8,463	20,000

ppb_v = parts per billion by volume
<SRL = less than the sample reporting limit

Per the Compliance Agreement, quarterly samples were collected and analyzed for Ethylbenzene and 1,4-Dichlorobenzene. A sample was collected on March 4, 2022 (1st Quarter), April 15, 2022 (2nd Quarter), and August 16, 2022 (3rd Quarter) at the Flare and the Engine Inlet (pre-treatment). Results are presented below.

Table 2-14 Toxic Air Contaminants Sampling

Species	1st Quarter 2022		2nd Quarter 2022		3rd Quarter 2022		Limit (ppb_v)
	A60 Flare (ppb_v)	Engine (ppb_v)	A60 Flare (ppb_v)	Engine (ppb_v)	A60 Flare (ppb_v)	Engine (ppb_v)	
Ethylbenzene	1,400	1,600	1,500	1,400	2,600	2,900	4,000
1,4-Dichlorobenzene	98	110	90	90	240	300	1,000

GROUND LEVEL H_2S MONITORING

RLI began conducting fenceline monitoring for ground level H_2S concentrations in accordance with the May 2011 Proposed Hydrogen Sulfide Monitoring Plan in November 2016. Monitoring was conducted on the following days:

- May 20, 2022
- June 7, 2022
- July 27, 2022
- August 11, 2022
- September 1, 2022
- October 27, 2022

There were no H_2S concentrations observed above 30 ppb averaged over 60 minutes or 60 ppb averaged over 3 minutes.

2.21 COMPLIANCE WITH TITLE V PERMIT CONDITION 22940 (S-56)

The permit for S-56 was surrendered to BAAQMD on October 8, 2020. The equipment is no longer on site.

2.22 COMPLIANCE WITH TITLE V PERMIT CONDITION 22941 (S-57)

The permit for S-57 was surrendered to BAAQMD on October 8, 2020. The equipment is no longer on site.

2.23 COMPLIANCE WITH TITLE V PERMIT CONDITION 23052 (S-58)

Pursuant to Permit Condition 23052 Part 1, the total leachate influent rate to the Aerated Leachate Pond (S-58), excluding non-contact storm runoff, did not exceed 39.42 million gallons during any consecutive 12-month period. Table 2-15 displays the leachate flow information for S-58.

Table 2-15 Leachate Flow Information for S-58

Month	Total Leachate Influent Rate to S-58 (gallons)	Total Rolling 12-Month Flow Rate to S-58 (millions of gallons)
May 2022	1,017,220	16,966,940
June 2022	1,024,460	17,173,280
July 2022	937,580	17,173,280
August 2022	991,880	17,350,660
September 2022	1,118,580	17,709,040
October 2022	771,060	17,336,180

As shown in Table 2-16, the average concentration of precursor organic compounds (POCs) in the leachate influent to S-58 did not exceed the limits specified by Title V Permit Condition Number 23052 Parts 2 and 3:

Table 2-16 POC Concentrations for S-58

Sample Date	Benzene (ppb)	1,4-Dichlorobenzene (ppb)	Vinyl Chloride (ppb)	Total POC Concentration (ppb)
June 8, 2022	2.1	1.8	ND<0.51	9.15
Limit	19	48	7	500

2.24 COMPLIANCE WITH TITLE V PERMIT CONDITION 24527 (S-61 AND S-62)

The S-61 Portable Diesel Engine for Waste Tipper and S-62 Portable Diesel Engine for Power Screens operated less than 4,992 hours combined during any 12-month period

ending in the May 1, 2022 to October 31, 2022 reporting period. Table 2-17 displays runtime hours for S-61 and S-62 during the reporting period.

Table 2-17 S-61 and S-62 Portable Diesel Engines

Month	S-61 Total Runtime (Hours)	S-62 Total Runtime (Hours)	Combined Rolling 12-Month Total (Hours)
May 2022	0	0	0
June 2022	0	0	0
July 2022	0	0	0
August 2022	0	0	0
September 2022	0	0	0
October 2022	0	0	0

2.25 COMPLIANCE WITH TITLE V PERMIT CONDITION 25634

Permit Condition 25634 requires the calculation of monthly LFG Input to all LFG-Fired Combustion Equipment and calculation of monthly emissions of CO and SO2. The calculations are summarized on a quarterly basis to show compliance with rolling 4-quarter limits. These calculations are summarized below. Complete calculations are presented in Appendix P.

Table 2-18 Rolling 4-Quarter LFG Input and CO and SO_2 Emissions

Year	Quarter	Rolling 4-Quarter Totals		
		LFG Input (MMscf)	CO Emissions (tons)	SO_2 Emissions (tons)
2021	4	1,093	22.6	37
2022	1	1,102	19.5	32
2022	2	1,087	16.5	28
2022	3	1,073	15.2	30
Limits		2,625	237.5	99

3 PERFORMANCE TEST REPORT

In accordance with BAAQMD Regulation 8-34-413 and 40 CFR §60.757(g) in NSPS, a Performance Test Report is required to be submitted from subject facilities containing performance and monitoring data for the operation of the GCCS. The operational records listed in Table 3-1 have been reviewed, summarized, and are included herein.

Table 3-1 Performance Test Requirements

Rule	Requirement	Location in Report
8-34-412, §60.8, §60.752(b)(2)(iii)(B), §60.754(d)	Compliance Demonstration Test	Section 3.1,
§60.757(g)(1)	A diagram of the collection system showing collection system positioning including all wells, horizontal collectors, surface collectors, or other gas extraction devices, including the locations of any areas excluded from collection and the proposed sites for future collection system expansion.	Section 3.2, Appendix A
§60.757(g)(2)	The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based.	Section 3.3
§60.757(g)(3)	The documentation of the presence of asbestos or non-degradable material for each area from which collection wells have been excluded based on the presence of asbestos or non-degradable material.	Section 3.4
§60.757(g)(4)	The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on non-productivity and the calculations of gas generation flow rate for each excluded area.	Section 3.5
§60.757(g)(5)	The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill.	Section 3.6
§60.757(g)(6)	The provisions for the control of off-site migration.	Section 3.7

3.1 SOURCE TEST RESULTS (BAAQMD 8-34-412)

3.1.1 FLARE (A-51) SOURCE TEST RESULTS

The 2022 Annual Compliance Demonstration Test (Source Test) was conducted on January 12, 2022. The Test Report was submitted to BAAQMD on March 11, 2022. A summary of the source test report is presented in Appendix N.

The results for the A-51 Flare indicated that the flare is in compliance with BAAQMD Regulation 8-34-301.3 and Title V Condition Number 19867, Parts 23 and 26. Inlet LFG samples were collected from the discharge side of the blower during the test to show compliance with the NMOC limits from Title V Permit Condition Number 18.a. Table 3-2 below shows the results of the source test, averaged from three test runs.

Table 3-2 A-51 Flare Source Test Results

Condition	Flare (A-51) Average Results	Permit Limit	8-34-301.3 limit	Compliance Status
NO_x (ppm_v @ 15% O_2)	12.4	15	---	In Compliance
CO (ppm_v @ 15% O_2)	33.7	82	---	In Compliance
NMOC Outlet (ppm_v @ 3% O_2)	1.8	---	30	In Compliance
NMOC Inlet (ppm_v)	232	360	---	In Compliance

3.1.2 FLARE (A-60) SOURCE TEST RESULTS

The A-60 Flare has two operating Zones (A and B). Title V Permit Condition 19867, Part 30 states that source testing can be conducted while the flare is operating in either zone, provided that each operating zone is tested at least once every five years.

The 2022 Source Test was performed on the A-60 flare operating in Zone A by Blue Sky Environmental, LLC on July 13, 2022. The Test Report was submitted to BAAQMD on September 11, 2022. A summary of the report is presented in Appendix N.

The results for Zone A of the A-60 Flare indicate that the flare is in compliance with BAAQMD Regulation 8-34-301.3 and Title V Condition Number 19867, Parts 23 and 26. Inlet LFG samples were collected from the discharge side of the blower during the test to show compliance with the NMOC limits from Title V Permit Condition Number 18.a. Table 3-3 below shows the results of the source test, averaged from three test runs.

Table 3-3 A-60 Zone A Flare Source Test Results

Condition	Flare (A-60 Zone A) Average Results	Permit Limit	8-34-301.3 limit	Compliance Status
NO_x (ppm_v @ 15% O_2)	12.2	15	---	In Compliance
CO (ppm_v @ 15% O_2)	34.7	82	---	In Compliance
NMOC Outlet (ppm_v @ 3% O_2)	<2.9	---	30	In Compliance
NMOC Inlet (ppm_v)	195	360	---	In Compliance

The 2018 Source Test was performed by Blue Sky Environmental, LLC on July 17, 2018 with the A-60 flare operating in Zone B. The Test Report was submitted to BAAQMD on September 14, 2018 and was included in the May 2019 semi-annual report.

The results for Zone B of the A-60 Flare indicate that the flare is in compliance with BAAQMD Regulation 8-34-301.3 and Title V Condition Number 19867, Parts 23 and 26. Inlet LFG samples were collected from the discharge side of the blower during the test to show compliance with the NMOC limits from Title V Permit Condition Number 18.a. Table 3-4 below shows the results of the source test, averaged from three test runs.

Table 3-4 A-60 Zone B Flare Source Test Results

Condition	Flare (A-60 Zone B) Average Results	Permit Limit	8-34-301.3 limit	Compliance Status
NO_x (ppm_v @ 15% O_2)	12.6	15	---	In Compliance
CO (ppm_v @ 15% O_2)	78.2	82	---	In Compliance
NMOC Outlet (ppm_v @ 3% O_2)	<9.1	---	30	In Compliance
NMOC Inlet (ppm_v)	233	360		In Compliance

3.1.3 ENGINES (S-64 AND S-65) SOURCE TEST RESULTS

The S-64 and S-65 landfill gas (LFG) Engines are operating in accordance with the Bay Area Air Quality Management District (BAAQMD) Permit to Operate (PTO) for Facility 1179, Permit Condition 25635, Part 13. Testing also satisfied initial testing requirements of 40 CFR 60, Subpart JJJ – New Source Performance Standards for Spark Ignition Internal Combustion Engines.

The 2022 Source Test was performed on the S-64 and S-65 LFG Engines by Blue Sky Environmental, LLC on July 14 and 15, 2022. The Test Report was submitted to BAAQMD on September 12, 2022. A summary of the report is presented in Appendix N.

The results for S-64 Engine indicates that the engine is in compliance with PTO Permit Condition 25635, Part 13. Table 3-5 below shows the results of the source test, averaged from three test runs (particulate and formaldehyde have a testing frequency of one engine per year).

Table 3-5 S-64 Engine Source Test Results

Condition	S-64 Engine Average Results	Permit Limit	Compliance Status
NO_x (gm/BHp-hr)	0.01	0.15	In Compliance
CO (gm/BHp-hr)	0.4	1.8	In Compliance
NMOC (gm/BHp-hr as CH_4)	0.02	0.16	In Compliance
Total Particulate (g/BHp)	0.05	0.10	In Compliance
Formaldehyde (lb/hr)	0.04	0.51	In Compliance

The results for S-65 Engine indicates that the engine is in compliance with PTO Permit Condition 25635, Part 13. Table 3-6 below shows the results of the source test, averaged from three test runs.

Table 3-6 S-65 Engine Source Test Results

Condition	S-64 Engine Average Results	Permit Limit	Compliance Status
NO_x (gm/BHp-hr)	0.09	0.15	In Compliance
CO (gm/BHp-hr)	0.2	1.8	In Compliance
NMOC (gm/BHp-hr as CH_4)	0.02	0.16	In Compliance

3.3 COMPLIANCE WITH §60.757(G)(1)

"A diagram of the collection system showing collection system positioning including wells, horizontal collectors…"

A map of the LFG collection system showing the positioning of all vertical wells, horizontal collectors, and other LFG extraction devices is included in Appendix A.

3.4 COMPLIANCE WITH §60.757(g)(2)

"The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based."

RLI's GCCS has historically provided LFG wells and collectors spaced in accordance with standard industry practices. The A-51 and A-60 flares, LFG extraction wells, and piping are more than adequate to move the current LFG flow rate. RLI will continue to add additional LFG control capacity as necessary with the approval of the BAAQMD. The installed collector density appears more than adequate for controlling surface emissions, based on continuous compliance and operational experience.

The total capacity of the LFG mover equipment was designed and will be designed to meet the current United States Environmental Protection Agency (EPA) Model AP-42 projections of LFG generation and the historic LFG extraction rates determined to be continuously available from the facility.

DEMONSTRATING COMPLIANCE WITH §60.757(g)(2)

"The data upon which the sufficient density of wells, horizontal collectors, surface collectors, or other gas extraction devices and the gas mover equipment sizing are based."

Compliance with 40 CFR §60.757(g)(2) is maintained by performing quarterly SEM. Refer to Section 2.6, Surface Emissions Monitoring for information pertaining to the SEM results. These results show that the GCCS has sufficient coverage over the waste footprint. The current flaring system has the capacity to destroy more than twice the actual recovery. Well monitoring data shows that adequate vacuum is available at all

points in the wellfield, demonstrating that the piping network is sufficient to handle all extracted LFG.

3.6 COMPLIANCE WITH §60.757(g)(3)

"The documentation of the presence of asbestos or non-degradable material for each area from which collection wells have been excluded based on the presence of asbestos or non-degradable material."

No segregated areas or accumulations of asbestos material are documented for the site in the GCCS Design Plan. Therefore, 40 CFR §60.757(g)(3) is not applicable.

3.7 COMPLIANCE WITH §60.757(g)(4)

"The sum of the gas generation flow rates for all areas from which collection wells have been excluded based on non-productivity and the calculations of gas generation flow rate for each excluded area."

No non-productive areas have been excluded from the coverage of the GCCS. Therefore, 40 CFR §60.757(g)(4) is not applicable.

3.8 COMPLIANCE WITH §60.757(g)(5)

"The provisions for increasing gas mover equipment capacity with increased gas generation flow rate, if the present gas mover equipment is inadequate to move the maximum flow rate expected over the life of the landfill."

The present LFG mover equipment capacity is adequate to move the current LFG flow rate. RLI will continue to add additional LFG control capacity as necessary with the approval of the BAAQMD.

13 wells were added to and 0 wells were removed from the collection system during the reporting period (May 1, 2022 to October 31, 2022).

As of the end of this reporting period, 143 total collectors (136 vertical wells and 7 horizontal collectors) were in service at RLI.

3.9 COMPLIANCE WITH §60.757(g)(6)

"The provisions for the control of off-site migration."

RLI is a diked area that is completely surrounded by permanent surface water features (San Antonio Creek, Hans Slough, West Slough, and South Slough) which present a barrier to gas migration. The waste footprint is also surrounded by an engineered leachate collection trench that provides a further barrier to LFG migration. Based on the location of RLI and on existing LFG monitoring data, the existing GCCS has been adequate in preventing subsurface lateral migration of LFG to off-site locations.

DEMONSTRATING COMPLIANCE WITH §60.757(g)(6)

"The provisions for the control of off-site migration."

The landfill operator will continue surface monitoring in accordance with the approved monitoring plans. If the GCCS at RLI does not meet the measures of performance set forth in the NSPS/Emissions Guidelines (EG), the GCCS will be adjusted or modified in accordance with the NSPS/EG requirements.

3.10 COMPLIANCE AGREEMENT SUMMARY

In response to increased concentrations of H_2S, 1,4-dichlorobenzene and ethylbenzene observed both during routine sampling events and the 2016 Source Test. RLI entered into a Compliance Agreement with BAAQMD on November 22, 2016. The agreement includes enhanced monitoring and reporting activities for RLI:

- The frequency for H_2S monitoring using Draeger tubes was increased from weekly to twice per week.
- Monthly fenceline monitoring for ground-level H_2S is now required.
- The frequency for TO-15 sampling for 1,4-dichlorobenzene and ethylbenzene was increased to quarterly.
- The frequency for instantaneous SEM was increased from quarterly to bi-monthly.

Reports summarizing this monitoring are required to be submitted to BAAQMD by the 20^{th} day of each month.

All terms of the Agreement were complied with during the reporting period. The monthly compliance reports were submitted to BAAQMD on the following days:

- June 10, 2022
- July 8, 2022
- August 5, 2022
- September 7, 2022
- October 10, 2022
- November 4, 2022

4 START-UP, SHUTDOWN, MALFUNCTION REPORT

Start-up, Shutdown, Malfunction (SSM) Report for the Collection and Control Systems at the Redwood Landfill

The NESHAP contained in 40 CFR Part 63, AAAA for MSW landfills to control hazardous air pollutants include the regulatory requirements for submittal of a semi-annual report (under 40 CFR §63.10(d)(5) of the general provisions) if an SSM event occurred during the reporting period. The reports required by 40 CFR §63.1980(a) of the NESHAP and §60.757(f) of the NSPS summarize the GCCS exceedances. These two semi-annual reports contain similar information and have been combined as allowed by 40 CFR §63.10(d)(5)(i) of the General Provisions.

NESHAP 40 CFR Part 63, AAAA became effective on January 16, 2004. SSM events that occurred during the semi-annual reporting period (May 1, 2022 to October 31, 2022) are noted in this section and included in Appendix B. The following information is included as required:

- During the reporting period, 3 A-51 Flare SSM events, 186 A-60 Flare Zone A SSM events, and 1 A-60 Flare Zone B SSM events occurred. The time, duration, and cause of each event are included in Appendix B, Flare and Engine SSM Logs.

- During the reporting period, 46 S-64 Engine (#1) SSM events, 37 S-65 Engine (#2) SSM events occurred. The time, duration, and cause of each event are included in Appendix B, Flare and Engine SSM Logs.

- During the reporting period, 25 wellfield SSM events occurred. The time and duration of these events are included in Appendix D, Wellfield SSM Log.

- During the reporting period, 0 monitoring/recorder equipment SSM event occurred.

- In all 298 flare, engine, and wellfield SSM events, automatic systems and operator actions were consistent with the standard operating procedures contained in the SSM Plan.

- Revisions of the SSM Plan to correct deficiencies in the landfill operations or procedures were neither required nor prepared (§63.6(e)(3)(viii)).

The Semi-Annual Report pursuit to NESHAP 40 CFR part 63 subpart AAAA, section 1981(h) is submitted separately.

I certify the following:

Based on information and belief formed after reasonable inquiry, information on the startup, shutdown, malfunction forms, all accompanying reports, and other required certifications are true, accurate, and complete.

Ramin A. Khany

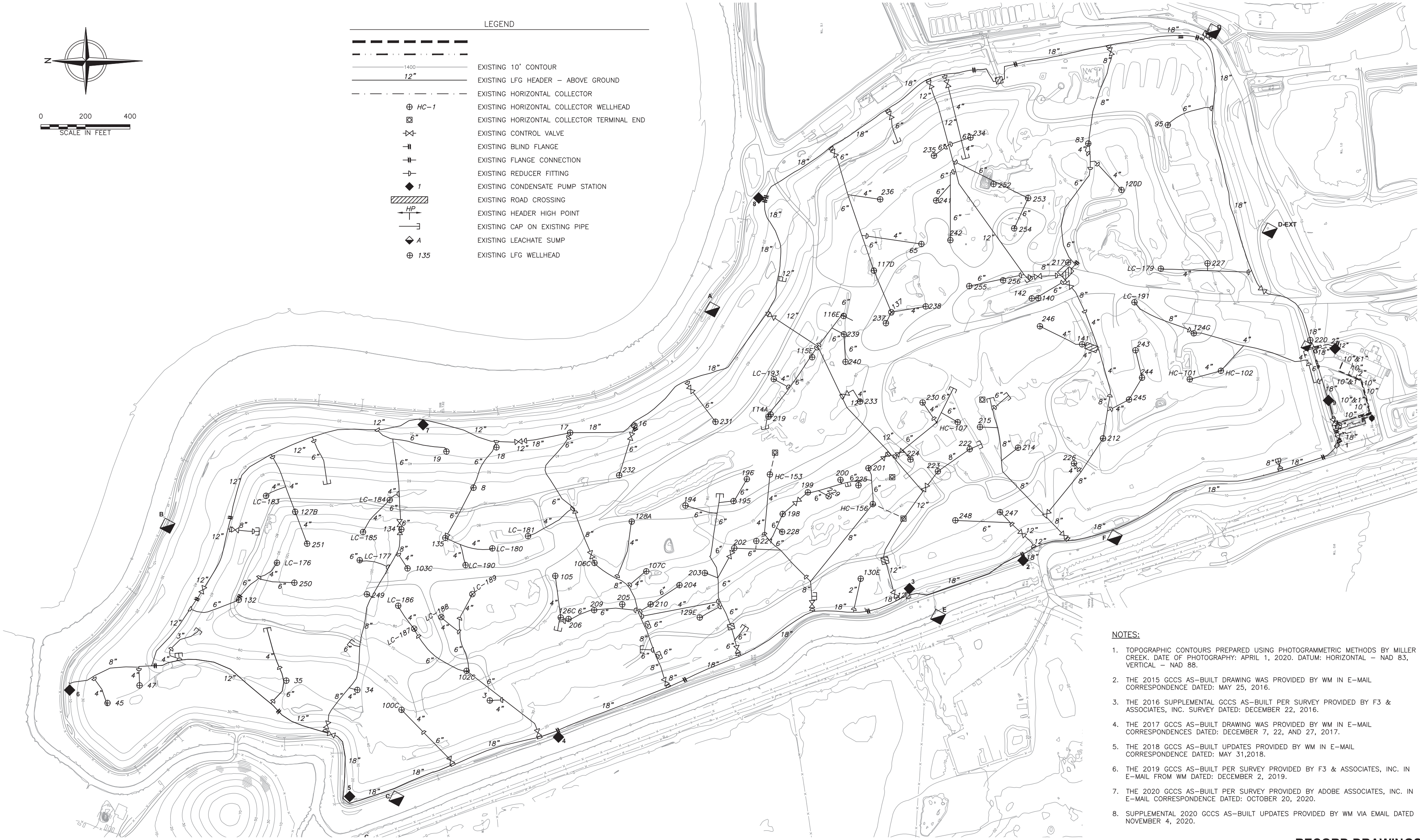
Signature of Responsible Official

November 25, 2022
Date

Ramin Khany
Name of Responsible Official

APPENDIX A

SITE MAP



LEGEND

Symbol	Description
1400	EXISTING 10' CONTOUR
12"	EXISTING LFG HEADER – ABOVE GROUND
	EXISTING HORIZONTAL COLLECTOR
⊕ HC-1	EXISTING HORIZONTAL COLLECTOR WELLHEAD
	EXISTING HORIZONTAL COLLECTOR TERMINAL END
	EXISTING CONTROL VALVE
	EXISTING BLIND FLANGE
	EXISTING FLANGE CONNECTION
	EXISTING REDUCER FITTING
◆ 1	EXISTING CONDENSATE PUMP STATION
	EXISTING ROAD CROSSING
HP	EXISTING HEADER HIGH POINT
	EXISTING CAP ON EXISTING PIPE
A	EXISTING LEACHATE SUMP
⊕ 135	EXISTING LFG WELLHEAD

0 200 400
SCALE IN FEET

NOTES:

1. TOPOGRAPHIC CONTOURS PREPARED USING PHOTOGRAMMETRIC METHODS BY MILLER CREEK. DATE OF PHOTOGRAPHY: APRIL 1, 2020. DATUM: HORIZONTAL – NAD 83, VERTICAL – NAD 88.
2. THE 2015 GCCS AS-BUILT DRAWING WAS PROVIDED BY WM IN E-MAIL CORRESPONDENCE DATED: MAY 25, 2016.
3. THE 2016 SUPPLEMENTAL GCCS AS-BUILT PER SURVEY PROVIDED BY F3 & ASSOCIATES, INC. SURVEY DATED: DECEMBER 22, 2016.
4. THE 2017 GCCS AS-BUILT DRAWING WAS PROVIDED BY WM IN E-MAIL CORRESPONDENCES DATED: DECEMBER 7, 22, AND 27, 2017.
5. THE 2018 GCCS AS-BUILT UPDATES PROVIDED BY WM IN E-MAIL CORRESPONDENCE DATED: MAY 31,2018.
6. THE 2019 GCCS AS-BUILT PER SURVEY PROVIDED BY F3 & ASSOCIATES, INC. IN E-MAIL FROM WM DATED: DECEMBER 2, 2019.
7. THE 2020 GCCS AS-BUILT PER SURVEY PROVIDED BY ADOBE ASSOCIATES, INC. IN E-MAIL CORRESPONDENCE DATED: OCTOBER 20, 2020.
8. SUPPLEMENTAL 2020 GCCS AS-BUILT UPDATES PROVIDED BY WM VIA EMAIL DATED NOVEMBER 4, 2020.

RECORD DRAWINGS

WASTE MANAGEMENT

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE 11/20/20 — DRAWN BY GVP — DESIGNED BY DHK — CHECKED BY AMN — APPROVED BY HLV

TETRA TECH

REDWOOD LANDFILL, INC.
MARIN COUNTY, CALIFORNIA

GCCS RECORD LAYOUT

AS-BUILT SITE PLAN

SHEET NO. 1

PROJECT NO. 200129

File: X:\PROJECTS\REDWOOD\200129 – AS-BUILT UPDATE\Project Drawings\200129_REDWOOD_AS-BUILT_RECORD DRAWING.DWG Layout: S1 User: GERARDO.PAREDES Nov 20, 2020 – 3:00pm

APPENDIX B

FLARE (A-51 & A-60) SSM LOGS, ENGINE (S-64 & S65) SSM LOGS, AND GCCS DOWNTIME SUMMARY

REDWOOD LANDFILL, INC.

A-51 CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
1	x Shutdown x Startup Malfunction	A-51 Flare	1/12/22 15:44 5/4/22 9:50	1/12/22 15:46 5/4/22 9:52	0.03 0.03	2682.10	A51 Source Testing January 12, 2022. After test, operate system with A60 only.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	5/4/2022
2	x Shutdown x Startup Malfunction	A-51 Flare	5/4/22 10:24 10/10/22 15:58	5/4/22 10:26 10/10/22 16:00	0.03 0.03	3821.57	After A51 maintenance, operate system with A60 only.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	10/10/2022
3	x Shutdown Startup Malfunction	A-51 Flare	10/11/22 12:40 A-51 shut down as of November 1, 2022	10/11/22 12:42	0.03	491.33	After A60 maintenance/repair, operate system with A60 only.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	11/1/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
1	x Shutdown x Startup Malfunction	A-60 Zone A	5/3/22 18:20 5/4/22 10:30	5/3/22 18:22 5/4/22 10:32	0.03 0.03	16.17	Varying flow/temperature alarm shutdowns. Manual startup after inspection/maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	5/4/2022
2	x Shutdown x Startup Malfunction	A-60 Zone A	5/4/22 18:36 5/5/22 9:56	5/4/22 18:38 5/5/22 9:58	0.03 0.03	15.33	Varying flow/temperature alarm shutdowns. Manual startup after inspection/maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	5/5/2022
3	x Shutdown x Startup Malfunction	A-60 Zone A	5/5/22 10:34 5/5/22 11:08	5/5/22 10:36 5/5/22 11:10	0.03 0.03	0.57	Varying flow/temperature alarm shutdowns. Manual startup after inspection/maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	5/5/2022
4	x Shutdown x Startup Malfunction	A-60 Zone A	5/8/22 20:04 5/8/22 21:42	5/8/22 20:06 5/8/22 21:44	0.03 0.03	1.63	Varying flow/temperature alarm shutdowns. Manual startup after inspection/maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	5/8/2022
5	x Shutdown x Startup Malfunction	A-60 Zone A	5/10/22 10:36 5/10/22 11:30	5/10/22 10:38 5/10/22 11:32	0.03 0.03	0.90	Manual shutdown for PLC maintenance.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	5/10/2022
6	x Shutdown x Startup Malfunction	A-60 Zone A	5/13/22 13:38 5/13/22 14:20	5/13/22 13:40 5/13/22 14:22	0.03 0.03	0.70	Manual shutdown for flare maintenance.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	5/13/2022
7	x Shutdown x Startup Malfunction	A-60 Zone A	5/17/22 18:04 5/17/22 18:10	5/17/22 18:06 5/17/22 18:12	0.03 0.03	0.10	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/17/2022
8	x Shutdown x Startup Malfunction	A-60 Zone A	5/17/22 18:46 5/17/22 19:04	5/17/22 18:48 5/17/22 19:06	0.03 0.03	0.30	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/17/2022
9	x Shutdown x Startup Malfunction	A-60 Zone A	5/18/22 14:44 5/18/22 14:50	5/18/22 14:46 5/18/22 14:52	0.03 0.03	0.10	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/18/2022
10	x Shutdown x Startup Malfunction	A-60 Zone A	5/18/22 17:24 5/19/22 11:26	5/18/22 17:26 5/19/22 11:28	0.03 0.03	18.03	Varying flow/temperature alarm shutdowns. Manual startup after inspection/maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	5/19/2022
11	x Shutdown x Startup Malfunction	A-60 Zone A	5/19/22 12:42 5/19/22 13:26	5/19/22 12:44 5/19/22 13:28	0.03 0.03	0.73	Manual shutdown and startup for inspection/maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	5/19/2022
12	x Shutdown x Startup Malfunction	A-60 Zone A	5/21/22 19:22 5/21/22 19:40	5/21/22 19:24 5/21/22 19:42	0.03 0.03	0.30	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/21/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
13	x Shutdown x Startup Malfunction	A-60 Zone A	5/22/22 17:42 5/22/22 18:10	5/22/22 17:44 5/22/22 18:12	0.03 0.03	0.47	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/22/2022
14	x Shutdown x Startup Malfunction	A-60 Zone A	5/24/22 11:06 5/24/22 11:38	5/24/22 11:08 5/24/22 11:40	0.03 0.03	0.53	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/24/2022
15	x Shutdown x Startup Malfunction	A-60 Zone A	5/24/22 13:34 5/24/22 14:18	5/24/22 13:36 5/24/22 14:20	0.03 0.03	0.73	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/24/2022
16	x Shutdown x Startup Malfunction	A-60 Zone A	5/25/22 5:34 5/25/22 7:10	5/25/22 5:36 5/25/22 7:12	0.03 0.03	1.60	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/25/2022
17	x Shutdown x Startup Malfunction	A-60 Zone A	5/25/22 11:12 5/25/22 11:30	5/25/22 11:14 5/25/22 11:32	0.03 0.03	0.30	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/25/2022
18	x Shutdown x Startup Malfunction	A-60 Zone A	5/25/22 21:04 5/26/22 1:14	5/25/22 21:06 5/26/22 1:16	0.03 0.03	4.17	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/26/2022
19	x Shutdown x Startup Malfunction	A-60 Zone A	5/26/22 2:36 5/26/22 4:36	5/26/22 2:38 5/26/22 4:38	0.03 0.03	2.00	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/26/2022
20	x Shutdown x Startup Malfunction	A-60 Zone A	5/26/22 7:00 5/26/22 8:18	5/26/22 7:02 5/26/22 8:20	0.03 0.03	1.30	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/26/2022
21	x Shutdown x Startup Malfunction	A-60 Zone A	5/26/22 19:54 5/26/22 22:10	5/26/22 19:56 5/26/22 22:12	0.03 0.03	2.27	Inlet valve alarm shutdown. Manual startup after inspection/maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	5/26/2022
22	x Shutdown x Startup Malfunction	A-60 Zone A	5/27/22 6:12 5/27/22 6:38	5/27/22 6:14 5/27/22 6:40	0.03 0.03	0.43	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/27/2022
23	x Shutdown x Startup Malfunction	A-60 Zone A	5/27/22 8:58 5/27/22 9:02	5/27/22 9:00 5/27/22 9:04	0.03 0.03	0.07	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/27/2022
24	x Shutdown x Startup Malfunction	A-60 Zone A	5/27/22 10:18 5/27/22 10:24	5/27/22 10:20 5/27/22 10:26	0.03 0.03	0.10	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/27/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
25	x Shutdown x Startup Malfunction	A-60 Zone A	5/28/22 0:26 5/28/22 0:32	5/28/22 0:28 5/28/22 0:34	0.03 0.03	0.10	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/28/2022
26	x Shutdown x Startup Malfunction	A-60 Zone A	5/28/22 1:42 5/28/22 1:48	5/28/22 1:44 5/28/22 1:50	0.03 0.03	0.10	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/28/2022
27	x Shutdown x Startup Malfunction	A-60 Zone A	5/28/22 4:54 5/28/22 7:30	5/28/22 4:56 5/28/22 7:32	0.03 0.03	2.60	Varying flow/temperature alarm shutdowns.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	5/28/2022
28	x Shutdown x Startup Malfunction	A-60 Zone A	5/30/22 4:50 5/30/22 8:36	5/30/22 4:52 5/30/22 8:38	0.03 0.03	3.77	Inlet valve alarm shutdown. Manual startup after inspection/maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	5/30/2022
29	x Shutdown x Startup Malfunction	A-60 Zone A	6/1/22 22:20 6/2/22 4:26	6/1/22 22:22 6/2/22 4:28	0.03 0.03	6.10	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	6/2/2022
30	x Shutdown x Startup Malfunction	A-60 Zone A	6/2/22 7:42 6/2/22 7:46	6/2/22 7:44 6/2/22 7:48	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/2/2022
31	x Shutdown x Startup Malfunction	A-60 Zone A	6/3/22 8:42 6/3/22 8:48	6/3/22 8:44 6/3/22 8:50	0.03 0.03	0.10	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/3/2022
32	x Shutdown x Startup Malfunction	A-60 Zone A	6/3/22 17:44 6/3/22 20:32	6/3/22 17:46 6/3/22 20:34	0.03 0.03	2.80	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/3/2022
33	x Shutdown x Startup Malfunction	A-60 Zone A	6/6/22 19:40 6/7/22 11:06	6/6/22 19:42 6/7/22 11:08	0.03 0.03	15.43	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/7/2022
34	x Shutdown x Startup Malfunction	A-60 Zone A	6/7/22 21:58 6/7/22 23:56	6/7/22 22:00 6/7/22 23:58	0.03 0.03	1.97	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/7/2022
35	x Shutdown x Startup Malfunction	A-60 Zone A	6/8/22 9:46 6/8/22 9:50	6/8/22 9:48 6/8/22 9:52	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/8/2022
36	x Shutdown x Startup Malfunction	A-60 Zone A	6/8/22 11:22 6/8/22 11:26	6/8/22 11:24 6/8/22 11:28	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/8/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
37	x Shutdown x Startup Malfunction	A-60 Zone A	6/8/22 13:02 6/8/22 13:16	6/8/22 13:04 6/8/22 13:18	0.03 0.03	0.23	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/8/2022
38	x Shutdown x Startup Malfunction	A-60 Zone A	6/8/22 13:54 6/8/22 14:46	6/8/22 13:56 6/8/22 14:48	0.03 0.03	0.87	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/8/2022
39	x Shutdown x Startup Malfunction	A-60 Zone A	6/8/22 20:00 6/8/22 20:04	6/8/22 20:02 6/8/22 20:06	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/8/2022
40	x Shutdown x Startup Malfunction	A-60 Zone A	6/8/22 20:28 6/8/22 20:32	6/8/22 20:30 6/8/22 20:34	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/8/2022
41	x Shutdown x Startup Malfunction	A-60 Zone A	6/8/22 21:24 6/8/22 21:30	6/8/22 21:26 6/8/22 21:32	0.03 0.03	0.10	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/8/2022
42	x Shutdown x Startup Malfunction	A-60 Zone A	6/8/22 23:10 6/8/22 23:18	6/8/22 23:12 6/8/22 23:20	0.03 0.03	0.13	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/8/2022
43	x Shutdown x Startup Malfunction	A-60 Zone A	6/9/22 0:34 6/9/22 0:44	6/9/22 0:36 6/9/22 0:46	0.03 0.03	0.17	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/9/2022
44	x Shutdown x Startup Malfunction	A-60 Zone A	6/9/22 1:08 6/9/22 1:14	6/9/22 1:10 6/9/22 1:16	0.03 0.03	0.10	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/9/2022
45	x Shutdown x Startup Malfunction	A-60 Zone A	6/9/22 7:02 6/9/22 7:10	6/9/22 7:04 6/9/22 7:12	0.03 0.03	0.13	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/9/2022
46	x Shutdown x Startup Malfunction	A-60 Zone A	6/9/22 8:16 6/9/22 8:20	6/9/22 8:18 6/9/22 8:22	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/9/2022
47	x Shutdown x Startup Malfunction	A-60 Zone A	6/9/22 8:44 6/9/22 8:50	6/9/22 8:46 6/9/22 8:52	0.03 0.03	0.10	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/9/2022
48	x Shutdown x Startup Malfunction	A-60 Zone A	6/9/22 10:06 6/9/22 10:18	6/9/22 10:08 6/9/22 10:20	0.03 0.03	0.20	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/9/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
49	x Shutdown x Startup Malfunction	A-60 Zone A	6/9/22 23:24 6/9/22 23:36	6/9/22 23:26 6/9/22 23:38	0.03 0.03	0.20	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/9/2022
50	x Shutdown x Startup Malfunction	A-60 Zone A	6/10/22 2:06 6/10/22 2:10	6/10/22 2:08 6/10/22 2:12	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/10/2022
51	x Shutdown x Startup Malfunction	A-60 Zone A	6/10/22 4:18 6/10/22 4:28	6/10/22 4:20 6/10/22 4:30	0.03 0.03	0.17	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/10/2022
52	x Shutdown x Startup Malfunction	A-60 Zone A	6/10/22 10:04 6/10/22 10:08	6/10/22 10:06 6/10/22 10:10	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/10/2022
53	x Shutdown x Startup Malfunction	A-60 Zone A	6/13/22 16:04 6/13/22 16:08	6/13/22 16:06 6/13/22 16:10	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/13/2022
54	x Shutdown x Startup Malfunction	A-60 Zone A	6/13/22 22:22 6/13/22 22:26	6/13/22 22:24 6/13/22 22:28	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/13/2022
55	x Shutdown x Startup Malfunction	A-60 Zone A	6/13/22 22:50 6/13/22 23:00	6/13/22 22:52 6/13/22 23:02	0.03 0.03	0.17	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/13/2022
56	x Shutdown x Startup Malfunction	A-60 Zone A	6/14/22 0:28 6/14/22 0:32	6/14/22 0:30 6/14/22 0:34	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/14/2022
57	x Shutdown x Startup Malfunction	A-60 Zone A	6/14/22 1:58 6/14/22 2:10	6/14/22 2:00 6/14/22 2:12	0.03 0.03	0.20	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/14/2022
58	x Shutdown x Startup Malfunction	A-60 Zone A	6/14/22 3:00 6/14/22 3:44	6/14/22 3:02 6/14/22 3:46	0.03 0.03	0.73	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/14/2022
59	x Shutdown x Startup Malfunction	A-60 Zone A	6/14/22 4:18 6/14/22 4:22	6/14/22 4:20 6/14/22 4:24	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/14/2022
60	x Shutdown x Startup Malfunction	A-60 Zone A	6/14/22 5:22 6/14/22 5:36	6/14/22 5:24 6/14/22 5:38	0.03 0.03	0.23	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/14/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
61	x Shutdown x Startup Malfunction	A-60 Zone A	6/14/22 6:38 6/14/22 6:46	6/14/22 6:40 6/14/22 6:48	0.03 0.03	0.13	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/14/2022
62	x Shutdown x Startup Malfunction	A-60 Zone A	6/14/22 7:26 6/14/22 7:30	6/14/22 7:28 6/14/22 7:32	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/14/2022
63	x Shutdown x Startup Malfunction	A-60 Zone A	6/14/22 7:50 6/14/22 7:54	6/14/22 7:52 6/14/22 7:56	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/14/2022
64	x Shutdown x Startup Malfunction	A-60 Zone A	6/14/22 8:20 6/14/22 8:30	6/14/22 8:22 6/14/22 8:32	0.03 0.03	0.17	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/14/2022
65	x Shutdown x Startup Malfunction	A-60 Zone A	6/14/22 8:46 6/14/22 8:50	6/14/22 8:48 6/14/22 8:52	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/14/2022
66	x Shutdown x Startup Malfunction	A-60 Zone A	6/14/22 12:32 6/14/22 12:36	6/14/22 12:34 6/14/22 12:38	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/14/2022
67	x Shutdown x Startup Malfunction	A-60 Zone A	6/15/22 10:14 6/15/22 12:50	6/15/22 10:16 6/15/22 12:52	0.03 0.03	2.60	Manual shutdown and startup for inspection/maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	6/15/2022
68	x Shutdown x Startup Malfunction	A-60 Zone A	6/15/22 14:32 6/15/22 14:36	6/15/22 14:34 6/15/22 14:38	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/15/2022
69	x Shutdown x Startup Malfunction	A-60 Zone A	6/16/22 20:24 6/16/22 20:34	6/16/22 20:26 6/16/22 20:36	0.03 0.03	0.17	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/16/2022
70	x Shutdown x Startup Malfunction	A-60 Zone A	6/17/22 1:20 6/17/22 1:24	6/17/22 1:22 6/17/22 1:26	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/17/2022
71	x Shutdown x Startup Malfunction	A-60 Zone A	6/17/22 1:54 6/17/22 2:04	6/17/22 1:56 6/17/22 2:06	0.03 0.03	0.17	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/17/2022
72	x Shutdown x Startup Malfunction	A-60 Zone A	6/17/22 2:20 6/17/22 8:44	6/17/22 2:22 6/17/22 8:46	0.03 0.03	6.40	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/17/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
73	x Shutdown x Startup Malfunction	A-60 Zone A	6/18/22 4:48 6/18/22 7:28	6/18/22 4:50 6/18/22 7:30	0.03 0.03	2.67	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/18/2022
74	x Shutdown x Startup Malfunction	A-60 Zone A	6/19/22 6:22 6/19/22 6:40	6/19/22 6:24 6/19/22 6:42	0.03 0.03	0.30	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/19/2022
75	x Shutdown x Startup Malfunction	A-60 Zone A	6/25/22 6:36 6/25/22 8:24	6/25/22 6:38 6/25/22 8:26	0.03 0.03	1.80	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/25/2022
76	x Shutdown x Startup Malfunction	A-60 Zone A	6/26/22 7:38 6/26/22 8:10	6/26/22 7:40 6/26/22 8:12	0.03 0.03	0.53	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/26/2022
77	x Shutdown x Startup Malfunction	A-60 Zone A	6/27/22 6:46 6/27/22 7:04	6/27/22 6:48 6/27/22 7:06	0.03 0.03	0.30	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/27/2022
78	x Shutdown x Startup Malfunction	A-60 Zone A	6/28/22 14:40 6/28/22 14:44	6/28/22 14:42 6/28/22 14:46	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	6/28/2022
79	x Shutdown x Startup Malfunction	A-60 Zone A	7/3/22 4:12 7/3/22 10:08	7/3/22 4:14 7/3/22 10:10	0.03 0.03	5.93	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/3/2022
80	x Shutdown x Startup Malfunction	A-60 Zone A	7/7/22 6:24 7/7/22 6:30	7/7/22 6:26 7/7/22 6:32	0.03 0.03	0.10	Flame loss alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/7/2022
81	x Shutdown x Startup Malfunction	A-60 Zone A	7/8/22 6:22 7/8/22 6:30	7/8/22 6:24 7/8/22 6:32	0.03 0.03	0.13	Flame loss alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/8/2022
82	x Shutdown x Startup Malfunction	A-60 Zone A	7/8/22 14:52 7/8/22 16:50	7/8/22 14:54 7/8/22 16:52	0.03 0.03	1.97	All control devices were shutdown due to a site-wide power outage. Inspected upon restart of the control devices. Visual inspections and PLC checks. **RCA 08J98**	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/8/2022
83	x Shutdown x Startup Malfunction	A-60 Zone A	7/8/22 17:14 7/8/22 17:18	7/8/22 17:16 7/8/22 17:20	0.03 0.03	0.07	All control devices were shutdown due to a site-wide power surge. Inspected upon restart of the control devices. Visual inspections and PLC checks were conducted.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/8/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
84	x Shutdown x Startup Malfunction	A-60 Zone A	7/12/22 1:16 7/12/22 1:22	7/12/22 1:18 7/12/22 1:24	0.03 0.03	0.10	Flame loss alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/12/2022
85	x Shutdown x Startup Malfunction	A-60 Zone A	7/13/22 20:36 7/13/22 20:46	7/13/22 20:38 7/13/22 20:48	0.03 0.03	0.17	Flame loss alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/13/2022
86	x Shutdown x Startup Malfunction	A-60 Zone A	7/14/22 7:02 7/14/22 7:08	7/14/22 7:04 7/14/22 7:10	0.03 0.03	0.10	Flame loss alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/14/2022
87	x Shutdown x Startup Malfunction	A-60 Zone A	7/14/22 15:00 7/14/22 15:06	7/14/22 15:02 7/14/22 15:08	0.03 0.03	0.10	Flame loss alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/14/2022
88	x Shutdown x Startup Malfunction	A-60 Zone A	7/20/22 9:50 7/20/22 10:04	7/20/22 9:52 7/20/22 10:06	0.03 0.03	0.23	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/20/2022
89	x Shutdown x Startup Malfunction	A-60 Zone A	7/22/22 7:40 7/22/22 8:08	7/22/22 7:42 7/22/22 8:10	0.03 0.03	0.47	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/22/2022
90	x Shutdown x Startup Malfunction	A-60 Zone A	7/22/22 10:04 7/22/22 10:28	7/22/22 10:06 7/22/22 10:30	0.03 0.03	0.40	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/22/2022
91	x Shutdown x Startup Malfunction	A-60 Zone A	7/22/22 11:18 7/22/22 11:24	7/22/22 11:20 7/22/22 11:26	0.03 0.03	0.10	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/22/2022
92	x Shutdown x Startup Malfunction	A-60 Zone A	7/22/22 12:02 7/22/22 12:20	7/22/22 12:04 7/22/22 12:22	0.03 0.03	0.30	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/22/2022
93	x Shutdown x Startup Malfunction	A-60 Zone A	7/29/22 13:48 7/29/22 13:54	7/29/22 13:50 7/29/22 13:56	0.03 0.03	0.10	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/29/2022
94	x Shutdown x Startup Malfunction	A-60 Zone A	7/29/22 14:08 7/29/22 14:26	7/29/22 14:10 7/29/22 14:28	0.03 0.03	0.30	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	7/29/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
95	x Shutdown x Startup Malfunction	A-60 Zone A	8/4/22 4:40 8/4/22 4:46	8/4/22 4:42 8/4/22 4:48	0.03 0.03	0.10	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/4/2022
96	x Shutdown x Startup Malfunction	A-60 Zone A	8/11/22 10:00 8/11/22 10:16	8/11/22 10:02 8/11/22 10:18	0.03 0.03	0.27	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/11/2022
97	x Shutdown x Startup Malfunction	A-60 Zone A	8/18/22 4:08 8/18/22 5:50	8/18/22 4:10 8/18/22 5:52	0.03 0.03	1.70	Temperature Alarm shutdown with manual restart	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	8/18/2022
98	x Shutdown x Startup Malfunction	A-60 Zone A	8/18/22 6:36 8/18/22 7:56	8/18/22 6:38 8/18/22 7:58	0.03 0.03	1.33	Temperature Alarm shutdown with manual restart	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	8/18/2022
99	x Shutdown x Startup Malfunction	A-60 Zone A	8/18/22 8:44 8/18/22 9:24	8/18/22 8:46 8/18/22 9:26	0.03 0.03	0.67	Temperature Alarm shutdown with manual restart	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	8/18/2022
100	x Shutdown x Startup Malfunction	A-60 Zone A	8/18/22 14:26 8/18/22 14:30	8/18/22 14:28 8/18/22 14:32	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/18/2022
101	x Shutdown x Startup Malfunction	A-60 Zone A	8/18/22 15:52 8/18/22 15:56	8/18/22 15:54 8/18/22 15:58	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/18/2022
102	x Shutdown x Startup Malfunction	A-60 Zone A	8/19/22 14:50 8/19/22 14:56	8/19/22 14:52 8/19/22 14:58	0.03 0.03	0.10	All control devices were shutdown due to a site-wide power surge. Inspected upon restart of the control devices. Visual inspections and PLC checks were conducted.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/19/2022
103	x Shutdown x Startup Malfunction	A-60 Zone A	8/19/22 15:04 8/19/22 20:20	8/19/22 15:06 8/19/22 20:22	0.03 0.03	5.27	All control devices were shutdown due to a site-wide power outage. Inspected upon restart of the control devices. Visual inspections and PLC checks. **RCA 08L05**	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/19/2022
104	x Shutdown x Startup Malfunction	A-60 Zone A	8/20/22 10:28 8/20/22 10:32	8/20/22 10:30 8/20/22 10:34	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/20/2022
105	x Shutdown x Startup Malfunction	A-60 Zone A	8/20/22 11:32 8/20/22 11:36	8/20/22 11:34 8/20/22 11:38	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/20/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
106	x Shutdown x Startup Malfunction	A-60 Zone A	8/20/22 11:52 8/20/22 11:56	8/20/22 11:54 8/20/22 11:58	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/20/2022
107	x Shutdown x Startup Malfunction	A-60 Zone A	8/20/22 17:10 8/20/22 17:14	8/20/22 17:12 8/20/22 17:16	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/20/2022
108	x Shutdown x Startup Malfunction	A-60 Zone A	8/20/22 17:24 8/20/22 17:28	8/20/22 17:26 8/20/22 17:30	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/20/2022
109	x Shutdown x Startup Malfunction	A-60 Zone A	8/20/22 19:06 8/20/22 19:10	8/20/22 19:08 8/20/22 19:12	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/20/2022
110	x Shutdown x Startup Malfunction	A-60 Zone A	8/20/22 20:08 8/20/22 20:12	8/20/22 20:10 8/20/22 20:14	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/20/2022
111	x Shutdown x Startup Malfunction	A-60 Zone A	8/21/22 13:52 8/21/22 13:56	8/21/22 13:54 8/21/22 13:58	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/21/2022
112	x Shutdown x Startup Malfunction	A-60 Zone A	8/21/22 19:56 8/21/22 20:00	8/21/22 19:58 8/21/22 20:02	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/21/2022
113	x Shutdown x Startup Malfunction	A-60 Zone A	8/22/22 13:08 8/22/22 13:12	8/22/22 13:10 8/22/22 13:14	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/22/2022
114	x Shutdown x Startup Malfunction	A-60 Zone A	8/22/22 13:40 8/22/22 13:46	8/22/22 13:42 8/22/22 13:48	0.03 0.03	0.10	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/22/2022
115	x Shutdown x Startup Malfunction	A-60 Zone A	8/22/22 15:18 8/22/22 15:22	8/22/22 15:20 8/22/22 15:24	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/22/2022
116	x Shutdown x Startup Malfunction	A-60 Zone A	8/23/22 10:56 8/23/22 11:00	8/23/22 10:58 8/23/22 11:02	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/23/2022
117	x Shutdown x Startup Malfunction	A-60 Zone A	8/23/22 13:56 8/23/22 14:00	8/23/22 13:58 8/23/22 14:02	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/23/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
118	x Shutdown x Startup Malfunction	A-60 Zone A	8/23/22 14:24 8/23/22 14:28	8/23/22 14:26 8/23/22 14:30	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/23/2022
119	x Shutdown x Startup Malfunction	A-60 Zone A	8/23/22 14:36 8/23/22 14:42	8/23/22 14:38 8/23/22 14:44	0.03 0.03	0.10	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/23/2022
120	x Shutdown x Startup Malfunction	A-60 Zone A	8/23/22 14:56 8/23/22 15:00	8/23/22 14:58 8/23/22 15:02	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/23/2022
121	x Shutdown x Startup Malfunction	A-60 Zone A	8/23/22 15:04 8/23/22 15:14	8/23/22 15:06 8/23/22 15:16	0.03 0.03	0.17	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/23/2022
122	x Shutdown x Startup Malfunction	A-60 Zone A	8/23/22 17:56 8/23/22 18:00	8/23/22 17:58 8/23/22 18:02	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/23/2022
123	x Shutdown x Startup Malfunction	A-60 Zone A	8/23/22 19:36 8/23/22 19:40	8/23/22 19:38 8/23/22 19:42	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	8/23/2022
124	x Shutdown x Startup Malfunction	A-60 Zone A	8/24/22 8:50 8/24/22 11:00	8/24/22 8:52 8/24/22 11:02	0.03 0.03	2.17	Manual shutdown and startup for thermocouple inspection/maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	8/24/2022
125	x Shutdown x Startup Malfunction	A-60 Zone A	8/30/22 16:36 8/30/22 20:10	8/30/22 16:38 8/30/22 20:12	0.03 0.03	3.57	All control devices were shutdown due to a site-wide power outage. Inspected upon restart of the control devices. Visual inspections and PLC checks. **RCA 08L31**	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	8/30/2022
126	x Shutdown x Startup Malfunction	A-60 Zone A	9/2/22 9:38 9/2/22 9:58	9/2/22 9:40 9/2/22 10:00	0.03 0.03	0.33	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/2/2022
127	x Shutdown x Startup Malfunction	A-60 Zone A	9/6/22 12:10 9/6/22 15:24	9/6/22 12:12 9/6/22 15:26	0.03 0.03	3.23	All control devices were shutdown due to a site-wide power outage. Inspected upon restart of the control devices. Visual inspections and PLC checks. **RCA 08L51**	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	9/6/2022
128	x Shutdown x Startup Malfunction	A-60 Zone A	9/6/22 18:04 9/7/22 9:24	9/6/22 18:06 9/7/22 9:26	0.03 0.03	15.33	Manual shutdown due to fire on landfill.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	9/7/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
129	x Shutdown x Startup Malfunction	A-60 Zone A	9/14/22 7:28 9/14/22 8:54	9/14/22 7:30 9/14/22 8:56	0.03 0.03	1.43	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/14/2022
130	x Shutdown x Startup Malfunction	A-60 Zone A	9/15/22 6:18 9/15/22 8:54	9/15/22 6:20 9/15/22 8:56	0.03 0.03	2.60	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/15/2022
131	x Shutdown x Startup Malfunction	A-60 Zone A	9/16/22 7:04 9/16/22 7:36	9/16/22 7:06 9/16/22 7:38	0.03 0.03	0.53	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/16/2022
132	x Shutdown x Startup Malfunction	A-60 Zone A	9/17/22 19:08 9/17/22 23:26	9/17/22 19:10 9/17/22 23:28	0.03 0.03	4.30	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/17/2022
133	x Shutdown x Startup Malfunction	A-60 Zone A	9/18/22 2:04 9/18/22 2:26	9/18/22 2:06 9/18/22 2:28	0.03 0.03	0.37	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/18/2022
134	x Shutdown x Startup Malfunction	A-60 Zone A	9/18/22 6:14 9/18/22 11:18	9/18/22 6:16 9/18/22 11:20	0.03 0.03	5.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/18/2022
135	x Shutdown x Startup Malfunction	A-60 Zone A	9/18/22 12:16 9/18/22 14:18	9/18/22 12:18 9/18/22 14:20	0.03 0.03	2.03	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/18/2022
136	x Shutdown x Startup Malfunction	A-60 Zone A	9/20/22 8:44 9/20/22 9:16	9/20/22 8:46 9/20/22 9:18	0.03 0.03	0.53	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/20/2022
137	x Shutdown x Startup Malfunction	A-60 Zone A	9/22/22 6:30 9/22/22 7:58	9/22/22 6:32 9/22/22 8:00	0.03 0.03	1.47	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/22/2022
138	x Shutdown x Startup Malfunction	A-60 Zone A	9/26/22 5:18 9/26/22 6:04	9/26/22 5:20 9/26/22 6:06	0.03 0.03	0.77	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/26/2022
139	x Shutdown x Startup Malfunction	A-60 Zone A	9/26/22 7:42 9/26/22 10:24	9/26/22 7:44 9/26/22 10:26	0.03 0.03	2.70	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/26/2022
140	x Shutdown x Startup Malfunction	A-60 Zone A	9/26/22 20:12 9/26/22 20:26	9/26/22 20:14 9/26/22 20:28	0.03 0.03	0.23	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/26/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
141	x Shutdown x Startup Malfunction	A-60 Zone A	9/27/22 3:58 9/27/22 5:46	9/27/22 4:00 9/27/22 5:48	0.03 0.03	1.80	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/27/2022
142	x Shutdown x Startup Malfunction	A-60 Zone A	9/28/22 8:36 9/28/22 9:32	9/28/22 8:38 9/28/22 9:34	0.03 0.03	0.93	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	9/28/2022
143	x Shutdown x Startup Malfunction	A-60 Zone A	10/1/22 20:02 10/1/22 22:08	10/1/22 20:04 10/1/22 22:10	0.03 0.03	2.10	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/1/2022
144	x Shutdown x Startup Malfunction	A-60 Zone A	10/3/22 7:04 10/3/22 8:20	10/3/22 7:06 10/3/22 8:22	0.03 0.03	1.27	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/3/2022
145	x Shutdown x Startup Malfunction	A-60 Zone A	10/4/22 6:52 10/4/22 7:52	10/4/22 6:54 10/4/22 7:54	0.03 0.03	1.00	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/4/2022
146	x Shutdown x Startup Malfunction	A-60 Zone A	10/4/22 9:00 10/4/22 9:26	10/4/22 9:02 10/4/22 9:28	0.03 0.03	0.43	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/4/2022
147	x Shutdown x Startup Malfunction	A-60 Zone A	10/4/22 10:30 10/4/22 11:16	10/4/22 10:32 10/4/22 11:18	0.03 0.03	0.77	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/4/2022
148	x Shutdown x Startup Malfunction	A-60 Zone A	10/4/22 15:04 10/4/22 15:08	10/4/22 15:06 10/4/22 15:10	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/4/2022
149	x Shutdown x Startup Malfunction	A-60 Zone A	10/4/22 21:58 10/4/22 23:28	10/4/22 22:00 10/4/22 23:30	0.03 0.03	1.50	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/4/2022
150	x Shutdown x Startup Malfunction	A-60 Zone A	10/5/22 0:28 10/5/22 4:08	10/5/22 0:30 10/5/22 4:10	0.03 0.03	3.67	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/5/2022
151	x Shutdown x Startup Malfunction	A-60 Zone A	10/5/22 5:22 10/5/22 7:14	10/5/22 5:24 10/5/22 7:16	0.03 0.03	1.87	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/5/2022
152	x Shutdown x Startup Malfunction	A-60 Zone A	10/5/22 8:34 10/5/22 9:04	10/5/22 8:36 10/5/22 9:06	0.03 0.03	0.50	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/5/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
153	x Shutdown x Startup Malfunction	A-60 Zone A	10/6/22 5:32 10/6/22 9:08	10/6/22 5:34 10/6/22 9:10	0.03 0.03	3.60	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/6/2022
154	x Shutdown x Startup Malfunction	A-60 Zone A	10/7/22 5:02 10/7/22 6:22	10/7/22 5:04 10/7/22 6:24	0.03 0.03	1.33	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/7/2022
155	x Shutdown x Startup Malfunction	A-60 Zone A	10/10/22 9:26 10/10/22 12:56	10/10/22 9:28 10/10/22 12:58	0.03 0.03	3.50	Manual shutdown and startup for flare maintenance.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	10/10/2022
156	x Shutdown x Startup Malfunction	A-60 Zone A	10/10/22 14:22 10/11/22 12:52	10/10/22 14:24 10/11/22 12:54	0.03 0.03	22.50	Auto shutdown due to low compressor pressure.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	10/11/2022
157	x Shutdown x Startup Malfunction	A-60 Zone A	10/12/22 11:28 10/12/22 11:52	10/12/22 11:30 10/12/22 11:54	0.03 0.03	0.40	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/12/2022
158	x Shutdown x Startup Malfunction	A-60 Zone A	10/12/22 18:30 10/12/22 19:04	10/12/22 18:32 10/12/22 19:06	0.03 0.03	0.57	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/12/2022
159	x Shutdown x Startup Malfunction	A-60 Zone A	10/13/22 18:58 10/13/22 19:42	10/13/22 19:00 10/13/22 19:44	0.03 0.03	0.73	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/13/2022
160	x Shutdown x Startup Malfunction	A-60 Zone A	10/14/22 10:56 10/14/22 11:34	10/14/22 10:58 10/14/22 11:36	0.03 0.03	0.63	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/14/2022
161	x Shutdown x Startup Malfunction	A-60 Zone A	10/14/22 19:00 10/14/22 19:44	10/14/22 19:02 10/14/22 19:46	0.03 0.03	0.73	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/14/2022
162	x Shutdown x Startup Malfunction	A-60 Zone A	10/14/22 20:40 10/14/22 20:44	10/14/22 20:42 10/14/22 20:46	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/14/2022
163	x Shutdown x Startup Malfunction	A-60 Zone A	10/14/22 23:18 10/14/22 23:24	10/14/22 23:20 10/14/22 23:26	0.03 0.03	0.10	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/14/2022
164	x Shutdown x Startup Malfunction	A-60 Zone A	10/15/22 1:08 10/15/22 1:24	10/15/22 1:10 10/15/22 1:26	0.03 0.03	0.27	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/15/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
165	x Shutdown x Startup Malfunction	A-60 Zone A	10/15/22 2:24 10/15/22 11:32	10/15/22 2:26 10/15/22 11:34	0.03 0.03	9.13	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/15/2022
166	x Shutdown x Startup Malfunction	A-60 Zone A	10/15/22 14:34 10/15/22 17:52	10/15/22 14:36 10/15/22 17:54	0.03 0.03	3.30	PG&E Planned Power Shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/15/2022
167	x Shutdown x Startup Malfunction	A-60 Zone A	10/19/22 10:22 10/19/22 10:34	10/19/22 10:24 10/19/22 10:36	0.03 0.03	0.20	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/19/2022
168	x Shutdown x Startup Malfunction	A-60 Zone A	10/20/22 7:16 10/20/22 7:22	10/20/22 7:18 10/20/22 7:24	0.03 0.03	0.10	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/20/2022
169	x Shutdown x Startup Malfunction	A-60 Zone A	10/20/22 8:30 10/20/22 9:46	10/20/22 8:32 10/20/22 9:48	0.03 0.03	1.27	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/20/2022
170	x Shutdown x Startup Malfunction	A-60 Zone A	10/20/22 20:34 10/20/22 23:46	10/20/22 20:36 10/20/22 23:48	0.03 0.03	3.20	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/20/2022
171	x Shutdown x Startup Malfunction	A-60 Zone A	10/21/22 0:36 10/21/22 0:56	10/21/22 0:38 10/21/22 0:58	0.03 0.03	0.33	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/21/2022
172	x Shutdown x Startup Malfunction	A-60 Zone A	10/21/22 2:38 10/21/22 8:28	10/21/22 2:40 10/21/22 8:30	0.03 0.03	5.83	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/21/2022
173	x Shutdown x Startup Malfunction	A-60 Zone A	10/21/22 9:16 10/21/22 12:16	10/21/22 9:18 10/21/22 12:18	0.03 0.03	3.00	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/21/2022
174	x Shutdown x Startup Malfunction	A-60 Zone A	10/21/22 12:26 10/21/22 12:52	10/21/22 12:28 10/21/22 12:54	0.03 0.03	0.43	Manual shutdown and startup for field maintenance.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	10/21/2022
175	x Shutdown x Startup Malfunction	A-60 Zone A	10/21/22 16:56 10/23/22 10:14	10/21/22 16:58 10/23/22 10:16	0.03 0.03	41.30	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		Mike Chan	10/23/2022
176	x Shutdown x Startup Malfunction	A-60 Zone A	10/23/22 11:16 10/23/22 11:26	10/23/22 11:18 10/23/22 11:28	0.03 0.03	0.17	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/23/2022

REDWOOD LANDFILL, INC.

A-60 ZONE A CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
177	x Shutdown x Startup Malfunction	A-60 Zone A	10/23/22 18:48 10/23/22 21:40	10/23/22 18:50 10/23/22 21:42	0.03 0.03	2.87	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/23/2022
178	x Shutdown x Startup Malfunction	A-60 Zone A	10/23/22 22:46 10/24/22 0:04	10/23/22 22:48 10/24/22 0:06	0.03 0.03	1.30	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/24/2022
179	x Shutdown x Startup Malfunction	A-60 Zone A	10/24/22 1:04 10/24/22 2:32	10/24/22 1:06 10/24/22 2:34	0.03 0.03	1.47	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/24/2022
180	x Shutdown x Startup Malfunction	A-60 Zone A	10/24/22 4:34 10/24/22 5:26	10/24/22 4:36 10/24/22 5:28	0.03 0.03	0.87	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/24/2022
181	x Shutdown x Startup Malfunction	A-60 Zone A	10/24/22 9:36 10/24/22 10:30	10/24/22 9:38 10/24/22 10:32	0.03 0.03	0.90	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/24/2022
182	x Shutdown x Startup Malfunction	A-60 Zone A	10/24/22 22:02 10/24/22 22:14	10/24/22 22:04 10/24/22 22:16	0.03 0.03	0.20	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/24/2022
183	x Shutdown x Startup Malfunction	A-60 Zone A	10/25/22 5:50 10/25/22 9:36	10/25/22 5:52 10/25/22 9:38	0.03 0.03	3.77	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/25/2022
184	x Shutdown x Startup Malfunction	A-60 Zone A	10/25/22 18:58 10/25/22 19:02	10/25/22 19:00 10/25/22 19:04	0.03 0.03	0.07	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/25/2022
185	x Shutdown x Startup Malfunction	A-60 Zone A	10/27/22 14:44 10/27/22 14:52	10/27/22 14:46 10/27/22 14:54	0.03 0.03	0.13	Manual shutdown and startup for flare maintenance.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	10/27/2022
186	x Shutdown x Startup Malfunction	A-60 Zone A	10/29/22 23:38 10/30/22 0:12	10/29/22 23:40 10/30/22 0:14	0.03 0.03	0.57	Varying flow/temperature alarm shutdown.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		Mike Chan	10/30/2022

REDWOOD LANDFILL, INC.

A-60 ZONE B CONTROL DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
1	x Shutdown Startup Malfunction	A-60 Zone B	12/18/19 13:28	12/18/19 13:30	0.03	25162.53	Manual shutdown. Running on A60A only.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	11/1/2022
			Zone B shut down as of November 1, 2022												

(a) **STANDARD OPERATING PROCEDURES**

Shutdown

Procedure No.	Procedure
1.	Ensure that there is no unsafe conditions present, contact manager immediately
2.	Initiate shutdown sequence below by one or more of the following (Note date and time in Section 1 of form above) a. Press Emergency Stop if necessary b. Close On/Off switch(es) or Push On/Off button(s) c. Close adjacent valves if necessary
3.	Observe that system achieves normal shutdown ranges for levels, pressures, and temperatures (Note date and time in Section 2 of form above)

Startup

Procedure No.	Procedure
1.	Ensure that there is no unsafe conditions present
2.	Ensure that the system is ready to start by one of the following: a. Valves are in correct position b. Levels, pressures, and temperatures are within normal starting range c. Alarms are cleared d. Power is on and available to control panel and ready to energized equipment. e. Emergency stop is de-energized
3.	Initiate start sequence (Note time and date in section 1 of form above)
4.	Observe that system achieves normal shutdown ranges for levels, pressures, and temperatures (Note time and date in Section 2 of form above)

Malfunction

EQUIPMENT	PURPOSE	MALFUNCTION EVENT	COMMON CAUSES	PROCEDURE NO. -TYPICAL RESPONSE ACTIONS
LFG Collection and Control System				
Blower or Other Gas Mover Equipment	Applies vacuum to wellfield to extract LFG and transport to control device	Loss of LFG Flow/Blower Malfunction	-Flame arrestor fouling/deterioratior -Automatic valve problems -Blower failure (e.g., belt, motor, impeller, coupling, seizing, etc.) -Loss of power -Extraction piping failure -Condensate knock-out problems -Extraction piping blockages	1. Repair breakages in extraction piping 2. Clean flame arrestor 3. Repair blockages in extraction piping 4. Verify automatic valve operation, compressed air/nitrogen supply 5. Notify power utility, if appropriate 6. Provide/utilize auxiliary power source, if necessar 7. Repair Settlement in Collection Piping 8. Repair Blower 9. Activate back-up blower, if available 10. Clean knock-up pot/demister 11. Drain knock-out pot
Extraction Wells and Collection Piping	Conduits for extractions and movement of LFG flow	Collection well and pipe failures	-Break/crack in header or lateral piping -Leaks at wellheads, valves, flanges, Test ports, seals, couplings, etc. -Collection piping blockages -Problems due to settlement (e.g. pipe separation, deformation, development of low points	12. Repair leaks or breaks in lines or wellheads 13. Follow procedures for loss of LFG flow/blower malfunction 14. Repair blockages in collection piping 15. Repair settlement in collection piping 16. Re-install, repair, or replace piping
Blower or Other Gas Mover Equipment And Control Device	Collection and control of LFG	Loss of electrical power	- Force majeure/Act of God (e.g., lightning, flood, earthquake, etc.) -Area-wide or local blackout or brown-ou -Interruption in service (e.g. blown service fuse -Electrical line failure -Breaker trip -Transformer failure -Motor starter failure/trip -Overdraw of power -Problems in electrical panel -Damage to electrical equipment from on-site operations	17. Check/reset breaker 18. Check/repair electrical panel components 19. Check/repair transformer 20. Check/repair motor starter 21. Check/repair electrical line 22. Test amperage to various equipment 23. Contact electricity supplier 24. Contact/contract electrician 25.Provide auxiliary power (if necessary
LFG Control Device	Combusts LFG	Low temperature conditions at control device	-Problems with temperature -monitoring equipmen -Problems/failure of -thermocouple and/or thermocouple wiring -Change of LFG flow -Change of LFG quality -Problems with air louvers -Problems with air/fuel controls -Change in atmospheric conditions	26. Check/repair temperature monitoring equipmen 27. Check/repair thermocouple and/or wiring 28. Follow procedures for loss of flow/blower malfunction 29. Check/adjust louvers 30. Check/adjust air/fuel controls
LFG Control Device	Combusts LFG	Loss of Flame	-Problems/failure of thermocouple -Loss/change of LFG flow -Loss/change of LFG quality -Problems with air/fuel controls -Problems/failure of flame sensor -Problems with temperature monitoring equipmen	31. Check/repair temperature monitoring equipmen 32. Check/repair thermocouple 33. Follow procedures for loss of flow/blower malfunction 34. Check/adjust air/fuel controls 35. Check/adjust/repair flame sensor 36. Check/adjust LFG collectors
Flow Monitoring/ Recording Device	Measures and records gas flow from collection system to control	Malfunctions of Flow Monitoring/Recording Device	-Problems with orifice plate, pitot tube, or other in-line flow measuring device -Problems with device controls and/or wiring -Problems with chart recorder	37. Check/adjust/repair flow measuring device and/or wiring 38. Check/repair chart recorder 39. Replace paper in chart recorder
Temperature Monitoring/ Recording Device	Monitors and records combustion temperature of enclosed combustion device	Malfunctions of Temperature Monitoring/Recording Device	-Problems with thermocouple -Problems with device controls and/or wiring -Problems with chart recorder	40. Check/adjust/repair thermocouple 41. Check/adjust/repair controller and/or wiring 42. Check/adjust/repair electrical panel components 43. Check/repair chart recorder 44. Replace paper in chart recorder
Control Device	Combusts LFG	Other Control Device Malfunctions	-Control device smoking (i.e. visible emissions) -Problems with flare insulation -Problems with pilot light system -Problems with air louvers -Problems with air/fuel controllers -Problems with thermocouple -Problems with burners -Problems with flame arrester -Alarmed malfunction conditions not covered above -Unalarmed conditions discovered during inspection not covered above	45. Site-specific diagnosis procedures 46. Site-specific responses actions based on diagnosis 47. Open manual louvers 48. Clean pitot orifice 49. Clean/drain flame arrestor 50. Refill propane supply 51. Check/repair pilot sparking system

(b) For each permit limit exceedance complete an "SSM Plan Departure Form".

REDWOOD LANDFILL, INC.
WMRE LFG Engine #1 (S-64) DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
1	x Shutdown x Startup Malfunction	Engine #1 (S-64)	5/9/22 11:00 5/9/22 14:15	5/9/22 11:02 5/9/22 14:17	0.03 0.03	3.25	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C. Johnson	5/9/2022
2	x Shutdown x Startup Malfunction	Engine #1 (S-64)	5/12/22 14:30 5/17/22 13:15	5/12/22 14:32 5/17/22 13:17	0.03 0.03	118.75	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C. Johnson	5/17/2022
3	x Shutdown x Startup Malfunction	Engine #1 (S-64)	5/17/22 14:30 5/17/22 17:00	5/17/22 14:32 5/17/22 17:02	0.03 0.03	2.50	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C. Johnson	5/17/2022
4	x Shutdown x Startup Malfunction	Engine #1 (S-64)	5/17/22 19:15 5/18/22 16:15	5/17/22 19:17 5/18/22 16:17	0.03 0.03	21.00	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C. Johnson	5/18/2022
5	x Shutdown x Startup Malfunction	Engine #1 (S-64)	6/10/22 16:00 6/13/22 7:45	6/10/22 16:02 6/13/22 7:47	0.03 0.03	63.75	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		c Johnson	6/13/2022
6	x Shutdown x Startup Malfunction	Engine #1 (S-64)	6/15/22 10:30 6/16/22 11:15	6/15/22 10:32 6/16/22 11:17	0.03 0.03	24.75	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/16/2022
7	x Shutdown x Startup Malfunction	Engine #1 (S-64)	6/17/22 14:30 6/18/22 19:30	6/17/22 14:32 6/18/22 19:32	0.03 0.03	29.00	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/18/2022
8	x Shutdown x Startup Malfunction	Engine #1 (S-64)	6/20/22 20:45 6/21/22 5:45	6/20/22 20:47 6/21/22 5:47	0.03 0.03	9.00	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/21/2022
9	x Shutdown x Startup Malfunction	Engine #1 (S-64)	6/21/22 15:30 6/22/22 12:15	6/21/22 15:32 6/22/22 12:17	0.03 0.03	20.75	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/22/2022
10	x Shutdown x Startup Malfunction	Engine #1 (S-64)	6/24/22 15:15 6/24/22 17:25	6/24/22 15:17 6/24/22 17:27	0.03 0.03	2.17	engine over speed	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		C Johnson	6/24/2022
11	x Shutdown x Startup Malfunction	Engine #1 (S-64)	6/27/22 10:37 6/27/22 10:45	6/27/22 10:39 6/27/22 10:47	0.03 0.03	0.13	Maintenace on Johnson Matthey system	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/27/2022
12	x Shutdown x Startup Malfunction	Engine #1 (S-64)	6/28/22 13:50 6/28/22 15:15	6/28/22 13:52 6/28/22 15:17	0.03 0.03	1.42	shut down to reboot system	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) x No		C Johnson	6/28/2022

REDWOOD LANDFILL, INC.
WMRE LFG Engine #1 (S-64) DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
13	x Shutdown x Startup Malfunction	Engine #1 (S-64)	6/29/22 18:45 6/30/22 11:55	6/29/22 18:47 6/30/22 11:57	0.03 0.03	17.17	throttle actuator failure	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/30/2022
14	x Shutdown x Startup Malfunction	Engine #1 (S-64)	6/30/22 21:15 7/1/22 0:05	6/30/22 21:17 7/1/22 0:07	0.03 0.03	2.83	coolant sensor	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	7/1/2022
15	x Shutdown x Startup Malfunction	Engine #1 (S-64)	7/1/22 0:45 7/1/22 12:15	7/1/22 0:47 7/1/22 12:17	0.03 0.03	11.50	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	7/1/2022
16	x Shutdown x Startup Malfunction	Engine #1 (S-64)	7/3/22 11:00 7/6/22 13:15	7/3/22 11:02 7/6/22 13:17	0.03 0.03	74.25	engine shut down, low flow from flare	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		c Johnson	7/6/2022
17	x Shutdown x Startup Malfunction	Engine #1 (S-64)	7/8/22 11:30 7/8/22 14:15	7/8/22 11:32 7/8/22 14:17	0.03 0.03	2.75	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		c Johnson	7/8/2022
18	x Shutdown x Startup Malfunction	Engine #1 (S-64)	7/8/22 14:55 7/8/22 17:45	7/8/22 14:57 7/8/22 17:47	0.03 0.03	2.83	power outage	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	7/8/2022
19	x Shutdown x Startup Malfunction	Engine #1 (S-64)	7/10/22 13:00 7/10/22 16:15	7/10/22 13:02 7/10/22 16:17	0.03 0.03	3.25	cylinder 14 detonation	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	7/10/2022
20	x Shutdown x Startup Malfunction	Engine #1 (S-64)	7/11/22 11:30 7/11/22 13:15	7/11/22 11:32 7/11/22 13:17	0.03 0.03	1.75	oil leak	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	7/11/2022
21	x Shutdown x Startup Malfunction	Engine #1 (S-64)	7/14/22 14:20 7/14/22 14:55	7/14/22 14:22 7/14/22 14:57	0.03 0.03	0.58	Check for vibration	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	7/14/2022
22	x Shutdown x Startup Malfunction	Engine #1 (S-64)	7/15/22 16:00 7/19/22 15:15	7/15/22 16:02 7/19/22 15:17	0.03 0.03	95.25	emission testing	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	7/19/2022
23	x Shutdown x Startup Malfunction	Engine #1 (S-64)	7/20/22 8:45 8/1/22 0:00	7/20/22 8:47 8/1/22 0:02	0.03 0.03	279.25	Lack of flow to flare. Engine 1 remain off to run Engine 2 only.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) Automatic (Go to 9) Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	8/1/2022
24	x Shutdown x Startup Malfunction	Engine #1 (S-64)	8/1/22 0:00 8/2/22 13:30	8/1/22 0:02 8/2/22 13:32	0.03 0.03	37.50	Lack of flow to flare	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) Automatic (Go to 9) Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	8/2/2022

REDWOOD LANDFILL, INC.
WMRE LFG Engine #1 (S-64) DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
25	x Shutdown x Startup Malfunction	Engine #1 (S-64)	8/17/22 8:30 8/20/22 17:00	8/17/22 8:32 8/20/22 17:02	0.03 0.03	80.50	johnson matheey	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	8/20/2022
26	x Shutdown x Startup Malfunction	Engine #1 (S-64)	8/23/22 10:55 8/23/22 11:15	8/23/22 10:57 8/23/22 11:17	0.03 0.03	0.33	test	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	8/23/2022
27	x Shutdown x Startup Malfunction	Engine #1 (S-64)	8/29/22 7:15 8/30/22 16:15	8/29/22 7:17 8/30/22 16:17	0.03 0.03	33.00	johnson matheey	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		c Johnson	8/30/2022
28	x Shutdown x Startup Malfunction	Engine #1 (S-64)	8/30/22 18:45 8/30/22 20:30	8/30/22 18:47 8/30/22 20:32	0.03 0.03	1.75	johnson mathey	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		c Johnson	8/30/2022
29	x Shutdown x Startup Malfunction	Engine #1 (S-64)	9/6/22 15:15 9/6/22 15:55	9/6/22 15:17 9/6/22 15:57	0.03 0.03	0.67	power outage	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		c Johnson	9/6/2022
30	x Shutdown x Startup Malfunction	Engine #1 (S-64)	9/7/22 9:50 9/7/22 10:00	9/7/22 9:52 9/7/22 10:02	0.03 0.03	0.17	fire	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) No	Yes (Go to 10) No Yes (Go to 10) x No		C Johnson	9/7/2022
31	x Shutdown x Startup Malfunction	Engine #1 (S-64)	9/7/22 12:55 9/7/22 13:20	9/7/22 12:57 9/7/22 13:22	0.03 0.03	0.42	johnson mathey	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	9/7/2022
32	x Shutdown x Startup Malfunction	Engine #1 (S-64)	9/8/22 8:20 9/8/22 9:40	9/8/22 8:22 9/8/22 9:42	0.03 0.03	1.33	coolant leak fix.	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	9/8/2022
33	x Shutdown x Startup Malfunction	Engine #1 (S-64)	9/8/22 18:20 9/8/22 19:20	9/8/22 18:22 9/8/22 19:22	0.03 0.03	1.00	johnson mathey	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	9/8/2022
34	x Shutdown x Startup Malfunction	Engine #1 (S-64)	9/18/22 14:30 9/20/22 8:30	9/18/22 14:32 9/20/22 8:32	0.03 0.03	42.00	Flare	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	9/20/2022
35	x Shutdown x Startup Malfunction	Engine #1 (S-64)	9/22/22 8:15 9/22/22 10:00	9/22/22 8:17 9/22/22 10:02	0.03 0.03	1.75	Flare	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		c Johnson	9/22/2022
36	x Shutdown x Startup Malfunction	Engine #1 (S-64)	9/27/22 5:40 9/27/22 7:30	9/27/22 5:42 9/27/22 7:32	0.03 0.03	1.83	Flare	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		c Johnson	9/27/2022

REDWOOD LANDFILL, INC.
WMRE LFG Engine #1 (S-64) DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
37	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/4/22 9:25 10/4/22 9:40	10/4/22 9:27 10/4/22 9:42	0.03 0.03	0.25	Flare	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) No		c Johnson	10/4/2022
38	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/7/22 6:10 10/7/22 13:40	10/7/22 6:12 10/7/22 13:42	0.03 0.03	7.50	blower drive fault	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	10/7/2022
39	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/10/22 13:25 10/11/22 15:30	10/10/22 13:27 10/11/22 15:32	0.03 0.03	26.08	field work	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	10/11/2022
40	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/11/22 17:45 10/11/22 18:00	10/11/22 17:47 10/11/22 18:02	0.03 0.03	0.25	field work	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	10/11/2022
41	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/11/22 17:25 10/12/22 8:50	10/11/22 17:27 10/12/22 8:52	0.03 0.03	15.42	field work	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	10/12/2022
42	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/12/22 19:00 10/12/22 21:25	10/12/22 19:02 10/12/22 21:27	0.03 0.03	2.42	blower drive fault	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		c Johnson	10/12/2022
43	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/13/22 19:35 10/13/22 20:50	10/13/22 19:37 10/13/22 20:52	0.03 0.03	1.25	pahh 315	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	10/13/2022
44	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/14/22 19:35 10/14/22 20:20	10/14/22 19:37 10/14/22 20:22	0.03 0.03	0.75	compressor went down	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	10/14/2022
45	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/19/22 9:50 10/19/22 10:10	10/19/22 9:52 10/19/22 10:12	0.03 0.03	0.33	drain compressor	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	10/19/2022
46	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/31/22 8:35 10/31/22 11:35	10/31/22 8:37 10/31/22 11:37	0.03 0.03	3.00	service	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	10/31/2022

REDWOOD LANDFILL, INC.
WMRE LFG Engine #2 (S-65) DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
1	x Shutdown x Startup Malfunction	Engine #2 (S-65)	5/9/22 11:00 5/9/22 13:30	5/9/22 11:02 5/9/22 13:32	0.03 0.03	2.50	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C. Johnson	5/9/2022
2	x Shutdown x Startup Malfunction	Engine #2 (S-65)	5/12/22 14:30 5/17/22 17:30	5/12/22 14:32 5/17/22 17:32	0.03 0.03	123.00	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C. Johnson	5/17/2022
3	x Shutdown x Startup Malfunction	Engine #2 (S-65)	5/17/22 19:15 5/17/22 21:15	5/17/22 19:17 5/17/22 21:17	0.03 0.03	2.00	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C. Johnson	5/17/2022
4	x Shutdown x Startup Malfunction	Engine #2 (S-65)	5/18/22 16:15 5/18/22 17:30	5/18/22 16:17 5/18/22 17:32	0.03 0.03	1.25	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C. Johnson	5/18/2022
5	x Shutdown x Startup Malfunction	Engine #2 (S-65)	5/25/22 7:30 5/25/22 11:15	5/25/22 7:32 5/25/22 11:17	0.03 0.03	3.75	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C. Johnson	5/25/2022
6	x Shutdown x Startup Malfunction	Engine #2 (S-65)	6/9/22 12:15 6/9/22 17:45	6/9/22 12:17 6/9/22 17:47	0.03 0.03	5.50	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/9/2022
7	x Shutdown x Startup Malfunction	Engine #2 (S-65)	6/11/22 10:30 6/13/22 8:30	6/11/22 10:32 6/13/22 8:32	0.03 0.03	46.00	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/13/2022
8	x Shutdown x Startup Malfunction	Engine #2 (S-65)	6/15/22 10:30 6/15/22 15:00	6/15/22 10:32 6/15/22 15:02	0.03 0.03	4.50	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/15/2022
9	x Shutdown x Startup Malfunction	Engine #2 (S-65)	6/18/22 7:45 6/18/22 12:15	6/18/22 7:47 6/18/22 12:17	0.03 0.03	4.50	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/18/2022
10	x Shutdown x Startup Malfunction	Engine #2 (S-65)	6/18/22 16:45 6/20/22 23:45	6/18/22 16:47 6/20/22 23:47	0.03 0.03	55.00	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/20/2022
11	x Shutdown x Startup Malfunction	Engine #2 (S-65)	6/21/22 1:45 6/21/22 17:30	6/21/22 1:47 6/21/22 17:32	0.03 0.03	15.75	Engine maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/21/2022
12	x Shutdown x Startup Malfunction	Engine #2 (S-65)	6/22/22 12:15 6/29/22 14:45	6/22/22 12:17 6/29/22 14:47	0.03 0.03	170.50	Johnson Matthey system maintenance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/29/2022

REDWOOD LANDFILL, INC.
WMRE LFG Engine #2 (S-65) DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
13	x Shutdown x Startup Malfunction	Engine #2 (S-65)	7/8/22 13:15 7/8/22 14:45	7/8/22 13:17 7/8/22 14:47	0.03 0.03	1.50	maintance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	7/8/2022
14	x Shutdown x Startup Malfunction	Engine #2 (S-65)	7/8/22 14:55 7/8/22 17:45	7/8/22 14:57 7/8/22 17:47	0.03 0.03	2.83	power outage	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	7/8/2022
15	x Shutdown x Startup Malfunction	Engine #2 (S-65)	7/12/22 9:45 7/13/22 14:45	7/12/22 9:47 7/13/22 14:47	0.03 0.03	29.00	Flare Testing	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	7/13/2022
16	x Shutdown x Startup Malfunction	Engine #2 (S-65)	7/14/22 16:15 7/15/22 18:30	7/14/22 16:17 7/15/22 18:32	0.03 0.03	26.25	emission testing	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	7/15/2022
17	x Shutdown x Startup Malfunction	Engine #2 (S-65)	7/18/22 7:15 7/20/22 10:45	7/18/22 7:17 7/20/22 10:47	0.03 0.03	51.50	Media change and oil change	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	7/20/2022
18	x Shutdown x Startup Malfunction	Engine #2 (S-65)	7/20/22 14:35 7/20/22 16:30	7/20/22 14:37 7/20/22 16:32	0.03 0.03	1.92	Maintance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	7/20/2022
19	x Shutdown x Startup Malfunction	Engine #2 (S-65)	7/22/22 8:30 7/22/22 12:15	7/22/22 8:32 7/22/22 12:17	0.03 0.03	3.75	Maintance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	7/22/2022
20	x Shutdown x Startup Malfunction	Engine #2 (S-65)	8/2/22 11:50 8/17/22 8:45	8/2/22 11:52 8/17/22 8:47	0.03 0.03	356.92	johnson mathey system	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) Automatic (Go to 9) Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	8/17/2022
21	x Shutdown x Startup Malfunction	Engine #2 (S-65)	8/19/22 15:15 8/19/22 20:00	8/19/22 15:17 8/19/22 20:02	0.03 0.03	4.75	power outage	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	8/19/2022
22	x Shutdown x Startup Malfunction	Engine #2 (S-65)	8/20/22 13:00 8/29/22 10:30	8/20/22 13:02 8/29/22 10:32	0.03 0.03	213.50	maintnance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	8/29/2022
23	x Shutdown x Startup Malfunction	Engine #2 (S-65)	8/30/22 7:45 8/30/22 12:30	8/30/22 7:47 8/30/22 12:32	0.03 0.03	4.75	maintnance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	8/30/2022
24	x Shutdown x Startup Malfunction	Engine #2 (S-65)	8/30/22 14:30 9/1/22 0:00	8/30/22 14:32 9/1/22 0:02	0.03 0.03	33.50	maintnance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	9/1/2022

REDWOOD LANDFILL, INC.
WMRE LFG Engine #2 (S-65) DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
25	x Shutdown x Startup Malfunction	Engine #2 (S-65)	9/1/22 0:00 9/1/22 8:30	9/1/22 0:02 9/1/22 8:32	0.03 0.03	8.50	maintnance	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	9/1/2022
26	x Shutdown x Startup Malfunction	Engine #2 (S-65)	9/6/22 14:50 9/6/22 15:50	9/6/22 14:52 9/6/22 15:52	0.03 0.03	1.00	power outage	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	9/6/2022
27	x Shutdown x Startup Malfunction	Engine #2 (S-65)	9/6/22 16:05 9/7/22 9:55	9/6/22 16:07 9/7/22 9:57	0.03 0.03	17.83	land field fire	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	9/7/2022
28	x Shutdown x Startup Malfunction	Engine #2 (S-65)	9/27/22 5:40 9/27/22 7:30	9/27/22 5:42 9/27/22 7:32	0.03 0.03	1.83	Flare	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) x Automatic (Go to 9) Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	9/27/2022
29	x Shutdown x Startup Malfunction	Engine #2 (S-65)	10/4/22 9:15 10/4/22 9:35	10/4/22 9:17 10/4/22 9:37	0.03 0.03	0.33	Flare	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) Manual (Go to 7) x Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) No	Yes (Go to 10) No Yes (Go to 10) x No		C Johnson	10/4/2022
30	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/7/22 6:10 10/7/22 7:15	10/7/22 6:12 10/7/22 7:17	0.03 0.03	1.08	blower not stable	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	10/7/2022
31	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/7/22 13:30 10/10/22 10:35	10/7/22 13:32 10/10/22 10:37	0.03 0.03	69.08	field work	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	10/10/2022
32	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/10/22 10:45 10/10/22 11:50	10/10/22 10:47 10/10/22 11:52	0.03 0.03	1.08	#17 detonation sensor	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		c Johnson	10/10/2022
33	x Shutdown x Startup Malfunction	Engine #1 (S-64)	10/10/22 12:55 10/11/22 15:30	10/10/22 12:57 10/11/22 15:32	0.03 0.03	26.58	field work	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		c Johnson	10/11/2022
34	x Shutdown x Startup Malfunction	Engine #2 (S-65)	10/12/22 19:00 10/13/22 10:45	10/12/22 19:02 10/13/22 10:47	0.03 0.03	15.75	field work	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	10/13/2022
35	x Shutdown x Startup Malfunction	Engine #2 (S-65)	10/13/22 19:35 10/13/22 20:45	10/13/22 19:37 10/13/22 20:47	0.03 0.03	1.17	pahh 315 compressor	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	Manual (Go to 7) x Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) No Yes (Go to 9) x No	Yes (Go to 10) x No Yes (Go to 10) No		C Johnson	10/13/2022
36	x Shutdown x Startup Malfunction	Engine #2 (S-65)	10/14/22 19:35 10/14/22 20:25	10/14/22 19:37 10/14/22 20:27	0.03 0.03	0.83	compressor fault	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	10/14/2022

REDWOOD LANDFILL, INC.
WMRE LFG Engine #2 (S-65) DEVICE DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
37	x Shutdown	Engine #2 (S-65)	10/19/22 8:30	10/19/22 8:32	0.03	1.50	drain compressor	x 113: Inspection/Maintenance	x Manual (Go to 7)	Procedures 1 to 3	Yes (Go to 9)	Yes (Go to 10)		C Johnson	10/19/2022
								116: Well Raising	Automatic (Go to 9)		x No	No		
	x		10/19/22 10:00	10/19/22 10:02	0.03			117: Gas Collection	x Manual (Go to 7)	Procedures 1 to 4	Yes (Go to 9)	Yes (Go to 10)			
	Malfunction							118: Construction Activities	Automatic (Go to 9)		x No	No			

REDWOOD LANDFILL, INC.
WMRE TREATMENT SYSTEM (S-71) DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
No S-71 SSM events in May 2022															
1	x Shutdown x Startup Malfunction	Treatment System (S-71)	6/21/22 13:00 6/21/22 15:00	6/21/22 13:02 6/21/22 15:02	0.03 0.03	2.00	replaced temp sensor	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/21/2022
2	x Shutdown x Startup Malfunction	Treatment System (S-71)	6/22/22 12:15 6/29/22 14:45	6/22/22 12:17 6/29/22 14:47	0.03 0.03	170.50	engine 2 Johnson Matthety system	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	6/29/2022
3	x Shutdown x Startup Malfunction	Treatment System (S-71)	7/18/22 7:15 7/20/22 13:15	7/18/22 7:17 7/20/22 13:17	0.03 0.03	54.00	Media change	x 113: Inspection/Maintenance 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		C Johnson	7/20/2022
No S-71 SSM events in August 2022															
No S-71 SSM events in September 2022															
No S-71 SSM events in October 2022															

Emission Control Devices
Gas Collection and Control System (GCCS) Downtime Summary

Redwood Landfill, Novato, CA GCCS DOWNTIME REPORT Period:		May 1, 2022 to October 31, 2022	
SHUTDOWN DATE/TIME	**START-UP DATE/TIME**	**TOTAL DOWNTIME (hours)**	**COMMENTS/ACTION TAKEN**
01/04/22 10:20	01/04/22 10:38	0.30	Manual Shutdown for flare inspection/maintenance
01/10/22 16:18	01/11/22 12:04	19.77	Varying flow/temperature alarm shutdown. Engine Plant Starting up. Sump pump maintenance
01/11/22 12:26	01/11/22 12:40	0.23	Sump pump maintenance
01/11/22 14:40	01/11/22 14:46	0.10	Sump pump maintenance
01/11/22 16:30	01/11/22 17:14	0.73	Sump pump maintenance
01/12/22 06:58	01/12/22 07:02	0.07	A60 Shutdown for A51 source testing.
01/12/22 15:44	01/12/22 15:50	0.10	A51 shutdown after source testing. Run on A60 only
01/13/22 08:44	01/13/22 08:56	0.20	Sump pump maintenance
01/13/22 09:40	01/13/22 09:54	0.23	Sump pump maintenance
02/10/22 10:24	02/10/22 10:30	0.10	Varying flow/temperature alarm shutdown.
03/07/22 04:44	03/07/22 04:50	0.10	Varying flow/temperature alarm shutdown.
03/12/22 11:48	03/12/22 13:28	1.67	Shutdown due to varying temperature. Thermocouple replaced and restarted.
03/18/22 08:26	03/18/22 08:34	0.13	High temperature alarm shutdown.
03/23/22 09:54	03/23/22 10:36	0.70	Manual shutdown to replace thermocouple and restarted.
04/13/22 12:58	04/13/22 13:04	0.10	Varying flow/temperature alarm shutdown.
04/13/22 13:48	04/13/22 13:52	0.07	Varying flow/temperature alarm shutdown.
04/13/22 14:22	04/13/22 14:36	0.23	Varying flow/temperature alarm shutdown.
05/13/22 13:38	05/13/22 14:20	0.70	Manual shutdown for flare maintenance. Flare and Engines shutdown
06/15/22 10:30	06/15/22 12:50	2.33	Manual shutdown and startup for inspection/maintenance
06/15/22 14:32	06/15/22 14:36	0.07	Varying flow/temperature alarm shutdown.
06/28/22 14:40	06/28/22 14:44	0.07	Varying flow/temperature alarm shutdown.
07/08/22 14:56	07/08/22 16:48	1.87	All control devices were shutdown due to a site-wide power outage. Inspected upon restart of the control devices. Visual inspections and PLC checks. RCA 08J98
07/08/22 17:14	07/08/22 17:18	0.07	All control devices were shutdown due to a site-wide power surge. Inspected upon restart of the control devices. Visual inspections and PLC checks were conducted.
07/20/22 09:50	07/20/22 10:04	0.23	Varying flow/temperature alarm shutdown.
07/22/22 10:04	07/22/22 10:28	0.40	Varying flow/temperature alarm shutdown.
07/22/22 11:18	07/22/22 11:24	0.10	Varying flow/temperature alarm shutdown.
07/22/22 12:02	07/22/22 12:14	0.20	Varying flow/temperature alarm shutdown.
08/19/22 15:16	08/19/22 20:00	4.73	All control devices were shutdown due to a site-wide power outage. Inspected upon restart of the control devices. Visual inspections and PLC checks. RCA 08L05
08/23/22 10:56	08/23/22 11:00	0.07	Varying flow/temperature alarm shutdown.
08/30/22 18:46	08/30/22 20:10	1.40	All control devices were shutdown due to a site-wide power outage. Inspected upon restart of the control devices. Visual inspections and PLC checks. RCA 08L31
09/06/22 15:16	09/06/22 15:24	0.13	All control devices were shutdown due to a site-wide power outage. Inspected upon restart of the control devices. Visual inspections and PLC checks. RCA 08L51
09/27/22 05:42	09/27/22 05:46	0.07	Varying flow/temperature alarm shutdown.
10/07/22 06:10	10/07/22 06:22	0.20	Varying flow/temperature alarm shutdown.

Emission Control Devices
Gas Collection and Control System (GCCS) Downtime Summary

Redwood Landfill, Novato, CA **GCCS DOWNTIME REPORT Period:**		**May 1, 2022 to October 31, 2022**	
SHUTDOWN DATE/TIME	**START-UP DATE/TIME**	**TOTAL DOWNTIME (hours)**	**COMMENTS/ACTION TAKEN**
10/10/22 14:22	10/10/22 15:58	1.60	Auto shutdown due to low compressor pressure.
10/11/22 12:40	10/11/22 12:52	0.20	Auto shutdown due to low compressor pressure.
10/12/22 19:00	10/12/22 19:04	0.07	Varying flow/temperature alarm shutdown.
10/13/22 19:38	10/13/22 19:42	0.07	Varying flow/temperature alarm shutdown.
10/14/22 19:36	10/14/22 19:44	0.13	Varying flow/temperature alarm shutdown.
Combined Emission Control Devices			
January 1, 2022 through April 30, 2022 Total Downtime:			**24.83**
May 1, 2022 through October 31, 2022 Total Downtime:			**14.70**
Total 2022 Downtime:			**39.53**

GCCS Downtime occurs when all flares and engines are shut down.

APPENDIX C

BAAQMD CORRESPONDENCE

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

July 8, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA) Notification
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

On behalf of Redwood Landfill, Inc. (RLI), although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is to request Breakdown Relief from BAAQMD for a PG&E power outage. On Friday, July 8, 2022 at ~2:51 PM, PG&E's power outage caused the GCCS to go offline. BAAQMD's Reportable Compliance Activity (RCA) notification form, as modified, is enclosed. It is not anticipated at this time that RLI violated applicable emission standard(s).

Breakdown Relief should be granted as RLI complied with administrative requirements despite its objections to the re-interpretation of Rule 8-34 and:

1. The breakdown is not the result of intent, negligence or disregard of air pollution control regulations;

2. The breakdown is not the result of improper maintenance;

3. The breakdown does not create a public nuisance;

4. The breakdown was not caused by an excessively recurrent breakdown of the same equipment; and

5. The breakdown did not occur, and any emissions did not interfere with attainment or maintenance of any National or California air quality standard.

On July 8, 2022 at ~4:50 PM the GCCS was back online after the PG&E power was restored. A breakdown report was submitted to BAAQMD on July 8, 2022 at ~5:30 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage and of the GCCS coming back online.

RLI has been and continues to actively seek a permitted generator to power the flare for future power outage events.

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,

Michael Chan
WM Environmental Protection Specialist
mchan2@wm.com

cc: Ramin Khany, RLI
Alisha McCutcheon, RLI
Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY NOTIFICATION FORM

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions →

1. [X] **BREAKDOWN RELIEF:** ***District Use Only*** **BREAKDOWN REFERENCE #:**

2. NA [ ] **MONITOR EXCESS EMISSION or EXCURSION:** ***District Use Only*** **REFERENCE#:**

3. NA [ ] **MONITOR IS INOPERATIVE:** ***District Use Only*** **REFERENCE#:**

4. NA [ ] **PRESSURE RELIEF DEVICE (PRD):** ***District Use Only*** **PRD REFERENCE#:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	Redwood Landfill, Inc. (RLI)	Site #	A1179
Address	8950 Redwood Highway, Novato	Source #	S-5
Reported by	Michael Chan	Phone #	510-613-2852
Indicated Excess	-NA	Fax #	-
Allowable Limit	-NA	Averaging Time	-
Start Time/Date	7/8/22 2:51 pm	Clear Time	7/8/22 4:50 pm

Monitor/device type(s): [ ] ▶CEM [ ] ▶GLM [ ] ▶Parametric [ ] ▶PRD [ ] ▶Non-monitor

Monitor description(s):

Parameter(s) exceeded or not functioning due to inoperation

[ ] ▶NO_x [ ] ▶SO_2 [ ] ▶CO [ ] ▶CO_2 [ ] ▶H_2S [ ] ▶TRS [ ] ▶NH_3
[ ] ▶O_2 [ ] ▶H_2O [ ] ▶Opacity [ ] ▶Lead [ ] ▶Gauge Pressure [ ] ▶Flow
[ ] ▶Hydrocarbon Breakthrough (VOC) [ ] ▶Temperature [ ] ▶Wind Speed
[ ] ▶Wind Direction [ ] ▶Steam [X] ▶Other (describe) Power Outage

Unit(s) of Measurement

[ ] ▶ppm [ ] ▶ppb [ ] ▶min/hr > 20% [ ] ▶inches H_2O [ ] ▶mmHg
[ ] ▶psig [ ] ▶pH [ ] ▶^{0}Fahrenheit [ ] ▶Other (describe)

Event Description:

A breakdown report was submitted on 7/8/22 at ~5:30 PM via phone 415-749-4979 by RLI because the GCCS cannot continuously operate due to the PG&E power outage. During the PG&E power outage, the GCCS was potentially out of compliance with BAAQMD regulation 8-34-301.1. Please also see our objections and discussion in the attached cover letter dated 7/8/22.

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
- ✓ You may submit only one request for breakdown relief per form. However, you may submit multiple indicated excess, inoperative monitors and PRD reports on one form, provided that the start and end times given for the events in the required information section is inclusive of all events. Information on parameters exceeded, units of measurement and allowable limits can be provided in the event description box or when contacted by District staff with questions.
- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Chan, Michael

From: Chan, Michael
Sent: Friday, July 8, 2022 6:12 PM
To: 'rca@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage
Attachments: RLI RCA Notification_220708.pdf

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage 7/8/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'rca@baaqmd.gov'; Richard Murray
Sent: Friday, July 8, 2022 6:12 PM
Subject: Relayed: Redwood Landfill Facility A1179 RCA Notification Power Outage

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'rca@baaqmd.gov' (rca@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

July 15, 2022

Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
Attn: Title V Reports
(Via email: compliance@baaqmd.gov)

Richard Murray
Air Quality Inspector
Compliance and Enforcement
Bay Area AQMD
rmurray@baaqmd.gov

Re: Redwood Landfill, Inc., Novato, California
Facility Number A1179,
Title V Section I.F, 10-Day and 30-Day written report (RCA 08J98)

Dear Sir or Madam:

The Redwood Landfill, Inc. (RLI) is submitting this combined 10-day and 30-day written report to the Bay Area Air Quality Management District (BAAQMD) as required under Title V Permit Condition Section I.F for Monitoring Reports. The RLI Title V Permit Requirement states that "*All instances of non-compliance with the permit shall be reported in writing to the District's Compliance and Enforcement Division within 10 calendar days of the discovery of the incident. Within 30 calendar days of the discovery of any incident of non-compliance, the facility shall submit a written report including the probable cause of non-compliance and any corrective or preventative actions*".

On Friday, July 8, 2022 at ~2:51 PM, PG&E had an area wide power outage that caused the gas collection and control system (GCCS) to go offline. The GCCS remained offline until July 8, 2022, at ~4:50 PM. A breakdown report was submitted to BAAQMD on July 8, 2022 at ~5:30 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage and of the GCCS coming back online. BAAQMD assigned RCA No.08J98 to this breakdown report. Although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from BAAQMD staff, RLI requested Breakdown Relief from BAAQMD for the July 8, 2022 PG&E power outage via BAAQMD's Reportable Compliance Activity (RCA) notification form submitted on July 8, 2022 (see Attachment A).

The unplanned power outage shutdown did not result in emissions and do not qualify as non-compliance. The downtime was less than 24 hours. RLI believes that it complied with the Title V permit conditions and safety protocols. RLI followed all measures to ensure gas movers and valves were closed during the shutdown event. RLI's downtime event was not the result of equipment malfunction, knowing, willful, intentional, chronic nor committed by a recalcitrant,

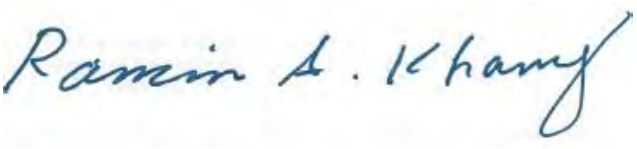
and did not benefit RLI economically nor result in a nuisance. The frequency and duration of weather or utility-related electrical interruptions are outside of RLI's control.

RLI is committed to operating its landfill in compliance with applicable regulations and will ensure that compliance is achieved. However, RLI disagrees with the BAAQMD that temporary shutdowns resulting from unplanned power outages are violations of any BAAQMD regulation.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned).

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Thank you,
Redwood Landfill, Inc.



Ramin Khany
District Manager

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY (RCA) 08J98 (JULY 8, 2022)

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

July 8, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA) Notification
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

On behalf of Redwood Landfill, Inc. (RLI), although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is to request Breakdown Relief from BAAQMD for a PG&E power outage. On Friday, July 8, 2022 at ~2:51 PM, PG&E's power outage caused the GCCS to go offline. BAAQMD's Reportable Compliance Activity (RCA) notification form, as modified, is enclosed. It is not anticipated at this time that RLI violated applicable emission standard(s).

Breakdown Relief should be granted as RLI complied with administrative requirements despite its objections to the re-interpretation of Rule 8-34 and:

1. The breakdown is not the result of intent, negligence or disregard of air pollution control regulations;

2. The breakdown is not the result of improper maintenance;

3. The breakdown does not create a public nuisance;

4. The breakdown was not caused by an excessively recurrent breakdown of the same equipment; and

5. The breakdown did not occur, and any emissions did not interfere with attainment or maintenance of any National or California air quality standard.

On July 8, 2022 at ~4:50 PM the GCCS was back online after the PG&E power was restored. A breakdown report was submitted to BAAQMD on July 8, 2022 at ~5:30 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage and of the GCCS coming back online.

RLI has been and continues to actively seek a permitted generator to power the flare for future power outage events.

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,

Michael Chan
WM Environmental Protection Specialist
mchan2@wm.com

cc: Ramin Khany, RLI
Alisha McCutcheon, RLI
Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY NOTIFICATION FORM

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions →

1. [X] **BREAKDOWN RELIEF:** ***District Use Only*** **BREAKDOWN REFERENCE #:**

2. NA [ ] **MONITOR EXCESS EMISSION or EXCURSION:** ***District Use Only*** **REFERENCE#:**

3. NA [ ] **MONITOR IS INOPERATIVE:** ***District Use Only*** **REFERENCE#:**

4. NA [ ] **PRESSURE RELIEF DEVICE (PRD):** ***District Use Only*** **PRD REFERENCE#:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	Redwood Landfill, Inc. (RLI)	Site #	A1179
Address	8950 Redwood Highway, Novato	Source #	S-5
Reported by	Michael Chan	Phone #	510-613-2852
Indicated Excess	-NA	Fax #	-
Allowable Limit	-NA	Averaging Time	-
Start Time/Date	7/8/22 2:51 pm	Clear Time	7/8/22 4:50 pm

Monitor/device type(s): [ ] ▶CEM [ ] ▶GLM [ ] ▶Parametric [ ] ▶PRD [ ] ▶Non-monitor

Monitor description(s):

Parameter(s) exceeded or not functioning due to inoperation

[ ] ▶NO_x [ ] ▶SO_2 [ ] ▶CO [ ] ▶CO_2 [ ] ▶H_2S [ ] ▶TRS [ ] ▶NH_3
[ ] ▶O_2 [ ] ▶H_2O [ ] ▶Opacity [ ] ▶Lead [ ] ▶Gauge Pressure [ ] ▶Flow
[ ] ▶Hydrocarbon Breakthrough (VOC) [ ] ▶Temperature [ ] ▶Wind Speed
[ ] ▶Wind Direction [ ] ▶Steam [X] ▶Other (describe) Power Outage

Unit(s) of Measurement

[ ] ▶ppm [ ] ▶ppb [ ] ▶min/hr > 20% [ ] ▶inches H_2O [ ] ▶mmHg
[ ] ▶psig [ ] ▶pH [ ] ▶^{0}Fahrenheit [ ] ▶Other (describe)

Event Description:

A breakdown report was submitted on 7/8/22 at ~5:30 PM via phone 415-749-4979 by RLI because the GCCS cannot continuously operate due to the PG&E power outage. During the PG&E power outage, the GCCS was potentially out of compliance with BAAQMD regulation 8-34-301.1. Please also see our objections and discussion in the attached cover letter dated 7/8/22.

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
- ✓ You may submit only one request for breakdown relief per form. However, you may submit multiple indicated excess, inoperative monitors and PRD reports on one form, provided that the start and end times given for the events in the required information section is inclusive of all events. Information on parameters exceeded, units of measurement and allowable limits can be provided in the event description box or when contacted by District staff with questions.
- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Chan, Michael

From: Chan, Michael
Sent: Friday, July 8, 2022 6:12 PM
To: 'rca@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage
Attachments: RLI RCA Notification_220708.pdf

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage 7/8/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'rca@baaqmd.gov'; Richard Murray
Sent: Friday, July 8, 2022 6:12 PM
Subject: Relayed: Redwood Landfill Facility A1179 RCA Notification Power Outage

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'rca@baaqmd.gov' (rca@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage

Chan, Michael

From: Chan, Michael
Sent: Friday, July 15, 2022 10:23 AM
To: 'compliance@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Title V combined 10day/30day Report (RCA 08J98)
Attachments: RLI Title V 10day 30day Report RCA 08J98_220715.pdf

Redwood Landfill (A1179) is submitting the attached combined Title V 10-day/30-day written report (RCA 08J98) to BAAQMD for the July 8, 2022 PG&E power outage.

Regards,

Mike

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

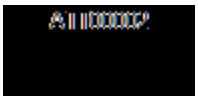
From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'compliance@baaqmd.gov'; Richard Murray
Sent: Friday, July 15, 2022 10:30 AM
Subject: Relayed: Redwood Title V combined 10day/30day Report (RCA 08J98)

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'compliance@baaqmd.gov' (compliance@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Title V combined 10day/30day Report (RCA 08J98)



REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

July 15, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA 08J98) 30-Day Breakdown Report
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

Although Redwood Landfill, Inc. (RLI) disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is the 30-Day Breakdown Relief Report to BAAQMD for a PG&E power outage. This report includes the required elements in Regulation 1, Section 1-432. On Friday, July 8, 2022 at ~2:51 PM, PG&E had an area wide power outage that caused the RLI gas collection and control system (GCCS) to go offline. The GCCS remained offline until July 8, 2022, at ~4:50 PM. A breakdown report was submitted to BAAQMD on July 8, 2022 at ~5:30 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage and of the GCCS coming back online. BAAQMD assigned RCA No. 08J98 to this breakdown report. RLI requested Breakdown Relief from BAAQMD for the July 8, 2022 PG&E power outage via BAAQMD's Reportable Compliance Activity (RCA) notification form submitted on July 8, 2022 (see Attachment A).

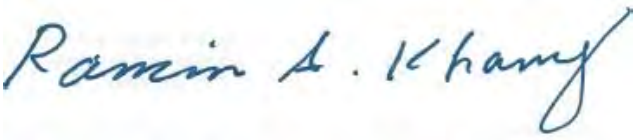
The unplanned power outage shutdown did not result in emissions and do not qualify as non-compliance. The downtime was less than 24 hours. RLI believes that it complied with the Title V permit conditions and safety protocols. RLI followed all measures to ensure gas movers and valves were closed during the shutdown event. RLI's downtime event was not the result of equipment malfunction, knowing, willful, intentional, chronic nor committed by a recalcitrant, and did not benefit RLI economically nor result in a nuisance. The frequency and duration of weather or utility-related electrical interruptions are outside of RLI's control.

RLI is committed to operating its landfill in compliance with applicable regulations and will ensure that compliance is achieved. However, RLI disagrees with the BAAQMD that temporary shutdowns resulting from unplanned power outages are violations of any BAAQMD regulation.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned).

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,
Redwood Landfill, Inc.



Ramin Khany
District Manager

cc: Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY (RCA) 08J98 (JULY 8, 2022)

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

July 8, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA) Notification
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

On behalf of Redwood Landfill, Inc. (RLI), although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is to request Breakdown Relief from BAAQMD for a PG&E power outage. On Friday, July 8, 2022 at ~2:51 PM, PG&E's power outage caused the GCCS to go offline. BAAQMD's Reportable Compliance Activity (RCA) notification form, as modified, is enclosed. It is not anticipated at this time that RLI violated applicable emission standard(s).

Breakdown Relief should be granted as RLI complied with administrative requirements despite its objections to the re-interpretation of Rule 8-34 and:

1. The breakdown is not the result of intent, negligence or disregard of air pollution control regulations;

2. The breakdown is not the result of improper maintenance;

3. The breakdown does not create a public nuisance;

4. The breakdown was not caused by an excessively recurrent breakdown of the same equipment; and

5. The breakdown did not occur, and any emissions did not interfere with attainment or maintenance of any National or California air quality standard.

On July 8, 2022 at ~4:50 PM the GCCS was back online after the PG&E power was restored. A breakdown report was submitted to BAAQMD on July 8, 2022 at ~5:30 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage and of the GCCS coming back online.

RLI has been and continues to actively seek a permitted generator to power the flare for future power outage events.

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,

Michael Chan
WM Environmental Protection Specialist
mchan2@wm.com

cc: Ramin Khany, RLI
Alisha McCutcheon, RLI
Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY NOTIFICATION FORM

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions →

1. [X] **BREAKDOWN RELIEF:** ***District Use Only*** **BREAKDOWN REFERENCE #:**

2. NA [ ] **MONITOR EXCESS EMISSION or EXCURSION:** ***District Use Only*** **REFERENCE#:**

3. NA [ ] **MONITOR IS INOPERATIVE:** ***District Use Only*** **REFERENCE#:**

4. NA [ ] **PRESSURE RELIEF DEVICE (PRD):** ***District Use Only*** **PRD REFERENCE#:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	Redwood Landfill, Inc. (RLI)	Site #	A1179
Address	8950 Redwood Highway, Novato	Source #	S-5
Reported by	Michael Chan	Phone #	510-613-2852
Indicated Excess	-NA	Fax #	-
Allowable Limit	-NA	Averaging Time	-
Start Time/Date	7/8/22 2:51 pm	Clear Time	7/8/22 4:50 pm

Monitor/device type(s): [ ] ▶CEM [ ] ▶GLM [ ] ▶Parametric [ ] ▶PRD [ ] ▶Non-monitor

Monitor description(s):

Parameter(s) exceeded or not functioning due to inoperation

[ ] ▶NO_x [ ] ▶SO_2 [ ] ▶CO [ ] ▶CO_2 [ ] ▶H_2S [ ] ▶TRS [ ] ▶NH_3
[ ] ▶O_2 [ ] ▶H_2O [ ] ▶Opacity [ ] ▶Lead [ ] ▶Gauge Pressure [ ] ▶Flow
[ ] ▶Hydrocarbon Breakthrough (VOC) [ ] ▶Temperature [ ] ▶Wind Speed
[ ] ▶Wind Direction [ ] ▶Steam [X] ▶Other (describe) Power Outage

Unit(s) of Measurement

[ ] ▶ppm [ ] ▶ppb [ ] ▶min/hr > 20% [ ] ▶inches H_2O [ ] ▶mmHg
[ ] ▶psig [ ] ▶pH [ ] ▶^{0}Fahrenheit [ ] ▶Other (describe)

Event Description:

A breakdown report was submitted on 7/8/22 at ~5:30 PM via phone 415-749-4979 by RLI because the GCCS cannot continuously operate due to the PG&E power outage. During the PG&E power outage, the GCCS was potentially out of compliance with BAAQMD regulation 8-34-301.1. Please also see our objections and discussion in the attached cover letter dated 7/8/22.

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
- ✓ You may submit only one request for breakdown relief per form. However, you may submit multiple indicated excess, inoperative monitors and PRD reports on one form, provided that the start and end times given for the events in the required information section is inclusive of all events. Information on parameters exceeded, units of measurement and allowable limits can be provided in the event description box or when contacted by District staff with questions.
- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Chan, Michael

From: Chan, Michael
Sent: Friday, July 8, 2022 6:12 PM
To: 'rca@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage
Attachments: RLI RCA Notification_220708.pdf

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage 7/8/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'rca@baaqmd.gov'; Richard Murray
Sent: Friday, July 8, 2022 6:12 PM
Subject: Relayed: Redwood Landfill Facility A1179 RCA Notification Power Outage

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'rca@baaqmd.gov' (rca@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage

Chan, Michael

From: Chan, Michael
Sent: Friday, July 15, 2022 10:34 AM
To: 'rca@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill RCA 08J98 30day Breakdown Report Facility A1179
Attachments: RLI_RCA 30day Breakdown RCA 08J98_220715.pdf

Redwood Landfill (A1179) is submitting the attached RCA 30-day Breakdown report (RCA 08J98) to BAAQMD for the July 8, 2022 PG&E power outage.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'rca@baaqmd.gov'; Richard Murray
Sent: Friday, July 15, 2022 10:42 AM
Subject: Relayed: Redwood Landfill RCA 08J98 30day Breakdown Report Facility A1179

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'rca@baaqmd.gov' (rca@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Landfill RCA 08J98 30day Breakdown Report Facility A1179

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

August 19, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA) Notification
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

On behalf of Redwood Landfill, Inc. (RLI), although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is to request Breakdown Relief from BAAQMD for a PG&E power outage. On Friday, August 19, 2022 at ~3:07 PM, PG&E's power outage caused the GCCS to go offline. BAAQMD's Reportable Compliance Activity (RCA) notification form, as modified, is enclosed. It is not anticipated at this time that RLI violated applicable emission standard(s).

Breakdown Relief should be granted as RLI complied with administrative requirements despite its objections to the re-interpretation of Rule 8-34 and:

1. The breakdown is not the result of intent, negligence or disregard of air pollution control regulations;

2. The breakdown is not the result of improper maintenance;

3. The breakdown does not create a public nuisance;

4. The breakdown was not caused by an excessively recurrent breakdown of the same equipment; and

5. The breakdown did not occur, and any emissions did not interfere with attainment or maintenance of any National or California air quality standard.

On August 19, 2022 at ~8:25 PM the GCCS was back online after the PG&E power was restored. A breakdown report was submitted to BAAQMD on August 19, 2022 at ~4:25 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage.

RLI has been and continues to actively work on permitting a generator to power the flare for future power outage events.

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,

Michael Chan
WM Environmental Protection Specialist
mchan2@wm.com

cc: Ramin Khany, RLI
Alisha McCutcheon, RLI
Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY NOTIFICATION FORM

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions →

1. [X] **BREAKDOWN RELIEF:** ***District Use Only*** **BREAKDOWN REFERENCE #:**

2. NA [ ] **MONITOR EXCESS EMISSION or EXCURSION:** ***District Use Only*** **REFERENCE#:**

3. NA [ ] **MONITOR IS INOPERATIVE:** ***District Use Only*** **REFERENCE#:**

4. NA [ ] **PRESSURE RELIEF DEVICE (PRD):** ***District Use Only*** **PRD REFERENCE#:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	Redwood Landfill, Inc. (RLI)	Site #	A1179
Address	8950 Redwood Highway, Novato	Source #	S-5
Reported by	Michael Chan	Phone #	510-613-2852
Indicated Excess	-NA	Fax #	-
Allowable Limit	-NA	Averaging Time	-
Start Time/Date	8/19/22 3:07 pm	Clear Time	8/19/22 8:25 pm

Monitor/device type(s): [ ] ▶CEM [ ] ▶GLM [ ] ▶Parametric [ ] ▶PRD [ ] ▶Non-monitor

Monitor description(s):

Parameter(s) exceeded or not functioning due to inoperation

[ ] ▶NO_x [ ] ▶SO_2 [ ] ▶CO [ ] ▶CO_2 [ ] ▶H_2S [ ] ▶TRS [ ] ▶NH_3
[ ] ▶O_2 [ ] ▶H_2O [ ] ▶Opacity [ ] ▶Lead [ ] ▶Gauge Pressure [ ] ▶Flow
[ ] ▶Hydrocarbon Breakthrough (VOC) [ ] ▶Temperature [ ] ▶Wind Speed
[ ] ▶Wind Direction [ ] ▶Steam [X] ▶Other (describe) Power Outage

Unit(s) of Measurement

[ ] ▶ppm [ ] ▶ppb [ ] ▶min/hr > 20% [ ] ▶inches H_2O [ ] ▶mmHg
[ ] ▶psig [ ] ▶pH [ ] ▶^{0}Fahrenheit [ ] ▶Other (describe)

Event Description:

A breakdown report was submitted on 8/19/22 at ~4:25 PM via phone 415-749-4979 by RLI because the GCCS cannot continuously operate due to the PG&E power outage. During the PG&E power outage, the GCCS was potentially out of compliance with BAAQMD regulation 8-34-301.1. Please also see our objections and discussion in the attached cover letter dated 8/19/22.

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
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- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Chan, Michael

From: Chan, Michael
Sent: Friday, August 19, 2022 8:55 PM
To: 'rca@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22
Attachments: RLI RCA Notification_220819.pdf

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 8/19/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'rca@baaqmd.gov'; Richard Murray
Sent: Friday, August 19, 2022 8:55 PM
Subject: Relayed: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'rca@baaqmd.gov' (rca@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22

Chan, Michael

From: RCA Notification <rca@baaqmd.gov>
Sent: Monday, August 22, 2022 7:16 AM
To: Chan, Michael
Subject: [EXTERNAL] RE: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22

08L05

From: Chan, Michael <mchan2@wm.com>
Sent: Friday, August 19, 2022 8:55 PM
To: RCA Notification <rca@baaqmd.gov>
Cc: Richard Murray <rmurray@baaqmd.gov>
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 8/19/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

August 25, 2022

Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
Attn: Title V Reports
(Via email: compliance@baaqmd.gov)

Richard Murray
Air Quality Inspector
Compliance and Enforcement
Bay Area AQMD
rmurray@baaqmd.gov

Re: Redwood Landfill, Inc., Novato, California
Facility Number A1179
Title V Section I.F, 10-Day and 30-Day written report (RCA 08L05)

Dear Sir or Madam:

The Redwood Landfill, Inc. (RLI) is submitting this combined 10-day and 30-day written report to the Bay Area Air Quality Management District (BAAQMD) as required under Title V Permit Condition Section I.F for Monitoring Reports. The RLI Title V Permit Requirement states that "*All instances of non-compliance with the permit shall be reported in writing to the District's Compliance and Enforcement Division within 10 calendar days of the discovery of the incident. Within 30 calendar days of the discovery of any incident of non-compliance, the facility shall submit a written report including the probable cause of non-compliance and any corrective or preventative actions*".

On Friday, August 19, 2022 at ~3:07 PM, PG&E had an area wide power outage that caused the gas collection and control system (GCCS) to go offline. The GCCS remained offline until August 19, 2022, at ~8:20 PM (see Attachment A). A breakdown report was submitted to BAAQMD on August 19, 2022 at ~4:25 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage. BAAQMD assigned RCA No. 08L05 to this breakdown report. Although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from BAAQMD staff, RLI requested Breakdown Relief from BAAQMD for the August 19, 2022 PG&E power outage via BAAQMD's Reportable Compliance Activity (RCA) notification form submitted on August 19, 2022 (see Attachment B).

The unplanned power outage shutdown did not result in emissions and do not qualify as non-compliance. The downtime was less than 24 hours. RLI believes that it complied with the Title V permit conditions and safety protocols. RLI followed all measures to ensure gas movers and valves were closed during the shutdown event. RLI's downtime event was not the result of equipment malfunction, knowing, willful, intentional, chronic nor committed by a recalcitrant,

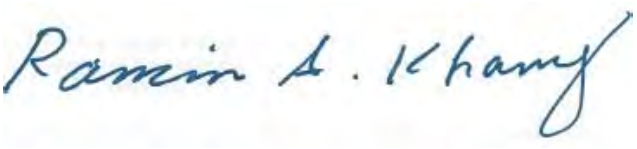
and did not benefit RLI economically nor result in a nuisance. The frequency and duration of weather or utility-related electrical interruptions are outside of RLI's control.

RLI is committed to operating its landfill in compliance with applicable regulations and will ensure that compliance is achieved. However, RLI disagrees with the BAAQMD that temporary shutdowns resulting from unplanned power outages are violations of any BAAQMD regulation.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned).

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Thank you,
Redwood Landfill, Inc.



Ramin Khany
District Manager

ATTACHMENT A

REDWOOD FLARE DATA FOR AUGUST 19, 2022

Date	Time	Flare Temp A		Mass Flow A	
		Deg F		SCFM	
		MIN	MAX	MIN	MAX
2022/08/19	14:00:00	1689	1779	1026	1361
2022/08/19	14:02:00	1521	1774	1056	1361
2022/08/19	14:04:00	1562	1694	950	1368
2022/08/19	14:06:00	1570	1705	1083	1403
2022/08/19	14:08:00	1377	1600	1088	1400
2022/08/19	14:10:00	1600	1771	1019	1437
2022/08/19	14:12:00	1425	1776	1066	1382
2022/08/19	14:14:00	1424	1724	1016	1381
2022/08/19	14:16:00	1724	1770	1038	1348
2022/08/19	14:18:00	1406	1768	1086	1390
2022/08/19	14:20:00	1356	1664	1070	1384
2022/08/19	14:22:00	1664	1760	1031	1482
2022/08/19	14:24:00	1433	1765	1051	1411
2022/08/19	14:26:00	1439	1716	1003	1358
2022/08/19	14:28:00	1716	1762	1053	1430
2022/08/19	14:30:00	1422	1722	1033	1398
2022/08/19	14:32:00	1563	1743	983	1416
2022/08/19	14:34:00	1463	1762	1034	1374
2022/08/19	14:36:00	1443	1696	1062	1337
2022/08/19	14:38:00	1696	1748	1025	1371
2022/08/19	14:40:00	1547	1726	1020	1440
2022/08/19	14:42:00	1586	1701	1015	1446
2022/08/19	14:44:00	1540	1715	1034	1374
2022/08/19	14:46:00	1397	1641	1009	1442
2022/08/19	14:48:00	1641	1746	1016	1409
2022/08/19	14:50:00	1647	1751	-2	1385
2022/08/19	14:52:00	1141	1647	-2	-2
2022/08/19	14:54:00	862	1141	-2	2416
2022/08/19	14:56:00	854	1446	1390	2440
2022/08/19	14:58:00	1446	1887	1066	1516
2022/08/19	15:00:00	1551	1888	1116	1423
2022/08/19	15:02:00	1436	1672	1081	1429
2022/08/19	15:04:00	1341	1718	-2	1453
2022/08/19	15:06:00	1165	1341	-2	2439
2022/08/19	15:08:00	890	1165	-2	1237
2022/08/19	15:10:00	718	890	-2	-2
2022/08/19	15:12:00	600	718	-2	-2
2022/08/19	15:14:00	517	600	-2	-2
2022/08/19	15:16:00	453	517	-2	-2
2022/08/19	15:18:00	404	453	-2	-2
2022/08/19	15:20:00	363	404	-2	-2
2022/08/19	15:22:00	332	363	-2	-2
2022/08/19	15:24:00	306	332	-2	-2
2022/08/19	15:26:00	285	306	-2	-2
2022/08/19	15:28:00	266	285	-2	-2
2022/08/19	15:30:00	251	266	-2	-2
2022/08/19	15:32:00	237	251	-2	-2
2022/08/19	15:34:00	225	237	-2	-2
2022/08/19	15:36:00	217	225	-2	-2
2022/08/19	15:38:00	209	217	-2	-2
2022/08/19	15:40:00	200	209	-2	-2
2022/08/19	15:42:00	193	200	-2	-2
2022/08/19	15:44:00	187	193	-2	-2
2022/08/19	15:46:00	182	187	-2	-2
2022/08/19	15:48:00	176	182	-2	-2
2022/08/19	15:50:00	172	176	-2	-2
2022/08/19	15:52:00	168	172	-2	-2
2022/08/19	15:54:00	163	168	-2	-2
2022/08/19	15:56:00	159	164	-2	-2
2022/08/19	15:58:00	156	159	-2	-2
2022/08/19	16:00:00	152	156	-2	-2
2022/08/19	16:02:00	149	153	-2	-2

Date	Time	Flare Temp A		Mass Flow A	
		Deg F		SCFM	
		MIN	MAX	MIN	MAX
2022/08/19	16:04:00	146	149	-2	-2
2022/08/19	16:06:00	143	146	-2	-2
2022/08/19	16:08:00	141	143	-2	-2
2022/08/19	16:10:00	140	142	-2	-2
2022/08/19	16:12:00	137	140	-2	-2
2022/08/19	16:14:00	135	137	-2	-2
2022/08/19	16:16:00	132	135	-2	-2
2022/08/19	16:18:00	130	133	-2	-2
2022/08/19	16:20:00	129	131	-2	-2
2022/08/19	16:22:00	127	129	-2	-2
2022/08/19	16:24:00	126	127	-2	-2
2022/08/19	16:26:00	124	126	-2	-2
2022/08/19	16:28:00	123	124	-2	-2
2022/08/19	16:30:00	121	123	-2	-2
2022/08/19	16:32:00	119	121	-2	-2
2022/08/19	16:34:00	118	120	-2	-2
2022/08/19	16:36:00	118	118	-2	-2
2022/08/19	16:38:00	116	118	-2	-2
2022/08/19	16:40:00	116	117	-2	-2
2022/08/19	16:42:00	115	116	-2	-2
2022/08/19	16:44:00	115	115	-2	-2
2022/08/19	16:46:00	113	115	-2	-2
2022/08/19	16:48:00	113	113	-2	-2
2022/08/19	16:50:00	112	113	-2	-2
2022/08/19	16:52:00	110	112	-2	-2
2022/08/19	16:54:00	110	110	-2	-2
2022/08/19	16:56:00	110	110	-2	-2
2022/08/19	16:58:00	110	110	-2	-2
2022/08/19	17:00:00	109	110	-2	-2
2022/08/19	17:02:00	109	109	-2	-2
2022/08/19	17:04:00	107	109	-2	-2
2022/08/19	17:06:00	107	107	-2	-2
2022/08/19	17:08:00	105	107	-2	-2
2022/08/19	17:10:00	104	106	-2	-2
2022/08/19	17:12:00	104	104	-2	-2
2022/08/19	17:14:00	104	104	-2	-2
2022/08/19	17:16:00	104	104	-2	-2
2022/08/19	17:18:00	102	104	-2	-2
2022/08/19	17:20:00	102	103	-2	-2
2022/08/19	17:22:00	102	102	-2	-2
2022/08/19	17:24:00	100	102	-2	-2
2022/08/19	17:26:00	99	101	-2	-2
2022/08/19	17:28:00	99	99	-2	-2
2022/08/19	17:30:00				
2022/08/19	17:32:00				
2022/08/19	17:34:00				
2022/08/19	17:36:00				
2022/08/19	17:38:00				
2022/08/19	17:40:00				
2022/08/19	17:42:00				
2022/08/19	17:44:00				
2022/08/19	17:46:00				
2022/08/19	17:48:00				
2022/08/19	17:50:00				
2022/08/19	17:52:00				
2022/08/19	17:54:00				
2022/08/19	17:56:00				
2022/08/19	17:58:00				
2022/08/19	18:00:00				
2022/08/19	18:02:00				
2022/08/19	18:04:00				
2022/08/19	18:06:00				

Date	Time	Flare Temp A		Mass Flow A	
		Deg F		SCFM	
		MIN	MAX	MIN	MAX
2022/08/19	18:08:00				
2022/08/19	18:10:00				
2022/08/19	18:12:00				
2022/08/19	18:14:00				
2022/08/19	18:16:00				
2022/08/19	18:18:00				
2022/08/19	18:20:00				
2022/08/19	18:22:00				
2022/08/19	18:24:00				
2022/08/19	18:26:00				
2022/08/19	18:28:00				
2022/08/19	18:30:00				
2022/08/19	18:32:00				
2022/08/19	18:34:00				
2022/08/19	18:36:00	87	88	-2	-2
2022/08/19	18:38:00	87	88	-2	-2
2022/08/19	18:40:00	88	89	-2	-2
2022/08/19	18:42:00	88	89	-2	-2
2022/08/19	18:44:00	88	89	-2	-2
2022/08/19	18:46:00	89	89	-2	-2
2022/08/19	18:48:00	89	89	-2	-2
2022/08/19	18:50:00	88	89	-2	-2
2022/08/19	18:52:00	88	88	-2	-2
2022/08/19	18:54:00	88	88	-2	-2
2022/08/19	18:56:00	88	88	-2	-2
2022/08/19	18:58:00	88	88	-2	-2
2022/08/19	19:00:00	88	88	-2	-2
2022/08/19	19:02:00	88	88	-2	-2
2022/08/19	19:04:00	88	88	-2	-2
2022/08/19	19:06:00	86	88	-2	-2
2022/08/19	19:08:00	86	86	-2	-2
2022/08/19	19:10:00	85	86	-2	-2
2022/08/19	19:12:00	85	86	-2	-2
2022/08/19	19:14:00	85	85	-2	-2
2022/08/19	19:16:00	85	85	-2	-2
2022/08/19	19:18:00	85	85	-2	-2
2022/08/19	19:20:00	85	85	-2	-2
2022/08/19	19:22:00	85	85	-2	-2
2022/08/19	19:24:00	85	85	-2	-2
2022/08/19	19:26:00	83	85	-2	-2
2022/08/19	19:28:00	83	85	-2	-2
2022/08/19	19:30:00	83	85	-2	-2
2022/08/19	19:32:00	83	83	-2	-2
2022/08/19	19:34:00	82	83	-2	-2
2022/08/19	19:36:00	82	82	-2	-2
2022/08/19	19:38:00	81	82	-2	-2
2022/08/19	19:40:00	81	82	-2	-2
2022/08/19	19:42:00	81	82	-2	-2
2022/08/19	19:44:00	81	82	-2	-2
2022/08/19	19:46:00	80	82	-2	-2
2022/08/19	19:48:00	80	80	-2	-2
2022/08/19	19:50:00	80	80	-2	-2
2022/08/19	19:52:00	80	80	-2	-2
2022/08/19	19:54:00	80	80	-2	-2
2022/08/19	19:56:00	79	80	-2	-2
2022/08/19	19:58:00	79	80	-2	-2
2022/08/19	20:00:00	78	80	-2	-2
2022/08/19	20:02:00	78	79	-2	-2
2022/08/19	20:04:00	77	79	-2	-2
2022/08/19	20:06:00	77	78	-2	-2
2022/08/19	20:08:00	77	77	-2	-2
2022/08/19	20:10:00	76	77	-2	-2

Date	Time	Flare Temp A		Mass Flow A	
		Deg F		SCFM	
		MIN	MAX	MIN	MAX
2022/08/19	20:12:00	76	77	-2	-2
2022/08/19	20:14:00	76	77	-2	-2
2022/08/19	20:16:00	75	77	-2	-2
2022/08/19	20:18:00	75	1056	-2	2676
2022/08/19	20:20:00	1056	1661	1253	1889
2022/08/19	20:22:00	1661	1892	1228	1671
2022/08/19	20:24:00	1612	1881	1262	1650
2022/08/19	20:26:00	1564	1652	1173	1643
2022/08/19	20:28:00	1556	1686	1190	1626
2022/08/19	20:30:00	1594	1708	1169	1579
2022/08/19	20:32:00	1673	1708	1158	1616
2022/08/19	20:34:00	1547	1673	1051	1562
2022/08/19	20:36:00	1385	1612	1234	1662
2022/08/19	20:38:00	1612	1742	1101	1654
2022/08/19	20:40:00	1609	1751	1118	1651
2022/08/19	20:42:00	1623	1664	1118	1560
2022/08/19	20:44:00	1627	1688	1158	1533
2022/08/19	20:46:00	1543	1661	1129	1561
2022/08/19	20:48:00	1609	1687	1190	1546
2022/08/19	20:50:00	1594	1670	1154	1561
2022/08/19	20:52:00	1595	1667	1125	1566
2022/08/19	20:54:00	1630	1676	1094	1516
2022/08/19	20:56:00	1609	1676	1109	1555
2022/08/19	20:58:00	1584	1676	1119	1529
2022/08/19	21:00:00	1576	1681	1129	1530
2022/08/19	21:02:00	1593	1643	1095	1579
2022/08/19	21:04:00	1626	1676	1088	1559
2022/08/19	21:06:00	1629	1678	1066	1549
2022/08/19	21:08:00	1560	1655	1045	1566
2022/08/19	21:10:00	1573	1693	1095	1590
2022/08/19	21:12:00	1562	1687	1127	1506
2022/08/19	21:14:00	1602	1664	1025	1451
2022/08/19	21:16:00	1648	1696	1108	1543
2022/08/19	21:18:00	1643	1668	1101	1570
2022/08/19	21:20:00	1573	1672	1073	1543
2022/08/19	21:22:00	1609	1679	1079	1548
2022/08/19	21:24:00	1573	1642	1033	1560
2022/08/19	21:26:00	1642	1674	1107	1535
2022/08/19	21:28:00	1575	1666	1164	1546
2022/08/19	21:30:00	1626	1678	1103	1489

ATTACHMENT B

REPORTABLE COMPLIANCE ACTIVITY (RCA) 08L05 (AUGUST 19, 2022)

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

August 19, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA) Notification
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

On behalf of Redwood Landfill, Inc. (RLI), although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is to request Breakdown Relief from BAAQMD for a PG&E power outage. On Friday, August 19, 2022 at ~3:07 PM, PG&E's power outage caused the GCCS to go offline. BAAQMD's Reportable Compliance Activity (RCA) notification form, as modified, is enclosed. It is not anticipated at this time that RLI violated applicable emission standard(s).

Breakdown Relief should be granted as RLI complied with administrative requirements despite its objections to the re-interpretation of Rule 8-34 and:

1. The breakdown is not the result of intent, negligence or disregard of air pollution control regulations;

2. The breakdown is not the result of improper maintenance;

3. The breakdown does not create a public nuisance;

4. The breakdown was not caused by an excessively recurrent breakdown of the same equipment; and

5. The breakdown did not occur, and any emissions did not interfere with attainment or maintenance of any National or California air quality standard.

On August 19, 2022 at ~8:25 PM the GCCS was back online after the PG&E power was restored. A breakdown report was submitted to BAAQMD on August 19, 2022 at ~4:25 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage.

RLI has been and continues to actively work on permitting a generator to power the flare for future power outage events.

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,

Michael Chan
WM Environmental Protection Specialist
mchan2@wm.com

cc: Ramin Khany, RLI
Alisha McCutcheon, RLI
Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY NOTIFICATION FORM

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions →

1. [X] **BREAKDOWN RELIEF:** ***District Use Only*** **BREAKDOWN REFERENCE #:**

2. NA [ ] **MONITOR EXCESS EMISSION or EXCURSION:** ***District Use Only*** **REFERENCE#:**

3. NA [ ] **MONITOR IS INOPERATIVE:** ***District Use Only*** **REFERENCE#:**

4. NA [ ] **PRESSURE RELIEF DEVICE (PRD):** ***District Use Only*** **PRD REFERENCE#:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	Redwood Landfill, Inc. (RLI)	Site #	A1179
Address	8950 Redwood Highway, Novato	Source #	S-5
Reported by	Michael Chan	Phone #	510-613-2852
Indicated Excess	-NA	Fax #	-
Allowable Limit	-NA	Averaging Time	-
Start Time/Date	8/19/22 3:07 pm	Clear Time	8/19/22 8:25 pm

Monitor/device type(s): [ ] ▶CEM [ ] ▶GLM [ ] ▶Parametric [ ] ▶PRD [ ] ▶Non-monitor

Monitor description(s):

Parameter(s) exceeded or not functioning due to inoperation

[ ] ▶NO_x [ ] ▶SO_2 [ ] ▶CO [ ] ▶CO_2 [ ] ▶H_2S [ ] ▶TRS [ ] ▶NH_3
[ ] ▶O_2 [ ] ▶H_2O [ ] ▶Opacity [ ] ▶Lead [ ] ▶Gauge Pressure [ ] ▶Flow
[ ] ▶Hydrocarbon Breakthrough (VOC) [ ] ▶Temperature [ ] ▶Wind Speed
[ ] ▶Wind Direction [ ] ▶Steam [X] ▶Other (describe) Power Outage

Unit(s) of Measurement

[ ] ▶ppm [ ] ▶ppb [ ] ▶min/hr > 20% [ ] ▶inches H_2O [ ] ▶mmHg
[ ] ▶psig [ ] ▶pH [ ] ▶^{0}Fahrenheit [ ] ▶Other (describe)

Event Description:

A breakdown report was submitted on 8/19/22 at ~4:25 PM via phone 415-749-4979 by RLI because the GCCS cannot continuously operate due to the PG&E power outage. During the PG&E power outage, the GCCS was potentially out of compliance with BAAQMD regulation 8-34-301.1. Please also see our objections and discussion in the attached cover letter dated 8/19/22.

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
- ✓ You may submit only one request for breakdown relief per form. However, you may submit multiple indicated excess, inoperative monitors and PRD reports on one form, provided that the start and end times given for the events in the required information section is inclusive of all events. Information on parameters exceeded, units of measurement and allowable limits can be provided in the event description box or when contacted by District staff with questions.
- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Chan, Michael

From: Chan, Michael
Sent: Friday, August 19, 2022 8:55 PM
To: 'rca@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22
Attachments: RLI RCA Notification_220819.pdf

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 8/19/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'rca@baaqmd.gov'; Richard Murray
Sent: Friday, August 19, 2022 8:55 PM
Subject: Relayed: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'rca@baaqmd.gov' (rca@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22

Chan, Michael

From: RCA Notification <rca@baaqmd.gov>
Sent: Monday, August 22, 2022 7:16 AM
To: Chan, Michael
Subject: [EXTERNAL] RE: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22

08L05

From: Chan, Michael <mchan2@wm.com>
Sent: Friday, August 19, 2022 8:55 PM
To: RCA Notification <rca@baaqmd.gov>
Cc: Richard Murray <rmurray@baaqmd.gov>
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 8/19/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Chan, Michael
Sent: Thursday, August 25, 2022 5:17 PM
To: 'compliance@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Title V combined 10day/30day Report (RCA 08L05)
Attachments: RLI Title V 10day 30day Report RCA 08L05_2200825.pdf

Redwood Landfill (A1179) is submitting the attached combined Title V 10-day/30-day written report (RCA 08L05) to BAAQMD for the August 19, 2022 PG&E power outage.

Regards,

Mike

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

August 25, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA 08L05) 30-Day Breakdown Report
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

Although Redwood Landfill, Inc. (RLI) disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is the 30-Day Breakdown Relief Report to BAAQMD for a PG&E power outage. This report includes the required elements in Regulation 1, Section 1-432. On Friday, August 19, 2022 at ~3:07 PM, PG&E had an area wide power outage that caused the RLI gas collection and control system (GCCS) to go offline. The GCCS remained offline until August 19, 2022, at ~8:20 PM (see Attachment A). A breakdown report was submitted to BAAQMD on August 19, 2022 at ~4:25 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage. BAAQMD assigned RCA No. 08L05 to this breakdown report. RLI requested Breakdown Relief from BAAQMD for the August 19, 2022 PG&E power outage via BAAQMD's Reportable Compliance Activity (RCA) notification form submitted on August 19, 2022 (see Attachment B).

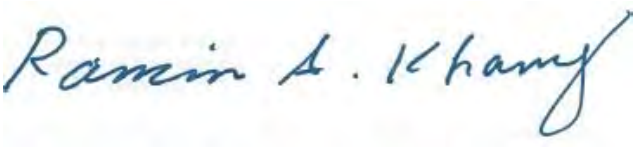
The unplanned power outage shutdown did not result in emissions and do not qualify as non-compliance. The downtime was less than 24 hours. RLI believes that it complied with the Title V permit conditions and safety protocols. RLI followed all measures to ensure gas movers and valves were closed during the shutdown event. RLI's downtime event was not the result of equipment malfunction, knowing, willful, intentional, chronic nor committed by a recalcitrant, and did not benefit RLI economically nor result in a nuisance. The frequency and duration of weather or utility-related electrical interruptions are outside of RLI's control.

RLI is committed to operating its landfill in compliance with applicable regulations and will ensure that compliance is achieved. However, RLI disagrees with the BAAQMD that temporary shutdowns resulting from unplanned power outages are violations of any BAAQMD regulation.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned).

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,
Redwood Landfill, Inc.



Ramin Khany
District Manager

cc: Richard Murray, BAAQMD

ATTACHMENT A

REDWOOD FLARE DATA FOR AUGUST 19, 2022

Date	Time	Flare Temp A		Mass Flow A	
		Deg F		SCFM	
		MIN	MAX	MIN	MAX
2022/08/19	14:00:00	1689	1779	1026	1361
2022/08/19	14:02:00	1521	1774	1056	1361
2022/08/19	14:04:00	1562	1694	950	1368
2022/08/19	14:06:00	1570	1705	1083	1403
2022/08/19	14:08:00	1377	1600	1088	1400
2022/08/19	14:10:00	1600	1771	1019	1437
2022/08/19	14:12:00	1425	1776	1066	1382
2022/08/19	14:14:00	1424	1724	1016	1381
2022/08/19	14:16:00	1724	1770	1038	1348
2022/08/19	14:18:00	1406	1768	1086	1390
2022/08/19	14:20:00	1356	1664	1070	1384
2022/08/19	14:22:00	1664	1760	1031	1482
2022/08/19	14:24:00	1433	1765	1051	1411
2022/08/19	14:26:00	1439	1716	1003	1358
2022/08/19	14:28:00	1716	1762	1053	1430
2022/08/19	14:30:00	1422	1722	1033	1398
2022/08/19	14:32:00	1563	1743	983	1416
2022/08/19	14:34:00	1463	1762	1034	1374
2022/08/19	14:36:00	1443	1696	1062	1337
2022/08/19	14:38:00	1696	1748	1025	1371
2022/08/19	14:40:00	1547	1726	1020	1440
2022/08/19	14:42:00	1586	1701	1015	1446
2022/08/19	14:44:00	1540	1715	1034	1374
2022/08/19	14:46:00	1397	1641	1009	1442
2022/08/19	14:48:00	1641	1746	1016	1409
2022/08/19	14:50:00	1647	1751	-2	1385
2022/08/19	14:52:00	1141	1647	-2	-2
2022/08/19	14:54:00	862	1141	-2	2416
2022/08/19	14:56:00	854	1446	1390	2440
2022/08/19	14:58:00	1446	1887	1066	1516
2022/08/19	15:00:00	1551	1888	1116	1423
2022/08/19	15:02:00	1436	1672	1081	1429
2022/08/19	15:04:00	1341	1718	-2	1453
2022/08/19	15:06:00	1165	1341	-2	2439
2022/08/19	15:08:00	890	1165	-2	1237
2022/08/19	15:10:00	718	890	-2	-2
2022/08/19	15:12:00	600	718	-2	-2
2022/08/19	15:14:00	517	600	-2	-2
2022/08/19	15:16:00	453	517	-2	-2
2022/08/19	15:18:00	404	453	-2	-2
2022/08/19	15:20:00	363	404	-2	-2
2022/08/19	15:22:00	332	363	-2	-2
2022/08/19	15:24:00	306	332	-2	-2
2022/08/19	15:26:00	285	306	-2	-2
2022/08/19	15:28:00	266	285	-2	-2
2022/08/19	15:30:00	251	266	-2	-2
2022/08/19	15:32:00	237	251	-2	-2
2022/08/19	15:34:00	225	237	-2	-2
2022/08/19	15:36:00	217	225	-2	-2
2022/08/19	15:38:00	209	217	-2	-2
2022/08/19	15:40:00	200	209	-2	-2
2022/08/19	15:42:00	193	200	-2	-2
2022/08/19	15:44:00	187	193	-2	-2
2022/08/19	15:46:00	182	187	-2	-2
2022/08/19	15:48:00	176	182	-2	-2
2022/08/19	15:50:00	172	176	-2	-2
2022/08/19	15:52:00	168	172	-2	-2
2022/08/19	15:54:00	163	168	-2	-2
2022/08/19	15:56:00	159	164	-2	-2
2022/08/19	15:58:00	156	159	-2	-2
2022/08/19	16:00:00	152	156	-2	-2
2022/08/19	16:02:00	149	153	-2	-2

Date	Time	Flare Temp A		Mass Flow A	
		Deg F		SCFM	
		MIN	MAX	MIN	MAX
2022/08/19	16:04:00	146	149	-2	-2
2022/08/19	16:06:00	143	146	-2	-2
2022/08/19	16:08:00	141	143	-2	-2
2022/08/19	16:10:00	140	142	-2	-2
2022/08/19	16:12:00	137	140	-2	-2
2022/08/19	16:14:00	135	137	-2	-2
2022/08/19	16:16:00	132	135	-2	-2
2022/08/19	16:18:00	130	133	-2	-2
2022/08/19	16:20:00	129	131	-2	-2
2022/08/19	16:22:00	127	129	-2	-2
2022/08/19	16:24:00	126	127	-2	-2
2022/08/19	16:26:00	124	126	-2	-2
2022/08/19	16:28:00	123	124	-2	-2
2022/08/19	16:30:00	121	123	-2	-2
2022/08/19	16:32:00	119	121	-2	-2
2022/08/19	16:34:00	118	120	-2	-2
2022/08/19	16:36:00	118	118	-2	-2
2022/08/19	16:38:00	116	118	-2	-2
2022/08/19	16:40:00	116	117	-2	-2
2022/08/19	16:42:00	115	116	-2	-2
2022/08/19	16:44:00	115	115	-2	-2
2022/08/19	16:46:00	113	115	-2	-2
2022/08/19	16:48:00	113	113	-2	-2
2022/08/19	16:50:00	112	113	-2	-2
2022/08/19	16:52:00	110	112	-2	-2
2022/08/19	16:54:00	110	110	-2	-2
2022/08/19	16:56:00	110	110	-2	-2
2022/08/19	16:58:00	110	110	-2	-2
2022/08/19	17:00:00	109	110	-2	-2
2022/08/19	17:02:00	109	109	-2	-2
2022/08/19	17:04:00	107	109	-2	-2
2022/08/19	17:06:00	107	107	-2	-2
2022/08/19	17:08:00	105	107	-2	-2
2022/08/19	17:10:00	104	106	-2	-2
2022/08/19	17:12:00	104	104	-2	-2
2022/08/19	17:14:00	104	104	-2	-2
2022/08/19	17:16:00	104	104	-2	-2
2022/08/19	17:18:00	102	104	-2	-2
2022/08/19	17:20:00	102	103	-2	-2
2022/08/19	17:22:00	102	102	-2	-2
2022/08/19	17:24:00	100	102	-2	-2
2022/08/19	17:26:00	99	101	-2	-2
2022/08/19	17:28:00	99	99	-2	-2
2022/08/19	17:30:00				
2022/08/19	17:32:00				
2022/08/19	17:34:00				
2022/08/19	17:36:00				
2022/08/19	17:38:00				
2022/08/19	17:40:00				
2022/08/19	17:42:00				
2022/08/19	17:44:00				
2022/08/19	17:46:00				
2022/08/19	17:48:00				
2022/08/19	17:50:00				
2022/08/19	17:52:00				
2022/08/19	17:54:00				
2022/08/19	17:56:00				
2022/08/19	17:58:00				
2022/08/19	18:00:00				
2022/08/19	18:02:00				
2022/08/19	18:04:00				
2022/08/19	18:06:00				

Date	Time	Flare Temp A		Mass Flow A	
		Deg F		SCFM	
		MIN	MAX	MIN	MAX
2022/08/19	18:08:00				
2022/08/19	18:10:00				
2022/08/19	18:12:00				
2022/08/19	18:14:00				
2022/08/19	18:16:00				
2022/08/19	18:18:00				
2022/08/19	18:20:00				
2022/08/19	18:22:00				
2022/08/19	18:24:00				
2022/08/19	18:26:00				
2022/08/19	18:28:00				
2022/08/19	18:30:00				
2022/08/19	18:32:00				
2022/08/19	18:34:00				
2022/08/19	18:36:00	87	88	-2	-2
2022/08/19	18:38:00	87	88	-2	-2
2022/08/19	18:40:00	88	89	-2	-2
2022/08/19	18:42:00	88	89	-2	-2
2022/08/19	18:44:00	88	89	-2	-2
2022/08/19	18:46:00	89	89	-2	-2
2022/08/19	18:48:00	89	89	-2	-2
2022/08/19	18:50:00	88	89	-2	-2
2022/08/19	18:52:00	88	88	-2	-2
2022/08/19	18:54:00	88	88	-2	-2
2022/08/19	18:56:00	88	88	-2	-2
2022/08/19	18:58:00	88	88	-2	-2
2022/08/19	19:00:00	88	88	-2	-2
2022/08/19	19:02:00	88	88	-2	-2
2022/08/19	19:04:00	88	88	-2	-2
2022/08/19	19:06:00	86	88	-2	-2
2022/08/19	19:08:00	86	86	-2	-2
2022/08/19	19:10:00	85	86	-2	-2
2022/08/19	19:12:00	85	86	-2	-2
2022/08/19	19:14:00	85	85	-2	-2
2022/08/19	19:16:00	85	85	-2	-2
2022/08/19	19:18:00	85	85	-2	-2
2022/08/19	19:20:00	85	85	-2	-2
2022/08/19	19:22:00	85	85	-2	-2
2022/08/19	19:24:00	85	85	-2	-2
2022/08/19	19:26:00	83	85	-2	-2
2022/08/19	19:28:00	83	85	-2	-2
2022/08/19	19:30:00	83	85	-2	-2
2022/08/19	19:32:00	83	83	-2	-2
2022/08/19	19:34:00	82	83	-2	-2
2022/08/19	19:36:00	82	82	-2	-2
2022/08/19	19:38:00	81	82	-2	-2
2022/08/19	19:40:00	81	82	-2	-2
2022/08/19	19:42:00	81	82	-2	-2
2022/08/19	19:44:00	81	82	-2	-2
2022/08/19	19:46:00	80	82	-2	-2
2022/08/19	19:48:00	80	80	-2	-2
2022/08/19	19:50:00	80	80	-2	-2
2022/08/19	19:52:00	80	80	-2	-2
2022/08/19	19:54:00	80	80	-2	-2
2022/08/19	19:56:00	79	80	-2	-2
2022/08/19	19:58:00	79	80	-2	-2
2022/08/19	20:00:00	78	80	-2	-2
2022/08/19	20:02:00	78	79	-2	-2
2022/08/19	20:04:00	77	79	-2	-2
2022/08/19	20:06:00	77	78	-2	-2
2022/08/19	20:08:00	77	77	-2	-2
2022/08/19	20:10:00	76	77	-2	-2

Date	Time	Flare Temp A		Mass Flow A	
		Deg F		SCFM	
		MIN	MAX	MIN	MAX
2022/08/19	20:12:00	76	77	-2	-2
2022/08/19	20:14:00	76	77	-2	-2
2022/08/19	20:16:00	75	77	-2	-2
2022/08/19	20:18:00	75	1056	-2	2676
2022/08/19	20:20:00	1056	1661	1253	1889
2022/08/19	20:22:00	1661	1892	1228	1671
2022/08/19	20:24:00	1612	1881	1262	1650
2022/08/19	20:26:00	1564	1652	1173	1643
2022/08/19	20:28:00	1556	1686	1190	1626
2022/08/19	20:30:00	1594	1708	1169	1579
2022/08/19	20:32:00	1673	1708	1158	1616
2022/08/19	20:34:00	1547	1673	1051	1562
2022/08/19	20:36:00	1385	1612	1234	1662
2022/08/19	20:38:00	1612	1742	1101	1654
2022/08/19	20:40:00	1609	1751	1118	1651
2022/08/19	20:42:00	1623	1664	1118	1560
2022/08/19	20:44:00	1627	1688	1158	1533
2022/08/19	20:46:00	1543	1661	1129	1561
2022/08/19	20:48:00	1609	1687	1190	1546
2022/08/19	20:50:00	1594	1670	1154	1561
2022/08/19	20:52:00	1595	1667	1125	1566
2022/08/19	20:54:00	1630	1676	1094	1516
2022/08/19	20:56:00	1609	1676	1109	1555
2022/08/19	20:58:00	1584	1676	1119	1529
2022/08/19	21:00:00	1576	1681	1129	1530
2022/08/19	21:02:00	1593	1643	1095	1579
2022/08/19	21:04:00	1626	1676	1088	1559
2022/08/19	21:06:00	1629	1678	1066	1549
2022/08/19	21:08:00	1560	1655	1045	1566
2022/08/19	21:10:00	1573	1693	1095	1590
2022/08/19	21:12:00	1562	1687	1127	1506
2022/08/19	21:14:00	1602	1664	1025	1451
2022/08/19	21:16:00	1648	1696	1108	1543
2022/08/19	21:18:00	1643	1668	1101	1570
2022/08/19	21:20:00	1573	1672	1073	1543
2022/08/19	21:22:00	1609	1679	1079	1548
2022/08/19	21:24:00	1573	1642	1033	1560
2022/08/19	21:26:00	1642	1674	1107	1535
2022/08/19	21:28:00	1575	1666	1164	1546
2022/08/19	21:30:00	1626	1678	1103	1489

ATTACHMENT B

REPORTABLE COMPLIANCE ACTIVITY (RCA) 08L05 (AUGUST 19, 2022)

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

August 19, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA) Notification
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

On behalf of Redwood Landfill, Inc. (RLI), although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is to request Breakdown Relief from BAAQMD for a PG&E power outage. On Friday, August 19, 2022 at ~3:07 PM, PG&E's power outage caused the GCCS to go offline. BAAQMD's Reportable Compliance Activity (RCA) notification form, as modified, is enclosed. It is not anticipated at this time that RLI violated applicable emission standard(s).

Breakdown Relief should be granted as RLI complied with administrative requirements despite its objections to the re-interpretation of Rule 8-34 and:

1. The breakdown is not the result of intent, negligence or disregard of air pollution control regulations;

2. The breakdown is not the result of improper maintenance;

3. The breakdown does not create a public nuisance;

4. The breakdown was not caused by an excessively recurrent breakdown of the same equipment; and

5. The breakdown did not occur, and any emissions did not interfere with attainment or maintenance of any National or California air quality standard.

On August 19, 2022 at ~8:25 PM the GCCS was back online after the PG&E power was restored. A breakdown report was submitted to BAAQMD on August 19, 2022 at ~4:25 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage.

RLI has been and continues to actively work on permitting a generator to power the flare for future power outage events.

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,

Michael Chan
WM Environmental Protection Specialist
mchan2@wm.com

cc: Ramin Khany, RLI
Alisha McCutcheon, RLI
Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY NOTIFICATION FORM

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions →

1. [X] **BREAKDOWN RELIEF:** ***District Use Only*** **BREAKDOWN REFERENCE #:**

2. NA [ ] **MONITOR EXCESS EMISSION or EXCURSION:** ***District Use Only*** **REFERENCE#:**

3. NA [ ] **MONITOR IS INOPERATIVE:** ***District Use Only*** **REFERENCE#:**

4. NA [ ] **PRESSURE RELIEF DEVICE (PRD):** ***District Use Only*** **PRD REFERENCE#:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	Redwood Landfill, Inc. (RLI)	Site #	A1179
Address	8950 Redwood Highway, Novato	Source #	S-5
Reported by	Michael Chan	Phone #	510-613-2852
Indicated Excess	-NA	Fax #	-
Allowable Limit	-NA	Averaging Time	-
Start Time/Date	8/19/22 3:07 pm	Clear Time	8/19/22 8:25 pm

Monitor/device type(s): [ ] ▶CEM [ ] ▶GLM [ ] ▶Parametric [ ] ▶PRD [ ] ▶Non-monitor

Monitor description(s):

Parameter(s) exceeded or not functioning due to inoperation

[ ] ▶NO_x [ ] ▶SO_2 [ ] ▶CO [ ] ▶CO_2 [ ] ▶H_2S [ ] ▶TRS [ ] ▶NH_3
[ ] ▶O_2 [ ] ▶H_2O [ ] ▶Opacity [ ] ▶Lead [ ] ▶Gauge Pressure [ ] ▶Flow
[ ] ▶Hydrocarbon Breakthrough (VOC) [ ] ▶Temperature [ ] ▶Wind Speed
[ ] ▶Wind Direction [ ] ▶Steam [X] ▶Other (describe) Power Outage

Unit(s) of Measurement

[ ] ▶ppm [ ] ▶ppb [ ] ▶min/hr > 20% [ ] ▶inches H_2O [ ] ▶mmHg
[ ] ▶psig [ ] ▶pH [ ] ▶^{0}Fahrenheit [ ] ▶Other (describe)

Event Description:

A breakdown report was submitted on 8/19/22 at ~4:25 PM via phone 415-749-4979 by RLI because the GCCS cannot continuously operate due to the PG&E power outage. During the PG&E power outage, the GCCS was potentially out of compliance with BAAQMD regulation 8-34-301.1. Please also see our objections and discussion in the attached cover letter dated 8/19/22.

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
- ✓ You may submit only one request for breakdown relief per form. However, you may submit multiple indicated excess, inoperative monitors and PRD reports on one form, provided that the start and end times given for the events in the required information section is inclusive of all events. Information on parameters exceeded, units of measurement and allowable limits can be provided in the event description box or when contacted by District staff with questions.
- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Chan, Michael

From: Chan, Michael
Sent: Friday, August 19, 2022 8:55 PM
To: 'rca@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22
Attachments: RLI RCA Notification_220819.pdf

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 8/19/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'rca@baaqmd.gov'; Richard Murray
Sent: Friday, August 19, 2022 8:55 PM
Subject: Relayed: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'rca@baaqmd.gov' (rca@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22

Chan, Michael

From: RCA Notification <rca@baaqmd.gov>
Sent: Monday, August 22, 2022 7:16 AM
To: Chan, Michael
Subject: [EXTERNAL] RE: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22

08L05

From: Chan, Michael <mchan2@wm.com>
Sent: Friday, August 19, 2022 8:55 PM
To: RCA Notification <rca@baaqmd.gov>
Cc: Richard Murray <rmurray@baaqmd.gov>
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/19/22

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 8/19/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Chan, Michael
Sent: Thursday, August 25, 2022 5:17 PM
To: 'rca@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill RCA 08L05 30day Breakdown Report Facility A1179
Attachments: RLI_RCA 30day Breakdown RCA 08L05_220825.pdf

Redwood Landfill (A1179) is submitting the attached RCA 30-day Breakdown report (RCA 08L05) to BAAQMD for the August 19, 2022 PG&E power outage.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

August 30, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA) Notification
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

On behalf of Redwood Landfill, Inc. (RLI), although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is to request Breakdown Relief from BAAQMD for a PG&E power outage. On Tuesday, August 30, 2022 at ~4:35 PM, PG&E's power outage caused the GCCS to go offline. BAAQMD's Reportable Compliance Activity (RCA) notification form, as modified, is enclosed. It is not anticipated at this time that RLI violated applicable emission standard(s).

Breakdown Relief should be granted as RLI complied with administrative requirements despite its objections to the re-interpretation of Rule 8-34 and:

1. The breakdown is not the result of intent, negligence or disregard of air pollution control regulations;

2. The breakdown is not the result of improper maintenance;

3. The breakdown does not create a public nuisance;

4. The breakdown was not caused by an excessively recurrent breakdown of the same equipment; and

5. The breakdown did not occur, and any emissions did not interfere with attainment or maintenance of any National or California air quality standard.

On August 30, 2022 at ~8:10 PM the GCCS was back online after the PG&E power was restored. A breakdown report was submitted to BAAQMD on August 30, 2022 at ~6:15 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned)..

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,

Michael Chan
WM Environmental Protection Specialist
mchan2@wm.com

cc: Ramin Khany, RLI
Alisha McCutcheon, RLI
Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY NOTIFICATION FORM

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions →

1. [X] **BREAKDOWN RELIEF:** ***District Use Only*** **BREAKDOWN REFERENCE #:**

2. NA [ ] **MONITOR EXCESS EMISSION or EXCURSION:** ***District Use Only*** **REFERENCE#:**

3. NA [ ] **MONITOR IS INOPERATIVE:** ***District Use Only*** **REFERENCE#:**

4. NA [ ] **PRESSURE RELIEF DEVICE (PRD):** ***District Use Only*** **PRD REFERENCE#:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	Redwood Landfill, Inc. (RLI)	Site #	A1179
Address	8950 Redwood Highway, Novato	Source #	S-5
Reported by	Michael Chan	Phone #	510-613-2852
Indicated Excess	-NA	Fax #	-
Allowable Limit	-NA	Averaging Time	-
Start Time/Date	8/30/22 ~4:35 pm	Clear Time	8/30/22 ~8:10 pm
Monitor/device type(s)	[ ] ▶CEM [ ] ▶GLM [ ] ▶Parametric [ ] ▶PRD [ ] ▶Non-monitor		
Monitor description(s)			

Parameter(s) exceeded or not functioning due to inoperation

[ ] ▶NO_x [ ] ▶SO_2 [ ] ▶CO [ ] ▶CO_2 [ ] ▶H_2S [ ] ▶TRS [ ] ▶NH_3
[ ] ▶O_2 [ ] ▶H_2O [ ] ▶Opacity [ ] ▶Lead [ ] ▶Gauge Pressure [ ] ▶Flow
[ ] ▶Hydrocarbon Breakthrough (VOC) [ ] ▶Temperature [ ] ▶Wind Speed
[ ] ▶Wind Direction [ ] ▶Steam [X] ▶Other (describe) Power Outage

Unit(s) of Measurement

[ ] ▶ppm [ ] ▶ppb [ ] ▶min/hr > 20% [ ] ▶inches H_2O [ ] ▶mmHg
[ ] ▶psig [ ] ▶pH [ ] ▶^{0}Fahrenheit [ ] ▶Other (describe)

Event Description:

A breakdown report was submitted on 8/30/22 at ~6:15 pm via phone 415-749-4979 by RLI because the GCCS cannot continuously operate due to the PG&E power outage. During the PG&E power outage, the GCCS was potentially out of compliance with BAAQMD regulation 8-34-301.1. Please also see our objections and discussion in the attached cover letter dated 8/30/22.

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
- ✓ You may submit only one request for breakdown relief per form. However, you may submit multiple indicated excess, inoperative monitors and PRD reports on one form, provided that the start and end times given for the events in the required information section is inclusive of all events. Information on parameters exceeded, units of measurement and allowable limits can be provided in the event description box or when contacted by District staff with questions.
- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Chan, Michael

From: Chan, Michael
Sent: Tuesday, August 30, 2022 8:41 PM
To: 'rca@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/30/22
Attachments: RLI RCA Notification_220830.pdf

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 8/30/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: RCA Notification <rca@baaqmd.gov>
Sent: Wednesday, August 31, 2022 8:14 AM
To: Chan, Michael
Subject: [EXTERNAL] RE: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/30/22

08L31

From: Chan, Michael <mchan2@wm.com>
Sent: Tuesday, August 30, 2022 8:41 PM
To: RCA Notification <rca@baaqmd.gov>
Cc: Richard Murray <rmurray@baaqmd.gov>
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/30/22

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 8/30/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

September 2, 2022

Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
Attn: Title V Reports
(Via email: compliance@baaqmd.gov)

Richard Murray
Air Quality Inspector
Compliance and Enforcement
Bay Area AQMD
rmurray@baaqmd.gov

Re: Redwood Landfill, Inc., Novato, California
Facility Number A1179
Title V Section I.F, 10-Day and 30-Day written report (RCA 08L31)

Dear Sir or Madam:

The Redwood Landfill, Inc. (RLI) is submitting this combined 10-day and 30-day written report to the Bay Area Air Quality Management District (BAAQMD) as required under Title V Permit Condition Section I.F for Monitoring Reports. The RLI Title V Permit Requirement states that "*All instances of non-compliance with the permit shall be reported in writing to the District's Compliance and Enforcement Division within 10 calendar days of the discovery of the incident. Within 30 calendar days of the discovery of any incident of non-compliance, the facility shall submit a written report including the probable cause of non-compliance and any corrective or preventative actions*".

On Tuesday, August 30, 2022 at ~4:35 PM, PG&E had an area wide power outage that caused the gas collection and control system (GCCS) to go offline. The GCCS remained offline until August 30, 2022, at ~8:10 PM. A breakdown report was submitted to BAAQMD on August 30, 2022 at ~6:15 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage. BAAQMD assigned RCA No. 08L31 to this breakdown report. Although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from BAAQMD staff, RLI requested Breakdown Relief from BAAQMD for the August 30, 2022 PG&E power outage via BAAQMD's Reportable Compliance Activity (RCA) notification form submitted on August 30, 2022 (see Attachment A).

The unplanned power outage shutdown did not result in emissions and do not qualify as non-compliance. The downtime was less than 24 hours. RLI believes that it complied with the Title V permit conditions and safety protocols. RLI followed all measures to ensure gas movers and valves were closed during the shutdown event. RLI's downtime event was not the result of equipment malfunction, knowing, willful, intentional, chronic nor committed by a recalcitrant,

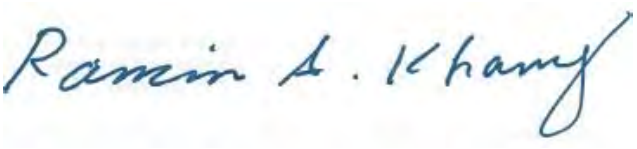
and did not benefit RLI economically nor result in a nuisance. The frequency and duration of weather or utility-related electrical interruptions are outside of RLI's control.

RLI is committed to operating its landfill in compliance with applicable regulations and will ensure that compliance is achieved. However, RLI disagrees with the BAAQMD that temporary shutdowns resulting from unplanned power outages are violations of any BAAQMD regulation.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned).

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Thank you,
Redwood Landfill, Inc.



Ramin Khany
District Manager

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY (RCA) 08L31 (AUGUST 30, 2022)

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

August 30, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA) Notification
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

On behalf of Redwood Landfill, Inc. (RLI), although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is to request Breakdown Relief from BAAQMD for a PG&E power outage. On Tuesday, August 30, 2022 at ~4:35 PM, PG&E's power outage caused the GCCS to go offline. BAAQMD's Reportable Compliance Activity (RCA) notification form, as modified, is enclosed. It is not anticipated at this time that RLI violated applicable emission standard(s).

Breakdown Relief should be granted as RLI complied with administrative requirements despite its objections to the re-interpretation of Rule 8-34 and:

1. The breakdown is not the result of intent, negligence or disregard of air pollution control regulations;

2. The breakdown is not the result of improper maintenance;

3. The breakdown does not create a public nuisance;

4. The breakdown was not caused by an excessively recurrent breakdown of the same equipment; and

5. The breakdown did not occur, and any emissions did not interfere with attainment or maintenance of any National or California air quality standard.

On August 30, 2022 at ~8:10 PM the GCCS was back online after the PG&E power was restored. A breakdown report was submitted to BAAQMD on August 30, 2022 at ~6:15 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned)..

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,

Michael Chan
WM Environmental Protection Specialist
mchan2@wm.com

cc: Ramin Khany, RLI
Alisha McCutcheon, RLI
Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY NOTIFICATION FORM

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions →

1. [X] **BREAKDOWN RELIEF:** ***District Use Only*** **BREAKDOWN REFERENCE #:**

2. NA [ ] **MONITOR EXCESS EMISSION or EXCURSION:** ***District Use Only*** **REFERENCE#:**

3. NA [ ] **MONITOR IS INOPERATIVE:** ***District Use Only*** **REFERENCE#:**

4. NA [ ] **PRESSURE RELIEF DEVICE (PRD):** ***District Use Only*** **PRD REFERENCE#:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	Redwood Landfill, Inc. (RLI)	Site #	A1179
Address	8950 Redwood Highway, Novato	Source #	S-5
Reported by	Michael Chan	Phone #	510-613-2852
Indicated Excess	-NA	Fax #	-
Allowable Limit	-NA	Averaging Time	-
Start Time/Date	8/30/22 ~4:35 pm	Clear Time	8/30/22 ~8:10 pm
Monitor/device type(s)	[ ] ▶CEM [ ] ▶GLM [ ] ▶Parametric [ ] ▶PRD [ ] ▶Non-monitor		
Monitor description(s)			

Parameter(s) exceeded or not functioning due to inoperation

[ ] ▶NO_x [ ] ▶SO_2 [ ] ▶CO [ ] ▶CO_2 [ ] ▶H_2S [ ] ▶TRS [ ] ▶NH_3
[ ] ▶O_2 [ ] ▶H_2O [ ] ▶Opacity [ ] ▶Lead [ ] ▶Gauge Pressure [ ] ▶Flow
[ ] ▶Hydrocarbon Breakthrough (VOC) [ ] ▶Temperature [ ] ▶Wind Speed
[ ] ▶Wind Direction [ ] ▶Steam [X] ▶Other (describe) Power Outage

Unit(s) of Measurement

[ ] ▶ppm [ ] ▶ppb [ ] ▶min/hr > 20% [ ] ▶inches H_2O [ ] ▶mmHg
[ ] ▶psig [ ] ▶pH [ ] ▶^{0}Fahrenheit [ ] ▶Other (describe)

Event Description:

A breakdown report was submitted on 8/30/22 at ~6:15 pm via phone 415-749-4979 by RLI because the GCCS cannot continuously operate due to the PG&E power outage. During the PG&E power outage, the GCCS was potentially out of compliance with BAAQMD regulation 8-34-301.1. Please also see our objections and discussion in the attached cover letter dated 8/30/22.

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
- ✓ You may submit only one request for breakdown relief per form. However, you may submit multiple indicated excess, inoperative monitors and PRD reports on one form, provided that the start and end times given for the events in the required information section is inclusive of all events. Information on parameters exceeded, units of measurement and allowable limits can be provided in the event description box or when contacted by District staff with questions.
- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Chan, Michael

From: Chan, Michael
Sent: Tuesday, August 30, 2022 8:41 PM
To: 'rca@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/30/22
Attachments: RLI RCA Notification_220830.pdf

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 8/30/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: RCA Notification <rca@baaqmd.gov>
Sent: Wednesday, August 31, 2022 8:14 AM
To: Chan, Michael
Subject: [EXTERNAL] RE: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/30/22

08L31

From: Chan, Michael <mchan2@wm.com>
Sent: Tuesday, August 30, 2022 8:41 PM
To: RCA Notification <rca@baaqmd.gov>
Cc: Richard Murray <rmurray@baaqmd.gov>
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/30/22

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 8/30/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Chan, Michael
Sent: Friday, September 2, 2022 10:26 AM
To: 'compliance@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Title V combined 10day/30day Report (RCA 08L31)
Attachments: RLI Title V 10day 30day Report RCA 08L31_2200902.pdf

Redwood Landfill (A1179) is submitting the attached combined Title V 10-day/30-day written report (RCA 08L31) to BAAQMD for the August 30, 2022 PG&E power outage.

Regards,

Mike

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'compliance@baaqmd.gov'; Richard Murray
Sent: Friday, September 2, 2022 10:28 AM
Subject: Relayed: Redwood Title V combined 10day/30day Report (RCA 08L31)

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'compliance@baaqmd.gov' (compliance@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Title V combined 10day/30day Report (RCA 08L31)

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

September 2, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA 08L31) 30-Day Breakdown Report
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

Although Redwood Landfill, Inc. (RLI) disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is the 30-Day Breakdown Relief Report to BAAQMD for a PG&E power outage. This report includes the required elements in Regulation 1, Section 1-432. On Tuesday, August 30, 2022 at ~4:35 PM, PG&E had an area wide power outage that caused the RLI gas collection and control system (GCCS) to go offline. The GCCS remained offline until August 30, 2022, at ~8:10 PM. A breakdown report was submitted to BAAQMD on August 30, 2022 at ~6:15 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage. BAAQMD assigned RCA No. 08L31 to this breakdown report. RLI requested Breakdown Relief from BAAQMD for the August 30, 2022 PG&E power outage via BAAQMD's Reportable Compliance Activity (RCA) notification form submitted on August 30, 2022 (see Attachment A).

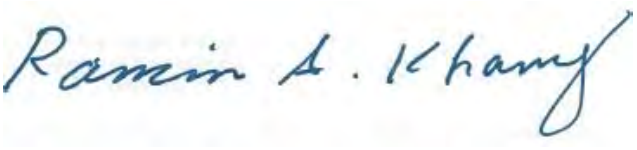
The unplanned power outage shutdown did not result in emissions and do not qualify as non-compliance. The downtime was less than 24 hours. RLI believes that it complied with the Title V permit conditions and safety protocols. RLI followed all measures to ensure gas movers and valves were closed during the shutdown event. RLI's downtime event was not the result of equipment malfunction, knowing, willful, intentional, chronic nor committed by a recalcitrant, and did not benefit RLI economically nor result in a nuisance. The frequency and duration of weather or utility-related electrical interruptions are outside of RLI's control.

RLI is committed to operating its landfill in compliance with applicable regulations and will ensure that compliance is achieved. However, RLI disagrees with the BAAQMD that temporary shutdowns resulting from unplanned power outages are violations of any BAAQMD regulation.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned).

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,
Redwood Landfill, Inc.



Ramin Khany
District Manager

cc: Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY (RCA) 08L31 (AUGUST 30, 2022)

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

August 30, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA) Notification
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

On behalf of Redwood Landfill, Inc. (RLI), although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is to request Breakdown Relief from BAAQMD for a PG&E power outage. On Tuesday, August 30, 2022 at ~4:35 PM, PG&E's power outage caused the GCCS to go offline. BAAQMD's Reportable Compliance Activity (RCA) notification form, as modified, is enclosed. It is not anticipated at this time that RLI violated applicable emission standard(s).

Breakdown Relief should be granted as RLI complied with administrative requirements despite its objections to the re-interpretation of Rule 8-34 and:

1. The breakdown is not the result of intent, negligence or disregard of air pollution control regulations;

2. The breakdown is not the result of improper maintenance;

3. The breakdown does not create a public nuisance;

4. The breakdown was not caused by an excessively recurrent breakdown of the same equipment; and

5. The breakdown did not occur, and any emissions did not interfere with attainment or maintenance of any National or California air quality standard.

On August 30, 2022 at ~8:10 PM the GCCS was back online after the PG&E power was restored. A breakdown report was submitted to BAAQMD on August 30, 2022 at ~6:15 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned)..

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,

Michael Chan
WM Environmental Protection Specialist
mchan2@wm.com

cc: Ramin Khany, RLI
Alisha McCutcheon, RLI
Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY NOTIFICATION FORM

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions →

1. [X] **BREAKDOWN RELIEF:** ***District Use Only*** **BREAKDOWN REFERENCE #:**

2. NA [ ] **MONITOR EXCESS EMISSION or EXCURSION:** ***District Use Only*** **REFERENCE#:**

3. NA [ ] **MONITOR IS INOPERATIVE:** ***District Use Only*** **REFERENCE#:**

4. NA [ ] **PRESSURE RELIEF DEVICE (PRD):** ***District Use Only*** **PRD REFERENCE#:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	Redwood Landfill, Inc. (RLI)	Site #	A1179
Address	8950 Redwood Highway, Novato	Source #	S-5
Reported by	Michael Chan	Phone #	510-613-2852
Indicated Excess	-NA	Fax #	-
Allowable Limit	-NA	Averaging Time	-
Start Time/Date	8/30/22 ~4:35 pm	Clear Time	8/30/22 ~8:10 pm
Monitor/device type(s)	[ ] ▶CEM [ ] ▶GLM [ ] ▶Parametric [ ] ▶PRD [ ] ▶Non-monitor		
Monitor description(s)			

Parameter(s) exceeded or not functioning due to inoperation

[ ] ▶NO_x [ ] ▶SO_2 [ ] ▶CO [ ] ▶CO_2 [ ] ▶H_2S [ ] ▶TRS [ ] ▶NH_3
[ ] ▶O_2 [ ] ▶H_2O [ ] ▶Opacity [ ] ▶Lead [ ] ▶Gauge Pressure [ ] ▶Flow
[ ] ▶Hydrocarbon Breakthrough (VOC) [ ] ▶Temperature [ ] ▶Wind Speed
[ ] ▶Wind Direction [ ] ▶Steam [X] ▶Other (describe) Power Outage

Unit(s) of Measurement

[ ] ▶ppm [ ] ▶ppb [ ] ▶min/hr > 20% [ ] ▶inches H_2O [ ] ▶mmHg
[ ] ▶psig [ ] ▶pH [ ] ▶^{0}Fahrenheit [ ] ▶Other (describe)

Event Description:

A breakdown report was submitted on 8/30/22 at ~6:15 pm via phone 415-749-4979 by RLI because the GCCS cannot continuously operate due to the PG&E power outage. During the PG&E power outage, the GCCS was potentially out of compliance with BAAQMD regulation 8-34-301.1. Please also see our objections and discussion in the attached cover letter dated 8/30/22.

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
- ✓ You may submit only one request for breakdown relief per form. However, you may submit multiple indicated excess, inoperative monitors and PRD reports on one form, provided that the start and end times given for the events in the required information section is inclusive of all events. Information on parameters exceeded, units of measurement and allowable limits can be provided in the event description box or when contacted by District staff with questions.
- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Chan, Michael

From: Chan, Michael
Sent: Tuesday, August 30, 2022 8:41 PM
To: 'rca@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/30/22
Attachments: RLI RCA Notification_220830.pdf

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 8/30/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: RCA Notification <rca@baaqmd.gov>
Sent: Wednesday, August 31, 2022 8:14 AM
To: Chan, Michael
Subject: [EXTERNAL] RE: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/30/22

08L31

From: Chan, Michael <mchan2@wm.com>
Sent: Tuesday, August 30, 2022 8:41 PM
To: RCA Notification <rca@baaqmd.gov>
Cc: Richard Murray <rmurray@baaqmd.gov>
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 8/30/22

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 8/30/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Chan, Michael
Sent: Friday, September 2, 2022 10:29 AM
To: 'rca@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill RCA 08L31 30day Breakdown Report Facility A1179
Attachments: RLI_RCA 30day Breakdown RCA 08L31_220902.pdf

Redwood Landfill (A1179) is submitting the attached RCA 30-day Breakdown report (RCA 08L31) to BAAQMD for the August 30, 2022 PG&E power outage.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

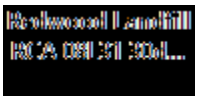
From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'rca@baaqmd.gov'; Richard Murray
Sent: Friday, September 2, 2022 10:31 AM
Subject: Relayed: Redwood Landfill RCA 08L31 30day Breakdown Report Facility A1179

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'rca@baaqmd.gov' (rca@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Landfill RCA 08L31 30day Breakdown Report Facility A1179



REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

September 6, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA) Notification
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

On behalf of Redwood Landfill, Inc. (RLI), although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is to request Breakdown Relief from BAAQMD for a PG&E power outage. On Tuesday, September 6, 2022 at ~12:09 PM, PG&E's power outage caused the GCCS to go offline. BAAQMD's Reportable Compliance Activity (RCA) notification form, as modified, is enclosed. It is not anticipated at this time that RLI violated applicable emission standard(s).

Breakdown Relief should be granted as RLI complied with administrative requirements despite its objections to the re-interpretation of Rule 8-34 and:

1. The breakdown is not the result of intent, negligence or disregard of air pollution control regulations;

2. The breakdown is not the result of improper maintenance;

3. The breakdown does not create a public nuisance;

4. The breakdown was not caused by an excessively recurrent breakdown of the same equipment; and

5. The breakdown did not occur, and any emissions did not interfere with attainment or maintenance of any National or California air quality standard.

On September 6, 2022 at ~3:25 PM the GCCS was back online after the PG&E power was restored. A breakdown report was submitted to BAAQMD on September 6, 2022 at ~1:30 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned)..

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,

Michael Chan
WM Environmental Protection Specialist
mchan2@wm.com

cc: Ramin Khany, RLI
Alisha McCutcheon, RLI
Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY NOTIFICATION FORM

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions →

1. [X] **BREAKDOWN RELIEF:** ***District Use Only*** **BREAKDOWN REFERENCE #:**

2. NA [ ] **MONITOR EXCESS EMISSION or EXCURSION:** ***District Use Only*** **REFERENCE#:**

3. NA [ ] **MONITOR IS INOPERATIVE:** ***District Use Only*** **REFERENCE#:**

4. NA [ ] **PRESSURE RELIEF DEVICE (PRD):** ***District Use Only*** **PRD REFERENCE#:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	Redwood Landfill, Inc. (RLI)	Site #	A1179
Address	8950 Redwood Highway, Novato CA 94945	Source #	S-5
Reported by	Michael Chan	Phone #	510-613-2852
Indicated Excess	-NA	Fax #	-
Allowable Limit	-NA	Averaging Time	-
Start Time/Date	9/6/22 ~12:09 pm	Clear Time	9/6/22 ~3:25 pm
Monitor/device type(s)	[ ] ▶CEM [ ] ▶GLM [ ] ▶Parametric [ ] ▶PRD [ ] ▶Non-monitor		
Monitor description(s)			

Parameter(s) exceeded or not functioning due to inoperation

[ ] ▶NO_x [ ] ▶SO_2 [ ] ▶CO [ ] ▶CO_2 [ ] ▶H_2S [ ] ▶TRS [ ] ▶NH_3
[ ] ▶O_2 [ ] ▶H_2O [ ] ▶Opacity [ ] ▶Lead [ ] ▶Gauge Pressure [ ] ▶Flow
[ ] ▶Hydrocarbon Breakthrough (VOC) [ ] ▶Temperature [ ] ▶Wind Speed
[ ] ▶Wind Direction [ ] ▶Steam [X] ▶Other (describe) Power Outage

Unit(s) of Measurement

[ ] ▶ppm [ ] ▶ppb [ ] ▶min/hr > 20% [ ] ▶inches H_2O [ ] ▶mmHg
[ ] ▶psig [ ] ▶pH [ ] ▶^{0}Fahrenheit [ ] ▶Other (describe)

Event Description:

A breakdown report was submitted on 9/6/22 at ~1:30 pm via phone 415-749-4979 by RLI because the GCCS cannot continuously operate due to the PG&E power outage. During the PG&E power outage, the GCCS was potentially out of compliance with BAAQMD regulation 8-34-301.1. Please also see our objections and discussion in the attached cover letter dated 9/6/22.

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
- ✓ You may submit only one request for breakdown relief per form. However, you may submit multiple indicated excess, inoperative monitors and PRD reports on one form, provided that the start and end times given for the events in the required information section is inclusive of all events. Information on parameters exceeded, units of measurement and allowable limits can be provided in the event description box or when contacted by District staff with questions.
- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Chan, Michael

From: RCA Notification <rca@baaqmd.gov>
Sent: Tuesday, September 6, 2022 5:32 PM
To: Chan, Michael
Cc: Richard Murray
Subject: [EXTERNAL] RE: Redwood Landfill Facility A1179 RCA Notification Power Outage 9/6/22

I am confirming receipt, the RCA for your notification is 08L51

From: Chan, Michael <mchan2@wm.com>
Sent: Tuesday, September 6, 2022 4:39 PM
To: RCA Notification <rca@baaqmd.gov>
Cc: Richard Murray <rmurray@baaqmd.gov>
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 9/6/22

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 9/6/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'rca@baaqmd.gov'; Richard Murray
Sent: Tuesday, September 6, 2022 4:39 PM
Subject: Relayed: Redwood Landfill Facility A1179 RCA Notification Power Outage 9/6/22

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'rca@baaqmd.gov' (rca@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 9/6/22

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

September 12, 2022

Director of Compliance and Enforcement
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
Attn: Title V Reports
(Via email: compliance@baaqmd.gov)

Richard Murray
Air Quality Inspector
Compliance and Enforcement
Bay Area AQMD
rmurray@baaqmd.gov

Re: Redwood Landfill, Inc., Novato, California
Facility Number A1179
Title V Section I.F, 10-Day and 30-Day written report (RCA 08L51)

Dear Sir or Madam:

The Redwood Landfill, Inc. (RLI) is submitting this combined 10-day and 30-day written report to the Bay Area Air Quality Management District (BAAQMD) as required under Title V Permit Condition Section I.F for Monitoring Reports. The RLI Title V Permit Requirement states that "*All instances of non-compliance with the permit shall be reported in writing to the District's Compliance and Enforcement Division within 10 calendar days of the discovery of the incident. Within 30 calendar days of the discovery of any incident of non-compliance, the facility shall submit a written report including the probable cause of non-compliance and any corrective or preventative actions*".

On Tuesday, September 6, 2022 at ~12:09 PM, PG&E had an area wide power outage that caused the gas collection and control system (GCCS) to go offline. The GCCS remained offline until September 6, 2022, at ~3:25 PM. A breakdown report was submitted to BAAQMD on September 6, 2022 at ~1:30 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage. BAAQMD assigned RCA No. 08L51 to this breakdown report. Although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from BAAQMD staff, RLI requested Breakdown Relief from BAAQMD for the September 6, 2022 PG&E power outage via BAAQMD's Reportable Compliance Activity (RCA) notification form submitted on September 6, 2022 (see Attachment A).

The unplanned power outage shutdown did not result in emissions and do not qualify as non-compliance. The downtime was less than 24 hours. RLI believes that it complied with the Title V permit conditions and safety protocols. RLI followed all measures to ensure gas movers and valves were closed during the shutdown event. RLI's downtime event was not the result of equipment malfunction, knowing, willful, intentional, chronic nor committed by a recalcitrant,

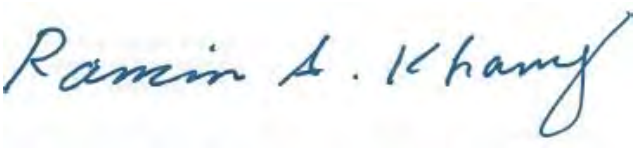
and did not benefit RLI economically nor result in a nuisance. The frequency and duration of weather or utility-related electrical interruptions are outside of RLI's control.

RLI is committed to operating its landfill in compliance with applicable regulations and will ensure that compliance is achieved. However, RLI disagrees with the BAAQMD that temporary shutdowns resulting from unplanned power outages are violations of any BAAQMD regulation.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned).

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Thank you,
Redwood Landfill, Inc.



Ramin Khany
District Manager

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY (RCA) 08L51 (SEPTEMBER 6, 2022)

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

September 6, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA) Notification
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

On behalf of Redwood Landfill, Inc. (RLI), although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is to request Breakdown Relief from BAAQMD for a PG&E power outage. On Tuesday, September 6, 2022 at ~12:09 PM, PG&E's power outage caused the GCCS to go offline. BAAQMD's Reportable Compliance Activity (RCA) notification form, as modified, is enclosed. It is not anticipated at this time that RLI violated applicable emission standard(s).

Breakdown Relief should be granted as RLI complied with administrative requirements despite its objections to the re-interpretation of Rule 8-34 and:

1. The breakdown is not the result of intent, negligence or disregard of air pollution control regulations;

2. The breakdown is not the result of improper maintenance;

3. The breakdown does not create a public nuisance;

4. The breakdown was not caused by an excessively recurrent breakdown of the same equipment; and

5. The breakdown did not occur, and any emissions did not interfere with attainment or maintenance of any National or California air quality standard.

On September 6, 2022 at ~3:25 PM the GCCS was back online after the PG&E power was restored. A breakdown report was submitted to BAAQMD on September 6, 2022 at ~1:30 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned)..

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,

Michael Chan
WM Environmental Protection Specialist
mchan2@wm.com

cc: Ramin Khany, RLI
Alisha McCutcheon, RLI
Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY NOTIFICATION FORM

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions →

1. [X] **BREAKDOWN RELIEF:** ***District Use Only*** **BREAKDOWN REFERENCE #:**

2. NA [ ] **MONITOR EXCESS EMISSION or EXCURSION:** ***District Use Only*** **REFERENCE#:**

3. NA [ ] **MONITOR IS INOPERATIVE:** ***District Use Only*** **REFERENCE#:**

4. NA [ ] **PRESSURE RELIEF DEVICE (PRD):** ***District Use Only*** **PRD REFERENCE#:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	Redwood Landfill, Inc. (RLI)	Site #	A1179
Address	8950 Redwood Highway, Novato CA 94945	Source #	S-5
Reported by	Michael Chan	Phone #	510-613-2852
Indicated Excess	-NA	Fax #	-
Allowable Limit	-NA	Averaging Time	-
Start Time/Date	9/6/22 ~12:09 pm	Clear Time	9/6/22 ~3:25 pm
Monitor/device type(s)	[ ] ▶CEM [ ] ▶GLM [ ] ▶Parametric [ ] ▶PRD [ ] ▶Non-monitor		
Monitor description(s)			

Parameter(s) exceeded or not functioning due to inoperation

[ ] ▶NO_x [ ] ▶SO_2 [ ] ▶CO [ ] ▶CO_2 [ ] ▶H_2S [ ] ▶TRS [ ] ▶NH_3
[ ] ▶O_2 [ ] ▶H_2O [ ] ▶Opacity [ ] ▶Lead [ ] ▶Gauge Pressure [ ] ▶Flow
[ ] ▶Hydrocarbon Breakthrough (VOC) [ ] ▶Temperature [ ] ▶Wind Speed
[ ] ▶Wind Direction [ ] ▶Steam [X] ▶Other (describe) Power Outage

Unit(s) of Measurement

[ ] ▶ppm [ ] ▶ppb [ ] ▶min/hr > 20% [ ] ▶inches H_2O [ ] ▶mmHg
[ ] ▶psig [ ] ▶pH [ ] ▶^{0}Fahrenheit [ ] ▶Other (describe)

Event Description:

A breakdown report was submitted on 9/6/22 at ~1:30 pm via phone 415-749-4979 by RLI because the GCCS cannot continuously operate due to the PG&E power outage. During the PG&E power outage, the GCCS was potentially out of compliance with BAAQMD regulation 8-34-301.1. Please also see our objections and discussion in the attached cover letter dated 9/6/22.

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
- ✓ You may submit only one request for breakdown relief per form. However, you may submit multiple indicated excess, inoperative monitors and PRD reports on one form, provided that the start and end times given for the events in the required information section is inclusive of all events. Information on parameters exceeded, units of measurement and allowable limits can be provided in the event description box or when contacted by District staff with questions.
- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Chan, Michael

From: RCA Notification <rca@baaqmd.gov>
Sent: Tuesday, September 6, 2022 5:32 PM
To: Chan, Michael
Cc: Richard Murray
Subject: [EXTERNAL] RE: Redwood Landfill Facility A1179 RCA Notification Power Outage 9/6/22

I am confirming receipt, the RCA for your notification is 08L51

From: Chan, Michael <mchan2@wm.com>
Sent: Tuesday, September 6, 2022 4:39 PM
To: RCA Notification <rca@baaqmd.gov>
Cc: Richard Murray <rmurray@baaqmd.gov>
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 9/6/22

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 9/6/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'rca@baaqmd.gov'; Richard Murray
Sent: Tuesday, September 6, 2022 4:39 PM
Subject: Relayed: Redwood Landfill Facility A1179 RCA Notification Power Outage 9/6/22

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'rca@baaqmd.gov' (rca@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 9/6/22

Chan, Michael

From: Chan, Michael
Sent: Monday, September 12, 2022 5:21 PM
To: 'rca@baaqmd.gov'; 'compliance@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill A1179 Title V 10day30day Report and RCA 08L51 30day Breakdown Report 9/6/22
Attachments: RLI Title V 10day 30day Report RCA 08L51_2200912.pdf; RLI_RCA 30day Breakdown RCA 08L51_220912.pdf

On behalf of Redwood Landfill, Inc. (RLI), attached are the Title V 10day/30day Combined Report and the RCA 30day Breakdown Report for the unplanned PG&E Power Outage on 9/6/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'rca@baaqmd.gov'; 'compliance@baaqmd.gov'; Richard Murray
Sent: Monday, September 12, 2022 5:21 PM
Subject: Relayed: Redwood Landfill A1179 Title V 10day30day Report and RCA 08L51 30day Breakdown Report 9/6/22

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'rca@baaqmd.gov' (rca@baaqmd.gov)

'compliance@baaqmd.gov' (compliance@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Landfill A1179 Title V 10day30day Report and RCA 08L51 30day Breakdown Report 9/6/22

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

September 12, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov and compliance@baaqmd.gov)

Re: Reportable Compliance Activity (RCA 08L51) 30-Day Breakdown Report
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

Although Redwood Landfill, Inc. (RLI) disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is the 30-Day Breakdown Relief Report to BAAQMD for a PG&E power outage. This report includes the required elements in Regulation 1, Section 1-432. On Tuesday, September 6, 2022 at ~12:09 PM, PG&E had an area wide power outage that caused the RLI gas collection and control system (GCCS) to go offline. The GCCS remained offline until September 6, 2022, at ~3:25 PM. A breakdown report was submitted to BAAQMD on September 6, 2022 at ~1:30 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage. BAAQMD assigned RCA No. 08L51 to this breakdown report. RLI requested Breakdown Relief from BAAQMD for the September 6, 2022 PG&E power outage via BAAQMD's Reportable Compliance Activity (RCA) notification form submitted on September 6, 2022 (see Attachment A).

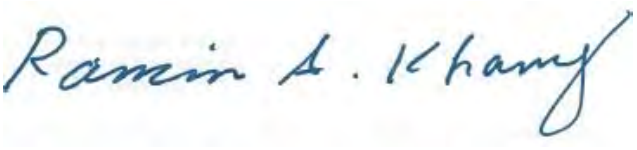
The unplanned power outage shutdown did not result in emissions and do not qualify as non-compliance. The downtime was less than 24 hours. RLI believes that it complied with the Title V permit conditions and safety protocols. RLI followed all measures to ensure gas movers and valves were closed during the shutdown event. RLI's downtime event was not the result of equipment malfunction, knowing, willful, intentional, chronic nor committed by a recalcitrant, and did not benefit RLI economically nor result in a nuisance. The frequency and duration of weather or utility-related electrical interruptions are outside of RLI's control.

RLI is committed to operating its landfill in compliance with applicable regulations and will ensure that compliance is achieved. However, RLI disagrees with the BAAQMD that temporary shutdowns resulting from unplanned power outages are violations of any BAAQMD regulation.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned).

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,
Redwood Landfill, Inc.



Ramin Khany
District Manager

cc: Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY (RCA) 08L51 (SEPTEMBER 6, 2022)

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

September 6, 2022

Compliance and Enforcement Division
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
(via email: rca@baaqmd.gov)

Re: Reportable Compliance Activity (RCA) Notification
Redwood Landfill, Inc., Novato, California
Facility Number A1179

Dear Sir or Madam:

On behalf of Redwood Landfill, Inc. (RLI), although RLI disagrees that Breakdown Relief is the appropriate methodology for compliance with Rule 8-34 during an unplanned power outage, due to direction from Bay Area Air Quality Management District (BAAQMD) staff, this letter is to request Breakdown Relief from BAAQMD for a PG&E power outage. On Tuesday, September 6, 2022 at ~12:09 PM, PG&E's power outage caused the GCCS to go offline. BAAQMD's Reportable Compliance Activity (RCA) notification form, as modified, is enclosed. It is not anticipated at this time that RLI violated applicable emission standard(s).

Breakdown Relief should be granted as RLI complied with administrative requirements despite its objections to the re-interpretation of Rule 8-34 and:

1. The breakdown is not the result of intent, negligence or disregard of air pollution control regulations;

2. The breakdown is not the result of improper maintenance;

3. The breakdown does not create a public nuisance;

4. The breakdown was not caused by an excessively recurrent breakdown of the same equipment; and

5. The breakdown did not occur, and any emissions did not interfere with attainment or maintenance of any National or California air quality standard.

On September 6, 2022 at ~3:25 PM the GCCS was back online after the PG&E power was restored. A breakdown report was submitted to BAAQMD on September 6, 2022 at ~1:30 PM via the phone 415-749-4979 about the GCCS going offline due to PG&E's power outage.

RLI has placed the purchase order for a permanent generator. RLI submitted the backup generator permit application to the BAAQMD on February 16, 2022 (AN 31603 was assigned)..

If you have any questions regarding this letter, please contact Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Sincerely,

Michael Chan
WM Environmental Protection Specialist
mchan2@wm.com

cc: Ramin Khany, RLI
Alisha McCutcheon, RLI
Richard Murray, BAAQMD

ATTACHMENT A

REPORTABLE COMPLIANCE ACTIVITY NOTIFICATION FORM

BAY AREA AIR QUALITY MANAGEMENT DISTRICT

COMPLIANCE & ENFORCEMENT DIVISION

Notification Form

Reportable Compliance Activity (RCA)

See back of form for instructions →

1. [X] **BREAKDOWN RELIEF:** ***District Use Only*** **BREAKDOWN REFERENCE #:**

2. NA [ ] **MONITOR EXCESS EMISSION or EXCURSION:** ***District Use Only*** **REFERENCE#:**

3. NA [ ] **MONITOR IS INOPERATIVE:** ***District Use Only*** **REFERENCE#:**

4. NA [ ] **PRESSURE RELIEF DEVICE (PRD):** ***District Use Only*** **PRD REFERENCE#:**

SITE INFORMATION AND DESCRIPTION INFORMATION (REQUIRED)			
Company	Redwood Landfill, Inc. (RLI)	Site #	A1179
Address	8950 Redwood Highway, Novato CA 94945	Source #	S-5
Reported by	Michael Chan	Phone #	510-613-2852
Indicated Excess	-NA	Fax #	-
Allowable Limit	-NA	Averaging Time	-
Start Time/Date	9/6/22 ~12:09 pm	Clear Time	9/6/22 ~3:25 pm
Monitor/device type(s)	[ ] ▶CEM [ ] ▶GLM [ ] ▶Parametric [ ] ▶PRD [ ] ▶Non-monitor		
Monitor description(s)			

Parameter(s) exceeded or not functioning due to inoperation

[ ] ▶NO_x [ ] ▶SO_2 [ ] ▶CO [ ] ▶CO_2 [ ] ▶H_2S [ ] ▶TRS [ ] ▶NH_3
[ ] ▶O_2 [ ] ▶H_2O [ ] ▶Opacity [ ] ▶Lead [ ] ▶Gauge Pressure [ ] ▶Flow
[ ] ▶Hydrocarbon Breakthrough (VOC) [ ] ▶Temperature [ ] ▶Wind Speed
[ ] ▶Wind Direction [ ] ▶Steam [X] ▶Other (describe) Power Outage

Unit(s) of Measurement

[ ] ▶ppm [ ] ▶ppb [ ] ▶min/hr > 20% [ ] ▶inches H_2O [ ] ▶mmHg
[ ] ▶psig [ ] ▶pH [ ] ▶^{0}Fahrenheit [ ] ▶Other (describe)

Event Description:

A breakdown report was submitted on 9/6/22 at ~1:30 pm via phone 415-749-4979 by RLI because the GCCS cannot continuously operate due to the PG&E power outage. During the PG&E power outage, the GCCS was potentially out of compliance with BAAQMD regulation 8-34-301.1. Please also see our objections and discussion in the attached cover letter dated 9/6/22.

District Use Only		
Received by	Date	Time

General Instructions

- ✓ Check the Box numbers 1- 4 that apply to the RCA you are trying to report or request and read the detailed instructions.
- ✓ You will receive an ID # for each RCA you submit. In the case of a request for Breakdown Relief where multiple monitors are affected, you do not need to submit multiple forms, as long as all necessary information is given on one form. RCA reported during other than core business hours will be assigned an ID # the following working day. If you do not receive an ID #, it is your responsibility to contact the BAAQMD to get one.
- ✓ You may submit only one request for breakdown relief per form. However, you may submit multiple indicated excess, inoperative monitors and PRD reports on one form, provided that the start and end times given for the events in the required information section is inclusive of all events. Information on parameters exceeded, units of measurement and allowable limits can be provided in the event description box or when contacted by District staff with questions.
- ✓ Fill out the "Site Information and Description Information Required" areas of this form and email to *rca@baaqmd.gov*
- ✓ **A 30-day written follow-up report is required for Breakdown Requests and PRD Releases**. Reports for these types of RCA must contain a quantification of emissions, the calculations used to derive the emissions, and their duration. Reference Breakdown Admissions Advisory dated 12/3/04. Send 30-day report letters to: BAAQMD Compliance and Enforcement Division, MAILSTOP: RCA 30-DAY REPORT, 375 Beale Street, Ste. 600 San Francisco, CA 94105. NOTE: **You may have additional report requirements under Title V.**

Detailed Instructions

Box 1: To Request Breakdown Relief (Regulations 1-112, 1-113, 1-208, 1-431, 1-432)

If you have an equipment malfunction (e.g.; breakdown) that leads to the release of air pollutants above the regulatory or your permitted levels, you may request relief from BAAQMD enforcement action.

- Check Box #1.
- **NOTE:** Start and end times given for these events in the required information section must be inclusive of all events.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Requests for breakdown relief may not be withdrawn and must be called in or faxed to the BAAQMD immediately upon discovery of an equipment malfunction.
- Receipt of an RCA ID# for a breakdown does not mean relief has been granted. An Inspector will visit your facility to determine compliance.

Box 2: Monitor Indicates Excess Emission or Excursion (Regulation 1-522.7, 1-523.3, 1-542)

When a BAAQMD-required monitor indicates an excess or excursion, you must report it to the BAAQMD.

- Check Box #2.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- Any excess emission indicated by a CEM or excursion of a parametric monitor, shall be reported to the BAAQMD within 96 hours.
- Area concentration excesses over the limits prescribed in District regulations shall be reported to the BAAQMD within the next normal working day following the examination of data.

Box 3: Monitor Is Inoperative (Regulations 1-522, 1-523, 1-530)

When a BAAQMD-required monitor is inoperative for greater than 24 hours, you must report it to the BAAQMD.

- Check Box #3 only if inoperative for greater than 24 hours.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All reports of inoperative monitors must be reported by the following BAAQMD working day and additionally be cleared by a notification of resumption of monitoring. To notify the BAAQMD regarding the resumption of monitoring, do not send in a separate RCA form; call (415) 749-4979 and give the RCA ID #, date, and the time of resumption.
- Inoperative monitors (except parametric monitors) with downtime greater than 15 days must furnish proof of expedited repair in a follow-up report.

Box 4: Pressure Relief Device (PRD) Is Released (Regulation 8-28-401)

When a PRD at your refinery/chemical plant vents to the atmosphere, you must report it to the BAAQMD.

- Check Box #4 only if a pressure relief device is released.
- Separate RCA ID #'s can be applied to monitor(s) affected by a PRD by also checking Box #2 if other monitors record an excess or excursion.
- Fill out all the information in the "Site Information and Description Information (Required)" area of the form.
- All PRD release reports must be reported by the following BAAQMD working day.

Chan, Michael

From: RCA Notification <rca@baaqmd.gov>
Sent: Tuesday, September 6, 2022 5:32 PM
To: Chan, Michael
Cc: Richard Murray
Subject: [EXTERNAL] RE: Redwood Landfill Facility A1179 RCA Notification Power Outage 9/6/22

I am confirming receipt, the RCA for your notification is 08L51

From: Chan, Michael <mchan2@wm.com>
Sent: Tuesday, September 6, 2022 4:39 PM
To: RCA Notification <rca@baaqmd.gov>
Cc: Richard Murray <rmurray@baaqmd.gov>
Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 9/6/22

On behalf of Redwood Landfill, Inc. (RLI), attached is the Reportable Compliance Activity (RCA) form for the unplanned PG&E Power Outage today 9/6/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'rca@baaqmd.gov'; Richard Murray
Sent: Tuesday, September 6, 2022 4:39 PM
Subject: Relayed: Redwood Landfill Facility A1179 RCA Notification Power Outage 9/6/22

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'rca@baaqmd.gov' (rca@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Landfill Facility A1179 RCA Notification Power Outage 9/6/22

Chan, Michael

From: Chan, Michael
Sent: Monday, September 12, 2022 5:21 PM
To: 'rca@baaqmd.gov'; 'compliance@baaqmd.gov'
Cc: Richard Murray
Subject: Redwood Landfill A1179 Title V 10day30day Report and RCA 08L51 30day Breakdown Report 9/6/22
Attachments: RLI Title V 10day 30day Report RCA 08L51_2200912.pdf; RLI_RCA 30day Breakdown RCA 08L51_220912.pdf

On behalf of Redwood Landfill, Inc. (RLI), attached are the Title V 10day/30day Combined Report and the RCA 30day Breakdown Report for the unplanned PG&E Power Outage on 9/6/22.

Regards,

Mike Chan

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'rca@baaqmd.gov'; 'compliance@baaqmd.gov'; Richard Murray
Sent: Monday, September 12, 2022 5:21 PM
Subject: Relayed: Redwood Landfill A1179 Title V 10day30day Report and RCA 08L51 30day Breakdown Report 9/6/22

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'rca@baaqmd.gov' (rca@baaqmd.gov)

'compliance@baaqmd.gov' (compliance@baaqmd.gov)

Richard Murray (rmurray@baaqmd.gov)

Subject: Redwood Landfill A1179 Title V 10day30day Report and RCA 08L51 30day Breakdown Report 9/6/22

REDWOOD LANDFILL, INC.
8950 Redwood Highway
P.O. Box 793
Novato, CA 94948
(415) 892-2851
(855) 242-0798 Fax

September 23, 2022

Ms. Simrun Dhoot
Senior Air Quality Engineer
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, California 94105
sdhoot@baaqmd.gov

Re: Well Actions Letter
Title V Permit Condition Number 19867, Part 17, Facility A1179
Redwood Landfill, Inc., Novato, California

Dear Ms. Dhoot:

On behalf of Redwood Landfill, Inc. (RLI), this letter is to notify the Bay Area Air Quality Management District (BAAQMD) of the well actions recently performed at the RLI, pursuant to Title V Permit A1179 as modified by Application Number (AN) 30065. These well actions is summarized below:

- Vertical wells RLI00275, RLI00276, RLI00277, RLI00278, RLI00282, RLI00284, RLI00285, RLI00286, and RLI00287 were added to the collection system on 9/21/2022.
- Vertical wells RLI00279, RLI00280, RLI00281, and RLI00283 were added to the collection system on 9/22/2022.

AN 30065 allows installation of up to 100 new vertical wells, unlimited one-to-one replacement of vertical wells, installation of up to 50 new horizontal collectors, decommissioning of up to 50 vertical wells, and decommissioning of up to 15 horizontal collectors.

As stated in the October 29, 2021 Well Actions Letter, prior to the completion of this well action, RLI had 130 total collectors (123 vertical wells and 7 horizontal collectors) connected to the GCCS. With the completion of this well actions, RLI's existing GCCS component count and permitted remaining actions per AN 30065 are listed in the following table:

	Install New Vertical Wells	Decommission Vertical Wells	Install New Horizontal Collectors	Decommission Horizontal Collectors	Replace Vertical Wells*
Actions Permitted Under AN 30065	100	50	50	15	Unlimited
Actions Performed by RLI per AN 30065	54	19	0	2	-
Actions Remaining Under AN 30065	46	31	50	13	Unlimited
Active Collector Count after Actions in this Letter	143 Total Collectors: 136 Vertical LFG Wells and 7 Horizontal Collectors				

*One-for-one well replacement at new optimal locations.

If you have any questions regarding this notification, please contact me at (510) 613-2852 or Alisha McCutcheon, Redwood Landfill Technical Manager, at (415) 373-8033.

Thank you,
Redwood Landfill, Inc.

Michael Chan
Environmental Protection Specialist

Chan, Michael

From: Chan, Michael
Sent: Friday, September 23, 2022 4:02 PM
To: 'Simrun Dhoot'
Cc: McCutcheon, Alisha
Subject: Redwood Landfill Well Actions Notification September 2022
Attachments: 2022.09.23 - RLI Well Actions Letter 13 New Wells RLI00275 thru RLI00287.pdf

Hi Simrun,

Attached is the Well Actions Notification letter that Redwood Landfill has added 13 new wells to the collection system.

Thanks,

Mike

Michael Chan
EP Air Quality Specialist
mchan2@wm.com

T: 510.613.2852
C: 510.205.0410
172 98th Avenue
Oakland, CA 94603

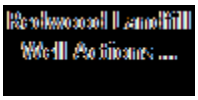
Chan, Michael

From: Microsoft Outlook <MicrosoftExchange329e71ec88ae4615bbc36ab6ce41109e@wm.com>
To: 'Simrun Dhoot'
Sent: Friday, September 23, 2022 4:02 PM
Subject: Relayed: Redwood Landfill Well Actions Notification September 2022

Delivery to these recipients or groups is complete, but no delivery notification was sent by the destination server:

'Simrun Dhoot' (sdhoot@baaqmd.gov)

Subject: Redwood Landfill Well Actions Notification September 2022



APPENDIX D

WELLFIELD SSM LOG

REDWOOD LANDFILL, INC.

COLLECTION SYSTEM DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
1	x Shutdown x Startup Malfunction	RLLC0246	2/18/22 15:25 9/22/22 17:48	2/18/22 15:27 9/22/22 17:50	0.03 0.03	5,186.39	Well raising, well located in active fill area	113: Inspection/Maintenance x 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	9/22/2022
2	x Shutdown x Startup Malfunction	RLLC0265	2/18/22 15:30 9/22/22 18:05	2/18/22 15:32 9/22/22 18:07	0.03 0.03	5,186.59	Well raising, well located in active fill area	113: Inspection/Maintenance x 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	9/22/2022
3	x Shutdown x Startup Malfunction	RLI00141	2/28/22 8:20 7/5/22 10:20	2/28/22 8:22 7/5/22 10:22	0.03 0.03	3,050.00	Well raising, well located in active fill area	113: Inspection/Maintenance x 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	7/5/2022
4	x Shutdown x Startup Malfunction	RLLC0212	4/12/22 11:15 7/22/22 11:50	4/12/22 11:17 7/22/22 11:52	0.03 0.03	2,424.58	Well raising, well located in active fill area	113: Inspection/Maintenance x 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	7/22/2022
5	x Shutdown x Startup Malfunction	RLLC0226	4/12/22 11:15 7/22/22 11:50	4/12/22 11:17 7/22/22 11:52	0.03 0.03	2,424.58	Well raising, well located in active fill area	113: Inspection/Maintenance x 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	7/22/2022
6	x Shutdown x Startup Malfunction	RLLC0266	7/6/22 14:48 7/15/22 16:15	7/6/22 14:50 7/15/22 16:17	0.03 0.03	217.45	Well raising, well located in active fill area	113: Inspection/Maintenance x 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	7/15/2022
7	x Shutdown x Startup Malfunction	RLLC0268	7/15/22 16:30 10/18/22 16:42	7/15/22 16:32 10/18/22 16:44	0.03 0.03	2,280.20	Well raising, well located in active fill area	113: Inspection/Maintenance x 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) x No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	10/18/2022
8	Shutdown x Startup Malfunction	RLI00275	9/21/22 15:42 N/A	9/21/22 15:44	0.03	N/A	Well startup pursuant to AN #30065	113: Inspection/Maintenance 116: Well Raising 117: Gas Collection x 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) N/A	Procedures 1 to 3	Yes (Go to 9) x No	Yes (Go to 10) No		Mike Chan	9/21/2022
9	Shutdown x Startup Malfunction	RLI00276	9/21/22 16:16 N/A	9/21/22 16:18	0.03	N/A	Well startup pursuant to AN #30065	113: Inspection/Maintenance 116: Well Raising 117: Gas Collection x 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) N/A	Procedures 1 to 3	Yes (Go to 9) x No	Yes (Go to 10) No		Mike Chan	9/21/2022
10	Shutdown x Startup Malfunction	RLI00277	9/21/22 17:25 N/A	9/21/22 17:27	0.03	N/A	Well startup pursuant to AN #30065	113: Inspection/Maintenance 116: Well Raising 117: Gas Collection x 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) N/A	Procedures 1 to 3	Yes (Go to 9) x No	Yes (Go to 10) No		Mike Chan	9/21/2022
11	Shutdown x Startup Malfunction	RLI00278	9/21/22 17:35 N/A	9/21/22 17:37	0.03	N/A	Well startup pursuant to AN #30065	113: Inspection/Maintenance 116: Well Raising 117: Gas Collection x 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) N/A	Procedures 1 to 3	Yes (Go to 9) x No	Yes (Go to 10) No		Mike Chan	9/21/2022
12	Shutdown x Startup Malfunction	RLI00279	9/22/22 11:07 N/A	9/22/22 11:09	0.03	N/A	Well startup pursuant to AN #30065	113: Inspection/Maintenance 116: Well Raising 117: Gas Collection x 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) N/A	Procedures 1 to 3	Yes (Go to 9) x No	Yes (Go to 10) No		Mike Chan	9/22/2022

REDWOOD LANDFILL, INC.

COLLECTION SYSTEM DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
13	[ ] Shutdown [x] Startup [ ] Malfunction	RLI00280	9/22/22 10:42 N/A	9/22/22 10:44	0.03	N/A	Well startup pursuant to AN #30065	[ ] 113: Inspection/Maintenance [ ] 116: Well Raising [ ] 117: Gas Collection [x] 118: Construction Activities	[x] Manual (Go to 7) [ ] Automatic (Go to 9) N/A	Procedures 1 to 3	[ ] Yes (Go to 9) [x] No N/A	[ ] Yes (Go to 10) [ ] No		Mike Chan	9/22/2022
14	[ ] Shutdown [x] Startup [ ] Malfunction	RLI00281	9/22/22 10:53 N/A	9/22/22 10:55	0.03	N/A	Well startup pursuant to AN #30065	[ ] 113: Inspection/Maintenance [ ] 116: Well Raising [ ] 117: Gas Collection [x] 118: Construction Activities	[x] Manual (Go to 7) [ ] Automatic (Go to 9) N/A	Procedures 1 to 3	[ ] Yes (Go to 9) [x] No N/A	[ ] Yes (Go to 10) [ ] No		Mike Chan	9/22/2022
15	[ ] Shutdown [x] Startup [ ] Malfunction	RLI00282	9/21/22 16:34 N/A	9/21/22 16:36	0.03	N/A	Well startup pursuant to AN #30065	[ ] 113: Inspection/Maintenance [ ] 116: Well Raising [ ] 117: Gas Collection [x] 118: Construction Activities	[x] Manual (Go to 7) [ ] Automatic (Go to 9) N/A	Procedures 1 to 3	[ ] Yes (Go to 9) [x] No N/A	[ ] Yes (Go to 10) [ ] No		Mike Chan	9/21/2022
16	[ ] Shutdown [x] Startup [ ] Malfunction	RLI00283	9/22/22 9:37 N/A	9/22/22 9:39	0.03	N/A	Well startup pursuant to AN #30065	[ ] 113: Inspection/Maintenance [ ] 116: Well Raising [ ] 117: Gas Collection [x] 118: Construction Activities	[x] Manual (Go to 7) [ ] Automatic (Go to 9) N/A	Procedures 1 to 3	[ ] Yes (Go to 9) [x] No N/A	[ ] Yes (Go to 10) [ ] No		Mike Chan	9/22/2022
17	[ ] Shutdown [x] Startup [ ] Malfunction	RLI00284	9/21/22 15:51 N/A	9/21/22 15:53	0.03	N/A	Well startup pursuant to AN #30065	[ ] 113: Inspection/Maintenance [ ] 116: Well Raising [ ] 117: Gas Collection [x] 118: Construction Activities	[x] Manual (Go to 7) [ ] Automatic (Go to 9) N/A	Procedures 1 to 3	[ ] Yes (Go to 9) [x] No N/A	[ ] Yes (Go to 10) [ ] No		Mike Chan	9/21/2022
18	[ ] Shutdown [x] Startup [ ] Malfunction	RLI00285	9/21/22 15:28 N/A	9/21/22 15:30	0.03	N/A	Well startup pursuant to AN #30065	[ ] 113: Inspection/Maintenance [ ] 116: Well Raising [ ] 117: Gas Collection [x] 118: Construction Activities	[x] Manual (Go to 7) [ ] Automatic (Go to 9) N/A	Procedures 1 to 3	[ ] Yes (Go to 9) [x] No N/A	[ ] Yes (Go to 10) [ ] No		Mike Chan	9/21/2022
19	[ ] Shutdown [x] Startup [ ] Malfunction	RLI00286	9/21/22 16:51 N/A	9/21/22 16:53	0.03	N/A	Well startup pursuant to AN #30065	[ ] 113: Inspection/Maintenance [ ] 116: Well Raising [ ] 117: Gas Collection [x] 118: Construction Activities	[x] Manual (Go to 7) [ ] Automatic (Go to 9) N/A	Procedures 1 to 3	[ ] Yes (Go to 9) [x] No N/A	[ ] Yes (Go to 10) [ ] No		Mike Chan	9/21/2022
20	[ ] Shutdown [x] Startup [ ] Malfunction	RLI00287	9/21/22 17:09 N/A	9/21/22 17:11	0.03	N/A	Well startup pursuant to AN #30065	[ ] 113: Inspection/Maintenance [ ] 116: Well Raising [ ] 117: Gas Collection [x] 118: Construction Activities	[x] Manual (Go to 7) [ ] Automatic (Go to 9) N/A	Procedures 1 to 3	[ ] Yes (Go to 9) [x] No N/A	[ ] Yes (Go to 10) [ ] No		Mike Chan	9/21/2022
21	[x] Shutdown [x] Startup [ ] Malfunction	RLLC0234	10/6/22 10:02 10/17/22 16:15	10/6/22 10:04 10/17/22 16:17	0.03 0.03	270.22	Well raising, well located in active fill area	[ ] 113: Inspection/Maintenance [x] 116: Well Raising [ ] 117: Gas Collection [ ] 118: Construction Activities	[x] Manual (Go to 7) [ ] Automatic (Go to 9) [x] Manual (Go to 7) [ ] Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	[ ] Yes (Go to 9) [x] No [ ] Yes (Go to 9) [x] No	[ ] Yes (Go to 10) [ ] No [ ] Yes (Go to 10) [ ] No		Mike Chan	10/17/2022
22	[x] Shutdown [ ] Startup [ ] Malfunction	RLLC0252	10/18/22 14:02 Well offline as of November 1, 2022	10/18/22 14:04	0.03	321.97	Well raising, well located in active fill area	[ ] 113: Inspection/Maintenance [x] 116: Well Raising [ ] 117: Gas Collection [ ] 118: Construction Activities	[x] Manual (Go to 7) [ ] Automatic (Go to 9) [ ] Manual (Go to 7) [ ] Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	[ ] Yes (Go to 9) [x] No [ ] Yes (Go to 9) [ ] No	[ ] Yes (Go to 10) [ ] No [ ] Yes (Go to 10) [ ] No		Mike Chan	11/1/2022
23	[x] Shutdown [ ] Startup [ ] Malfunction	RLLC0253	10/18/22 12:05 Well offline as of November 1, 2022	10/18/22 12:07	0.03	323.92	Well raising, well located in active fill area	[ ] 113: Inspection/Maintenance [x] 116: Well Raising [ ] 117: Gas Collection [ ] 118: Construction Activities	[x] Manual (Go to 7) [ ] Automatic (Go to 9) [ ] Manual (Go to 7) [ ] Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	[ ] Yes (Go to 9) [x] No [ ] Yes (Go to 9) [ ] No	[ ] Yes (Go to 10) [ ] No [ ] Yes (Go to 10) [ ] No		Mike Chan	11/1/2022
24	[x] Shutdown [ ] Startup [ ] Malfunction	RLLC0254	10/19/22 10:18 Well offline as of November 1, 2022	10/19/22 10:20	0.03	301.70	Well raising, well located in active fill area	[ ] 113: Inspection/Maintenance [x] 116: Well Raising [ ] 117: Gas Collection [ ] 118: Construction Activities	[x] Manual (Go to 7) [ ] Automatic (Go to 9) [ ] Manual (Go to 7) [ ] Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	[ ] Yes (Go to 9) [x] No [ ] Yes (Go to 9) [ ] No	[ ] Yes (Go to 10) [ ] No [ ] Yes (Go to 10) [ ] No		Mike Chan	11/1/2022

REDWOOD LANDFILL, INC.

COLLECTION SYSTEM DOWNTIME LOG

Event No.	Check Applicable Event	Device	(1) Event Start Date/Time	(2) Event End Date/Time	(3) Duration (Hrs)	Downtime (Hrs)	(4) Cause or Reason	(5) Applicable Regulation	(6) Type of Event	(7) Procedures Used (a),(b)	(8) Did Steps Taken Vary From (7)	(9) Did Event Cause Any Emission Limit Exceedance?	(10) Describe Emission Standard(s) Exceeded (b)	Completed By	(11) Date Entry Completed
25	x Shutdown Startup Malfunction	RLI00276	10/31/22 16:30 Well offline as of November 1, 2022	10/31/22 16:32	0.03	7.50	Well raising, well located in active fill area	113: Inspection/Maintenance x 116: Well Raising 117: Gas Collection 118: Construction Activities	x Manual (Go to 7) Automatic (Go to 9) Manual (Go to 7) Automatic (Go to 9)	Procedures 1 to 3 Procedures 1 to 4	Yes (Go to 9) x No Yes (Go to 9) No	Yes (Go to 10) No Yes (Go to 10) No		Mike Chan	11/1/2022

(a) **STANDARD OPERATING PROCEDURES**

Shutdown

Procedure No.	Procedure
1.	Ensure that there is no unsafe conditions present, contact manager immediately
2.	Initiate shutdown sequence below by one or more of the following (Note date and time in Section 1 of form above)
	a. Press Emergency Stop if necessary
	b. Close On/Off switch(es) or Push On/Off button(s)
	c. Close adjacent valves if necessary
3.	Observe that system achieves normal shutdown ranges for levels, pressures, and temperatures (Note date and time in Section 2 of form above)

Startup

Procedure No.	Procedure
1.	Ensure that there is no unsafe conditions present
2.	Ensure that the system is ready to start by one of the following:
	a. Valves are in correct position
	b. Levels, pressures, and temperatures are within normal starting range
	c. Alarms are cleared
	d. Power is on and available to control panel and ready to energized equipment.
	e. Emergency stop is de-energized
3.	Initiate start sequence (Note time and date in section 1 of form above)
4.	Observe that system achieves normal shutdown ranges for levels, pressures, and temperatures (Note time and date in Section 2 of form above)

Malfunction

EQUIPMENT	PURPOSE	MALFUNCTION EVENT	COMMON CAUSES	PROCEDURE NO. -TYPICAL RESPONSE ACTIONS
LFG Collection and Control System				
Blower or Other Gas Mover Equipment	Applies vacuum to wellfield to extract LFG and transport to control device	Loss of LFG Flow/Blower Malfunction	-Flame arrestor fouling/deterioration -Automatic valve problems -Blower failure (e.g., belt, motor, impeller, coupling, seizing, etc.) -Loss of power -Extraction piping failure -Condensate knock-out problems -Extraction piping blockages	1. Repair breakages in extraction piping 2. Clean flame arrestor 3. Repair blockages in extraction piping 4. Verify automatic valve operation, compressed air/nitrogen supply 5. Notify power utility, if appropriate 6. Provide/utilize auxiliary power source, if necessary 7. Repair Settlement in Collection Piping 8. Repair Blower 9. Activate back-up blower, if available 10. Clean knock-up pot/demister 11. Drain knock-out pot
Extraction Wells and Collection Piping	Conduits for extractions and movement of LFG flow	Collection well and pipe failures	-Break/crack in header or lateral piping -Leaks at wellheads, valves, flanges, Test ports, seals, couplings, etc. -Collection piping blockages -Problems due to settlement (e.g. pipe separation, deformation, development of low points	12. Repair leaks or breaks in lines or wellheads 13. Follow procedures for loss of LFG flow/blower malfunction 14. Repair blockages in collection piping 15. Repair settlement in collection piping 16. Re-install, repair, or replace piping
Blower or Other Gas Mover Equipment And Control Device	Collection and control of LFG	Loss of electrical power	- Force majeure/Act of God (e.g., lightning, flood, earthquake, etc.) -Area-wide or local blackout or brown-ou -Interruption in service (e.g. blown service fuse -Electrical line failure -Breaker trip -Transformer failure -Motor starter failure/trip -Overdraw of power -Problems in electrical panel -Damage to electrical equipment from on-site operations	17. Check/reset breaker 18. Check/repair electrical panel components 19. Check/repair transformer 20. Check/repair motor starter 21. Check/repair electrical line 22. Test amperage to various equipment 23. Contact electricity supplier 24. Contact/contract electrician 25.Provide auxiliary power (if necessary
LFG Control Device	Combusts LFG	Low temperature conditions at control device	-Problems with temperature -monitoring equipmen -Problems/failure of -thermocouple and/or thermocouple wiring -Change of LFG flow -Change of LFG quality -Problems with air louvers -Problems with air/fuel controls -Change in atmospheric conditions	26. Check/repair temperature monitoring equipment 27. Check/repair thermocouple and/or wiring 28. Follow procedures for loss of flow/blower malfunction 29. Check/adjust louvers 30. Check/adjust air/fuel controls
LFG Control Device	Combusts LFG	Loss of Flame	-Problems/failure of thermocouple -Loss/change of LFG flow -Loss/change of LFG quality -Problems with air/fuel controls -Problems/failure of flame sensor -Problems with temperature monitoring equipmen	31. Check/repair temperature monitoring equipment 32. Check/repair thermocouple 33. Follow procedures for loss of flow/blower malfunction 34. Check/adjust air/fuel controls 35. Check/adjust/repair flame sensor 36. Check/adjust LFG collectors
Flow Monitoring/ Recording Device	Measures and records gas flow from collection system to control	Malfunctions of Flow Monitoring/Recording Device	-Problems with orifice plate, pitot tube, or other in-line flow measuring device -Problems with device controls and/or wiring -Problems with chart recorder	37. Check/adjust/repair flow measuring device and/or wiring 38. Check/repair chart recorder 39. Replace paper in chart recorder
Temperature Monitoring/ Recording Device	Monitors and records combustion temperature of enclosed combustion device	Malfunctions of Temperature Monitoring/Recording Device	-Problems with thermocouple -Problems with device controls and/or wiring -Problems with chart recorder	40. Check/adjust/repair thermocouple 41. Check/adjust/repair controller and/or wiring 42. Check/adjust/repair electrical panel components 43. Check/repair chart recorder 44. Replace paper in chart recorder
Control Device	Combusts LFG	Other Control Device Malfunctions	-Control device smoking (i.e. visible emissions) -Problems with flare insulation -Problems with pilot light system -Problems with air louvers -Problems with air/fuel controllers -Problems with thermocouple -Problems with burners -Problems with flame arrester -Alarmed malfunction conditions not covered above -Unalarmed conditions discovered during inspection not covered above	45. Site-specific diagnosis procedures 46. Site-specific responses actions based on diagnosis 47. Open manual louvers 48. Clean pitot orifice 49. Clean/drain flame arrestor 50. Refill propane supply 51. Check/repair pilot sparking system

(b) For each permit limit exceedance complete an "SSM Plan Departure Form".

APPENDIX E

A-51 AND A-60 FLARE TEMPERATURE REPORTS

Redwood Landfill, Novato, CA

A-51 Flare TEMPERATURE DEVIATION/ INOPERATIVE MONITOR REPORT **May 1, 2022 to October 31, 2022**

REPORT PREPARED BY:	Michael Chan	**DATE:**	November 23, 2022
TEMPERATURE SENSING DEVICE:	Thermocouple	**MODEL:**	Thermo-Electric

START DATE & TIME	END DATE & TIME	TEMP (^{o}F) / FLOW	CAUSE	EXPLANATION	ACTION TAKEN
No deviations or inoperative monitors during the month of May 2022					
No deviations or inoperative monitors during the month of June 2022					
No deviations or inoperative monitors during the month of July 2022					
No deviations or inoperative monitors during the month of August 2022					
No deviations or inoperative monitors during the month of September 2022					
No deviations or inoperative monitors during the month of October 2022					

COMMENTS:

1 In accordance with Title V Permit Condition Number 19867, Part 22a, the A-51 Flare combustion zone 3-hour average temperature did not drop below 1,400 degrees Fahrenheit (°F) while the flare was in operation.

2 The A-51 Flare combustion zone 3-hour average temperature did not drop below the 1,488°F (3/10/2021 to 3/10/22) or 1459°F (3/11/22 to current) limits established during the January 14, 2021 and January 12, 2022 Annual Source Tests, while the flare was in operation, pursuant to Title V Permit Condition Number 19867, Part 22, and 40 CFR 60.752 b(2)(iii)(B)(2) in Subpart WWW of the NSPS.

Redwood Landfill, Novato, CA

A-60 Flare TEMPERATURE DEVIATION/ INOPERATIVE MONITOR REPORT **May 1, 2022 to October 31, 2022**

REPORT PREPARED BY:	Michael Chan	**DATE:**	November 23, 2022
TEMPERATURE SENSING DEVICE:	Thermocouple	**MODEL:**	Thermo-Electric

START DATE & TIME	END DATE & TIME	TEMP (^{o}F) / FLOW	CAUSE	EXPLANATION	ACTION TAKEN
No deviations or inoperative monitors during the month of May 2022					
No deviations or inoperative monitors during the month of June 2022					
No deviations or inoperative monitors during the month of July 2022					
No deviations or inoperative monitors during the month of August 2022					
No deviations or inoperative monitors during the month of September 2022					
No deviations or inoperative monitors during the month of October 2022					

COMMENTS:

1 In accordance with Authority To Construct (ATC) 19098 Condition Number 19867, Part 22b, the A-60 Flare combustion Zone A 3-hour average temperature did not drop below 1,400 degrees Fahrenheit (°F) while the flare was in operation, and the A-60 Flare combustion Zone B 3-hour average temperature did not drop below 1,400°F while the flare was in operation.

2 The A-60 Flare Zone A combustion zone three-hour average temperature did not drop below 1,525°F (9/10/21 - 9/10/22) or 1,532°F (9/11/22 - current) limits established during the July 13, 2021 and July 13, 2022 source tests. Source Tests, pursuant to 40 CFR 60.752 b(2)(iii)(B)(2) in Subpart WWW of the NSPS.
Zone B of the A-60 Flare combustion zone 3-hour average temperature did not drop below the 1,555°F (9/14/18 to current) limits established in the July 17, 2018 Source Test. Pursuant to Title V Condition 19867 Part 30g, the Annual Source Test at A-60 may be conducted while it is operating in either zone, provided that each operating zone is tested at least once every five years.

APPENDIX F

MISSING A-51 AND A-60 FLOW AND TEMPERATURE RECORDS

Emission Control Devices

A-51 Flare Missing Data Summary

Redwood Landfill, Novato, CA

FLARE MISSING DATA REPORT May 1, 2022 to October 31, 2022

Date & Time	Date & Time	Total Missing Data Hours	Total Missing Data Days	Comments
There was no missing data for May 2022				
There was no missing data for June 2022				
There was no missing data for July 2022				
There was no missing data for August 2022				
There was no missing data for September 2022				
There was no missing data for October 2022				

Flare A-51	Hours	Days
Total Missing Data:	0.00	0.00
Total Complete Data:	4,416.00	184.00
Missing Data Percentage:	0.00%	0.00%

Emission Control Devices

A-60 Flare Missing Data Summary

Redwood Landfill, Novato, CA

FLARE MISSING DATA REPORT May 1, 2022 to October 31, 2022

Date & Time	Date & Time	Total Missing Data Hours	Total Missing Data Days	Comments
There was no missing data for May 2022				
There was no missing data for June 2022				
There was no missing data for July 2022				
There was no missing data for August 2022				
There was no missing data for September 2022				
There was no missing data for October 2022				

Flare A-60	Hours	Days
Total Missing Data:	0.00	0.00
Total Complete Data:	4,416.00	184.00
Missing Data Percentage:	0.00%	0.00%

APPENDIX G

COVER INTEGRITY MONITORING REPORTS

Monthly Cover Integrity Inspection Form

Facility	Redwood Landfill				
Month	May 2022	Received	Manager	Rosalin L. Kay	Date 5/23/22
Technician	Mo	Repairs Complete	Manager		Date

Cell/Pad		Cell/Pad	
Description of finding and corrective action: No breaches of cover integrity (e.g., cover cracks or exposed garbage) were found during the reporting period.		Description of finding and corrective action:	
Date Identified 5/26/2022	Repaired N/A	Date Identified	Repaired
Cell/Pad		Cell/Pad	
Description of finding and corrective action:		Description of finding and corrective action:	
Date Identified	Repaired	Date Identified	Repaired
Cell/Pad		Cell/Pad	
Description of finding and corrective action:		Description of finding and corrective action:	
Date Identified	Repaired	Date Identified	Repaired
Cell/Pad		Cell/Pad	
Description of finding and corrective action:		Description of finding and corrective action:	
Date Identified	Repaired	Date Identified	Repaired
Cell/Pad		Cell/Pad	
Description of finding and corrective action:		Description of finding and corrective action:	
Date Identified	Repaired	Date Identified	Repaired
Cell/Pad		Cell/Pad	
Description of finding and corrective action:		Description of finding and corrective action:	
Date Identified	Repaired	Date Identified	Repaired
Cell/Pad		Cell/Pad	
Description of finding and corrective action:		Description of finding and corrective action:	
Date Identified	Repaired	Date Identified	Repaired

Monthly Cover Integrity Inspection Form

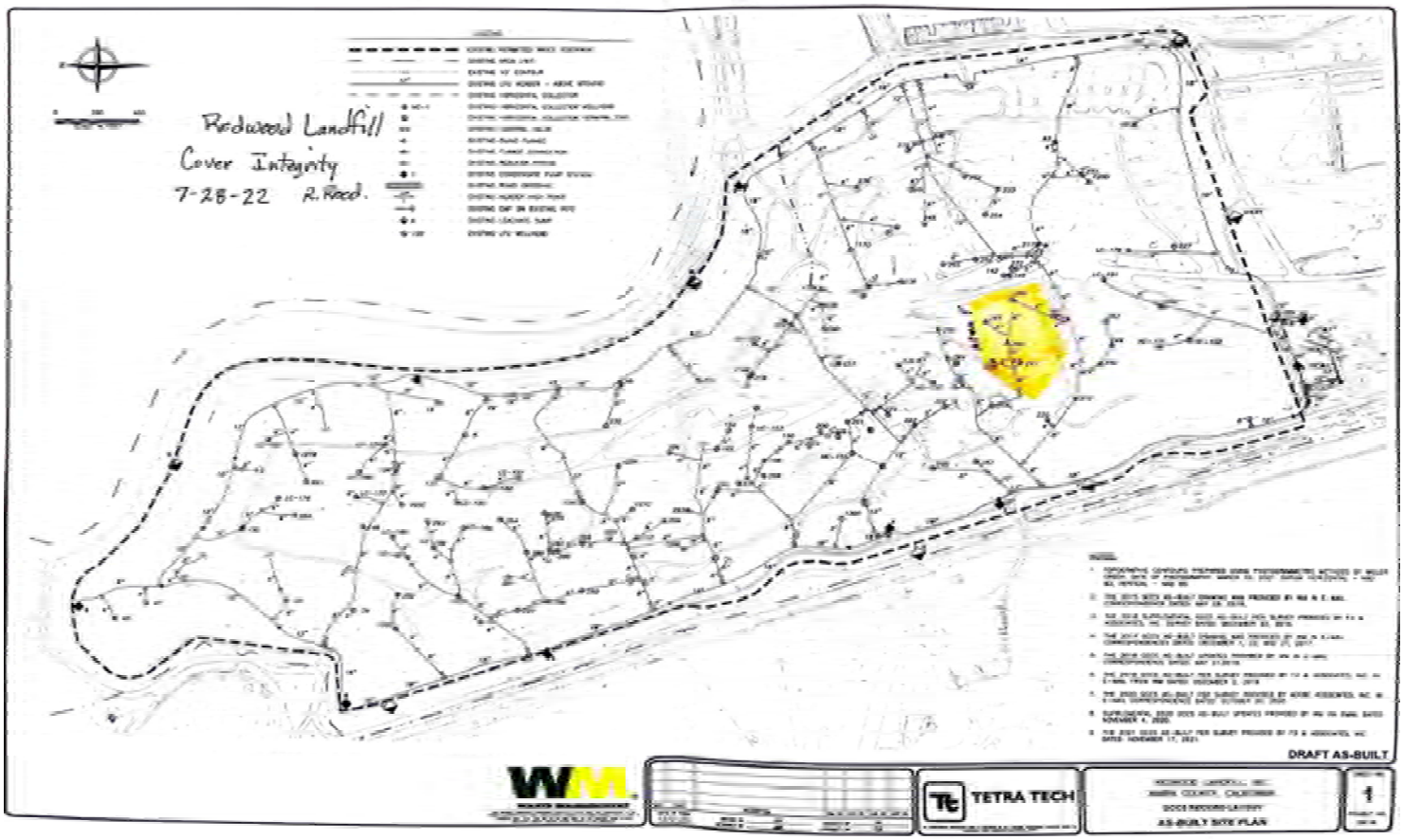
Facility	Redwood Landfill				
Month	June 2022	Received	Manager	Ramon A King	Date 6/20/22
Technician	Mo	Repairs Complete	Manager		Date

Cell/Pad		Cell/Pad	
Description of finding and corrective action: No areas of concern were observed during the monitoring event.		Description of finding and corrective action:	
Date Identified 6/20/2022	Repaired N/A	Date Identified	Repaired
Cell/Pad		Cell/Pad	
Description of finding and corrective action:		Description of finding and corrective action:	
Date Identified	Repaired	Date Identified	Repaired
Cell/Pad		Cell/Pad	
Description of finding and corrective action:		Description of finding and corrective action:	
Date Identified	Repaired	Date Identified	Repaired
Cell/Pad		Cell/Pad	
Description of finding and corrective action:		Description of finding and corrective action:	
Date Identified	Repaired	Date Identified	Repaired
Cell/Pad		Cell/Pad	
Description of finding and corrective action:		Description of finding and corrective action:	
Date Identified	Repaired	Date Identified	Repaired
Cell/Pad		Cell/Pad	
Description of finding and corrective action:		Description of finding and corrective action:	
Date Identified	Repaired	Date Identified	Repaired
Cell/Pad		Cell/Pad	
Description of finding and corrective action:		Description of finding and corrective action:	
Date Identified	Repaired	Date Identified	Repaired

Monthly Cover Integrity Inspection Form

Facility	Waste Management- Redwood Landfill				
Date	7/28/2022	Received	Manager	Ramin Khany	Date 7/28/2022
Technician	RReed	Repairs Complete	Manager	Ramin Khany	Date 8/16/2022
Cell/Pad	Area D (North End) Area E(Sout End)		Cell/Pad		

Description of finding and corrective action: Additional cover needed in area F, south and west of wells 265 and 268. See attached map for details. Corrective Action: Area covered	Description of finding and corrective action: Area has been covered.
Date Identified: Repaired:	Date Identified: 7/28/22 Repaired: 8/16/22
Cell/Pad:	Cell/Pad:
Description of finding and corrective action:	Description of finding and corrective action:
Date Identified: Repaired:	Date Identified: Repaired:
Cell/Pad:	Cell/Pad:
Description of finding and corrective action:	Description of finding and corrective action:
Date Identified: Repaired:	Date Identified: Repaired:
Cell/Pad:	Cell/Pad:



Monthly Cover Integrity Inspection Form

Facility	Waste Management- Redwood Landfill				
Date	8/31/2022	**Received**	**Manager**	Ramin Khany	**Date**	9/2/2022
Technician	James Dutra	**Repairs Complete**	**Manager**		**Date**	

Cell/Pad				Cell/Pad			
No findings to report for August 2022.				Description of finding and corrective action:			
Date Identified		**Repaired**		**Date Identified**		**Repaired**	
Cell/Pad				Cell/Pad			
Description of finding and corrective action:				Description of finding and corrective action:			
Date Identified		**Repaired**		**Date Identified**		**Repaired**	
Cell/Pad				Cell/Pad			
Description of finding and corrective action:				Description of finding and corrective action:			
Date Identified		**Repaired**		**Date Identified**		**Repaired**	
Cell/Pad				Cell/Pad			
Description of finding and corrective action:				Description of finding and corrective action:			
Date Identified		**Repaired**		**Date Identified**		**Repaired**	
Cell/Pad				Cell/Pad			
Description of finding and corrective action:				Description of finding and corrective action:			
Date Identified		**Repaired**		**Date Identified**		**Repaired**	
Cell/Pad				Cell/Pad			
Description of finding and corrective action:				Description of finding and corrective action:			
Date Identified		**Repaired**		**Date Identified**		**Repaired**	
Cell/Pad				Cell/Pad			
Description of finding and corrective action:				Description of finding and corrective action:			
Date Identified		**Repaired**		**Date Identified**		**Repaired**	

Monthly Cover Integrity Inspection Form

Facility	Waste Management- Redwood Landfill						
Date	9/29/2022	Received		Manager	Ramin Khany	Date	9/29/2022
Technician	Dan San Jose	Repairs Complete		Manager		Date	
Cell/Pad	**East of Well 16**			Cell/Pad			
Description of finding and corrective action: Leachate seep to the East of Well 16 on a bench. Located next to a capped decomissioned well with the number 28 written on it.(See map)				Description of finding and corrective action:			
Date Identified	9/29/2022	Repaired		Date Identified		Repaired	
Cell/Pad				Cell/Pad			
Description of fi							
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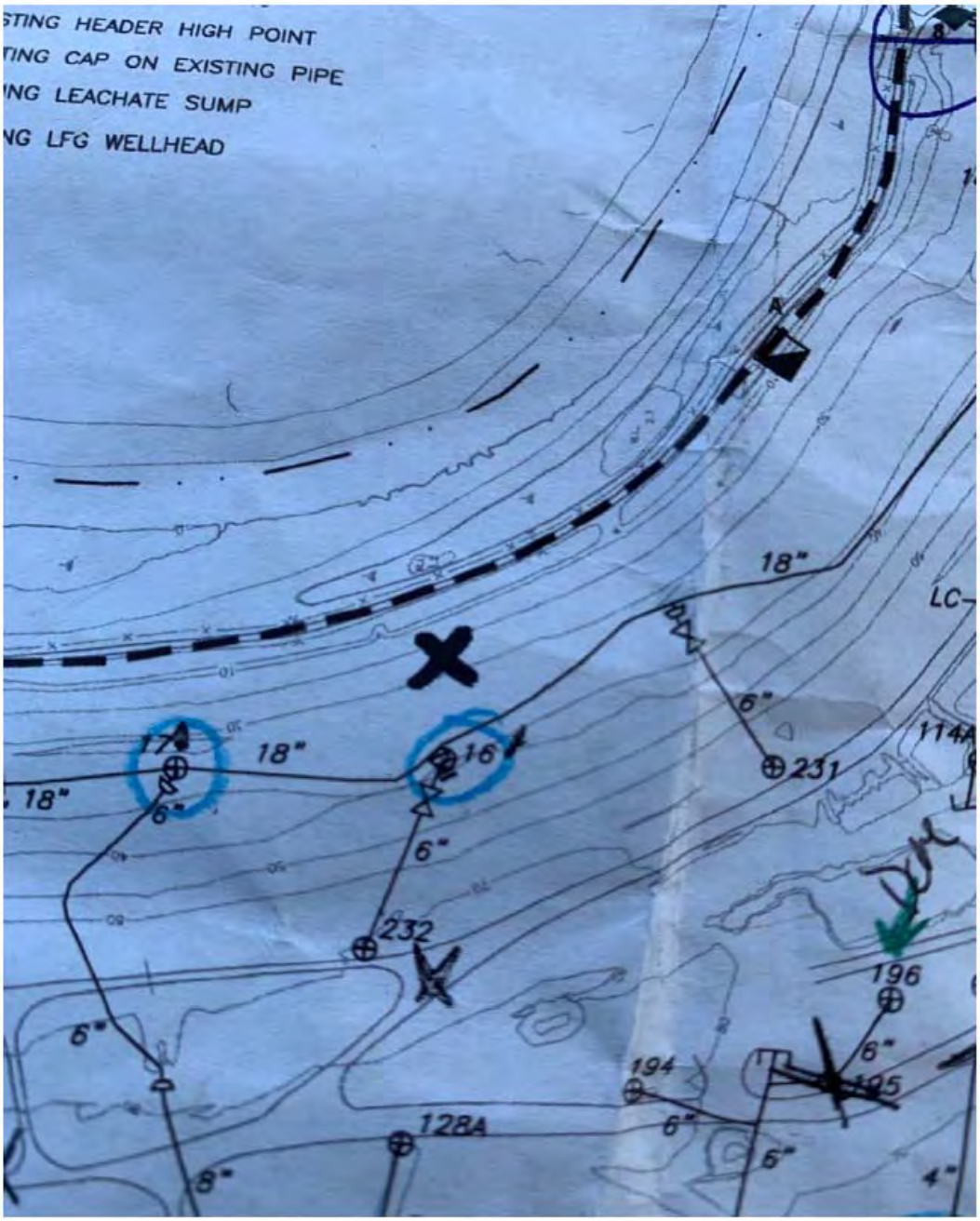
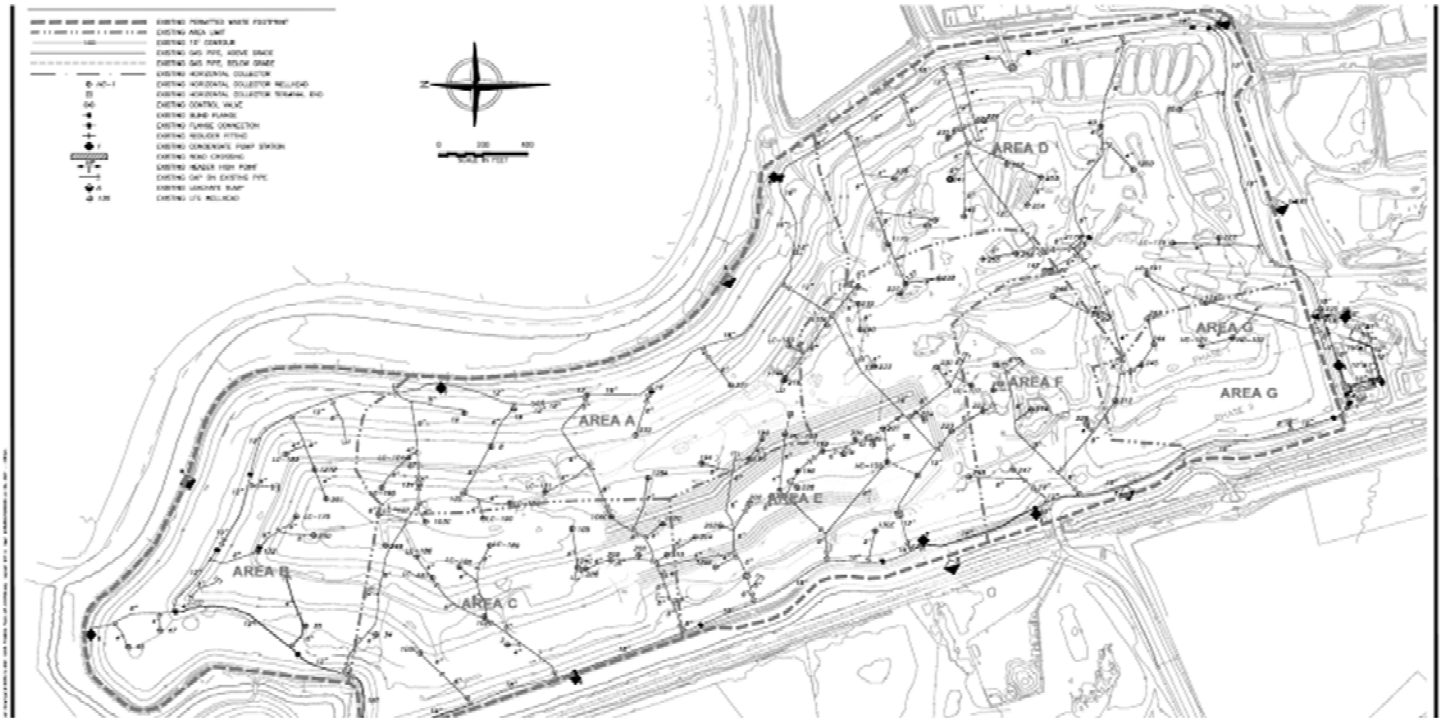


Monthly Cover Integrity Inspection Form

Facility	Waste Management- Redwood Landfill						
Date	10/24/2022	Received		Manager	Ramin Khany	Date	10/24/2022
Technician	Rick Reed	Repairs Complete		Manager	*Ramin A. Khany*	Date	10/27/2022
Cell/Pad	East of Well 16			Cell/Pad	East of Well 16		
Description of finding : Leachate seep to the East of Well 16 on a bench. Located next to a capped decomissioned well with the number 28 written on it.(See map)				Description of corrective action: Seep was found to be a leaking cap. The line was pumped and the cap secured. A mound of soil was placed near the riser to prevent any migration of liquids.			
Date Identified	9/29/2022					Repaired	9/30/22
Cell/Pad				Cell/Pad			
Description of finding: No issues found for October.				Description of finding and corrective action:			
Date Identified		Repaired		Date Identified		Repaired	
Cell/Pad				Cell/Pad			
Description of finding and corrective action:				Description of finding and corrective action:			
Date Identified		Repaired		Date Identified		Repaired	
Cell/Pad				Cell/Pad			
Description of finding and corrective action:				Description of finding and corrective action:			

Redwood Cover Integrity
October - 2022

No issues found



APPENDIX H

SURFACE EMISSIONS MONITORING / COMPONENT LEAK

WASTE MANAGEMENT
172 98th Avenue
Oakland, CA 94603
(510) 430-8509

July 19, 2022

Ms. Alisha McCutcheon
Redwood Landfill, Inc.
8590 Redwood Highway
Novato, California 94948

Re: Second Quarter 2022 Surface Emissions and Component Leak Monitoring Report for Redwood Landfill, Inc.

Dear Ms. McCutcheon:

This monitoring report for "**Redwood Landfill, Inc. (RLI)"** contains the results of the Second Quarter 2022 Integrated and Instantaneous Surface Emissions Monitoring (SEM) and Component Leak Monitoring. Initial surface emissions monitoring was performed by Roberts Environmental Services, LLC. (RES). Re-monitoring of surface emissions and site-wide component leak monitoring was conducted by RES and/or Waste Management (WM) personnel.

APPLICABLE REQUIREMENTS

The monitoring discussed in this report was conducted in accordance with the following requirements:

Surface Emission Monitoring (SEM)

- New Source Performance Standard (NSPS), Title 40 of the Code of Federal Regulations (CFR) §60.755 (c) and (d), 40 CFR 60, Appendix A Method 21, promulgated by the United States Environmental Protection Agency (USEPA).

- California Code of Regulations (CCR) Title 17, Subchapter 10, Article 4, Subarticle 6, §95460 to §95476, known as the Assembly Bill 32 (AB32) landfill methane rule (LMR).

- National Emission Standards for Hazardous Air Pollutants (NESHAP): Municipal Solid Waste Landfills, Title 40: Chapter I: Subchapter C: Part 63: Subpart AAAA, §63.1981(h)(5)

- Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 34, Section 303 (Landfill Surface Requirements) and Section 607 (Landfill Surface Inspection procedures).

Component Leak

- Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 34, Section 301 (Landfill Gas Collection and Emission Control System Requirements) and Section 602 (Collection and Control System Leak Inspection procedures).

- California Code of Regulations (CCR) Title 17, Subchapter 10, Article 4, Subarticle 6, §95464, known as the Assembly Bill 32 (AB32) landfill methane rule (LMR).

RLI Plan and Alternative Compliance Measures

An Alternative Compliance Option (ACO) Request was submitted to the California Air Resources Board (CARB) on March 24, 2011. After receipt of comments, this ACO was amended, restated, and submitted to BAAQMD on July 1, 2016. SEM and Component Leak monitoring was conducted per the methods outlined in the July 1, 2016 ACO.

PROCEDURES

General

The surface of the RLI disposal area has been divided into two hundred-eight (208), approximately 50,000 square foot monitoring grids. The entire landfill surface is monitored with the exception of active portions of the Landfill, slope areas, and as requested in the approved ACO, areas containing only asbestos-containing waste, inert waste and/or non-decomposable waste which are excluded for safety as allowed by CCR Title 17 §95466.

Field personnel walked the surface of the landfill following the walking pattern as depicted the 2011 RLI AB-32 SEM Plan, which traverses each monitoring grid. Additionally, in accordance with the provisions of 40 CFR 60.753(d) and 60.755(c)(1-3), the entire perimeter of the landfill surface was monitored. During the event, special attention was given to monitoring unusual cover conditions (stressed vegetation, cracks, seeps, etc.) and any areas with unusual odors.

Instantaneous Surface Emissions Monitoring

The Instantaneous SEM was conducted using a Toxic Vapor Analyzer (TVA) 1000 flame ionization detector (FID), which was calibrated to 500 parts per million by volume (ppm_v) methane, which meets or exceeds all guidelines set forth in the CCR Title 17 §95471(a) and NSPS. The FID was calibrated prior to use in accordance with the United States Environmental Protection Agency (USEPA) Method 21 requirements. The Instantaneous SEM procedures followed the requirements of 40 CFR 60.755 (c) and (d) and CCR Title 17 §95471(c)(2).

RES personnel walked the surface of the landfill on a grid by grid basis with the wand tip held at 2 inches from the landfill surface. While sampling the grid; the technicians also checked any surface impoundments (wells or otherwise) for leaks. Technicians also checked any surface cracks, seeps, or other areas that show evidence of surface emissions (odors or distressed vegetation). Active and sloped areas excluded for safety were documented on field data sheets and maps.

All instantaneous surface monitoring was performed in accordance with the applicable requirements referenced in this report. Any detections of methane above 200 ppm_v (areas of concern) or 500 ppm_v (exceedances) for instantaneous were recorded, flagged, and marked on an SEM Map, which, wherever required, is included in the Appendices of this report. Applicable corrective action and re-monitoring timelines are listed below:

- Corrective actions must be initiated within 5 days of the initial exceedance and re-monitoring shall be conducted within 10 days of the initial exceedance.
    - If the re-monitoring event shows the exceedance is corrected, the location shall be re-monitored within 1 month of the initial exceedance.
    - If the 1-month re-monitoring event shows the location is still corrected, all re-monitoring requirements have been completed.
- If either the first 10-day or 1-month re-monitoring events show a second exceedance, additional corrective actions shall be completed and a second re-monitoring event shall be conducted within 10 days of the second exceedance.
- If the second 10-day re-monitoring event shows the second exceedance is corrected, the location shall be re-monitored within 1 month of the initial exceedance. If the 1-month re-monitoring event shows the area is still corrected, monitoring requirements have been completed.

If any location shows three exceedances, an additional well shall be installed within 120 days of the initial exceedance.

Integrated Surface Emissions Monitoring

The Integrated surface monitoring was conducted using a TVA 1000 calibrated to 25 ppm_v for the integrated monitoring, which meets or exceeds all guidelines set forth in the CCR Title 17 §95471(a). The field technician traversed the grid walking path over a continuous 25-minute period using the TVA 1000 held at 3 inches above the landfill surface. The Integrated monitoring procedures followed the requirements of CCR Title 17 §95471(c)(2).

Grids with results greater than 25 ppm_v were recorded, marked on the SEM map, and flagged for remediation. Any grids with integrated concentrations greater than 25 ppm_v are subject to the following re-monitoring timeline:

- Re-monitoring shall be conducted within 10 days of the initial exceedance.
- If the 10-day re-monitoring event shows the exceedance is corrected, all re-monitoring requirements have been completed.
- If either the first 10-day re-monitoring event shows a second grid exceedance, additional corrective actions shall be completed and a second re-monitoring event shall be conducted within 10 days of the second exceedance.

- If the second 10-day re-monitoring event shows the second exceedance is corrected, all re-monitoring requirements have been completed.

- The second 10-day re-monitoring event shows a third grid exceedance, an additional well shall be installed within 120 days of the third exceedance.

Component Leak Monitoring Procedures

RES personnel monitored the exposed LFG components under positive pressure (pipes, wellheads, valves, blowers, and other mechanical appurtenances) using a TVA 1000 calibrated to 500 ppm_v. All leaks measured one half inch or less from the component exceeding the compliance limit of 500 ppm_v per requirements outlined in pursuant to CARB Title 17 of California Code of Regulations Subchapter 10, Article 4, Subarticle 6, Section 95464(b)(1)(B) and 1,000 ppm_v per requirements outlined in BAAQMD 8-34-303 were recorded. Applicable corrective action and re-monitoring timelines are listed below:

- Leaks between 500 and 999 ppm_v must be corrected and re-monitored within 10 days of the initial exceedance.

- Leaks at or above 1000 ppm_v must be corrected and re-monitored within 7 days of the initial exceedance.

SECOND QUARTER 2022 SEM AND COMPONENT LEAK RESULTS

The following is a summary of the SEM and component leak monitoring results completed for the Second Quarter 2022.

Instantaneous Surface Emissions Monitoring Results

The Instantaneous surface monitoring was performed on May 3, 2022 in accordance with the NSPS, BAAQMD 8-34, and CCR Title 17 §95469, NESHAP Subpart AAAA, and ACO. Results and data from the monitoring are presented in Attachment A.

Initial Monitoring Event Exceedances of 500 ppm_v

There were five (5) exceedances of 500 ppm_v as methane detected on May 3, 2022. Corrective actions to initiate repairs of the exceedances were completed within five days for all locations.

First Ten-Day Re-Monitoring Results

The first 10-day re-monitoring was completed on May 12, 2022. All locations were observed at less than 500 ppm_v as methane.

One-Month Re-Monitoring Results

The 1-month re-monitoring event was completed on May 31, 2022. All locations were observed at less than 500 ppm_v.

Readings between 200 ppm_v and 499 ppm_v (Initial and Re-monitored)

There were no readings between 200 ppm_v and 499 ppm_v as methane detected during the initial monitoring event on May 3, 2022. Pursuant to CCR Title 17 §95471(c), instantaneous surface emissions exceeding 200 ppm_v but below 500 ppm_v are required to be recorded.

Integrated Surface Emissions Monitoring Results

The Integrated surface sampling (ISS) was performed on May 2 and 4, 2022 in accordance with the ACO and requirements outlined in CCR Title 17 §95469.

Initial Monitoring Event Exceedances of 25 ppm_v

There were 0 grids with exceedances of 25 ppm_v as methane detected during the initial monitoring event.

The average methane concentration of each grid was recorded during the monitoring event per applicable requirements. See Attachment B, Integrated SEM 25 ppm_v Exceedances and Monitoring Log, and SEM Map included in Attachment B, for details.

Component Leak Monitoring Results

Component leak monitoring was conducted per the applicable requirements on May 3, 2022. No leaks greater than 500 ppm_v were identified. Please see Attachment C, for details.

WEATHER CONDITIONS

Wind Speed Conductions during the Surface Emission Monitoring Events

Wind speeds during initial monitoring were monitored using a portable weather station. The station has a strip chart that records the wind speed and direction. After completion of monitoring, the strip chart is reviewed by RES office staff to determine the average and maximum wind speeds during the monitoring and the average wind direction during each grid and ensure that the wind speed requirements are met (no gusts greater than 20 mph, average wind speed cannot exceed 10 mph). These values are documented in the field data sheets. The chart data is scanned and included in Attachment D.

Precipitation Requirements

Per the RLI's ACO, the initial monitoring event was carefully scheduled so that it could be conducted in compliance with the precipitation requirements (no precipitation ≥0.01" within 24 hours, ≥0.16" within 48 hours, nor ≥0.25" within 72 hours). Re-monitoring events are required to adhere to strict timelines. Any conflicts with precipitation requirements are discussed in the results section of this document.

EQUIPMENT CALIBRATION

The portable analyzers were calibrated to meet the instrument specifications requirements of U.S. EPA Method 21. The calibration gas used was methane, diluted to a nominal concentration of 25 ppm_v in air for integrated sample analyses and 500 ppm_v in air for instantaneous monitoring to comply with the requirements.

All analyzers were calibrated prior to use with required response time and precision related instrument checks. Calibration records include the following: One time response time test record; One time response factor determination for methane; Calibration Precision test records (test to be performed every 3 months); and Daily Instrument Calibration and Background test records for each gas meter that was used during the quarterly monitoring event. The calibration log records are included in Attachment E.

All monitoring was completed in accordance with the applicable regulatory requirements or approved alternatives. If you have any questions regarding this report, please do not hesitate to contact me at (510) 613-2852.

Thank you,
Waste Management

Michael Chan
Environmental Protection Specialist

Attachment A – Instantaneous Surface Emission Monitoring Event Records

- Monitoring Logs and Exceedances
- Surface Monitoring Weather Data
- SEM Map

Attachment B – Integrated Surface Emission Monitoring Event Records

- Monitoring Logs and Exceedances
- Surface Monitoring Weather Data
- SEM Map

Attachment C – Component Leak Monitoring Event Records

- Component Leak Exceedances and Monitoring Logs

Attachment D – Weather Station Data

- Strip Chart Data

Attachment E – Calibration Records

- Instrument and Gas Calibration Records

Attachment A

Instantaneous Surface Emission Monitoring Event Records

Table A.1
Instantaneous Landfill Surface Emissions Monitoring
Initial Monitoring Event Areas of Concern

2022 QUARTER: 2
PERFORMED BY: RES
LANDFILL NAME: Redwood Landfill, Inc.

Flag Number	Grid Number	Latitude	Longitude	Date of Monitoring	Concentration of Emission (ppm_v)	Comments
O11	187	38.17162	-122.56927	5/3/2022	1,500	well102c
O12	131	38.16899	-122.56667	5/3/2022	3,000	well194
O1	194	38.17094	-122.56949	5/3/2022	550	well 257
O2	156	38.17061	-122.56779	5/3/2022	1,700	well 105
O3	156	38.17053	-122.56781	5/3/2022	530	well 274

Notes: Please refer to field data sheets for details

Table A.2
Instantaneous Landfill Surface Emissions Monitoring
Exceedance and Monitoring Logs (NSPS/BAAQMD 8-34)

2022 QUARTER: 2
INITIAL MONITORING PERFORMED BY: RES
FOLLOW-UP MONITORING PERFORMED BY: Mo Sotoudeh
LANDFILL NAME: Redwood Landfill, Inc.

Initial Monitoring Event			Corrective Action		1st 10-day Follow-Up			2nd 10-day Follow-Up			1st 30-day Follow-Up			
Flag Number	Monitoring Date	Reading ppm	Repair Date	Action Taken	Monitoring Date	No Exced. <500 ppm	Exced. >500 ppm	Monitoring Date	No Exced. <500 ppm	Exced. >500 ppm	Monitoring Date	No Exced. <500 ppm	Exced. >500 ppm	Comments
O11	5/3/2022	1,500	5/4/2022	Compacted, Added soil	5/12/2022	35		n/a			5/31/2022	24		well102c
O12	5/3/2022	3,000	5/4/2022	Compacted, Added soil	5/12/2022	129		n/a			5/31/2022	97		well194
O1	5/3/2022	550	5/4/2022	Compacted, Added soil	5/12/2022	0		n/a			5/31/2022	0		well 257
O2	5/3/2022	1,700	5/4/2022	Compacted, Added soil	5/12/2022	47		n/a			5/31/2022	0		well 105
O3	5/3/2022	530	5/4/2022	Compacted, Added soil	5/12/2022	0		n/a			5/31/2022	0		well 274

Table A.3
Instantaneous Landfill Surface Emissions Monitoring
Exceedance and Monitoring Logs (AB-32)

2022 QUARTER: 2

INITIAL MONITORING PERFORMED BY: RES

FOLLOW-UP MONITORING PERFORMED BY: Mo Sotoudeh

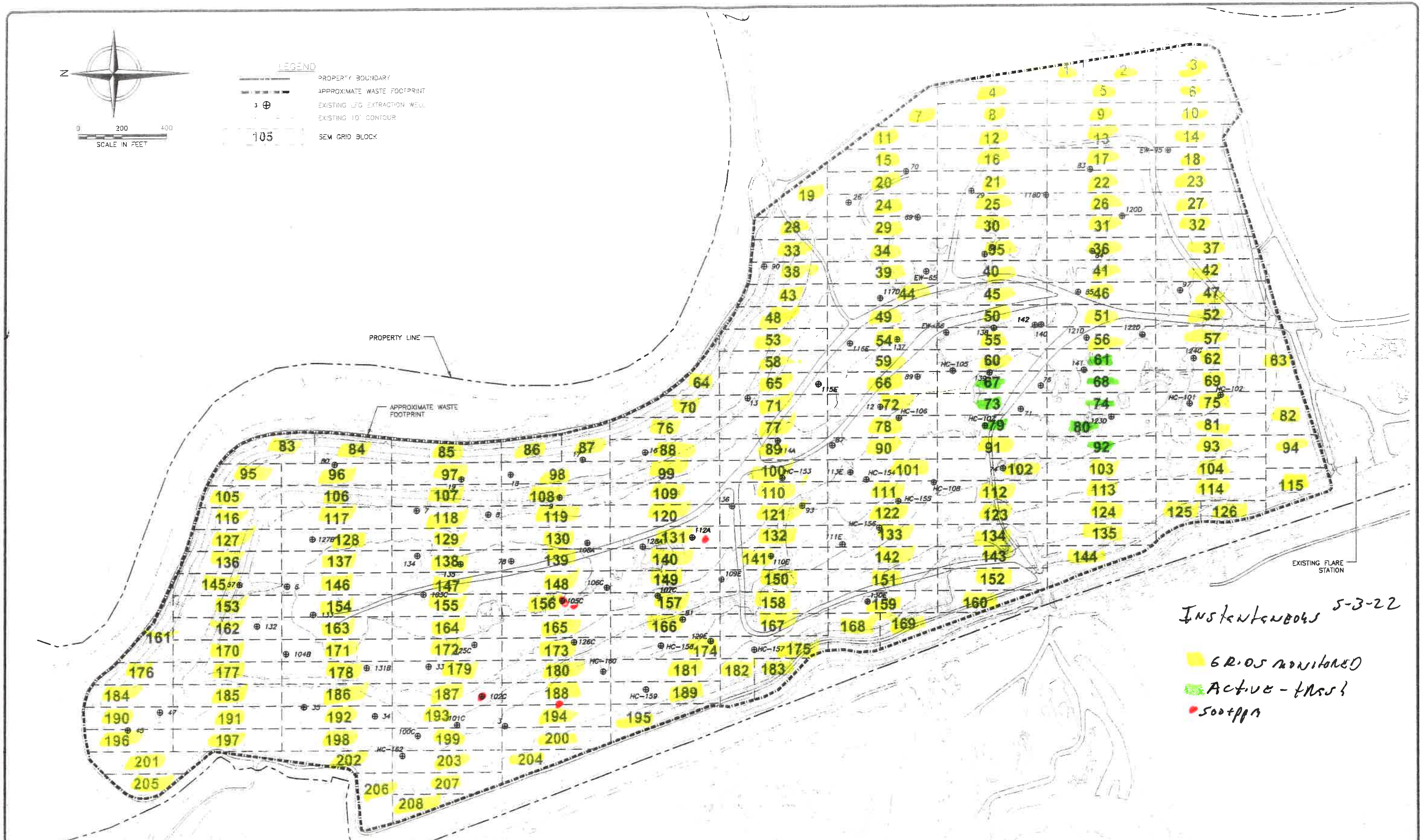
LANDFILL NAME: Redwood Landfill, Inc.

Initial Monitoring Event			1st Re-mon Event - 10 Days			2nd Re-mon Event - 10 Days			
Flag Number	Monitoring Date	Reading ppm	Monitoring Date	No Exced. <500 ppm	Exced. >500 ppm	Monitoring Date	No Exced. <500 ppm	Exced. >500 ppm	**Comments**
O11	5/3/2022	1,500	5/12/2022	35		n/a			well102c
O12	5/3/2022	3,000	5/12/2022	129		n/a			well194
O1	5/3/2022	550	5/12/2022	0		n/a			well 257
O2	5/3/2022	1,700	5/12/2022	47		n/a			well 105
O3	5/3/2022	530	5/12/2022	0		n/a			well 274

Table A.4
Instantaneous Landfill Surface Emissions Monitoring
Areas of Concern Greater than 200 ppmv

2022 QUARTER: 2
INITIAL MONITORING PERFORMED BY: RES
FOLLOW-UP MONITORING PERFORMED BY:
LANDFILL NAME: Redwood Landfill, Inc.

Initial Monitoring Event			Re-mon Event		Comments
Flag Number	Monitoring Date	Reading ppm	Monitoring Date	Reading ppm	
No 200-499 ppmv locations					



NOTES:
1. TOPOGRAPHIC CONTOURS PREPARED USING PHOTOGRAMMETRIC METHODS BY MILLER CREEK AERIAL MAPPING. DATE OF PHOTOGRAPHY: FEBRUARY 14, 2014.
2. LOCATION OF WASTE FOOTPRINT IS APPROXIMATE.
3. SUPPLEMENTAL AS-BUILT WELL LOCATIONS PER FIELD SURVEY PERFORMED BY F3 AND ASSOCIATES (DATE OF SURVEY: AUGUST 13, 2013) AND NOTES FROM WASTE MANAGEMENT DATED OCTOBER 2, 2013 AND JUNE 19, 2014.

WASTE MANAGEMENT

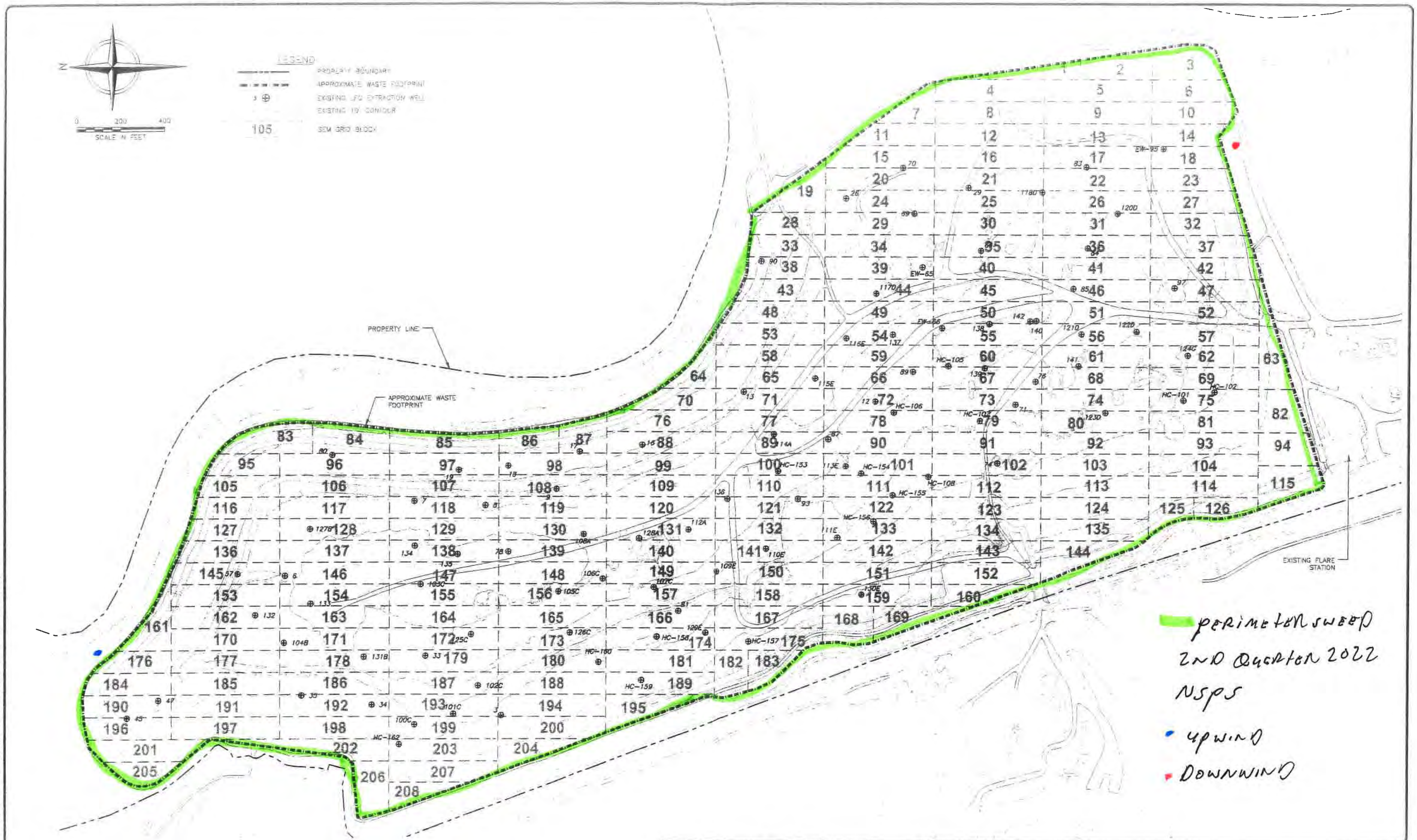
cornerstone environmental

PREPARED BY
CORNERSTONE ENVIRONMENTAL GROUP, LLC

REDWOOD LANDFILL, INC.
MARIN COUNTY, CALIFORNIA

SURFACE EMISSIONS MONITORING
GRID MAP

SHEET NO.
1



NOTES:
1. TOPOGRAPHIC CONTOURS PREPARED USING PHOTOGRAMMETRIC METHODS BY MILLER CREEK AERIAL MAPPING. DATE OF PHOTOGRAPHY: FEBRUARY 4, 2014.
2. LOCATION OF WASTE FOOTPRINT IS APPROXIMATE.
3. SUPPLEMENTAL AS-BUILT WELL LOCATIONS PER FIELD SURVEY PERFORMED BY FG AND ASSOCIATES (DATE OF SURVEY: AUGUST 13, 2013), AND NOTES FROM WASTE MANAGEMENT DATED OCTOBER 3, 2013 AND JUNE 9, 2014.

WASTE MANAGEMENT

cornerstone environmental

PREPARED BY
CORNERSTONE ENVIRONMENTAL GROUP, LLC

REDWOOD LANDFILL, INC
MARIN COUNTY, CALIFORNIA

SURFACE EMISSIONS MONITORING
GRID MAP

SHEET NO
1

wpt			redwood 2nd 2022		
ID	lat	lon	time	name	cmt
1	38.17162299	-122.569266	2022-05-03T16:11:29Z	O11	1500Ppm well102c
2	38.16898998	-122.566671	2022-05-03T16:29:02Z	O12	3000Ppm well194
3	38.17093601	-122.569492	2022-05-03T16:07:27Z	O1	550Ppm well 257
4	38.17061196	-122.567791	2022-05-03T16:25:06Z	O2	1700Ppm well 105
5	38.17053401	-122.567807	2022-05-03T16:27:48Z	O3	530Ppm well 274

Orange Flag Landfill Surface Emissions Monitoring
Exceedances and Monitoring Log

Site: REDWOOD

Quarter / Year:	2ND 2022
Technician:	LEIGH WADE
Instrument:	TVA 1000
Calibration Standard:	500 ppm

Page of Pages

Initial Monitoring Event				First Re-Monitoring Event - 10 Days			Second Re-Monitoring Event - 10 Days			30-Day Follow-up Monitoring			Comments
Flag Number	Grid Number	Field Reading (ppm)	Date Monitored	Date Monitored	No Excd. <500 ppm	Excd. >500 ppm	Date Monitored	No Excd. <500 ppm	Excd. >500 ppm	Date Monitored	No Excd. <500 ppm	Excd. >500 ppm	
O-11	187	1500	5-3-22										WELL 102C
O-12	131	3,000	↓										WELL 194
O-1	200	550											WELL 257
O-2	156	1700											WELL 105
O-3	156	530											WELL 274
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REDWOOD LANDFILL - MONITORING POINTS FOR SEM - UPDATED ON 11-14-2021

No.	Point ID	DESCRIPTION	POINT TYPE	LATITUDE	LONGITUDE	SEM GRID BLOCK NO.	DATE	READING (PPM)	NOTES
1		P-2	Other (See Comments) (OT)	38.16264033	-122.5593088	3	5-3-22	17	
2		P-4	Other (See Comments) (OT)	38.16458567	-122.5597367	4		31	
3		P-5	Other (See Comments) (OT)	38.1659435	-122.559745	7		26	
4		P-6	Other (See Comments) (OT)	38.16590933	-122.5597347	7		40	
5		P-7	Other (See Comments) (OT)	38.16601117	-122.5596422	7		12	
6		P-8	Other (See Comments) (OT)	38.16601483	-122.5596808	7		67	
7		P-1	Other (See Comments) (OT)	38.16237717	-122.559976	10		14	
8		P-9	Other (See Comments) (OT)	38.16708483	-122.560793	15		35	
9	59567	LC-234	LFG Collector - Standard	38.1654038	-122.5607993	16		38	
10	877	83	LFG Collector - Standard	38.1640668	-122.5610008	17		22	
11	889	95	LFG Collector - Standard	38.1630983	-122.5606295	17		16	
12	59568	LC-235	LFG Collector - Standard	38.1659611	-122.5611811	20		71	
13	62176	LC-252	LFG Collector - Standard	38.164918	-122.5618217	25		32	
14	59569	LC-236	LFG Collector - Standard	38.1666116	-122.5618882	29		55	
15	59574	LC-241	LFG Collector - Standard	38.1659295	-122.5619612	29		36	
16	62177	LC-253	LFG Collector - Standard	38.1648188	-122.5617898	30		40	
17		P-10	Other (See Comments) (OT)	38.16413217	-122.5619648	31		26	
18	62178	LC-254	LFG Collector - Standard	38.1649718	-122.5622977	35		18	
19		P-14	Other (See Comments) (OT)	38.16814117	-122.562457	38		35	
20	859	65	LFG Collector - Standard	38.1660924	-122.5624656	39		28	
21	59575	LC-242	LFG Collector - Standard	38.1657546	-122.5624878	39		26	
22		P-16	Other (See Comments) (OT)	38.1681825	-122.5629578	43		68	
23		P-17	Other (See Comments) (OT)	38.1682025	-122.5629357	43		42	
24	36862	117 D	LFG Collector - Standard	38.1667142	-122.5629642	44		20	
25	49444	LC-179	LFG Collector - Standard	38.1714265	-122.5672832	46		47	
26	54623	LC-217	LFG Collector - Standard	38.1642982	-122.5627832	46		31	
27	56613	LC-227	LFG Collector - Standard	38.1625588	-122.5627977	47		20	
28		P-47	Other (See Comments) (OT)	38.1684925	-122.5632173	48		62	
29	41945	140	LFG Collector - Standard	38.1646417	-122.5634152	50		48	
30	44328	142	LFG Collector - Standard	38.1647059	-122.5633469	50		20	
31	62179	LC-255	LFG Collector - Standard	38.1654921	-122.563161	50		14	
32	62180	LC-256	LFG Collector - Standard	38.1651125	-122.563103	50		27	
33		P-19	Other (See Comments) (OT)	38.1686105	-122.5637285	53		16	
34	36861	116 E	LFG Collector - Standard	38.1670675	-122.5636515	54		39	
35	41725	137	LFG Collector - Standard	38.1664956	-122.5635508	54		22	
36	59570	LC-237	LFG Collector - Standard	38.1665481	-122.5637343	54		17	
37	59571	LC-238	LFG Collector - Standard	38.1660756	-122.5635479	54		26	
38		P-11	Other (See Comments) (OT)	38.16337667	-122.5635122	56		31	
39	59572	LC-239	LFG Collector - Standard	38.1670255	-122.5639206	59		20	
40	41996	141	LFG Collector - Standard	38.1641195	-122.5641272	60		37	

REDWOOD LANDFILL - MONITORING POINTS FOR SEM - UPDATED ON 11-14-2021

No.	Point ID	DESCRIPTION	POINT TYPE	LATITUDE	LONGITUDE	SEM GRID BLOCK NO.	DATE	READING (PPM)	NOTES
41	62170	LC-246	LFG Collector - Standard	38.1646082	-122.5640043	60	5-3-22	27	
42	36869	124 G	LFG Collector - Standard	38.1627022	-122.5638785	62		34	
43	56162	220	LFG Collector - Standard	38.1613197	-122.5642922	63		20	
44		P-21	Other (See Comments) (OT)	38.16887917	-122.5642652	64		45	
45		P-22	Other (See Comments) (OT)	38.16887883	-122.5642492	64		51	
46		P-23	Other (See Comments) (OT)	38.1688705	-122.5642428	64		36	
47		P-82	Other (See Comments) (OT)	38.1688325	-122.5641177	64		45	
48		P-83	Other (See Comments) (OT)	38.16892133	-122.5643035	64		71	
49		P-84	Other (See Comments) (OT)	38.16910133	-122.564327	64		30	
50		P-85	Other (See Comments) (OT)	38.16914767	-122.5644217	64		45	
51	36860	115 E	LFG Collector - Standard	38.1674718	-122.564332	65		37	
52	59573	LC-240	LFG Collector - Standard	38.1670241	-122.5644225	66		25	
53	59576	LC-243	LFG Collector - Standard	38.1634542	-122.5641759	68			ACTIVE
54	59577	LC-244	LFG Collector - Standard	38.1633506	-122.5645797	74			ACTIVE
55	44039	HC-101	LFG Collector - Standard	38.1628293	-122.5646008	75		37	
56	44040	HC-102	LFG Collector - Standard	38.1623785	-122.5644932	75		22	
57	56619	LC-230	LFG Collector - Standard	38.1660713	-122.5650072	78		45	
58	56624	LC-233	LFG Collector - Standard	38.1668967	-122.5649932	78		19	
59	59578	LC-245	LFG Collector - Standard	38.1634761	-122.5650176	80			ACTIVE
60		P-86	Other (See Comments) (OT)	38.16314633	-122.5649933	80			ACTIVE
61		P-48	Other (See Comments) (OT)	38.17419167	-122.5651825	83		45	
62		P-43	Other (See Comments) (OT)	38.1730765	-122.5652423	84		62	
63		P-36	Other (See Comments) (OT)	38.17149783	-122.5653047	85		27	
64		P-38	Other (See Comments) (OT)	38.17183867	-122.5653647	85		40	
65	811	17	LFG Collector - Standard	38.1703617	-122.5655321	87		31	
66	810	16	LFG Collector - Standard	38.1696262	-122.5654417	88		26	
67	56620	LC-231	LFG Collector - Standard	38.1686286	-122.565354	88		49	
68	36859	114 A	LFG Collector - Standard	38.1679373	-122.5652196	89		27	
69	54625	LC-219	LFG Collector - Standard	38.1679709	-122.5652163	89		35	
70	54621	LC-215	LFG Collector - Standard	38.1650547	-122.5653325	91		60	
71	43673	HC-107	LFG Collector - Standard	38.1656909	-122.5652975	91		26	
72		P-49	Other (See Comments) (OT)	38.17493067	-122.5655627	95		49	
73	812	18	LFG Collector - Standard	38.1713486	-122.5657009	97		32	
74	813	19	LFG Collector - Standard	38.1720321	-122.5657371	97		46	
75	54620	LC-214	LFG Collector - Standard	38.1644529	-122.5654859	102		21	
76	56608	LC-222	LFG Collector - Standard	38.1654792	-122.5656981	102		17	
77	54618	LC-212	LFG Collector - Standard	38.1639036	-122.5656472	103		36	
78		P-50	Other (See Comments) (OT)	38.17512867	-122.5660458	105		106	
79	56621	LC-232	LFG Collector - Standard	38.1697835	-122.5661705	109		34	
80	54599	LC-196	LFG Collector - Standard	38.1682071	-122.5661163	110		22	

REDWOOD LANDFILL - MONITORING POINTS FOR SEM - UPDATED ON 11-14-2021									
No.	**Point ID**	**DESCRIPTION**	**POINT TYPE**	**LATITUDE**	**LONGITUDE**	**SEM GRID BLOCK NO.**	**DATE**	**READING (PPM)**	**NOTES**
81	56618	LC-229	LFG Collector - Standard	38.1672291	-122.5664904	110	5-3-22	57	
82	45852	HC-153	LFG Collector - Standard	38.1679467	-122.5661684	110		70	
83	54603	LC-200	LFG Collector - Standard	38.167125	-122.5662454	111		49	
84	54605	LC-201	LFG Collector - Standard	38.166682	-122.5660752	111		37	
85	56609	LC-223	LFG Collector - Standard	38.1658602	-122.5660864	111		26	
86	56610	LC-224	LFG Collector - Standard	38.1662079	-122.5659064	111		58	
87	56612	LC-226	LFG Collector - Standard	38.1641725	-122.5658872	113		28	
88	52613	LC-183	LFG Collector - Standard	38.1741572	-122.5665373	116		31	
89		P-51	Other (See Comments) (OT)	38.17522917	-122.5664445	116		57	
90	52614	LC-184	LFG Collector - Standard	38.1729705	-122.5670855	117		32	
91	802	8	LFG Collector - Standard	38.1716005	-122.566374	118		40	
92	54598	LC-195	LFG Collector - Standard	38.1683749	-122.5665931	121		27	
93	54602	LC-199	LFG Collector - Standard	38.1674912	-122.5663974	121		26	
94	56611	LC-225	LFG Collector - Standard	38.1669138	-122.566333	122		35	
95		P-52	Other (See Comments) (OT)	38.1753825	-122.5669377	127		29	
96	36872	127 B	LFG Collector - Standard	38.1738351	-122.5667563	128		20	
97	36873	128 A	LFG Collector - Standard	38.1698037	-122.5673679	131		140	
98	54597	LC-194	LFG Collector - Standard	38.1689615	-122.5665835	131		3,000	
99	54601	LC-198	LFG Collector - Standard	38.1677646	-122.566832	132		110	
100	45855	HC-156	LFG Collector - Standard	38.1666548	-122.5666904	133		32	
101		P-13	Other (See Comments) (OT)	38.16627267	-122.5667888	133		20	
102	62171	LC-247	LFG Collector - Standard	38.1650576	-122.5667205	134		49	
103	62172	LC-248	LFG Collector - Standard	38.1656523	-122.5668544	134		75	
104		P-53	Other (See Comments) (OT)	38.175473	-122.567267	136		31	
105	62175	LC-251	LFG Collector - Standard	38.1736281	-122.5672672	137		50	
106	41722	134	LFG Collector - Standard	38.1725194	-122.5670213	138		72	
107	41723	135	LFG Collector - Standard	38.1721529	-122.5672934	138		40	
108	56607	LC-221	LFG Collector - Standard	38.1681175	-122.5672286	141		65	
109	56617	LC-228	LFG Collector - Standard	38.1677564	-122.5670458	141		27	
110		P-12	Other (See Comments) (OT)	38.16712983	-122.5670528	141		19	
111	49441	LC-176	LFG Collector - Standard	38.1740513	-122.5675294	145		24	
112		P-55	Other (See Comments) (OT)	38.17551583	-122.5676485	145		60	
113	36848	103 C	LFG Collector - Standard	38.172415	-122.5677142	147		95	
114	52620	LC-190	LFG Collector - Standard	38.1634359	-122.5634027	147		117	
115	36851	106 C	LFG Collector - Standard	38.1700882	-122.5675715	148		34	
116	54607	LC-202	LFG Collector - Standard	38.1683618	-122.5672804	150		60	
117		P-54	Other (See Comments) (OT)	38.17572183	-122.5679133	153		37	
118	62174	LC-250	LFG Collector - Standard	38.1738242	-122.5678612	154		49	
119	36850	105 C	LFG Collector - Standard	38.1706173	-122.5677909	156		1700	
120	36852	107 C	LFG Collector - Standard	38.1694971	-122.5676143	157		32	

REDWOOD LANDFILL - MONITORING POINTS FOR SEM - UPDATED ON 11-14-2021									
No.	Point ID	DESCRIPTION	POINT TYPE	LATITUDE	LONGITUDE	SEM GRID BLOCK NO.	DATE	READING (PPM)	NOTES
121	54609	LC-203	LFG Collector - Standard	38.1687352	-122.5676688	157	5-3-22	36	
122	54610	LC-204	LFG Collector - Standard	38.1690544	-122.5678759	157		41	
123	36875	130 E	LFG Collector - Standard	38.1667905	-122.5677676	159		30	
124		P-56	Other (See Comments) (OT)	38.17588233	-122.5682602	161		22	
125	41720	132	LFG Collector - Standard	38.1719093	-122.5679846	162		38	
126	62173	LC-249	LFG Collector - Standard	38.1729121	-122.5680262	163		42	
127	52616	LC-186	LFG Collector - Standard	38.1722291	-122.5686197	164		65	
128	54615	LC-209	LFG Collector - Standard	38.1700423	-122.5682426	165		49	
129	54611	LC-205	LFG Collector - Standard	38.1697844	-122.5682198	166		31	
130	54616	LC-210	LFG Collector - Standard	38.1694802	-122.5681831	166		48	
131	52618	LC-188	LFG Collector - Standard	38.171603	-122.5680363	172		37	
132	36871	126 C	LFG Collector - Standard	38.1705307	-122.5683679	174		45	
133	36874	129 E	LFG Collector - Standard	38.1688503	-122.5683779	174		69	
134	54612	LC-206	LFG Collector - Standard	38.1703914	-122.5684577	174		38	
135		P-61	Other (See Comments) (OT)	38.17628833	-122.5690028	176		24	
136	829	35	LFG Collector - Standard	38.1739165	-122.5693927	186		58	
137	36847	102 C	LFG Collector - Standard	38.1716815	-122.5692653	187		1500	
138		P-81	Other (See Comments) (OT)	38.16884867	-122.569311	189		28	
139	839	45	LFG Collector - Standard	38.1760433	-122.5697611	190		40	
140	841	47	LFG Collector - Standard	38.1757422	-122.5694936	190		86	
141		P-74	Other (See Comments) (OT)	38.17652617	-122.5696552	190		21	
142	828	34	LFG Collector - Standard	38.1730762	-122.5695551	192		19	
143	797	3	LFG Collector - Standard	38.1713895	-122.569684	193		24	
144		P-76	Other (See Comments) (OT)	38.17518783	-122.570047	197		18	
145		P-77	Other (See Comments) (OT)	38.17460717	-122.5700413	197		26	
146		P-78	Other (See Comments) (OT)	38.17432767	-122.5702018	197		14	
147	36845	100 C	LFG Collector - Standard	38.1724647	-122.5698034	199		22	
148		P-75	Other (See Comments) (OT)	38.17632433	-122.5704643	200		17	
149		P-79	Other (See Comments) (OT)	38.17342533	-122.5702742	202		11	
150	52622	LC-192	LFG Collector - Standard	38.1679347	-122.5646219				COULD NOT FIND
151		P-44	Other (See Comments) (OT)					65	
152		P-45	Other (See Comments) (OT)						COULD NOT FIND
153		P-73	Other (See Comments) (OT)				√	14	

Redwood Landfill
Penetrations Workbook

WELL	GRID	PPM	DATE							
266	73	25	5-3-22							NOT ON MAP OR LOG
267	79	10								
268	79	24								
269	79	31								
270	67-73	50								
265	67	22								
259	195	11								
258	189	39								
262	193	42								
261	180	10								
274	186	530								
264	156	22								
257	200	550								NOT [redacted] ON MAP

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: LOUIS LINDOR, DWIGHT ANDERSON
RICK LEMOS, NICK BANKS
CALVIN MIN

Date: 5-3-22 Instrument Used: TVA 1000 Grid Spacing: 25'

Temperature: 52 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
1	LW	0545	0600	12	2	2	6	
2	RL	0545	0600	15	2	2	6	
3	DA	0545	0600	17	2	2	6	
4	CO	0545	0600	31	2	2	6	
5	NB	0545	0600	16	2	2	6	
6	LW	0600	0615	12	1	1	6	
7	RL	0600	0615	67	1	1	6	
8	DA	0600	0615	41	1	1	6	
9	CO	0600	0615	36	1	1	6	
10	NB	0600	0615	14	1	1	6	
11	LW	0615	0630	51	1	2	5	
12	RL	0615	0630	79	1	2	5	
13	DA	0615	0630	27	1	2	5	
14	CO	0615	0630	11	1	2	5	
15	NB	0615	0630	35	1	2	5	
16	LW	0630	0645	38	2	3	4	
17	RL	0630	0645	22	2	3	4	
18	DA	0630	0645	26	2	3	4	
19	CO	0630	0645	41	2	3	4	
20	NB	0630	0645	71	2	3	4	
21	LW	0645	0700	85	2	2	4	
22	RL	0645	0700	31	2	2	4	
23	DA	0645	0700	14	2	2	4	
24	CO	0645	0700	60	2	2	4	
25	NB	0645	0700	32	2	2	4	
26	LW	0700	0715	16	2	3	4	
27	RL	0700	0715	12	2	3	4	
28	DA	0700	0715	31	2	3	4	
29	CO	0700	0715	55	2	3	4	
30	NB	0700	0715	40	2	3	4	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: LOIS L WADE, DWIGHT ANDERSON, R. MCLEMORE, NICK BENICI, COLVIN ORTH

Date: 5-3-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 60 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
31	LW	0715	0730	26	1	1	10	
32	RL	0715	0730	16	1	1	10	
33	CO	0715	0730	35	1	1	10	
34	DA	0715	0730	70	1	1	10	
35	ND	0715	0730	18	1	1	10	
36	LW	0730	0745	14	1	1	16	
37	RL	0730	0745	10	1	1	16	
38	CO	0730	0745	35	1	1	16	
39	DA	0730	0745	28	1	1	16	
40	ND	0730	0745	37	1	1	16	
41	LW	0745	0800	55	1	2	16	
42	RL	0745	0800	11	1	2	16	
43	CO	0745	0800	68	1	2	16	
44	DA	0745	0800	20	1	2	16	
45	ND	0745	0800	62	1	2	16	
46	LW	0800	0815	47	1	2	14	
47	RL	0800	0815	20	1	2	14	
48	CO	0800	0815	62	1	2	14	
49	DA	0800	0815	102	1	2	14	
50	ND	0800	0815	48	1	2	14	
51	LW	0815	0830	17	1	2	10	
52	RL	0815	0830	9	1	2	10	
53	DA	0815	0830	16	1	2	10	
54	CO	0815	0830	39	1	2	10	
55	ND	0815	0830	27	1	2	10	
56	LW	0830	0845	31	2	4	13	
57	RL	0830	0845	16	2	4	13	
58	CO	0830	0845	92	2	4	13	
59	DA	0830	0845	20	2	4	13	
60	ND	0830	0845	37	2	4	13	

Attach Calibration Sheet
Attach site map showing grid ID

Page 2 of 7

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: LEIGH WADE, DWIGHT ANDERSON, RICK LEACH, NICK BONDS, CALVIN ORTH

Date: 5-3-22 Instrument Used: TVA 1000 Grid Spacing: 25'

Temperature: 65 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
62	LW	0845	0900	34	2	4	13	
63	RL	0845	0900	20	2	4	13	
64	CO	0845	0900	71	2	4	13	
65	DA	0845	0900	37	2	4	13	
66	NB	0845	0900	25	2	4	13	
69	LW	0900	0915	31	2	4	13	
70	RL	0900	0915	55	2	4	13	
71	CO	0900	0915	40	2	4	13	
72	DA	0900	0915	65	2	4	13	
75	NB	0900	0915	37	2	4	13	
76	LW	0915	0930	28	3	5	12	
77	RL	0915	0930	82	3	5	12	
78	CO	0915	0930	45	3	5	12	
81	DA	0915	0930	20	3	5	12	
82	NB	0915	0930	110	3	5	12	
83	LW	0930	0945	45	2	3	12	
84	RL	0930	0945	62	2	3	12	
85	CO	0930	0945	40	2	3	12	
86	DA	0930	0945	25	2	3	12	
87	NB	0930	0945	31	2	3	12	
88	LW	0945	1000	49	4	6	12	
89	RL	0945	1000	35	4	6	12	
90	CO	0945	1000	116	4	6	12	
91	DA	0945	1000	60	4	6	12	
93	NB	0945	1000	24	4	6	12	
94	LW	1000	1015	19	4	6	12	
95	RL	1000	1015	49	4	6	12	
96	CO	1000	1015	22	4	6	12	
97	DA	1000	1015	46	4	6	12	
98	NB	1000	1015	27	4	6	12	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: LEIGH WAOT, DWIGHT ANDERSON
R. NICHOLAS, NICK BANKS
COLVIN ORTIZ

Date: 5-3-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 65 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
99	LW	1015	1030	36	2	4	14	
100	RL	1015	1030	42	2	4	14	
101	CO	1015	1030	84	2	4	14	
102	DA	1015	1030	21	2	4	14	
103	NB	1015	1030	36	2	4	14	
104	LW	1030	1045	25	2	4	12	
105	RL	1030	1045	106	2	4	12	
106	CO	1030	1045	57	2	4	12	
107	DA	1030	1045	24	2	4	12	
108	NB	1030	1045	35	2	4	12	
109	LW	1045	1100	34	3	5	12	
110	RL	1045	1100	70	3	5	12	
111	CO	1045	1100	58	3	5	12	
112	DA	1045	1100	46	3	5	12	
113	NB	1045	1100	28	3	5	12	
114	LW	1100	1115	30	3	5	14	
115	RL	1100	1115	68	3	5	14	
116	DA	1100	1115	57	3	5	14	
117	CO	1100	1115	32	3	5	14	
118	NB	1100	1115	40	3	5	14	
119	LW	1115	1130	20	3	5	14	
120	RL	1115	1130	65	3	5	14	
121	CO	1115	1130	27	3	5	14	
122	DA	1115	1130	29	3	5	14	
123	NB	1115	1130	52	3	5	14	
124	LW	1130	1145	26	1	3	12	
125	RL	1130	1145	20	1	3	12	
126	DA	1130	1145	18	1	3	12	
127	CO	1130	1145	29	1	3	12	
128	NB	1130	1145	60	1	3	12	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: LOIS LWNOE, DWIGHT ANDERSON, R. CICLERO, NICK BENCS, CELVIN ORTIZ

Date: 5-3-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 70 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
129	LW	1145	1200	45	2	4	14	
130	RL	1145	1200	77	2	4	14	
131	CO	1145	1200	3,000	2	4	14	WELL 194
132	DA	1145	1200	110	2	4	14	
133	NB	1145	1200	32	2	4	14	
134	LW	1230	1245	75	5	7	12	
135	RL	1230	1245	27	5	7	12	
136	CO	1230	1245	31	5	7	12	
137	DA	1230	1245	50	5	7	12	
138	NB	1230	1245	72	5	7	12	
139	LW	1245	1300	136	7	9	12	
140	RL	1245	1300	85	7	9	12	
141	CO	1245	1300	65	7	9	12	
142	NB	1245	1300	47	7	9	12	
143	DA	1245	1300	31	7	9	12	
144	LW	1300	1315	55	3	5	12	
145	RL	1300	1315	60	3	5	12	
146	CO	1300	1315	31	3	5	12	
147	NB	1300	1315	117	3	5	12	
148	DA	1300	1315	34	3	5	12	
149	LW	1315	1330	78	6	8	11	
150	RL	1315	1330	60	6	8	11	
151	CO	1315	1330	125	6	8	11	
152	DA	1315	1330	36	6	8	11	
153	NB	1315	1330	37	6	8	11	
154	LW	1330	1345	49	5	7	12	
155	RL	1330	1345	37	5	7	12	
156	CO	1330	1345	1700	5	7	12	WELL 105C
157	DA	1330	1345	116	5	7	12	
158	NB	1330	1345	92	5	7	12	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: LEIGHANNE DWight ANDERSON
RICK RAMOS NICK BANKS
CELVIN ORTIZ

Date: 5-3-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 71 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
159	LW	1345	1400	30	3	5	12	
160	RL	1345	1400	27	3	5	12	
161	CO	1345	1400	22	3	5	12	
162	DA	1345	1400	33	3	5	12	
163	NB	1345	1400	42	3	5	12	
164	LW	1400	1415	65	6	10	12	
165	RL	1400	1415	49	6	10	12	
166	CO	1400	1415	48	6	10	12	
167	DA	1400	1415	55	6	10	12	
168	NB	1410	1415	17	6	10	12	
169	LW	1415	1430	24	5	7	11	
170	RL	1415	1430	45	5	7	11	
171	CO	1415	1430	32	5	7	11	
172	DA	1415	1430	37	5	7	11	
173	NB	1415	1430	16	5	7	11	
174	LW	1430	1445	85	5	7	11	
175	RL	1430	1445	27	5	7	11	
176	CO	1430	1445	24	5	7	11	
177	DA	1430	1445	35	5	7	11	
178	NB	1430	1445	45	5	7	11	
179	LW	1445	1500	37	6	10	13	
180	RL	1445	1500	55	6	10	13	
181	CO	1445	1500	30	6	10	13	
182	DA	1445	1500	17	6	10	13	
183	NB	1445	1500	29	6	10	13	
184	LW	1500	1515	17	5	9	13	
185	RL	1500	1515	26	5	9	13	
186	CO	1500	1515	58	5	9	13	
187	DA	1500	1515	1500	5	9	13	WELL 102C
188	NB	1500	1515	45	5	9	13	

Attach Calibration Sheet
Attach site map showing grid ID

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REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: LEIGH WADE, DWIGHT ANDERSON, R. LICLOMES, NICK BONES, CALVIN ORTEL

Date: 5-3-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 74 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
189	LW	1515	1530	28	6	9	12	
190	RL	1515	1530	40	6	9	12	
191	CO	1515	1530	27	6	9	12	
192	DA	1515	1530	19	6	9	12	
193	NB	1515	1530	24	6	9	12	
194	LW	1530	1545	25	6	10	12	
195	RL	1530	1545	27	6	10	12	
196	CO	1530	1545	18	6	10	12	
197	DA	1530	1545	26	6	10	12	
198	NB	1530	1545	35	6	10	12	
199	LW	1545	1600	22	6	8	11	
200	RL	1545	1600	550	6	8	11	WELL 257
201	CO	1545	1600	13	6	8	11	
202	DA	1545	1600	21	6	8	11	
203	NB	1545	1600	41	6	8	11	
204	LW	1600	1615	27	6	10	11	
205	RL	1600	1615	22	6	10	11	
206	CO	1600	1615	14	6	10	11	
207	DA	1600	1615	23	6	10	11	
208	NB	1600	1615	19	6	10	11	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: LEIGH WADE

Date: 5-3-22 Instrument Used: _____ Grid Spacing: _____

Temperature: _____ Precip: _____ Upwind BG: _____ Downwind BG: _____

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
61								ACTIVE-PASS
67								
68								
73								
74								
79								
80								
82								

Attach Calibration Sheet
Attach site map showing grid ID

Page 1 of 1

Attachment B

Integrated Surface Emission Monitoring Event Records

Table B.1
Integrated Landfill Surface Monitoring
Exceedances and Monitoring Log

2022 QUARTER: 2
INITIAL MONITORING PERFORMED BY: RES
FOLLOW-UP MONITORING PERFORMED BY:
LANDFILL NAME: Redwood Landfill, Inc.

Initial Monitoring Event			1st Re-mon Event - 10 Days			2nd Re-mon Event - 10 Days			
Exceedance	Monitoring	Reading	Monitoring	No Exced.	No Exced.	Monitoring	No Exced.	No Exced.	
Grid ID No.	Date	ppm	Date	<25 ppm	>25 ppm	Date	<25 ppm	>25 ppm	**Comments**
No Exceedances									

N

0 200 400
SCALE IN FEET

LEGEND

- PROPERTY BOUNDARY
- APPROXIMATE WASTE FOOTPRINT
- 3 ⊕ EXISTING LFG EXTRACTION WELL
- EXISTING 10' CONTOUR
- 105 SEM GRID BLOCK

PROPERTY LINE

APPROXIMATE WASTE FOOTPRINT

EXISTING FLARE STATION

INTEGRATED 5-2-22
5-4-22

GRIDS MONITORED

Active-first

No Exceedances

NOTES:
1. TOPOGRAPHIC CONTOURS PREPARED USING PHOTOGRAMMETRIC METHODS BY MILLER CREEK AERIAL MAPPING. DATE OF PHOTOGRAPHY: FEBRUARY 14, 2014.
2. LOCATION OF WASTE FOOTPRINT IS APPROXIMATE.
3. SUPPLEMENTAL AS-BUILT WELL LOCATIONS PER FIELD SURVEY PERFORMED BY FD AND ASSOCIATES (DATE OF SURVEY: AUGUST 13, 30, 31) AND NOTES FROM WASTE MANAGEMENT DATED OCTOBER 2, 2013 AND JUNE 13, 2014.

WASTE MANAGEMENT

REV.	DATE	DESCRIPTION	DRN BY	CKD BY	CHK BY	APP BY
	DATE OF ISSUE 8/29/2014	DRAWN BY: RL; DESIGNED BY: MEE	CHECKED BY: MEE; APPROVED BY: PDS			

cornerstone environmental

PREPARED BY:
CORNERSTONE ENVIRONMENTAL GROUP, LLC

REDWOOD LANDFILL, INC.
MARIN COUNTY, CALIFORNIA

SURFACE EMISSIONS MONITORING
GRID MAP

SHEET NO 1

PROJECT NO 14052

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: LOIS & WADE, DWIGHT ANDERSON
RUSS JENNINGS, NICK BENES
CALVIN ORTIZ
Cal. Gas Exp. Date: 6-9-23

Date: 5-2-22 Instrument Used: TVA 1000 Grid Spacing: 25'

Temperature: 57 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
1	LW	1230	1255	3.07	5	8	13	
2	RL	1230	1255	3.41	5	8	13	
3	DA	1230	1255	4.16	5	8	13	
4	CO	1230	1255	3.98	5	8	13	
5	NB	1230	1255	4.15	5	8	13	
6	LW	1255	1320	4.70	3	5	12	
7	RL	1255	1320	6.18	3	5	12	
8	DA	1255	1320	7.13	3	5	12	
9	CO	1255	1320	5.40	3	5	12	
10	NB	1255	1320	3.22	3	5	12	
11	LW	1320	1345	7.35	6	9	11	
12	RL	1320	1345	10.34	6	9	11	
13	DA	1320	1345	6.11	6	9	11	
14	CO	1320	1345	5.33	6	9	11	
15	NB	1320	1345	8.22	6	9	11	
16	LW	1345	1410	9.75	3	5	12	
17	RL	1345	1410	6.13	3	5	12	
18	DA	1345	1410	5.19	3	5	12	
19	CO	1345	1410	7.37	3	5	12	
20	NB	1345	1410	7.60	3	5	12	
21	LW	1410	1435	10.22	1	2	10	
22	RL	1410	1435	6.41	1	2	10	
23	DA	1410	1435	4.28	1	2	10	
24	CO	1410	1435	8.25	1	2	10	
25	NB	1410	1435	6.03	1	2	10	
26	LW	1435	1500	4.98	6	9	12	
27	RL	1435	1500	3.20	6	9	12	
28	DA	1435	1500	6.18	6	9	12	
29	CO	1435	1500	7.35	6	9	12	
30	NB	1435	1500	6.51	6	9	12	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: Leigh Wade, Dwight Anderson, _____
Rick Ibarra, Nick Benick, _____
Celvin Ortiz, _____ Cal. Gas Exp. Date: 6-9-23

Date: 5-2-22 Instrument Used: TVA 1000 Grid Spacing: 25'

Temperature: 59 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
31	LW	1500	1525	4.18	6	9	11	
32	RL	1500	1525	3.76	6	9	11	
33	DA	1500	1525	8.50	6	9	11	
34	CO	1500	1525	7.39	6	9	11	
35	NB	1500	1525	5.35	6	9	11	
36	LW	1525	1550	4.28	7	9	11	
37	RL	1525	1550	4.10	7	9	11	
38	DA	1525	1550	6.97	7	9	11	
39	CO	1525	1550	7.29	7	9	11	
40	NB	1525	1550	5.48	7	9	11	
41	LW	1550	1615	4.16	5	7	10	
42	RL	1550	1615	4.25	5	7	10	
43	DA	1550	1615	6.07	5	7	10	
44	CO	1550	1615	5.25	5	7	10	
45	NB	1550	1615	4.53	5	7	10	
46	LW	1615	1640	5.01	3	5	10	
47	RL	1615	1640	4.22	3	5	10	
48	DA	1615	1640	7.20	3	5	10	
49	CO	1615	1640	8.57	3	5	10	
50	NB	1615	1640	6.54	3	5	10	
51	LW	1640	1705	6.82	5	6	11	
52	RL	1640	1705	5.14	5	6	11	
53	DA	1640	1705	4.56	5	6	11	
54	CO	1640	1705	6.81	5	6	11	
55	NB	1640	1705	6.10	5	6	11	
56	LW	1705	1730	5.23	5	8	11	
57	RL	1705	1730	4.13	5	8	11	
58	CO	1705	1730	7.21	5	8	11	
59	NB	1705	1730	6.55	5	8	11	
60	DA	1705	1730	4.79	5	8	11	

Attach Calibration Sheet
Attach site map showing grid ID

Page 2 of 2

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: LOJ 2 WNOE _____ _____ _____

_____ _____ _____

_____ _____ Cal. Gas Exp. Date: _____

Date: 5-2-22 Instrument Used: _____ Grid Spacing: _____

Temperature: _____ Precip: _____ Upwind BG: _____ Downwind BG: _____

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
61								Actuator-tracks
68								↓
74								
80								
92								
67								
73								
79								

Attach Calibration Sheet
Attach site map showing grid ID

Page 1 of 1

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: LEIGH LUNDE, DWIGHT ANDERSON, R. ILLIENOS, NICK BENES, CELVIN ORTIZ

Cal. Gas Exp. Date: 6-9-23

Date: 5-4-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 52 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
67	LW	0510	0535	5.54	3	4	13	
63	RL	0510	0535	4.11	3	4	13	
64	DA	0510	0535	6.21	3	4	13	
65	CO	0510	0535	5.48	3	4	13	
66	NB	0510	0535	6.13	3	4	13	
69	LW	0535	0600	4.27	2	3	11	
70	RL	0535	0600	5.92	2	3	11	
71	DA	0535	0600	5.15	2	3	11	
72	CO	0535	0600	6.38	2	3	11	
75	NB	0535	0600	5.39	2	3	11	
76	LW	0610	0625	6.41	1	2	11	
77	RL	0600	0625	5.70	1	2	11	
78	DA	0600	0625	7.30	1	2	11	
81	CO	0600	0625	5.52	1	2	11	
82	NB	0600	0625	4.16	1	2	11	
83	LW	0625	0650	5.27	2	3	12	
84	RL	0625	0650	4.27	2	3	12	
85	DA	0625	0650	4.18	2	3	12	
86	CO	0625	0650	5.26	2	3	12	
87	NB	0625	0650	5.41	2	3	12	
88	LW	0650	0715	6.80	2	3	13	
89	RL	0650	0715	7.13	2	3	13	
90	DA	0650	0715	8.45	2	3	13	
91	CO	0650	0715	7.58	2	3	13	
93	NB	0650	0715	4.21	2	3	13	
94	LW	0715	0740	4.06	2	3	14	
95	RL	0715	0740	5.28	2	3	14	
96	DA	0715	0740	4.70	2	3	14	
97	CO	0715	0740	4.62	2	3	14	
98	NB	0715	0740	5.09	2	3	14	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: LEIGH WADE, DWIGHT ANDERSON
RICK LOADS, NICK BANKS
CALVIN ORTH
Cal. Gas Exp. Date: 6-9-23

Date: 5-4-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 60 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
99	LW	0740	0805	5.26	2	3	14	
100	RL	0740	0805	6.18	2	3	14	
101	DA	0740	0805	9.45	2	3	14	
102	CO	0740	0805	7.60	2	3	14	
103	NB	0740	0805	7.45	2	3	14	
104	LW	0805	0830	5.10	3	4	14	
105	RL	0805	0830	4.16	3	4	14	
106	DA	0805	0830	5.08	3	4	14	
107	CO	0805	0830	4.77	3	4	14	
108	NB	0805	0830	4.51	3	4	14	
109	LW	0830	0855	5.16	3	5	12	
110	RL	0830	0855	4.77	3	5	12	
111	DA	0830	0855	7.45	3	5	12	
112	CO	0830	0855	4.27	3	5	12	
113	NB	0830	0855	5.70	3	5	12	
114	LW	0855	0920	5.22	3	5	16	
115	RL	0855	0920	5.08	3	5	16	
116	DA	0855	0920	8.45	3	5	16	
117	CO	0855	0920	5.89	3	5	16	
118	NB	0855	0920	6.41	3	5	16	
119	LW	0920	0945	4.11	2	4	8	
120	RL	0920	0945	4.27	2	4	8	
121	DA	0920	0945	7.45	2	4	8	
122	CO	0920	0945	4.62	2	4	8	
123	NB	0920	0945	7.13	2	4	8	
124	LW	0945	1010	6.21	3	5	8	
125	RL	0945	1010	5.41	3	5	8	
126	DA	0945	1010	6.19	3	5	8	
127	CO	0945	1010	4.77	3	5	8	
128	NB	0945	1010	5.20	3	5	8	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: Leisha Wade, Dwight Anderson, Rick Ramos, Nicil Banks, Celvin Ortiz

Cal. Gas Exp. Date: 6-9-23

Date: 5-4-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 65 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
129	LW	1010	1035	5.41	1	2	16	
130	RL	1010	1035	7.20	1	2	16	
131	DA	1010	1035	12.71	1	2	16	
132	CO	1010	1035	9.60	1	2	16	
133	NB	1010	1035	7.25	1	2	16	
134	LW	1035	1100	6.41	4	6	12	
135	RL	1035	1100	4.85	4	6	12	
136	DA	1035	1100	5.10	4	6	12	
137	CO	1035	1100	4.78	4	6	12	
138	NB	1035	1100	6.25	4	6	12	
139	LW	1100	1125	10.38	2	4	16	
140	RL	1100	1125	12.26	2	4	16	
141	DA	1100	1125	14.97	2	4	16	
142	CO	1100	1125	7.81	2	4	16	
143	NB	1100	1125	8.40	2	4	16	
144	LW	1125	1150	6.12	4	7	12	
145	RL	1125	1150	5.38	4	7	12	
146	DA	1125	1150	6.19	4	7	12	
147	CO	1125	1150	10.34	4	7	12	
148	NB	1125	1150	9.70	4	7	12	
149	LW	1150	1215	12.41	5	7	12	
150	RL	1150	1215	14.78	5	7	12	
151	DA	1150	1215	10.32	5	7	12	
152	CO	1150	1215	7.45	5	7	12	
153	NB	1150	1215	6.27	5	7	12	
154	LW	1215	1240	5.90	6	8	12	
155	RL	1215	1240	8.47	6	8	12	
156	DA	1215	1240	7.21	6	8	12	
157	CO	1215	1240	12.10	6	8	12	
158	NB	1215	1240	10.81	6	8	12	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: LOIS LAWSON, DWIGHT ANDERSON, RICK LEWIS, NICK BANKS, CALVIN ORTIZ

Cal. Gas Exp. Date: 6-9-23

Date: 5-4-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 70 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
159	LW	1240	1305	9.75	7	9	11	
160	RL	1240	1305	8.13	7	9	11	
161	DA	1240	1305	5.06	7	9	11	
162	CO	1240	1305	6.45	7	9	11	
163	NB	1240	1305	7.12	7	9	11	
164	LW	1305	1330	6.94	5	7	12	
165	RL	1305	1330	8.25	5	7	12	
166	DA	1305	1330	11.77	5	7	12	
167	CO	1305	1330	9.51	5	7	12	
168	NB	1305	1330	6.13	5	7	12	
169	LW	1330	1355	5.28	4	5	11	
170	RL	1330	1355	7.68	4	6	11	
171	DA	1330	1355	8.14	4	6	11	
172	CO	1330	1355	7.31	4	6	11	
173	NB	1330	1355	7.14	4	5	11	
174	LW	1355	1420	6.22	6	8	12	
175	RL	1355	1420	5.11	6	8	12	
176	DA	1355	1420	5.20	6	8	12	
177	CO	1355	1420	6.45	6	8	12	
178	NB	1355	1420	8.34	6	8	12	
179	LW	1420	1445	6.97	6	6	12	
180	RL	1420	1445	8.31	6	6	12	
181	DA	1420	1445	6.47	6	6	12	
182	CO	1420	1445	5.02	6	8	12	
183	NB	1420	1445	5.47	6	8	12	
184	LW	1445	1510	5.06	2	4	12	
185	RL	1445	1510	4.77	2	4	12	
186	DA	1445	1510	5.39	2	4	12	
187	CO	1445	1510	7.50	2	4	12	
188	NB	1445	1510	7.92	2	4	12	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: LEISHAWNDE DWIGHT ANDERSON
R. ALLEMOS NICK BANKS
CELVIN ORTIZ
Cal. Gas Exp. Date: 6-9-23

Date: 5-4-22 Instrument Used: TVA 1000 Grid Spacing: 25'

Temperature: 72 Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
189	LW	1510	1535	6.31	6	8	12	
190	RL	1510	1535	5.79	6	8	12	
191	CO	1510	1535	5.47	6	8	12	
192	DA	1510	1535	6.03	6	8	12	
193	ND	1510	1535	5.21	6	8	12	
194	LW	1535	1600	7.62	6	10	12	
195	RL	1535	1600	6.98	6	10	12	
196	CO	1535	1600	4.02	6	10	12	
197	ND	1535	1600	5.39	6	10	12	
198	DA	1535	1600	6.01	6	10	12	
199	LW	1600	1625	5.38	6	8	12	
200	RL	1600	1625	6.01	6	8	12	
201	CO	1600	1625	5.40	6	8	12	
202	ND	1600	1625	4.79	6	8	12	
203	DA	1600	1625	5.18	6	8	12	
204	LW	1625	1650	5.52	5	7	13	
205	RL	1625	1650	4.21	5	7	13	
206	CO	1625	1650	5.60	5	7	13	
207	ND	1625	1650	4.79	5	7	13	
208	DA	1625	1650	4.48	5	7	13	

Attach Calibration Sheet
Attach site map showing grid ID

Page 5 of 5

Attachment C

Component Leak Monitoring Event Records

Table C.1
AB-32 Component Leak Monitoring
Summary of Component Leaks Greater than 500 ppmv

2022 QUARTER: 2
INITIAL MONITORING PERFORMED BY: RES
FOLLOW-UP MONITORING PERFORMED BY:
LANDFILL NAME: Redwood Landfill, Inc.

Location	Initial Monitoring			Corrective Action		10-Day Remonitoring		
	Date	TOC (ppmv)	Tech	Date	Description	Date	TOC (ppmv)	Tech
No Exceedances Detected								

Table C.2
BAAQMD Component Leak Monitoring
Summary of Component Leaks Greater than 1,000 ppmv

2022 QUARTER: 2
INITIAL MONITORING PERFORMED BY: RES
FOLLOW-UP MONITORING PERFORMED BY:
LANDFILL NAME: Redwood Landfill, Inc.

Location	Initial Monitoring			Corrective Action		7-Day Remonitoring		
	Date	TOC (ppmv)	Tech	Date	Description	Date	TOC (ppmv)	Tech
No Exceedances Detected								

LANDFILL NAME: Redwood
QUARTERLY LFG COMPONENT LEAK MONITORING

INSTRUMENT FID
MAKE: Thermo Environr
MODEL: TVA 1000
S/N: 1036346773

DATE OF SAMPLING: 5-3-22
TECHNICIAN: CHRIS WADE

LOCATION OF LEAK	LEAK CONCENTRATION (ppmv)	DATE OF DISCOVERY	TECHNICIAN	ACTION TAKEN TO REPAIR LEAK	DATE OF REPAIR	DATE OF ANY REQUIRED RE-MONITORING	RE-MONITORED CONCENTRATION (ppmv)
NO EXCEEDANCES							

In the event that an exceedance is detected, please intiate corrective action and re-monitor the exceedance location within 7 days of the initial exceedance.

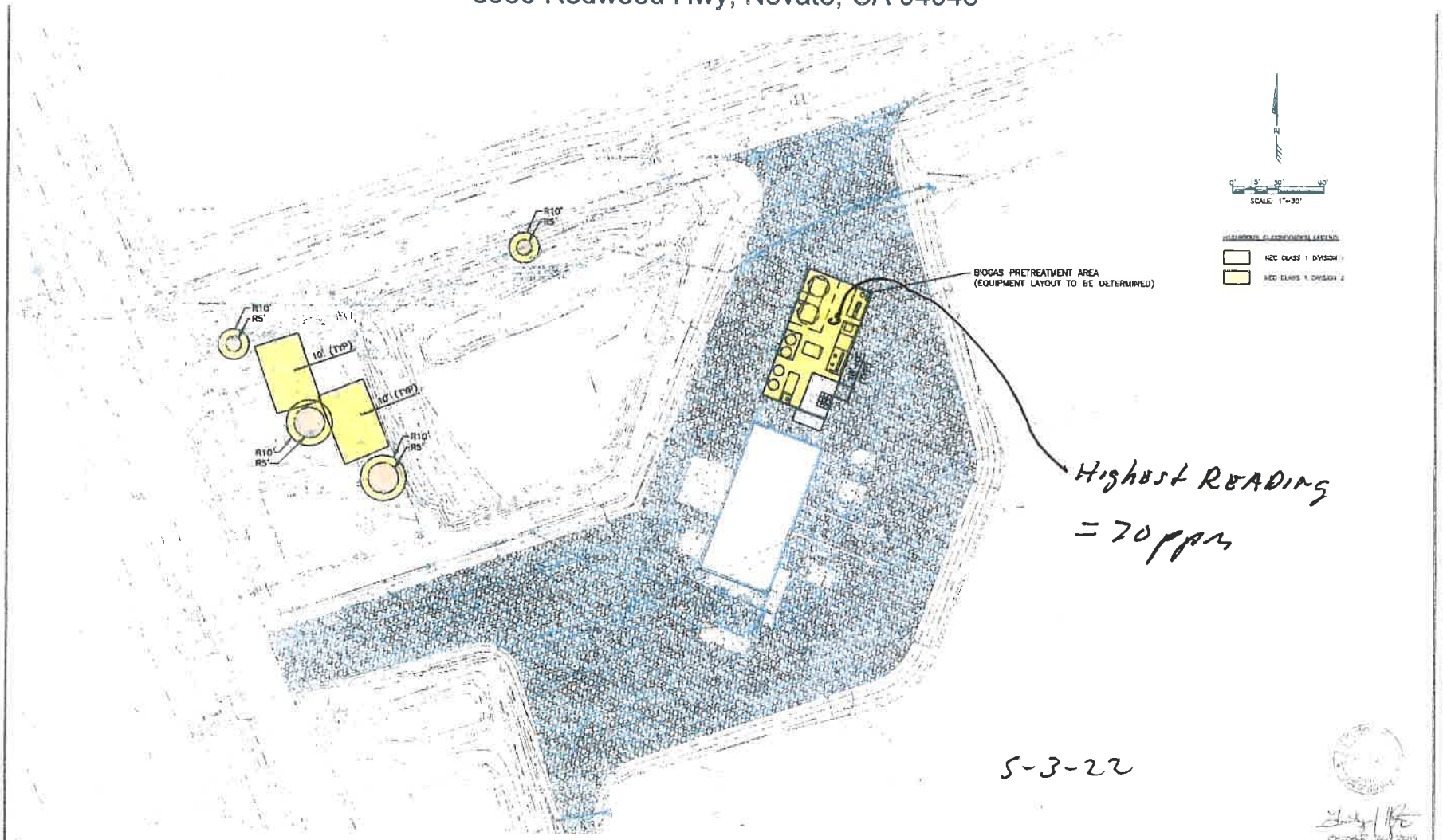
NOTE: Leaks over 500 ppmv methane are exceedances at any component containing landfill gas, pursuant to CARB Title 17 of California Code of Regulations Subchapter 10, Article 4, Subarticle 6, Section 95464(b)(1)(B).

NOTE: Leaks over 1,000 ppmv methane are exceedances at any component containing landfill gas, pursuant to BAAQMD Regulation 8-34-301.2.

REDWOOD 3520+ ENGINE PLANT, CA

Site Map

8950 Redwood Hwy, Novato, CA 94948



REV	DATE	BY	DESCRIPTION
3	3-1-18	RAA	ISSUED FOR CONSTRUCTION
2	10-26-15	RAA	BUILDING PERMIT APPLICATION SET
1	10-2-15	RAA	95% DESIGN RESUBMITTAL
0	8-7-15	RAA	ISSUED FOR GAS TREATMENT SKID BID
	6-12-15	RAA	95% DESIGN SUBMITTAL
	5-6-15	RAA	50% DESIGN SUBMITTAL

SCALE: AS SHOWN
DATE: 5-5-15
DRAWN: JFD
CHECKED: RFC
APPROVED: RAA

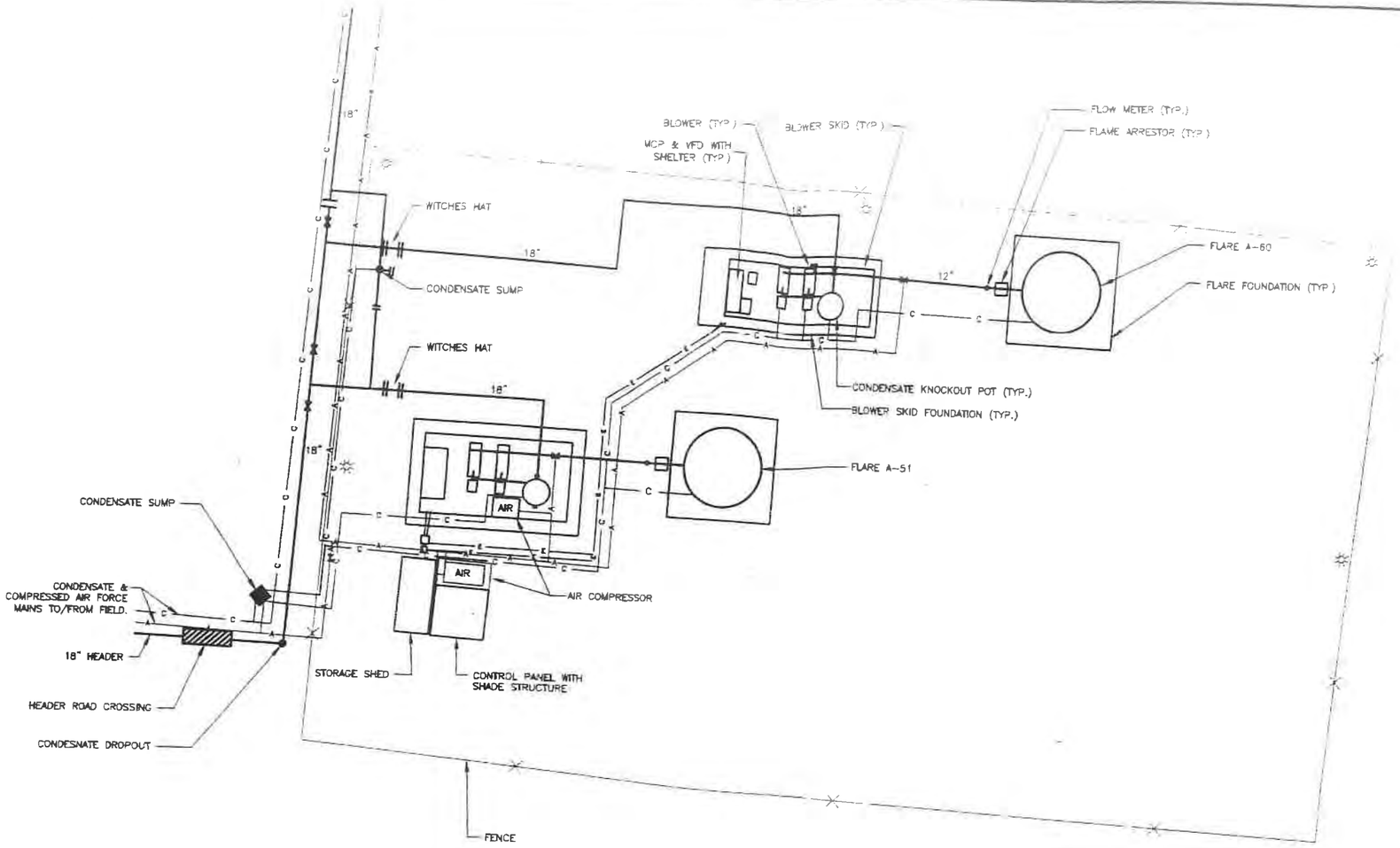
ACEng
www.ac-engineering.com

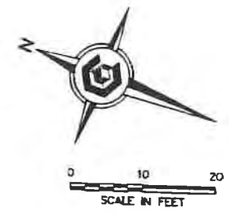
CLIENT: WASTE MANAGEMENT RENEWABLE ENERGY
LANDFILL TO GAS ENERGY PROJECT
REDWOOD LANDFILL, NOVATO, CA

DESCRIPTION: PROPOSED CONDITIONS AND HAZARDOUS AREA CLASSIFICATIONS

PROJECT NO. 1003.005.001

SHEET: G-5





LEGEND

- EXISTING PIPING
- EXISTING FLANGE
- LIGHT SYMBOL
- EXISTING PIPING
- EXISTING BLIND FLANGE
- EXISTING VALVE
- C — 2" HDPE SDR-7 CONDENSATE FORCE MAIN
- A — 2" HDPE SDR-9 COMPRESSED AIR FORCE MAIN
- ROAD CROSSING
- CONDENSATE SUMP

5-3-22

NO ENCUMBRANCES

DRAFT

WASTE MANAGEMENT

PAUL J STOUT P.E.

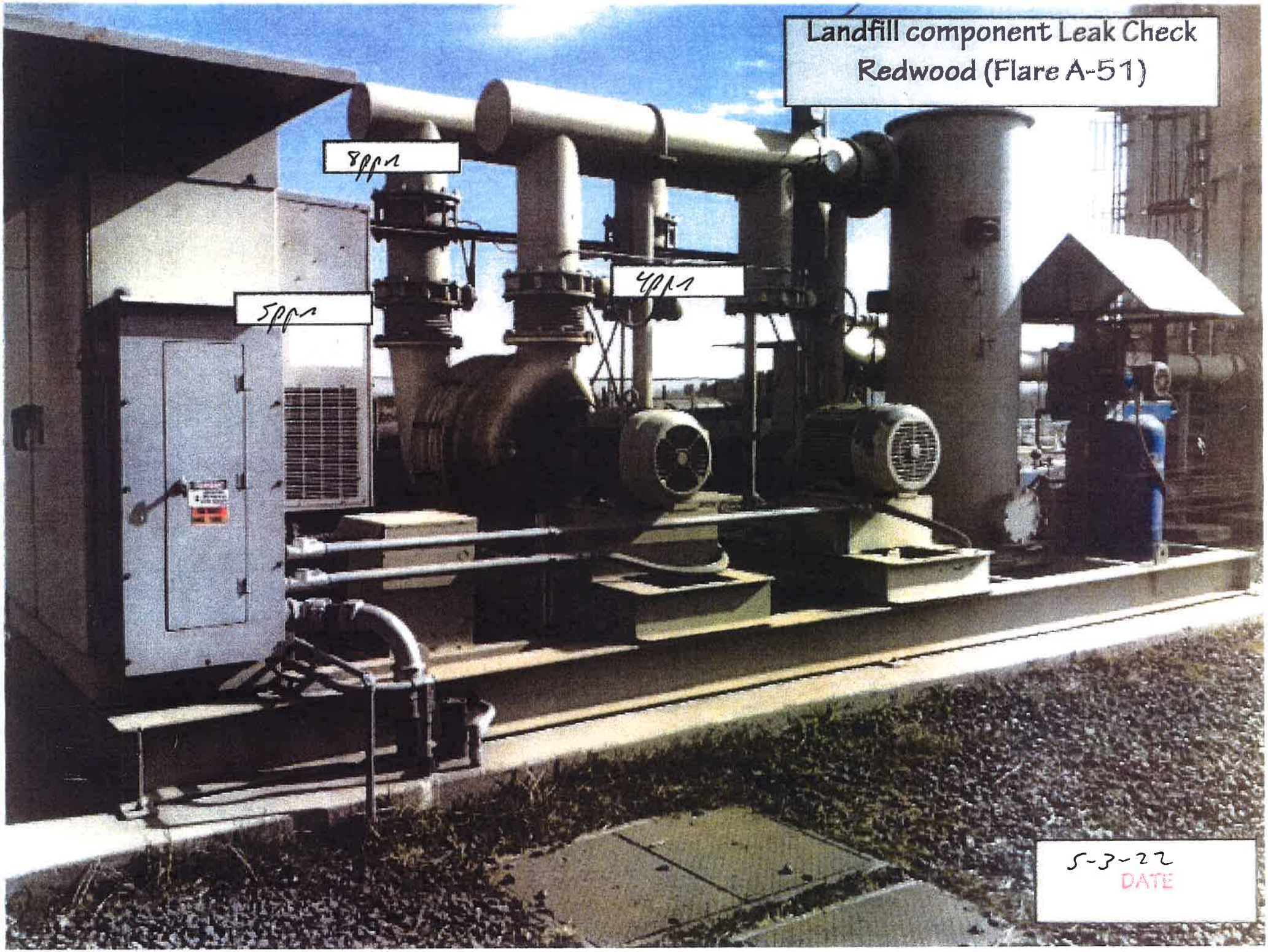
P.E. LIC. No. 052821 Date

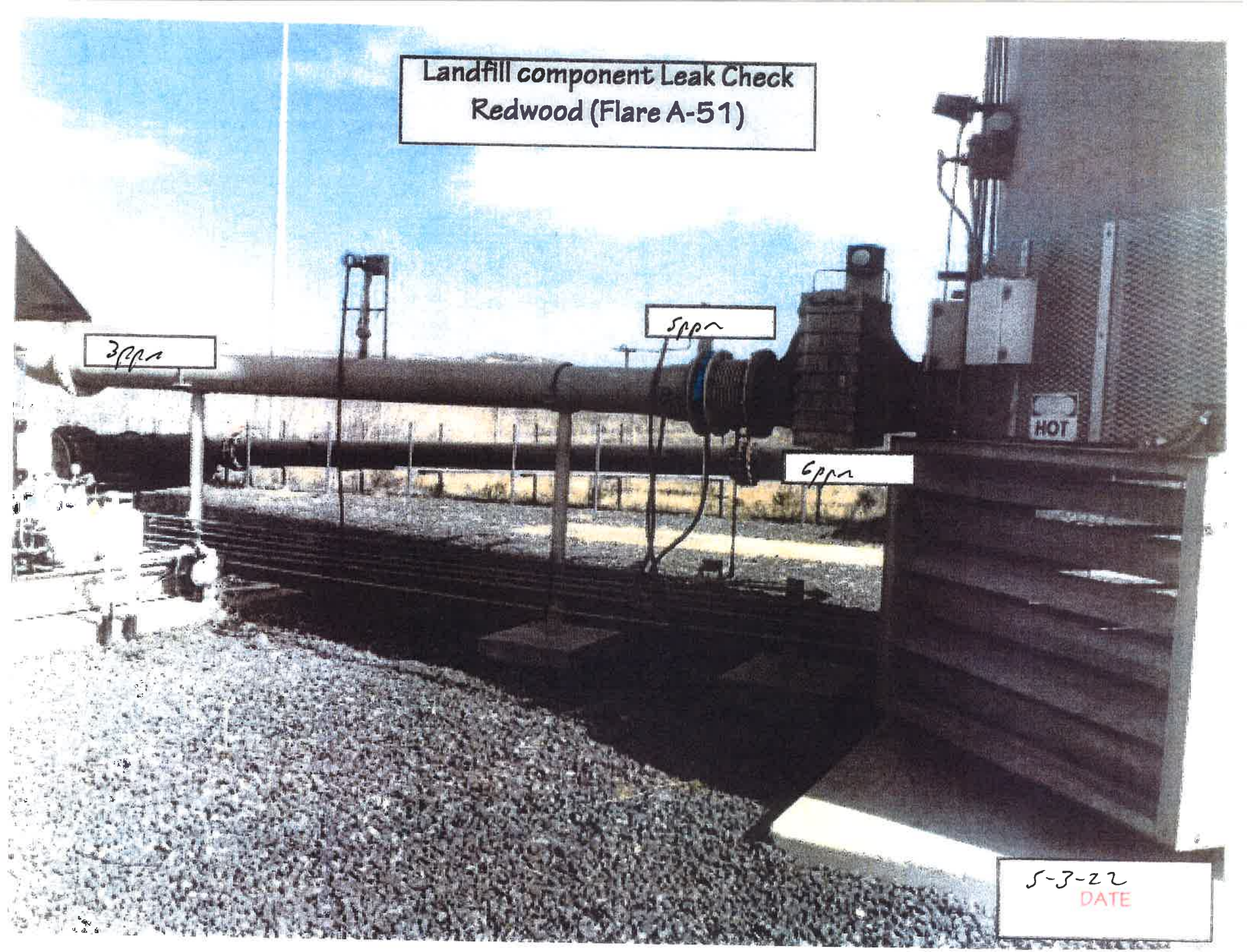
CORNERSTONE Environmental Group LLC

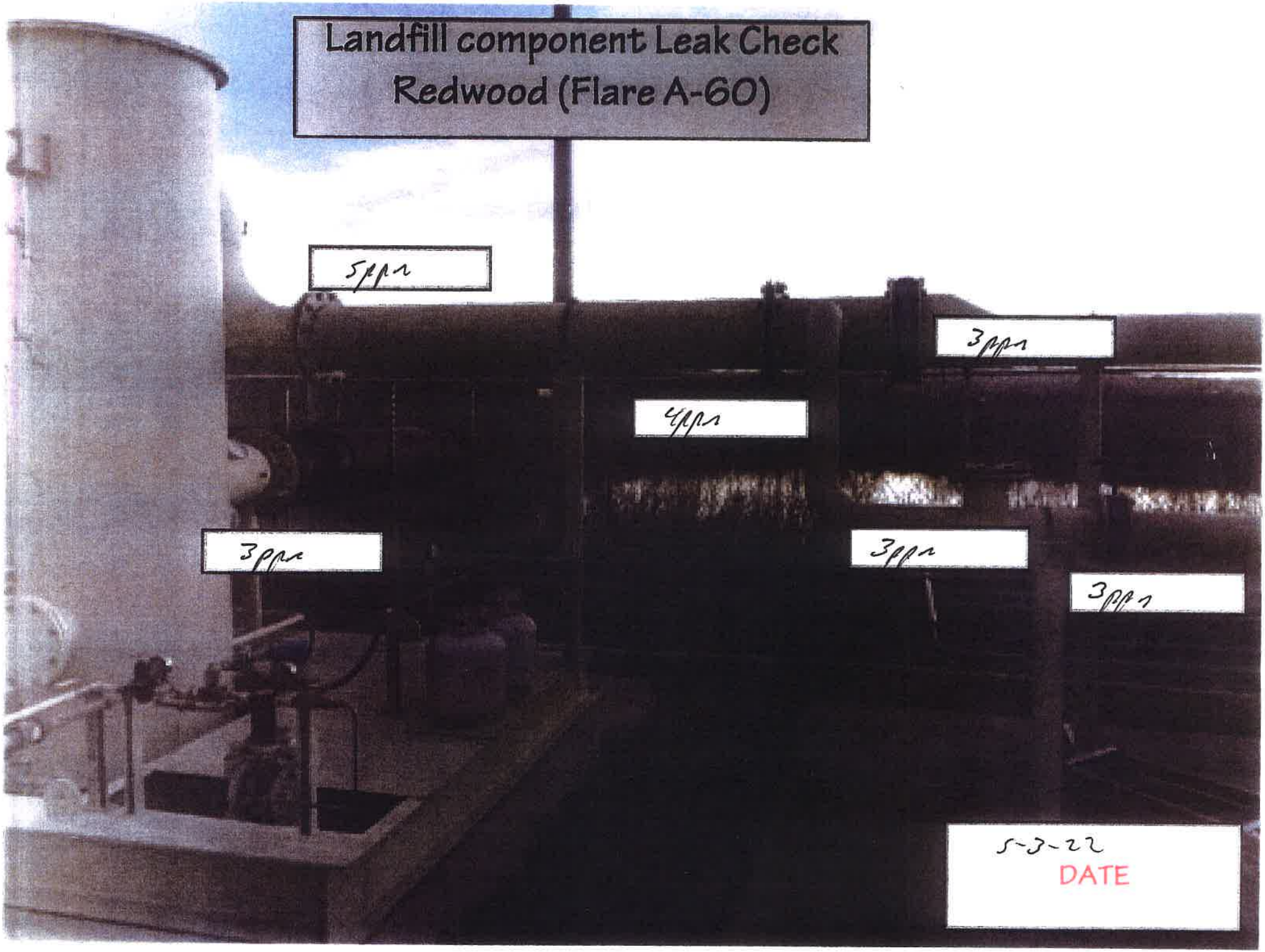
WASTE MANAGEMENT OF CALIFORNIA, INC
REDWOOD LANDFILL INC
NOVATO, MARIN COUNTY, CALIFORNIA

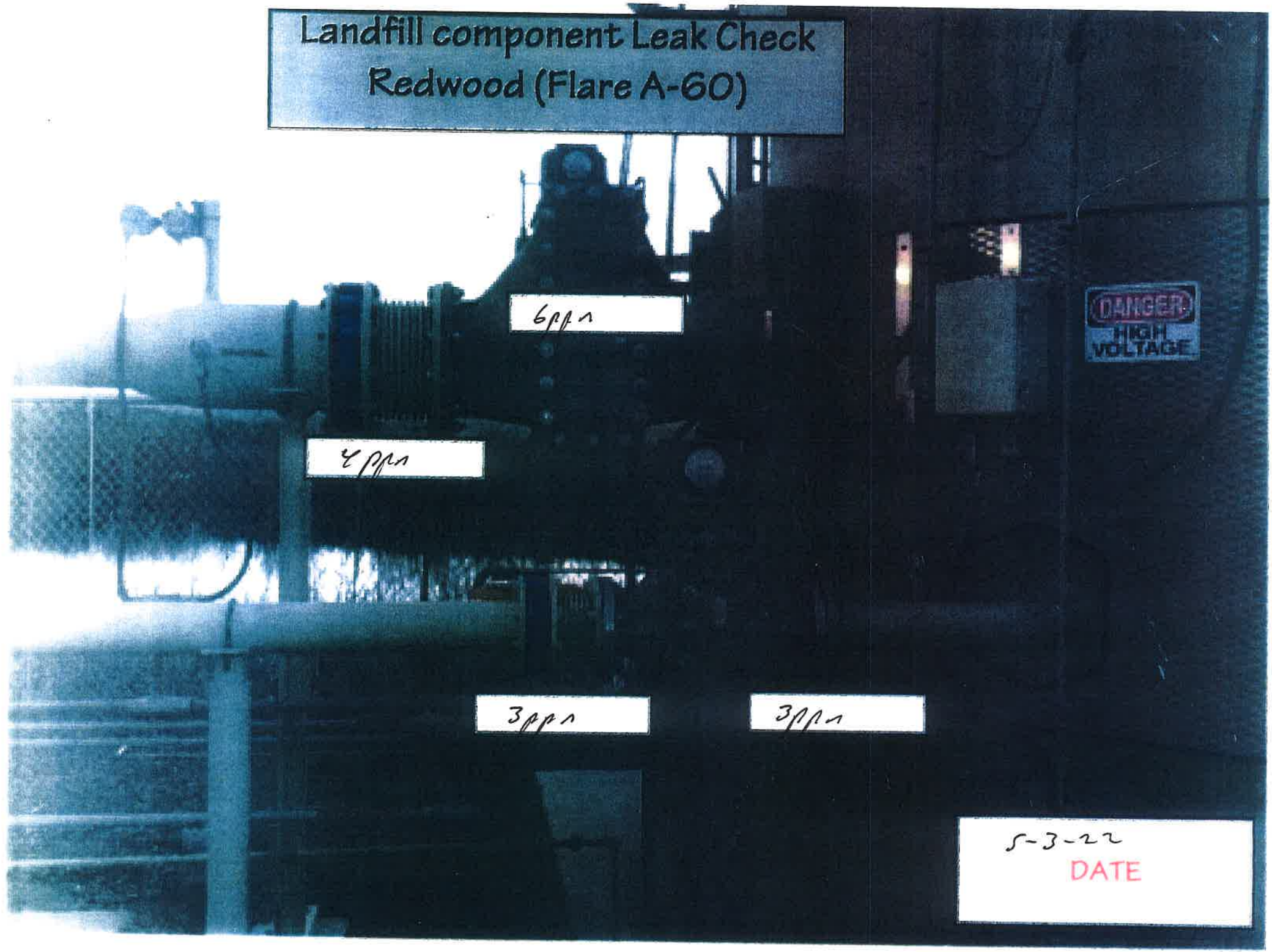
LFG FLARE AND GCCS AS-BUILT

SHEET NO 1


Landfill component Leak Check
Redwood (Flare A-51)
8ppm
4ppm
5ppm
5-3-22
DATE


Landfill component Leak Check
Redwood (Flare A-51)
3ppm
5ppm
6ppm
HOT
5-3-22
DATE


Landfill component Leak Check
Redwood (Flare A-60)
5ppm
4ppm
3ppm
3ppm
3ppm
3ppm
3ppm
5-3-22
DATE


Landfill component Leak Check
Redwood (Flare A-60)
6ppm
4ppm
3ppm
3ppm
DANGER
HIGH VOLTAGE
5-3-22
DATE

Attachment D

Weather Station Data

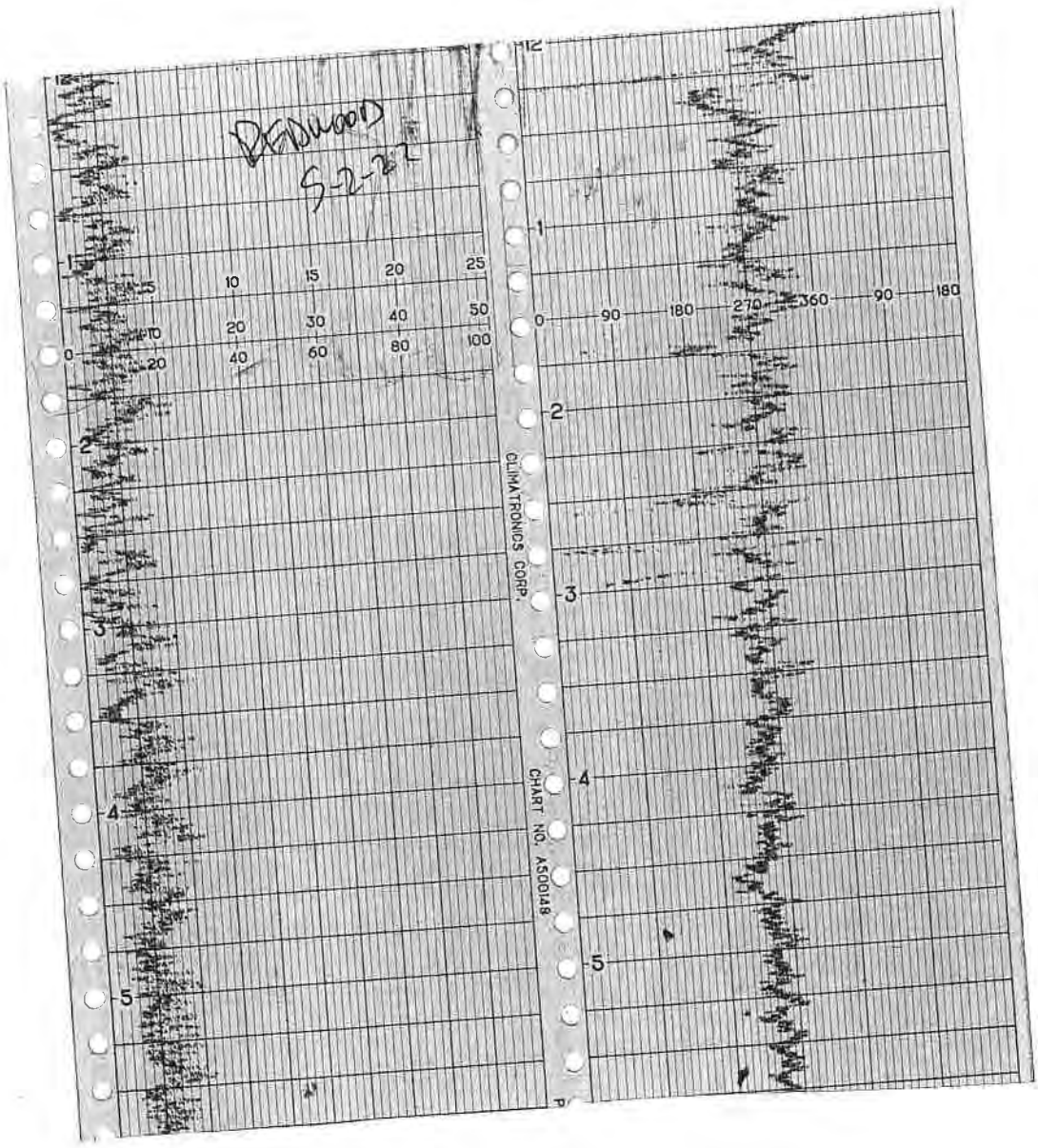
RES Environmental Inc.

16-POINT WIND DIRECTION INDEX

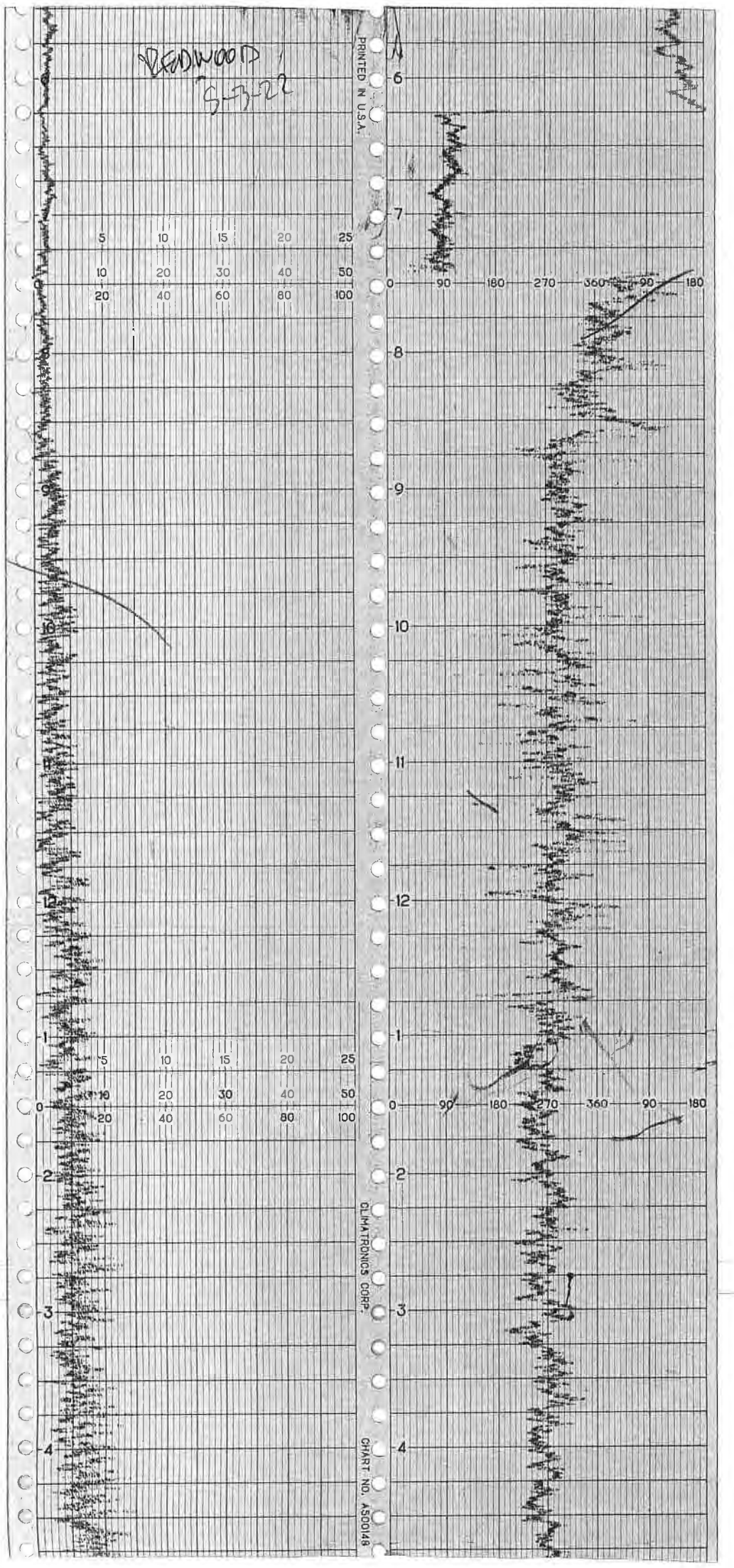
NO	DIRECTION	DEGREES		
		FROM	CENTER	TO
16	NORTH (N)	348.8	360.0	011.3
1	NORTH-NORTHEAST (NNE)	011.3	022.5	033.8
2	NORTHEAST (NE)	033.8	045.0	056.3
3	EAST-NORTHEAST (ENE)	056.3	067.5	078.8
4	EAST (E)	078.8	090.0	101.3
5	EAST-SOUTHEAST (ESE)	101.3	112.5	123.8
6	SOUTHEAST (SE)	123.8	135.0	146.3
7	SOUTH-SOUTHEAST (SSE)	146.3	157.5	168.8
8	SOUTH (S)	168.8	180.0	191.3
9	SOUTH-SOUTHWEST (SSW)	191.3	202.5	213.8
10	SOUTHWEST (SW)	213.8	225.0	236.3
11	WEST-SOUTHWEST (WSW)	236.3	247.5	258.8
12	WEST (W)	258.8	270.0	281.3
13	WEST-NORTHWEST (WNW)	281.3	292.5	303.8
14	NORTHWEST (NW)	303.8	315.0	326.3
15	NORTH-NORTHWEST (NNW)	326.3	337.5	348.8

865 Via Lata ▪ Colton, California 92324 ▪ (909) 422-1001 Fax (909) 422-0707

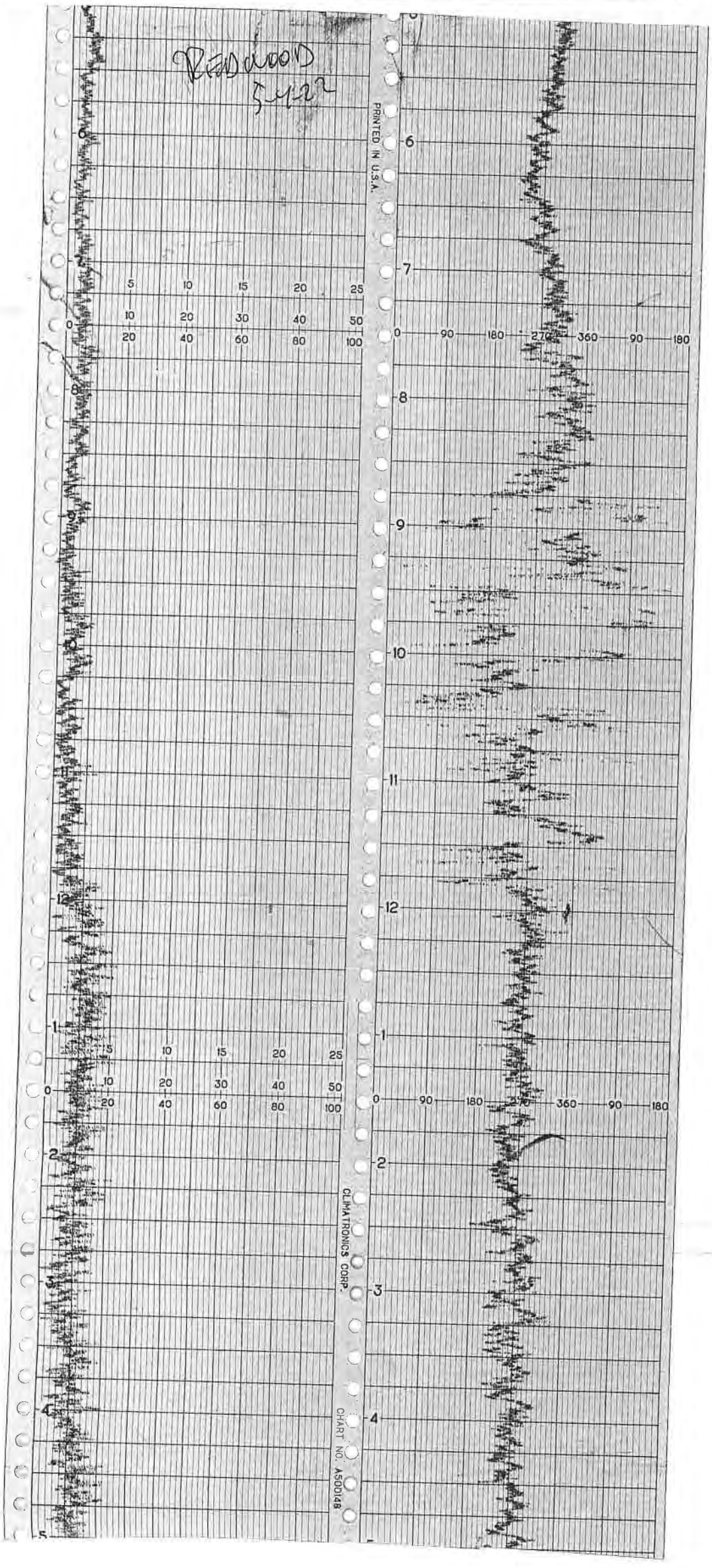
WIND SPEED & DIRECTION CHART ROLL



WIND SPEED & DIRECTION CHART ROLL



WIND SPEED & DIRECTION CHART ROLL



Attachment E

Calibration Records

RESPONSE TIME TEST RECORD

Date: 4/14/2022

Expiration Date (3 months): 7/14/2022

Time: 11:25 AM _____ PM

Instrument Make: Photovac Model: MicroFID S/N: CZMF340

Measurement #1:

Stabilized Reading Using Calibration Gas: 496 ppm
90% of the Stabilized Reading: 446 ppm
Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas: 6 seconds (a)

Measurement #2:

Stabilized Reading Using Calibration Gas: 495 ppm
90% of the Stabilized Reading: 445 ppm
Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas: 6 seconds (b)

Measurement #3:

Stabilized Reading Using Calibration Gas: 495 ppm
90% of the Stabilized Reading: 445 ppm
Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas: 6 seconds (c)

Calculate Response Time:

$\frac{(a)+(b)+(c)}{3}$ = 6 seconds (must be less than 30 seconds)

Performed By: Mo

CALIBRATION PRECISION TEST RECORD

Date: 4/14/2022

Expiration Date (3 months): 7/14/2022

Time: 11:40 AM _____ PM

Instrument Make: Photovac Model: MicroFID S/N: CZMF340

Measurement #1:

Meter Reading for Zero Air: 0 ppm (a)

Meter Reading for Calibration Gas: 491 ppm (b)

Measurement #2:

Meter Reading for Zero Air: 0 ppm (c)

Meter Reading for Calibration Gas: 491 ppm (d)

Measurement #3:

Meter Reading for Zero Air: 0 ppm (e)

Meter Reading for Calibration Gas: 490 ppm (f)

Calculate Precision:

$$\frac{\{|(500)-(b)|+|(500)-(d)|+|(500)-(f)|\}}{3} \times \frac{1}{500} \times 100$$

1.87 % (must be < than 10%)

Performed By: Mo

CALIBRATION PROCEDURE AND BACKGROUND DETERMINATION REPORT

Landfill Name: Redwood Date: 5/12/2022

Time: 10:15 AM _____ PM

Instrument Make: Photovac Model: MicroFID S/N: CZ MF 340

Calibration Procedure

1. Allow instrument to internally zero itself while introducing zero air.
2. Introduce the calibration gas into the probe.

   Stable Reading = 499 ppm
3. Adjust meter to read 500 ppm.

Background Determination Procedure

1. Upwind Reading (highest in 30 seconds): 0 ppm (a)
2. Downwind Reading (highest in 30 seconds): 0 ppm (b)

Calculate Background Value:

$\frac{(a) + (b)}{2}$ Background = 0 ppm

Performed By: Mo

CALIBRATION PROCEDURE AND BACKGROUND DETERMINATION REPORT

Landfill Name: Redwood Date: 5/31/2022

Time: _____ AM 1:20 PM

Instrument Make: Photovac Model: MicroFID S/N: CZ MF 340

Calibration Procedure

1. Allow instrument to internally zero itself while introducing zero air.
2. Introduce the calibration gas into the probe.

   Stable Reading = 496 ppm
3. Adjust meter to read 500 ppm.

Background Determination Procedure

1. Upwind Reading (highest in 30 seconds): 0 ppm (a)
2. Downwind Reading (highest in 30 seconds): 0 ppm (b)

Calculate Background Value:

$\frac{(a) + (b)}{2}$ Background = 0 ppm

Performed By: Mo

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: REDWOOD INSTRUMENT MAKE: HEATH

MODEL: TVA 1000 EQUIPMENT #: 10 SERIAL #: 1036346773

MONITORING DATE: 5-3-22 TIME: 0540

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 500 ppm
3. Adjust meter settings to read 500 ppm

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	490 ppm	440 ppm	5
#2	500 ppm	450 ppm	5
#3	500 ppm	450 ppm	5
Calculate Response Time (1+2+3) / 3			5 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.21 ppm	480 ppm	10
#2	0.10 ppm	507 ppm	0
#3	0.06 ppm	503 ppm	0
Calculate Precision	[STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/500 X 100/1		0.33 #DIV/0! Must be less than 10%

Performed By: LOUIS WADE Date/Time: 5-3-22 ~ 0540

RES
Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: Lemoyne INSTRUMENT MAKE: Thermo

MODEL: TVA 1000 EQUIPMENT #: 11 SERIAL #: 1036346774

MONITORING DATE: 5-3-22 TIME: 0540

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 500 ppm
3. Adjust meter settings to read 500 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	506 ppm	456 ppm	7
#2	502 ppm	452 ppm	7
#3	500 ppm	450 ppm	7
Calculate Response Time (1+2+3) / 3			7 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.20 ppm	506 ppm	6
#2	0.11 ppm	502 ppm	2
#3	0.07 ppm	500 ppm	0
Calculate Precision	[STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/500 X 100/1		0.53 #DIV/0! Must be less than 10%

Performed By: Rick Lomio Date/Time: 5-3-22 – 0540

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: Redwood INSTRUMENT MAKE: TurnO

MODEL: TVA1000 EQUIPMENT #: 12 SERIAL #: 1036246741

MONITORING DATE: 5-3-22 TIME: 0540

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 500 ppm
3. Adjust meter settings to read 500 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	485 ppm	439 ppm	6
#2	503 ppm	453 ppm	6
#3	500 ppm	450 ppm	6
Calculate Response Time (1+2+3)/3			6 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.13 ppm	485 ppm	11
#2	0.11 ppm	503 ppm	3
#3	0.09 ppm	500 ppm	0
Calculate Precision	[STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/500 X 100/1		0.93 #DIV/0! Must be less than 10%

Performed By: Nicole Banks Date/Time: 5-3-22 - 0540

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: Redwood INSTRUMENT MAKE: Thermo

MODEL: TVA 1000 EQUIPMENT #: 13 SERIAL #: 1102716775

MONITORING DATE: 5-3-22 TIME: 0540

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 500 ppm
3. Adjust meter settings to read 500 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	506 ppm	456 ppm	5
#2	500 ppm	450 ppm	5
#3	500 ppm	450 ppm	5
Calculate Response Time (1+2+3) / 3			5 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.10 ppm	506 ppm	6
#2	0.05 ppm	500 ppm	0
#3	0.04 ppm	500 ppm	0
Calculate Precision	[STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/500 X 100/1		0.40 #DIV/0! Must be less than 10%

Performed By: Calvin Ortiz Date/Time: 5-3-22 0540

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: REDWOOD INSTRUMENT MAKE: THERMO

MODEL: TVA1000 EQUIPMENT #: 16 SERIAL #: 1102746776

MONITORING DATE: 5-3-22 TIME: 0540

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 500 ppm
3. Adjust meter settings to read 500 ppm

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	501 ppm	451 ppm	4
#2	498 ppm	448 ppm	4
#3	500 ppm	450 ppm	4
Calculate Response Time (1+2+3) / 3			4 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.16 ppm	501 ppm	1
#2	0.11 ppm	498 ppm	2
#3	0.05 ppm	503 ppm	0
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/500 X 100/1			0.20 #DIV/0! Must be less than 10%

Performed By: DWIGHT ANDERSON Date/Time: 5-3-22 - 0540

KES

CALIBRATION PROCEDURE AND BACKGROUND REPORT - INTEGRATED

LANDFILL NAME: Edmond INSTRUMENT MAKE: TVA

MODEL: TVA1000 EQUIPMENT #: 10 SERIAL #: 1036346733

MONITORING DATE: 5-2-22 TIME: 1220

Calibration Procedure

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 25 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	24 ppm	21.6 ppm	4
#2	25 ppm	22.5 ppm	4
#3	25 ppm	22.5 ppm	4
Calculate Response Time (1+2+3) / 3			4 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.10 ppm	24 ppm	1
#2	0.06 ppm	25 ppm	0
#3	0.04 ppm	25 ppm	0
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			1.3 #DIV/0! Must be less than 10%

Performed By: LEIGHWADE Date/Time: 5-2-22 - 1220

RIES

CALIBRATION PROCEDURE AND BACKGROUND REPORT - INTEGRATED

LANDFILL NAME Redwood INSTRUMENT MAKE TVA

MODEL TVA1000 EQUIPMENT # #1 SERIAL # 1036346774

MONITORING DATE 5-2-22 TIME 1220

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 25 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	23 ppm	20.7 ppm	5
#2	25 ppm	22.5 ppm	5
#3	25 ppm	22.5 ppm	5
Calculate Response Time (1+2+3) / 3			5 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.16 ppm	23 ppm	2
#2	0.11 ppm	25 ppm	0
#3	0.04 ppm	25 ppm	0
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			2.6 #DIV/0! Must be less than 10%

Performed By Rick Ries Date/Time 5-2-22 -1220

RISS

CALIBRATION PROCEDURE AND BACKGROUND REPORT - INTEGRATED

LANDFILL NAME Redwood INSTRUMENT MAKE Heath

MODEL TVA 1000 EQUIPMENT # 12 SERIAL # 103624674/

MONITORING DATE 5-2-22 TIME: 1220

Calibration Procedure:

1. Allow instrument to zero itself while introducing air
2. Introduce calibration gas into the probe. Stabilized reading = 25 ppm
3. Adjust meter settings to read 25 ppm

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	24 ppm	21.6 ppm	5
#2	24 ppm	21.6 ppm	5
#3	25 ppm	22.5 ppm	5
Calculate Response Time (1+2+3) / 3			5 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.14 ppm	24 ppm	1
#2	0.10 ppm	25 ppm	0
#3	0.07 ppm	25 ppm	0
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			1.3 #DIV/0! Must be less than 10%

Performed By NICK BENICS Date/Time 5-2-22 1220

RES

CALIBRATION PROCEDURE AND BACKGROUND REPORT - INTEGRATED

LANDFILL NAME Redwood INSTRUMENT MAKE Heath

MODEL TVA1000 EQUIPMENT # 13 SERIAL # 1102946775

MONITORING DATE 5-2-22 TIME 1220

Calibration Procedure

1. Allow instrument to zero itself while introducing air
2. Introduce calibration gas into the probe. Stabilized reading = 25 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	23 ppm	20.7 ppm	6
#2	24 ppm	21.6 ppm	6
#3	25 ppm	22.5 ppm	6
Calculate Response Time (1+2+3) / 3			6 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.10 ppm	23 ppm	2
#2	0.06 ppm	24 ppm	1
#3	0.05 ppm	25 ppm	0
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			4.0 #DIV/0! Must be less than 10%

Performed By Colvin Ortiz Date/Time 5-2-22 1220

RES

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME Redwood INSTRUMENT MAKE Thermo

MODEL TVA1000 EQUIPMENT # 16 SERIAL # 1102746796

MONITORING DATE: 5-2-22 TIME 1220

Calibration Procedure:

1. Allow instrument to zero itself while introducing air
2. Introduce calibration gas into the probe. Stabilized reading = 25 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	24 ppm	21.6 ppm	5
#2	25 ppm	22.5 ppm	5
#3	25 ppm	22.5 ppm	5
Calculate Response Time (1+2+3) / 3			5 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.11 ppm	24 ppm	1
#2	0.09 ppm	25 ppm	0
#3	0.07 ppm	25 ppm	0
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			1-3 #DIV/0! Must be less than 10%

Performed By Dwight Anderson Date/Time 5-2-22-1220

RES

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME REDWOOD INSTRUMENT MAKE THERMO

MODEL TVA 1000 EQUIPMENT # 10 SERIAL # 1036346773

MONITORING DATE: 5-4-22 TIME 0505

Calibration Procedure:

1. Allow instrument to zero itself while introducing air
2. Introduce calibration gas into the probe. Stabilized reading = 25 ppm
3. Adjust meter settings to read 25 ppm

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	24 ppm	21.6 ppm	4
#2	25 ppm	22.5 ppm	4
#3	25 ppm	22.5 ppm	4
Calculate Response Time (1+2+3) / 3			4 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.12 ppm	24 ppm	1
#2	0.11 ppm	25 ppm	0
#3	0.09 ppm	25 ppm	0
Calculate Precision	[STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1		1.3 #DIV/0! Must be less than 10%

Performed By LOSHMAN Date/Time 5-4-22 0505

KLEINFELDER

CALIBRATION PROCEDURE AND BACKGROUND REPORT - INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: TH Elmo

MODEL: TVA 1000 EQUIPMENT #: 11 SERIAL #: 1036346774

MONITORING DATE: 5-4-22 TIME: 0505

Calibration Procedure:

1. Allow instrument to zero itself while introducing air
2. Introduce calibration gas into the probe. Stabilized reading = 25 ppm
3. Adjust meter settings to read 25 ppm

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	23 ppm	20.7 ppm	5
#2	25 ppm	22.5 ppm	5
#3	25 ppm	22.5 ppm	5
Calculate Response Time (1+2+3) / 3			5 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.15 ppm	23 ppm	2
#2	0.11 ppm	25 ppm	0
#3	0.07 ppm	25 ppm	0
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			2.6 #DIV/0! Must be less than 10%

Performed By: Rick Lomas Date/Time: 5-4-22 0505

KES

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME Redwood INSTRUMENT MAKE THERMO

MODEL TVA 1000 EQUIPMENT # 12 SERIAL # 1036246741

MONITORING DATE 5-4-22 TIME 0505

Calibration Procedure:

1. Allow instrument to zero itself while introducing air
2. Introduce calibration gas into the probe. Stabilized reading = 25 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	24 ppm	21.6 ppm	6
#2	24 ppm	21.6 ppm	6
#3	25 ppm	22.5 ppm	6
Calculate Response Time (1+2+3) / 3			6 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.09 ppm	24 ppm	1
#2	0.07 ppm	24 ppm	1
#3	0.05 ppm	25 ppm	0
Calculate Precision	[STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1		2.6 #DIV/0! Must be less than 10%

Performed By Calvin Smith Date/Time 5-4-22 - 0505

RIES

CALIBRATION PROCEDURE AND BACKGROUND REPORT - INTEGRATED

LANDFILL NAME: Renwick INSTRUMENT MAKE: Honda

MODEL: HNA 1000 EQUIPMENT #: 13 SERIAL #: 1102742775

MONITORING DATE: 5-4-22 TIME: 0505

Calibration Procedure

1. Allow instrument to zero itself while introducing air
2. Introduce calibration gas into the probe. Stabilized reading = 25 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	24 ppm	21.6 ppm	5
#2	25 ppm	22.5 ppm	5
#3	25 ppm	22.5 ppm	5
Calculate Response Time (1+2+3) / 3			5 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.07 ppm	24 ppm	1
#2	0.06 ppm	25 ppm	0
#3	0.04 ppm	25 ppm	0
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			1.3 #DIV/0! Must be less than 10%

Performed By: Dwight Anderson Date/Time: 5-4-22 0505

RES

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: Horiba

MODEL: VA1000 EQUIPMENT #: 16 SERIAL #: 1102746776

MONITORING DATE: 5-4-22 TIME: 0505

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 25 ppm
3. Adjust meter settings to read 25 ppm

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	23 ppm	20.7 ppm	6
#2	24 ppm	21.6 ppm	6
#3	25 ppm	22.5 ppm	6
Calculate Response Time (1+2+3) / 3			6 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.16 ppm	23 ppm	2
#2	0.10 ppm	24 ppm	1
#3	0.06 ppm	25 ppm	0
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			4.0 #DIV/0! Must be less than 10%

Performed By: Nick Banks Date/Time: 5-4-22 0505

RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: MC M

Date: 5-7-22 **Time:** 0845

Model # TVA 1000

Serial # #10 1036346773

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	2.1 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100%
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	4-1-22	Time required to attain 90% of Cal Gas ppm
Factory calibration record w/instrument within 3 months	(Pass) / Fail	1. 6
		2. 6
		3. 7
		Average 6.3
		Equal to or less than 30 seconds? (Y) N
		Instrument calibrated to CH4 gas.

Comments: _____

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RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: _____

Date: 5-7-22 **Time:** 0900

Model # TVA 1000

Serial # #11 1036346774

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	2.2 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100%
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	4-1-22	Time required to attain 90% of Cal Gas ppm
Factory calibration record w/instrument within 3 months	(Pass) / Fail	1. 6 2. 6 3. 5 Average 5.6 Equal to or less than 30 seconds? (Y) N Instrument calibrated to CH4 gas.

Comments: _____

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RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: MM MM

Date: 5-7-22 Time: 0915

Model # TVA 1000

Serial # #12 1036246741

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	2.1 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100%
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	4-1-22	Time required to attain 90% of Cal Gas ppm: 1. 6 / 2. 6 / 3. 5 / Average 5.6
Factory calibration record w/instrument within 3 months	(Pass) / Fail	Equal to or less than 30 seconds? (Y) N
		Instrument calibrated to CH4 gas.

Comments: _____

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RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: JM JM

Date: 5-7-22 **Time:** 0930

Model # TVA-1000

Serial # #13 1102746775

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	2.5 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100%
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	4-1-22	Time required to attain 90% of Cal Gas ppm
Factory calibration record w/instrument within 3 months	(Pass) / Fail	1. 5
		2. 6
		3. 6
		Average 5.6
		Equal to or less than 30 seconds? (Y) N
		Instrument calibrated to CH4 gas.

Comments: _____

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RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: JM CM

Date: 5-7-22 **Time:** 1015

Model # TVA 1000

Serial # #16 1102746776

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	2.3 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100%
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	4-1-22	Time required to attain 90% of Cal Gas ppm
Factory calibration record w/instrument within 3 months	(Pass) / Fail	1. 6 2. 6 3. 7 Average 6.3
		Equal to or less than 30 seconds? (Y) N
		Instrument calibrated to CH4 gas.

Comments: _____

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RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: RES Unit #10

SERIAL NUMBER: 1036346773

TECHNICIAN: [signature] DATE: 4-1-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	99	+/- 25
500	500	499	+/- 125
10000	10000	10,000	+/- 2500
< 1	ZERO GAS	0.61	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50		+/- 12.5
100	100		+/- 25
500	500		+/- 125
< 1	ZERO GAS		< 3

All measurement standards are calibrated at scheduled intervals by the National Institute of Standards and Technology (NIST), or against certified standards, which are traceable to the National Institute of Standards and Technology.

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RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: RES Unit #11

SERIAL NUMBER: 1036346779

TECHNICIAN: JM DM DATE: 4-1-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	100	+/- 25
500	500	500	+/- 125
10000	10000	10,000	+/- 2500
< 1	ZERO GAS	0.68	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50		+/- 12.5
100	100		+/- 25
500	500		+/- 125
< 1	ZERO GAS		< 3

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RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: RES Van #12

SERIAL NUMBER: 1036246741

TECHNICIAN: [signature] DATE: 4-1-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	100	+/- 25
500	500	500	+/- 125
10000	10000	10,000	+/- 2500
< 1	ZERO GAS	0.71	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50		+/- 12.5
100	100		+/- 25
500	500		+/- 125
< 1	ZERO GAS		< 3

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RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: RES Unit #13

SERIAL NUMBER: 110274677S

TECHNICIAN: JH DH DATE: 4-1-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	101	+/- 25
500	500	501	+/- 125
10000	10000	10,000	+/- 2500
< 1	ZERO GAS	0.51	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50	/	+/- 12.5
100	100	/	+/- 25
500	500	/	+/- 125
< 1	ZERO GAS	/	< 3

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RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: Mes Cat #16

SERIAL NUMBER: 110274676

TECHNICIAN: MM DATE: 4-1-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	100	+/- 25
500	500	500	+/- 125
10000	10000	10,000	+/- 2500
< 1	ZERO GAS	0.61	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50		+/- 12.5
100	100		+/- 25
500	500		+/- 125
< 1	ZERO GAS		< 3

All measurement standards are calibrated at scheduled intervals by the National Institute of Standards and Technology (NIST), or against certified standards, which are traceable to the National Institute of Standards and Technology.

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INTERMOUNTAIN SPECIALTY GASES

520 N. Kings Road • Nampa • Idaho • 83687

800-552-5003 • www.isgases.com

CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy
Air - Zero		
THC	< 2 PPM	
Oxygen	20.9%	± 2%
Nitrogen	Balance	

Lot # 19-6779

Mfg. Date: 4/3/2019

Parent Cylinder ID Number: 001739, 02268

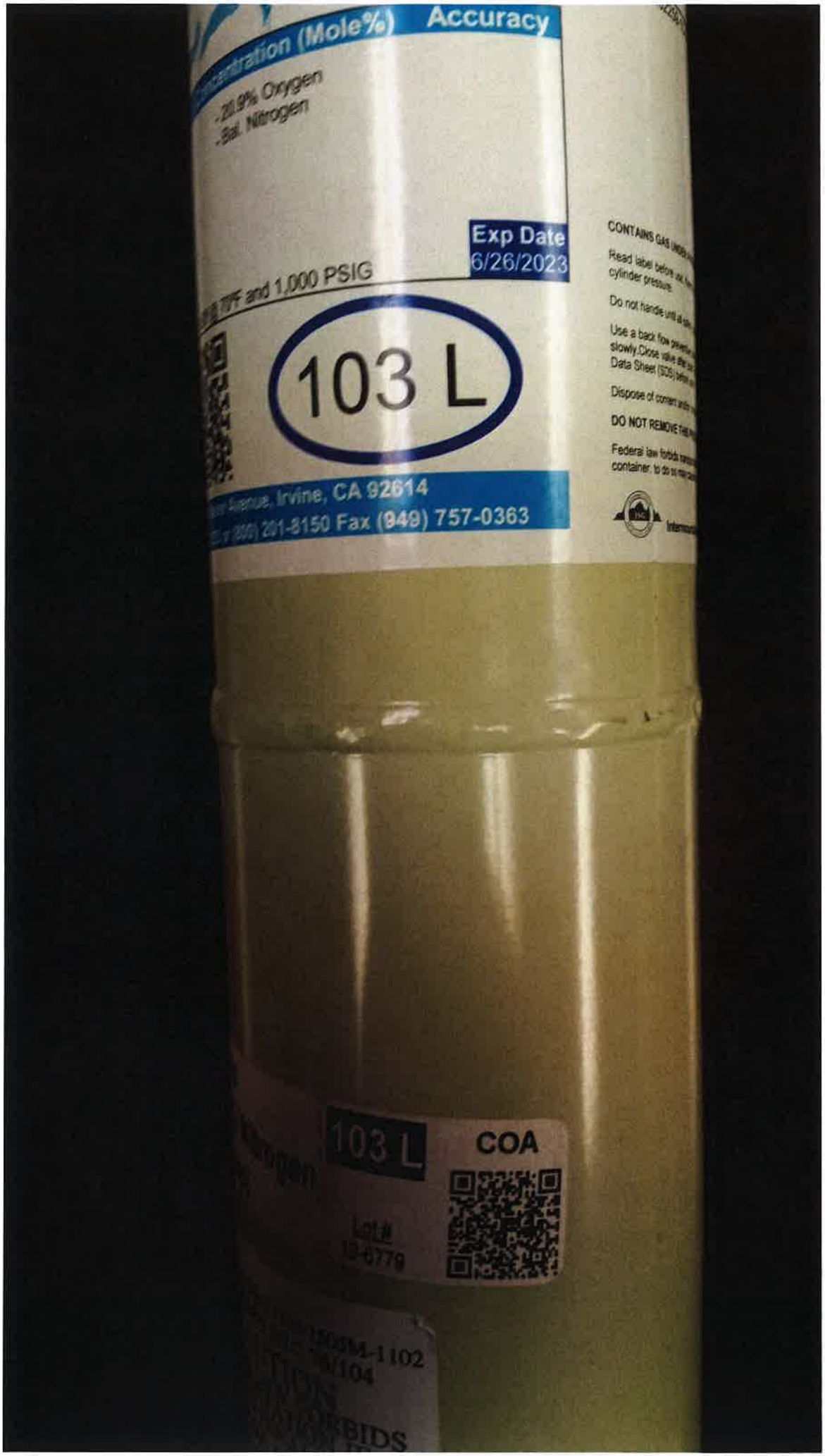
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

This mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Quality Assurance Manager
800-552-5003
Certificate Date: 4/3/2019


Concentration (Mole%) Accuracy
- 20.9% Oxygen
- Bal. Nitrogen
Exp Date
6/26/2023
and 1,000 PSIG
103 L
Irvine, CA 92614
Fax (949) 757-0363
CONTAINS GAS UNDER
Read label before
cylinder pressure.
Do not handle until
Use a back flow
slowly.Close valve
Data Sheet (SDS)
Dispose of content
DO NOT REMOVE
Federal law
container; to
103 L
COA
Lot #
M-1102
104

INTERMOUNTAIN SPECIALTY GASES

520 N. Kings Road • Nampa • Idaho • 83687

800-552-5003 • www.isgases.com

CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy
Methane	25 ppm	± 5%
Air	Balance	

Lot # 17-6074

Mfg. Date: 10/16/2017

Parent Cylinder ID Number: 17161

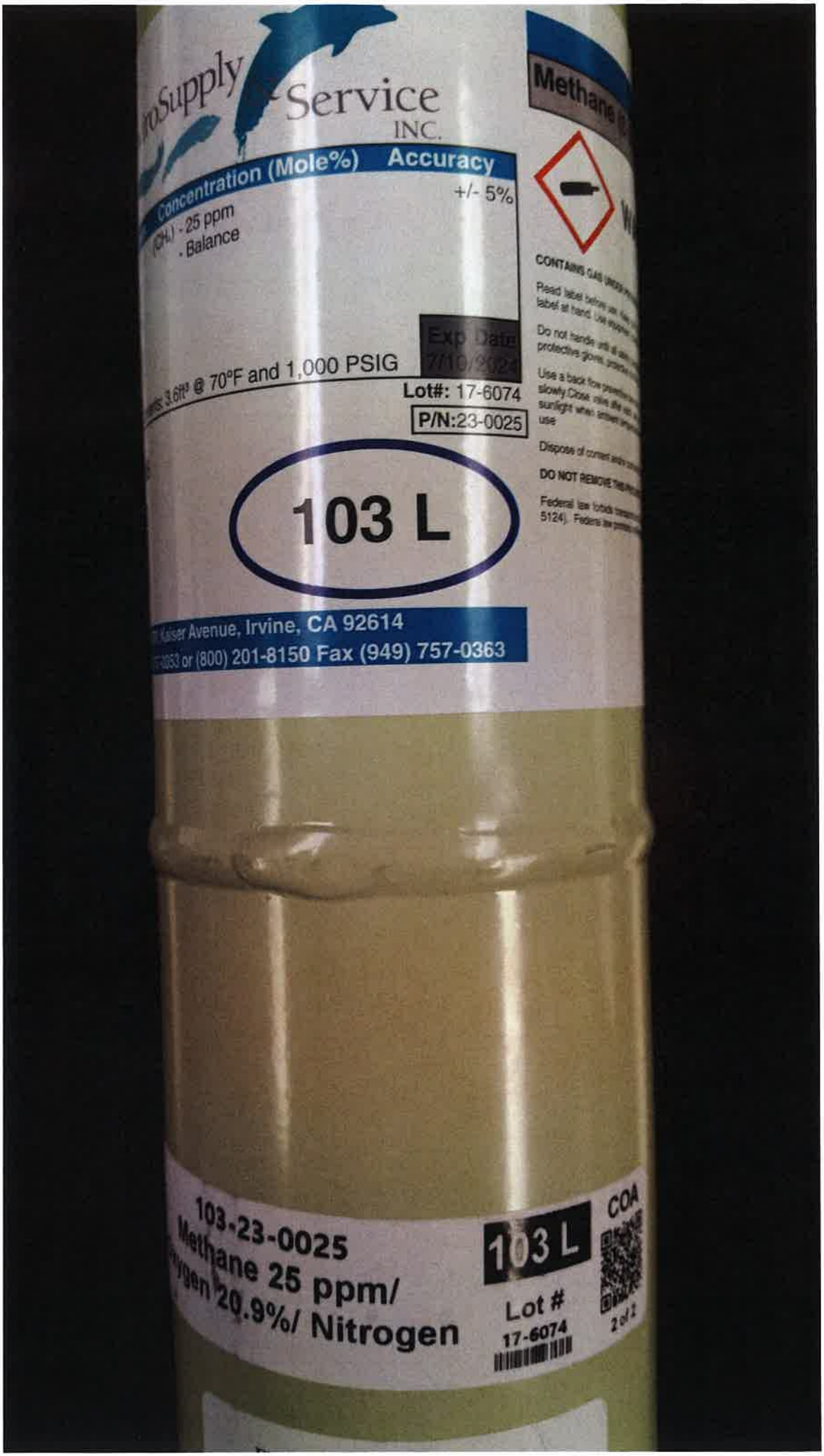
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Quality Assurance Manager
800-552-5003
Certificate Date: 10/16/2017


Service
INC.
Concentration (Mole%) Accuracy
+/- 5%
(CH4) - 25 ppm
. Balance
Exp Date
7/10/2024
Lot#: 17-6074
P/N:23-0025
103 L
Kaiser Avenue, Irvine, CA 92614
(800) 201-8150 Fax (949) 757-0363
103-23-0025
Methane 25 ppm/
Nitrogen
103 L
Lot #
17-6074
COA

INTERMOUNTAIN SPECIALTY GASES

520 N. Kings Road • Nampa • Idaho • 83687

800-552-5003 • www.isgases.com

CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy
Methane	25 ppm	± 5%
Air	Balance	

Lot # 17-6074

Mfg. Date: 10/16/2017

Parent Cylinder ID Number: 17161

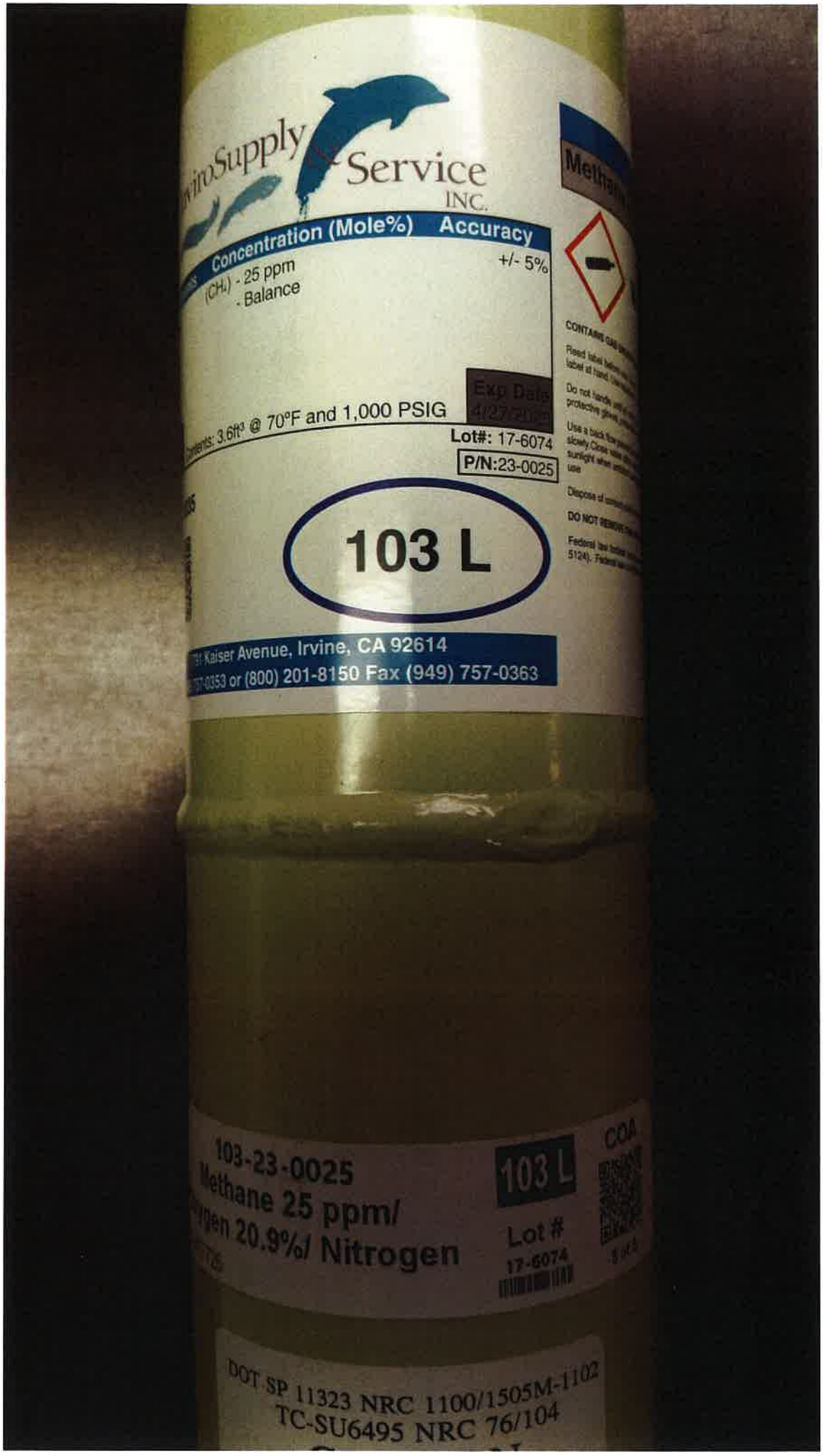
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Quality Assurance Manager
800-552-5003
Certificate Date: 10/16/2017


Service
INC.
Concentration (Mole%) Accuracy
(CH4) - 25 ppm +/- 5%
. Balance
Contents: 3.6ft³ @ 70°F and 1,000 PSIG
Lot#: 17-6074
P/N:23-0025
103 L
Kaiser Avenue, Irvine, CA 92614
(800) 201-8150 Fax (949) 757-0363
103-23-0025
Methane 25 ppm/
Nitrogen 20.9%/ Nitrogen
103 L
Lot #
17-6074
COA
DOT SP 11323 NRC 1100/1505M-1102
TC-SU6495 NRC 76/104

Intermountain Specialty Gases
520 N. Kings Road
Nampa, ID 83687 (USA)
Phone (800) 552-5003, Fax (208) 466-9143
www.isgases.com

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"Your calibration gas manufacturer since 1992"

CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy (+/-)
Methane	500 ppm	2%
Oxygen	20.9 %	2%
Nitrogen	Balance UHP	

Lot #	**20-7497**
Mfg. Date:	7/10/2020
Expiration Date:	
Transfill Date:	see cylinder
Parent Cylinder ID Number:	TWC001763

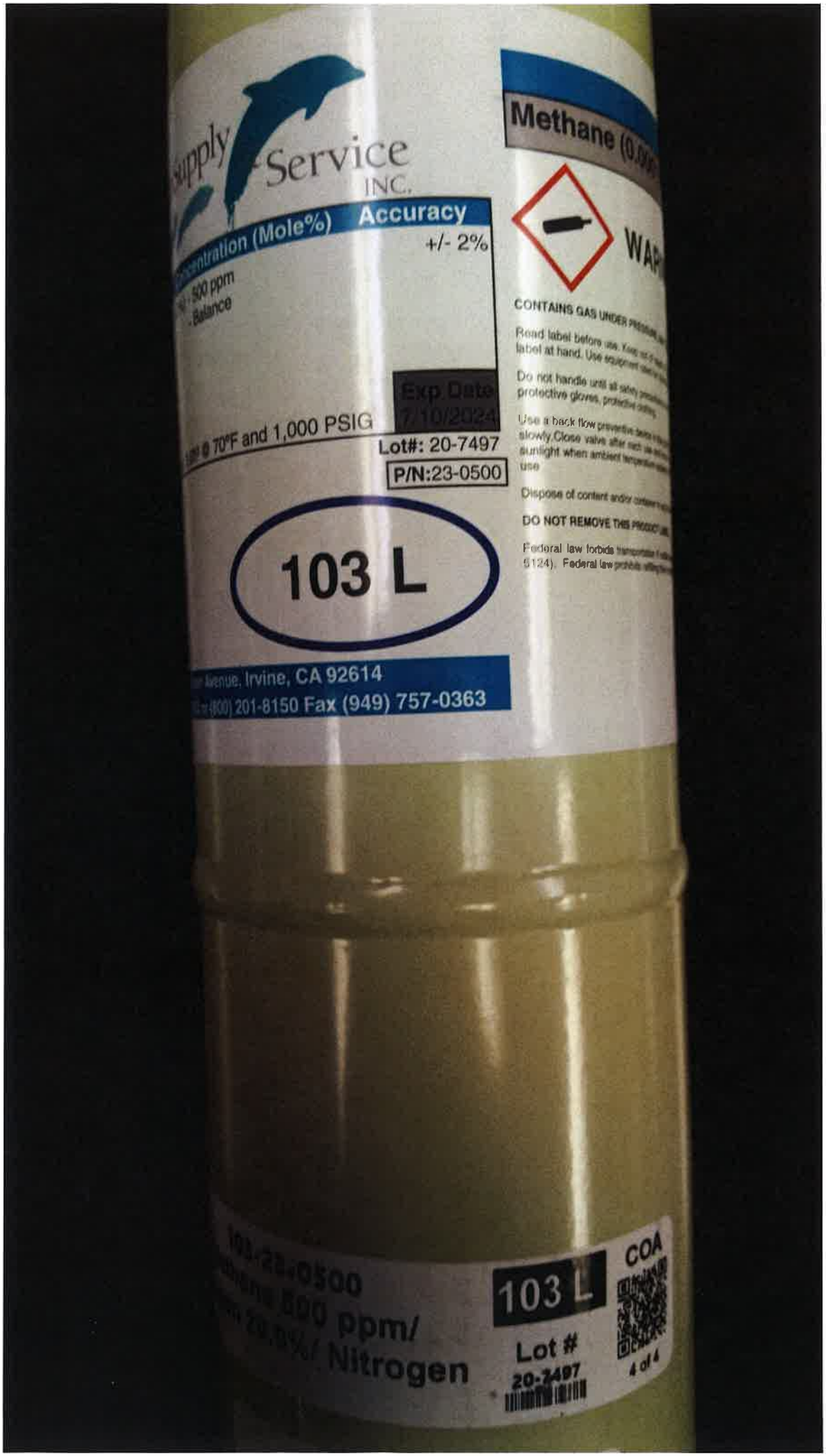
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By:	Tony Janquart
Title:	Quality Assurance Manager
Certificate Date:	7/10/2020


Supply & Service INC.
Methane (0.99
Concentration (Mole%) Accuracy
+/- 2%
, 500 ppm
- Balance
WAR
CONTAINS GAS UNDER PRESSURE
Read label before use. Keep
label at hand. Use equipment
Do not handle until all safety
protective gloves, protective clothing.
Use a back flow preventive
slowly.Close valve after each
sunlight when ambient
use
Dispose of content and/or
DO NOT REMOVE THIS PRODUCT
Federal law forbids
5124). Federal law
Exp Date
7/10/2024
@ 70°F and 1,000 PSIG
Lot#: 20-7497
P/N:23-0500
103 L
Avenue, Irvine, CA 92614
(800) 201-8150 Fax (949) 757-0363
103-23-0500
800 ppm/
Nitrogen
103 L
Lot #
20-7497
COA
4 of 4

INTERMOUNTAIN SPECIALTY GASES

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800-552-5003 • www.isgases.com

CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy
Methane	500 ppm	± 2%
Air	Balance	

Lot # 19-6955

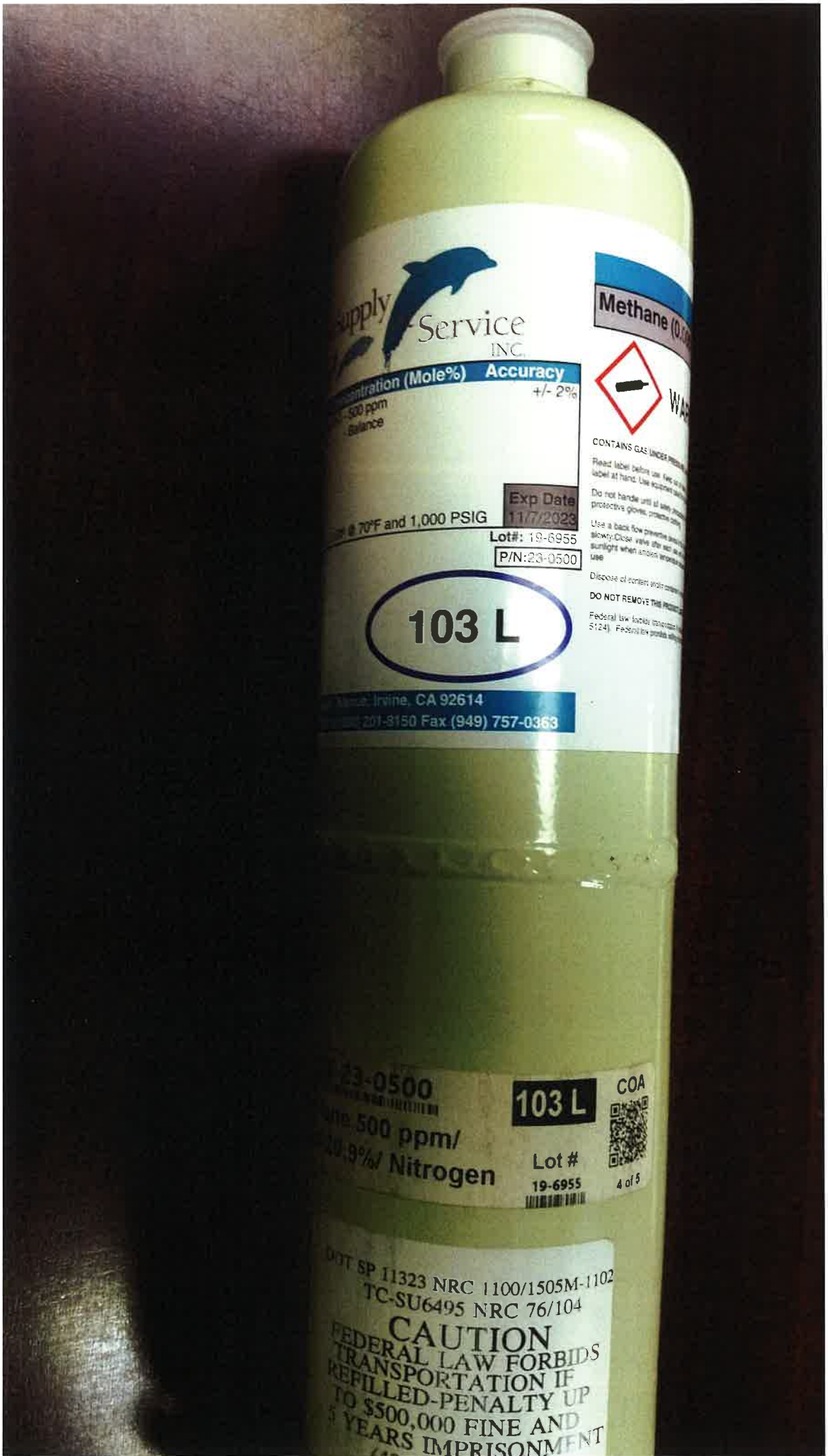
Mfg. Date: 7/24/2019

Parent Cylinder ID Number: 001763

Method of Preparation:
Gravimetric/Pressure Transfilled

Method of Analysis:
The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Quality Assurance Manager
800-552-5003
Certificate Date: 7/24/2019


Service
INC.
Accuracy
+/- 2%
Exp Date
11/7/2023
Lot#: 19-6955
P/N:23-0500
103 L
Irvine, CA 92614
Fax (949) 757-0363
Methane
CONTAINS GAS UNDER
DO NOT REMOVE THIS
23-0500
103 L
COA
Lot #
19-6955
4 of 5
DOT 5P 11323 NRC 1100/1505M-1102
TC-SU6495 NRC 76/104
CAUTION
FEDERAL LAW FORBIDS
TRANSPORTATION IF
REFILLED-PENALTY UP
TO $500,000 FINE AND
5 YEARS IMPRISONMENT

Intermountain Specialty Gases
520 N. Kings Road
Nampa, ID 83687 (USA)
Phone (800) 552-5003, Fax (208) 466-9143
www.isgases.com

INTERMOUNTAIN SPECIALTY GASES
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CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy (+/-)
Methane	500 ppm	2%
Oxygen	20.9 %	2%
Nitrogen	Balance UHP	

Lot #	**18-6641**
Mfg. Date:	12/18/2018
Expiration Date:	
Transfill Date:	see cylinder
Parent Cylinder ID Number:	001763

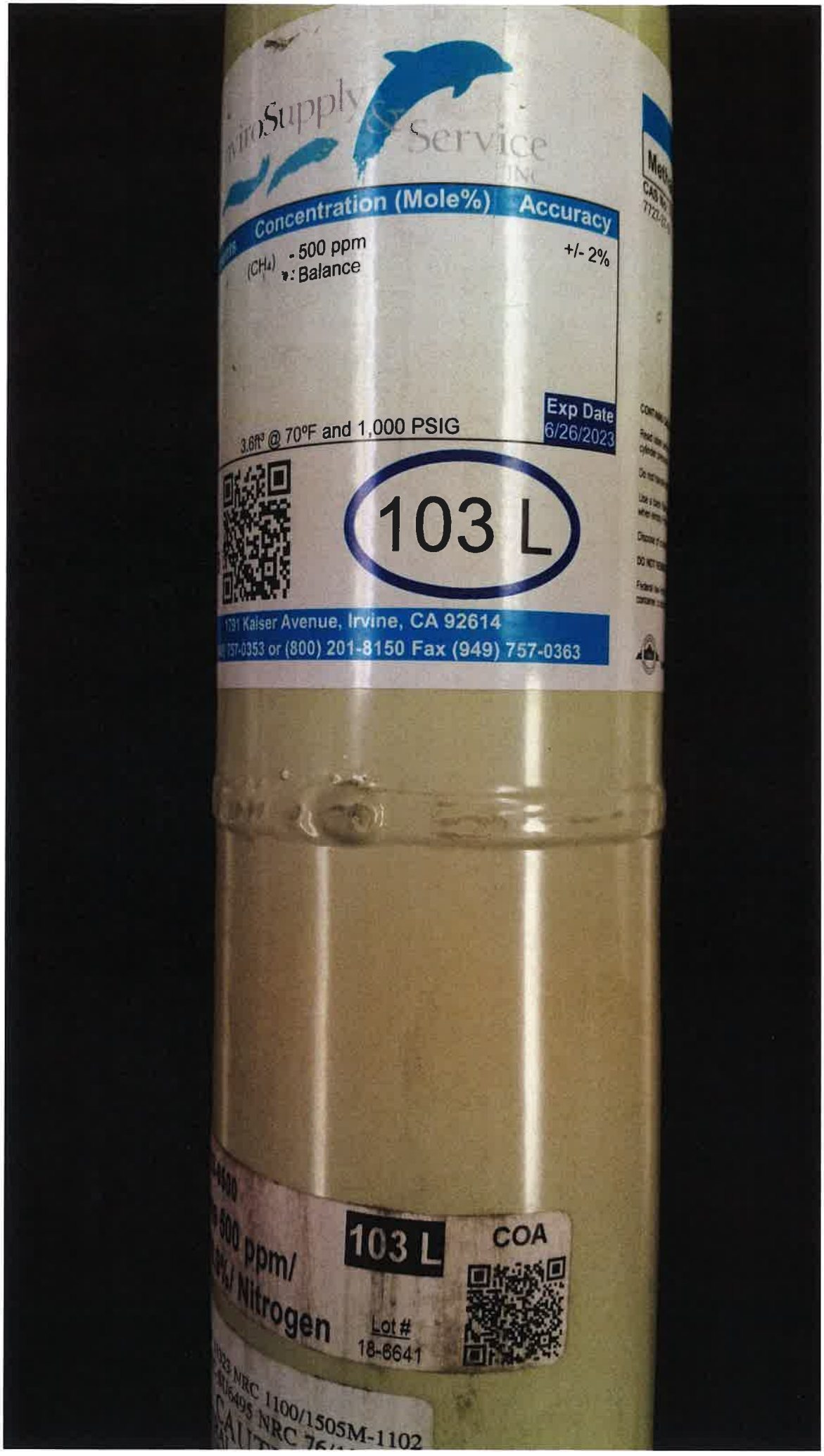
Method of Preparation:

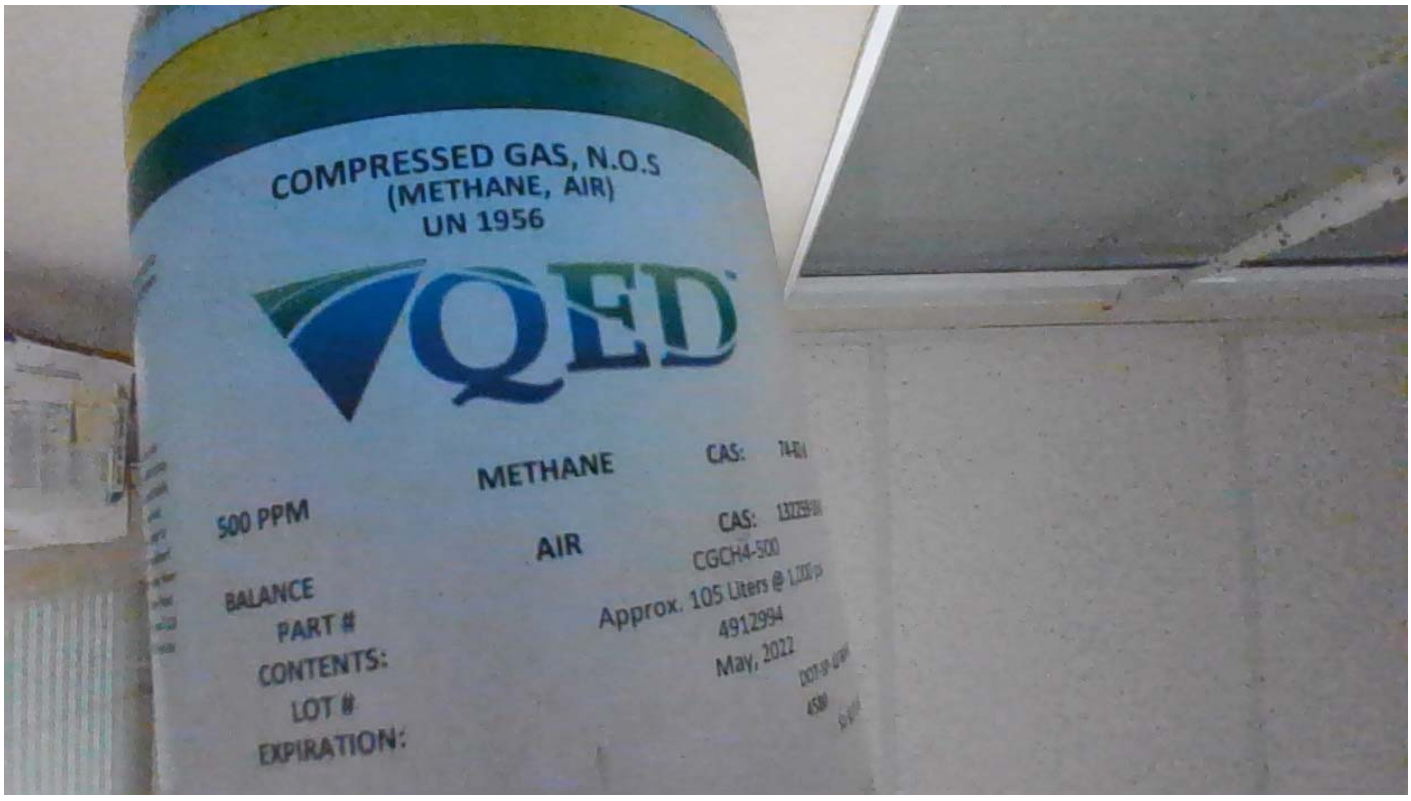
Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Title: Quality Assurance Manager
Certificate Date: 12/18/2018


Concentration (Mole%)
Accuracy
(CH4) - 500 ppm
: Balance
+/- 2%
3.6ft³ @ 70°F and 1,000 PSIG
Exp Date
6/26/2023
103 L
1091 Kaiser Avenue, Irvine, CA 92614
757-0353 or (800) 201-8150 Fax (949) 757-0363
500 ppm/
Nitrogen
103 L
COA
Lot #
18-6641


COMPRESSED GAS, N.O.S
(METHANE, AIR)
UN 1956
QED
METHANE
CAS:
500 PPM
AIR
CAS:
BALANCE
CGCH4-500
PART #
Approx. 105 Liters @
CONTENTS:
4912994
LOT #
May, 2022
EXPIRATION:


EQUIPCO
2100 Meridian Park Boulevard
Concord, CA 94520
TO REORDER CALL 1 (888)-234-5671
AIR, ULTRA ZERO
THC < 0.01 PPM
Analytical Accuracy +/- 2%
103L @ 70F & 1000 PSIG
LOT# 1D003957
P/N: ZER-AIR-103L
EXP. DATE: 10/11/2023

WASTE MANAGEMENT
172 98th Avenue
Oakland, CA 94603
(510) 430-8509

October 7, 2022

Ms. Alisha McCutcheon
Redwood Landfill, Inc.
8590 Redwood Highway
Novato, California 94948

Re: Third Quarter 2022 Surface Emissions and Component Leak Monitoring Report for Redwood Landfill, Inc.

Dear Ms. McCutcheon:

This monitoring report for "**Redwood Landfill, Inc. (RLI)"** contains the results of the Third Quarter 2022 Integrated and Instantaneous Surface Emissions Monitoring (SEM) and Component Leak Monitoring. Initial surface emissions monitoring was performed by Roberts Environmental Services, LLC. (RES). Re-monitoring of surface emissions and site-wide component leak monitoring was conducted by RES and/or Waste Management (WM) personnel.

APPLICABLE REQUIREMENTS

The monitoring discussed in this report was conducted in accordance with the following requirements:

Surface Emission Monitoring (SEM)

- New Source Performance Standard (NSPS), Title 40 of the Code of Federal Regulations (CFR) §60.755 (c) and (d), 40 CFR 60, Appendix A Method 21, promulgated by the United States Environmental Protection Agency (USEPA).

- California Code of Regulations (CCR) Title 17, Subchapter 10, Article 4, Subarticle 6, §95460 to §95476, known as the Assembly Bill 32 (AB32) landfill methane rule (LMR).

- National Emission Standards for Hazardous Air Pollutants (NESHAP): Municipal Solid Waste Landfills, Title 40: Chapter I: Subchapter C: Part 63: Subpart AAAA, §63.1981(h)(5)

- Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 34, Section 303 (Landfill Surface Requirements) and Section 607 (Landfill Surface Inspection procedures).

Component Leak

- Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 34, Section 301 (Landfill Gas Collection and Emission Control System Requirements) and Section 602 (Collection and Control System Leak Inspection procedures).

- California Code of Regulations (CCR) Title 17, Subchapter 10, Article 4, Subarticle 6, §95464, known as the Assembly Bill 32 (AB32) landfill methane rule (LMR).

RLI Plan and Alternative Compliance Measures

An Alternative Compliance Option (ACO) Request was submitted to the California Air Resources Board (CARB) on March 24, 2011. After receipt of comments, this ACO was amended, restated, and submitted to BAAQMD on July 1, 2016. SEM and Component Leak monitoring was conducted per the methods outlined in the July 1, 2016 ACO.

PROCEDURES

General

The surface of the RLI disposal area has been divided into two hundred-eight (208), approximately 50,000 square foot monitoring grids. The entire landfill surface is monitored with the exception of active portions of the Landfill, slope areas, and as requested in the approved ACO, areas containing only asbestos-containing waste, inert waste and/or non-decomposable waste which are excluded for safety as allowed by CCR Title 17 §95466.

Field personnel walked the surface of the landfill following the walking pattern as depicted the 2011 RLI AB-32 SEM Plan, which traverses each monitoring grid. Additionally, in accordance with the provisions of 40 CFR 60.753(d) and 60.755(c)(1-3), the entire perimeter of the landfill surface was monitored. During the event, special attention was given to monitoring unusual cover conditions (stressed vegetation, cracks, seeps, etc.) and any areas with unusual odors.

Instantaneous Surface Emissions Monitoring

The Instantaneous SEM was conducted using a Toxic Vapor Analyzer (TVA) 1000 flame ionization detector (FID), which was calibrated to 500 parts per million by volume (ppm_v) methane, which meets or exceeds all guidelines set forth in the CCR Title 17 §95471(a) and NSPS. The FID was calibrated prior to use in accordance with the United States Environmental Protection Agency (USEPA) Method 21 requirements. The Instantaneous SEM procedures followed the requirements of 40 CFR 60.755 (c) and (d) and CCR Title 17 §95471(c)(2).

RES personnel walked the surface of the landfill on a grid by grid basis with the wand tip held at 2 inches from the landfill surface. While sampling the grid; the technicians also checked any surface impoundments (wells or otherwise) for leaks. Technicians also checked any surface cracks, seeps, or other areas that show evidence of surface emissions (odors or distressed vegetation). Active and sloped areas excluded for safety were documented on field data sheets and maps.

All instantaneous surface monitoring was performed in accordance with the applicable requirements referenced in this report. Any detections of methane above 200 ppm_v (areas of concern) or 500 ppm_v (exceedances) for instantaneous were recorded, flagged, and marked on an SEM Map, which, wherever required, is included in the Appendices of this report. Applicable corrective action and re-monitoring timelines are listed below:

- Corrective actions must be initiated within 5 days of the initial exceedance and re-monitoring shall be conducted within 10 days of the initial exceedance.
    - If the re-monitoring event shows the exceedance is corrected, the location shall be re-monitored within 1 month of the initial exceedance.
    - If the 1-month re-monitoring event shows the location is still corrected, all re-monitoring requirements have been completed.
- If either the first 10-day or 1-month re-monitoring events show a second exceedance, additional corrective actions shall be completed and a second re-monitoring event shall be conducted within 10 days of the second exceedance.
- If the second 10-day re-monitoring event shows the second exceedance is corrected, the location shall be re-monitored within 1 month of the initial exceedance. If the 1-month re-monitoring event shows the area is still corrected, monitoring requirements have been completed.

If any location shows three exceedances, an additional well shall be installed within 120 days of the initial exceedance.

Integrated Surface Emissions Monitoring

The Integrated surface monitoring was conducted using a TVA 1000 calibrated to 25 ppm_v for the integrated monitoring, which meets or exceeds all guidelines set forth in the CCR Title 17 §95471(a). The field technician traversed the grid walking path over a continuous 25-minute period using the TVA 1000 held at 3 inches above the landfill surface. The Integrated monitoring procedures followed the requirements of CCR Title 17 §95471(c)(2).

Grids with results greater than 25 ppm_v were recorded, marked on the SEM map, and flagged for remediation. Any grids with integrated concentrations greater than 25 ppm_v are subject to the following re-monitoring timeline:

- Re-monitoring shall be conducted within 10 days of the initial exceedance.
- If the 10-day re-monitoring event shows the exceedance is corrected, all re-monitoring requirements have been completed.
- If either the first 10-day re-monitoring event shows a second grid exceedance, additional corrective actions shall be completed and a second re-monitoring event shall be conducted within 10 days of the second exceedance.

- If the second 10-day re-monitoring event shows the second exceedance is corrected, all re-monitoring requirements have been completed.

- The second 10-day re-monitoring event shows a third grid exceedance, an additional well shall be installed within 120 days of the third exceedance.

Component Leak Monitoring Procedures

RES personnel monitored the exposed LFG components under positive pressure (pipes, wellheads, valves, blowers, and other mechanical appurtenances) using a TVA 1000 calibrated to 500 ppm_v. All leaks measured one half inch or less from the component exceeding the compliance limit of 500 ppm_v per requirements outlined in pursuant to CARB Title 17 of California Code of Regulations Subchapter 10, Article 4, Subarticle 6, Section 95464(b)(1)(B) and 1,000 ppm_v per requirements outlined in BAAQMD 8-34-303 were recorded. Applicable corrective action and re-monitoring timelines are listed below:

- Leaks between 500 and 999 ppm_v must be corrected and re-monitored within 10 days of the initial exceedance.

- Leaks at or above 1000 ppm_v must be corrected and re-monitored within 7 days of the initial exceedance.

THIRD QUARTER 2022 SEM AND COMPONENT LEAK RESULTS

The following is a summary of the SEM and component leak monitoring results completed for the Third Quarter 2022.

Instantaneous Surface Emissions Monitoring Results

The Instantaneous surface monitoring was performed on July 20, 2022 in accordance with the NSPS, BAAQMD 8-34, and CCR Title 17 §95469, NESHAP Subpart AAAA, and ACO. Results and data from the monitoring are presented in Attachment A.

Initial Monitoring Event Exceedances of 500 ppm_v

There were four (4) exceedances of 500 ppm_v as methane detected on July 20, 2022. Corrective actions to initiate repairs of the exceedances were completed within five days for all locations.

First Ten-Day Re-Monitoring Results

The first 10-day re-monitoring was completed on July 22, 2022. All locations were observed at less than 500 ppm_v as methane.

One-Month Re-Monitoring Results

The 1-month re-monitoring event was completed on August 18, 2022. All locations were observed at less than 500 ppm_v.

Readings between 200 ppm_v and 499 ppm_v (Initial and Re-monitored)

There were no readings between 200 ppm_v and 499 ppm_v as methane detected during the initial monitoring event on July 20, 2022. Pursuant to CCR Title 17 §95471(c), instantaneous surface emissions exceeding 200 ppm_v but below 500 ppm_v are required to be recorded.

Integrated Surface Emissions Monitoring Results

The Integrated surface sampling (ISS) was performed on July 19, 20, and 21, 2022 in accordance with the ACO and requirements outlined in CCR Title 17 §95469.

Initial Monitoring Event Exceedances of 25 ppm_v

There were 0 grids with exceedances of 25 ppm_v as methane detected during the initial monitoring event.

The average methane concentration of each grid was recorded during the monitoring event per applicable requirements. See Attachment B, Integrated SEM 25 ppm_v Exceedances and Monitoring Log, and SEM Map included in Attachment B, for details.

Component Leak Monitoring Results

Component leak monitoring was conducted per the applicable requirements on July 20, 2022. No leaks greater than 500 ppm_v were identified. Please see Attachment C, for details.

WEATHER CONDITIONS

Wind Speed Conductions during the Surface Emission Monitoring Events

Wind speeds during initial monitoring were monitored using a portable weather station. The station has a strip chart that records the wind speed and direction. After completion of monitoring, the strip chart is reviewed by RES office staff to determine the average and maximum wind speeds during the monitoring and the average wind direction during each grid and ensure that the wind speed requirements are met (no gusts greater than 20 mph, average wind speed cannot exceed 10 mph). These values are documented in the field data sheets. The chart data is scanned and included in Attachment D.

Precipitation Requirements

Per the RLI's ACO, the initial monitoring event was carefully scheduled so that it could be conducted in compliance with the precipitation requirements (no precipitation ≥0.01" within 24 hours, ≥0.16" within 48 hours, nor ≥0.25" within 72 hours). Re-monitoring events are required to adhere to strict timelines. Any conflicts with precipitation requirements are discussed in the results section of this document.

EQUIPMENT CALIBRATION

The portable analyzers were calibrated to meet the instrument specifications requirements of U.S. EPA Method 21. The calibration gas used was methane, diluted to a nominal concentration of 25 ppm_v in air for integrated sample analyses and 500 ppm_v in air for instantaneous monitoring to comply with the requirements.

All analyzers were calibrated prior to use with required response time and precision related instrument checks. Calibration records include the following: One time response time test record; One time response factor determination for methane; Calibration Precision test records (test to be performed every 3 months); and Daily Instrument Calibration and Background test records for each gas meter that was used during the quarterly monitoring event. The calibration log records are included in Attachment E.

All monitoring was completed in accordance with the applicable regulatory requirements or approved alternatives. If you have any questions regarding this report, please do not hesitate to contact me at (510) 613-2852.

Thank you,
Waste Management

Michael Chan
Environmental Protection Specialist

Attachment A – Instantaneous Surface Emission Monitoring Event Records

- Monitoring Logs and Exceedances
- Surface Monitoring Weather Data
- SEM Map

Attachment B – Integrated Surface Emission Monitoring Event Records

- Monitoring Logs and Exceedances
- Surface Monitoring Weather Data
- SEM Map

Attachment C – Component Leak Monitoring Event Records

- Component Leak Exceedances and Monitoring Logs

Attachment D – Weather Station Data

- Strip Chart Data

Attachment E – Calibration Records

- Instrument and Gas Calibration Records

Attachment A

Instantaneous Surface Emission Monitoring Event Records

Table A.1
Instantaneous Landfill Surface Emissions Monitoring
Initial Monitoring Event Areas of Concern

2022 QUARTER: 3
PERFORMED BY: RES
LANDFILL NAME: Redwood Landfill, Inc.

Flag Number	Grid Number	Latitude	Longitude	Date of Monitoring	Concentration of Emission (ppm_v)	Comments
O11	103	38.16379	-122.56548	7/20/2022	500	Unmarked Pipe
O12	68	38.16413	-122.56418	7/20/2022	650	Well 141
O13	56	38.16340	-122.56358	7/20/2022	500	Well 122
O14	110	38.16828	-122.56618	7/20/2022	1,567	Well 196
Notes: Please refer to field data sheets for details						

Table A.2
Instantaneous Landfill Surface Emissions Monitoring
Exceedance and Monitoring Logs (NSPS/BAAQMD 8-34)

2022 QUARTER: 3

INITIAL MONITORING PERFORMED BY: RES

FOLLOW-UP MONITORING PERFORMED BY: Ben Tarver/James Dutra

LANDFILL NAME: Redwood Landfill, Inc.

Initial Monitoring Event			Corrective Action		1st 10-day Follow-Up			2nd 10-day Follow-Up			1st 30-day Follow-Up			
Flag Number	Monitoring Date	Reading ppm	Repair Date	Action Taken	Monitoring Date	No Exceed. <500 ppm	Exceed. >500 ppm	Monitoring Date	No Exceed. <500 ppm	Exceed. >500 ppm	Monitoring Date	No Exceed. <500 ppm	Exceed. >500 ppm	Comments
O11	7/20/2022	500	7/22/2022	Compacted dirt	7/22/2022	296		n/a			8/18/2022	101		Unmarked Pipe
O12	7/20/2022	650	7/22/2022	Compacted dirt	7/22/2022	125		n/a			8/18/2022	17		Well 141
O13	7/20/2022	500	7/22/2022	Compacted dirt	7/22/2022	118		n/a			8/18/2022	22		Well 122
O14	7/20/2022	1,567	7/22/2022	Compacted dirt	7/22/2022	66		n/a			8/18/2022	35		Well 196

Table A.3
Instantaneous Landfill Surface Emissions Monitoring
Exceedance and Monitoring Logs (AB-32)

2022 QUARTER: 3

INITIAL MONITORING PERFORMED BY: RES

FOLLOW-UP MONITORING PERFORMED BY: Ben Tarver/James Dutra

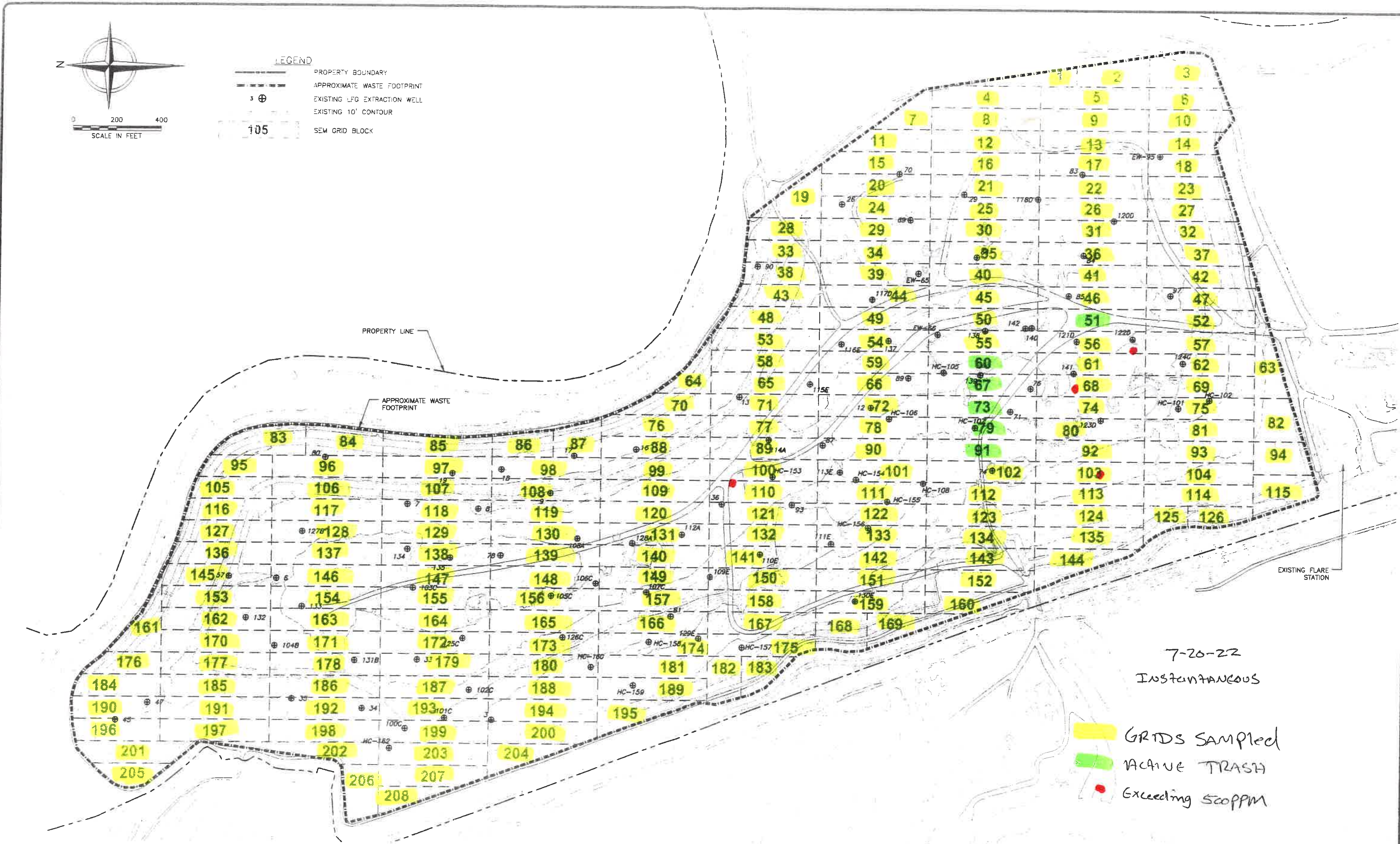
LANDFILL NAME: Redwood Landfill, Inc.

Initial Monitoring Event			1st Re-mon Event - 10 Days			2nd Re-mon Event - 10 Days			
Flag Number	Monitoring Date	Reading ppm	Monitoring Date	No Exced. <500 ppm	Exced. >500 ppm	Monitoring Date	No Exced. <500 ppm	Exced. >500 ppm	**Comments**
O11	7/20/2022	500	7/22/2022	296		n/a			Unmarked Pipe
O12	7/20/2022	650	7/22/2022	125		n/a			Well 141
O13	7/20/2022	500	7/22/2022	118		n/a			Well 122
O14	7/20/2022	1,567	7/22/2022	66		n/a			Well 196

Table A.4
Instantaneous Landfill Surface Emissions Monitoring
Areas of Concern Greater than 200 ppmv

2022 QUARTER: 3
INITIAL MONITORING PERFORMED BY: RES
FOLLOW-UP MONITORING PERFORMED BY:
LANDFILL NAME: Redwood Landfill, Inc.

Initial Monitoring Event			Re-mon Event		Comments
Flag Number	Monitoring Date	Reading ppm	Monitoring Date	Reading ppm	
No 200-499 ppmv locations					



NOTES:
1. TOPOGRAPHIC CONTOURS PREPARED USING PHOTOGRAMMETRIC METHODS BY MILLER CREEK AERIAL MAPPING. DATE OF PHOTOGRAPHY: FEBRUARY 14, 2014
2. LOCATION OF WASTE FOOTPRINT IS APPROXIMATE.
3. SUPPLEMENTAL AS-BUILT WELL LOCATIONS PER FIELD SURVEY PERFORMED BY FC AND ASSOCIATES (DATE OF SURVEY: AUGUST 13, 2013) AND NOTES FROM WASTE MANAGEMENT DATED OCTOBER 2, 2013 AND JUNE 18, 2014

WASTE MANAGEMENT

cornerstone environmental

PREPARED BY CORNERSTONE ENVIRONMENTAL GROUP, LLC

REDWOOD LANDFILL, INC.
MARIN COUNTY, CALIFORNIA

SURFACE EMISSIONS MONITORING
GRID MAP

SHEET NO. 1

N

0 200 400
SCALE IN FEET

LEGEND

PROPERTY BOUNDARY
APPROXIMATE WASTE FOOTPRINT
EXISTING LFG EXTRACTION WELL
EXISTING 10' CONTOUR
SEM GRID BLOCK

PROPERTY LINE

APPROXIMATE WASTE FOOTPRINT

EXISTING FLARE STATION

Perimeter Sweep
3rd QTR 2022
NSPS
upwind
Downwind

NOTES:
1. TOPOGRAPHIC CONTOURS PREPARED USING PHOTOGRAMMETRIC METHODS BY MILLER CREEK AERIAL MAPPING. DATE OF PHOTOGRAPHY: FEBRUARY 14, 2014.
2. LOCATION OF WASTE FOOTPRINT IS APPROXIMATE.
3. SUPPLEMENTAL AS-BUILT WELL LOCATIONS PER FIELD SURVEY PERFORMED BY FD AND ASSOCIATES (DATE OF SURVEY: AUGUST 13, 2013), AND NOTES FROM WASTE MANAGEMENT, DATED OCTOBER 2, 2013 AND JUNE 16, 2014.

WASTE MANAGEMENT

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APR BY
DATE OF ISSUE: 8/24/2014		DRAWN BY: RL DESIGNED BY: VLH		CHECKED BY: MEC APPROVED BY: EVS		

cornerstone environmental

PREPARED BY:
CORNERSTONE ENVIRONMENTAL GROUP, LLC

REDWOOD LANDFILL, INC
MARIN COUNTY, CALIFORNIA

SURFACE EMISSIONS MONITORING
GRID MAP

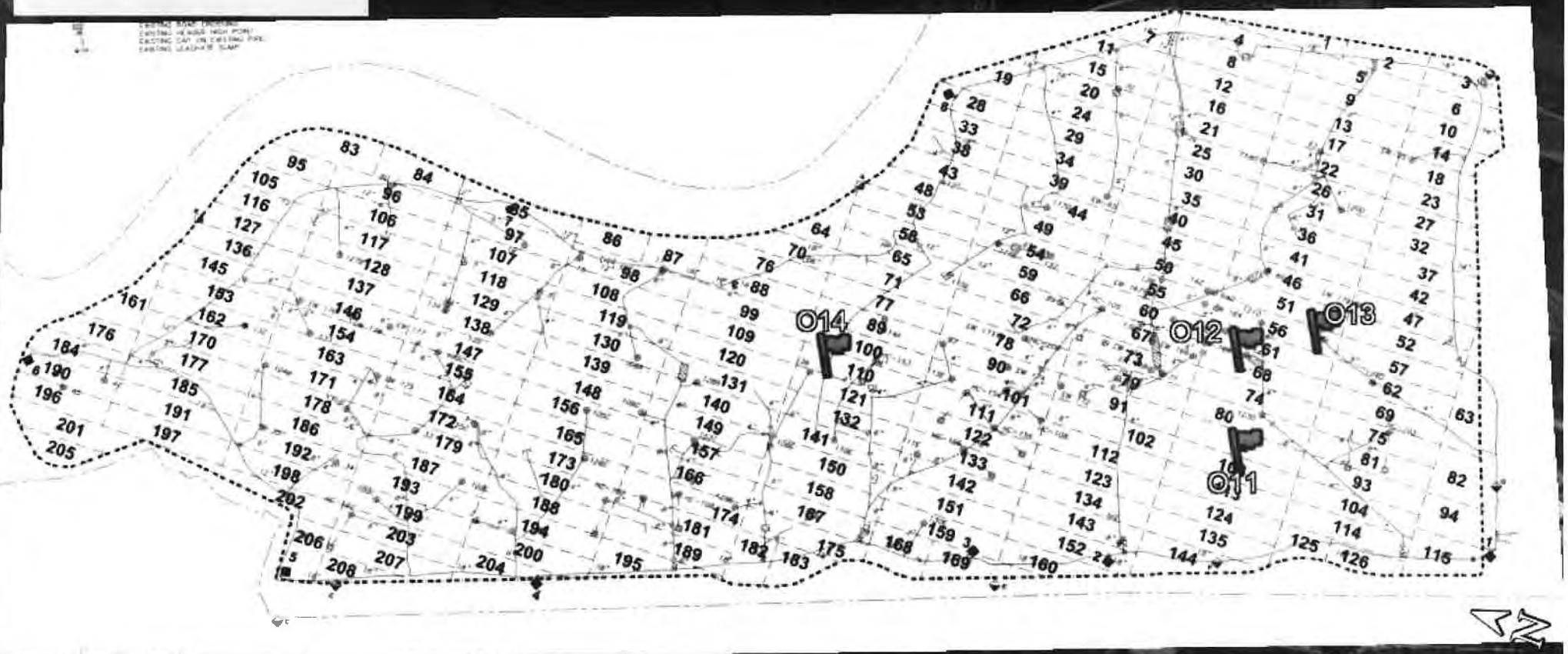
SHEET NO
1
PROJECT NO
140501

Redwood Landfill

3rd Qtr 2022

Legend

500+PPM



Google Earth

Orange Flag Landfill Surface Emissions Monitoring
Exceedances and Monitoring Log

Site: Redwood

Quarter / Year: 3rd / 2022
Technician: MIKE ORUE
Instrument: TVA1000
Calibration Standard: 500 PPM

Page 1 of 1 Pages

Initial Monitoring Event				First Re-Monitoring Event - 10 Days			Second Re-Monitoring Event - 10 Days			30-Day Follow-up Monitoring			Comments
Flag Number	Grid Number	Field Reading (ppm)	Date Monitored	Date Monitored	No Excd. <500 ppm	Excd. >500 ppm	Date Monitored	No Excd. <500 ppm	Excd. >500 ppm	Date Monitored	No Excd. <500 ppm	Excd. >500 ppm	
O-11	113	500	7-20-22										unmarked Pipe
O-12	68	650	↓										well 141
O-13	56	500	↓										well 122
O-14	110	1,567	↓										well 196
O-													
O-													
O-													
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wpt			Redwood 3rd 2022		
ID	lat	lon	time	name	cmt
1	38.16379496	-122.565477	2022-07-20T14:13:01Z	O11	500PPM Unmarked Pipe
2	38.16412898	-122.564177	2022-07-20T14:25:50Z	O12	650PPM Well 141
3	38.16340403	-122.563579	2022-07-20T14:32:38Z	O13	500PPM Well 122
4	38.16827701	-122.566182	2022-07-20T16:02:24Z	O14	1567PPM Well 196

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: M. ORUE, J. RAZO, N. BANKS, D. Anderson, A. Martinez

Cal. Gas Exp. Date: 2/4/23

Date: 7-20-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 56° Precip: 0 Upwind BG: 2.4 Downwind BG: 3.1

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
1	MO	0545	0600	8	0	0	10	
2	NB	0545	0600	6	0	0	10	
3	AM	0545	0600	11	0	0	10	
4	JR	0545	0600	23	0	0	10	
5	DA	0545	0600	10	0	0	10	
6	MO	0600	0615	9	0	0	11	
7	NB	0600	0615	41	0	0	11	
8	AM	0600	0615	23	0	0	11	
9	JR	0600	0615	18	0	0	11	
10	DA	0600	0615	23	0	0	11	
11	MO	0615	0630	12	1	2	14	
12	NB	0615	0630	14	1	2	14	
13	AM	0615	0630	20	1	2	14	
14	JR	0615	0630	16	1	2	14	
15	DA	0615	0630	32	1	2	14	
16	MO	0630	0645	8	0	1	14	
17	NB	0630	0645	12	0	1	14	
18	AM	0630	0645	23	0	1	14	
19	JR	0630	0645	17	0	1	14	
20	DA	0630	0645	6	0	1	14	
21	MO	0645	0700	8	0	1	14	
22	NB	0645	0700	8	0	1	14	
23	AM	0645	0700	12	0	1	14	
24	JR	0645	0700	9	0	1	14	
25	DA	0645	0700	6	0	1	14	
26	MO	0700	0715	11	0	0	13	
27	NB	0700	0715	17	0	0	13	
28	AM	0700	0715	21	0	0	13	
29	JR	0700	0715	8	0	0	13	
30	DA	0700	0715	6	0	0	13	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: M. ORUE, J. RAZO, N. BANKS, D. ANDERSON, A. MARTINEZ

Cal. Gas Exp. Date: 2/4/23

Date: 7-20-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 62° Precip: 0 Upwind BG: 2.4 Downwind BG: 3.1

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
31	MO	0715	0730	10	0	0	14	
32	NB	0715	0730	16	0	0	14	
33	AM	0715	0730	9	0	0	14	
34	JR	0715	0730	12	0	0	14	
35	DA	0715	0730	9	0	0	14	
36	MO	0730	0745	9	0	0	14	
37	NB	0730	0745	8	0	0	14	
38	AM	0730	0745	9	0	0	14	
39	JR	0730	0745	10	0	0	14	
40	DA	0730	0745	6	0	0	14	
41	MO	0745	0800	9	0	0	14	
42	NB	0745	0800	12	0	0	14	
43	AM	0745	0800	20	0	0	14	
44	JR	0745	0800	9	0	0	14	
45	DA	0745	0800	12	0	0	14	
46	MO	0800	0815	25	0	0	12	
47	NB	0800	0815	23	0	0	12	
48	AM	0800	0815	29	0	0	12	
49	JR	0800	0815	19	0	0	12	
50	DA	0800	0815	6	0	0	12	
52	MO	0815	0830	14	0	0	14	
53	NB	0815	0830	42	0	0	14	
54	AM	0815	0830	195	0	0	14	
55	JR	0815	0830	32	0	0	14	
56	DA	0815	0830	500	0	0	14	well 122
57	MO	0830	0845	23	0	0	14	
58	NB	0830	0845	10	0	0	14	
59	AM	0830	0845	31	0	0	14	
61	JR	0830	0845	8	0	0	14	
62	DA	0830	0845	4	0	0	14	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: M. ORTIZ, J. RAZO, N. BANKS, D. ANDERSON, A. MARTINEZ

Cal. Gas Exp. Date: 2/4/23

Date: 7-20-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 68° Precip: 0 Upwind BG: 2.4 Downwind BG: 3.1

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
63	MO	0845	0900	14	0	0	C	
64	NB	0845	0900	37	0	0	C	
65	AM	0845	0900	5	0	0	C	
66	JR	0845	0900	6	0	0	C	
68	DA	0845	0900	650	0	0	C	well 141
69	MO	0900	0915	28	0	0	C	
70	NB	0900	0915	32	0	0	C	
71	AM	0900	0915	25	0	0	C	
72	JR	0900	0915	18	0	0	C	
74	DA	0900	0915	7	0	0	C	
75	MO	0915	0930	6	0	0	2	
76	NB	0915	0930	12	0	0	2	
77	AM	0915	0930	17	0	0	2	
78	JR	0915	0930	15	0	0	2	
80	DA	0915	0930	10	0	0	2	
81	MO	0930	0945	16	0	0	C	
82	NB	0930	0945	15	0	0	C	
83	AM	0930	0945	20	0	0	C	
84	JR	0930	0945	42	0	0	C	
85	DA	0930	0945	24	0	0	C	
86	MO	0945	1000	20	0	0	16	
87	NB	0945	1000	17	0	0	16	
88	AM	0945	1000	19	0	0	16	
89	JR	0945	1000	25	0	0	16	
90	DA	0945	1000	23	0	0	16	
92	MO	1000	1015	28	0	0	16	
93	NB	1000	1015	17	0	0	16	
94	AM	1000	1015	12	0	0	16	
95	JR	1000	1015	32	0	0	16	
96	DA	1000	1015	28	0	0	16	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: M. ORUE, J. RAZO, N. BANKS, D. ANDERSON, A. MARTINEZ

Cal. Gas Exp. Date: 2/4/23

Date: 7-20-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 70° Precip: 0 Upwind BG: 2.4 Downwind BG: 3.1

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
97	MO	1015	1030	46	0	1	16	
98	NB	1015	1030	32	0	1	16	
99	AM	1015	1030	24	0	1	16	
100	JR	1015	1030	30	0	1	16	
101	DA	1015	1030	15	0	1	16	
102	MO	1030	1045	18	0	1	16	
103	NB	1030	1045	15	0	1	16	
104	AM	1030	1045	12	0	1	16	
105	JR	1030	1045	12	0	1	16	
106	DA	1030	1045	8	0	1	16	
107	MO	1045	1100	6	0	0	16	
108	NB	1045	1100	6	0	0	16	
109	AM	1045	1100	5	0	0	16	
110	JR	1045	1100	1,567	0	0	16	well 196
111	DA	1045	1100	150	0	0	16	
112	MO	1100	1115	41	0	1	13	
113	NB	1100	1115	500	0	1	13	unmarked pipe
114	AM	1100	1115	13	0	1	13	
115	JR	1100	1115	15	0	1	13	
116	DA	1100	1115	32	0	1	13	
117	MO	1115	1130	14	0	1	16	
118	NB	1115	1130	28	0	1	16	
119	AM	1115	1130	34	0	1	16	
120	JR	1115	1130	8	0	1	16	
121	DA	1115	1130	6	0	1	16	
122	MO	1130	1145	8	1	1	16	
123	NB	1130	1145	10	1	1	16	
124	AM	1130	1145	6	1	1	16	
125	JR	1130	1145	6	1	1	16	
126	DA	1130	1145	8	1	1	16	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: M. ORUE, J. RAZO, N. BANKS, D. ANDERSON, A. MARTINEZ

Cal. Gas Exp. Date: 2/4/23

Date: 7-20-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 75° Precip: 0 Upwind BG: 2.4 Downwind BG: 3.1

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
127	MO	1145	1200	13	0	1	2	
128	NB	1145	1200	10	0	1	2	
129	AM	1145	1200	10	0	1	2	
130	JR	1145	1200	15	0	1	2	
131	DA	1145	1200	8	0	1	2	
132	MO	1230	1245	20	1	3	2	
133	NB	1230	1245	17	1	3	2	
134	AM	1230	1245	172	1	3	2	
135	JR	1230	1245	39	1	3	2	
136	DA	1230	1245	38	1	3	2	
137	MO	1245	1300	6	1	2	2	
138	NB	1245	1300	22	1	2	2	
139	AM	1245	1300	8	1	2	2	
140	JR	1245	1300	9	1	2	2	
141	DA	1245	1300	39	1	2	2	
142	MO	1300	1315	25	1	2	2	
143	NB	1300	1315	21	1	2	2	
144	AM	1300	1315	11	1	2	2	
145	JR	1300	1315	16	1	2	2	
146	DA	1300	1315	22	1	2	2	
147	MO	1315	1330	33	0	1	6	
148	NB	1315	1330	15	0	1	6	
149	AM	1315	1330	12	0	1	6	
150	JR	1315	1330	28	0	1	6	
151	DA	1315	1330	23	0	1	6	
152	MO	1330	1345	25	1	2	6	
153	NB	1330	1345	9	1	2	6	
154	AM	1330	1345	22	1	2	6	
155	JR	1330	1345	9	1	2	6	
156	DA	1330	1345	5	1	2	6	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: M. ORUE, J. RAZO, N. BANKS, D. ANDERSON, A. MARTINEZ

Cal. Gas Exp. Date: 2/4/23

Date: 7-20-22 Instrument Used: TVA-1000 Grid Spacing: 25'

Temperature: 76° Precip: 0 Upwind BG: 2.4 Downwind BG: 3.1

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
157	MO	1345	1400	23	1	2	6	
158	NB	1345	1400	14	1	2	6	
159	AM	1345	1400	5	1	2	6	
160	JR	1345	1400	16	1	2	6	
161	DA	1345	1400	51	1	2	6	
162	MO	1400	1415	4	1	2	6	
163	NB	1400	1415	28	1	2	6	
164	AM	1400	1415	7	1	2	6	
165	JR	1400	1415	9	1	2	6	
166	DA	1400	1415	48	1	2	6	
167	MO	1415	1430	19	2	3	6	
168	NB	1415	1430	17	2	3	6	
169	AM	1415	1430	16	2	3	6	
170	JR	1415	1430	8	2	3	6	
171	DA	1415	1430	12	2	3	6	
172	MO	1430	1445	23	1	1	6	
173	NB	1430	1445	28	1	1	6	
174	AM	1430	1445	42	1	1	6	
175	JR	1430	1445	19	1	1	6	
176	DA	1430	1445	14	1	1	6	
177	MO	1445	1500	23	0	0	7	
178	NB	1445	1500	20	0	0	7	
179	AM	1445	1500	18	0	0	7	
180	JR	1445	1500	11	0	0	7	
181	DA	1445	1500	9	0	0	7	
182	MO	1500	1515	10	0	0	7	
183	NB	1500	1515	6	0	0	7	
184	AM	1500	1515	6	0	0	7	
185	JR	1500	1515	8	0	0	7	
186	DA	1500	1515	5	0	0	7	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: M. ORUE, J. RAZO, N. BANKS, D. Anderson, A. MARTINEZ

Cal. Gas Exp. Date: 2/4/23

Date: 7-20-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 79° Precip: 0 Upwind BG: 2.4 Downwind BG: 3.1

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
187	MO	1515	1530	9	0	0	14	
188	NB	1515	1530	18	0	0	14	
189	AM	1515	1530	33	0	0	14	
190	JR	1515	1530	24	0	0	14	
191	DA	1515	1530	20	0	0	14	
192	MO	1530	1545	11	0	0	15	
193	NB	1530	1545	28	0	0	15	
194	AM	1530	1545	29	0	0	15	
195	JR	1530	1545	25	0	0	15	
196	DA	1530	1545	16	0	0	15	
197	MO	1545	1600	51	0	0	15	
198	NB	1545	1600	12	0	0	15	
199	AM	1545	1600	8	0	0	15	
200	JR	1545	1600	38	0	0	15	
201	DA	1545	1600	23	0	0	15	
202	MO	1600	1615	27	1	3	15	
203	NB	1600	1615	34	0	3	15	
204	AM	1600	1615	26	0	3	15	
205	JR	1600	1615	19	0	3	15	
206	DA	1600	1615	19	0	0	15	
207	MO	1615	1630	10	0	0	15	
208	NB	1615	1630	17	0	0	15	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INSTANTANEOUS LANDFILL SURFACE MONITORING

Personnel: MIORUE _____ _____ _____

_____ _____ _____

_____ _____ Cal. Gas Exp. Date: _____

Date: 7-20-22 Instrument Used: _____ Grid Spacing: _____

Temperature: _____ Precip: _____ Upwind BG: _____ Downwind BG: _____

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
51								ACTIVE TRASH
60								
67								
73								
79								
91								

Attach Calibration Sheet
Attach site map showing grid ID

Page 1 of 1

REDWOOD LANDFILL - MONITORING POINTS FOR SEM - UPDATED ON 11-14-2021

No.	Point ID	DESCRIPTION	POINT TYPE	LATITUDE	LONGITUDE	SEM GRID BLOCK NO.	DATE	READING (PPM)	NOTES
1		P-2	Other (See Comments) (OT)	38.16264033	-122.5593088	3	7-20-22	11	
2		P-4	Other (See Comments) (OT)	38.16458567	-122.5597367	4		23	
3		P-5	Other (See Comments) (OT)	38.1659435	-122.559745	7		25	
4		P-6	Other (See Comments) (OT)	38.16590933	-122.5597347	7		41	
5		P-7	Other (See Comments) (OT)	38.16601117	-122.5596422	7		30	
6		P-8	Other (See Comments) (OT)	38.16601483	-122.5596808	7		21	
7		P-1	Other (See Comments) (OT)	38.16237717	-122.559976	10		23	
8		P-9	Other (See Comments) (OT)	38.16708483	-122.560793	15		32	
9	59567	LC-234	LFG Collector - Standard	38.1654038	-122.5607993	16		8	
10	877	83	LFG Collector - Standard	38.1640668	-122.5610008	17		7	
11	889	95	LFG Collector - Standard	38.1630983	-122.5606295	17		12	
12	59568	LC-235	LFG Collector - Standard	38.1659611	-122.5611811	20		4	
13	62176	LC-252	LFG Collector - Standard	38.164918	-122.5618217	25		6	
14	59569	LC-236	LFG Collector - Standard	38.1666116	-122.5618882	29		4	
15	59574	LC-241	LFG Collector - Standard	38.1659295	-122.5619612	29		6	
16	62177	LC-253	LFG Collector - Standard	38.1648188	-122.5617898	30		6	
17		P-10	Other (See Comments) (OT)	38.16413217	-122.5619648	31		10	
18	62178	LC-254	LFG Collector - Standard	38.1649718	-122.5622977	35		5	
19		P-14	Other (See Comments) (OT)	38.16814117	-122.562457	38		9	
20	859	65	LFG Collector - Standard	38.1660924	-122.5624656	39		5	
21	59575	LC-242	LFG Collector - Standard	38.1657546	-122.5624878	39		4	
22		P-16	Other (See Comments) (OT)	38.1681825	-122.5629578	43		6	
23		P-17	Other (See Comments) (OT)	38.1682025	-122.5629357	43		20	
24	36862	117 D	LFG Collector - Standard	38.1667142	-122.5629642	44		4	
25	49444	LC-179	LFG Collector - Standard	38.1714265	-122.5672832	46		18	
26	54623	LC-217	LFG Collector - Standard	38.1642982	-122.5627832	46		25	
27	56613	LC-227	LFG Collector - Standard	38.1625588	-122.5627977	47		23	
28		P-47	Other (See Comments) (OT)	38.1684925	-122.5632173	48		29	
29	41945	140	LFG Collector - Standard	38.1646417	-122.5634152	50		6	
30	44328	142	LFG Collector - Standard	38.1647059	-122.5633469	50		6	
31	62179	LC-255	LFG Collector - Standard	38.1654921	-122.563161	50		5	
32	62180	LC-256	LFG Collector - Standard	38.1651125	-122.563103	50		5	
33		P-19	Other (See Comments) (OT)	38.1686105	-122.5637285	53		42	
34	36861	116 E	LFG Collector - Standard	38.1670675	-122.5636515	54		195	
35	41725	137	LFG Collector - Standard	38.1664956	-122.5635508	54		5	
36	59570	LC-237	LFG Collector - Standard	38.1665481	-122.5637343	54		5	
37	59571	LC-238	LFG Collector - Standard	38.1660756	-122.5635479	54		50	
38		P-11	Other (See Comments) (OT)	38.16337667	-122.5635122	56		15	
39	59572	LC-239	LFG Collector - Standard	38.1670255	-122.5639206	59		5	
40	41996	141	LFG Collector - Standard	38.1641195	-122.5641272	60		650	

REDWOOD LANDFILL - MONITORING POINTS FOR SEM - UPDATED ON 11-14-2021

No.	Point ID	DESCRIPTION	POINT TYPE	LATITUDE	LONGITUDE	SEM GRID BLOCK NO.	DATE	READING (PPM)	NOTES
41	62170	LC-246	LFG Collector - Standard	38.1646082	-122.5640043	60	7-20-22	29	
42	36869	124 G	LFG Collector - Standard	38.1627022	-122.5638785	62		4	
43	56162	220	LFG Collector - Standard	38.1613197	-122.5642922	63		14	
44		P-21	Other (See Comments) (OT)	38.16887917	-122.5642652	64		37	
45		P-22	Other (See Comments) (OT)	38.16887883	-122.5642492	64		14	
46		P-23	Other (See Comments) (OT)	38.1688705	-122.5642428	64		22	
47		P-82	Other (See Comments) (OT)	38.1688325	-122.5641177	64		33	
48		P-83	Other (See Comments) (OT)	38.16892133	-122.5643035	64		8	
49		P-84	Other (See Comments) (OT)	38.16910133	-122.564327	64		16	
50		P-85	Other (See Comments) (OT)	38.16914767	-122.5644217	64		9	
51	36860	115 E	LFG Collector - Standard	38.1674718	-122.564332	65		5	
52	59573	LC-240	LFG Collector - Standard	38.1670241	-122.5644225	66		6	
53	59576	LC-243	LFG Collector - Standard	38.1634542	-122.5641759	68		7	
54	59577	LC-244	LFG Collector - Standard	38.1633506	-122.5645797	74		7	
55	44039	HC-101	LFG Collector - Standard	38.1628293	-122.5646008	75		6	
56	44040	HC-102	LFG Collector - Standard	38.1623785	-122.5644932	75		3	
57	56619	LC-230	LFG Collector - Standard	38.1660713	-122.5650072	78		15	
58	56624	LC-233	LFG Collector - Standard	38.1668967	-122.5649932	78		5	
59	59578	LC-245	LFG Collector - Standard	38.1634761	-122.5650176	80		10	
60		P-86	Other (See Comments) (OT)	38.16314633	-122.5649933	80		10	
61		P-48	Other (See Comments) (OT)	38.17419167	-122.5651825	83		20	
62		P-43	Other (See Comments) (OT)	38.1730765	-122.5652423	84		42	
63		P-36	Other (See Comments) (OT)	38.17149783	-122.5653047	85		11	
64		P-38	Other (See Comments) (OT)	38.17183867	-122.5653647	85		24	
65	811	17	LFG Collector - Standard	38.1703617	-122.5655321	87		17	
66	810	16	LFG Collector - Standard	38.1696262	-122.5654417	88		19	
67	56620	LC-231	LFG Collector - Standard	38.1686286	-122.565354	88		4	
68	36859	114 A	LFG Collector - Standard	38.1679373	-122.5652196	89		25	
69	54625	LC-219	LFG Collector - Standard	38.1679709	-122.5652163	89		5	
70	54621	LC-215	LFG Collector - Standard	38.1650547	-122.5653325	91		28	
71	43673	HC-107	LFG Collector - Standard	38.1656909	-122.5652975	91		6	
72		P-49	Other (See Comments) (OT)	38.17493067	-122.5655627	95		32	
73	812	18	LFG Collector - Standard	38.1713486	-122.5657009	97		16	
74	813	19	LFG Collector - Standard	38.1720321	-122.5657371	97		37	
75	54620	LC-214	LFG Collector - Standard	38.1644529	-122.5654859	102		18	
76	56608	LC-222	LFG Collector - Standard	38.1654792	-122.5656981	102		5	
77	54618	LC-212	LFG Collector - Standard	38.1639036	-122.5656472	103		15	
78		P-50	Other (See Comments) (OT)	38.17512867	-122.5660458	105		12	
79	56621	LC-232	LFG Collector - Standard	38.1697835	-122.5661705	109		5	
80	54599	LC-196	LFG Collector - Standard	38.1682071	-122.5661163	110		1,567	

REDWOOD LANDFILL - MONITORING POINTS FOR SEM - UPDATED ON 11-14-2021

No.	Point ID	DESCRIPTION	POINT TYPE	LATITUDE	LONGITUDE	SEM GRID BLOCK NO.	DATE	READING (PPM)	NOTES
81	56618	LC-229	LFG Collector - Standard	38.1672291	-122.5664904	110	7-20-22	6	
82	45852	HC-153	LFG Collector - Standard	38.1679467	-122.5661684	110		3	
83	54603	LC-200	LFG Collector - Standard	38.167125	-122.5662454	111		150	
84	54605	LC-201	LFG Collector - Standard	38.166682	-122.5660752	111		148	
85	56609	LC-223	LFG Collector - Standard	38.1658602	-122.5660864	111		4	
86	56610	LC-224	LFG Collector - Standard	38.1662079	-122.5659064	111		5	
87	56612	LC-226	LFG Collector - Standard	38.1641725	-122.5658872	113		7	
88	52613	LC-183	LFG Collector - Standard	38.1741572	-122.5665373	116		16	
89		P-51	Other (See Comments) (OT)	38.17522917	-122.5664445	116		32	
90	52614	LC-184	LFG Collector - Standard	38.1729705	-122.5670855	117		14	
91	802	8	LFG Collector - Standard	38.1716005	-122.566374	118		28	
92	54598	LC-195	LFG Collector - Standard	38.1683749	-122.5665931	121		4	
93	54602	LC-199	LFG Collector - Standard	38.1674912	-122.5663974	121		3	
94	56611	LC-225	LFG Collector - Standard	38.1669138	-122.566333	122		6	
95		P-52	Other (See Comments) (OT)	38.1753825	-122.5669377	127		13	
96	36872	127 B	LFG Collector - Standard	38.1738351	-122.5667563	128		10	
97	36873	128 A	LFG Collector - Standard	38.1698037	-122.5673679	131		6	
98	54597	LC-194	LFG Collector - Standard	38.1689615	-122.5665835	131		8	
99	54601	LC-198	LFG Collector - Standard	38.1677646	-122.566832	132		20	
100	45855	HC-156	LFG Collector - Standard	38.1666548	-122.5666904	133		6	
101		P-13	Other (See Comments) (OT)	38.16627267	-122.5667888	133		17	
102	62171	LC-247	LFG Collector - Standard	38.1650576	-122.5667205	134		172	
103	62172	LC-248	LFG Collector - Standard	38.1656523	-122.5668544	134		4	
104		P-53	Other (See Comments) (OT)	38.175473	-122.567267	136		38	
105	62175	LC-251	LFG Collector - Standard	38.1736281	-122.5672672	137		6	
106	41722	134	LFG Collector - Standard	38.1725194	-122.5670213	138		8	
107	41723	135	LFG Collector - Standard	38.1721529	-122.5672934	138		22	
108	56607	LC-221	LFG Collector - Standard	38.1681175	-122.5672286	141		3	
109	56617	LC-228	LFG Collector - Standard	38.1677564	-122.5670458	141		4	
110		P-12	Other (See Comments) (OT)	38.16712983	-122.5670528	141		39	
111	49441	LC-176	LFG Collector - Standard	38.1740513	-122.5675294	145		16	
112		P-55	Other (See Comments) (OT)	38.17551583	-122.5676485	145		11	
113	36848	103 C	LFG Collector - Standard	38.172415	-122.5677142	147		9	
114	52620	LC-190	LFG Collector - Standard	38.1634359	-122.5634027	147		33	
115	36851	106 C	LFG Collector - Standard	38.1700882	-122.5675715	148		15	
116	54607	LC-202	LFG Collector - Standard	38.1683618	-122.5672804	150		28	
117		P-54	Other (See Comments) (OT)	38.17572183	-122.5679133	153		9	
118	62174	LC-250	LFG Collector - Standard	38.1738242	-122.5678612	154		22	
119	36850	105 C	LFG Collector - Standard	38.1706173	-122.5677909	156		5	
120	36852	107 C	LFG Collector - Standard	38.1694971	-122.5676143	157		13	

REDWOOD LANDFILL - MONITORING POINTS FOR SEM - UPDATED ON 11-14-2021

No.	Point ID	DESCRIPTION	POINT TYPE	LATITUDE	LONGITUDE	SEM GRID BLOCK NO.	DATE	READING (PPM)	NOTES
121	54609	LC-203	LFG Collector - Standard	38.1687352	-122.5676688	157	7-20-22	21	
122	54610	LC-204	LFG Collector - Standard	38.1690544	-122.5678759	157		10	
123	36875	130 E	LFG Collector - Standard	38.1667905	-122.5677676	159		5	
124		P-56	Other (See Comments) (OT)	38.17588233	-122.5682602	161		51	
125	41720	132	LFG Collector - Standard	38.1719093	-122.5679846	162		4	
126	62173	LC-249	LFG Collector - Standard	38.1729121	-122.5680262	163		28	
127	52616	LC-186	LFG Collector - Standard	38.1722291	-122.5686197	164		3	
128	54615	LC-209	LFG Collector - Standard	38.1700423	-122.5682426	165		9	
129	54611	LC-205	LFG Collector - Standard	38.1697844	-122.5682198	166		48	
130	54616	LC-210	LFG Collector - Standard	38.1694802	-122.5681831	166		37	
131	52618	LC-188	LFG Collector - Standard	38.171603	-122.5680363	172		23	
132	36871	126 C	LFG Collector - Standard	38.1705307	-122.5683679	174		12	
133	36874	129 E	LFG Collector - Standard	38.1688503	-122.5683779	174		3	
134	54612	LC-206	LFG Collector - Standard	38.1703914	-122.5684577	174		42	
135		P-61	Other (See Comments) (OT)	38.17628833	-122.5690028	176		14	
136	829	35	LFG Collector - Standard	38.1739165	-122.5693927	186		5	
137	36847	102 C	LFG Collector - Standard	38.1716815	-122.5692653	187		9	
138		P-81	Other (See Comments) (OT)	38.16884867	-122.569311	189		33	
139	839	45	LFG Collector - Standard	38.1760433	-122.5697611	190		17	
140	841	47	LFG Collector - Standard	38.1757422	-122.5694936	190		24	
141		P-74	Other (See Comments) (OT)	38.17652617	-122.5696552	190		9	
142	828	34	LFG Collector - Standard	38.1730762	-122.5695551	192		11	
143	797	3	LFG Collector - Standard	38.1713895	-122.569684	193		18	
144		P-76	Other (See Comments) (OT)	38.17518783	-122.570047	197		20	
145		P-77	Other (See Comments) (OT)	38.17460717	-122.5700413	197		16	
146		P-78	Other (See Comments) (OT)	38.17432767	-122.5702018	197		51	
147	36845	100 C	LFG Collector - Standard	38.1724647	-122.5698034	199		8	
148		P-75	Other (See Comments) (OT)	38.17632433	-122.5704643	200		38	
149		P-79	Other (See Comments) (OT)	38.17342533	-122.5702742	202		27	
151		P-44	Other (See Comments) (OT)					20	
153		P-73	Other (See Comments) (OT)					12	

Redwood Landfill
Penetrations Workbook

Well	GR.O	PPM	DATE							
266	73		7-20-22							Active TRASH.
267	79									
268	79									
269	79									
270	67-73									
265	67									
259	195	9								Not on Map of Log
258	184	3								
262	193	23								
261	180	11								
274	186	5								
264	156	4								
257	200	3								Not on Map
272	50	5								
271	26	6								
273	65	6								
191	56	10								
122	56	500								

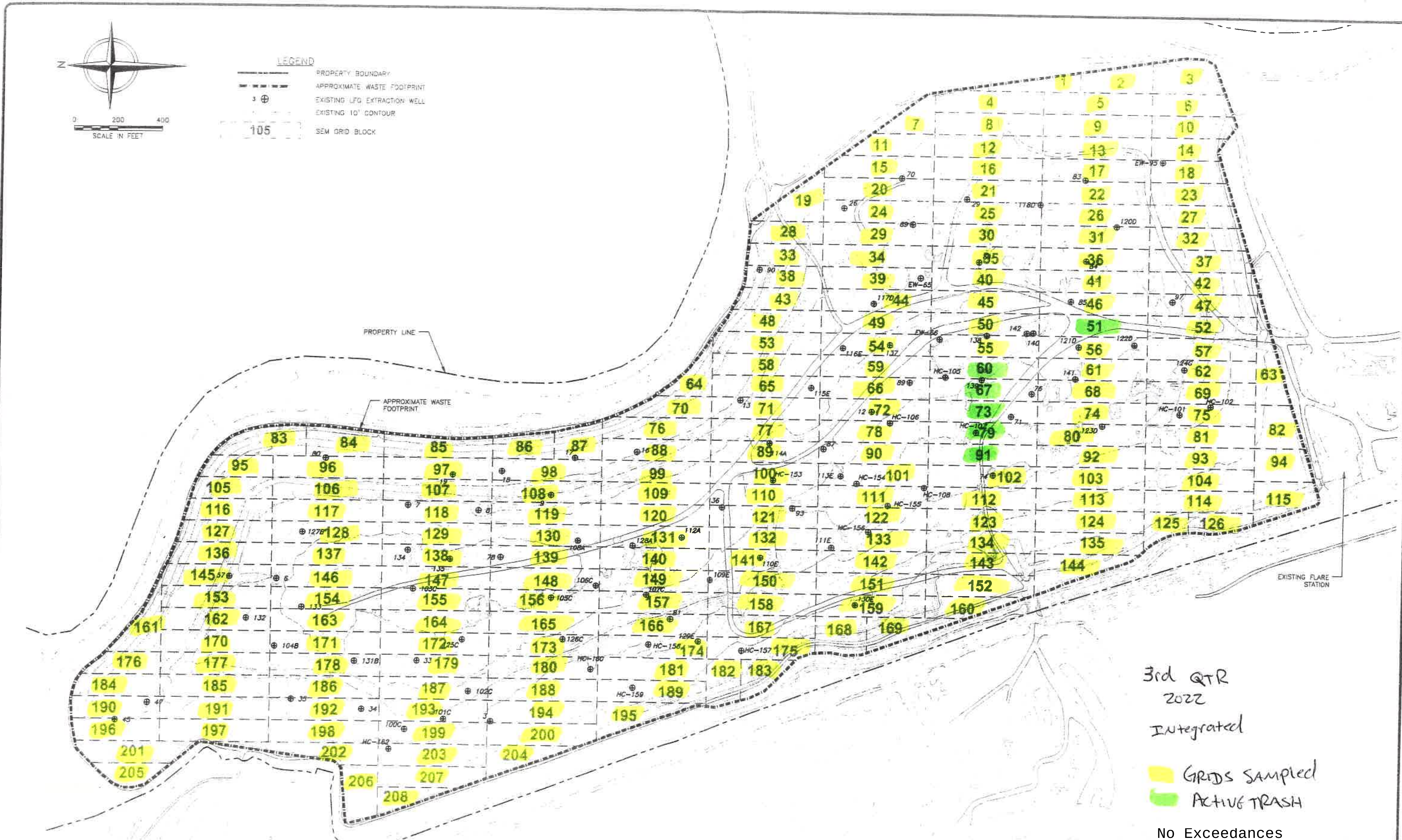
Attachment B

Integrated Surface Emission Monitoring Event Records

Table B.1
Integrated Landfill Surface Monitoring
Exceedances and Monitoring Log

2022 QUARTER: 3
INITIAL MONITORING PERFORMED BY: RES
FOLLOW-UP MONITORING PERFORMED BY:
LANDFILL NAME: Redwood Landfill, Inc.

Initial Monitoring Event			1st Re-mon Event - 10 Days			2nd Re-mon Event - 10 Days			
Exceedance	Monitoring	Reading	Monitoring	No Exced.	No Exced.	Monitoring	No Exced.	No Exced.	
Grid ID No.	Date	ppm	Date	<25 ppm	>25 ppm	Date	<25 ppm	>25 ppm	**Comments**
No Exceedances									



NOTES:

1. TOPOGRAPHIC CONTOURS PREPARED USING PHOTOGRAMMETRIC METHODS BY MILLER CREEK AERIAL MAPPING. DATE OF PHOTOGRAPHY: FEBRUARY 14, 2014
2. LOCATION OF WASTE FOOTPRINT IS APPROXIMATE
3. SUPPLEMENTAL AS-BUILT WELL LOCATIONS PER FIELD SURVEY PERFORMED BY F3 AND ASSOCIATES (DATE OF SURVEY: AUGUST 11, 2013) AND NOTES FROM WASTE MANAGEMENT DATED OCTOBER 2, 2013 AND JUNE 19, 2014

WASTE MANAGEMENT

REV	DATE	DESCRIPTION	DWN BY	DES BY	CHK BY	APP BY

DATE OF ISSUE: 6/24/2014
DRAWN BY: RL
DESIGNED BY: MLH
CHECKED BY: MED
APPROVED BY: PJS

cornerstone environmental

PREPARED BY
CORNERSTONE ENVIRONMENTAL GROUP, LLC

REDWOOD LANDFILL, INC.
MARIN COUNTY, CALIFORNIA

SURFACE EMISSIONS MONITORING
GRID MAP

SHEET NO 1

PROJECT NO 140521

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: M. Orus, J. Razo, N. Banks, D. Anderson, A. Martinez

Cal. Gas Exp. Date: 6-9-23

Date: 7-19-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 73° Precip: 0 Upwind BG: 2.1 Downwind BG: 2.9

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
1	MO	1230	1255	2.57	1	2	6	
2	NB	1230	1255	4.94	1	2	6	
3	AM	1230	1255	1.97	1	2	6	
4	JR	1230	1255	3.13	1	2	6	
5	DA	1230	1255	3.77	1	2	6	
6	MO	1255	1320	3.34	1	2	6	
7	NB	1255	1320	4.91	1	2	6	
8	AM	1255	1320	5.98	1	2	6	
9	JR	1255	1320	4.63	1	2	6	
10	DA	1255	1320	4.06	1	2	6	
11	MO	1320	1345	3.49	2	4	6	
12	NB	1320	1345	5.42	2	4	6	
13	AM	1320	1345	2.14	2	4	6	
14	JR	1320	1345	2.45	2	4	6	
15	DA	1320	1345	2.44	2	4	6	
16	MO	1345	1410	3.58	0	1	16	
17	NB	1345	1410	2.92	0	1	16	
18	AM	1345	1410	4.82	0	1	16	
19	JR	1345	1410	2.61	0	1	16	
20	DA	1345	1410	3.17	0	1	16	
21	MO	1410	1435	2.49	0	0	1	
22	NB	1410	1435	3.67	0	0	1	
23	AM	1410	1435	4.85	0	0	1	
24	JR	1410	1435	2.79	0	0	1	
25	DA	1410	1435	3.79	0	0	1	
26	MO	1435	1500	2.37	0	0	14	
27	NB	1435	1500	2.81	0	0	14	
28	AM	1435	1500	2.70	0	0	14	
29	JR	1435	1500	5.52	0	0	14	
30	DA	1435	1500	3.95	0	0	14	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: M. ORO, J. RAZO
N. Banks, D. Anderson
A. Martinez
Cal. Gas Exp. Date: 6-9-22

Date: 7-19-22 Instrument Used: TVA100C Grid Spacing: 25'

Temperature: 75° Precip: 0 Upwind BG: 2.1 Downwind BG: 2.9

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
31	MO	1500	1525	3.17	0	0	13	
32	NB	1500	1525	5.12	0	0	13	
33	AM	1500	1525	3.84	0	0	13	
34	JR	1500	1525	4.66	0	0	13	
35	DA	1500	1525	2.89	0	0	13	
36	MO	1525	1550	2.55	3	5	13	
37	NB	1525	1550	5.27	3	5	13	
38	AM	1525	1550	3.64	3	5	13	
39	JR	1525	1550	2.60	3	5	13	
40	DA	1525	1550	5.79	3	5	13	
41	MO	1550	1615	4.13	2	4	15	
42	NB	1550	1615	2.11	2	4	15	
43	AM	1550	1615	4.73	2	4	15	
44	JR	1550	1615	4.54	2	4	15	
45	DA	1550	1615	4.69	2	4	15	
46	MO	1615	1640	2.24	1	2	14	
47	NB	1615	1640	2.18	1	2	14	
48	AM	1615	1640	4.63	1	2	14	
49	JR	1615	1640	1.96	1	2	14	
50	DA	1615	1640	2.41	1	2	14	
62	MO	1640	1705	2.73	1	2	15	
52	NB	1640	1705	3.99	1	2	15	
53	AM	1640	1705	4.38	1	2	15	
54	JR	1640	1705	1.94	1	2	15	
55	DA	1640	1705	2.50	1	2	15	
56	MO	1705	1730	3.72	1	2	15	
57	NB	1705	1730	2.75	1	2	15	
58	AM	1705	1730	5.82	1	2	15	
59	JR	1705	1730	5.12	1	2	15	
61	DA	1705	1730	5.37	1	2	15	

Attach Calibration Sheet
Attach site map showing grid ID

Page 2 of 2

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: MORVE _____ _____ _____

_____ _____ _____

_____ _____ Cal. Gas Exp. Date: _____

Date: 7-19-22 Instrument Used: _____ Grid Spacing: _____

Temperature: _____ Precip: _____ Upwind BG: _____ Downwind BG: _____

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
51								ACTIVE TRASH
60								↓
67								
73								
79								
91								

Attach Calibration Sheet
Attach site map showing grid ID

Page 1 of 1

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: M. ORUE, J. RAZO, N. BANKS, D. ANDERSON, A. MARTINEZ

Cal. Gas Exp. Date: 6-9-23

Date: 7-20-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 79° Precip: 0. Upwind BG: 2.1 Downwind BG: 2.6

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
63	MO	1630	1655	4.65	0	0	15	
64	NB	1630	1655	4.01	0	0	15	
65	AM	1630	1655	5.62	0	0	15	
66	JR	1630	1655	3.99	0	0	15	
68	DA	1630	1655	4.15	0	0	15	
69	MO	1655	1720	4.39	3	5	15	
70	NB	1655	1720	4.98	3	5	15	
71	AM	1655	1720	6.09	3	5	15	
72	JR	1655	1720	5.17	3	5	15	
74	DA	1655	1720	4.84	3	5	15	

Attach Calibration Sheet
Attach site map showing grid ID

Page 1 of 1

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: M. ORUE, J. RAZO, N. BANKS, D. ANDERSON, A. MARTINEZ

Cal. Gas Exp. Date: 6-9-23

Date: 7-21-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 57° Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
75	MO	0515	0540	6.95	0	0	14	
76	NB	0515	0540	8.01	0	0	14	
77	AM	0515	0540	8.23	0	0	14	
78	JR	0515	0540	12.05	0	0	14	
80	DA	0515	0540	9.56	0	0	14	
81	MO	0540	0605	4.24	0	0	14	
82	NB	0540	0605	5.74	0	0	14	
83	AM	0540	0605	5.38	0	0	14	
84	JR	0540	0605	10.11	0	0	14	
85	DA	0540	0605	10.68	0	0	14	
86	MO	0605	0630	13.40	0	0	14	
87	NB	0605	0630	7.75	0	0	14	
88	AM	0605	0630	6.94	0	0	14	
89	JR	0605	0630	8.30	0	0	14	
90	DA	0605	0630	14.63	0	0	14	
92	MO	0630	0655	10.83	0	0	14	
93	NB	0630	0655	9.95	0	0	14	
94	AM	0630	0655	8.21	0	0	14	
95	JR	0630	0655	5.76	0	0	14	
96	DA	0630	0655	6.55	0	0	14	
97	MO	0655	0720	12.23	0	0	16	
98	NB	0655	0720	12.13	0	0	16	
99	AM	0655	0720	14.89	0	0	16	
100	JR	0655	0720	10.39	0	0	16	
101	DA	0655	0720	15.53	0	0	16	
102	MO	0720	0745	9.82	0	0	14	
103	NB	0720	0745	8.44	0	0	14	
104	AM	0720	0745	8.67	0	0	14	
105	JR	0720	0745	6.39	0	0	14	
106	DA	0720	0745	5.21	0	0	14	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: M. ORUE, J. RAZO, N. BANKS, D. ANDERSON, A. MARTINEZ

Cal. Gas Exp. Date: 6-9-23

Date: 7-21-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 64° Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
107	MO	0745	0810	10.43	0	0	16	
108	NB	0745	0810	14.19	0	0	16	
109	AM	0745	0810	14.50	0	0	16	
110	JR	0745	0810	16.14	0	0	16	
111	DA	0745	0810	11.22	0	0	16	
112	MO	0810	0835	12.36	0	0	16	
113	NB	0810	0835	12.24	0	0	16	
114	AM	0810	0835	12.28	0	0	16	
115	JR	0810	0835	9.40	0	0	16	
116	DA	0810	0835	10.55	0	0	16	
117	MO	0835	0900	8.64	0	0	16	
118	NB	0835	0900	8.99	0	0	16	
119	AM	0835	0900	15.27	0	0	16	
120	JR	0835	0900	17.60	0	0	16	
121	DA	0835	0900	8.33	0	0	16	
122	MO	0900	0925	9.82	0	1	16	
123	NB	0900	0925	9.39	0	1	16	
124	AM	0900	0925	10.47	0	1	16	
125	JR	0900	0925	6.51	0	1	16	
126	DA	0900	0925	8.67	0	1	16	
127	MO	0925	0950	6.60	0	1	14	
128	NB	0925	0950	9.25	0	1	14	
129	AM	0925	0950	12.18	0	1	14	
130	JR	0925	0950	14.40	0	1	14	
131	DA	0925	0950	14.71	0	1	14	
132	MO	0950	1015	8.86	0	0	12	
133	NB	0950	1015	6.58	0	0	12	
134	AM	0950	1015	5.61	0	0	12	
135	JR	0950	1015	8.90	0	0	12	
136	DA	0950	1015	9.26	0	0	12	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: M. ORUE, J. RAZO, N. BANKS, D. Anderson, A. MARTINEZ

Cal. Gas Exp. Date: 6-9-23

Date: 7-21-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 69° Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
137	MO	1015	1040	15.18	0	0	12	
138	NB	1015	1040	13.36	0	0	12	
139	AM	1015	1040	12.67	0	0	12	
140	JR	1015	1040	12.10	0	0	12	
141	DA	1015	1040	16.38	0	0	12	
142	MO	1040	1105	11.95	0	0	12	
143	NB	1040	1105	9.91	0	0	12	
144	AM	1040	1105	15.25	0	0	12	
145	JR	1040	1105	16.44	0	0	12	
146	DA	1040	1105	9.60	0	0	12	
147	MO	1105	1130	10.82	0	0	12	
148	NB	1105	1130	8.52	0	0	12	
149	AM	1105	1130	15.66	0	0	12	
150	JR	1105	1130	16.11	0	0	12	
151	DA	1105	1130	15.26	0	0	12	
152	MO	1200	1225	15.64	1	2	6	
153	NB	1200	1225	10.38	1	2	6	
154	AM	1200	1225	13.19	1	2	6	
155	JR	1200	1225	9.49	1	2	6	
156	DA	1200	1225	8.52	1	2	6	
157	MO	1225	1250	10.56	1	2	6	
158	NB	1225	1250	14.29	1	2	6	
159	AM	1225	1250	15.30	1	2	6	
160	JR	1225	1250	14.18	1	2	6	
161	DA	1225	1250	14.53	1	2	6	
162	MO	1250	1315	10.72	1	2	6	
163	NB	1250	1315	11.65	1	2	6	
164	AM	1250	1315	11.31	1	2	6	
165	JR	1250	1315	14.19	1	2	6	
166	DA	1250	1315	15.45	1	2	6	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: M. ORUE, J. RAZO
N. BANKS, D. ANDERSON
A. MARTINEZ
Cal. Gas Exp. Date: 6-9-23

Date: 7-21-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 74° Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
167	MO	1315	1340	8.40	1	1	6	
168	NB	1315	1340	12.25	1	1	6	
169	AM	1315	1340	10.35	1	1	6	
170	JR	1315	1340	10.11	1	1	6	
171	DA	1315	1340	16.52	1	1	6	
172	MO	1340	1405	14.82	1	2	6	
173	NB	1340	1405	12.61	1	2	6	
174	AM	1340	1405	14.41	1	2	6	
175	JR	1340	1405	10.94	1	2	6	
176	DA	1340	1405	8.35	1	2	6	
177	MO	1405	1430	16.95	1	2	6	
178	NB	1405	1430	15.12	1	2	6	
179	AM	1405	1430	15.69	1	2	6	
180	JR	1405	1430	16.42	1	2	6	
181	DA	1405	1430	13.36	1	2	6	
182	MO	1430	1455	10.68	2	3	6	
183	NB	1430	1455	11.21	2	3	6	
184	AM	1430	1455	11.56	2	3	6	
185	JR	1430	1455	11.30	2	3	6	
186	DA	1430	1455	17.18	2	3	6	
187	MO	1455	1520	15.61	0	0	8	
188	NB	1455	1520	9.22	0	0	6	
189	AM	1455	1520	12.31	0	0	6	
190	JR	1455	1520	9.54	0	0	6	
191	DA	1455	1520	8.63	0	0	6	
192	MO	1520	1545	10.19	0	0	14	
193	NB	1520	1545	15.57	0	0	14	
194	AM	1520	1545	14.25	0	0	14	
195	JR	1520	1545	14.46	0	0	14	
196	DA	1520	1545	12.83	0	0	14	

Attach Calibration Sheet
Attach site map showing grid ID

REDWOOD LANDFILL
INTEGRATED LANDFILL SURFACE MONITORING

Personnel: M. ORUE, J. RAZO, N. BANKS, D. ANDERSON, A. MARTINEZ

Cal. Gas Exp. Date: 6-9-23

Date: 7-21-22 Instrument Used: TVA1000 Grid Spacing: 25'

Temperature: 82° Precip: 0 Upwind BG: 2.2 Downwind BG: 2.8

GRID ID	STAFF INITIALS	START TIME	STOP TIME	TOC PPM	WIND INFORMATION			REMARKS
					AVG SPEED	MAX. SPEED	DIRECTION 16 POINT	
197	MO	1545	1605	9.23	0	1	14	
198	NB	1545	1605	12.85	0	1	14	
199	AM	1545	1605	8.11	0	1	14	
200	JR	1545	1605	8.94	0	1	14	
201	DA	1545	1605	11.36	0	1	14	
202	MO	1605	1630	13.20	2	4	14	
203	NB	1605	1630	9.51	2	4	14	
204	AM	1605	1630	10.38	2	4	14	
205	JR	1605	1630	10.42	2	4	14	
206	DA	1605	1630	14.65	2	4	14	
207	MO	1630	1655	8.67	0	0	14	
208	NB	1630	1655	12.90	0	0	14	

Attach Calibration Sheet
Attach site map showing grid ID

Attachment C

Component Leak Monitoring Event Records

Table C.1
AB-32 Component Leak Monitoring
Summary of Component Leaks Greater than 500 ppmv

2022 QUARTER: 3
INITIAL MONITORING PERFORMED BY: RES
FOLLOW-UP MONITORING PERFORMED BY:
LANDFILL NAME: Redwood Landfill, Inc.

Location	Initial Monitoring			Corrective Action		10-Day Remonitoring		
	Date	TOC (ppmv)	Tech	Date	Description	Date	TOC (ppmv)	Tech
No Exceedances Detected								

Table C.2
BAAQMD Component Leak Monitoring
Summary of Component Leaks Greater than 1,000 ppmv

2022 QUARTER: 3
INITIAL MONITORING PERFORMED BY: RES
FOLLOW-UP MONITORING PERFORMED BY:
LANDFILL NAME: Redwood Landfill, Inc.

Location	Initial Monitoring			Corrective Action		7-Day Remonitoring		
	Date	TOC (ppmv)	Tech	Date	Description	Date	TOC (ppmv)	Tech
No Exceedances Detected								

LANDFILL NAME:
QUARTERLY LFG COMPONENT LEAK MONITORING

INSTRUMENT FID
MAKE: Thermo Environr
MODEL: TVA 1000
S/N:

DATE OF SAMPLING: 7-20-22
TECHNICIAN: Michael Obst

LOCATION OF LEAK	LEAK CONCENTRATION (ppmv)	DATE OF DISCOVERY	TECHNICIAN	ACTION TAKEN TO REPAIR LEAK	DATE OF REPAIR	DATE OF ANY REQUIRED RE-MONITORING	RE-MONITORED CONCENTRATION (ppmv)
No Exceedances found							

In the event that an exceedance is detected, please intiate corrective action and re-monitor the exceedance location within 7 days of the initial exceedance.

NOTE: Leaks over 500 ppmv methane are exceedances at any component containing landfill gas, pursuant to CARB Title 17 of California Code of Regulations Subchapter 10, Article 4, Subarticle 6, Section 95464(b)(1)(B).

NOTE: Leaks over 1,000 ppmv methane are exceedances at any component containing landfill gas, pursuant to BAAQMD Regulation 8-34-301.2.

REDWOOD 3520+ ENGINE PLANT, CA

Site Map

8950 Redwood Hwy, Novato, CA 94948

7-20-22

REV	DATE	BY	DESCRIPTION
6	3-1-18	RAA	ISSUED FOR CONSTRUCTION
5	10-26-15	RAA	BUILDING PERMIT APPLICATION SET
4	10-2-15	RAA	95% DESIGN RESUBMITTAL
3	8-7-15	RAA	ISSUED FOR GAS TREATMENT SKID BID
2	6-12-15	RAA	65% DESIGN SUBMITTAL
1	5-6-15	RAA	50% DESIGN SUBMITTAL

SCALE: AS SHOWN
DATE: 5-5-15
DRAWN: JFD
CHECKED: RFC
APPROVED: RAA

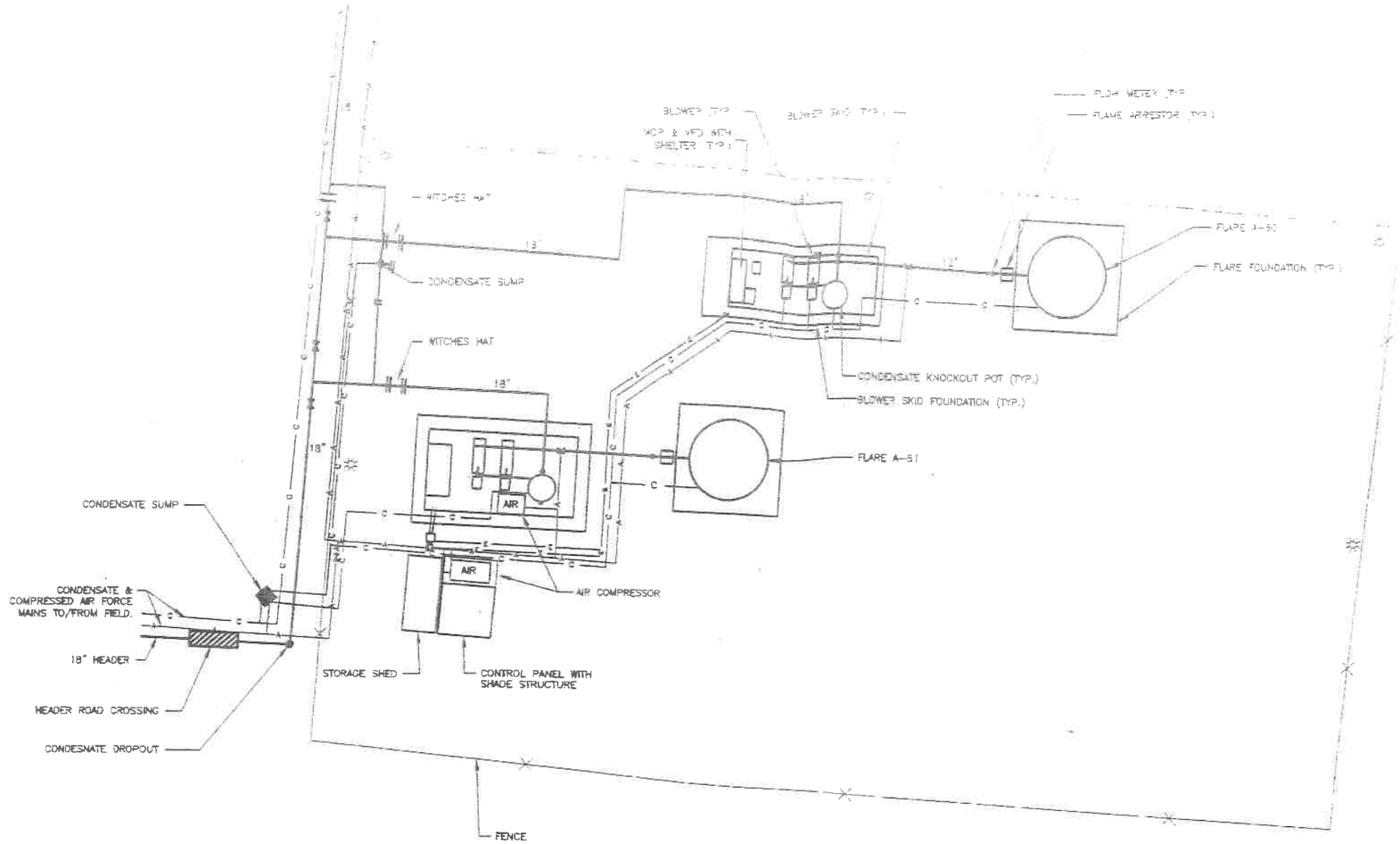
ACEng
www.ac-engineering.com

CLIENT: WASTE MANAGEMENT RENEWABLE ENERGY
LANDFILL TO GAS ENERGY PROJECT
REDWOOD LANDFILL, NOVATO, CA

DESCRIPTION: PROPOSED CONDITIONS AND HAZARDOUS AREA CLASSIFICATIONS

PROJECT NO. 1003 005.001

SHEET: G-5



LEGEND

- EXISTING PIPING
- EXISTING FLANGE
- LIGHT SYMBOL
- EXISTING PIPING
- EXISTING BLIND FLANGE
- EXISTING VALVE
- C — 2" HDPE SDR-7 CONDENSATE FORCE MAIN
- A — 2" HDPE SDR-9 COMPRESSED AIR FORCE MAIN
- ROAD CROSSING
- CONDENSATE SUMP

7-20-22

NO Exceedances

DRAFT

WASTE MANAGEMENT

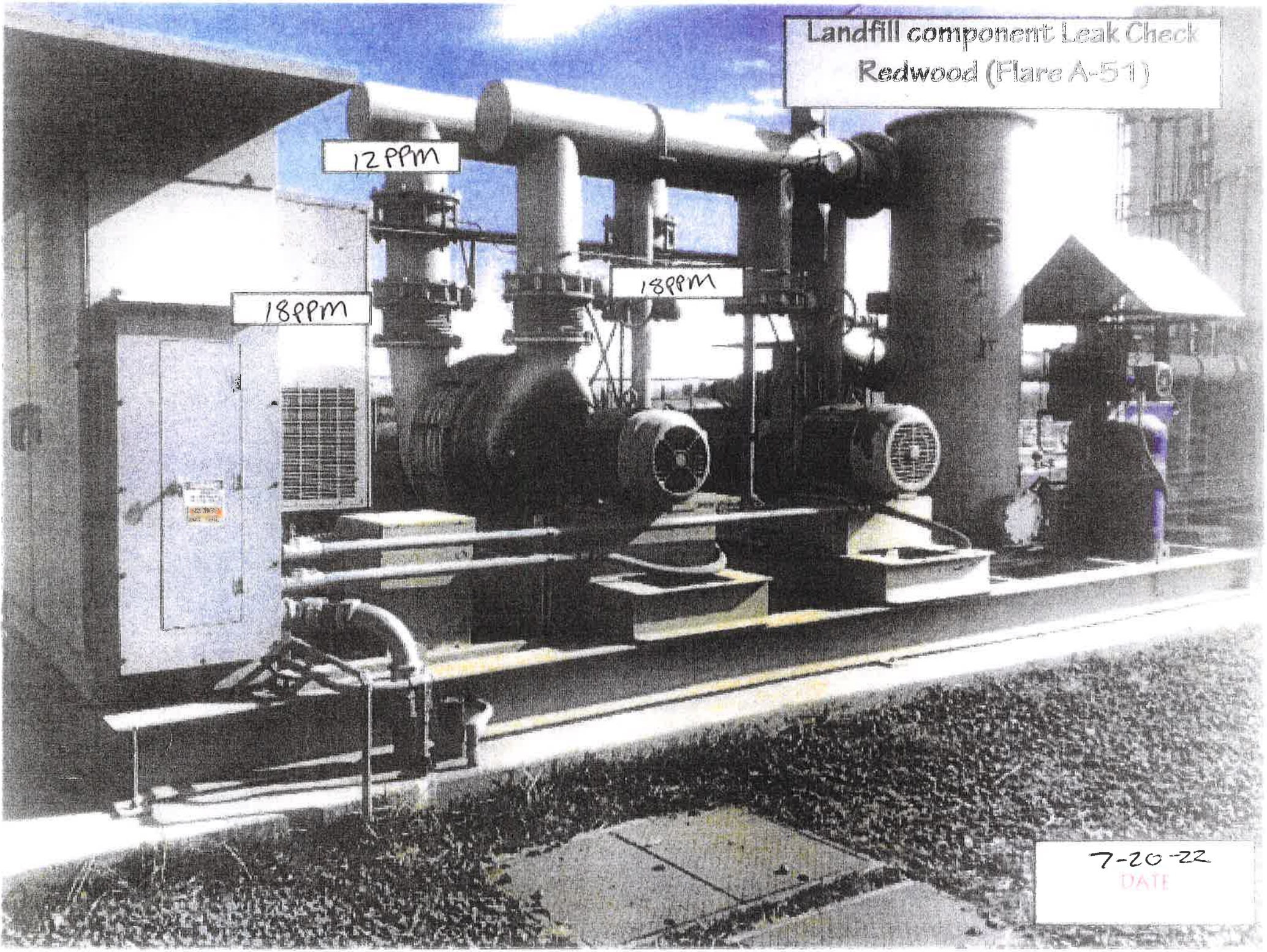
PAUL J. STOUT P.E.

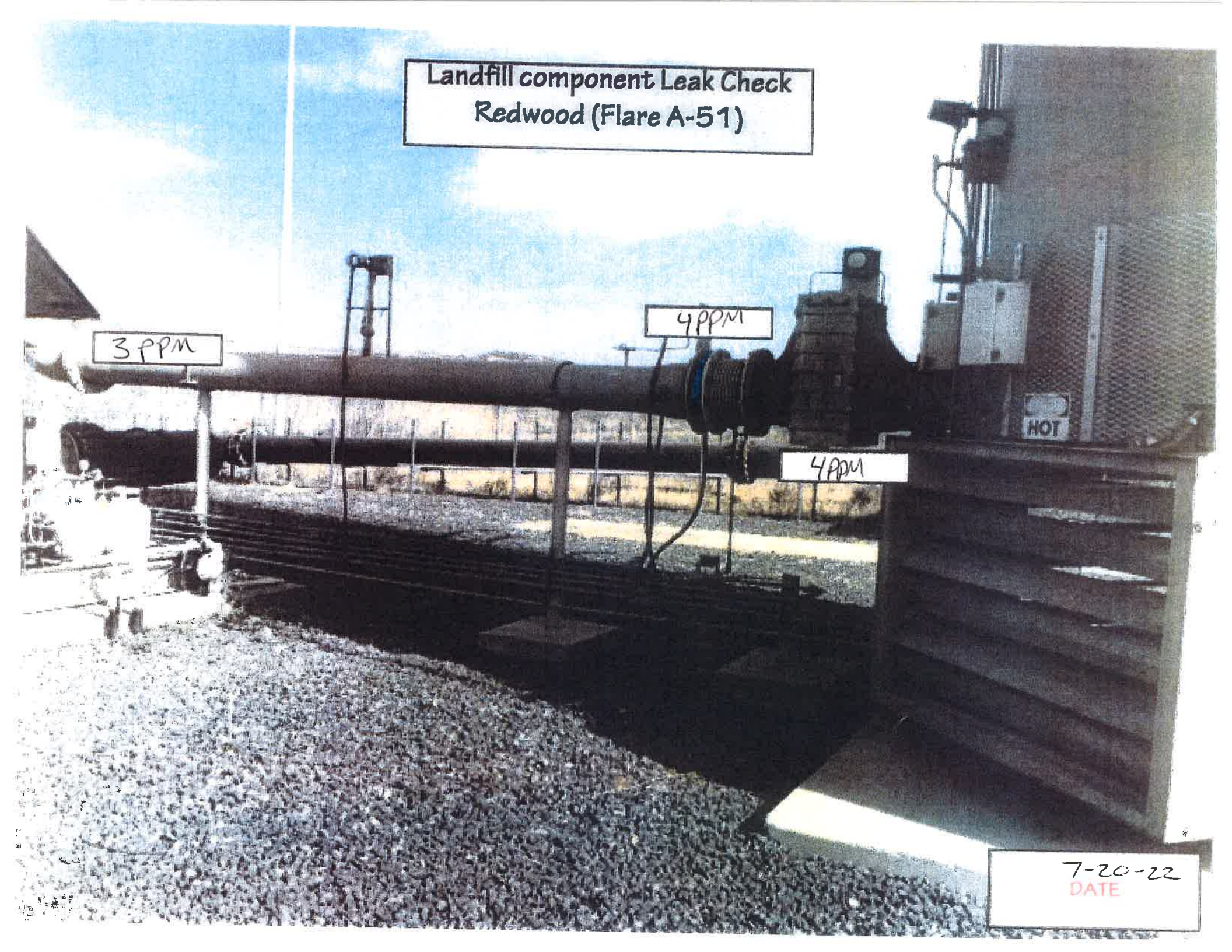
CORNERSTONE Environmental Group LLC

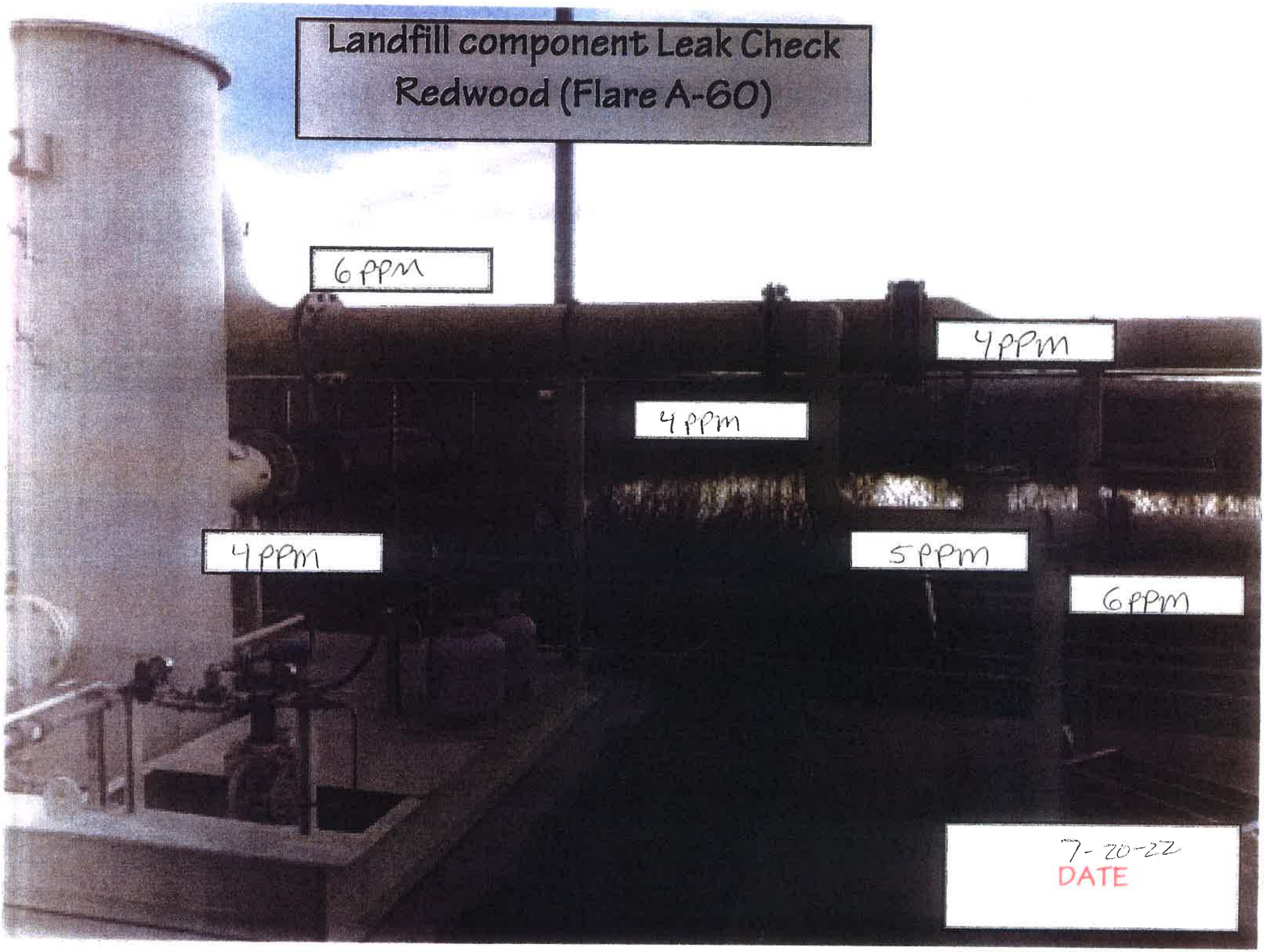
WASTE MANAGEMENT OF CALIFORNIA, INC
REDWOOD LANDFILL, INC
NOVATO, MARIN COUNTY, CALIFORNIA

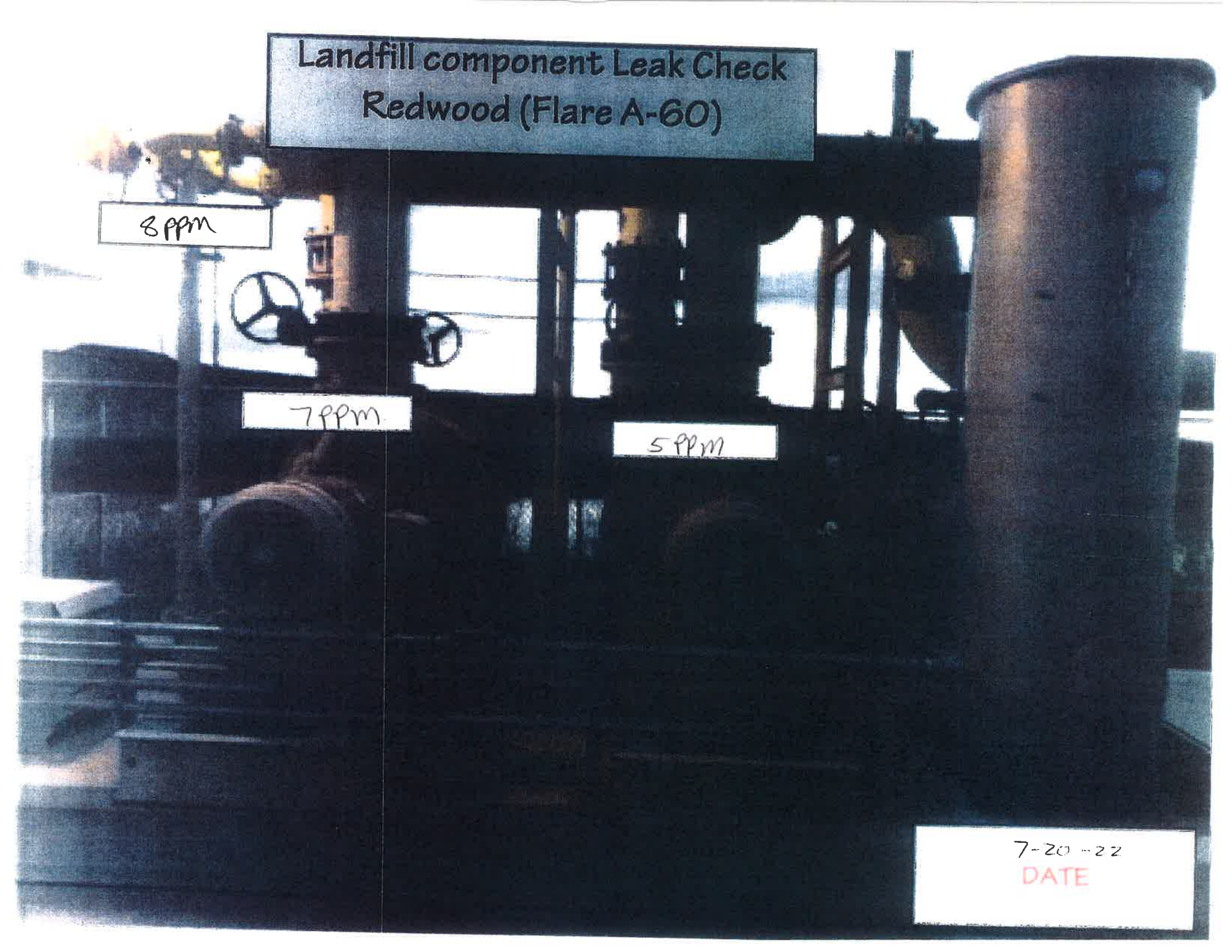
LFG FLARE AND GCCS AS-BUILT

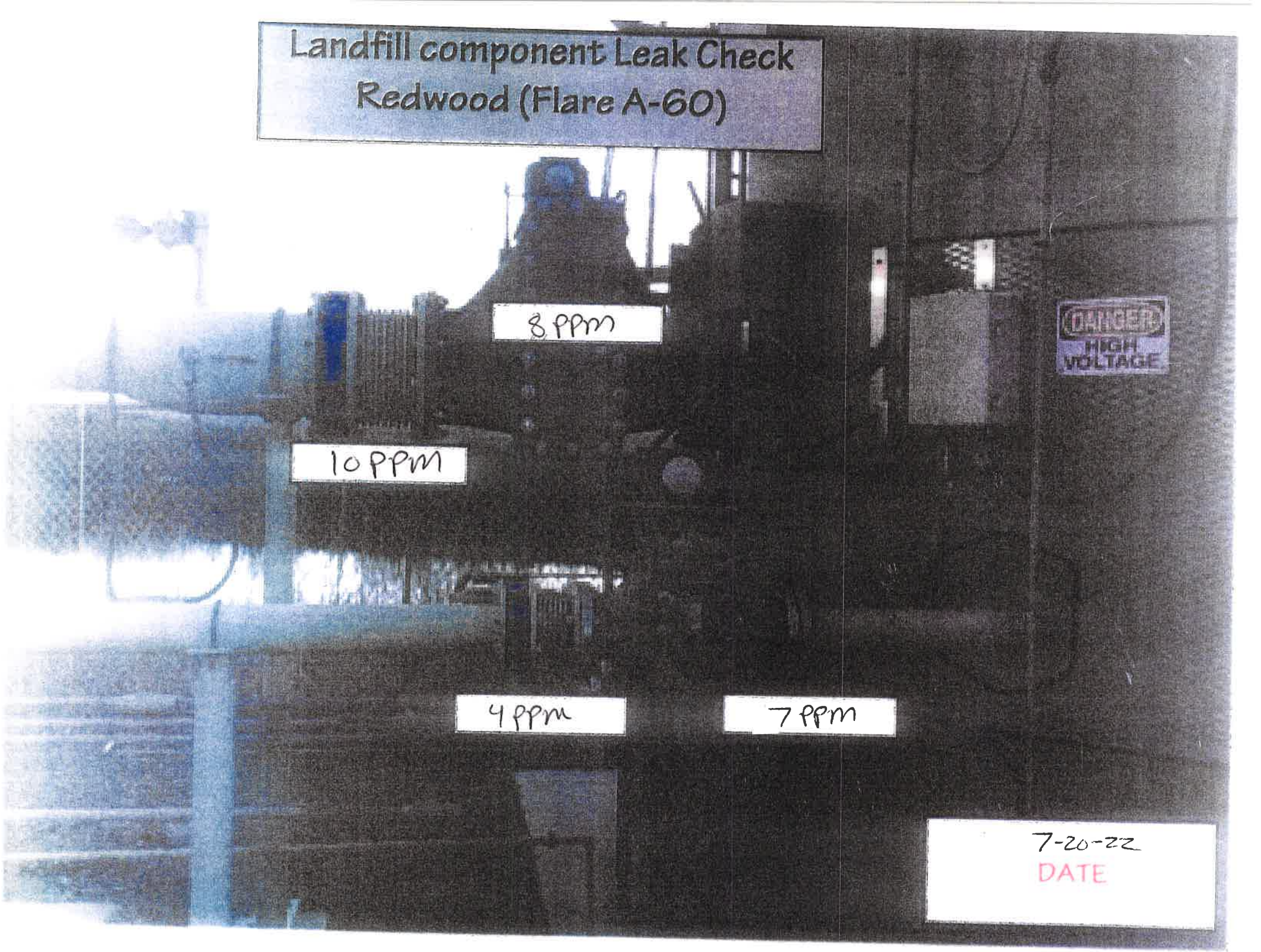
SHEET NO. 1


Landfill component Leak Check
Redwood (Flare A-51)
12PPM
18PPM
18PPM
7-20-22
DATE


Landfill component Leak Check
Redwood (Flare A-51)
3PPM
4PPM
4PPM
HOT
7-20-22
DATE


Landfill component Leak Check
Redwood (Flare A-60)
6 PPM
4 PPM
4 PPM
4 PPM
5 PPM
6 PPM
7-20-22
DATE


Landfill component Leak Check
Redwood (Flare A-60)
8 ppm
7 ppm
5 ppm
7-20-22
DATE


Landfill component Leak Check
Redwood (Flare A-60)
8 PPM
DANGER
HIGH VOLTAGE
10 PPM
4 PPM
7 PPM
7-20-22
DATE

Attachment D

Weather Station Data

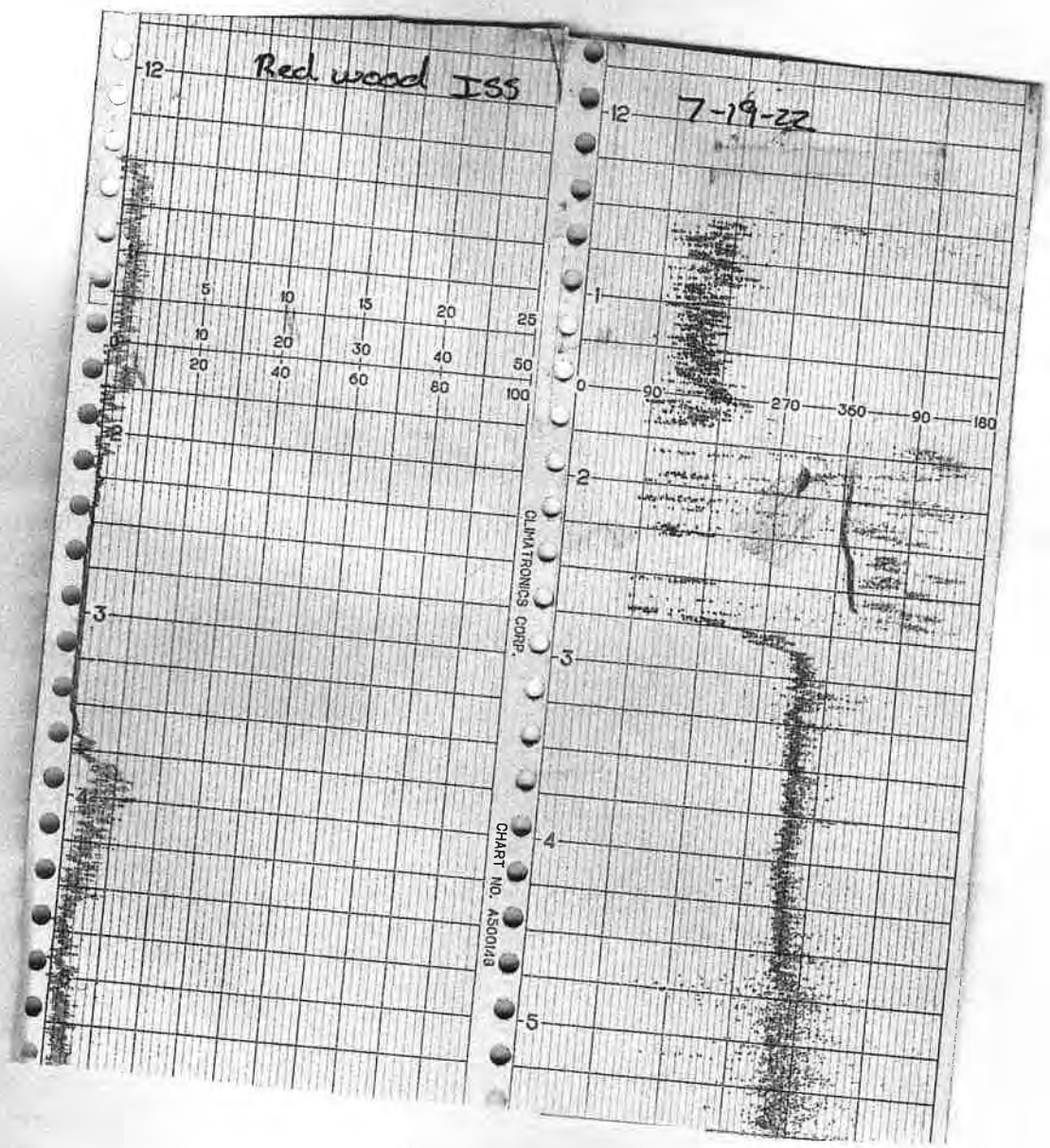
RES Environmental Inc.

16-POINT WIND DIRECTION INDEX

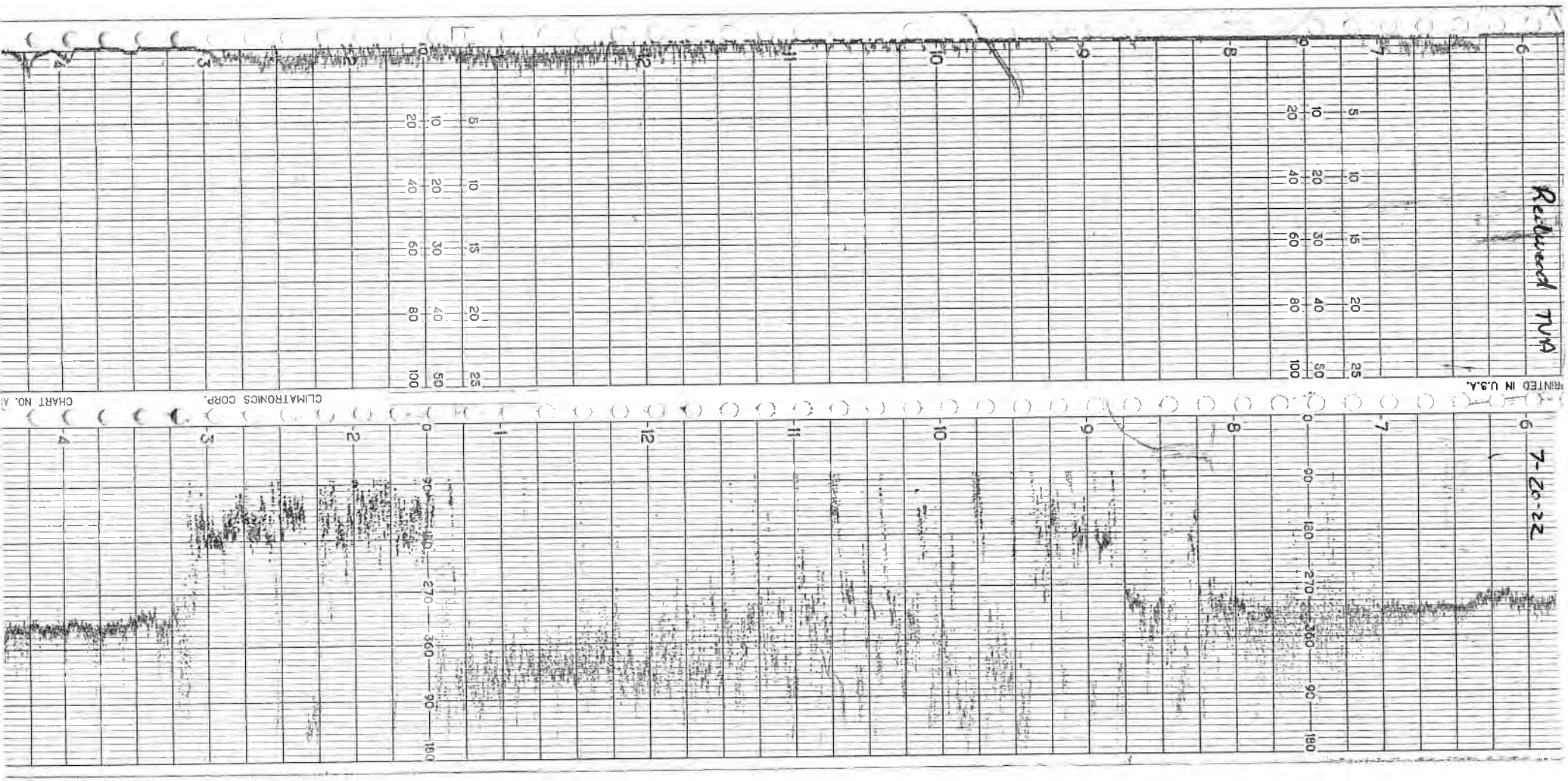
NO	DIRECTION	DEGREES		
		FROM	CENTER	TO
16	NORTH (N)	348.8	360.0	011.3
1	NORTH-NORTHEAST (NNE)	011.3	022.5	033.8
2	NORTHEAST (NE)	033.8	045.0	056.3
3	EAST-NORTHEAST (ENE)	056.3	067.5	078.8
4	EAST (E)	078.8	090.0	101.3
5	EAST-SOUTHEAST (ESE)	101.3	112.5	123.8
6	SOUTHEAST (SE)	123.8	135.0	146.3
7	SOUTH-SOUTHEAST (SSE)	146.3	157.5	168.8
8	SOUTH (S)	168.8	180.0	191.3
9	SOUTH-SOUTHWEST (SSW)	191.3	202.5	213.8
10	SOUTHWEST (SW)	213.8	225.0	236.3
11	WEST-SOUTHWEST (WSW)	236.3	247.5	258.8
12	WEST (W)	258.8	270.0	281.3
13	WEST-NORTHWEST (WNW)	281.3	292.5	303.8
14	NORTHWEST (NW)	303.8	315.0	326.3
15	NORTH-NORTHWEST (NNW)	326.3	337.5	348.8

865 Via Lata ▪ Colton, California 92324 ▪ (909) 422-1001 Fax (909) 422-0707

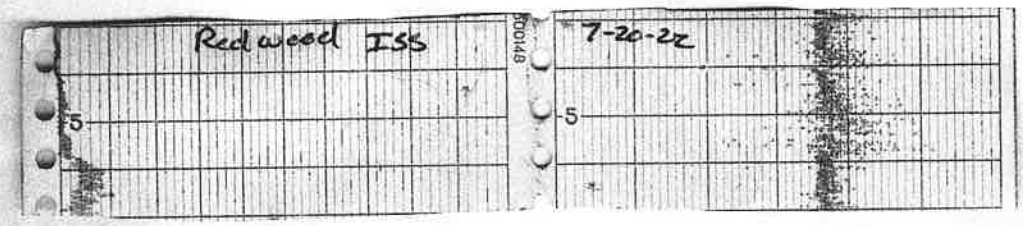
WIND SPEED & DIRECTION CHART ROLL



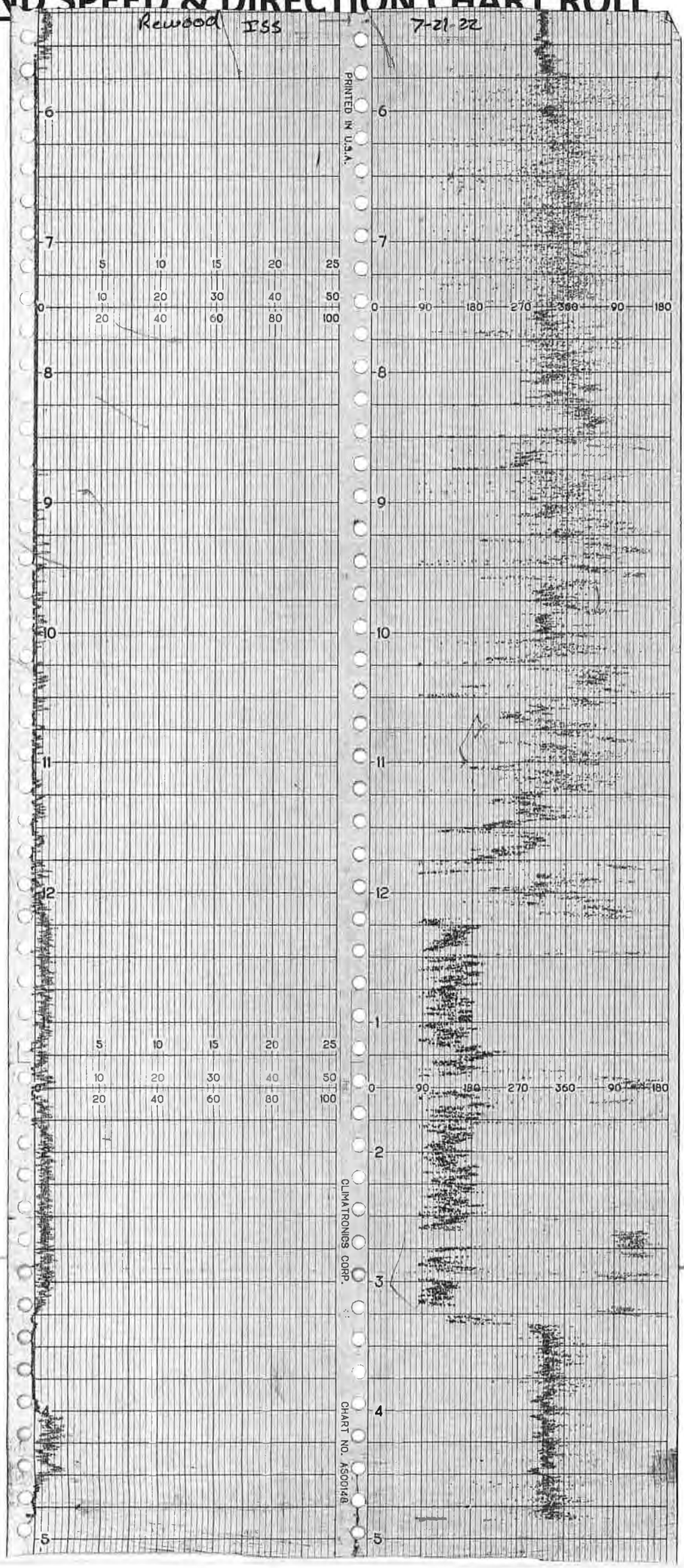
WIND SPEED & DIRECTION CHART ROLL



WIND SPEED & DIRECTION CHART ROLL



WIND SPEED & DIRECTION CHART ROLL



Attachment E

Calibration Records

RESPONSE TIME TEST RECORD

Date: 7/22/22

Expiration Date (3 months): 10/22/22

Time: 9:00 (AM) _____ PM

Instrument Make: PhotoVAC Model: Micro FID S/N: CZMF340

Measurement #1:

Stabilized Reading Using Calibration Gas: 497 ppm
90% of the Stabilized Reading: 447 ppm
Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas: 3 seconds (a)

Measurement #2:

Stabilized Reading Using Calibration Gas: 498 ppm
90% of the Stabilized Reading: 449 ppm
Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas: 3 seconds (b)

Measurement #3:

Stabilized Reading Using Calibration Gas: 499 ppm
90% of the Stabilized Reading: 449 ppm
Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas: 2 seconds (c)

Calculate Response Time:

$\frac{(a) + (b) + (c)}{3}$ = 2.66 seconds (must be less than 30 seconds)

Performed By: J Dutra

CALIBRATION PRECISION TEST RECORD

Date: 7/22/22

Expiration Date (3 months): 10/22/22

Time: 9.00 (AM) _____ PM

Instrument Make: Photo VAC Model: Micro FID S/N: CZMF340

Measurement #1:

Meter Reading for Zero Air: 0 ppm (a)

Meter Reading for Calibration Gas: 497 ppm (b)

Measurement #2:

Meter Reading for Zero Air: 0 ppm (c)

Meter Reading for Calibration Gas: 498 ppm (d)

Measurement #3:

Meter Reading for Zero Air: 0 ppm (e)

Meter Reading for Calibration Gas: 499 ppm (f)

Calculate Precision:

$$\frac{\{|(500)-(b)|+|(500)-(d)|+|(500)-(f)|\}}{3} \times \frac{1}{500} \times 100$$

0.4 % (must be < than 10%)

Performed By: J Dutra

CALIBRATION PROCEDURE AND BACKGROUND DETERMINATION REPORT

Landfill Name: Redwood Landfill Date: 7/22/22

Time: 9:00 (AM) _____ PM

Instrument Make: Photo VAC Model: Micro PID S/N: CZMF340

Calibration Procedure

1. Allow instrument to internally zero itself while introducing zero air.
2. Introduce the calibration gas into the probe.

   Stable Reading = 497 ppm
3. Adjust meter to read 500 ppm.

Background Determination Procedure

1. Upwind Reading (highest in 30 seconds): 0 ppm (a)
2. Downwind Reading (highest in 30 seconds): 0 ppm (b)

Calculate Background Value:

$\frac{(a) + (b)}{2}$ Background = 0 ppm

Performed By: J Ortiz

CALIBRATION PROCEDURE AND BACKGROUND DETERMINATION REPORT

Landfill Name: Redwood Landfill Date: 8/18/22

Time: 08:15 AM _____ PM

Instrument Make: Photovac Model: Micro FID S/N: CZMF340

Calibration Procedure

1. Allow instrument to internally zero itself while introducing zero air.
2. Introduce the calibration gas into the probe.

   Stable Reading = 504 ppm

Background Determination Procedure

1. Upwind Reading (highest in 30 seconds): 1 ppm (a)
2. Downwind Reading (highest in 30 seconds): 2 ppm (b)

Calculate Background Value:

$\frac{(a) + (b)}{2}$ Background = 1.5 ppm

Performed By: RDavis

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: Redwood INSTRUMENT MAKE: THermo

MODEL: TVA1000 EQUIPMENT #: 10 SERIAL #: 1036346773

MONITORING DATE: 7-20-22 TIME: 0545

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 502 ppm
3. Adjust meter settings to read 500 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.4 ppm	3.1 ppm	2.7 ppm

Background Value = 2.7 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	505 ppm	450 ppm	6
#2	502 ppm	450 ppm	5
#3	502 ppm	450 ppm	6
Calculate Response Time (1+2+3) / 3			5.6 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.26 ppm	505 ppm	5
#2	0.18 ppm	502 ppm	2
#3	0.34 ppm	502 ppm	2
Calculate Precision	[STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/500 X 100/1		0.6% #DIV/0! Must be less than 10%

Performed By: Michael ORR Date/Time: 7-20-22 / 0545

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: Redwood INSTRUMENT MAKE: THermo

MODEL: TVA 1000 EQUIPMENT #: 11 SERIAL #: 1036346774

MONITORING DATE: 7-20-22 TIME: 0545

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 501 ppm
3. Adjust meter settings to read 500 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.1 ppm	2.6 ppm	2.3 ppm

Background Value = 2.3 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	503 ppm	450 ppm	6
#2	503 ppm	450 ppm	6
#3	501 ppm	450 ppm	7
Calculate Response Time (1+2+3)/3			6.3 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.35 ppm	503 ppm	3
#2	0.32 ppm	503 ppm	3
#3	0.35 ppm	501 ppm	1
Calculate Precision	[STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/500 X 100/1		0.4% #DIV/0! Must be less than 10%

Performed By: Nick BANKS Date/Time: 7-20-22 / 0545

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: Redwood INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 12 SERIAL #: 1036246741

MONITORING DATE: 7-20-22 TIME: 0545

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 504 ppm
3. Adjust meter settings to read 500 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.5 ppm	2.9 ppm	2.7 ppm

Background Value = 2.7 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	504 ppm	450 ppm	5
#2	504 ppm	450 ppm	5
#3	504 ppm	450 ppm	6
Calculate Response Time (1+2+3) / 3			5.3 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.56 ppm	504 ppm	4
#2	0.47 ppm	504 ppm	4
#3	0.50 ppm	504 ppm	4
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1 / 500 X 100 / 1			0.8% #DIV/0! Must be less than 10%

Performed By: Armando Martinez Date/Time: 7-20-22 / 0545

RES
Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: Red Wood INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 13 SERIAL #: 1102746775

MONITORING DATE: 7-20-22 TIME: 0545

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 503 ppm
3. Adjust meter settings to read 500 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.6 ppm	2.4 ppm

Background Value = 2.4 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	502 ppm	450 ppm	5
#2	503 ppm	450 ppm	5
#3	503 ppm	450 ppm	5
Calculate Response Time (1+2+3) / 3			5 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.44 ppm	502 ppm	2
#2	0.43 ppm	503 ppm	3
#3	0.49 ppm	503 ppm	3
Calculate Precision	[STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/500 X 100/1		0.5% #DIV/0! Must be less than 10%

Performed By: JOSH RAZO Date/Time: 7-20-22 / 0548

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: Redwoods INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 15 SERIAL #: 1036346772

MONITORING DATE: 7-20-22 TIME: 0545

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 503 ppm
3. Adjust meter settings to read 500 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
1,9 ppm	2,6 ppm	2,2 ppm

Background Value = 2,2 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	502 ppm	450 ppm	6
#2	502 ppm	450 ppm	7
#3	503 ppm	450 ppm	7
Calculate Response Time (1+2+3) / 3			6,66 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0,56 ppm	502 ppm	2
#2	0,58 ppm	502 ppm	2
#3	0,64 ppm	503 ppm	3
Calculate Precision	[STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/500 X 100/1		0,4% #DIV/0! Must be less than 10%

Performed By: Dwight Anderson Date/Time: 7-20-22 / 0545

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: THermo

MODEL: TVA1000 EQUIPMENT #: 10 SERIAL #: 1036346723

MONITORING DATE: 7-19-22 TIME: 1230

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 25.7 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.9 ppm	2.5 ppm

Background Value = 2.5 **ppm**

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	26.1 ppm	22.5 ppm	5
#2	26.3 ppm	22.5 ppm	4
#3	25.7 ppm	22.5 ppm	4
Calculate Response Time (1+2+3) / 3			4.3 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 **ppm**

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.56 ppm	26.1 ppm	1.1
#2	0.47 ppm	26.3 ppm	1.3
#3	0.59 ppm	25.7 ppm	0.7
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			0.25% #DIV/0! Must be less than 10%

Performed By: Michael ORue Date/Time: 7-19-22 / 1230

RES
Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: THERMO

MODEL: TVA1000 EQUIPMENT #: 11 SERIAL #: 1036346774

MONITORING DATE: 7-19-22 TIME: 1236

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 24.9 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.3 ppm	2.7 ppm	2.5 ppm

Background Value = 2.5 **ppm**

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	25.2 ppm	22.5 ppm	4
#2	24.9 ppm	22.5 ppm	4
#3	24.9 ppm	22.5 ppm	4
Calculate Response Time (1+2+3)/3			4 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 **ppm**

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.39 ppm	25.2 ppm	0.2
#2	0.32 ppm	24.9 ppm	0.1
#3	0.35 ppm	24.9 ppm	0.1
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			0.5% #DIV/0! Must be less than 10%

Performed By: Nick Banks Date/Time: 7-19-22 / 1230

RES
Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Red Wood INSTRUMENT MAKE: THERMO

MODEL: TVA1000 EQUIPMENT #: 12 SERIAL #: 1036246741

MONITORING DATE: 7-19-22 TIME: 1230

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 25.5 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.4 ppm	2.9 ppm	2.6 ppm

Background Value = 2.6 **ppm**

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	25.2 ppm	22.5 ppm	4
#2	25.5 ppm	22.5 ppm	5
#3	25.5 ppm	22.5 ppm	5
Calculate Response Time (1+2+3) / 3			4.6 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 **ppm**

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.63 ppm	25.2 ppm	0.2
#2	0.57 ppm	25.5 ppm	0.5
#3	0.60 ppm	25.5 ppm	0.5
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			0.6% #DIV/0! Must be less than 10%

Performed By: Armando Martinez Date/Time: 7-19-22 / 1230

RES
Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME Red Wood INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 13 SERIAL #: 1102746725

MONITORING DATE 7-19-22 TIME: 1230

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 26.3 ppm
3. Adjust meter settings to read 25 ppm

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.0 ppm	2.7 ppm	2.3 ppm

Background Value = 2.3 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	26.3 ppm	22.5 ppm	4
#2	26.3 ppm	22.5 ppm	5
#3	26.3 ppm	22.5 ppm	4
Calculate Response Time (1+2+3) / 3			4.3 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.68 ppm	26.3 ppm	1.3
#2	0.57 ppm	26.3 ppm	1.3
#3	0.53 ppm	26.3 ppm	1.3
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			5.1 % #DIV/0! Must be less than 10%

Performed By: JOSH RAZO Date/Time: 7-19-22 1230

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Red Wood INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 15 SERIAL #: 1036346772

MONITORING DATE: 7-19-22 TIME: 1230

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 25.7 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.5 ppm	2.8 ppm	2.6 ppm

Background Value = 2.6 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	25.3 ppm	22.5 ppm	5
#2	25.5 ppm	22.5 ppm	5
#3	25.7 ppm	22.5 ppm	5
Calculate Response Time (1+2+3) / 3			5 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.48 ppm	25.3 ppm	0.3
#2	0.53 ppm	25.5 ppm	0.5
#3	0.49 ppm	25.7 ppm	0.7
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			1.6 #DIV/0! Must be less than 10%

Performed By: Dwight Anderson Date/Time: 7-19-22/1230

NES Environmental Inc

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 10 SERIAL #: 1036346773

MONITORING DATE: 7-20-22 TIME: 1630

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 25.5 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.1 ppm	2.6 ppm	2.3 ppm

Background Value = 2.3 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	26.0 ppm	22.5 ppm	6
#2	25.6 ppm	22.5 ppm	5
#3	25.5 ppm	22.5 ppm	5
Calculate Response Time (1+2+3) / 3			5.3 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.34 ppm	26.0 ppm	1
#2	0.51 ppm	25.6 ppm	0.6
#3	0.47 ppm	25.5 ppm	0.5
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			2.8 #DIV/0! Must be less than 10%

Performed By: Michael O'Rourke Date/Time: 7-20-22 1630

RES
Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: THERMO

MODEL: TVA1000 EQUIPMENT #: 11 SERIAL #: 1036346774

MONITORING DATE: 7-20-22 TIME: 1630

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 24.6 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.0 ppm	2.5 ppm	2.2 ppm

Background Value = 2.2 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	24.4 ppm	22.5 ppm	5
#2	24.4 ppm	22.5 ppm	5
#3	24.6 ppm	22.5 ppm	6
Calculate Response Time (1+2+3) / 3			5.3 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.43 ppm	24.4 ppm	0.6
#2	0.56 ppm	24.4 ppm	0.6
#3	0.50 ppm	24.6 ppm	0.4
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			0.4 #DIV/0! Must be less than 10%

Performed By: Nick Banks Date/Time: 7-20-22/1630

RES
Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 12 SERIAL #: 1036246775

MONITORING DATE: 7-20-22 TIME: 1630

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 25.2 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.6 ppm	2.4 ppm

Background Value = 2.4 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	25.2 ppm	22.5 ppm	6
#2	25.2 ppm	22.5 ppm	6
#3	25.2 ppm	22.5 ppm	7
Calculate Response Time (1+2+3) / 3			6.3 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.18 ppm	25.2 ppm	0.2
#2	0.25 ppm	25.2 ppm	0.2
#3	0.27 ppm	25.2 ppm	0.2
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			0.8% #DIV/0! Must be less than 10%

Performed By: Armando Martinez Date/Time: 7-20-22 / 1630

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 13 SERIAL #: 1102746775

MONITORING DATE: 7-20-22 TIME: 1630

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 25.8 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.3 ppm	2.7 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	26.2 ppm	22.5 ppm	5
#2	26.2 ppm	22.5 ppm	5
#3	25.8 ppm	22.5 ppm	5
Calculate Response Time (1+2+3) / 3			5 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.67 ppm	26.2 ppm	1.2
#2	0.55 ppm	26.2 ppm	1.2
#3	0.48 ppm	25.8 ppm	0.8
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			4.2% #DIV/0! Must be less than 10%

Performed By: JOSH RAZO Date/Time: 7-20-22 / 1630

RES
Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 15 SERIAL #: 1036346772

MONITORING DATE: 7-20-22 TIME 1630

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 25.4 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.7 ppm	2.4 ppm

Background Value = 2.4 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	25.5 ppm	22.5 ppm	6
#2	25.9 ppm	22.5 ppm	5
#3	25.4 ppm	22.5 ppm	5
Calculate Response Time (1+2+3) / 3			5.3 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.73 ppm	25.5 ppm	0.5
#2	0.68 ppm	25.9 ppm	0.9
#3	0.87 ppm	25.4 ppm	0.4
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			0.4% #DIV/0! Must be less than 10%

Performed By: Dwight Anderson Date/Time: 7-20-22

RES
Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: THermO

MODEL: TVA1000 EQUIPMENT #: 10 SERIAL #: 1036346773

MONITORING DATE: 7-21-22 TIME: 0515

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 25.7 ppm
3. Adjust meter settings to read 25 ppm

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.3 ppm	2.9 ppm	2.6 ppm

Background Value = 2.6 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	24.8 ppm	22.5 ppm	6
#2	25.3 ppm	22.5 ppm	5
#3	25.7 ppm	22.5 ppm	6
Calculate Response Time (1+2+3) / 3			5.6 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.56 ppm	24.8 ppm	0.2
#2	0.48 ppm	25.3 ppm	0.7
#3	0.51 ppm	25.7 ppm	0.3
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			0.6% #DIV/0! Must be less than 10%

Performed By: Michael O'Rourke Date/Time: 7-21-22/0515

RES Environmental Inc

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 11 SERIAL #: 1036346774

MONITORING DATE: 7-21-22 TIME: 0515

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 25.4 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.4 ppm	2.3 ppm

Background Value = 2.3 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	25.4 ppm	22.5 ppm	5
#2	25.4 ppm	22.5 ppm	6
#3	25.4 ppm	22.5 ppm	5
Calculate Response Time (1+2+3) / 3			5.3 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.53 ppm	25.4 ppm	0.4
#2	0.47 ppm	25.4 ppm	0.4
#3	0.54 ppm	25.4 ppm	0.4
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			0.6 #DIV/0! Must be less than 10%

Performed By: Nick Banks Date/Time: 7-21-22/0515

RES
Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 12 SERIAL #: 1036246741

MONITORING DATE: 7-21-22 TIME: 0515

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 25.6 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.3 ppm	2.8 ppm	2.5 ppm

Background Value = 2.5 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	25.4 ppm	22.5 ppm	6
#2	25.4 ppm	22.5 ppm	6
#3	25.6 ppm	22.5 ppm	6
Calculate Response Time (1+2+3) / 3			6 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.83 ppm	25.4 ppm	0.4
#2	0.78 ppm	25.4 ppm	0.4
#3	0.80 ppm	25.6 ppm	0.6
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			0.5% #DIV/0! Must be less than 10%

Performed By: Armando Martinez Date/Time 7-21-22/0515

RES
Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 13 SERIAL #: 1102746775

MONITORING DATE: 7-21-22 TIME 0515

Calibration Procedure:

1. Allow instrument to zero itself while introducing air
2. Introduce calibration gas into the probe. Stabilized reading = 25.6 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.5 ppm	2.8 ppm	2.6 ppm

Background Value = 2.6 **ppm**

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	25.7 ppm	22.5 ppm	5
#2	25.9 ppm	22.5 ppm	4
#3	25.6 ppm	22.5 ppm	4
Calculate Response Time (1+2+3) / 3			4.3 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 **ppm**

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.39 ppm	25.7 ppm	0.7
#2	0.42 ppm	25.9 ppm	0.9
#3	0.39 ppm	25.6 ppm	0.6
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			1.1% #DIV/0! Must be less than 10%

Performed By: JOSH RAZO Date/Time: 7-21-22 / 0515

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INTEGRATED

LANDFILL NAME: Redwood INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 15 SERIAL #: 1036346772

MONITORING DATE: 7-21-22 TIME: 0515

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 24.8 ppm
3. Adjust meter settings to read 25 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.6 ppm	3.1 ppm	2.8 ppm

Background Value = 2.8 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	24.3 ppm	22.5 ppm	8
#2	24.6 ppm	22.5 ppm	7
#3	24.8 ppm	22.5 ppm	7
Calculate Response Time (1+2+3) / 3			7.3 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 25 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.40 ppm	24.3 ppm	0.7
#2	0.38 ppm	24.6 ppm	0.4
#3	0.43 ppm	24.8 ppm	0.2
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/25 X 100/1			0.6% #DIV/0! Must be less than 10%

Performed By: Dwight Anderson Date/Time: 7-21-22/0515

RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: _____

Date: 7-9-22 **Time:** 0800

Model # JCA 1000

Serial # #10 1036396773

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	2.1 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	7-9-22	Time required to attain 90% of Cal Gas ppm: 1. 5 / 2. 5 / 3. 6
Factory calibration record w/instrument within 3 months	(Pass) / Fail	Average: _____
		Equal to or less than 30 seconds? (Y) N
		Instrument calibrated to CH4 gas.

Comments: _____

P.O Box 748 • Colton, California 92324 •
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RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: John Woods

Date: 7-9-22 **Time:** 0815

Model # TVA 1000

Serial # 11 1036347794

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	2.0 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	7-9-22	Time required to attain 90% of Cal Gas ppm: 1. 5 / 2. 6 / 3. 5 / Average _____
Factory calibration record w/instrument within 3 months	(Pass) / Fail	Equal to or less than 30 seconds? (Y) N
		Instrument calibrated to CH4 gas.

Comments: _____

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RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: MG MABRITS

Date: 7-9-22 **Time:** 0830

Model # TVA 1000

Serial # #12 1036246941

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	1.8 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	7-9-22	Time required to attain 90% of Cal Gas ppm
Factory calibration record w/instrument within 3 months	(Pass) / Fail	1. 5 2. 5 3. 6 Average _____ Equal to or less than 30 seconds? (Y) N Instrument calibrated to CH4 gas.

Comments: _____

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RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: Jm NBMS

Date: 7-9-22 **Time:** 0845

Model # TVA 1000

Serial # #13 1102746 775

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	2.3 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100%
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	7-9-22	Time required to attain 90% of Cal Gas ppm
Factory calibration record w/instrument within 3 months	(Pass) / Fail	1. 6 2. 5 3. 5 Average _____ Equal to or less than 30 seconds? (Y) N Instrument calibrated to CH4 gas.

Comments: _____

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RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: M Martin

Date: 7-9-22 **Time:** 0915

Model # TVA 1000

Serial # #15 1036346772

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	211 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	7-9-22	Time required to attain 90% of Cal Gas ppm: 1. 6 / 2. 6 / 3. 4
Factory calibration record w/instrument within 3 months	(Pass) / Fail	Average: _____
		Equal to or less than 30 seconds? (Y) N
		Instrument calibrated to CH4 gas.

Comments: _____

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RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: RES Unit #10

SERIAL NUMBER: 1036246773

TECHNICIAN: M Roberts DATE: 7-9-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	100	+/- 25
500	500	500	+/- 125
10000	10000	10,000	+/- 2500
< 1	ZERO GAS	0.69	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50		+/- 12.5
100	100		+/- 25
500	500		+/- 125
< 1	ZERO GAS		< 3

All measurement standards are calibrated at scheduled intervals by the National Institute of Standards and Technology (NIST), or against certified standards, which are traceable to the National Institute of Standards and Technology.

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RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: RES cart #11

SERIAL NUMBER: 1036346774

TECHNICIAN: M. Mutt DATE: 7-9-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	100	+/- 25
500	500	500	+/- 125
10000	10000	10,000	+/- 2500
< 1	ZERO GAS	0.52	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50		+/- 12.5
100	100		+/- 25
500	500		+/- 125
< 1	ZERO GAS		< 3

All measurement standards are calibrated at scheduled intervals by the National Institute of Standards and Technology (NIST), or against certified standards, which are traceable to the National Institute of Standards and Technology.

P.O. Box 748 ▪ Colton, California 92324
(909) 422-1001 ▪ TOLL FREE (888) 325-1098 ▪ FAX (909) 422-0707 ▪ www.resenvironmental.com

RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: RES Van #12

SERIAL NUMBER: 1036246741

TECHNICIAN: M Mendez DATE: 9-9-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	100	+/- 25
500	500	503	+/- 125
10000	10000	10,000	+/- 2500
< 1	ZERO GAS	0.46	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50		+/- 12.5
100	100		+/- 25
500	500		+/- 125
< 1	ZERO GAS		< 3

All measurement standards are calibrated at scheduled intervals by the National Institute of Standards and Technology (NIST), or against certified standards, which are traceable to the National Institute of Standards and Technology.

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(909) 422-1001 ▪ TOLL FREE (888) 325-1098 ▪ FAX (909) 422-0707 ▪ www.resenvironmental.com

RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: RES Unit #13

SERIAL NUMBER: 1102746775

TECHNICIAN: M Mabrit DATE: 7-9-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	99	+/- 25
500	500	500	+/- 125
10000	10000	10,000	+/- 2500
< 1	ZERO GAS	0.59	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50		+/- 12.5
100	100		+/- 25
500	500		+/- 125
< 1	ZERO GAS		< 3

All measurement standards are calibrated at scheduled intervals by the National Institute of Standards and Technology (NIST), or against certified standards, which are traceable to the National Institute of Standards and Technology.

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RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: RES Van #15

SERIAL NUMBER: 1036346772

TECHNICIAN: [signature] DATE: 9-9-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	100	+/- 25
500	500	500	+/- 125
10000	10000	10,003	+/- 2500
< 1	ZERO GAS	0.65	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50		+/- 12.5
100	100		+/- 25
500	500		+/- 125
< 1	ZERO GAS		< 3

All measurement standards are calibrated at scheduled intervals by the National Institute of Standards and Technology (NIST), or against certified standards, which are traceable to the National Institute of Standards and Technology.

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Nampa, ID 83687 (USA)
Phone (800) 552-5003, Fax (208) 466-9143
www.isgases.com

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CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy (+/-)
Oxygen	20.9 %	2%
Nitrogen	Balance UHP	

Lot #	**20-7421**
Mfg. Date:	5/20/2020
Expiration Date:	
Transfill Date:	see cylinder
Parent Cylinder ID Number:	NY02268

Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Title: Quality Assurance Manager
Certificate Date: 5/20/2020


Service
INC.
Concentration (Mole%) Accuracy
. 20.9% Oxygen
. Bal. Nitrogen
Exp Date
7/10/2024
Lot#: 20-7421
P/N:01-100
103 L
Kaiser Avenue, Irvine, CA 92614
757-0353 or (800) 201-8150 Fax (949) 757-0363
103-01-100
103 L

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CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy
Methane	25 ppm	± 5%
Air	Balance	

Lot # 17-6074

Mfg. Date: 10/16/2017

Parent Cylinder ID Number: 17161

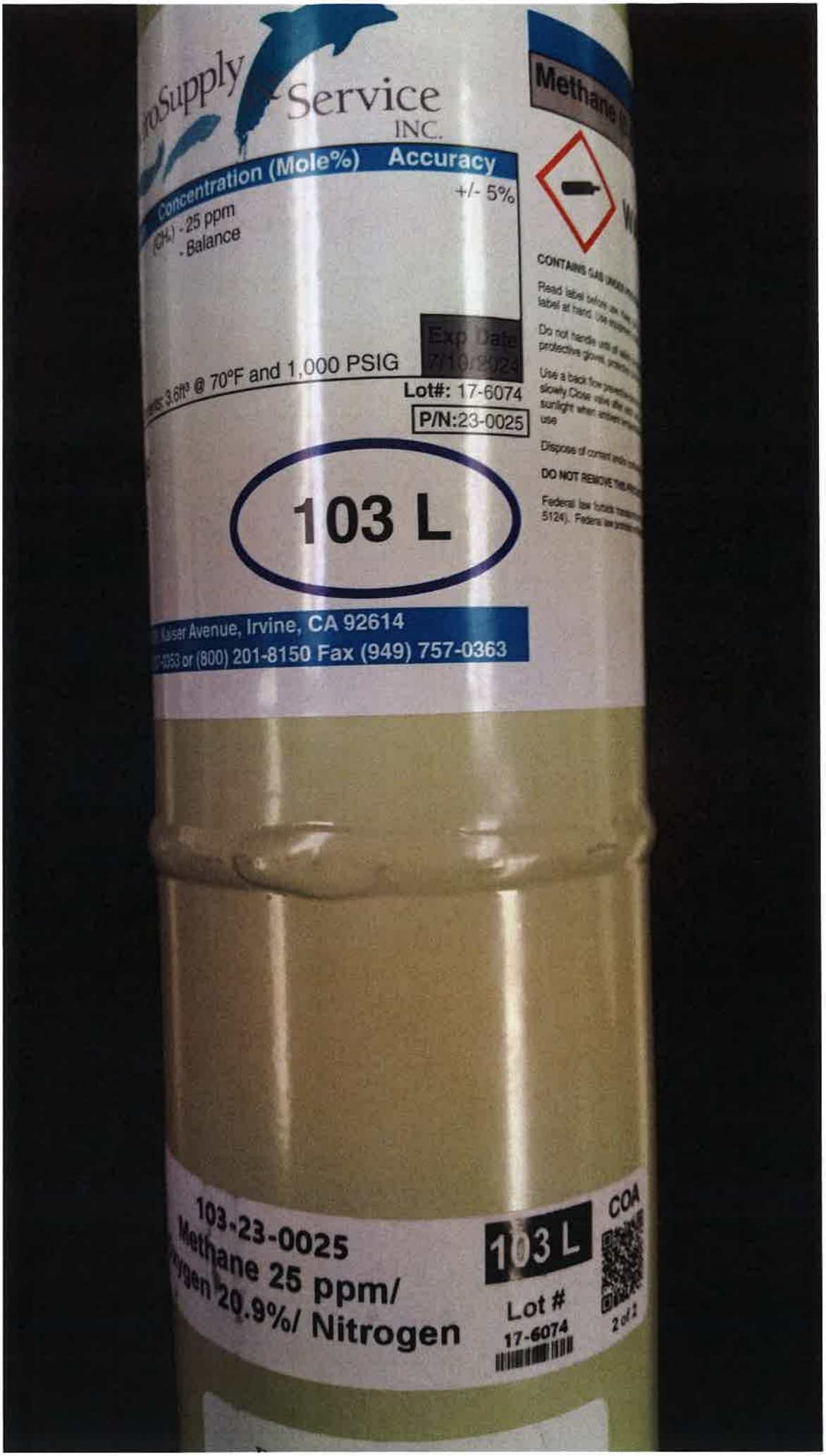
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Quality Assurance Manager
800-552-5003
Certificate Date: 10/16/2017


Service
INC.
Concentration (Mole%) Accuracy
+/- 5%
(CH4) - 25 ppm
- Balance
Exp Date
Lot#: 17-6074
P/N:23-0025
103 L
Kaiser Avenue, Irvine, CA 92614
(800) 201-8150 Fax (949) 757-0363
103-23-0025
Methane 25 ppm/
20.9%/ Nitrogen
103 L
Lot #
17-6074
COA

INTERMOUNTAIN SPECIALTY GASES

520 N. Kings Road • Nampa • Idaho • 83687

800-552-5003 • www.isgases.com

CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy
Methane	25 ppm	± 5%
Air	Balance	

Lot # 17-6074

Mfg. Date: 10/16/2017

Parent Cylinder ID Number: 17161

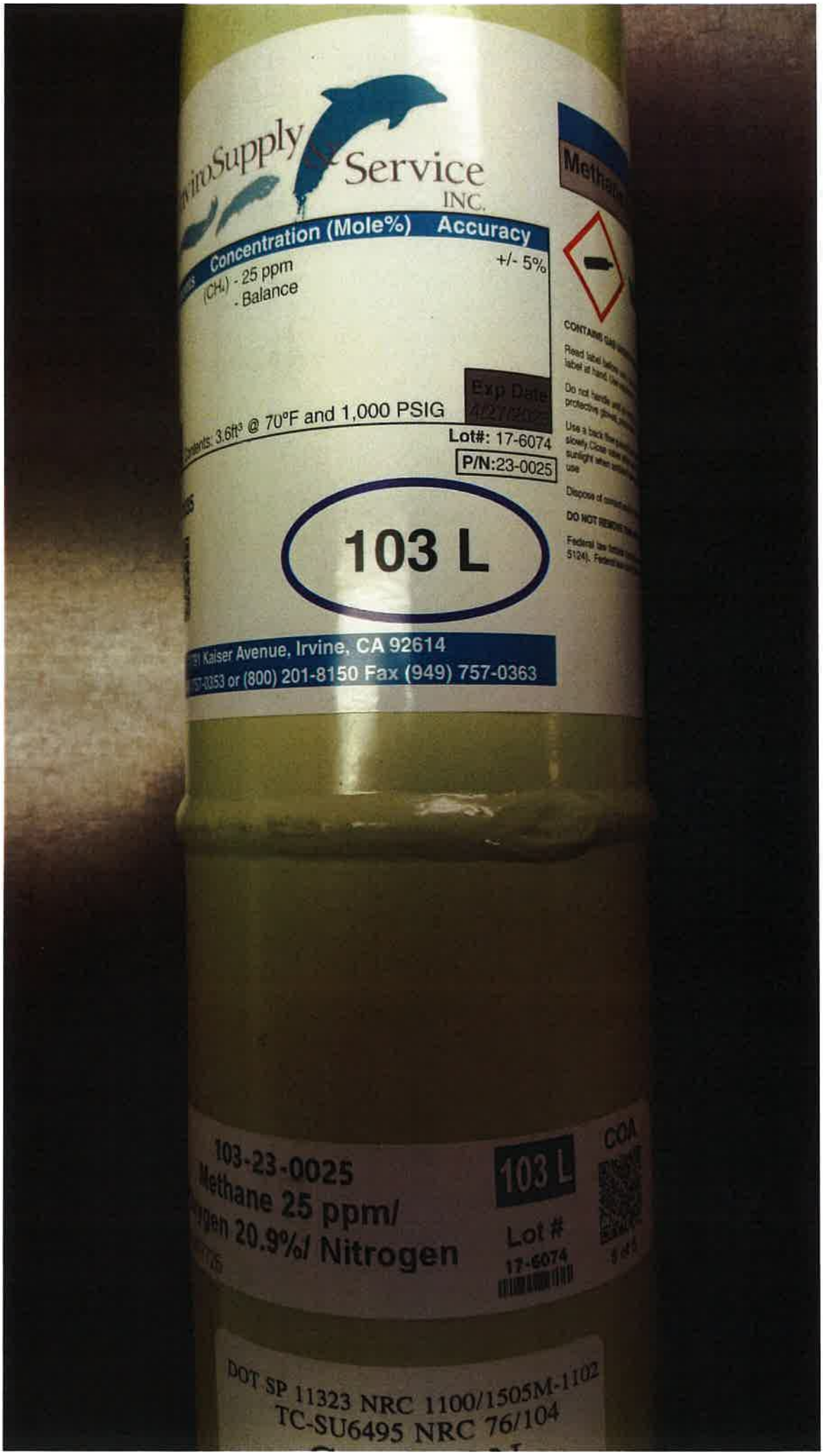
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Quality Assurance Manager
800-552-5003
Certificate Date: 10/16/2017


Service
INC.
Concentration (Mole%) Accuracy
(CH4) - 25 ppm
. Balance
+/- 5%
Exp Date
Contents: 3.6ft³ @ 70°F and 1,000 PSIG
Lot#: 17-6074
P/N:23-0025
103 L
Kaiser Avenue, Irvine, CA 92614
(800) 201-8150 Fax (949) 757-0363
103-23-0025
Methane 25 ppm/
ygen 20.9%/ Nitrogen
103 L
Lot #
17-6074
COA
DOT SP 11323 NRC 1100/1505M-1102
TC-SU6495 NRC 76/104

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Composition	Certification	Analytical Accuracy (+/-)
Methane	500 ppm	2%
Oxygen	20.9 %	2%
Nitrogen	Balance UHP	

Lot #	**20-7497**
Mfg. Date:	7/10/2020
Expiration Date:	
Transfill Date:	see cylinder
Parent Cylinder ID Number:	TWC001763

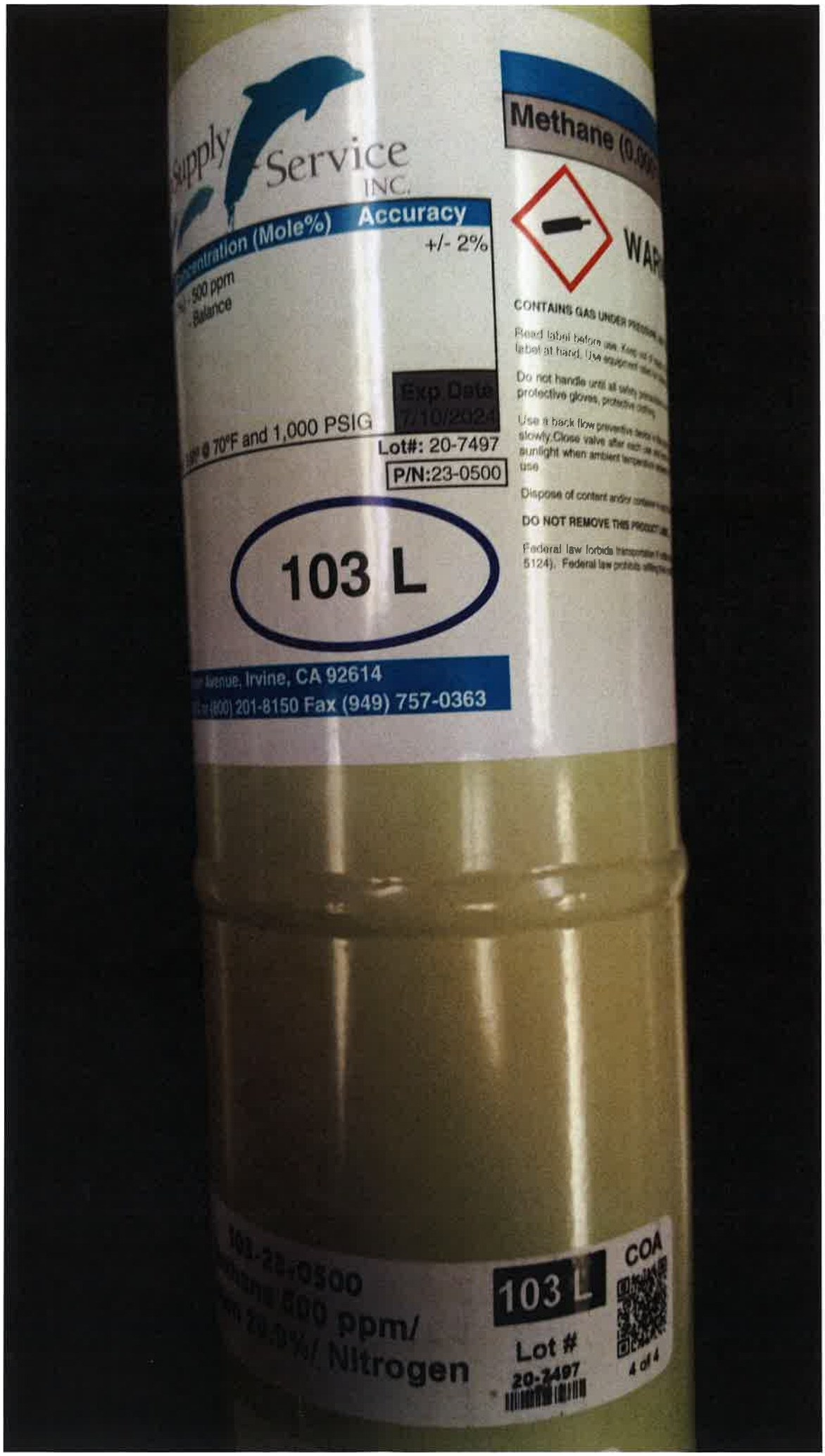
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Title: Quality Assurance Manager
Certificate Date: 7/10/2020


Supply Service
INC.
Methane (0.
Concentration (Mole%)
Accuracy
+/- 2%
- 500 ppm
- Balance
WAR
CONTAINS GAS UNDER PRESSURE
Read label before use. Keep
label at hand. Use equipment
Do not handle until all safety
protective gloves, protective
Use a back flow preventive
slowly.Close valve after each
sunlight when ambient
use
Dispose of content and
DO NOT REMOVE THIS PRODUCT
Federal law forbids
5124). Federal law
Exp Date
7/10/2024
Lot#: 20-7497
P/N:23-0500
103 L
Avenue, Irvine, CA 92614
(800) 201-8150 Fax (949) 757-0363
103 L
COA
Lot #
20-7497
4 of 4
Nitrogen

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CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy
Methane	500 ppm	± 2%
Air	Balance	

Lot # 19-6955

Mfg. Date: 7/24/2019

Parent Cylinder ID Number: 001763

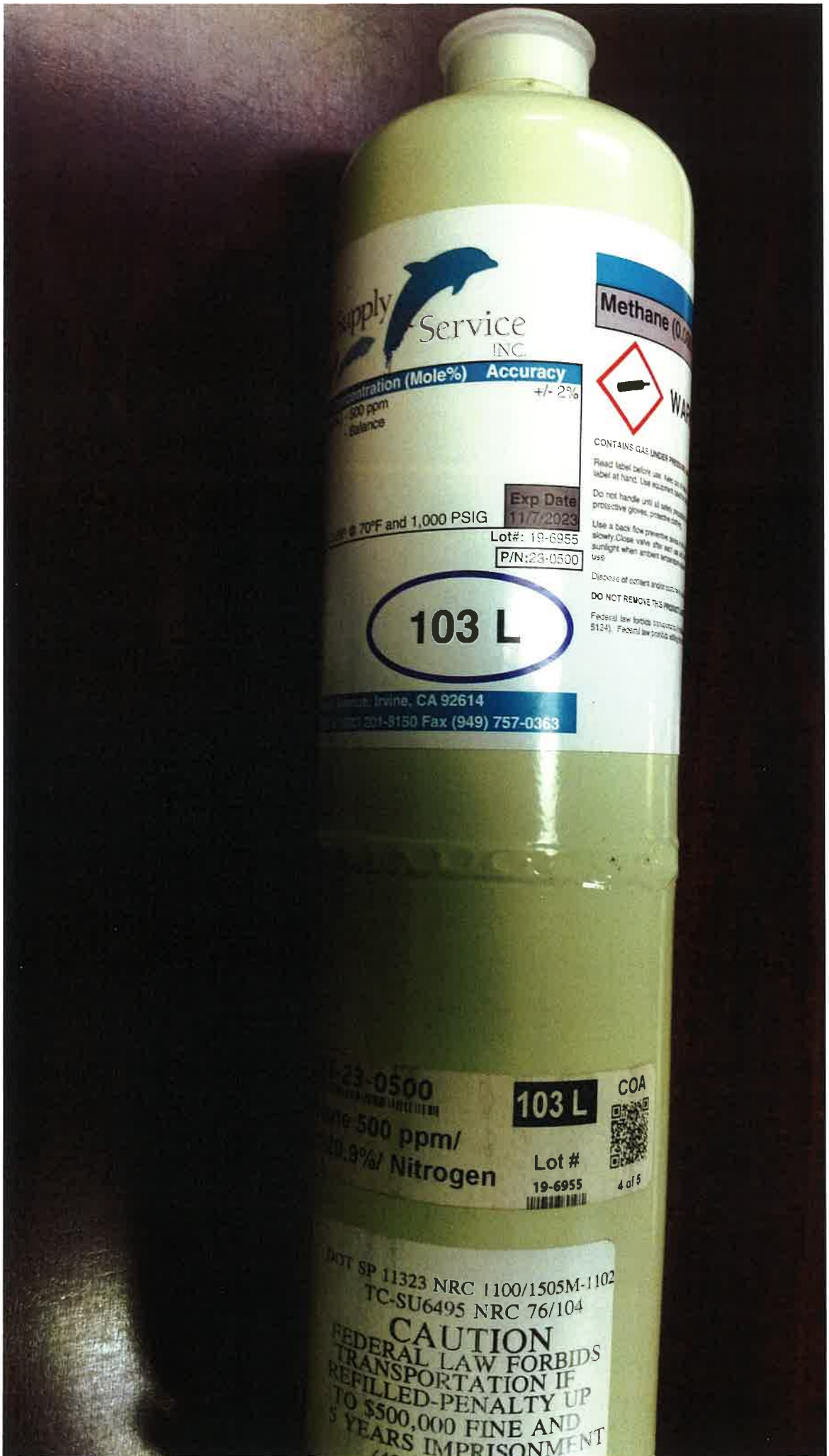
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Quality Assurance Manager
800-552-5003
Certificate Date: 7/24/2019


Supply Service INC.
Accuracy
+/- 2%
Exp Date
11/7/2023
Lot#: 19-6955
P/N:23-0500
103 L
Irvine, CA 92614
Fax (949) 757-0363
Methane
CONTAINS GAS UNDER
DO NOT REMOVE THIS
23-0500
500 ppm/
Nitrogen
103 L
Lot #
19-6955
COA
4 of 5
DOT SP 11323 NRC 1100/1505M-1102
TC-SU6495 NRC 76/104
CAUTION
FEDERAL LAW FORBIDS
TRANSPORTATION IF
REFILLED-PENALTY UP
TO $500,000 FINE AND
5 YEARS IMPRISONMENT

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Nampa, ID 83687 (USA)
Phone (800) 552-5003, Fax (208) 466-9143
www.isgases.com

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Composition	Certification	Analytical Accuracy (+/-)
Methane	500 ppm	2%
Oxygen	20.9 %	2%
Nitrogen	Balance UHP	

Lot #	18-6641
Mfg. Date:	12/18/2018
Expiration Date:	
Transfill Date:	see cylinder
Parent Cylinder ID Number:	001763

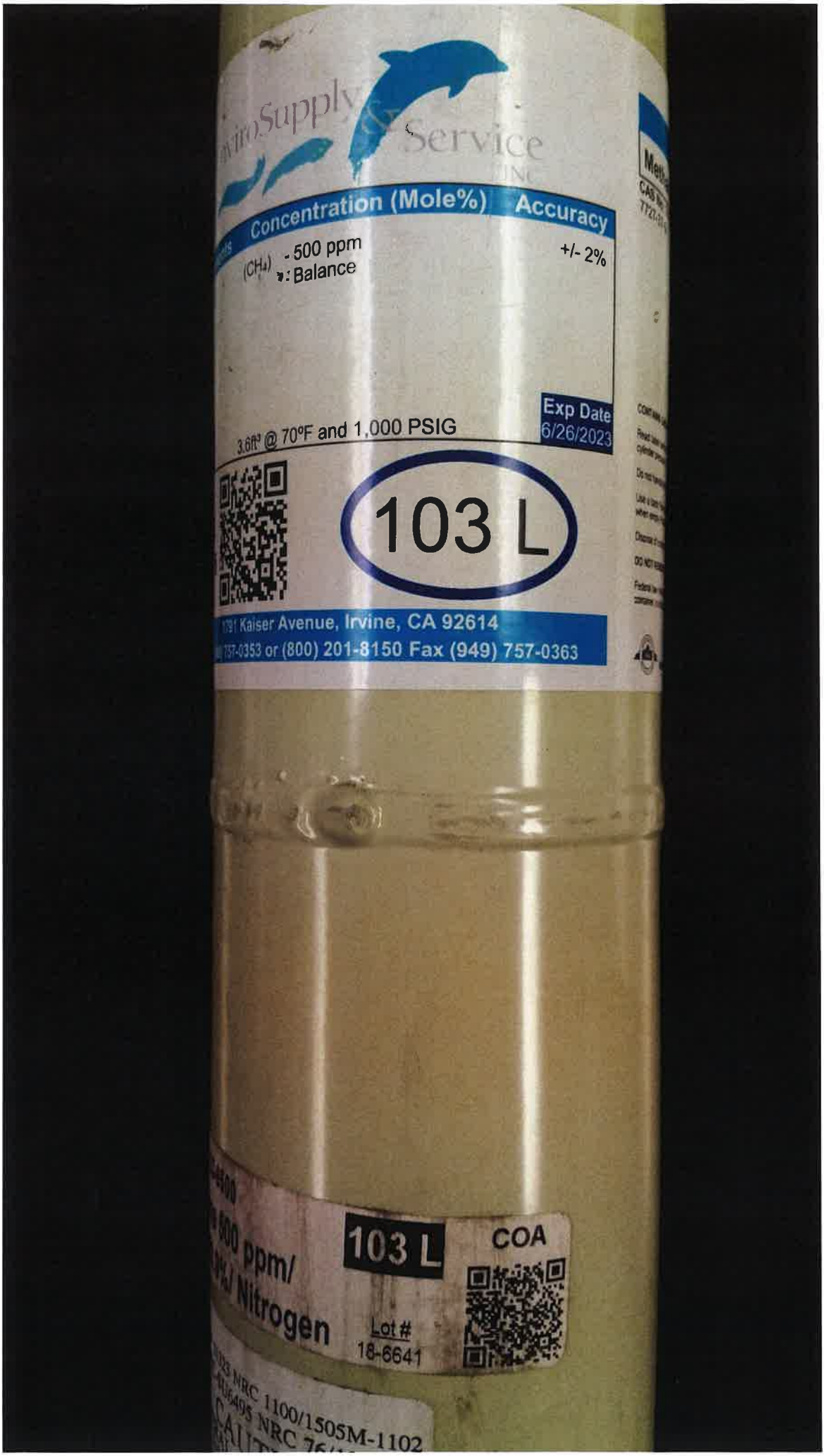
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Title: Quality Assurance Manager
Certificate Date: 12/18/2018


Concentration (Mole%)
Accuracy
(CH4) - 500 ppm
: Balance
+/- 2%
3.6ft³ @ 70°F and 1,000 PSIG
Exp Date
6/26/2023
103 L
1731 Kaiser Avenue, Irvine, CA 92614
757-0353 or (800) 201-8150 Fax (949) 757-0363
103 L
COA
Lot #
18-6641
Nitrogen
1100/1505M-1102

Nor

A DIVISION OF NORLAB, INC.

Calibration Gases & Equipment

CERTIFICATE OF ANALYSIS

Premier Safety & Service

46400 Continental Drivve
Chesterfield ,MI 48047

Cust Number 07152
Order Number 62891146
PO Number 04548169

Lot Number 9-326-80
Norlab Part# J1971500PA
Cylinder Size 103 Liter
Number of Cyl 1

Customer Part# N/A

Date on Manufacture 12/31/2019
Expires 12/2022
Analytical Accuracy +/- 2 %

Component	Reported Concentration	Requested Concentration
Methane	500 ppm	500 ppm
Air	Balance	Balance

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

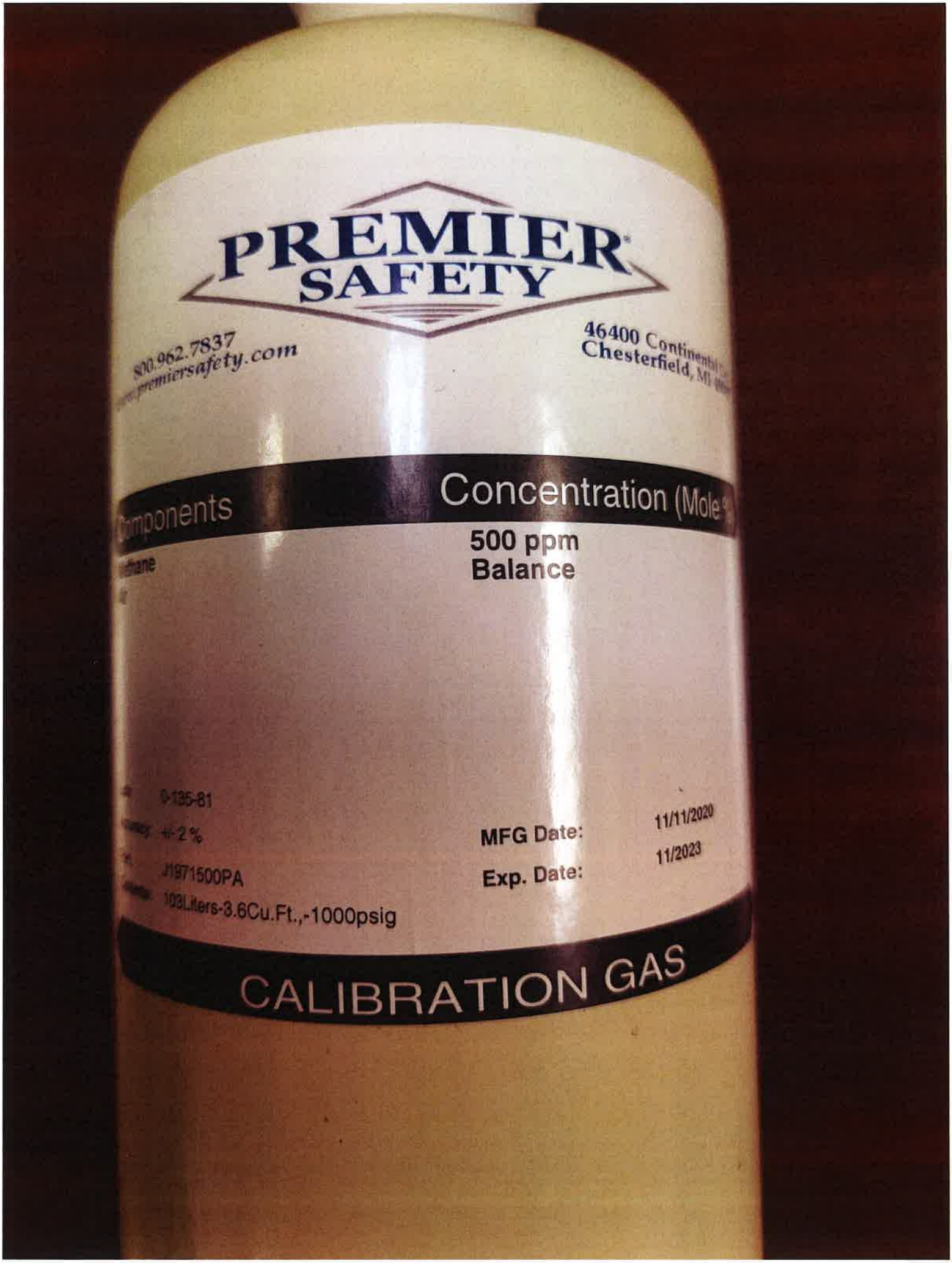
The cylinders in this lot were transfilled from cylinders prepared gravimetrically and traceable to the NIST by the certified weights used to calibrate the scale. The transfilled cylinders were then analyzed against standards traceable to the NIST by weights or SRMs.

NIST Traceable Numbers 20180519 and 20180224

Approved: _____ Date Signed: 12/31/2019

David Reed
Lab Technician

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672


PREMIER
SAFETY
800.962.7837
premiersafety.com
46400 Continental
Chesterfield, MI
Components
Concentration (Mole
500 ppm
Balance
MFG Date:
11/11/2020
Exp. Date:
11/2023
CALIBRATION GAS

NorLAB®
A DIVISION OF NORCO, INC.

Calibration Gases & Equipment

CERTIFICATE OF ANALYSIS

Premier Safety & Service

33596 Sterling Pond Blvd
Sterling Hights MI 48312

Cust Number 07152
Order Number 69679439
PO Number 04906817

Lot Number 2-154-85
Norlab Part# J1002
Cylinder Size 103 Liter
Number of Cyl 1

Customer Part# N/A

Date on Manufacture 6/13/2022
Expires 06/2025
Analytical Accuracy Certified

Component	Reported Concentration	Requested Concentration
Air	Zero Grade	Zero Grade
Oxygen	20.9 %	20.9 %
T.H.C. (as Methane)	< 1.0 ppm	< 1.0 ppm
Nitrogen	Balance	Balance

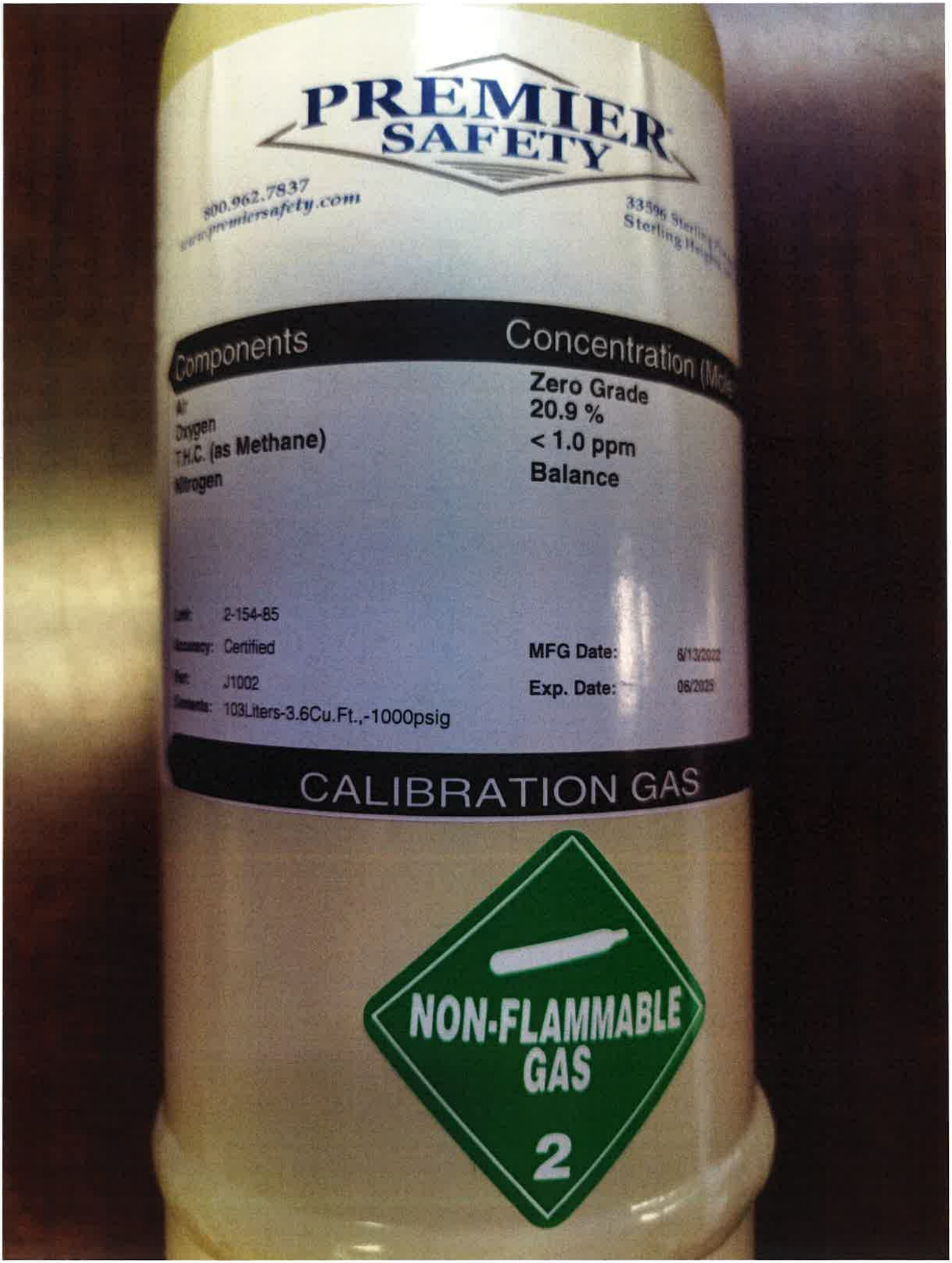
Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Minor constituents tested with standards traceable to NIST by mass or comparison to SRM's (Standard Reference Materials).

NIST Traceable Numbers are available upon request.

Approved: _____ Date Signed: 6/13/2022
David Reed
Lab Technician

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672


PREMIER
SAFETY
800.962.7837
www.premiersafety.com
33596 Sterling
Sterling Heights
Components
Concentration (Mole
Air
Zero Grade
Oxygen
20.9 %
T.H.C. (as Methane)
< 1.0 ppm
Nitrogen
Balance
Lot: 2-154-85
Accuracy: Certified
MFG Date: 8/13/2022
Ref: J1002
Exp. Date: 08/2025
Comments: 103Liters-3.6Cu.Ft.,-1000psig
CALIBRATION GAS
NON-FLAMMABLE
GAS
2

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Calibration Gases & Equipment

CERTIFICATE OF ANALYSIS

Premier Safety & Service

33596 Sterling Pond Blvd
Sterling Hights MI 48312

Cust Number 07152
Order Number 69671309
PO Number 08361523

Lot Number 2-108-80
Norlab Part# J1971500PA
Cylinder Size 103 Liter
Number of Cyl 1

Customer Part# N/A

Date on Manufacture 6/10/2022
Expires 06/2025
Analytical Accuracy +/- 2 %

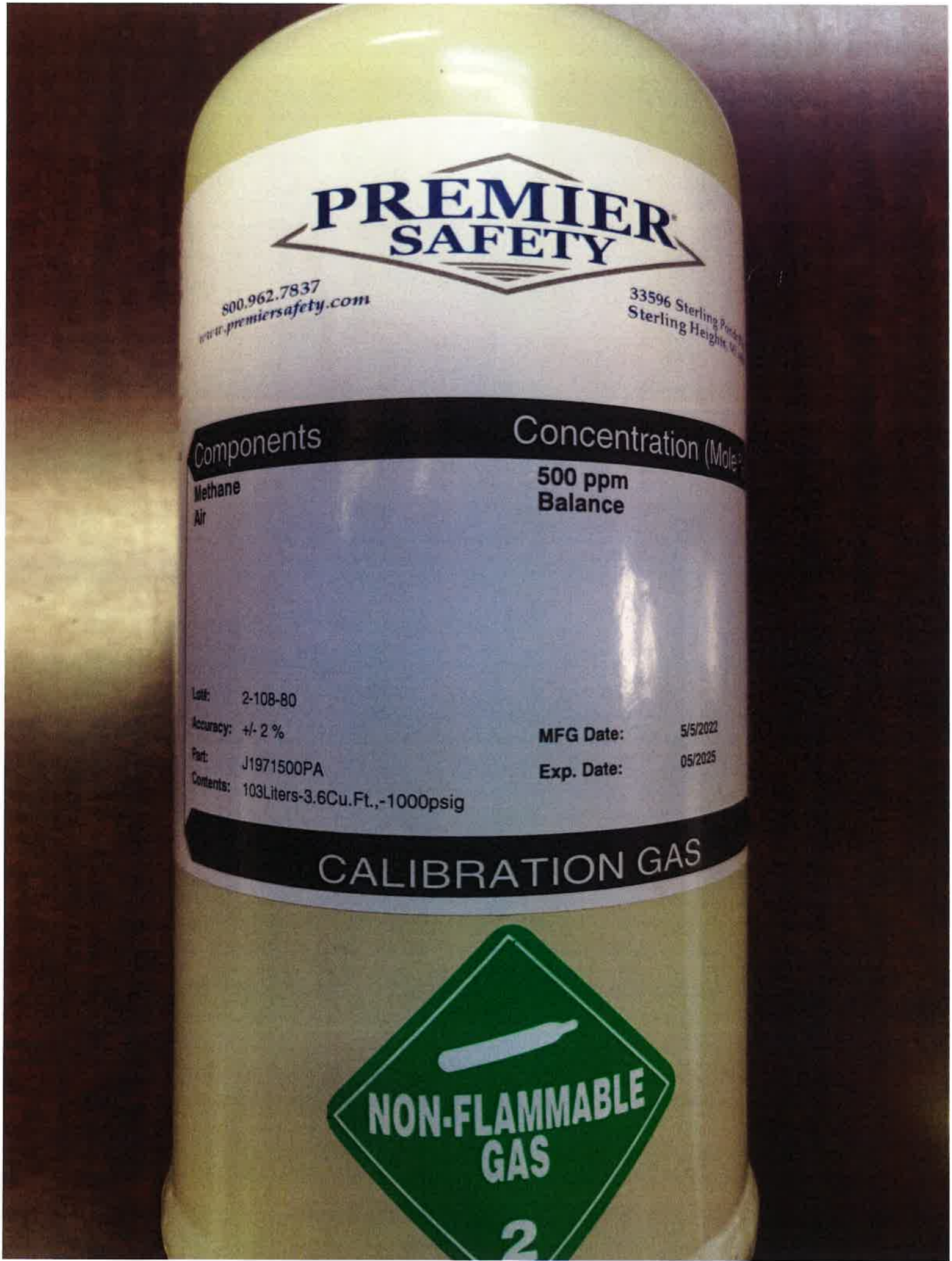
Component	Reported Concentration	Requested Concentration
Methane	500 ppm	500 ppm
Air	Balance	Balance

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

The cylinders in this lot were transfilled from cylinders prepared gravimetrically and traceable to the NIST by the certified weights used to calibrate the scale. The transfilled cylinders were then analyzed against standards traceable to the NIST by weights or SRMs. NIST Traceable Numbers are available upon request.

Approved: _____ Date Signed: 6/10/2022
David Reed
Lab Technician

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672


PREMIER
SAFETY
800.962.7837
www.premiersafety.com
33596 Sterling Pond
Sterling Heights, MI
Components
Concentration (Mole
Methane
Air
500 ppm
Balance
Lot#: 2-108-80
Accuracy: +/- 2 %
Part: J1971500PA
Contents: 103Liters-3.6Cu.Ft.,-1000psig
MFG Date: 5/5/2022
Exp. Date: 05/2025
CALIBRATION GAS
NON-FLAMMABLE
GAS
2


EQUIPCO
SALES & SERVICE
2100 MERIDIAN PARK BLVD
Concord, CA 94520
TO REORDER CALL 1 (888) 234-5678
METHANE 500ppm
AIR BALANCE
Analytical Accuracy +/- 2%
103L @ 70F & 1000 PSIG
Lot# 260447
P/N MET-500-103L
EXP: JAN/2025
EQUIPCO
SALES & SERVICE
2100 MERIDIAN PARK BLVD
Concord, CA 94520
TO REORDER CALL 1 (888) 234-5678
AIR, ULTRA ZERO
THC <0.2 PPM
Analytical Accuracy +/- 2%
103L @ 70F & 1000 PSIG
Lot# 260362
P/N AIR-ZER-103L
EXP: JAN/2025

WASTE MANAGEMENT
172 98th Avenue
Oakland, CA 94603
(510) 430-8509

October 14, 2022

Ms. Alisha McCutcheon
Redwood Landfill, Inc.
8590 Redwood Highway
Novato, California 94948

Re: September 2022 Surface Emissions Monitoring Report for Redwood Landfill, Inc.

Dear Ms. McCutcheon:

This monitoring report for "**Redwood Landfill, Inc. (RLI)"** contains the results of the September 2022 Surface Emissions Monitoring (SEM). Initial surface emissions monitoring was performed by Roberts Environmental Services, LLC. (RES).

APPLICABLE REQUIREMENTS

The monitoring discussed in this report was conducted in accordance with the following requirements:

Surface Emission Monitoring (SEM)

- New Source Performance Standard (NSPS), Title 40 of the Code of Federal Regulations (CFR) §60.755 (c) and (d), 40 CFR 60, Appendix A Method 21, promulgated by the United States Environmental Protection Agency (USEPA).

- Bay Area Air Quality Management District (BAAQMD) Regulation 8, Rule 34, Section 303 (Landfill Surface Requirements) and Section 607 (Landfill Surface Inspection procedures).

PROCEDURES

General

Per NSPS and 8-34 rules, the entire surface of the landfill was monitored following a serpentine path with a 100' spacing. Active portions of the Landfill, slope areas, and as requested in the approved ACO, areas containing only asbestos-containing waste, inert waste and/or non-decomposable waste which are excluded for safety as allowed by the NSPS and 8-34.

Field personnel walked the surface of the landfill using the gridlines normally used for monitoring required by AB32 (see Attachment A map). These grids typically have dimensions of 500' x 100'. A consistent 100' spacing was achieved by walking on the 500' long borderline shared by two grids. Additionally, in accordance with the provisions of 40 CFR 60.753(d) and

60.755(c)(1-3), the entire perimeter of the landfill surface was monitored. During the event, special attention was given to monitoring unusual cover conditions (stressed vegetation, cracks, seeps, etc.) and any areas with unusual odors.

Instantaneous Surface Emissions Monitoring

The Instantaneous SEM was conducted using a Toxic Vapor Analyzer (TVA) 1000 flame ionization detector (FID), which was calibrated to 500 parts per million by volume (ppm_v) methane, which meets or exceeds all guidelines set forth in the NSPS and 8-34. The FID was calibrated prior to use in accordance with the United States Environmental Protection Agency (USEPA) Method 21 requirements.

RES personnel walked the surface of the landfill with the wand tip held at 2 inches from the landfill surface. While sampling the grid; the technicians also checked any surface impoundments (wells or otherwise) for leaks. Technicians also checked any surface cracks, seeps, or other areas that show evidence of surface emissions (odors or distressed vegetation). Active and sloped areas excluded for safety were documented on the map included in Attachment A.

All instantaneous surface monitoring was performed in accordance with the applicable requirements referenced in this report. Any detections of methane above 500 ppm_v (exceedances) for instantaneous were recorded, flagged, and marked on an SEM Map, which, wherever required, is included in the Appendices of this report. Applicable corrective action and re-monitoring timelines are listed below:

- Corrective actions must be initiated within 5 days of the initial exceedance and re-monitoring shall be conducted within 10 days of the initial exceedance.
    - If the re-monitoring event shows the exceedance is corrected, the location shall be re-monitored within 1 month of the initial exceedance.
    - If the 1-month re-monitoring event shows the location is still corrected, all re-monitoring requirements have been completed.
- If either the first 10-day or 1-month re-monitoring events show a second exceedance, additional corrective actions shall be completed, and a second re-monitoring event shall be conducted within 10 days of the second exceedance.
- If the second 10-day re-monitoring event shows the second exceedance is corrected, the location shall be re-monitored within 1 month of the initial exceedance. If the 1-month re-monitoring event shows the area is still corrected, monitoring requirements have been completed.

If any location shows three exceedances, an additional well shall be installed within 120 days of the initial exceedance.

SEPTEMBER 2022 SEM RESULTS

The Instantaneous surface monitoring was performed on September 26, 2022, in accordance with the NSPS and BAAQMD 8-34. Results and data from the monitoring are presented in Attachment A.

Initial Monitoring Event Exceedances of 500 ppm_v

There were no exceedances of 500 ppm_v as methane detected on September 26, 2022. Remonitoring was not required.

WEATHER CONDITIONS

Wind Speed Conductions during the Surface Emission Monitoring Events

Wind speeds during initial monitoring were monitored using a portable weather station. The station has a strip chart that records the wind speed and direction. The chart data is scanned and included in Attachment B.

EQUIPMENT CALIBRATION

The portable analyzers were calibrated to meet the instrument specifications requirements of U.S. EPA Method 21. The calibration gas used was methane, diluted to a nominal concentration of 25 ppm_v in air for integrated sample analyses and 500 ppm_v in air for instantaneous monitoring to comply with the requirements.

All analyzers were calibrated prior to use with required response time and precision related instrument checks. Calibration records include the following: Response time test record; Response factor determination for methane; Calibration Precision test records; and Daily Instrument Calibration and Background test records for each gas meter that was used during the monitoring event. The calibration log records are included in Attachment C.

All monitoring was completed in accordance with the applicable regulatory requirements or approved alternatives. If you have any questions regarding this report, please do not hesitate to contact me at (510) 613-2852.

Thank you,
Waste Management

Michael Chan
Environmental Protection Specialist

Attachment A – Instantaneous Surface Emission Monitoring Event Records

- SEM Map
- Monitoring Logs and Exceedances

Attachment B – Weather Station Data

- Strip Chart Data

Attachment C – Calibration Records

- Instrument and Gas Calibration Records

Attachment A

Surface Emission Monitoring Event Records

9-26-22
NSPS SWEEP

= DW

= UPW

LEGEND

- EXISTING 10' CONTOUR
- EXISTING LFG HEADER-ABOVE GROUND
- EXISTING HORIZONTAL COLLECTOR
- EXISTING FORCE MAIN AND AIR LINE
- EXISTING HORIZONTAL COLLECTOR WELLHEAD
- EXISTING HORIZONTAL COLLECTOR TERMINAL HEAD
- EXISTING CONTROL VALVE
- EXISTING BLIND FLANGE
- EXISTING FLANGE CONNECTION
- EXISTING REDUCER FITTING
- EXISTING CONDENSATE PUMP STATION
- EXISTING ROAD CROSSING
- EXISTING HEADER HIGH POINT
- EXISTING CAP ON EXISTING PIPE
- EXISTING LEACHATE SUMP

No Exceedances

GRAPHIC SCALE

200 100 0 200 400 600

SCALE: 1"=200'

NOTES:

1. EXISTING TOPOGRAPHY BASED ON AERIAL SURVEY BY MILLER CREEK AERIAL MAPPING DATED FEBRUARY 19, 2014. FEATURES, CONTOURS, AND ELEVATIONS OF THIS BASE MAP ARE APPROXIMATE INDICATIONS OF CURRENT AND FUTURE CONDITIONS.
2. EXISTING GCCS COMPONENTS (INSTALLED PRIOR TO THE 2015 GCCS IMPROVEMENTS) ARE PER THE LOCATIONS ESTABLISHED AT THE END OF THE 2014 IMPROVMENTS BY OTHERS.
3. ALL 2014 GCCS COMPONENTS INSTALLED AS PART OF THE 2014 GCCS IMPROVEMENTS ARE SHOWN IN THEIR APPROXIMATE LOCATIONS.
4. SURVEY DATA BASED ON FIELD SURVEY PERFORMED ON OCTOBER 29, 2015, BY F3 & ASSOCIATES, INC.

F3 & Associates, Inc.
LAND SURVEYING - 3D INDUSTRIAL LASER SCANNING
701 E. H ST. ,BENICIA ,CA 94510
PHONE(707)748-4300 FAX(707)361-0295
www.F3-Inc.com

REDWOOD LANDFILL

AS-BUILT GCCS PLAN

2015 GCCS IMPROVEMENTS

CALIFORNIA

MARIN COUNTY

NOVATO

DESIGN BY:	N/A
DRAWN BY:	STAFF
DATE:	NOV 2015
SCALE:	1"=200'
PAGE OF	1 1
JOB NUMBER:	15341

Instantaneous Landfill Surface Emissions Monitoring
Exceedance and Monitoring Logs (NSPS/BAAQMD 8-34)

2022 Month: September
INITIAL MONITORING PERFORMED BY: RES
FOLLOW-UP MONITORING PERFORMED BY:
LANDFILL NAME: Redwood Landfill, Inc.

Initial Monitoring Event			Corrective Action		1st 10-day Follow-Up			1st 30-day Follow-Up			
Flag Number	Monitoring Date	Reading ppm	Repair Date	Action Taken	Monitoring Date	No Exced. <500 ppm	Exced. >500 ppm	Monitoring Date	No Exced. <500 ppm	Exced. >500 ppm	**Comments**
No Exceedances on September 26, 2022											

Attachment B

Weather Station Data

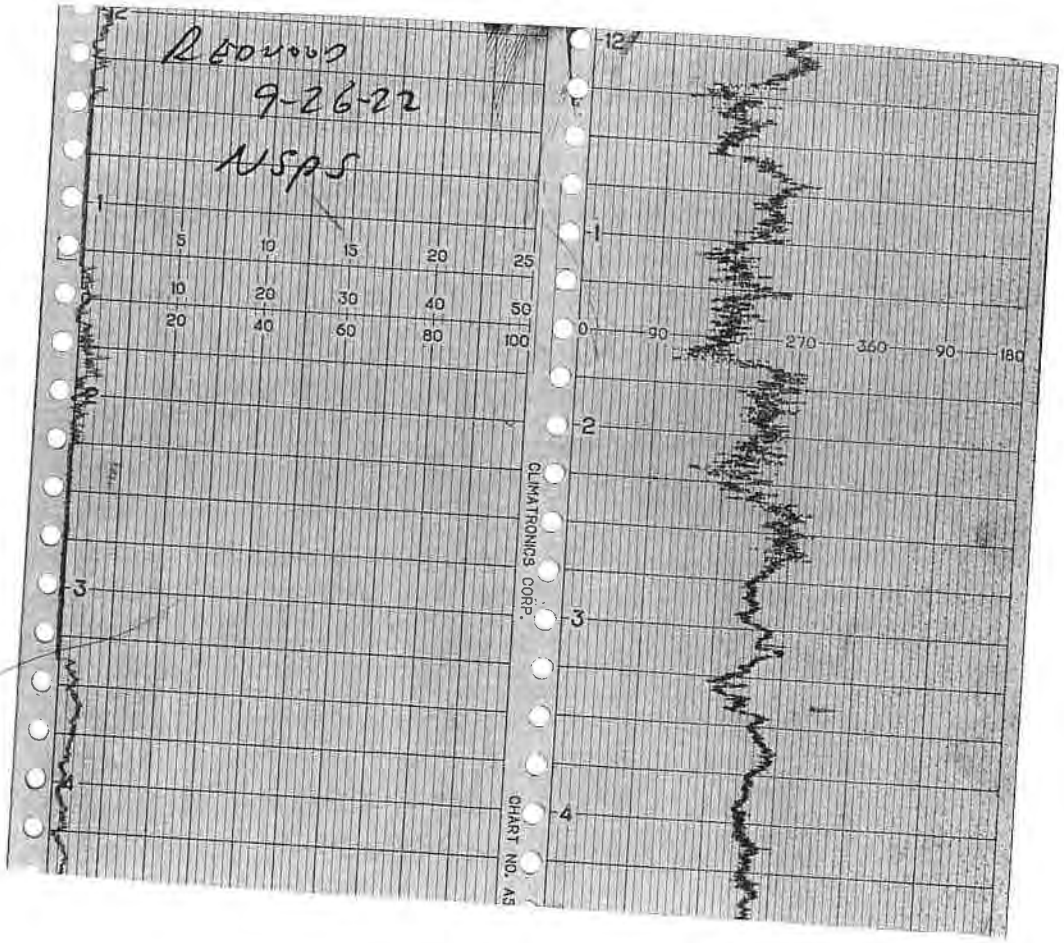
RES Environmental Inc.

16-POINT WIND DIRECTION INDEX

NO	DIRECTION	DEGREES		
		FROM	CENTER	TO
16	NORTH (N)	348.8	360.0	011.3
1	NORTH-NORTHEAST (NNE)	011.3	022.5	033.8
2	NORTHEAST (NE)	033.8	045.0	056.3
3	EAST-NORTHEAST (ENE)	056.3	067.5	078.8
4	EAST (E)	078.8	090.0	101.3
5	EAST-SOUTHEAST (ESE)	101.3	112.5	123.8
6	SOUTHEAST (SE)	123.8	135.0	146.3
7	SOUTH-SOUTHEAST (SSE)	146.3	157.5	168.8
8	SOUTH (S)	168.8	180.0	191.3
9	SOUTH-SOUTHWEST (SSW)	191.3	202.5	213.8
10	SOUTHWEST (SW)	213.8	225.0	236.3
11	WEST-SOUTHWEST (WSW)	236.3	247.5	258.8
12	WEST (W)	258.8	270.0	281.3
13	WEST-NORTHWEST (WNW)	281.3	292.5	303.8
14	NORTHWEST (NW)	303.8	315.0	326.3
15	NORTH-NORTHWEST (NNW)	326.3	337.5	348.8

865 Via Lata ▪ Colton, California 92324 ▪ (909) 422-1001 Fax (909) 422-0707

WIND SPEED & DIRECTION CHART ROLL



Attachment C

Calibration Records

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: REPUBLIC INSTRUMENT MAKE: THERMO

MODEL: TVA1000 EQUIPMENT #: 10 SERIAL #: 1636346773

MONITORING DATE: 9-26-22 TIME: 1200

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 500 ppm
3. Adjust meter settings to read 500 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.6 ppm	2.4 ppm

Background Value = 2.4 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	507 ppm	457 ppm	6
#2	500 ppm	450 ppm	6
#3	506 ppm	450 ppm	6
Calculate Response Time (1+2+3) / 3			6 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.10 ppm	507 ppm	7
#2	0.06 ppm	500 ppm	0
#3	0.04 ppm	500 ppm	0
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/500 X 100/1			0.46 #DIV/0! Must be less than 10%

Performed By: LEIGH WADE Date/Time: 9-26-22 -1200

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: Redwood INSTRUMENT MAKE: THERMO

MODEL TVA1000 EQUIPMENT #: 11 SERIAL #: 1036346772

MONITORING DATE: 9-26-22 TIME: 1200

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 500 ppm
3. Adjust meter settings to read 500 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.6 ppm	2.4 ppm

Background Value = 2.4 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	495 ppm	445 ppm	7
#2	500 ppm	450 ppm	7
#3	500 ppm	450 ppm	7
Calculate Response Time (1+2+3) / 3			7 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.09 ppm	495 ppm	5
#2	0.06 ppm	500 ppm	0
#3	0.05 ppm	500 ppm	0
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/500 X 100/1			0.03 #DIV/0! Must be less than 10%

Performed By: Calvin Orth Date/Time: 9-26-22 - 1200

RES Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: Redwood INSTRUMENT MAKE: Ideal

MODEL: TVA 1000 EQUIPMENT #: 12 SERIAL #: 1036241674

MONITORING DATE: 9-26-22 TIME: 1200

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 500 ppm
3. Adjust meter settings to read 500 ppm.

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.6 ppm	2.4 ppm

Background Value = 2.4 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	503 ppm	453 ppm	6
#2	485 ppm	435 ppm	6
#3	500 ppm	450 ppm	6
Calculate Response Time (1+2+3) / 3			6 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.14 ppm	505 ppm	5
#2	0.08 ppm	500 ppm	0
#3	0.07 ppm	500 ppm	0
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/500 X 100/1			0.33 #DIV/0! Must be less than 10%

Performed By: Dwight Gardenier Date/Time: 9-26-22 - 1200

RES
Environmental Inc.

CALIBRATION PROCEDURE AND BACKGROUND REPORT – INSTANTANEOUS

LANDFILL NAME: Redwood INSTRUMENT MAKE: Thermo

MODEL: TVA1000 EQUIPMENT #: 13 SERIAL #: 1102746775

MONITORING DATE: 9-26-22 TIME: 1200

Calibration Procedure:

1. Allow instrument to zero itself while introducing air.
2. Introduce calibration gas into the probe. Stabilized reading = 500 ppm
3. Adjust meter settings to read 500 ppm

Background Determination Procedure

Upwind Background Reading: (Highest in 30 seconds)	Downwind Background Reading: (Highest in 30 seconds)	Background Value: (Upwind + Downwind) / 2
2.2 ppm	2.6 ppm	2.4 ppm

Background Value = 2.4 ppm

INSTRUMENT RESPONSE TIME RECORD

Measurement #	Stabilized Reading Using Calibration Gas	90% of the Stabilized Reading	Time to Reach 90% of Stabilized Reading after switching from Zero Air to Calibration Gas
#1	492 ppm	442 ppm	5
#2	500 ppm	450 ppm	5
#3	500 ppm	450 ppm	5
Calculate Response Time (1+2+3) / 3			5 #DIV/0! Must be less than 30 seconds

CALIBRATION PRECISION RECORD

Calibration Gas Standard = 500 ppm

Measurement #	Meter Reading for Zero Air (A)	Meter Reading for Calibration Gas (B)	Calculate Precision [STD – (B)]
#1	0.13 ppm	492 ppm	8
#2	0.11 ppm	502 ppm	0
#3	0.09 ppm	510 ppm	0
Calculate Precision [STD-B1] + [STD-B2] + [STD-B3] / 3 X 1/500 X 100/1			0.53 #DIV/0! Must be less than 10%

Performed By: Josh Rego Date/Time: 9-26-22 - 1200

RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: JM CM

Date: 9-10-22 **Time:** 0900

Model # TVA 1000

Serial # 10 1036346773

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	2.4 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	7-9-22	Time required to attain 90% of Cal Gas ppm: 1. 6 / 2. 6 / 3. 6
Factory calibration record w/instrument within 3 months	(Pass) / Fail	Average: 6.0
		Equal to or less than 30 seconds? (Y) N
		Instrument calibrated to CH4 gas.

Comments: _____

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RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: JM JM

Date: 9-10-22 Time: 0915

Model # TVA 1000

Serial # 11 1036346 774

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	2.1 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	7-9-22	Time required to attain 90% of Cal Gas ppm: 1. 2 2. 2 3. 2 Average 2.0
Factory calibration record w/instrument within 3 months	(Pass) / Fail	Equal to or less than 30 seconds? (Y) N
		Instrument calibrated to CH4 gas.

Comments: _____

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RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: JM

Date: 9-10-22 **Time:** 0930

Model # TVA 1000

Serial # 12 1036246741

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	2.2 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	7-9-22	Time required to attain 90% of Cal Gas ppm: 1. 6 / 2. 6 / 3. 7 / Average 6.3
Factory calibration record w/instrument within 3 months	(Pass) / Fail	Equal to or less than 30 seconds? (Y) N
		Instrument calibrated to CH_4 gas.

Comments: _____

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RES Environmental Inc.

SURFACE EMISSION MONITORING INSTRUMENT
CALIBRATION LOG

Site: _____

Purpose: _____

Operator: JM CM

Date: 9-10-22 **Time:** 0945

Model # TVA 1000

Serial # #13 1102746775

INSTRUMENT INTEGRITY CHECKLIST		INSTRUMENT CALIBRATION
Battery test	(Pass) / Fail	CALIBRATION CHECK
Reading following ignition	2.2 ppm	Calibration Gas (ppm): 500 / Actual (ppm): 500 / % Accuracy: 100
Leak test	(Pass) / Fail / NA	RESPONSE TIME
Clean system check (check valve chatter)	(Pass) / Fail / NA	Calibration Gas, ppm: 500
H_2 supply pressure gauge (acceptable range 9.5 - 12)	(Pass) / Fail / NA	90% of Calibration Gas, ppm: 450
Date of last factory calibration	7-9-22	Time required to attain 90% of Cal Gas ppm: 1. 7 / 2. 7 / 3. 6 / Average 6.6
Factory calibration record w/instrument within 3 months	(Pass) / Fail	Equal to or less than 30 seconds? (Y) N
		Instrument calibrated to Celit gas.

Comments: _____

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RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: RES Unit #10

SERIAL NUMBER: 1036246773

TECHNICIAN: M Roberts DATE: 7-9-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	100	+/- 25
500	500	500	+/- 125
10000	10000	10,000	+/- 2500
< 1	ZERO GAS	0.69	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50		+/- 12.5
100	100		+/- 25
500	500		+/- 125
< 1	ZERO GAS		< 3

All measurement standards are calibrated at scheduled intervals by the National Institute of Standards and Technology (NIST), or against certified standards, which are traceable to the National Institute of Standards and Technology.

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RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: RES cart #11

SERIAL NUMBER: 1036346774

TECHNICIAN: M. Mutt DATE: 7-9-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	100	+/- 25
500	500	500	+/- 125
10000	10000	10,000	+/- 2500
< 1	ZERO GAS	0.52	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50		+/- 12.5
100	100		+/- 25
500	500		+/- 125
< 1	ZERO GAS		< 3

All measurement standards are calibrated at scheduled intervals by the National Institute of Standards and Technology (NIST), or against certified standards, which are traceable to the National Institute of Standards and Technology.

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RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: RES Van #12

SERIAL NUMBER: 1036246741

TECHNICIAN: M Mendez DATE: 9-9-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	100	+/- 25
500	500	503	+/- 125
10000	10000	10,000	+/- 2500
< 1	ZERO GAS	0.46	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50		+/- 12.5
100	100		+/- 25
500	500		+/- 125
< 1	ZERO GAS		< 3

All measurement standards are calibrated at scheduled intervals by the National Institute of Standards and Technology (NIST), or against certified standards, which are traceable to the National Institute of Standards and Technology.

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RES Environmental Inc.

TVA1000B CALIBRATION VERIFICATION

CUSTOMER: RES Unit #13

SERIAL NUMBER: 1102746775

TECHNICIAN: M Mabrit DATE: 7-9-22

GAS CALIBRATION CHECK (PERFORMED AT ROOM TEMPERATURE)

FID			
METHANE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
100	100	99	+/- 25
500	500	500	+/- 125
10000	10000	10,000	+/- 2500
< 1	ZERO GAS	0.59	< 3
PID			
ISOBUTYLENE GAS NOMINAL (ppm)	CALIBRATION GAS (ppm)	TVA READING (ppm)	TOLERANCE (ppm)
50	50		+/- 12.5
100	100		+/- 25
500	500		+/- 125
< 1	ZERO GAS		< 3

All measurement standards are calibrated at scheduled intervals by the National Institute of Standards and Technology (NIST), or against certified standards, which are traceable to the National Institute of Standards and Technology.

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Intermountain Specialty Gases
520 N. Kings Road
Nampa, ID 83687 (USA)
Phone (800) 552-5003, Fax (208) 466-9143
www.isgases.com

INTERMOUNTAIN SPECIALTY GASES
"Your calibration gas manufacturer since 1992"

CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy (+/-)
Oxygen	20.9 %	2%
Nitrogen	Balance UHP	

Lot #	**20-7421**
Mfg. Date:	5/20/2020
Expiration Date:	
Transfill Date:	see cylinder
Parent Cylinder ID Number:	NY02268

Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Title: Quality Assurance Manager
Certificate Date: 5/20/2020


Service
INC.
Concentration (Mole%) Accuracy
. 20.9% Oxygen
. Bal. Nitrogen
Exp Date
7/10/2024
Lot#: 20-7421
P/N:01-100
103 L
Kaiser Avenue, Irvine, CA 92614
757-0353 or (800) 201-8150 Fax (949) 757-0363
103-01-100
103 L

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CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy
Methane	25 ppm	± 5%
Air	Balance	

Lot # 17-6074

Mfg. Date: 10/16/2017

Parent Cylinder ID Number: 17161

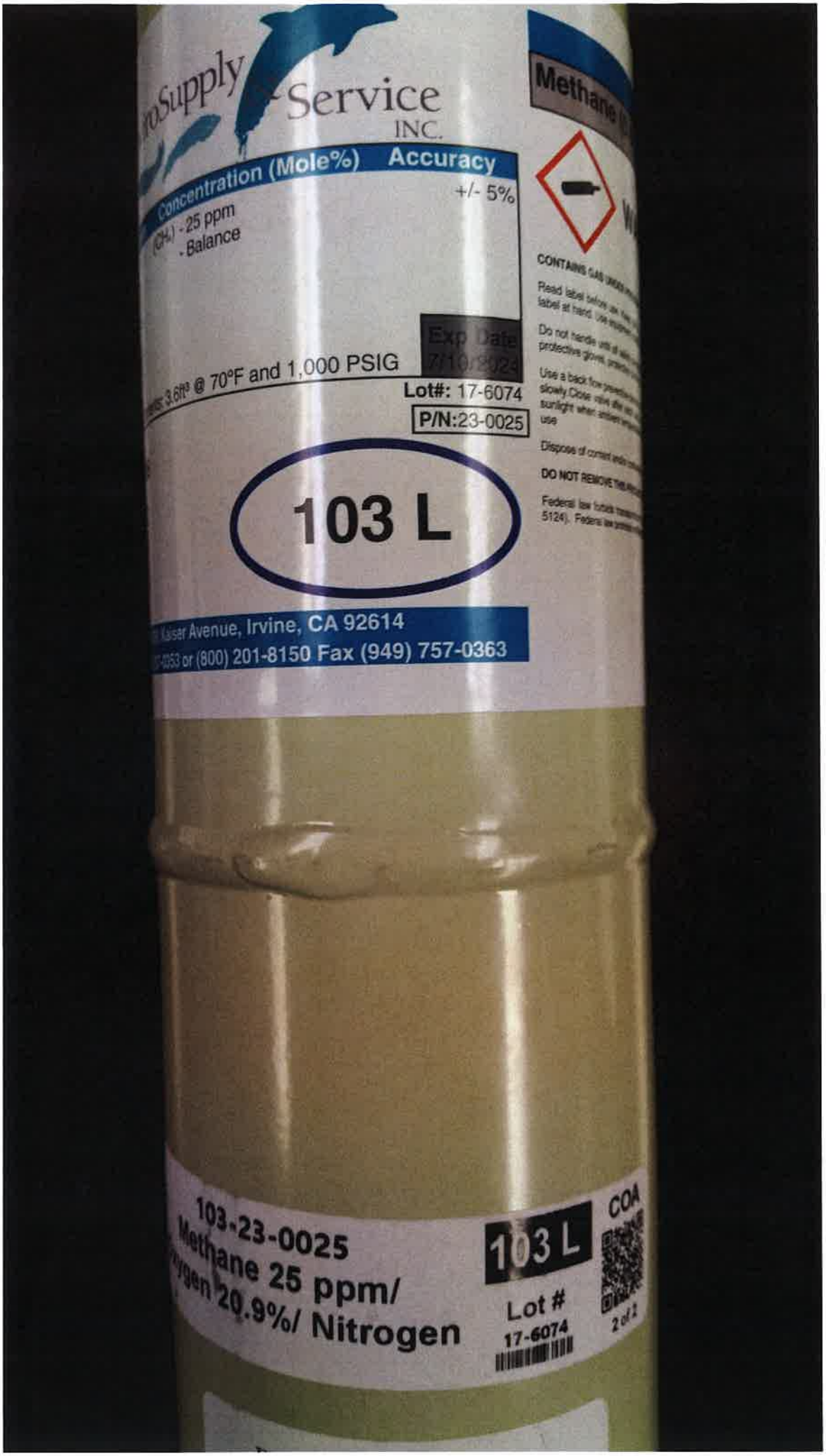
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Quality Assurance Manager
800-552-5003
Certificate Date: 10/16/2017


Service
INC.
Concentration (Mole%) Accuracy
+/- 5%
(CH4) - 25 ppm
- Balance
Exp Date
Lot#: 17-6074
P/N:23-0025
103 L
Kaiser Avenue, Irvine, CA 92614
(800) 201-8150 Fax (949) 757-0363
103-23-0025
Methane 25 ppm/
20.9%/ Nitrogen
103 L
Lot #
17-6074
COA

INTERMOUNTAIN SPECIALTY GASES

520 N. Kings Road • Nampa • Idaho • 83687

800-552-5003 • www.isgases.com

CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy
Methane	25 ppm	± 5%
Air	Balance	

Lot # 17-6074

Mfg. Date: 10/16/2017

Parent Cylinder ID Number: 17161

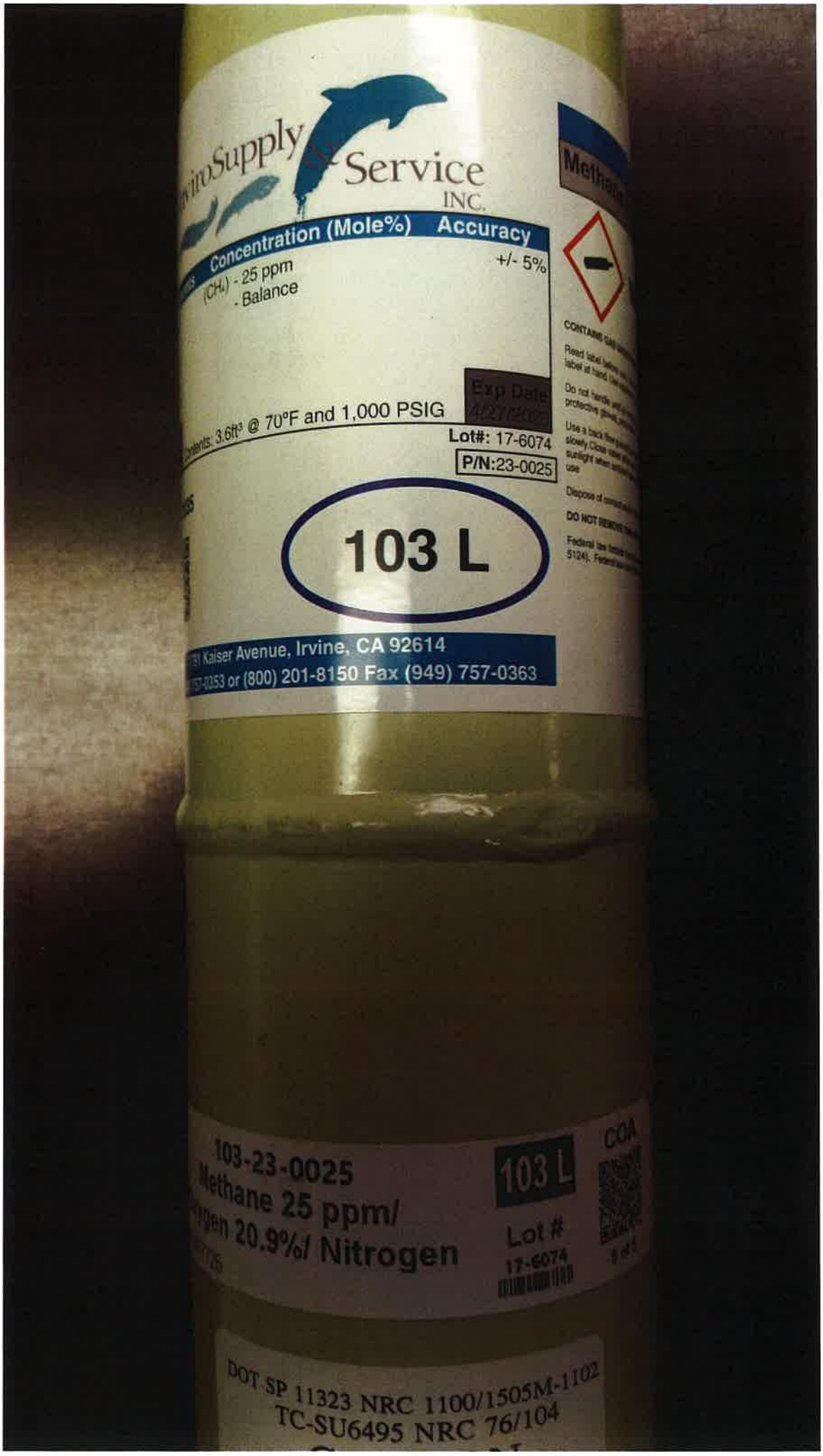
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Quality Assurance Manager
800-552-5003
Certificate Date: 10/16/2017


Service
INC.
Concentration (Mole%) Accuracy
(CH4) - 25 ppm
. Balance
+/- 5%
Exp Date
Contents: 3.6ft³ @ 70°F and 1,000 PSIG
Lot#: 17-6074
P/N:23-0025
103 L
Kaiser Avenue, Irvine, CA 92614
(800) 201-8150 Fax (949) 757-0363
103-23-0025
Methane 25 ppm/
ygen 20.9%/ Nitrogen
103 L
Lot #
17-6074
COA
DOT SP 11323 NRC 1100/1505M-1102
TC-SU6495 NRC 76/104

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Nampa, ID 83687 (USA)
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www.isgases.com

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CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy (+/-)
Methane	500 ppm	2%
Oxygen	20.9 %	2%
Nitrogen	Balance UHP	

Lot #	**20-7497**
Mfg. Date:	7/10/2020
Expiration Date:	
Transfill Date:	see cylinder
Parent Cylinder ID Number:	TWC001763

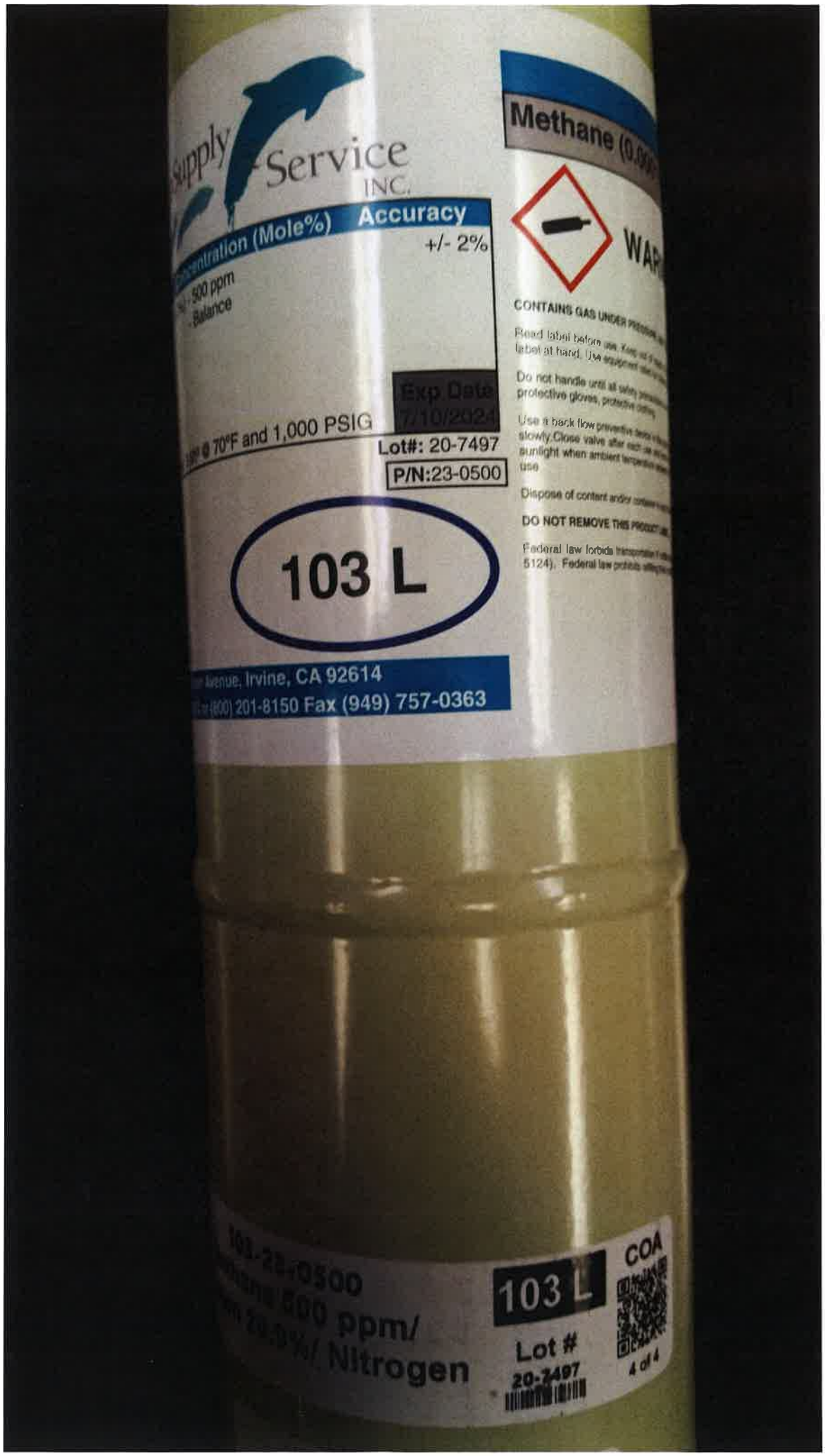
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Title: Quality Assurance Manager
Certificate Date: 7/10/2020


Supply Service
INC.
Methane (0.
Concentration (Mole%)
Accuracy
+/- 2%
- 500 ppm
- Balance
WAR
CONTAINS GAS UNDER PRESSURE
Read label before use. Keep
label at hand. Use equipment
Do not handle until all safety
protective gloves, protective
Use a back flow preventive
slowly.Close valve after each
sunlight when ambient
use
Dispose of content and
DO NOT REMOVE THIS PRODUCT
Federal law forbids
5124). Federal law
Exp Date
7/10/2024
Lot#: 20-7497
P/N:23-0500
103 L
Avenue, Irvine, CA 92614
(800) 201-8150 Fax (949) 757-0363
103 L
COA
Lot #
20-7497
4 of 4
Nitrogen

INTERMOUNTAIN SPECIALTY GASES

520 N. Kings Road • Nampa • Idaho • 83687

800-552-5003 • www.isgases.com

CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy
Methane	500 ppm	± 2%
Air	Balance	

Lot # 19-6955

Mfg. Date: 7/24/2019

Parent Cylinder ID Number: 001763

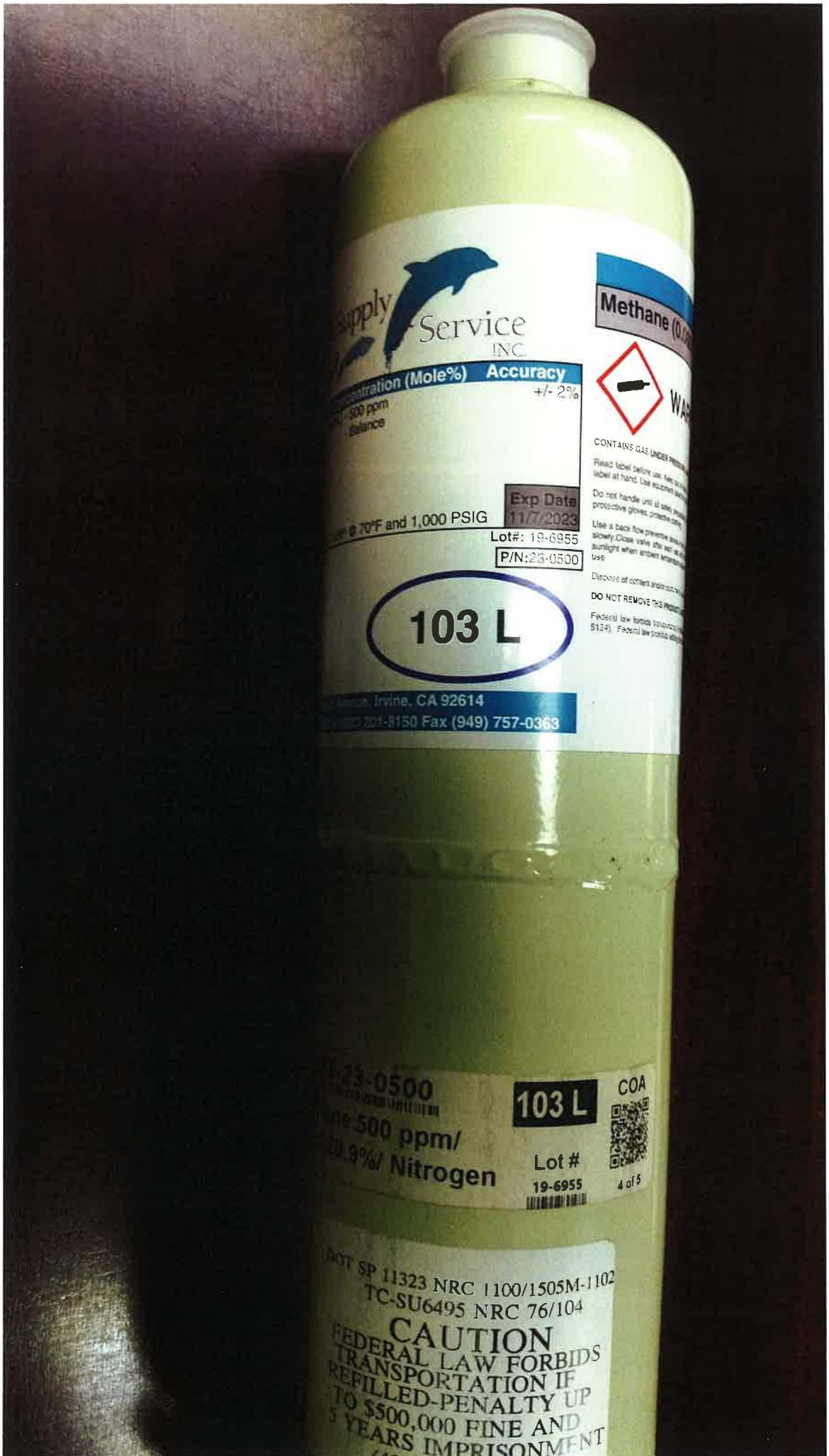
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Quality Assurance Manager
800-552-5003
Certificate Date: 7/24/2019


Supply Service INC.
Accuracy
+/- 2%
Exp Date
11/7/2023
Lot#: 19-6955
P/N:23-0500
103 L
Irvine, CA 92614
Fax (949) 757-0363
Methane
CONTAINS GAS UNDER
DO NOT REMOVE THIS
23-0500
500 ppm/
Nitrogen
103 L
Lot #
19-6955
COA
4 of 5
DOT SP 11323 NRC 1100/1505M-1102
TC-SU6495 NRC 76/104
CAUTION
FEDERAL LAW FORBIDS
TRANSPORTATION IF
REFILLED-PENALTY UP
TO $500,000 FINE AND
5 YEARS IMPRISONMENT

Intermountain Specialty Gases
520 N. Kings Road
Nampa, ID 83687 (USA)
Phone (800) 552-5003, Fax (208) 466-9143
www.isgases.com

INTERMOUNTAIN SPECIALTY GASES
"Your calibration gas manufacturer since 1992"

CERTIFICATE OF ANALYSIS

Composition	Certification	Analytical Accuracy (+/-)
Methane	500 ppm	2%
Oxygen	20.9 %	2%
Nitrogen	Balance UHP	

Lot #	18-6641
Mfg. Date:	12/18/2018
Expiration Date:	
Transfill Date:	see cylinder
Parent Cylinder ID Number:	001763

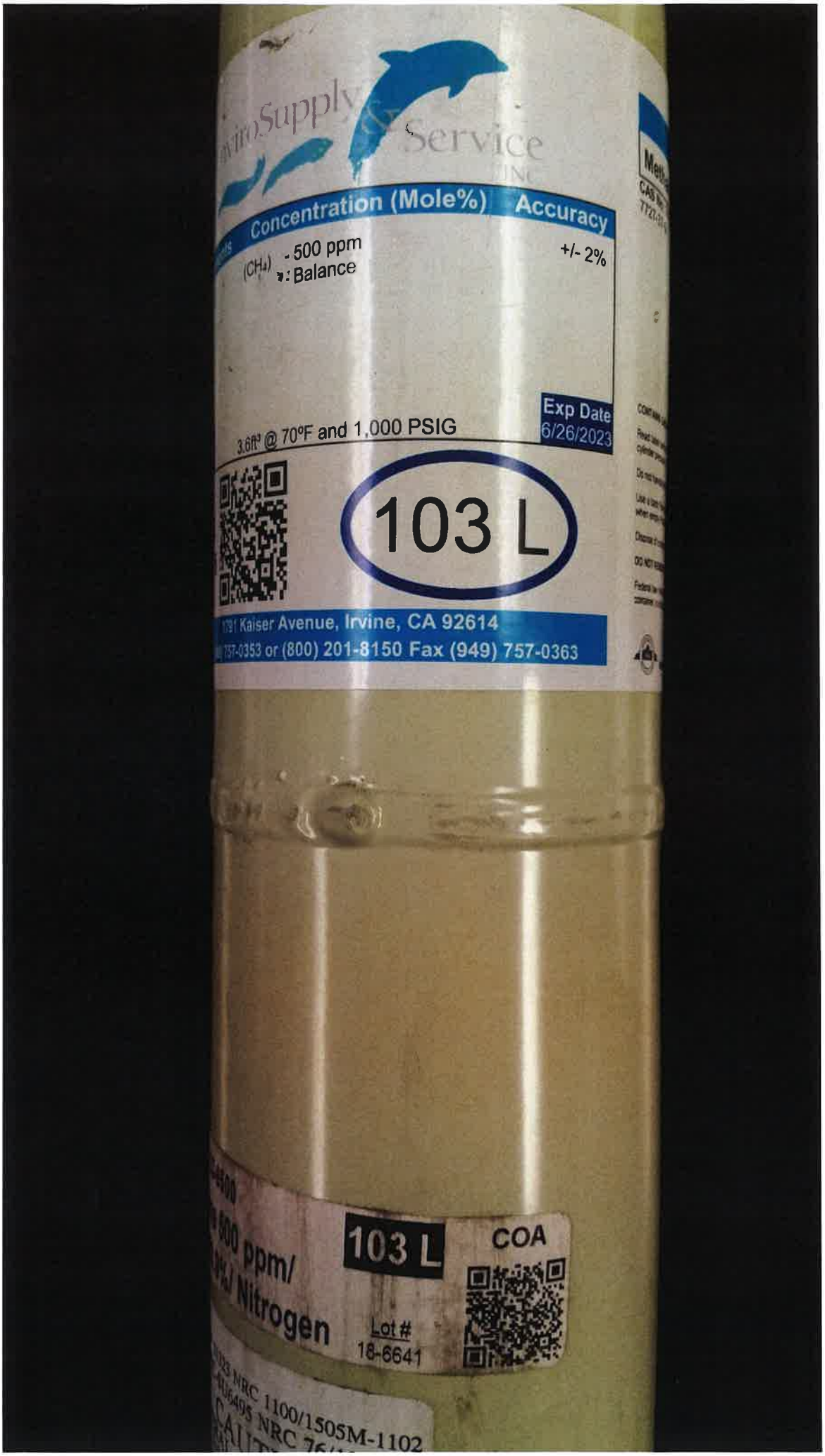
Method of Preparation:

Gravimetric/Pressure Transfilled

Method of Analysis:

The parent mix was prepared gravimetrically and is traceable to the NIST by certified weights (ID #CA10814) used to calibrate the scale.

Analysis By: Tony Janquart
Title: Quality Assurance Manager
Certificate Date: 12/18/2018


Concentration (Mole%)
Accuracy
(CH4) - 500 ppm
: Balance
+/- 2%
3.6ft³ @ 70°F and 1,000 PSIG
Exp Date
6/26/2023
103 L
1731 Kaiser Avenue, Irvine, CA 92614
757-0353 or (800) 201-8150 Fax (949) 757-0363
103 L
COA
Lot #
18-6641
Nitrogen
1100/1505M-1102

Nor

A DIVISION OF NORLAB, INC.

Calibration Gases & Equipment

CERTIFICATE OF ANALYSIS

Premier Safety & Service

46400 Continental Drivve
Chesterfield ,MI 48047

Cust Number 07152
Order Number 62891146
PO Number 04548169

Lot Number 9-326-80
Norlab Part# J1971500PA
Cylinder Size 103 Liter
Number of Cyl 1

Customer Part# N/A

Date on Manufacture 12/31/2019
Expires 12/2022
Analytical Accuracy +/- 2 %

Component	Reported Concentration	Requested Concentration
Methane	500 ppm	500 ppm
Air	Balance	Balance

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

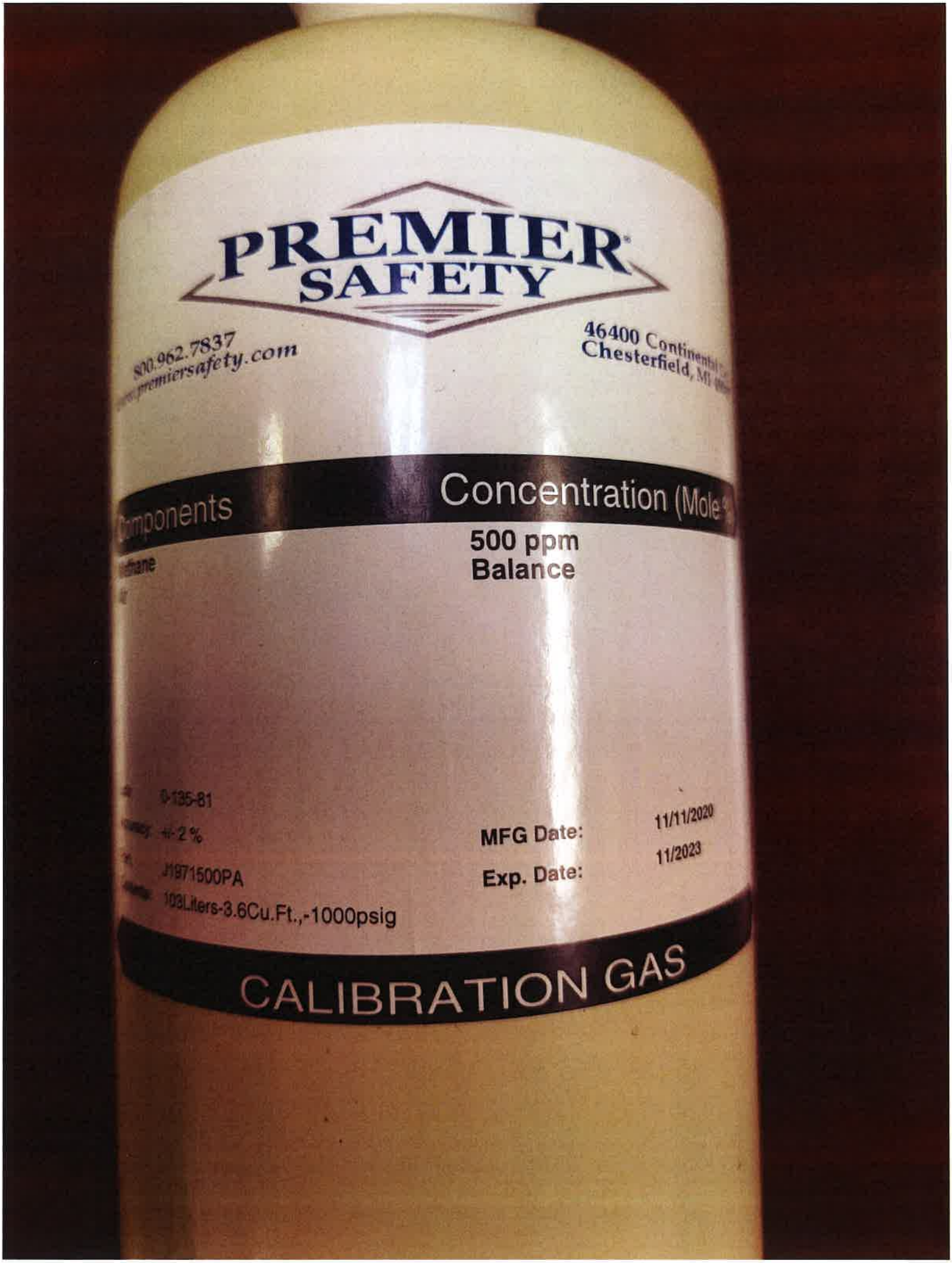
The cylinders in this lot were transfilled from cylinders prepared gravimetrically and traceable to the NIST by the certified weights used to calibrate the scale. The transfilled cylinders were then analyzed against standards traceable to the NIST by weights or SRMs.

NIST Traceable Numbers 20180519 and 20180224

Approved: _____ Date Signed: 12/31/2019

David Reed
Lab Technician

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672


PREMIER
SAFETY
800.962.7837
premiersafety.com
46400 Continental
Chesterfield, MI
Components
Concentration (Mole
500 ppm
Balance
MFG Date:
11/11/2020
Exp. Date:
11/2023
CALIBRATION GAS

NorLAB®
A DIVISION OF NORCO, INC.

Calibration Gases & Equipment

CERTIFICATE OF ANALYSIS

Premier Safety & Service

33596 Sterling Pond Blvd
Sterling Hights MI 48312

Cust Number 07152
Order Number 69679439
PO Number 04906817

Lot Number 2-154-85
Norlab Part# J1002
Cylinder Size 103 Liter
Number of Cyl 1

Customer Part# N/A

Date on Manufacture 6/13/2022
Expires 06/2025
Analytical Accuracy Certified

Component	Reported Concentration	Requested Concentration
Air	Zero Grade	Zero Grade
Oxygen	20.9 %	20.9 %
T.H.C. (as Methane)	< 1.0 ppm	< 1.0 ppm
Nitrogen	Balance	Balance

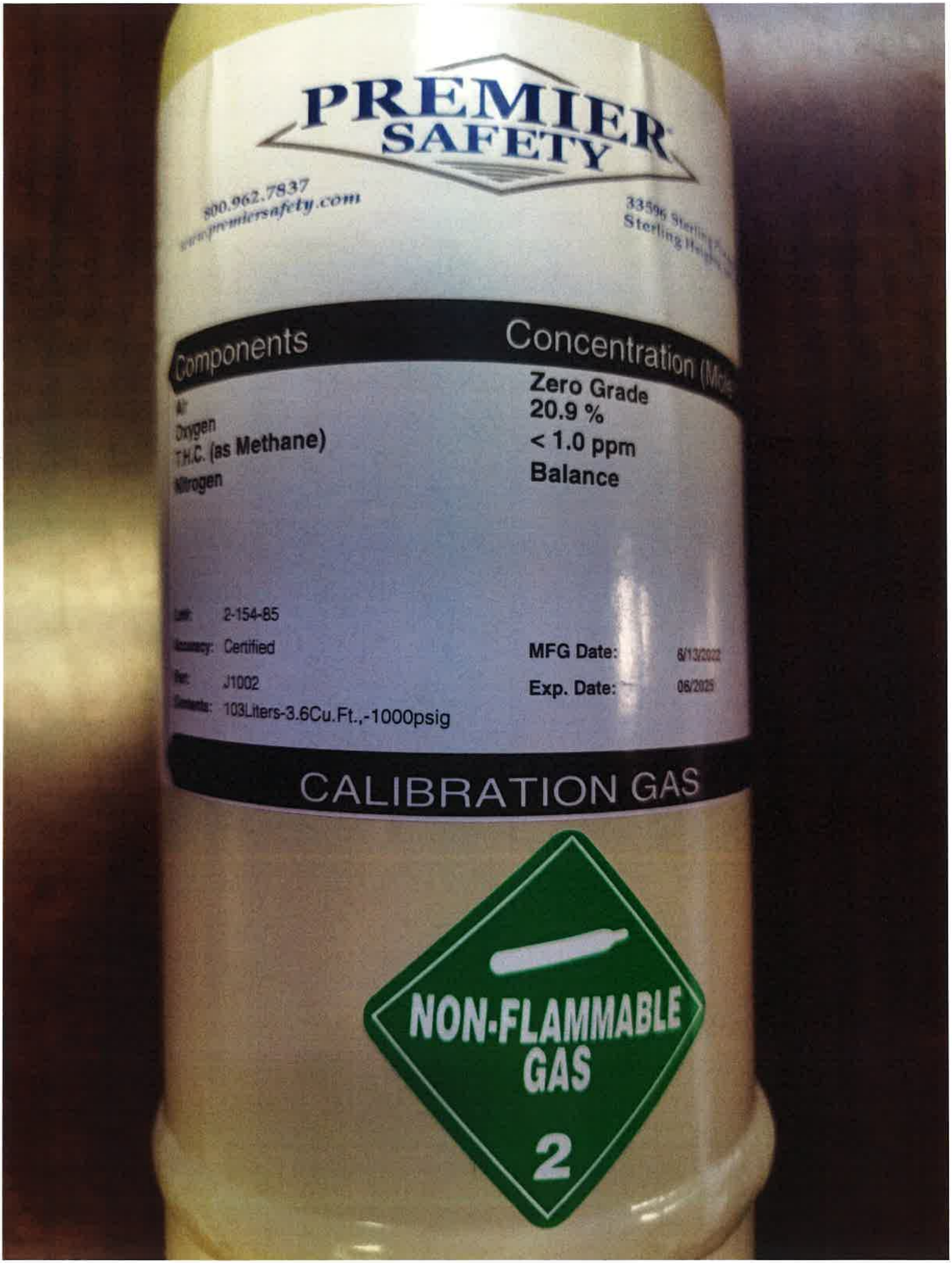
Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

Minor constituents tested with standards traceable to NIST by mass or comparison to SRM's (Standard Reference Materials).

NIST Traceable Numbers are available upon request.

Approved: _____ Date Signed: 6/13/2022
David Reed
Lab Technician

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672


PREMIER
SAFETY
800.962.7837
www.premiersafety.com
33596 Sterling
Sterling Heights
Components
Concentration (Mole
Air
Zero Grade
Oxygen
20.9 %
T.H.C. (as Methane)
< 1.0 ppm
Nitrogen
Balance
Lot: 2-154-85
Accuracy: Certified
MFG Date: 8/13/2022
Ref: J1002
Exp. Date: 08/2025
Comments: 103Liters-3.6Cu.Ft.,-1000psig
CALIBRATION GAS
NON-FLAMMABLE
GAS
2

NorLAB®
A DIVISION OF NORCO, INC.

Calibration Gases & Equipment

CERTIFICATE OF ANALYSIS

Premier Safety & Service

33596 Sterling Pond Blvd
Sterling Hights MI 48312

Cust Number 07152
Order Number 69671309
PO Number 08361523

Lot Number 2-108-80
Norlab Part# J1971500PA
Cylinder Size 103 Liter
Number of Cyl 1

Customer Part# N/A

Date on Manufacture 6/10/2022
Expires 06/2025
Analytical Accuracy +/- 2 %

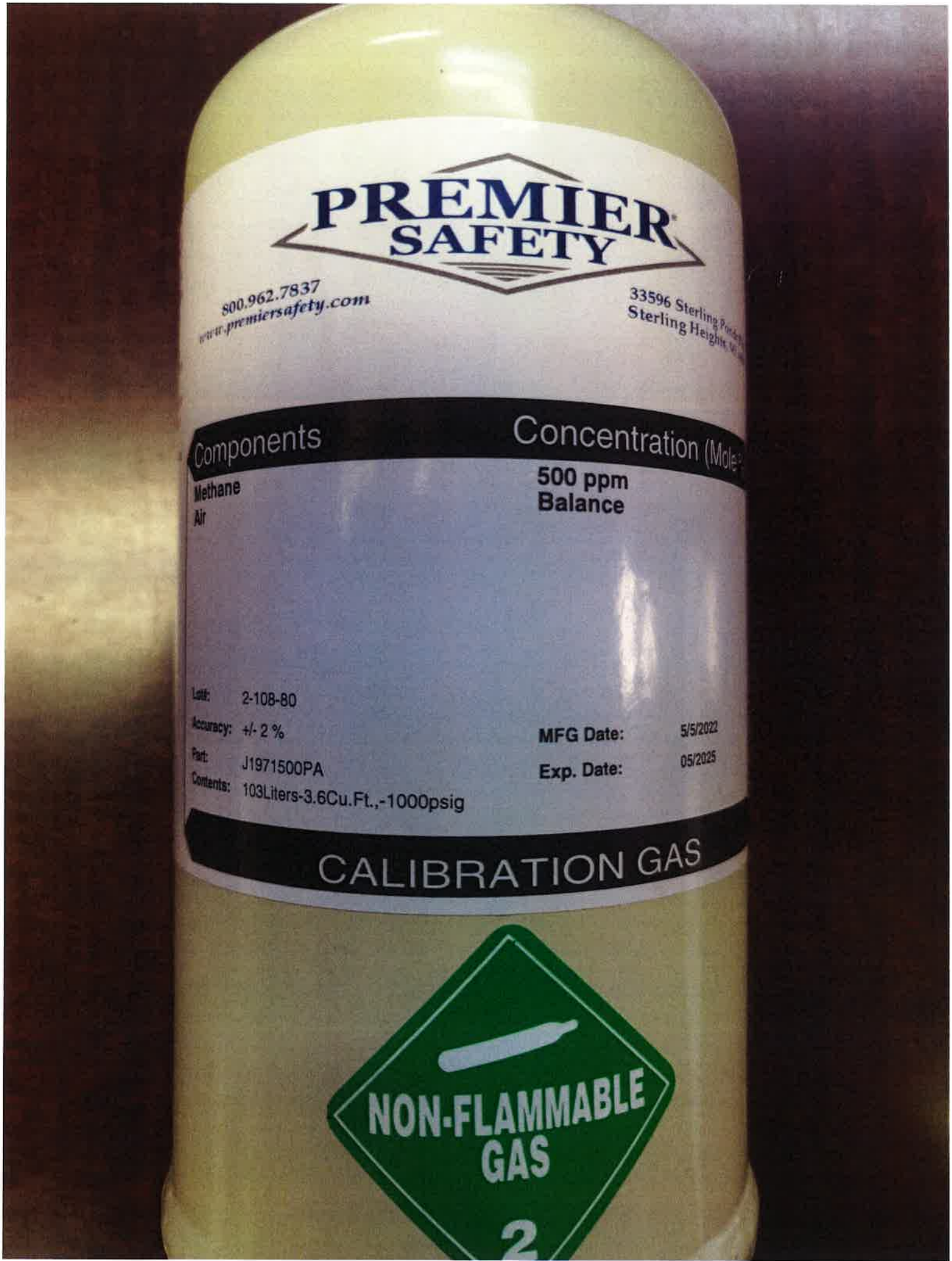
Component	Reported Concentration	Requested Concentration
Methane	500 ppm	500 ppm
Air	Balance	Balance

Storage: Keep away from heat, flames, and sparks. Store and use with adequate ventilation. Close valve when not in use and when empty. Never allow cylinder temperature to exceed 125 degrees F.

The cylinders in this lot were transfilled from cylinders prepared gravimetrically and traceable to the NIST by the certified weights used to calibrate the scale. The transfilled cylinders were then analyzed against standards traceable to the NIST by weights or SRMs. NIST Traceable Numbers are available upon request.

Approved: _____ Date Signed: 6/10/2022
David Reed
Lab Technician

898 W. GOWEN ROAD • BOISE, IDAHO 83705
Phone (208) 336-1643 • Fax (208) 331-3038 • 800-657-6672


PREMIER
SAFETY
800.962.7837
www.premiersafety.com
33596 Sterling Pond
Sterling Heights, MI
Components
Concentration (Mole
Methane
Air
500 ppm
Balance
Lot#: 2-108-80
Accuracy: +/- 2 %
Part: J1971500PA
Contents: 103Liters-3.6Cu.Ft.,-1000psig
MFG Date: 5/5/2022
Exp. Date: 05/2025
CALIBRATION GAS
NON-FLAMMABLE
GAS
2

APPENDIX I

WELLFIELD MONITORING LOGS

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - May 2, 3, 5, 6, 9, and 10, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	5/6/22 15:59	41.1	38.7	0	20.2	-2.1	99	-1.9	99
RLHC0156	5/6/22 14:43	56	30.9	0	13.1	-0.2	93	-0.2	97
RLI00003	5/5/22 16:07	54.9	35.6	0	9.5	-18.3	76	-18.3	76
RLI00008	5/5/22 10:14	57.6	32	1.4	9	-13	58	-13	58
RLI00016	5/2/22 12:12	23.2	23.5	0	53.3	-33.1	70	-30.5	70
RLI00017	5/2/22 12:06	63.9	34.8	0.3	1	-6.7	72	-8.5	72
RLI00018	5/2/22 11:57	29.6	26.4	0.7	43.3	-15.7	70	-15.5	70
RLI00019	5/2/22 11:48	64	35.4	0.1	0.5	-26.4	60	-27.1	61
RLI00034	5/5/22 14:51	60.3	39.6	0	0.1	-10.9	81	-10.3	81
RLI00035	5/5/22 14:45	49.8	33.9	1.3	15	-28.4	77	-27.2	77
RLI00045	5/5/22 11:24	39.1	28.8	0	32.1	-1.3	71	-1.3	74
RLI00047	5/5/22 11:30	43.4	30.9	0	25.7	-1.3	78	-1.3	78
RLI00065	5/2/22 11:14	49.4	36	2	12.6	-43.1	104	-39.5	102
RLI00083	5/3/22 14:26	62.8	37.1	0	0.1	-39.3	93	-41	93
RLI00095	5/2/22 10:11	43	31.9	0	25.1	-2.2	96	-2.1	96
RLI00132	5/5/22 10:54	57.8	35.9	0	6.3	-13.4	94	-14.5	94
RLI00134	5/5/22 10:23	53.9	38.9	0	7.2	-8.5	114	-8.6	115
RLI00135	5/9/22 15:32	42.8	37.9	0	19.3	-0.8	108	-0.7	108
RLI00137	5/6/22 16:25	64.4	32.7	0.3	2.6	-9.5	82	-11.7	82
RLI00140	5/3/22 14:53	48.5	49.9	0	1.6	-25.2	92	-27	92
RLI00142	5/3/22 14:49	57.1	40.7	0	2.2	-36.3	88	-37.4	88
RLI00220	5/2/22 10:00	49.6	37.5	0.3	12.6	-2.8	61	-2.4	60
RLI0100C	5/5/22 15:00	60.7	39.2	0	0.1	-2.6	78	-3.9	78
RLI0102C	5/5/22 15:18	61.5	38.4	0	0.1	-39.3	92	-39.2	92
RLI0103C	5/9/22 15:44	59.3	40.4	0	0.3	-12.2	102	-12.7	102
RLI0105C	5/9/22 15:10	46.5	44.4	1	8.1	-12.4	78	-6.4	78
RLI0106C	5/9/22 14:58	46.4	43.2	0.2	10.2	-3.7	109	-3.4	108
RLI0107C	5/6/22 15:29	40.4	35.4	1.8	22.4	-40	113	-40.3	113
RLI0114A	5/9/22 12:10	46.4	24.6	4.9	24.1	-0.1	71	-0.1	74
RLI0115E	5/3/22 17:08	60.7	35.4	0	3.9	-31.3	98	-36.2	99
RLI0116E	5/5/22 9:45	58.8	34.8	1.4	5	-12.5	61	-12.5	61
RLI0117D	5/9/22 17:10	42.7	28.8	4.8	23.7	-1.9	68	-2	68
RLI0124G	5/2/22 12:27	61.6	38.3	0	0.1	-23.2	87	-24.7	88
RLI0126C	5/5/22 15:44	69	30.7	0.1	0.2	-34	94	-35.5	93
RLI0127B	5/5/22 10:34	53	35.3	0	11.7	-12.2	103	-12.8	103
RLI0128A	5/10/22 14:42	37.2	37	1.1	24.7	-14.4	114	-13.9	114
RLI0129E	5/6/22 14:37	58	31.4	0	10.6	-32.1	78	-32.3	79
RLI0130E	5/6/22 14:48	51.8	30.6	0	17.6	-5.3	77	-4.7	77
RLIHC101	5/2/22 12:36	61.4	38.4	0	0.2	-45.4	102	-45.5	102
RLIHC102	5/2/22 12:31	56.9	37.9	0	5.2	-29.3	100	-29.7	101
RLIHC107	5/3/22 15:20	26.3	32.5	3.1	38.1	-34	92	-34.1	92
RLLC0176	5/5/22 10:47	58.7	37.9	0.7	2.7	-15.1	62	-15.5	62
RLLC0177	5/9/22 15:55	56	39.3	0	4.7	-14.7	107	-15.6	108
RLLC0179	5/2/22 10:21	61.4	33.5	0	5.1	-5	80	-6.3	82
RLLC0180	5/9/22 15:25	54.3	38.7	0	7	-5.1	106	-6.3	107
RLLC0181	5/9/22 15:18	56.4	35.9	0.8	6.9	-2.2	104	-2.3	104
RLLC0183	5/5/22 10:39	31.6	29.2	0	39.2	-2.4	65	-2.2	65
RLLC0184	5/5/22 10:27	53.6	35.7	0	10.7	-6.1	98	-6	99
RLLC0185	5/9/22 15:50	30.1	34.6	0	35.3	-0.1	83	-0.1	79
RLLC0186	5/9/22 16:17	52.2	39	0	8.8	-12.6	98	-12.7	99
RLLC0187	5/5/22 15:07	54.8	37.3	0	7.9	-40	104	-40.2	104
RLLC0188	5/9/22 16:27	54	40.2	0	5.8	-16.5	106	-16.7	106
RLLC0189	5/9/22 16:36	52.7	41.5	0	5.8	-0.2	109	-0.2	110
RLLC0190	5/9/22 15:37	38.4	40.6	0	21	-0.1	102	-0.1	106
RLLC0191	5/2/22 12:21	61.2	38.7	0	0.1	-0.7	89	-0.9	88
RLLC0193	5/3/22 17:02	33.9	31.7	0	34.4	-17.9	106	-14.2	107

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - May 2, 3, 5, 6, 9, and 10, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	5/6/22 15:59	41.1	38.7	0	20.2	-2.1	99	-1.9	99
RLHC0156	5/6/22 14:43	56	30.9	0	13.1	-0.2	93	-0.2	97
RLLC0194	5/9/22 14:47	54.6	42.2	0	3.2	-5.2	101	-5.9	101
RLLC0195	5/9/22 14:43	49.5	45.8	0	4.7	-25.6	98	-25.7	98
RLLC0196	5/9/22 14:40	56	38.1	0	5.9	-26.9	98	-27.2	99
RLLC0198	5/6/22 15:55	43.9	31.6	0	24.5	-4.8	104	-4.5	104
RLLC0199	5/6/22 16:03	47.9	35.3	0	16.8	-4.8	112	-4.6	113
RLLC0200	5/6/22 16:09	44.2	30.9	0	24.9	-0.2	87	-0.2	87
RLLC0201	5/6/22 15:12	46.5	33.2	0	20.3	-0.5	100	-0.3	100
RLLC0202	5/6/22 15:41	43.8	32.4	0	23.8	-6.2	91	-6.1	91
RLLC0203	5/6/22 15:37	54.9	34.5	0.3	10.3	-8.7	89	-8.6	89
RLLC0204	5/6/22 15:33	48.7	35	0	16.3	-1.3	103	-1.2	103
RLLC0205	5/5/22 16:01	22.2	27	0	50.8	-0.4	108	-0.1	108
RLLC0206	5/5/22 15:37	47.3	34.5	1.5	16.7	-2.3	66	-2.3	66
RLLC0209	5/5/22 15:30	45.8	35	0	19.2	-0.4	97	-0.4	97
RLLC0210	5/5/22 15:56	19.8	25.7	0	54.5	-0.3	107	-0.1	107
RLLC0214	5/3/22 15:52	61	37.2	0	1.8	-9.3	100	-10	100
RLLC0215	5/3/22 15:41	61.1	35.8	0	3.1	-46.8	96	-46.5	97
RLLC0217	5/3/22 14:33	62.7	37.2	0	0.1	-11.8	93	-13.8	94
RLLC0219	5/3/22 16:44	42.7	35.2	0	22.1	0	102	-0.2	103
RLLC0221	5/6/22 15:46	40.3	30.6	0	29.1	-12.4	91	-12.3	91
RLLC0222	5/3/22 15:27	49	38.6	0	12.4	-21.9	107	-21.4	108
RLLC0223	5/6/22 15:03	50.5	36.3	0	13.2	-3.5	104	-3.3	104
RLLC0224	5/6/22 15:06	50	36	0	14	-2.5	103	-2.3	103
RLLC0225	5/6/22 15:17	50.9	31.9	0	17.2	-0.2	81	-0.2	81
RLLC0227	5/2/22 10:05	56.8	34.9	0	8.3	-2.5	80	-2.6	81
RLLC0228	5/6/22 15:51	41.9	30.4	0	27.7	-0.4	84	-0.3	84
RLLC0229	5/6/22 16:06	34.4	29	0	36.6	-0.1	91	-0.1	92
RLLC0230	5/3/22 15:07	49.5	40	0	10.5	-3.9	112	-3.7	112
RLLC0231	5/5/22 10:01	50.5	35.9	0.3	13.3	-1.9	93	-1.8	93
RLLC0232	5/5/22 10:06	49.3	35.2	0	15.5	-1.7	91	-1.6	91
RLLC0233	5/3/22 16:29	35	31.8	0	33.2	-0.3	105	-0.2	105
RLLC0234	5/2/22 10:40	50.6	36.9	0.1	12.4	-14.7	112	-14.6	112
RLLC0235	5/2/22 11:28	38.4	32.7	0	28.9	-2.3	110	-1.6	109
RLLC0236	5/2/22 11:34	46.7	35.8	0	17.5	-2.3	100	-2.2	101
RLLC0237	5/6/22 16:29	52.4	36.6	0	11	-8	90	-7.9	91
RLLC0238	5/3/22 16:07	48	37.7	0	14.3	-1.4	107	-1.3	107
RLLC0239	5/3/22 16:36	35.8	31.4	0	32.8	-0.1	93	-0.1	93
RLLC0240	5/3/22 16:32	38	31.7	0	30.3	-0.1	99	-0.1	99
RLLC0241	5/2/22 11:05	47.7	36.7	0	15.6	-15	104	-14.5	104
RLLC0242	5/2/22 11:01	47	38.3	0	14.7	-10.2	109	-9.4	109
RLLC0243	5/2/22 12:50	42.7	53.5	0	3.8	-2	117	-2	118
RLLC0244	5/2/22 12:47	49.1	41.5	0	9.4	-1.4	112	-1.3	112
RLLC0245	5/2/22 12:43	46.6	47.2	0	6.2	-1.1	107	-1.2	107
RLLC0247	5/6/22 14:54	47.8	37.3	0	14.9	-1.2	97	-1.1	97
RLLC0248	5/6/22 14:57	56.4	40	0	3.6	-2.1	103	-2.2	104
RLLC0249	5/9/22 16:13	45.6	38.3	0	16.1	-0.8	111	-0.8	112
RLLC0250	5/9/22 16:07	43.3	36.8	0	19.9	-1	111	-0.8	112
RLLC0251	5/9/22 16:02	43.2	36.9	0.2	19.7	-0.8	108	-0.7	109
RLLC0252	5/2/22 10:46	45.2	38.8	0	16	-3.8	103	-3.6	103
RLLC0253	5/2/22 10:53	47.8	40.1	0	12.1	-4.6	104	-4.2	104
RLLC0254	5/2/22 10:56	46.9	39.6	0	13.5	-2.1	104	-2	105
RLLC0255	5/3/22 14:42	54.8	41	0	4.2	-4.6	106	-4.7	106
RLLC0256	5/3/22 14:38	57	42.9	0	0.1	-4.5	104	-4.9	104
RLLC0257	5/9/22 11:36	41.7	32.4	2	23.9	-0.1	64	-0.1	65
RLLC0258	5/6/22 14:29	54.2	34.3	0	11.5	-0.9	74	-0.9	74

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - May 2, 3, 5, 6, 9, and 10, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	5/6/22 15:59	41.1	38.7	0	20.2	-2.1	99	-1.9	99
RLHC0156	5/6/22 14:43	56	30.9	0	13.1	-0.2	93	-0.2	97
RLLC0259	5/6/22 14:32	50.7	37.7	0	11.6	-4.5	83	-4.4	83
RLLC0260	5/5/22 15:23	50.9	37.8	0	11.3	-0.6	95	-0.6	96
RLLC0261	5/5/22 15:49	54.6	37.8	0	7.6	-1.9	102	-2	102
RLLC0262	5/5/22 15:13	60.4	39.5	0	0.1	-0.1	85	-0.4	86
RLLC0263	5/9/22 16:30	50.4	43.4	0	6.2	-1.2	110	-1.1	110
RLLC0264	5/9/22 16:41	46.8	43.9	0	9.3	-1.7	111	-1.5	111
RLLC0266	5/3/22 16:01	52.5	44.4	0	3.1	-8.5	98	-8.7	98
RLLC0267	5/3/22 15:57	36.4	59.4	0	4.2	-0.4	97	-0.4	97
RLLC0268	5/3/22 15:47	50.3	42.6	0	7.1	-5	101	-5	101
RLLC0269	5/3/22 15:37	41	42	0	17	-0.1	104	-0.1	104
RLLC0270	5/3/22 15:33	53.6	42.5	0	3.9	-1.5	107	-1.5	107
RLLC0271	5/2/22 10:27	50	35.1	0.1	14.8	-14.8	99	-14.7	99
RLLC0272	5/3/22 14:58	45.7	50.3	0	4	-43	94	-47.1	94
RLLC0273	5/3/22 17:12	45.2	34.2	0	20.6	-8.2	110	-7.7	110
RLLC0274	5/9/22 15:02	48	42.2	0	9.8	-0.5	114	-0.4	114

There are 130 total collectors; 123 vertical wells and 7 horizontal collectors at RLI.

%= percent

°F= degrees Fahrenheit

"H2O = in. w.c.= inches in water column

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - June 1, 2, 3, 6 and 8, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	6/6/22 11:59	42.6	38.2	0	19.2	-1.8	98	-1.6	99
RLHC0156	6/3/22 15:29	34.7	24.4	0.6	40.3	-0.9	103	-0.3	103
RLI00003	6/3/22 14:44	50.8	33.1	0	16.1	-19	78	-17.1	79
RLI00008	6/3/22 12:32	47.6	28.4	1.9	22.1	-27.1	78	-27.1	78
RLI00016	6/2/22 15:57	64.5	27.8	0	7.7	-2.4	78	-4.2	78
RLI00017	6/2/22 15:48	45.6	28.7	0.7	25	-22.5	78	-16.6	78
RLI00018	6/2/22 15:39	19.7	21.8	0.4	58.1	-15.9	79	-13.7	80
RLI00019	6/2/22 15:33	51.3	30.2	1.2	17.3	-29.9	76	-29.2	76
RLI00034	6/3/22 14:28	53.5	35.6	0.1	10.8	-20	81	-20.5	81
RLI00035	6/3/22 14:23	41.4	29.7	1.5	27.4	-39.2	77	-35.8	77
RLI00045	6/3/22 14:12	31.9	26.8	0	41.3	-3	79	-3	79
RLI00047	6/3/22 14:17	39.2	29.8	0	31	-1.9	82	-1.8	82
RLI00065	6/1/22 11:43	55.1	38.3	0	6.6	-10.1	106	-10.5	106
RLI00083	6/1/22 10:59	50.8	31.2	2	16	-45.1	94	-44.4	94
RLI00095	6/1/22 10:38	44.9	32.2	0	22.9	-1.2	97	-1.1	98
RLI00132	6/3/22 13:09	48	30.8	1.5	19.7	-43.3	97	-38.3	97
RLI00134	6/1/22 11:06	43.3	33.1	0.2	23.4	-14.3	112	-12.2	112
RLI00134	6/3/22 12:42	46.3	35.4	0	18.3	-21.9	113	-20.4	114
RLI00135	6/6/22 13:06	33.9	33.7	0	32.4	-1.9	112	-1.6	112
RLI00137	6/2/22 11:38	61.5	31	0	7.5	-13.7	81	-14.4	79
RLI00140	6/2/22 11:22	44	45	0	11	-29.4	92	-27.7	93
RLI00142	6/2/22 11:27	50.7	39.3	0.3	9.7	-34.3	89	-33.7	89
RLI00220	6/1/22 10:28	47	36	0	17	-1.8	65	-1.6	65
RLI0100C	6/3/22 14:38	48.7	32.4	1.2	17.7	-15.2	82	-14.1	82
RLI0102C	6/6/22 14:50	52	32.2	0.6	15.2	-49.5	92	-49.9	92
RLI0103C	6/6/22 13:23	47	33.6	1.6	17.8	-46	105	-45.4	105
RLI0105C	6/6/22 12:38	44.1	41.6	0	14.3	-16.7	90	-10.6	90
RLI0106C	6/6/22 12:26	46.7	41.2	0	12.1	-1.5	108	-0.8	109
RLI0107C	6/6/22 16:32	31.8	26.8	4.4	37	-46	110	-30.1	111
RLI0114A	6/3/22 12:14	44.2	23.2	4.9	27.7	-7.3	85	-7.3	86
RLI0115E	6/3/22 11:50	46.3	29.1	3.3	21.3	-37.8	99	-37.1	99
RLI0116E	6/1/22 12:13	50.6	30.9	1.6	16.9	-30	77	-29.2	78
RLI0117D	6/1/22 12:01	63.4	33.5	0	3.1	0	86	-1	83
RLI0124G	6/1/22 14:42	50.5	32.4	1.4	15.7	-26.2	90	-25.4	90
RLI0126C	6/8/22 15:33	43.6	21.1	4.8	30.5	-16.5	94	-16.5	94
RLI0127B	6/3/22 12:52	45.7	31.6	0.5	22.2	-26.5	103	-25.6	104
RLI0128A	6/6/22 12:21	34.4	36.2	0	29.4	-16.8	113	-14.8	114
RLI0129E	6/3/22 15:22	48.8	27.5	0.6	23.1	-39.3	80	-37.3	80
RLI0130E	6/3/22 15:35	49.9	29.2	0	20.9	-4	79	-3.9	80
RLIHC101	6/1/22 14:47	48.8	32.1	1.8	17.3	-46.7	105	-47.4	105
RLIHC102	6/1/22 14:52	45.8	31.8	1.8	20.6	-30.4	104	-29	106
RLIHC107	6/2/22 14:27	34.7	39	0	26.3	-25	86	-22.4	85
RLLC0176	6/3/22 13:17	33.2	29.3	0.7	36.8	-40.8	110	-30.3	108
RLLC0177	6/6/22 13:46	41.6	31.8	1.9	24.7	-38.9	107	-34.8	107
RLLC0179	6/1/22 10:47	53	31.2	0	15.8	-5.3	86	-5.3	86
RLLC0180	6/6/22 12:56	46.3	34.9	0	18.8	-24.3	107	-23.7	108
RLLC0181	6/6/22 12:45	54.9	35.6	0	9.5	-10.1	105	-10.1	105
RLLC0183	6/3/22 12:58	35.2	28.3	0	36.5	-3.7	77	-3.6	77
RLLC0184	6/3/22 12:38	46.7	33.3	0	20	-15	98	-14.7	98
RLLC0185	6/6/22 13:36	20.5	26.9	0	52.6	-0.4	99	-0.4	99
RLLC0186	6/6/22 14:40	48	35.4	0	16.6	-18.5	103	-17.1	103
RLLC0187	6/6/22 14:57	45.2	31.4	0.7	22.7	-45.6	104	-39	104
RLLC0188	6/6/22 15:06	49	36.8	0	14.2	-24.1	106	-23.7	107
RLLC0189	6/6/22 15:10	43.3	37.6	0	19.1	-0.3	113	-0.2	113
RLLC0190	6/6/22 13:11	30.6	35.6	0	33.8	-0.5	111	-0.4	112
RLLC0191	6/1/22 14:35	59	37	0	4	-0.1	93	-0.3	93

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - June 1, 2, 3, 6 and 8, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	6/6/22 11:59	42.6	38.2	0	19.2	-1.8	98	-1.6	99
RLHC0156	6/3/22 15:29	34.7	24.4	0.6	40.3	-0.9	103	-0.3	103
RLLC0193	6/3/22 11:59	34.4	30.4	0	35.2	-12.2	107	-8.6	107
RLLC0194	6/6/22 12:15	50.1	40.3	0	9.6	-10.3	101	-10.2	102
RLLC0195	6/6/22 12:10	35.3	34.8	1.7	28.2	-41.7	102	-28.7	103
RLLC0196	6/6/22 12:06	45.6	31.6	2	20.8	-49.1	98	-46.8	98
RLLC0198	6/8/22 14:31	41.9	31.3	0	26.8	-3.6	105	-3	105
RLLC0199	6/8/22 14:36	46.9	34.3	0	18.8	-4.1	112	-3.9	112
RLLC0200	6/8/22 14:44	45.9	31.1	0	23	-0.3	92	-0.2	92
RLLC0201	6/8/22 13:31	53.9	35.4	0	10.7	-0.7	101	-0.7	101
RLLC0202	6/8/22 14:14	43.5	31.8	0	24.7	-5.8	94	-5.6	94
RLLC0203	6/8/22 14:10	53.9	34.1	0.3	11.7	-7.7	93	-7.7	94
RLLC0204	6/8/22 14:06	47.8	34.5	0	17.7	-1.6	104	-1.5	104
RLLC0205	6/8/22 13:51	28.3	29.1	0	42.6	-0.4	107	-0.3	107
RLLC0206	6/6/22 19:08	48.8	33.7	0.3	17.2	-1.6	96	-1.5	96
RLLC0209	6/6/22 15:35	49.4	34.2	0	16.4	-0.4	98	-0.4	98
RLLC0210	6/8/22 13:54	24.9	27.2	0	47.9	-0.4	107	-0.4	107
RLLC0214	6/2/22 14:09	57.6	38.1	0	4.3	-11.2	100	-12.3	100
RLLC0215	6/2/22 14:17	54.6	32.3	0.5	12.6	-38.3	97	-38	97
RLLC0217	6/1/22 12:21	55	34.7	0	10.3	-15.2	93	-15.4	93
RLLC0219	6/3/22 12:08	34.7	31.3	0.1	33.9	-1.9	106	-1	105
RLLC0221	6/8/22 14:20	38.2	29.7	0	32.1	-12	98	-11.8	99
RLLC0222	6/2/22 14:22	49.5	37.6	0	12.9	-17.6	108	-16.4	108
RLLC0223	6/3/22 15:50	48.4	34.9	0	16.7	-2.8	105	-2.6	105
RLLC0224	6/3/22 15:55	50.3	35.3	0	14.4	-2.1	103	-2	103
RLLC0225	6/8/22 13:37	59	33.5	0	7.5	-0.4	88	-0.5	88
RLLC0227	6/1/22 10:33	53	33.8	0	13.2	-2	85	-2	85
RLLC0228	6/8/22 14:26	40	29.6	0	30.4	-1	95	-0.8	95
RLLC0229	6/8/22 14:40	33.3	28.3	0	38.4	-0.2	95	-0.2	95
RLLC0230	6/2/22 15:13	50.7	38.8	0	10.5	-3.6	111	-3.6	112
RLLC0231	6/3/22 12:19	53.4	36.1	0	10.5	-1.7	94	-1.7	94
RLLC0232	6/3/22 12:23	45.3	33.4	0	21.3	-2	93	-1.8	93
RLLC0233	6/2/22 12:02	40.9	33.5	0	25.6	-0.3	105	-0.2	105
RLLC0234	6/6/22 11:52	47.2	34.7	0	18.1	-11.8	112	-10.6	112
RLLC0235	6/1/22 11:49	45.1	34.5	0	20.4	-0.9	110	-0.8	110
RLLC0236	6/1/22 11:54	49.5	36.3	0	14.2	-1.5	101	-1.5	101
RLLC0237	6/2/22 11:43	50.2	35.7	0	14.1	-8.8	90	-8.4	90
RLLC0238	6/2/22 11:47	49.8	37.9	0	12.3	-1.6	107	-1.4	107
RLLC0239	6/2/22 11:54	34.6	31.2	0	34.2	-0.5	93	-0.3	92
RLLC0240	6/2/22 11:57	37.3	31.9	0	30.8	-0.5	99	-0.3	99
RLLC0241	6/1/22 11:38	46	34.8	0	19.2	-14.3	104	-12.9	104
RLLC0242	6/1/22 11:31	46.3	36.6	0	17.1	-8.6	109	-7.5	109
RLLC0243	6/1/22 15:11	45.2	49.1	0	5.7	-0.9	117	-0.9	117
RLLC0244	6/1/22 15:07	51.1	44.5	0	4.4	-0.3	112	-0.4	112
RLLC0245	6/1/22 15:00	45.4	50	0	4.6	-0.2	109	-0.3	109
RLLC0247	6/3/22 15:41	44.8	35	0	20.2	-0.7	97	-0.6	97
RLLC0248	6/3/22 15:45	52.4	37.9	0	9.7	-2.1	103	-2.1	103
RLLC0249	6/6/22 14:01	41.3	35.6	0	23.1	-1.8	113	-1.6	113
RLLC0250	6/6/22 13:57	41	34.6	0	24.4	-1.4	111	-1	111
RLLC0251	6/6/22 13:52	37.3	33.2	0	29.5	-1.5	109	-1	109
RLLC0252	6/1/22 11:12	46.2	38.3	0	15.5	-3.1	104	-3	104
RLLC0253	6/1/22 11:19	46.3	38.7	0	15	-3.6	105	-3	105
RLLC0254	6/1/22 11:25	46.6	38.9	0	14.5	-1.4	105	-1.3	105
RLLC0255	6/2/22 11:10	54.6	40.2	0	5.2	-4.7	107	-4.7	107
RLLC0256	6/2/22 11:02	56.5	42.1	0	1.4	-5.1	104	-5.3	104
RLLC0257	6/3/22 14:58	45.1	34.3	0	20.6	-0.3	76	-0.3	76

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - June 1, 2, 3, 6 and 8, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	6/6/22 11:59	42.6	38.2	0	19.2	-1.8	98	-1.6	99
RLHC0156	6/3/22 15:29	34.7	24.4	0.6	40.3	-0.9	103	-0.3	103
RLLC0258	6/3/22 15:04	67.8	23.3	0	8.9	-33.1	78	-33.1	78
RLLC0259	6/3/22 15:09	47.8	35.7	0	16.5	-4.5	83	-3.8	83
RLLC0260	6/6/22 15:29	48.3	36.2	0	15.5	-0.7	96	-0.6	96
RLLC0261	6/6/22 15:26	51.9	36.2	0	11.9	-2	102	-2	102
RLLC0262	6/6/22 14:44	41.9	31.4	0	26.7	-1.8	89	-1.3	89
RLLC0263	6/6/22 15:02	48.3	41.1	0	10.6	-1.4	110	-1.3	111
RLLC0264	6/6/22 12:50	44.1	41.8	0	14.1	-1.9	111	-1.7	112
RLLC0266	6/2/22 14:00	51.2	42.4	0	6.4	-8	99	-7.9	99
RLLC0267	6/2/22 14:05	39.8	56.7	0	3.5	-0.6	98	-0.7	98
RLLC0268	6/2/22 13:57	52.4	43	0	4.6	-4.9	102	-4.9	102
RLLC0269	6/2/22 14:38	43.3	42.2	0	14.5	-0.2	104	-0.1	105
RLLC0270	6/2/22 14:34	54.3	41.9	0	3.8	-1.5	108	-1.6	108
RLLC0271	6/1/22 10:53	48	33.6	0	18.4	-15	99	-14.7	99
RLLC0272	6/2/22 11:17	37.6	39.6	0.7	22.1	-44.4	100	-41.1	101
RLLC0273	6/3/22 11:54	43.6	32.7	0	23.7	-7.4	109	-6.2	110
RLLC0274	6/6/22 12:32	47.5	41.1	0	11.4	-0.6	115	-0.5	115

There are 130 total collectors; 123 vertical wells and 7 horizontal collectors at RLI.

%= percent

°F= degrees Fahrenheit

"H2O = in. w.c.= inches in water column

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - July 6, 7, 8, 22, 26, 27, and 28, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	7/7/22 13:29	44	39.4	0	16.6	-1.82	101.4	-1.52	101.4
RLHC0153	7/26/22 13:44	45.5	39.1	0.1	15.3	-1.78	101.8	-1.74	101.8
RLHC0156	7/8/22 8:36	31.7	25.4	2.5	40.4	-0.84	106.4	-0.36	105.3
RLI00003	7/8/22 9:03	54.7	36.2	0.4	8.7	-12.54	82.1	-12.42	82.1
RLI00008	7/8/22 12:07	41.2	27.6	2.8	28.4	-3.26	91.9	-3.21	91.9
RLI00016	7/26/22 8:41	67.9	32.1	0	0	-0.13	68.4	-0.1	68.4
RLI00017	7/26/22 8:48	62.3	35.6	0.5	1.6	-9.48	74	-8.97	73.9
RLI00018	7/26/22 8:57	27.2	27.3	1.1	44.4	-7.85	70.7	-7.8	70.8
RLI00019	7/26/22 9:03	62.1	35.1	0.7	2.1	-29.01	72.5	-28.35	72
RLI00034	7/26/22 9:22	59.4	39.2	0.2	1.2	-22.12	82.3	-22.75	82.3
RLI00035	7/26/22 9:27	51.1	36.4	0	12.5	-28.6	77.7	-28.65	77.7
RLI00045	7/26/22 9:35	32.4	30.3	0	37.3	-3.67	79.5	-3.36	79.4
RLI00047	7/26/22 9:39	44.4	33.8	0	21.8	-1.63	82.7	-1.6	82.7
RLI00065	7/7/22 12:02	52.2	39.1	0.7	8	-27.66	108.1	-26.13	108.1
RLI00083	7/7/22 9:43	62.9	36.9	0.2	0	-40.12	95	-41.8	94.9
RLI00095	7/7/22 9:14	47.2	32.8	2	18	-0.82	98.6	-0.83	98.6
RLI00132	7/8/22 12:28	53.2	35.3	0.4	11.1	-29.33	100.9	-31.93	100.9
RLI00134	7/26/22 11:59	49.1	37.8	0	13.1	-15.72	115.6	-15.66	115.7
RLI00135	7/26/22 12:24	39.9	35.2	0.1	24.8	-1.54	114.8	-1.47	114.7
RLI00137	7/7/22 12:47	64.3	33.6	0.2	1.9	1.12	94	-0.89	95.8
RLI00140	7/6/22 11:36	48.3	48.5	0	3.2	-3.32	93.6	-3.23	93.8
RLI00141	7/6/22 11:21	52.6	46.6	0	0.8	-6.83	96.9	-6.83	97
RLI00142	7/6/22 11:32	54.8	45.2	0	0	-1.23	96.2	-1.03	94.6
RLI00220	7/8/22 7:56	48.8	38.2	0.7	12.3	-1.81	65.2	-1.8	65.2
RLI0100C	7/26/22 9:48	52.8	36	1.6	9.6	-11.21	79.8	-12.29	80.5
RLI0102C	7/8/22 9:13	61	37.6	0.1	1.3	-38.9	94.4	-38.87	94.1
RLI0103C	7/26/22 12:05	55.7	40.2	0	4.1	-33.59	107.3	-29.45	107.1
RLI0105C	7/26/22 12:39	47.2	45	0.2	7.6	-0.91	87.5	-0.9	87.5
RLI0106C	7/26/22 12:57	55.5	43.1	0	1.4	-0.05	91.9	-0.05	91.9
RLI0107C	7/26/22 13:08	44	37.3	1.4	17.3	-13.71	109.8	-14.38	111.2
RLI0114A	7/8/22 11:47	43.6	24.1	4.8	27.5	-1.93	95.6	-2.02	95.6
RLI0115E	7/8/22 11:35	52.1	31.8	2.6	13.5	-44.43	96.3	-42.15	96.5
RLI0116E	7/7/22 13:02	19.7	11.9	13.9	54.5	-1.52	81.3	-1.12	81.2
RLI0116E	7/7/22 13:09	22.5	13.7	12.9	50.9	-0.91	82.1	-0.79	82
RLI0116E	7/22/22 14:27	45	26.3	4	24.7	-0.2	82	-1	83
RLI0117D	7/7/22 12:21	18.4	16.7	8.7	56.2	-33.91	87.6	-26.94	88
RLI0117D	7/7/22 12:32	23	19.3	8.1	49.6	-8.62	86.5	-15.68	87
RLI0117D	7/22/22 14:39	21.7	18	8.9	51.4	-26.9	88	-21.8	88
RLI0117D	7/27/22 16:06	21	21	6.2	51.8	-10.96	90.4	-4.47	92.6
RLI0124G	7/7/22 9:59	56.3	37.6	0.6	5.5	-15.97	89.6	-15.92	89.6
RLI0126C	7/8/22 9:25	64.6	30.5	0.8	4.1	20.49	101.9	-1.04	101.2
RLI0127B	7/8/22 12:18	47.3	34.5	0.5	17.7	-22.83	105.5	-21.72	105.6
RLI0128A	7/26/22 13:28	36.3	38.5	0.1	25.1	-9.9	116.9	-10.05	117
RLI0129E	7/8/22 8:42	53.9	31.4	1	13.7	-32.61	80.3	-32.56	80.4
RLI0130E	7/8/22 8:25	51.2	31.7	0.1	17	-4.12	79.7	-4.09	79.8
RLIHC101	7/7/22 10:03	60.5	39.5	0	0	-43.02	104.4	-42.52	104.5
RLIHC102	7/7/22 10:08	55.9	39.5	0	4.6	-28.56	102.5	-28.44	102.5
RLIHC107	7/8/22 10:38	32.4	39.7	1.4	26.5	-23.41	96.4	-23.3	96.3
RLLC0176	7/26/22 11:41	53.6	37.4	0.9	8.1	-30.05	84.7	-31.84	85
RLLC0177	7/26/22 11:29	54.5	40.1	0	5.4	-25.62	109.5	-24.34	109.5
RLLC0179	7/7/22 9:28	54.5	33.7	0.2	11.6	-5.03	85.7	-6.48	86
RLLC0180	7/26/22 12:29	52.5	38.7	0	8.8	-15.47	109.9	-17.21	109.9
RLLC0181	7/26/22 10:37	57.5	38.3	0	4.2	-8.9	107	-8.9	106.8
RLLC0183	7/8/22 12:22	34.9	29.2	0.2	35.7	-3.67	89.9	-3.64	89.9
RLLC0184	7/8/22 12:12	47.3	34.6	0.1	18	-10.15	103	-10.15	103
RLLC0185	7/26/22 11:54	29	33	0.1	37.9	-0.03	81.9	-0.11	81.7

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - July 6, 7, 8, 22, 26, 27, and 28, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	7/7/22 13:29	44	39.4	0	16.6	-1.82	101.4	-1.52	101.4
RLHC0153	7/26/22 13:44	45.5	39.1	0.1	15.3	-1.78	101.8	-1.74	101.8
RLLC0186	7/26/22 11:12	25.9	20.4	9.7	44	-14.58	104.7	-10.97	103.3
RLLC0186	7/26/22 11:17	50.2	38.9	0	10.9	-9.73	101.6	-9.72	101.6
RLLC0187	7/26/22 11:06	54.9	37.8	0	7.3	-32.62	106.6	-33.27	106.6
RLLC0188	7/26/22 11:00	53.5	40.3	0	6.2	-22.37	108.3	-22.33	108.3
RLLC0189	7/26/22 10:51	45.4	40.3	0.1	14.2	-0.06	113.4	-0.14	113.9
RLLC0190	7/26/22 12:15	32.1	38.6	0	29.3	-0.45	109.8	-0.13	109.5
RLLC0191	7/7/22 9:51	61.1	38	0.4	0.5	-1.09	94.6	-1.47	95.1
RLLC0193	7/8/22 11:42	43.8	33.3	0.1	22.8	-4.23	108	-4.11	107.6
RLLC0194	7/26/22 10:19	50.4	42.3	0.1	7.2	-10.86	103.5	-10.86	103.6
RLLC0195	7/26/22 13:35	44.4	42.9	0.4	12.3	-23.93	105.2	-22.34	105.7
RLLC0196	7/26/22 13:40	56	37.6	0.1	6.3	-43.68	100.5	-43.12	100.5
RLLC0198	7/27/22 11:02	43.9	33.6	0.1	22.4	-1.88	100	-1.84	100
RLLC0199	7/7/22 13:57	48.6	35.1	0.1	16.2	-3.86	113.9	-3.81	113.9
RLLC0200	7/7/22 14:05	43.1	31	0	25.9	-0.88	97.5	-0.86	97.5
RLLC0201	7/7/22 14:14	48.3	34.3	0	17.4	-0.78	102.6	-0.7	102.8
RLLC0202	7/7/22 13:40	50.3	34.4	0.4	14.9	-3.42	96.5	-3.38	96.5
RLLC0203	7/7/22 13:35	55.9	34.9	1	8.2	-6.62	93.3	-15.29	95.4
RLLC0203	7/26/22 13:13	54.4	36	0.4	9.2	-13.63	99.7	-13.6	99.9
RLLC0204	7/26/22 13:17	52.1	36.4	0	11.5	-1.29	105.9	-1.26	105.9
RLLC0205	7/27/22 10:40	32	32.5	0.1	35.4	-0.32	106.9	-0.14	104.3
RLLC0206	7/8/22 9:29	10.4	6.6	16.5	66.5	-0.19	84	-0.16	83.3
RLLC0206	7/8/22 9:38	8.4	5.3	17.2	69.1	-0.17	83.9	-0.1	83.8
RLLC0206	7/22/22 15:06	57.9	34.2	0	7.9	-1	98	-1.1	98
RLLC0206	7/27/22 15:47	56.2	35.7	0.1	8	-2.11	99.5	-2.07	99.5
RLLC0209	7/8/22 9:42	57.9	36.6	0.1	5.4	-0.53	100.8	-0.44	100.9
RLLC0210	7/27/22 10:51	28.3	30.5	0	41.2	-0.41	106.9	-0.09	100.2
RLLC0212	7/27/22 9:10	60.5	39.5	0.1	-0.1	-4.52	98.5	-5.58	98.7
RLLC0214	7/6/22 11:55	57.9	42	0.1	0	-14.16	101.7	-17.82	101.6
RLLC0214	7/8/22 10:56	55	41.7	0.1	3.2	-17.05	103.4	-16.79	103.4
RLLC0215	7/8/22 10:26	59.5	37.7	0.1	2.7	-37.85	94.9	-38.82	94.9
RLLC0217	7/27/22 10:12	57.3	37.7	0	5	-12.76	93.5	-14.1	93.6
RLLC0219	7/8/22 11:50	41.9	31.9	2.6	23.6	-0.46	103.4	-0.33	103.2
RLLC0221	7/7/22 13:45	41.4	30.7	0.1	27.8	-11.85	99.5	-11.35	99.5
RLLC0222	7/8/22 10:32	50.1	40.6	0.1	9.2	-18.47	110.6	-17.8	110.6
RLLC0223	7/7/22 14:25	48	36.4	0	15.6	-2.67	107.6	-2.8	107.3
RLLC0224	7/7/22 14:19	51.7	36.8	0.2	11.3	-2.38	105.8	-2.3	105.9
RLLC0225	7/7/22 14:11	53	30.8	0.5	15.7	-0.52	88.1	-0.45	88.1
RLLC0226	7/27/22 14:29	33.3	29.1	7.3	30.3	-33.13	83.1	-33.16	83
RLLC0226	7/27/22 14:40	28.9	25.4	8.6	37.1	-41.09	84.8	-37.51	84.5
RLLC0227	7/7/22 9:21	54.8	35.1	0.1	10	-1.46	87.2	-1.46	87.2
RLLC0228	7/7/22 13:51	25.8	22.6	4	47.6	-0.97	95.6	-0.79	95.6
RLLC0229	7/7/22 14:02	30.8	28.5	0.3	40.4	-0.32	95.4	-0.34	95
RLLC0230	7/27/22 11:22	53	42	0.1	4.9	-3.48	114.1	-3.67	114.1
RLLC0231	7/8/22 11:56	53.4	36	1	9.6	-1.46	95.7	-1.63	95.9
RLLC0232	7/8/22 12:00	47.6	34.9	0.1	17.4	-1.87	95.4	-1.84	95.4
RLLC0233	7/7/22 13:24	44.2	35.7	0.1	20	-0.69	106.9	-0.64	106.9
RLLC0234	7/7/22 11:48	49.1	35.1	1.7	14.1	-7.19	112.7	-7.22	112.8
RLLC0235	7/7/22 11:43	45	35.6	0.3	19.1	-1.17	111.7	-1.12	111.7
RLLC0236	7/27/22 11:45	48.6	38	0	13.4	-1.88	104.2	-1.86	104.2
RLLC0237	7/7/22 12:52	50	37	0.2	12.8	-7.17	91.3	-7.91	91.3
RLLC0238	7/27/22 11:38	49.9	39.1	0.1	10.9	-1.65	108.5	-1.6	108.5
RLLC0239	7/7/22 13:14	34.6	31.9	0.1	33.4	-0.43	94	-0.37	93.9
RLLC0240	7/7/22 13:19	38.3	31.8	0.1	29.8	-0.98	101.5	-0.48	101.3
RLLC0241	7/7/22 11:54	47.8	36.9	0.2	15.1	-10.94	104.8	-10.96	104.8

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - July 6, 7, 8, 22, 26, 27, and 28, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	7/7/22 13:29	44	39.4	0	16.6	-1.82	101.4	-1.52	101.4
RLHC0153	7/26/22 13:44	45.5	39.1	0.1	15.3	-1.78	101.8	-1.74	101.8
RLLC0242	7/7/22 11:23	47.3	39.3	0.1	13.3	-7.34	110.5	-7.32	110.4
RLLC0243	7/7/22 10:16	47.8	48.3	0	3.9	-1.16	119.9	-1.16	119.9
RLLC0244	7/7/22 10:20	53.1	45.8	0	1.1	-1	114.5	-1.01	114.5
RLLC0245	7/7/22 10:23	49	49.9	0	1.1	-0.88	110.3	-0.89	110.3
RLLC0247	7/8/22 8:13	49.2	38.4	0.1	12.3	-1.05	98.8	-1.02	98.8
RLLC0248	7/8/22 8:18	54.4	41.1	0	4.5	-2.39	104.4	-2.75	104.4
RLLC0249	7/26/22 11:23	45.8	39	0	15.2	-1.4	116.1	-1.13	115.8
RLLC0250	7/26/22 11:36	53.3	41.4	0	5.3	-0.46	111.9	-0.43	111.9
RLLC0251	7/26/22 11:46	43.5	38	0.5	18	-1.13	110.7	-0.85	110.7
RLLC0252	7/7/22 10:44	48.3	40	0.1	11.6	-3.14	106	-3.1	106
RLLC0253	7/7/22 10:40	49.1	41.8	0	9.1	-2.89	106.6	-2.89	106.6
RLLC0254	7/7/22 10:31	47.9	40.7	0.2	11.2	-1.57	106.8	-1.5	106.9
RLLC0255	7/7/22 10:56	53.3	40.8	0	5.9	-5.14	108.1	-5.06	108.2
RLLC0256	7/7/22 10:51	54.1	42.3	0.4	3.2	-5.48	105.2	-5.38	105.3
RLLC0257	7/8/22 8:57	45	35	1.3	18.7	-40.41	77.8	-40.46	77.8
RLLC0258	7/8/22 8:51	63	32.2	0.1	4.7	-20.35	79.5	-31.15	79.8
RLLC0259	7/8/22 8:47	50.2	38.4	0.1	11.3	-3.97	85	-3.92	85
RLLC0260	7/28/22 9:58	55.9	39.3	0.1	4.7	-0.14	89.9	-0.48	92.9
RLLC0261	7/28/22 9:52	53.4	38.8	0.1	7.7	-2.48	103.8	-2.48	104
RLLC0262	7/8/22 9:08	51.1	36.3	0.1	12.5	-0.77	91	-0.74	91
RLLC0263	7/26/22 10:55	48.8	42.9	0	8.3	-1.39	113	-1.36	113
RLLC0264	7/28/22 10:51	44.4	43.5	0.2	11.9	-1.84	113.2	-1.82	113.2
RLLC0266	7/27/22 9:46	44.9	52	0.1	3	-17.65	100.4	-10.16	101.3
RLLC0267	7/6/22 12:02	45	55	0	0	-0.97	100	-0.8	99.9
RLLC0268	7/8/22 10:51	47.8	44.8	0.1	7.3	-5.39	104.9	-5.35	104.9
RLLC0269	7/8/22 10:45	42.4	43.3	0.1	14.2	-0.73	107.1	-0.67	107.1
RLLC0270	7/27/22 12:09	54.3	43.6	0	2.1	-2.19	110.3	-2.3	110.3
RLLC0271	7/7/22 9:35	49.9	36.6	0.1	13.4	-14.05	100.4	-14.16	100.4
RLLC0272	7/6/22 11:42	38.4	40.5	0.5	20.6	-20.14	108.4	-21.96	108.4
RLLC0273	7/8/22 11:29	49.2	36.2	0.1	14.5	-5.29	113	-5.13	113
RLLC0274	7/26/22 12:43	50	43.2	0	6.8	-0.76	116.9	-0.72	116.9

There are 130 total collectors; 123 vertical wells and 7 horizontal collectors at RLI.

%= percent

°F= degrees Fahrenheit

"H2O = in. w.c.= inches in water column

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - August 8, 16, 17, 18, and 19, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	8/8/22 14:58	46.4	40.2	0.1	13.3	-1.46	102.6	-1.44	102.6
RLHC0156	8/16/22 10:49	64.3	33.7	0	2	-0.2	106	-0.16	106.1
RLI00003	8/17/22 8:57	57.7	37.2	0.3	4.8	-9.73	72.5	-31.33	75.4
RLI00008	8/19/22 6:34	64.7	35.2	0.2	-0.1	-1.93	63.9	-18.75	85.4
RLI00016	8/19/22 7:04	58.2	31.8	0.1	9.9	-6.08	65.2	-5.98	65.2
RLI00017	8/19/22 7:00	61.7	35	0.8	2.5	-9.51	70.8	-9.44	70.9
RLI00018	8/19/22 6:53	28.6	27.3	1.1	43	-7.25	62.3	-7.25	62.4
RLI00019	8/19/22 6:48	56.5	32.9	0.9	9.7	-36.65	65.7	-36.51	65.2
RLI00034	8/17/22 9:30	58.5	39.6	0	1.9	-17.78	83.4	-15.35	83.5
RLI00035	8/17/22 9:35	52.9	38.4	0	8.7	-27.95	79.2	-28.28	79.2
RLI00045	8/17/22 9:44	33.5	29.8	0	36.7	-2.9	82.7	-2.67	82.8
RLI00047	8/17/22 9:40	47.1	35.5	0	17.4	-0.74	84.6	-0.59	72.4
RLI00065	8/16/22 14:58	56.3	39.8	0	3.9	-25.67	111.8	-23.65	111.8
RLI00083	8/17/22 7:31	60.9	39.1	0	0	-40.58	94.8	-39.76	94.8
RLI00095	8/16/22 7:08	54.1	38.8	0	7.1	-1.01	99.5	-1.12	99.8
RLI00132	8/17/22 8:42	58.2	39.2	0.1	2.5	-29.48	98.5	-29.71	98.6
RLI00134	8/17/22 8:20	49.8	38.2	0	12	-17.4	115.7	-17.33	115.7
RLI00135	8/18/22 13:19	38.8	35.7	0	25.5	-1.76	91.5	-1.72	91
RLI00137	8/17/22 6:39	51.9	38.7	0.2	9.2	-0.55	86.8	-0.52	99.6
RLI00140	8/16/22 15:33	51	44.2	0	4.8	-0.69	105.4	-4.78	106.5
RLI00141	8/16/22 8:22	47.3	50.4	0	2.3	-2.42	110.1	-6.19	109.9
RLI00141	8/18/22 8:49	49.5	46	0.2	4.3	-1.34	110.2	-4.7	110.2
RLI00142	8/16/22 15:29	56.3	41.6	0.3	1.8	-2.49	104	-14.35	103.3
RLI00220	8/16/22 13:53	51.5	37.3	0.6	10.6	-1.93	75.4	-1.87	75.5
RLI0100C	8/17/22 9:25	53.3	35.5	1.7	9.5	-8.29	78.2	-8.29	78.3
RLI0102C	8/17/22 8:53	60.5	39.4	0.2	-0.1	-34.28	93.4	-34.66	93.4
RLI0103C	8/17/22 11:42	55.5	40.1	0.3	4.1	-29.56	78.3	-30.25	78.3
RLI0105C	8/8/22 15:51	50.1	47	0.2	2.7	-0.65	90.3	-0.62	90.4
RLI0106C	8/8/22 15:45	56.4	43.6	0	0	-0.12	93.9	-0.11	93.9
RLI0107C	8/17/22 10:35	48.9	40.4	0.3	10.4	-3.13	112.5	-3.21	115.6
RLI0114A	8/17/22 7:56	65	35	0	0	-0.58	67.5	-0.58	67.8
RLI0115E	8/17/22 7:45	51.7	38.6	0	9.7	-45.87	74.8	-41.04	75.2
RLI0116E	8/16/22 14:34	47.3	28.7	3.5	20.5	-19.87	104.7	-19.94	104.7
RLI0117D	8/16/22 14:56	59.6	35.3	0.6	4.5	-23.71	111.4	-29.43	111.5
RLI0117D	8/17/22 7:01	59.2	36.9	3.9	0	-26	108.5	-25.41	108.7
RLI0124G	8/16/22 7:45	60	40	0	0	-17.12	89.2	-23.8	89.8
RLI0126C	8/17/22 10:18	56	27.9	2.5	13.6	-7.12	101	-5.86	101.4
RLI0127B	8/17/22 8:26	51.9	37.8	0.1	10.2	-20.65	104.4	-20.62	104.3
RLI0128A	8/8/22 15:22	41.9	40.9	0	17.2	-3.49	118	-3.55	118
RLI0128A	8/18/22 12:21	44	40.3	0	15.7	-3.43	94.4	-3.38	92.8
RLI0129E	8/17/22 9:17	55.1	34.4	0.5	10	-28.85	79.8	-28.94	79.9
RLI0130E	8/16/22 10:44	51.9	32.9	0	15.2	-3.45	86.3	-3.45	86.5
RLIHC101	8/16/22 7:30	58.4	41.5	0.1	0	-41.78	104.8	-40.66	104.9
RLIHC102	8/16/22 7:41	57	40.2	0	2.8	-27.91	103.4	-23.59	104.5
RLIHC107	8/16/22 8:57	36.4	37.6	3.5	22.5	-12.36	86.2	-12.79	85.8
RLLC0176	8/17/22 8:37	54	38.4	0.2	7.4	-32	71.6	-31.43	72.7
RLLC0177	8/17/22 11:52	53.9	40.9	0	5.2	-24.92	110.9	-26.68	111.1
RLLC0179	8/16/22 6:54	56.6	34.5	0	8.9	-6.85	85.4	-7.15	85.6
RLLC0180	8/18/22 12:49	53.2	38	0	8.8	-18.84	101.7	-19.22	110.1
RLLC0181	8/18/22 12:44	55	36.9	0	8.1	-7.35	109.3	-6.19	109.4
RLLC0183	8/17/22 8:30	40.4	32.7	0.1	26.8	-3.11	70.3	-3.1	70.4
RLLC0184	8/17/22 8:17	52.3	37.1	0	10.6	-8.94	101.2	-9.56	101.1
RLLC0185	8/18/22 13:12	35.3	34.7	0	30	-0.25	90.6	-0.23	90.7
RLLC0186	8/17/22 11:36	55.7	38.5	0	5.8	-7.76	100.4	-28.04	105.5
RLLC0187	8/17/22 11:32	55	38.9	0	6.1	-28.64	108	-31.54	103.6
RLLC0188	8/17/22 11:28	51.9	39.6	0	8.5	-20.74	110	-22.23	108.8

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - August 8, 16, 17, 18, and 19, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	8/8/22 14:58	46.4	40.2	0.1	13.3	-1.46	102.6	-1.44	102.6
RLHC0156	8/16/22 10:49	64.3	33.7	0	2	-0.2	106	-0.16	106.1
RLLC0189	8/8/22 16:24	44.8	39	0	16.2	-2.38	119.6	-2.04	119.7
RLLC0190	8/8/22 16:15	32.2	38.5	0.1	29.2	-0.2	74.9	-0.03	77.3
RLLC0191	8/16/22 7:10	60.4	39.5	0.1	0	-0.53	94	-0.8	94.6
RLLC0193	8/17/22 7:51	59.9	37.2	0	2.9	-0.38	80.3	-0.33	83.9
RLLC0194	8/8/22 15:11	51.1	42.6	0.1	6.2	-8.69	105.3	-8.9	105.4
RLLC0195	8/8/22 15:07	48.5	45.3	0.2	6	-22.04	106.9	-22.54	107.1
RLLC0196	8/8/22 15:03	56.9	38.7	0.1	4.3	-35.51	102.4	-33.89	102.3
RLLC0198	8/18/22 11:50	55.8	35.9	0	8.3	-1.94	105.2	-5.25	107.8
RLLC0199	8/18/22 11:47	53.4	33.6	0.4	12.6	-3.69	115.8	-7.29	116.5
RLLC0200	8/16/22 10:34	45.8	31.9	0	22.3	-1.23	100.1	-1.18	100.1
RLLC0201	8/16/22 10:27	52.1	36.6	0	11.3	-0.55	104	-2.22	105.2
RLLC0202	8/18/22 12:02	56.6	36.1	0	7.3	-2.39	95.3	-2.9	97.4
RLLC0203	8/17/22 10:38	53.9	36.4	0.8	8.9	-10.66	99.1	-10.59	99.2
RLLC0203	8/18/22 12:05	55.6	35.6	0.1	8.7	-10.84	102	-10.84	102.4
RLLC0203	8/18/22 12:05	55.6	35.6	0.1	8.7	-10.84	102	-10.84	102.4
RLLC0204	8/17/22 10:42	52	36.5	0	11.5	-0.48	106.9	-0.47	106.9
RLLC0205	8/17/22 10:49	43.3	34.2	0	22.5	-0.11	106.4	-0.09	106.4
RLLC0206	8/17/22 10:21	54.5	37.2	0.1	8.2	-0.88	103.1	-0.94	103.2
RLLC0209	8/17/22 10:24	51	37.2	0.1	11.7	-0.39	101.9	-0.24	101.9
RLLC0210	8/17/22 10:46	40.6	33.1	0.2	26.1	-0.07	99.4	-0.07	102.3
RLLC0212	8/16/22 7:56	55.2	44.8	0	0	-2.84	100.8	-7.04	101.1
RLLC0214	8/16/22 8:05	57.5	42.5	0	0	-9.24	104.3	-30.33	104.2
RLLC0215	8/16/22 9:12	63.2	36.8	0	0	-32.76	98.8	-33.86	98.8
RLLC0217	8/17/22 7:21	57.5	39.1	0	3.4	-15.33	93.1	-15.3	93.1
RLLC0219	8/17/22 8:00	61.4	38.2	0.4	0	-0.08	78.9	-0.07	79
RLLC0221	8/18/22 11:58	45.1	32.6	0	22.3	-11.72	101.8	-11.71	101.9
RLLC0222	8/16/22 8:53	53.1	43.5	0	3.4	-16.65	111.9	-20.26	112
RLLC0223	8/16/22 10:04	43	34.5	0.5	22	-1.93	109.3	-3.31	109.4
RLLC0224	8/16/22 10:20	52.8	38.8	0	8.4	-2.25	107.2	-3.29	107.2
RLLC0225	8/16/22 10:31	55.8	34.6	0	9.6	-0.43	89.6	-2.03	93.8
RLLC0226	8/16/22 8:00	53.3	37.8	1.9	7	-1.36	64.7	-1.22	64.7
RLLC0226	8/17/22 6:30	46.6	34.2	3.9	15.3	-33.78	55.4	-36.03	55.5
RLLC0227	8/16/22 6:47	54.4	36	0	9.6	-1.52	88.1	-3.42	89
RLLC0228	8/18/22 11:54	48.9	31.9	0	19.2	-0.44	90.8	-0.44	90.8
RLLC0229	8/18/22 12:14	49.8	42.2	0.1	7.9	-26.31	104.9	-26.32	105
RLLC0230	8/16/22 14:01	52.5	40.4	0	7.1	-2.48	117	-1.24	117.4
RLLC0231	8/17/22 8:05	59.7	40.3	0	0	-0.97	93.9	-1.67	93.9
RLLC0232	8/17/22 8:10	54.9	38.5	0.1	6.5	-1.48	94.2	-2.25	94.3
RLLC0233	8/16/22 14:08	47.9	37.2	0	14.9	-0.62	110.4	-0.58	110.5
RLLC0234	8/17/22 6:54	59.4	40	0	0.6	-0.81	113	-1.48	111.7
RLLC0235	8/17/22 6:49	49.8	37.8	0	12.4	-1.19	110.1	-2.01	110.9
RLLC0236	8/17/22 6:44	50.8	38.8	0	10.4	-1.9	104.4	-1.87	104.5
RLLC0237	8/17/22 6:36	52	37.2	0.2	10.6	-9.41	91.2	-9.43	91.2
RLLC0238	8/16/22 15:43	44.5	37	0.3	18.2	-1.46	111.3	-0.8	111.9
RLLC0239	8/16/22 14:14	38.8	33	0	28.2	-0.34	96.8	-0.26	96.8
RLLC0240	8/16/22 14:11	45.6	35.4	0	19	-0.36	105	-0.34	105
RLLC0241	8/18/22 10:59	51.3	35.6	0.5	12.6	-1.6	79.1	-1.6	78.4
RLLC0242	8/16/22 15:10	47.9	38.1	0	14	-13.6	112.5	-2.74	112.7
RLLC0243	8/16/22 7:15	48.7	46.3	0.1	4.9	-0.45	120.7	-0.49	120.7
RLLC0244	8/16/22 7:19	53.8	46	0.1	0.1	-0.58	115.3	-0.49	115.7
RLLC0245	8/16/22 7:22	51.1	48.9	0.1	-0.1	-0.5	110.5	-0.58	111.3
RLLC0247	8/16/22 10:11	45.8	37.8	0	16.4	-1.2	100.4	-0.65	100.5
RLLC0248	8/16/22 10:15	51	40.6	0	8.4	-3.22	105.5	-4.04	105.4
RLLC0249	8/17/22 11:48	48.6	39	0	12.4	-1.23	116.9	-0.56	116.3

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Wellfield Monitoring Report - August 8, 16, 17, 18, and 19, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	8/8/22 14:58	46.4	40.2	0.1	13.3	-1.46	102.6	-1.44	102.6
RLHC0156	8/16/22 10:49	64.3	33.7	0	2	-0.2	106	-0.16	106.1
RLLC0250	8/18/22 13:05	53.9	40.4	0	5.7	-0.36	115.1	-0.89	115.2
RLLC0251	8/18/22 12:56	46.6	37.2	0.6	15.6	-0.87	112.1	-0.34	111.9
RLLC0252	8/17/22 7:06	50.7	41.4	0.1	7.8	-3.37	106.3	-3.34	106.3
RLLC0253	8/17/22 7:09	50.8	42.6	0	6.6	-9.58	105.8	-2.93	105.8
RLLC0254	8/17/22 7:11	51.6	42.8	0	5.6	-1.68	105.9	-2.04	106.1
RLLC0255	8/16/22 15:13	50.7	38.8	0	10.5	-4.76	109.7	-4.68	109.7
RLLC0256	8/16/22 15:18	53.9	41	0	5.1	-5.21	108.5	-5.14	108.7
RLLC0257	8/17/22 9:01	41.5	33.6	2.7	22.2	-37.91	66.2	-37.93	66.1
RLLC0258	8/17/22 9:10	68.3	31.6	0	0.1	-30.17	75.8	-36.69	76.5
RLLC0259	8/17/22 9:13	53.6	37	0	9.4	-3.98	84.1	-7.33	84.1
RLLC0260	8/17/22 10:02	52	39.4	0	8.6	-0.18	97.6	-0.76	97.9
RLLC0261	8/17/22 9:57	48.7	37.1	0	14.2	-0.96	106	-0.35	106
RLLC0262	8/17/22 8:49	55.2	38.1	0	6.7	-0.35	88.1	-0.36	88.3
RLLC0263	8/8/22 16:08	48.9	43.1	0.1	7.9	-1.01	114.6	-0.99	114.6
RLLC0264	8/8/22 16:00	44.6	43.5	0.1	11.8	-1.68	114.6	-1.46	114.6
RLLC0266	8/16/22 8:37	49.3	50.6	0.1	0	-9.53	103.4	-9.03	103.4
RLLC0267	8/16/22 8:11	47.7	52.1	0.2	0	-0.49	100.8	-0.74	101.4
RLLC0269	8/16/22 9:09	46.7	44.7	0.2	8.4	-0.11	108	-0.15	108
RLLC0270	8/16/22 9:03	53	42.7	0	4.3	-2.19	111.8	-2.2	111.8
RLLC0271	8/17/22 7:26	49.7	38.1	0	12.2	-8.78	102	-6.61	101.4
RLLC0272	8/16/22 15:36	39.7	40.1	0.7	19.5	-16.56	113.2	-1.4	114.9
RLLC0273	8/17/22 7:41	55	37.7	0	7.3	-4.78	113.2	-4.8	113.2
RLLC0274	8/8/22 15:54	51.5	44	0	4.5	-0.7	118.2	-0.64	118.2

There are 130 total collectors; 123 vertical wells and 7 horizontal collectors at RLI.

%= percent

°F= degrees Fahrenheit

"H2O = in. w.c.= inches in water column

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - September 13, 14, 21, 22, 23, 28, and 29, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	9/14/22 10:25	43.8	38.3	0	17.9	-2.16	102.3	-1.5	101.9
RLHC0156	9/23/22 10:03	66.4	33.6	0	0	-0.02	97.9	-0.44	100.8
RLI00003	9/13/22 10:46	45.3	35.3	1.3	18.1	-37.79	81.9	-25.91	81.4
RLI00008	9/13/22 9:28	53.2	36.8	0.6	9.4	-35.75	81.7	-35.88	83.2
RLI00016	9/13/22 8:49	41.9	31.2	0.3	26.6	-8.8	73.1	-8.8	73.3
RLI00017	9/13/22 8:43	54.7	36	0.3	9	-9.5	73	-9.52	73
RLI00018	9/13/22 8:38	34.7	30.8	3.3	31.2	-6.9	69.2	-6.82	69.2
RLI00019	9/13/22 8:32	44	36.4	2.3	17.3	-36.27	67.6	-36.23	66.1
RLI00034	9/13/22 10:08	59	38.9	0	2.1	-26.43	83.1	-25.54	83.1
RLI00035	9/13/22 10:12	50.2	38.3	0	11.5	-31.09	77.9	-31.92	78.1
RLI00045	9/13/22 10:25	39.8	32.6	0	27.6	-2.08	81	-1.98	81
RLI00047	9/13/22 10:21	46.7	35.6	0	17.7	-1.44	83.6	-1.03	82.7
RLI00065	9/13/22 7:52	58.4	41.4	0	0.2	-35.14	108.4	-34.08	108.5
RLI00083	9/22/22 14:56	62.4	37.2	0.3	0.1	-42.55	97.7	-41.78	97.8
RLI00095	9/13/22 7:04	50.4	34.4	0.1	15.1	-2.19	99.8	-2.18	99.8
RLI00095	9/22/22 14:24	47.8	36.1	0.5	15.6	-1.73	102.1	-1.68	102.1
RLI00132	9/13/22 10:04	56.7	36.2	0	7.1	-32.82	99.4	-33.53	99.3
RLI00134	9/13/22 9:32	50.1	35	0.4	14.5	-18.33	115.8	-21.34	115.6
RLI00135	9/14/22 7:42	35.1	38.2	0	26.7	-1.89	58.5	-1.89	58.7
RLI00137	9/23/22 8:20	47.2	26.4	4.9	21.5	-9.37	74	-8.98	73.9
RLI00140	9/22/22 17:37	48.7	47.5	0	3.8	-3.08	94.8	-3.06	94.8
RLI00141	9/23/22 12:46	32.6	38.2	0.8	28.4	-17.6	120.1	-5.72	121
RLI00142	9/22/22 17:32	54.4	45.6	0	0	-24.33	99.8	-29.54	99.5
RLI00220	9/22/22 14:16	52.8	37.9	0.5	8.8	-2.07	74.7	-1.99	74.8
RLI00275	9/21/22 15:45	61.3	38.6	0.1	0	-4.29	84.9	-4.28	85
RLI00275	9/22/22 14:50	61.6	38.4	0	0	-3.25	93.7	-3.23	93.6
RLI00275	9/28/22 9:02	62.5	37.2	0	0.3	-1.77	72.3	-4.96	74.8
RLI00275	9/29/22 6:54	60.7	39.2	0	0.1	-6.7	88	-12.8	90
RLI00276	9/21/22 16:23	64.5	35.5	0.1	-0.1	-0.81	90.3	-0.81	90.3
RLI00276	9/28/22 8:26	45.8	38.8	0	15.4	-5.1	96.3	-5.11	96.3
RLI00276	9/29/22 7:29	44.1	40.6	0	15.3	-10.3	99	-5.9	99
RLI00277	9/21/22 17:29	60.2	39.8	0.1	-0.1	-0.07	97.5	-0.07	97.7
RLI00277	9/23/22 11:34	58.2	40.6	0.1	1.1	-0.15	106.1	-0.29	106.2
RLI00277	9/28/22 8:04	55.8	41.1	0	3.1	-0.47	104	-0.48	103.9
RLI00277	9/29/22 8:00	54.4	43.2	0	2.4	-0.5	104	-0.7	105
RLI00278	9/21/22 17:39	60.2	39.7	0.1	0	-0.1	94.3	-0.1	94.5
RLI00278	9/23/22 11:41	56.9	41.1	0	2	-0.07	102.5	-0.29	103.4
RLI00278	9/28/22 8:09	54.6	42.1	0	3.3	-0.51	95.5	-0.54	93.6
RLI00278	9/29/22 8:04	53.8	45	0	1.2	-0.6	99	-0.9	99
RLI00279	9/22/22 11:10	58.3	41.6	0	0.1	-0.13	115.6	-0.13	115.7
RLI00279	9/23/22 11:48	56.1	41.2	0	2.7	-0.33	126.8	-0.32	127.1
RLI00279	9/28/22 8:00	57.8	42.2	0	0	-0.39	129.8	-0.41	130
RLI00279	9/29/22 8:09	53.9	46	0	0.1	-0.4	129	-0.7	129
RLI00280	9/22/22 10:48	60.2	39.7	0.1	0	-0.15	101.2	-0.15	101.2
RLI00280	9/23/22 12:07	57.9	39.3	0	2.8	-0.85	111.1	-1.47	112.4
RLI00280	9/28/22 8:14	60	40	0	0	-0.89	112.3	-0.98	112.6
RLI00280	9/29/22 8:19	58.2	41.7	0	0.1	-1	113	-1.7	114
RLI00281	9/22/22 11:02	60.2	39.8	0.1	-0.1	-0.06	105.1	-0.06	105.1
RLI00281	9/23/22 11:56	58	39.5	0	2.5	-0.46	109.3	-0.36	109.4
RLI00281	9/28/22 7:54	59.1	40.9	0	0	-0.34	108.6	-0.37	108.7
RLI00281	9/29/22 8:14	55.9	44	0	0.1	-0.3	110	-0.6	110
RLI00282	9/21/22 16:42	59.8	39.8	0.4	0	-0.22	99.9	-0.2	100
RLI00282	9/22/22 17:23	56.6	43.3	0.1	0	-0.29	102.9	-0.25	103
RLI00282	9/28/22 8:43	56.1	43.9	0	0	-0.39	103	-0.4	103.1
RLI00282	9/29/22 7:46	53.3	46.6	0	0.1	-0.6	104	-0.9	104
RLI00283	9/22/22 9:42	58	41.9	0.1	0	-0.26	84.9	-0.25	84.9

REDWOOD LANDFILL, Novato, CA

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Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	9/14/22 10:25	43.8	38.3	0	17.9	-2.16	102.3	-1.5	101.9
RLHC0156	9/23/22 10:03	66.4	33.6	0	0	-0.02	97.9	-0.44	100.8
RLI00283	9/23/22 8:43	58.3	41.7	0	0	-0.43	95.6	-0.38	95.6
RLI00283	9/28/22 8:28	58.7	41.3	0	0	-0.56	95.6	-0.53	97.6
RLI00283	9/29/22 7:55	56.3	43.6	0	0.1	-0.7	102	-1.1	103
RLI00284	9/21/22 16:02	42.9	41.8	0.2	15.1	-2.78	101.4	-2.68	102.1
RLI00284	9/22/22 15:12	56.3	41.8	0	1.9	-1.54	113.6	-2.88	117.8
RLI00284	9/28/22 8:51	44.8	34.5	3.3	17.4	-23.43	73.4	-24.04	72.9
RLI00284	9/29/22 7:12	52.7	42.8	0	4.5	-19.9	55	-48	54
RLI00285	9/21/22 15:34	61.8	38.1	0.1	0	-14.53	84.8	-14.49	84.6
RLI00285	9/22/22 14:36	12.4	7.8	16	63.8	-26.06	90.5	-26.01	90.7
RLI00285	9/22/22 14:46	55.7	34.2	1.7	8.4	-46.88	91.7	-48.16	91.6
RLI00285	9/28/22 8:58	63	37	0	0	-0.61	80.3	-0.67	80.6
RLI00285	9/29/22 7:06	60.9	39	0	0.1	-0.2	74	-0.9	72
RLI00286	9/21/22 17:04	59.8	40.1	0.1	0	-0.03	93.9	-0.03	93.9
RLI00286	9/22/22 16:01	60.7	39.3	0	0	-0.05	95.5	-0.01	95.4
RLI00286	9/28/22 7:21	61.1	38.8	0.1	0	-0.23	91.7	-0.17	91.7
RLI00286	9/29/22 7:36	54.9	45	0	0.1	-0.2	91	-0.5	91
RLI00287	9/21/22 17:14	54.4	45.6	0	0	-8.03	95.5	-8.03	95.8
RLI00287	9/22/22 16:08	55.6	44.4	0	0	-5.95	97.1	-5.89	97.2
RLI00287	9/22/22 16:13	55.7	44.3	0	0	-6.08	96.7	-6.03	96.8
RLI00287	9/28/22 7:30	56.7	43.3	0	0	-5.39	88.5	-9.73	90.9
RLI00287	9/29/22 7:40	53.4	46.5	0	0.1	-12.6	93	-20.4	94
RLI0100C	9/13/22 10:31	52.5	36.7	1.3	9.5	-12.04	79.7	-17.48	82.4
RLI0102C	9/13/22 10:40	46.6	36.6	0	16.8	-41.44	96.8	-41.46	96.8
RLI0103C	9/14/22 7:06	56.7	42.4	0	0.9	-36.47	106.5	-37.38	106.5
RLI0105C	9/14/22 9:35	52.1	38.9	0.6	8.4	-0.78	76.6	-10.54	81.4
RLI0106C	9/14/22 9:44	55.3	43.2	0	1.5	-0.36	86.2	-0.24	86.3
RLI0107C	9/13/22 12:22	56.3	38.6	0	5.1	-2.24	105.9	-14.14	108.4
RLI0107C	9/23/22 11:15	33.6	29.6	4.8	32	-5.12	117.7	-4.82	115.5
RLI0114A	9/13/22 9:12	55.7	33.7	1.7	8.9	-2.08	78.3	-1.65	78.5
RLI0115E	9/13/22 9:00	43	33.5	0.6	22.9	-42.51	85.2	-44.54	84.6
RLI0116E	9/13/22 8:16	41.6	36.3	1.5	20.6	-0.41	69.2	-0.42	69.4
RLI0117D	9/13/22 8:10	49.8	38.6	0.1	11.5	-43.44	62.4	-42.53	62.3
RLI0124G	9/22/22 15:52	57.6	40	0	2.4	-29.19	94.3	-29.07	94.3
RLI0126C	9/13/22 12:50	41	20.5	2.6	35.9	-2.7	98.7	-2.68	98.6
RLI0127B	9/13/22 9:49	51.4	38.1	0	10.5	-23.64	105.9	-23.7	105.9
RLI0128A	9/14/22 9:51	49.1	41.1	0.4	9.4	-11.4	105	-11.45	105.2
RLI0129E	9/13/22 12:11	56.6	31	1.2	11.2	-46.48	78.3	-46.49	78.9
RLI0130E	9/23/22 9:55	48.2	32.1	0	19.7	-3.45	79.9	-3.44	79.9
RLIHC101	9/23/22 13:02	56.6	38.7	0.1	4.6	-40.61	109.6	-38.39	109.8
RLIHC102	9/22/22 15:47	56.8	39.8	0	3.4	-20.66	110.9	-20.13	111.2
RLIHC107	9/23/22 9:09	31.4	37.8	2.6	28.2	-21.15	77.3	-21.21	77.3
RLLC0176	9/14/22 6:40	60.5	25	2.3	12.2	-2.16	64.8	-2.15	64.9
RLLC0177	9/13/22 13:47	53.5	42	0	4.5	-30.43	110.3	-29.78	110.3
RLLC0179	9/13/22 7:11	52.5	34.2	0	13.3	-6.54	78	-4.76	84
RLLC0179	9/22/22 14:30	53	33.5	0.1	13.4	-3.48	91.1	-3.44	91.1
RLLC0180	9/14/22 7:36	50.8	38.5	0	10.7	-12.25	109.6	-12.07	109.7
RLLC0181	9/14/22 7:31	54.8	41.7	0	3.5	-5.01	107.1	-4.97	107.1
RLLC0183	9/13/22 9:53	38.9	32.7	0	28.4	-3.68	72.1	-3.66	72.2
RLLC0184	9/13/22 9:36	53.1	38.3	0	8.6	-7.1	101.1	-7.65	101.2
RLLC0185	9/14/22 7:50	22.6	27.2	3.8	46.4	-0.4	59.2	-0.4	59.2
RLLC0186	9/14/22 7:01	46.5	39.5	0.4	13.6	-41.32	103.6	-41.32	103.6
RLLC0187	9/14/22 7:15	45.5	40.9	0	13.6	-41.95	105.9	-41.94	106
RLLC0188	9/14/22 7:20	49.7	41.5	0	8.8	-23.11	109.3	-25.72	108.9
RLLC0189	9/14/22 7:24	40.3	37.2	0.2	22.3	-2.54	118.7	-2.46	118.8

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - September 13, 14, 21, 22, 23, 28, and 29, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	9/14/22 10:25	43.8	38.3	0	17.9	-2.16	102.3	-1.5	101.9
RLHC0156	9/23/22 10:03	66.4	33.6	0	0	-0.02	97.9	-0.44	100.8
RLLC0190	9/14/22 7:38	29.2	35.2	0	35.6	-0.36	60.8	-0.31	60.8
RLLC0191	9/13/22 7:15	61.8	37.5	0.1	0.6	-3.64	95	-3.63	95
RLLC0193	9/13/22 9:08	59.5	38.5	0	2	-0.98	91.3	-0.96	91.2
RLLC0194	9/23/22 12:24	46.4	40	0.1	13.5	-11.18	105.3	-11.04	105.3
RLLC0195	9/14/22 10:20	47	43.4	0.3	9.3	-30.12	104.8	-29.41	104.9
RLLC0196	9/14/22 10:22	50.6	41.7	0	7.7	-45.11	101.6	-45.94	101.6
RLLC0198	9/23/22 10:44	26	26.4	0	47.6	-9.75	110.1	-7.73	109.7
RLLC0199	9/23/22 10:35	36	32.3	0	31.7	-10.01	115.7	-8.21	115.6
RLLC0200	9/23/22 10:11	27.4	26.9	0	45.7	-1.99	96.8	-1.74	95.6
RLLC0201	9/23/22 10:16	25.7	27.9	0	46.4	-4.04	105.9	-3.07	105.9
RLLC0202	9/23/22 11:01	42.4	32.3	0	25.3	-6.73	97.7	-6.7	97.7
RLLC0203	9/23/22 11:06	37.4	30.4	2.3	29.9	-9.84	97.2	-9.86	97.2
RLLC0204	9/13/22 12:25	46.7	35.6	0	17.7	-2.46	106.6	-2	106.7
RLLC0204	9/23/22 11:10	41	33.9	0	25.1	-1.73	107.1	-1.72	107.2
RLLC0205	9/13/22 12:31	41.2	34.5	0	24.3	-0.17	104.9	-0.05	104.5
RLLC0206	9/13/22 12:38	46.6	36.8	0	16.6	-5.28	103.3	-4.49	103.3
RLLC0209	9/13/22 12:35	45.7	34.9	0	19.4	-0.59	95.2	-0.48	95.3
RLLC0210	9/13/22 12:28	35.9	31.6	0.3	32.2	-0.09	102.5	-0.04	103.1
RLLC0212	9/22/22 16:29	60.5	39.5	0	0	-15.11	100.6	-17.9	100.6
RLLC0214	9/22/22 16:36	57.4	42.6	0	0	-34.56	106	-35.69	106
RLLC0215	9/23/22 9:20	64.8	35.2	0.1	-0.1	-41.6	95.6	-41.79	95.5
RLLC0217	9/13/22 7:20	58.5	38.8	0	2.7	-15.66	93.3	-15.67	93.3
RLLC0219	9/13/22 9:15	62.4	37	0	0.6	-0.01	84.5	-0.03	84.8
RLLC0221	9/23/22 10:55	38.1	31.6	0.1	30.2	-12.15	99.8	-12.08	99.7
RLLC0222	9/23/22 9:14	50.1	41.6	0	8.3	-26.93	109.9	-26.92	109.9
RLLC0223	9/23/22 9:44	33.7	32.7	0	33.6	-4.36	106.7	-3.68	106.9
RLLC0224	9/23/22 9:49	45.7	36.7	0.1	17.5	-4.18	107.3	-3.46	107.3
RLLC0225	9/23/22 10:22	21.4	25.2	0	53.4	-3.32	95.9	-2.78	95.7
RLLC0226	9/28/22 7:36	48.1	38.6	1.4	11.9	-43.63	51.8	-41.76	51.6
RLLC0227	9/13/22 7:00	50.8	30.4	0.2	18.6	-3.22	89.1	-3.23	89.1
RLLC0227	9/22/22 14:20	48.3	34.8	0	16.9	-2.71	88.6	-2.67	88.8
RLLC0228	9/23/22 10:49	28.1	25.8	2.8	43.3	-0.55	89.2	-0.55	89.3
RLLC0229	9/23/22 10:29	14.9	21.2	1.9	62	-0.55	89.7	-0.51	89.9
RLLC0230	9/14/22 6:45	52.4	38	0.6	9	-2.12	66.2	-2.12	66.3
RLLC0230	9/23/22 9:03	56.9	43.1	0	0	-0.6	112.3	-0.49	112.4
RLLC0231	9/13/22 9:20	53.5	37.9	0	8.6	-3.29	96.3	-4.47	96.2
RLLC0232	9/13/22 9:23	44.5	35	0	20.5	-4.07	94.3	-1.38	92.7
RLLC0233	9/14/22 6:52	52.3	38.6	0	9.1	-0.65	106.2	-1.17	106.9
RLLC0234	9/13/22 7:42	57.5	42.5	0	0	-2.25	106.5	-2.24	106.4
RLLC0235	9/13/22 7:57	41.3	35.5	0	23.2	-1.87	112.3	-0.64	108.9
RLLC0236	9/13/22 8:09	50	39	0	11	-1.89	105.5	-1.86	105.6
RLLC0237	9/23/22 8:24	55.8	38.9	0	5.3	-9.96	91.6	-11.31	91.6
RLLC0238	9/23/22 8:32	55.1	40.2	0	4.7	-0.49	106.4	-0.57	106.9
RLLC0239	9/13/22 8:21	43.5	35.8	0	20.7	-0.3	91	-0.41	91.4
RLLC0240	9/13/22 8:24	52.3	38.4	0	9.3	-0.41	99.1	-0.28	99.7
RLLC0241	9/13/22 7:48	57.5	38.5	0	4	-15.76	104.6	-17.72	104.7
RLLC0242	9/13/22 7:34	57	42.5	0	0.5	-1.29	106.6	-1.91	107.4
RLLC0243	9/22/22 15:28	38.9	39.1	0	22	-1.73	122.3	-1.1	122.2
RLLC0244	9/22/22 15:33	42.3	39	0	18.7	-1.73	118.3	-1.43	118.3
RLLC0245	9/22/22 15:37	46.8	45.4	0	7.8	-2.77	115.5	-2.54	115.5
RLLC0246	9/22/22 17:48	57.6	42.3	0.1	0	-0.37	97.3	-0.68	97.6
RLLC0247	9/23/22 9:32	49.5	40.1	0	10.4	-0.43	97.3	-0.43	97.3
RLLC0248	9/23/22 9:37	43	37.5	0.1	19.4	-4.79	103.7	-4.19	103.9
RLLC0249	9/14/22 6:57	48.5	39.1	0	12.4	-0.72	114.2	-0.88	115.3

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - September 13, 14, 21, 22, 23, 28, and 29, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	9/14/22 10:25	43.8	38.3	0	17.9	-2.16	102.3	-1.5	101.9
RLHC0156	9/23/22 10:03	66.4	33.6	0	0	-0.02	97.9	-0.44	100.8
RLLC0250	9/13/22 13:38	47.4	40.3	0.4	11.9	-1.21	113.7	-1.07	105.8
RLLC0251	9/13/22 13:43	50	40.7	0.3	9	-0.25	108.7	-0.44	109.7
RLLC0252	9/13/22 7:38	53.8	42.2	0	4	-3.37	106.4	-3.94	106.6
RLLC0253	9/13/22 7:25	53.7	42.7	0	3.6	-3.24	105.8	-3.17	105.8
RLLC0254	9/13/22 7:28	52.6	44.1	0	3.3	-2.17	106.3	-2.15	106.6
RLLC0255	9/22/22 17:17	57.6	41.2	0.1	1.1	-4.87	107.4	-5.85	107.6
RLLC0256	9/22/22 17:11	57.2	42.6	0.2	0	-5.49	105.7	-7.07	105.9
RLLC0257	9/13/22 10:55	65.4	30.8	0.2	3.6	-42.5	77.8	-45.67	78.6
RLLC0258	9/13/22 10:58	59.9	31.8	1.4	6.9	-45.23	73.1	-45.38	74.1
RLLC0259	9/13/22 12:04	47.3	31.9	0.2	20.6	-8.26	85.4	-3.78	85.6
RLLC0260	9/13/22 13:17	43.3	31.8	0.1	24.8	-1.99	100.8	-1.46	100.7
RLLC0261	9/13/22 13:21	55.3	38.9	0	5.8	-0.49	99.3	-3.07	102.1
RLLC0262	9/13/22 10:35	37.1	32.6	0	30.3	-8.45	91.7	-1.29	91.5
RLLC0263	9/14/22 7:12	47.5	40.2	0.2	12.1	-1.62	110.2	-1.6	110.1
RLLC0264	9/14/22 7:28	42	41.3	0	16.7	-1.55	110.7	-1.5	111.4
RLLC0265	9/22/22 18:05	59.7	40.2	0.1	0	-0.22	97.1	-0.31	98.1
RLLC0266	9/22/22 18:00	40.2	47	0.3	12.5	-4.47	108	-2.25	108.6
RLLC0267	9/22/22 16:41	48.5	49.1	0.1	2.3	-1.84	103.5	-1.82	103.5
RLLC0269	9/23/22 8:57	49.8	44.6	0	5.6	-0.59	106.2	-0.58	106.2
RLLC0270	9/23/22 8:50	56.1	42.8	0.1	1	-2.92	109.8	-3.04	109.7
RLLC0271	9/22/22 15:06	59.9	38.5	0	1.6	-0.87	103.1	-1.2	103.4
RLLC0272	9/22/22 17:40	45.2	43.6	0	11.2	-1.68	107.4	-1.63	107.4
RLLC0273	9/13/22 9:03	56.1	36.9	0	7	-3.14	109.1	-3.75	109.5
RLLC0274	9/14/22 9:37	48.9	43.2	0	7.9	-0.87	117.7	-1.19	117.7

There are 143 total collectors; 136 vertical wells and 7 horizontal collectors at RLI.

%= percent

°F= degrees Fahrenheit

"H2O = in. w.c.= inches in water column

REDWOOD LANDFILL, Novato, CA

Wellfield Monitoring Report - October 6, 7, 12, 14, 17, 19, 20, 21, 25, and 26, 2022

Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	10/20/22 15:54	44.1	36.8	0.1	19	-0.87	102.7	-0.83	102.7
RLHC0156	10/19/22 14:36	35.6	25.3	2.1	37	-0.12	109.1	-0.04	109.2
RLI00003	10/25/22 14:37	48.5	37.9	0.3	13.3	-21.16	85.4	-21.15	85.4
RLI00008	10/25/22 11:34	55.5	33.2	2.1	9.2	-38.33	88.4	-38.54	88.5
RLI00016	10/20/22 10:14	30.9	28.4	0.3	40.4	-15.44	75.1	-15.34	75.1
RLI00017	10/20/22 10:21	62.8	36.9	0.3	0	-5.7	79.1	-6.7	79.3
RLI00018	10/20/22 10:26	26.7	25.6	2.8	44.9	-3.66	76.1	-3.63	76
RLI00019	10/20/22 10:32	59.2	35.7	0.4	4.7	-34.22	75.5	-33.85	75.4
RLI00034	10/25/22 14:50	47.6	34.4	3	15	-31.61	85.4	-29.4	85.5
RLI00035	10/25/22 15:10	48.5	36.2	0.1	15.2	-33	80.4	-32.41	80.3
RLI00045	10/25/22 15:02	45.3	33.6	0.1	21	-1.2	86.9	-1.16	87.1
RLI00047	10/25/22 14:58	58.6	36.7	0.1	4.6	-0.38	86	-0.29	86
RLI00065	10/21/22 9:37	48	39	0.2	12.8	-22.12	109	-22.06	108.9
RLI00083	10/7/22 8:57	63.6	34.7	0.9	0.8	-44.4	96.3	-44.98	96.4
RLI00095	10/6/22 7:22	47.5	38.2	0	14.3	-1.5	99	-1.3	99
RLI00132	10/25/22 12:02	56.5	37.7	0.2	5.6	-35.38	101.4	-33.87	101.4
RLI00134	10/26/22 15:28	46.1	37.1	0.3	16.5	-22.69	116.5	-22.45	116.5
RLI00135	10/26/22 9:56	35.3	36.2	0.2	28.3	-5	120.9	-3.62	120.7
RLI00137	10/19/22 13:40	40.6	23.6	6.5	29.3	-16.4	103.8	-16.31	103.9
RLI00137	10/19/22 13:44	40.3	23.6	6.5	29.6	-30.07	103.6	-23.59	103
RLI00140	10/6/22 9:23	45.2	47.4	0	7.4	-1.4	85	-1.4	86
RLI00141	10/6/22 9:16	34.1	40.1	0.5	25.3	-2.5	119	-2.5	119
RLI00142	10/6/22 9:19	53.1	46.8	0	0.1	-27.2	99	-36.7	99
RLI00142	10/26/22 12:51	46	43.2	0.4	10.4	-30.47	100.8	-30.56	101.1
RLI00220	10/19/22 8:32	45.5	36.6	0.7	17.2	-1.79	62.3	-1.8	62.3
RLI00275	10/6/22 7:19	59.9	40	0	0.1	-18.8	95	-26.5	96
RLI00275	10/7/22 8:54	62.8	35.1	0.2	1.9	-29.05	99.5	-38.62	99
RLI00275	10/12/22 8:48	56	39.6	0	4.4	-38.19	98.6	-43.86	98.8
RLI00275	10/14/22 7:18	49.3	38	0	12.7	-43.49	98.4	-43.46	98.4
RLI00275	10/26/22 12:11	37.3	37.7	0.1	24.9	-46.63	99.6	-39.07	99.5
RLI00276	10/6/22 9:44	39.9	38.3	0	21.8	-6	100	-7.1	100
RLI00276	10/7/22 11:59	38.8	35.5	0	25.7	-4.87	103.9	-2.31	103.5
RLI00276	10/12/22 9:09	38.7	36.7	0	24.6	-4.94	97.2	-19.86	98.8
RLI00276	10/12/22 9:12	40.4	36.6	0	23	-22.16	100.2	-3.84	98.3
RLI00276	10/14/22 9:59	37.9	36.1	0	26	-3	95.6	-1.09	94.6
RLI00276	10/17/22 17:06	40.2	37.7	0	22.1	-0.78	85.5	-0.76	85.3
RLI00277	10/6/22 10:10	41.9	39.5	0	18.6	-0.3	105	-0.1	105
RLI00277	10/7/22 11:11	41.9	37.7	0	20.4	-0.31	106	-0.11	105.4
RLI00277	10/12/22 9:41	56.8	41.2	0	2	-0.01	95.5	-0.06	101.7
RLI00277	10/14/22 8:53	50	39.3	0	10.7	-0.34	104.4	-0.6	104.8
RLI00277	10/26/22 13:07	41.9	38	0.1	20	-0.78	106.6	-0.65	106.6
RLI00278	10/6/22 10:07	44.9	43.6	0	11.5	-0.6	99	-0.3	98
RLI00278	10/7/22 11:36	45.7	41.3	0	13	-0.43	84.6	-0.23	85.8
RLI00278	10/12/22 9:37	53.5	43.3	0	3.2	-0.08	98.1	-0.18	96.6
RLI00278	10/14/22 8:47	47.5	41.8	0	10.7	-0.73	98.8	-0.71	98.8
RLI00278	10/26/22 13:18	45.8	42.3	0.1	11.8	-0.84	101.4	-0.81	101.4
RLI00279	10/7/22 11:18	54.8	44.1	0	1.1	-0.95	129.4	-1.41	130.2
RLI00279	10/12/22 9:55	45.3	38.5	3.3	12.9	-1.38	127.8	-0.81	129
RLI00279	10/14/22 9:07	54.4	44.4	0	1.2	-1.13	58.1	-1.44	60.9
RLI00280	10/7/22 11:53	57.9	39	0.1	3	-9.03	116	-11.08	115.8
RLI00280	10/12/22 9:47	36.1	36.2	0	27.7	-14.73	115.2	-6.97	115.5
RLI00280	10/14/22 9:47	36.6	35.9	0	27.5	-4.24	115.4	-2.55	115
RLI00281	10/7/22 11:30	54.9	39.5	0	5.6	-0.59	111.6	-1.42	111.5
RLI00281	10/12/22 10:01	53.6	42.6	0	3.8	-1.29	111.2	-1.22	111.2
RLI00281	10/14/22 9:39	50.9	41.1	0	8	-1.95	111.3	-4.15	111.1
RLI00282	10/6/22 8:52	53.5	46.4	0	0.1	-1.1	65	-1.4	65

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Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	10/20/22 15:54	44.1	36.8	0.1	19	-0.87	102.7	-0.83	102.7
RLHC0156	10/19/22 14:36	35.6	25.3	2.1	37	-0.12	109.1	-0.04	109.2
RLI00282	10/7/22 11:01	52.4	42.9	0	4.7	-1.84	106	-7.38	104.5
RLI00282	10/12/22 9:20	36.9	38.4	0	24.7	-8.47	104.9	-3.67	105
RLI00282	10/14/22 8:39	42.9	39.4	0	17.7	-1.45	104.7	-1.34	104.4
RLI00283	10/7/22 10:42	56.2	39.4	0	4.4	-1.08	105	-1.31	105.3
RLI00283	10/12/22 9:25	57.1	40.6	0	2.3	-1.77	104.7	-2.2	105
RLI00283	10/14/22 8:31	54	40	0	6	-2.22	105.1	-2.46	105.1
RLI00284	10/6/22 7:45	47.4	48	0.5	4.1	-44.6	72	-44.3	67
RLI00284	10/7/22 9:23	9.4	9.3	17.6	63.7	-47.37	60.6	-47.43	60.7
RLI00284	10/7/22 9:39	14.6	9.4	16	60	-46.55	58.9	-45.23	58.9
RLI00284	10/12/22 9:02	48.9	36.5	1.6	13	-47.45	64.3	-46.8	63.2
RLI00284	10/14/22 7:34	54.4	35.7	0.5	9.4	-44.83	59.3	-43.04	59.3
RLI00285	10/6/22 7:40	60.7	39.2	0	0.1	-1	89	-1.4	86
RLI00285	10/7/22 9:14	62.8	37.2	0	0	-9.62	80.6	-38.1	105.1
RLI00285	10/12/22 8:53	61.7	38.3	0	0	-46.07	101.8	-46.49	101.9
RLI00285	10/14/22 7:27	60.8	37.1	0	2.1	-47.31	100.7	-45.91	100.8
RLI00285	10/26/22 12:02	48.6	38	0.1	13.3	-43.63	104.7	-44.1	104.7
RLI00286	10/6/22 8:41	46.5	47.4	0	6.1	-0.4	91	-0.4	91
RLI00286	10/7/22 10:20	48.7	39.9	0.2	11.2	-0.39	92.8	-0.39	92.8
RLI00286	10/12/22 8:30	43	45.2	0	11.8	-0.58	91.9	-0.47	91.9
RLI00286	10/14/22 7:51	48.8	41.4	0	9.8	-0.31	92.2	-0.21	92.3
RLI00287	10/6/22 8:38	52.2	47.7	0	0.1	-23.7	94	-24.6	95
RLI00287	10/7/22 10:27	58.6	39.3	0.3	1.8	-38.58	96.8	-41.92	96.5
RLI00287	10/12/22 8:34	51.6	48.4	0	0	-40.48	96.5	-40.01	96.6
RLI00287	10/14/22 8:10	51.1	47.1	0	1.8	-46.2	95.5	-43.79	96.4
RLI0100C	10/25/22 14:45	58.6	39	0.4	2	-23.66	87.9	-23.95	88.2
RLI0102C	10/25/22 12:19	55.9	37.8	0.1	6.2	-42.67	96.2	-42.64	96.2
RLI0103C	10/20/22 17:39	55.6	40.4	0.1	3.9	-35.87	107.6	-35.49	107.6
RLI0105C	10/20/22 17:00	38.8	40.6	0.2	20.4	-1.44	87.5	-10.51	93.8
RLI0106C	10/20/22 16:46	55.7	44.2	0.1	0	-0.07	93.7	-0.06	93.7
RLI0107C	10/20/22 12:39	32.5	29.9	4.8	32.8	-2.11	117.4	-2.11	118
RLI0114A	10/21/22 11:39	58.1	31.6	1.9	8.4	-8.16	79.9	-7.16	79.8
RLI0115E	10/21/22 9:54	59.4	36.5	1.2	2.9	-41.69	80.6	-41.17	80.4
RLI0116E	10/19/22 11:47	16.5	9.9	14.6	59	-0.42	88.5	-0.4	88.4
RLI0116E	10/19/22 11:51	11.9	7.1	16.3	64.7	-0.81	88.3	-0.1	88.3
RLI0117D	10/19/22 11:32	20.9	15.9	10.3	52.9	-42.13	89.3	-41.07	89.3
RLI0117D	10/19/22 11:38	20.4	15.2	10.9	53.5	-42.84	89.3	-43.26	89.3
RLI0124G	10/6/22 8:14	59.3	40.6	0	0.1	-32.9	88	-32.9	88
RLI0126C	10/19/22 9:32	52.9	40.5	1.3	5.3	-37.69	72.3	-37.2	73
RLI0126C	10/25/22 13:29	31.1	17.5	9.8	41.6	-3.58	99.1	-0.24	98.8
RLI0126C	10/25/22 13:44	28.9	16.5	10.4	44.2	0.83	100.1	-0.78	97.8
RLI0127B	10/26/22 15:43	50.9	36.5	0.1	12.5	-21.43	106.6	-20.97	106.6
RLI0128A	10/20/22 16:41	58.2	41.4	0	0.4	-0.04	108.8	-0.04	108.8
RLI0129E	10/25/22 14:13	16.7	6.3	15.5	61.5	-45.71	82.4	-45.2	82.5
RLI0129E	10/25/22 14:21	17.3	6.5	15.5	60.7	-46.45	82.4	-46.38	82.4
RLI0130E	10/19/22 14:29	45.2	31.4	0.2	23.2	-3.23	90	-3.16	90.1
RLIHC101	10/6/22 8:06	58	41.9	0	0.1	-42.2	104	-41.8	104
RLIHC102	10/19/22 9:14	52.9	40.3	0	6.8	-28.76	105.4	-28.73	105.4
RLIHC107	10/19/22 15:13	31	34.7	2.1	32.2	-27.39	111.7	-27.36	111.8
RLLC0176	10/26/22 10:52	36.4	32.6	0.7	30.3	-32.75	90.8	-33.33	90.9
RLLC0177	10/26/22 10:34	51.6	39.9	0.1	8.4	-26.92	112.3	-27.49	112.3
RLLC0179	10/6/22 7:12	54.6	35	0	10.4	-2.6	77	-6.9	80
RLLC0179	10/26/22 12:23	40.4	31.5	0.7	27.4	-25.19	88.9	-25.18	88.9
RLLC0180	10/26/22 9:43	50.9	39.5	0.1	9.5	-21.41	112.1	-20.85	112.1
RLLC0181	10/26/22 9:32	60.2	39	0.2	0.6	-7.76	108.6	-8.07	108.6

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Device Name	Date Time	CH4 (Methane) (%)	CO2 (Carbon Dioxide) (%)	O2 (Oxygen) (%)	Balance Gas (%)	Initial Static Pressure ("H2O)	Initial Temperature (°F)	Adjusted Static Pressure ("H2O)	Adjusted Temperature (°F)
RLHC0153	10/20/22 15:54	44.1	36.8	0.1	19	-0.87	102.7	-0.83	102.7
RLHC0156	10/19/22 14:36	35.6	25.3	2.1	37	-0.12	109.1	-0.04	109.2
RLLC0183	10/25/22 11:55	37.7	32.3	0	30	-3.22	79.4	-3.19	79.5
RLLC0184	10/25/22 11:43	51.9	36.9	0.1	11.1	-5.56	102.6	-5.52	102.6
RLLC0185	10/26/22 10:40	19.7	28.3	1	51	-0.23	69.8	-0.18	67.8
RLLC0186	10/26/22 10:10	43.1	37.7	0.1	19.1	-41.85	107.9	-41.76	107.8
RLLC0187	10/26/22 10:05	51.8	37.2	0.1	10.9	-40.81	108.3	-40.78	108.3
RLLC0188	10/20/22 17:29	48.4	39.1	0.1	12.4	-28.64	108.9	-28.63	109
RLLC0189	10/20/22 17:23	43.1	36.9	0.1	19.9	-0.94	117.3	-0.92	117.3
RLLC0190	10/20/22 17:53	26.3	34.8	0.1	38.8	-0.1	84.7	-0.06	82.4
RLLC0190	10/26/22 9:51	24.2	34.1	0.1	41.6	-0.1	75.5	-0.08	75.5
RLLC0191	10/20/22 9:03	60.3	38.1	0.2	1.4	-3.68	94.8	-5.85	96
RLLC0193	10/21/22 10:04	60.8	39.2	0	0	-0.06	65.7	-0.64	75.3
RLLC0194	10/20/22 16:27	38.2	38.7	0	23.1	-13.11	105.5	-9.67	105.6
RLLC0195	10/20/22 16:09	42.9	40.9	0.6	15.6	-21.55	106.6	-18.89	106.7
RLLC0196	10/20/22 16:04	50.8	37.2	0	12	-45.23	101.5	-44.78	101.5
RLLC0198	10/20/22 11:49	33	29.5	0.1	37.4	-5.63	110.3	-5.51	110.3
RLLC0199	10/20/22 11:43	39	33.2	0.1	27.7	-8.06	116.8	-5.66	116.5
RLLC0200	10/20/22 11:31	35.1	29.2	0	35.7	-0.94	94.6	-0.73	93.5
RLLC0201	10/20/22 11:14	29.2	28.7	0.1	42	-2.37	106.3	-1.72	105.8
RLLC0202	10/20/22 12:12	61	37.5	0	1.5	-0.36	89.8	-1.3	94.1
RLLC0203	10/20/22 12:20	35.7	29.1	1.9	33.3	-11.14	98.7	-10.73	98.7
RLLC0204	10/20/22 12:32	47.7	35.5	0	16.8	-1.1	107.2	-1.11	107.3
RLLC0205	10/20/22 12:44	38.3	33.3	0	28.4	-0.31	106.8	-0.14	106.9
RLLC0206	10/25/22 13:15	50.4	37.4	0.1	12.1	-2.66	103.4	-2.62	103.4
RLLC0209	10/25/22 13:20	57.3	35.9	0	6.8	-0.14	95.3	-0.33	100
RLLC0210	10/26/22 11:19	31	30.9	0.3	37.8	-0.27	101.1	-0.09	98.8
RLLC0212	10/6/22 8:23	58.4	41.5	0	0.1	-19.7	98	-21	98
RLLC0214	10/6/22 8:29	56.9	43	0	0.1	-38.5	103	-45.3	103
RLLC0215	10/19/22 15:03	63.3	35.1	0.1	1.5	-42.03	109.5	-40.74	109.4
RLLC0217	10/6/22 8:48	57.1	41.4	0	1.5	-16.2	93	-18.6	93
RLLC0219	10/21/22 11:35	59.7	40	0.2	0.1	-0.72	105.1	-0.69	105.1
RLLC0221	10/20/22 12:03	40.8	32.3	0.1	26.8	-12.53	100.8	-12.37	100.8
RLLC0222	10/19/22 15:08	47.9	39.8	0	12.3	-27.98	115	-28.47	115
RLLC0223	10/19/22 14:09	36.4	33	0	30.6	-3.04	110.5	-2.99	110.4
RLLC0224	10/19/22 14:00	46.1	36.5	0.2	17.2	-3.55	110.6	-3.55	110.7
RLLC0225	10/20/22 11:24	24.7	26.2	0.1	49	-2.03	94.1	-1.43	93
RLLC0226	10/25/22 11:23	55.7	42.5	0.5	1.3	-39.67	81.5	-38.68	81.5
RLLC0227	10/6/22 7:06	46.9	35.2	0	17.9	-1.9	88	-1.4	88
RLLC0227	10/25/22 11:49	50.6	36.7	0	12.7	-22.46	106.6	-22.43	106.6
RLLC0228	10/20/22 11:56	35.3	27.7	2.3	34.7	-0.62	87.8	-0.52	88
RLLC0229	10/20/22 11:38	19.8	23.3	1.6	55.3	-0.37	85.2	-0.27	85.6
RLLC0230	10/19/22 15:19	55.2	41.3	0.1	3.4	-0.23	116.9	-0.17	116.9
RLLC0231	10/21/22 10:28	42.3	35.3	0	22.4	-3.42	96.5	-3.35	96.5
RLLC0232	10/21/22 10:35	51.4	36.9	0	11.7	-0.5	91.5	-0.39	91.6
RLLC0233	10/19/22 13:54	35	33.7	0	31.3	-1.22	110.1	-0.82	110.3
RLLC0234	10/6/22 9:56	58	41.9	0	0.1	-1.2	109	-1.3	109
RLLC0234	10/17/22 16:44	58.7	41.2	0.1	0	-16.01	113.7	-16.45	113.8
RLLC0234	10/26/22 11:06	45.9	37.4	0	16.7	-23.63	116.6	-23.31	116.5
RLLC0235	10/21/22 9:29	59.5	40.4	0.1	0	-0.03	97.8	-0.02	97.7
RLLC0236	10/21/22 9:19	44.2	36.3	0.1	19.4	-1.05	107.3	-1.06	107.3
RLLC0237	10/19/22 11:26	46	36.8	0	17.2	-10.15	95.6	-10.24	95.6
RLLC0238	10/19/22 11:13	38.4	36.2	0	25.4	-0.78	110.9	-0.57	110.9
RLLC0239	10/19/22 11:59	31.4	31.4	0	37.2	-0.3	95.5	-0.12	95.3
RLLC0240	10/19/22 12:05	37.8	33.5	0	28.7	-0.39	103.9	-0.23	103.9
RLLC0241	10/19/22 11:01	43.1	36.1	0	20.8	-14.54	105.8	-14.56	105.8

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RLHC0153	10/20/22 15:54	44.1	36.8	0.1	19	-0.87	102.7	-0.83	102.7
RLHC0156	10/19/22 14:36	35.6	25.3	2.1	37	-0.12	109.1	-0.04	109.2
RLLC0242	10/19/22 10:55	51.6	41.1	0	7.3	-2.67	111.5	-2.6	111.5
RLLC0243	10/6/22 7:52	37.6	39.5	0	22.9	-1.1	120	-0.7	120
RLLC0243	10/26/22 11:47	41.1	38.8	0.1	20	-0.62	120.6	-0.6	120.5
RLLC0244	10/6/22 7:55	40.8	39.5	0	19.7	-2	116	-1.3	117
RLLC0245	10/6/22 7:58	46.3	46.3	0	7.4	-1.9	113	-1.8	113
RLLC0245	10/26/22 11:52	47.5	43.6	0.1	8.8	-2.75	115.7	-2.73	115.7
RLLC0246	10/6/22 8:56	54.6	45.3	0	0.1	-0.3	94	-1.3	95
RLLC0247	10/19/22 14:16	48.1	38.8	0	13.1	-0.21	102.4	-0.18	102.5
RLLC0248	10/19/22 14:23	43.8	36.8	0.1	19.3	-3.73	107.3	-2.89	108.1
RLLC0249	10/26/22 10:29	39.7	36.8	0.1	23.4	-1.56	117.9	-1.13	117.7
RLLC0250	10/26/22 10:57	43.2	38.1	0.5	18.2	-1.16	114.4	-1.12	114.4
RLLC0251	10/26/22 10:46	36.9	35.2	0.8	27.1	-1.13	112	-0.75	111.9
RLLC0252	10/6/22 9:48	45.7	44.9	0	9.4	-3.6	107	-2.7	107
RLLC0253	10/17/22 16:55	50.7	44.2	0.1	5	-2.9	108.7	-2.89	108.7
RLLC0254	10/17/22 17:01	41.7	40.3	0.4	17.6	-2.08	107.3	-2.04	107.3
RLLC0254	10/19/22 10:13	42.3	40.5	0.1	17.1	-2.18	108.2	-2.12	108.3
RLLC0255	10/6/22 9:34	49.7	40.9	0	9.4	-5.7	107	-7.5	107
RLLC0256	10/6/22 9:37	56	43.9	0	0.1	-6.8	107	-10.6	107
RLLC0257	10/25/22 14:00	10	7.7	16.1	66.2	-45.6	87.5	-23.23	88.6
RLLC0257	10/25/22 14:29	9.6	7.6	16.8	66	-32.41	89.7	-29.43	89.7
RLLC0258	10/25/22 14:04	57	33.6	0.1	9.3	-44.23	82.1	-44.75	82.2
RLLC0259	10/25/22 14:08	48.8	37.3	0.1	13.8	-3.54	86	-3.52	86
RLLC0260	10/25/22 12:41	41.5	36.8	0.1	21.6	-1.24	100.3	-1.22	100.3
RLLC0261	10/25/22 12:30	43.3	35.9	0.1	20.7	-4.09	105.4	-3.96	105.4
RLLC0262	10/25/22 12:14	59.5	39.5	0.1	0.9	-0.37	91.1	-0.72	91.5
RLLC0263	10/20/22 17:34	42.6	39.3	0.1	18	-1.47	113.5	-1.48	113.5
RLLC0264	10/20/22 17:15	38.7	39.8	0.1	21.4	-2.24	113.5	-1.3	113.2
RLLC0265	10/6/22 9:05	56	43.9	0	0.1	-0.2	96	-0.7	97
RLLC0265	10/12/22 8:22	56.5	43.5	0	0	-0.92	100.6	-1.38	100.7
RLLC0266	10/6/22 9:01	38.1	46.2	0	15.7	-2.3	109	-0.8	109
RLLC0266	10/19/22 10:45	32.7	45.8	0.2	21.3	-0.64	112.6	-0.2	112.1
RLLC0267	10/6/22 8:33	48.5	48.9	0	2.6	-1.4	101	-2.3	101
RLLC0267	10/19/22 15:30	43	44.1	0.7	12.2	-2.88	107.3	-2.42	107.3
RLLC0268	10/19/22 10:35	35.9	41.9	1.1	21.1	-1.2	111.1	-0.71	110.9
RLLC0268	10/20/22 8:52	33.7	40.2	1.4	24.7	-0.58	106.4	-0.14	101.3
RLLC0269	10/19/22 14:54	46.7	43.5	0.1	9.7	-0.22	110.1	-0.19	110
RLLC0270	10/12/22 8:17	53.4	42.5	0	4.1	-2.55	111.4	-2.69	111.4
RLLC0270	10/19/22 14:48	48.4	41.9	0.1	9.6	-2.82	113.8	-2.77	113.8
RLLC0271	10/6/22 7:32	58.8	41.1	0	0.1	-1.9	99	-3.1	100
RLLC0271	10/7/22 9:01	62.7	35.7	0.6	1	-5.38	102.8	-5.48	102.7
RLLC0272	10/6/22 9:28	39.6	42.1	0	18.3	-2.6	109	-2.1	109
RLLC0273	10/21/22 9:49	57.2	39.5	0	3.3	-3.51	105.7	-4.53	113.5
RLLC0274	10/20/22 17:05	43	40.9	0.1	16	-0.93	115.3	-0.9	115.3

There are 143 total collectors; 136 vertical wells and 7 horizontal collectors at RLI.

%= percent

°F= degrees Fahrenheit

"H2O = in. w.c.= inches in water column

APPENDIX J

WELLFIELD DEVIATION LOGS

REDWOOD LANDFILL, INC
WELLFIELD DEVIATIONS AND 15-DAY REMONITORING REPORT

MONITORING PERFORMED BY: Rick Reed, James Dutra, Ben Tarver, Tino Robles
UPDATED DATE: 11/23/22
FLOW SENSING DEVICE: Landtec GEM

Well ID	Time	CH_4 (%)	CO_2 (%)	O_2 (%)	Balance Gas (%)	Initial Static Pressure (" w.c.)	Initial Temperature (°F)	Adjusted Static Pressure (" w.c.)	Adjusted Temperature (°F)	Comments	Duration of Exceedance (Days)
RLLC0219	5/3/22 16:44	42.7	35.2	0	22.1	0	102	-0.2	103	NSPS/EG CAI;Inc. Flow/Vac.	
RLLC0219 was monitored on 5/3/2022 and was found to be in exceedance for static pressure. Corrective actions were initiated. The well was re-monitored and cleared on 5/3/2022											
RLI0117D	6/1/22 12:01	63.4	33.5	0	3.1	0	86	-1	83	NSPS/EG CAI;Inc. Flow/Vac.	
RLI0117D was monitored on 6/1/2022 and was found to be in exceedance for static pressure. Corrective actions were initiated. The well was re-monitored and cleared on 6/1/2022											
RLI00137	7/7/22 12:47	64.3	33.6	0.2	1.9	1.12	94	-0.89	95.8	NSPS/EG CAI;Inc. Flow/Vac.;Surging	
RLI00137 was monitored on 7/7/2022 and was found to be in exceedance for static pressure. Corrective actions were initiated. The well was re-monitored and cleared on 7/7/2022											
RLI0116E	7/7/22 13:02	19.7	11.9	13.9	54.5	-1.52	81.3	-1.12	81.2	NSPS/EG CAI;Dec. Flow/Vac.;Surging	
RLI0116E	7/7/22 13:09	22.5	13.7	12.9	50.9	-0.91	82.1	-0.79	82	NSPS/EG CAI;Barely Open;Dec. Flow/Vac.;Surging	
RLI0116E	7/22/22 14:27	45	26.3	4	24.7	-0.2	82	-1	83	Barely Open	
RLI0116E was monitored on 7/7/2022 and was found to be in exceedance for Oxygen. Corrective actions were initiated. The well was re-monitored and cleared on 7/22/2022											15
RLI0117D	7/7/22 12:21	18.4	16.7	8.7	56.2	-33.91	87.6	-26.94	88	NSPS/EG CAI;Barely Open;Dec. Flow/Vac.	
RLI0117D	7/7/22 12:32	23	19.3	8.1	49.6	-8.62	86.5	-15.68	87	NSPS/EG CAI;Inc. Flow/Vac.;Surging	
RLI0117D	7/22/22 14:39	21.7	18	8.9	51.4	-26.9	88	-21.8	88	NSPS/EG CAI;Barely Open	
RLI0117D	7/27/22 16:06	21	21	6.2	51.8	-10.96	90.4	-4.47	92.6	NSPS/EG CAI;Barely Open;Dec. Flow/Vac.;Surging	
RLI0117D	8/16/22 14:56	59.6	35.3	0.6	4.5	-23.71	111.4	-29.43	111.5	Barely Open;No Adj. Made	
RLI0117D was monitored on 7/7/2022 and was found to be in exceedance for Oxygen. Corrective actions were initiated. The well was re-monitored and cleared on 8/16/22											40
RLI0126C	7/8/22 9:25	64.6	30.5	0.8	4.1	20.49	101.9	-1.04	101.2	NSPS/EG CAI;Inc. Flow/Vac.;Surging	
RLI0126C was monitored on 7/8/2022 and was found to be in exceedance for static pressure. Corrective actions were initiated. The well was re-monitored and cleared on 7/8/2022											
RLLC0186	7/26/22 11:12	25.9	20.4	9.7	44	-14.58	104.7	-10.97	103.3	NSPS/EG CAI;Barely Open;Dec. Flow/Vac.	
RLLC0186	7/26/22 11:17	50.2	38.9	0	10.9	-9.73	101.6	-9.72	101.6	No Adj. Made	
RLLC0186 was monitored on 7/26/2022 and was found to be in exceedance for Oxygen. Corrective actions were initiated. The well was re-monitored and cleared on 7/26/2022											
RLLC0206	7/8/22 9:29	10.4	6.6	16.5	66.5	-0.19	84	-0.16	83.3	NSPS/EG CAI;Inc. Flow/Vac.;Surging	
RLLC0206	7/8/22 9:38	8.4	5.3	17.2	69.1	-0.17	83.9	-0.1	83.8	NSPS/EG CAI;Dec. Flow/Vac.;Surging	
RLLC0206	7/22/22 15:06	57.9	34.2	0	7.9	-1	98	-1.1	98	Barely Open	
RLLC0206 was monitored on 7/8/2022 and was found to be in exceedance for Oxygen. Corrective actions were initiated. The well was re-monitored and cleared on 7/22/2022											14
RLLC0226	7/27/22 14:29	33.3	29.1	7.3	30.3	-33.13	83.1	-33.16	83	NSPS/EG CAI;Barely Open;Inc. Flow/Vac.	
RLLC0226	7/27/22 14:40	28.9	25.4	8.6	37.1	-41.09	84.8	-37.51	84.5	NSPS/EG CAI;Barely Open;Dec. Flow/Vac.;Surging	
RLLC0226	8/16/22 8:00	53.3	37.8	1.9	7	-1.36	64.7	-1.22	64.7	Barely Open;No Adj. Made	
RLLC0226 was monitored on 7/27/2022 and was found to be in exceedance for Oxygen. Corrective actions were initiated. The well was re-monitored and cleared on 8/16/22											25
RLI00285	9/22/22 14:36	12.4	7.8	16	63.8	-26.06	90.5	-26.01	90.7	NSPS/EG CAI;Dec. Flow/Vac.	
RLI00285	9/22/22 14:46	55.7	34.2	1.7	8.4	-46.88	91.7	-48.16	91.6	Inc. Flow/Vac.	
RLI00285 was monitored on 9/22/2022 and was found to be in exceedance for Oxygen. Corrective actions were initiated. The well was re-monitored and cleared on 9/22/22											0
RLI00137	10/19/22 13:40	40.6	23.6	6.5	29.3	-16.4	103.8	-16.31	103.9	NSPS/EG CAI;Dec. Flow/Vac.	
RLI00137	10/19/22 13:44	40.3	23.6	6.5	29.6	-30.07	103.6	-23.59	103	NSPS/EG CAI;Inc. Flow/Vac.	
RLI00137 was monitored on 10/19/2022 and was found to be in exceedance for Oxygen. Corrective actions were initiated. Repairs are in progress as of 11/1/22											
RLI00284	10/7/22 9:23	9.4	9.3	17.6	63.7	-47.37	60.6	-47.43	60.7	NSPS/EG CAI;Barely Open;Surging;No Adj. Made	
RLI00284	10/7/22 9:39	14.6	9.4	16	60	-46.55	58.9	-45.23	58.9	NSPS/EG CAI;Barely Open;Surging;No Adj. Made	
RLI00284	10/12/22 9:02	48.9	36.5	1.6	13	-47.45	64.3	-46.8	63.2	Inc. Flow/Vac.;Surging;Watered In	
RLI00284 was monitored on 10/7/2022 and was found to be in exceedance for Oxygen. Corrective actions were initiated. The well was re-monitored and cleared on 10/12/22											5
RLI0116E	10/19/22 11:47	16.5	9.9	14.6	59	-0.42	88.5	-0.4	88.4	NSPS/EG CAI;Dec. Flow/Vac.	
RLI0116E	10/19/22 11:51	11.9	7.1	16.3	64.7	-0.81	88.3	-0.1	88.3	NSPS/EG CAI;Dec. Flow/Vac.	
RLI0116E was monitored on 10/19/2022 and was found to be in exceedance for Oxygen. Corrective actions were initiated. Repairs are in progress as of 11/1/22											
RLI0117D	10/19/22 11:32	20.9	15.9	10.3	52.9	-42.13	89.3	-41.07	89.3	NSPS/EG CAI;Barely Open;Dec. Flow/Vac.	
RLI0117D	10/19/22 11:38	20.4	15.2	10.9	53.5	-42.84	89.3	-43.26	89.3	NSPS/EG CAI;Inc. Flow/Vac.	
RLI0117D was monitored on 10/19/2022 and was found to be in exceedance for Oxygen. Corrective actions were initiated. Repairs are in progress as of 11/1/22											
RLI0126C	10/25/22 13:29	31.1	17.5	9.8	41.6	-3.58	99.1	-0.24	98.8	NSPS/EG CAI;Dec. Flow/Vac.	
RLI0126C	10/25/22 13:44	28.9	16.5	10.4	44.2	0.83	100.1	-0.78	97.8	NSPS/EG CAI;Dec. Flow/Vac.	
RLI0126C was monitored on 10/25/2022 and was found to be in exceedance for Oxygen. Corrective actions were initiated. Repairs are in progress as of 11/1/22											
RLI0126C was monitored on 10/25/2022 and was found to be in exceedance for static pressure. Corrective actions were initiated. The well was re-monitored and cleared on 10/25/2022											
RLI0129E	10/25/22 14:13	16.7	6.3	15.5	61.5	-45.71	82.4	-45.2	82.5	NSPS/EG CAI;Dec. Flow/Vac.	
RLI0129E	10/25/22 14:21	17.3	6.5	15.5	60.7	-46.45	82.4	-46.38	82.4	NSPS/EG CAI;Dec. Flow/Vac.	
RLI0129E was monitored on 10/25/2022 and was found to be in exceedance for Oxygen. Corrective actions were initiated. Repairs are in progress as of 11/1/22											

APPENDIX K

MONTHLY LANDFILL GAS FLOW RATES

REDWOOD LANDFILL, INC.
Novato, CA

Yearly LFG for A-51 & A-60 Flares and S64 & S65 Engines (Engines #1 & #2)

Month	A-51 Flare Total Flow Corrected to HHV of 500 BTU/scf (scf)	A-60 Flare Total Flow Corrected to HHV of 500 BTU/scf (scf)	S-64 Engine Total Flow Corrected to HHV of 500 BTU/scf (scf)	S-65 Engine Total Flow Corrected to HHV of 500 BTU/scf (scf)	Combined A-51, A-60, S64, and S65 Corrected to HHV of 500 BTU/scf (scf)	Consecutive 12-Month Corrected Total for A-51 Flare (scf)	Consecutive 12-Month Corrected Total for A-60 Flare (scf)	Consecutive 12-Month Corrected Total for S-64 Engine (#1) (scf)	Consecutive 12-Month Corrected Total for S-65 Engine (#2) (scf)	Combined A-51, A-60, S 64, and S-65 Corrected 12-Month Throughput[1]
Nov-21	0	41,362,143	28,922,035	24,634,000	94,918,178	285,068	535,193,175	317,686,919	261,918,050	1,115,083,211
Dec-21	0	41,748,581	28,551,365	24,694,229	94,994,175	247,258	538,433,925	314,909,725	257,102,607	1,110,693,515
Jan-22	700,094	39,823,831	23,884,153	21,661,585	86,069,663	700,094	539,211,642	307,463,624	249,589,020	1,096,964,380
Feb-22	0	42,776,336	23,195,157	21,660,346	87,631,838	700,094	543,710,811	303,403,546	247,005,461	1,094,819,913
Mar-22	0	42,401,306	27,333,535	23,048,036	92,782,878	700,094	541,085,126	301,408,635	242,166,625	1,085,360,480
Apr-22	0	38,621,353	27,058,796	21,285,927	86,966,076	700,094	540,938,858	297,936,668	237,259,558	1,076,835,177
May-22	24,336	42,225,186	18,087,139	15,922,931	76,259,593	724,430	535,164,563	286,714,511	233,796,647	1,056,400,150
Jun-22	0	45,330,886	17,314,882	11,409,857	74,055,625	724,430	522,575,523	278,328,806	236,992,251	1,038,621,010
Jul-22	0	50,171,874	6,873,205	17,432,660	74,477,739	724,430	514,421,546	259,527,671	244,685,008	1,019,358,654
Aug-22	0	50,326,245	19,907,365	4,085,449	74,319,059	724,430	527,413,052	249,580,026	223,369,747	1,001,087,255
Sep-22	0	43,640,409	17,314,437	16,947,403	77,902,249	724,430	531,350,811	251,196,616	220,081,739	1,003,353,596
Oct-22	3,102,693	47,141,832	19,308,349	16,907,279	86,460,153	3,827,123	525,569,983	257,750,418	219,689,701	1,006,837,225

Notes:

[1]Pursuant to Title V Permit Condition Number 19867 Part 20, as modified in renewal application dated September 22, 2016 to match BAAQMD Permit To Operate, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-51 and A-60 Landfill Gas Flares shall each not exceed 4,320,000 scf during any one day, and the combined throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-51 and A-60 Flares shall not exceed 2,625 million scf during any consecutive 12-month period.

HHV= higher heating value

BTU = British Thermal Units

scf= standard cubic feet

MONTHLY LFG Input to Flare (A-51)

WM - REDWOOD LANDFILL, Novato, CA

A-51 (Flare)

Month	Total Available Runtime (hours)	Total Downtime (hours)	Total Runtime (hours)	Average Flow (scfm)	Average CH_4 (%)[1]	Total Flow LFG Volume (scf)	Total Flow LFG Volume Corrected to HHV of 500 BTU/scf	Total CH_4 Volume (scf)	Total Heat Input (MMBTU)	CO Emission Factor (lb/MMBtu)[1]	CO Emissions (tons)	SO2 Emission Factor (lb/MMscf)[2]	SO2 Emissions (tons)[2]
May-22	744.00	743.43	0.57	740	47.8	25,147	24,336	12,012	12	0.083	0.00	91.19	0.00
June-22	720.00	720.00	0.00	0		0	0	0	0	0.083	0.00	91.19	0.00
July-22	744.00	744.00	0.00	0		0	0	0	0	0.083	0.00	98.21	0.00
August-22	744.00	744.00	0.00	0		0	0	0	0	0.083	0.00	98.21	0.00
September-22	720.00	720.00	0.00	0		0	0	0	0	0.083	0.00	98.21	0.00
October-22	744.00	723.30	20.70	2,581	47.8	3,206,078	3,102,693	1,531,438	1,551	0.083	0.06	TBD	TBD
TOTAL/ AVG:	**4,416.00**	**4,394.73**	**21.27**	**2,532**	**47.8**	**3,231,225**	**3,127,029**	**1,543,450**	**1,563.51**	**--**	**--**	**--**	**--**

NOTES:

The A-51 Flare commenced operation on June 21, 2005.

[1] CH_4 content and CO emission factor was determined from the January 22, 2020 (March 16, 2020 - March 9, 2021) and January 14, 2021 (March 10, 2021 - present) source tests.

[2] SO_2 emission factors are calculated on a quarterly basis and are derived from the average of all weekly samples and the quarterly lab sample (flare inlets only). SO2 Emissions are updated at the end of each quarter when the quarterly average emission factor is calculated.

Pursuant to Title V Permit Condition Number 19867 Part 20, as modified by Authority To Construct (ATC) 19098, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-51 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day, and shall not exceed 2,625 million scf combined with the A-60 Landfill Gas Flare during any consecutive 12-month period.

scfm= standard cubic feet per minute
BTU/scf= British thermal unit per square cubic feet
scf= standard cubic feet
MMBTU= million British thermal units
LFG= landfill gas
CH_4= methane
HHV= higher heating value
TBD=To Be Determined.

REDWOOD LANDFILL
Novato, CA

A-51 Flare Heat Input Rate

MONTH: May-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total Flow LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU) / Day	Total Flow LFG Volume Corrected to HHV of 500 BTU/scf
5/1/2022	0.00	47.8	0	0	0	1,013	0	0
5/2/2022	0.00	47.8	0	0	0	1,013	0	0
5/3/2022	0.00	47.8	0	0	0	1,013	0	0
5/4/2022	0.57	47.8	740	25,147	12,012	1,013	12	24,336
5/5/2022	0.00	47.8	0	0	0	1,013	0	0
5/6/2022	0.00	47.8	0	0	0	1,013	0	0
5/7/2022	0.00	47.8	0	0	0	1,013	0	0
5/8/2022	0.00	47.8	0	0	0	1,013	0	0
5/9/2022	0.00	47.8	0	0	0	1,013	0	0
5/10/2022	0.00	47.8	0	0	0	1,013	0	0
5/11/2022	0.00	47.8	0	0	0	1,013	0	0
5/12/2022	0.00	47.8	0	0	0	1,013	0	0
5/13/2022	0.00	47.8	0	0	0	1,013	0	0
5/14/2022	0.00	47.8	0	0	0	1,013	0	0
5/15/2022	0.00	47.8	0	0	0	1,013	0	0
5/16/2022	0.00	47.8	0	0	0	1,013	0	0
5/17/2022	0.00	47.8	0	0	0	1,013	0	0
5/18/2022	0.00	47.8	0	0	0	1,013	0	0
5/19/2022	0.00	47.8	0	0	0	1,013	0	0
5/20/2022	0.00	47.8	0	0	0	1,013	0	0
5/21/2022	0.00	47.8	0	0	0	1,013	0	0
5/22/2022	0.00	47.8	0	0	0	1,013	0	0
5/23/2022	0.00	47.8	0	0	0	1,013	0	0
5/24/2022	0.00	47.8	0	0	0	1,013	0	0
5/25/2022	0.00	47.8	0	0	0	1,013	0	0
5/26/2022	0.00	47.8	0	0	0	1,013	0	0
5/27/2022	0.00	47.8	0	0	0	1,013	0	0
5/28/2022	0.00	47.8	0	0	0	1,013	0	0
5/29/2022	0.00	47.8	0	0	0	1,013	0	0
5/30/2022	0.00	47.8	0	0	0	1,013	0	0
5/31/2022	0.00	47.8	0	0	0	1,013	0	0
Totals/ Average:	**0.57**	**47.8**	**740**	**25,147.0**	**12,012**	**1,013**	**12**	**24,336**
						Maximum:	**12**	**24,336**

Notes:

The A-51 Flare commenced operation on June 21, 2005.

*CH_4 content was determined from the January 14, 2021 (March 10, 2021 - March 10, 2022) and January 12, 2022 (March 11, 2022 - present) source tests.

Pursuant to Title V Permit Condition Number 19867 Part 20, as modified by Authority To Construct (ATC) 19098, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-51 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day, and shall not exceed 2,625 million scf combined with the A-60 Landfill Gas Flare during any consecutive 12-month period.

scfm= standard cubic feet per minute

BTU/scf= British thermal unit per square cubic feet

scf= standard cubic feet

MMBTU= million British thermal units

LFG= landfill gas

CH_4= methane

HHV= higher heating value

REDWOOD LANDFILL
Novato, CA

A-51 Flare Heat Input Rate

MONTH: Jun-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total Flow LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU) / Day	Total Flow LFG Volume Corrected to HHV of 500 BTU/scf
6/1/2022	0.00	47.8	0	0	0	1,013	0	0
6/2/2022	0.00	47.8	0	0	0	1,013	0	0
6/3/2022	0.00	47.8	0	0	0	1,013	0	0
6/4/2022	0.00	47.8	0	0	0	1,013	0	0
6/5/2022	0.00	47.8	0	0	0	1,013	0	0
6/6/2022	0.00	47.8	0	0	0	1,013	0	0
6/7/2022	0.00	47.8	0	0	0	1,013	0	0
6/8/2022	0.00	47.8	0	0	0	1,013	0	0
6/9/2022	0.00	47.8	0	0	0	1,013	0	0
6/10/2022	0.00	47.8	0	0	0	1,013	0	0
6/11/2022	0.00	47.8	0	0	0	1,013	0	0
6/12/2022	0.00	47.8	0	0	0	1,013	0	0
6/13/2022	0.00	47.8	0	0	0	1,013	0	0
6/14/2022	0.00	47.8	0	0	0	1,013	0	0
6/15/2022	0.00	47.8	0	0	0	1,013	0	0
6/16/2022	0.00	47.8	0	0	0	1,013	0	0
6/17/2022	0.00	47.8	0	0	0	1,013	0	0
6/18/2022	0.00	47.8	0	0	0	1,013	0	0
6/19/2022	0.00	47.8	0	0	0	1,013	0	0
6/20/2022	0.00	47.8	0	0	0	1,013	0	0
6/21/2022	0.00	47.8	0	0	0	1,013	0	0
6/22/2022	0.00	47.8	0	0	0	1,013	0	0
6/23/2022	0.00	47.8	0	0	0	1,013	0	0
6/24/2022	0.00	47.8	0	0	0	1,013	0	0
6/25/2022	0.00	47.8	0	0	0	1,013	0	0
6/26/2022	0.00	47.8	0	0	0	1,013	0	0
6/27/2022	0.00	47.8	0	0	0	1,013	0	0
6/28/2022	0.00	47.8	0	0	0	1,013	0	0
6/29/2022	0.00	47.8	0	0	0	1,013	0	0
6/30/2022	0.00	47.8	0	0	0	1,013	0	0
Totals/ Average:	**0.00**			**0.0**	**0**	**1,013**	**0**	**0**
Notes:						**Maximum:**	**0**	**0**

The A-51 Flare commenced operation on June 21, 2005.

*CH_4 content was determined from the January 14, 2021 (March 10, 2021 - March 10, 2022) and January 12, 2022 (March 11, 2022 - present) source tests.

Pursuant to Title V Permit Condition Number 19867 Part 20, as modified by Authority To Construct (ATC) 19098, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-51 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day, and shall not exceed 2,625 million scf combined with the A-60 Landfill Gas Flare during any consecutive 12-month period.

scfm= standard cubic feet per minute

BTU/scf= British thermal unit per square cubic feet

scf= standard cubic feet

MMBTU= million British thermal units

LFG= landfill gas

CH_4= methane

HHV= higher heating value

REDWOOD LANDFILL
Novato, CA

A-51 Flare Heat Input Rate

MONTH: Jul-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total Flow LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU) / Day	Total Flow LFG Volume Corrected to HHV of 500 BTU/scf
7/1/2022	0.00	47.8	0	0	0	1,013	0	0
7/2/2022	0.00	47.8	0	0	0	1,013	0	0
7/3/2022	0.00	47.8	0	0	0	1,013	0	0
7/4/2022	0.00	47.8	0	0	0	1,013	0	0
7/5/2022	0.00	47.8	0	0	0	1,013	0	0
7/6/2022	0.00	47.8	0	0	0	1,013	0	0
7/7/2022	0.00	47.8	0	0	0	1,013	0	0
7/8/2022	0.00	47.8	0	0	0	1,013	0	0
7/9/2022	0.00	47.8	0	0	0	1,013	0	0
7/10/2022	0.00	47.8	0	0	0	1,013	0	0
7/11/2022	0.00	47.8	0	0	0	1,013	0	0
7/12/2022	0.00	47.8	0	0	0	1,013	0	0
7/13/2022	0.00	47.8	0	0	0	1,013	0	0
7/14/2022	0.00	47.8	0	0	0	1,013	0	0
7/15/2022	0.00	47.8	0	0	0	1,013	0	0
7/16/2022	0.00	47.8	0	0	0	1,013	0	0
7/17/2022	0.00	47.8	0	0	0	1,013	0	0
7/18/2022	0.00	47.8	0	0	0	1,013	0	0
7/19/2022	0.00	47.8	0	0	0	1,013	0	0
7/20/2022	0.00	47.8	0	0	0	1,013	0	0
7/21/2022	0.00	47.8	0	0	0	1,013	0	0
7/22/2022	0.00	47.8	0	0	0	1,013	0	0
7/23/2022	0.00	47.8	0	0	0	1,013	0	0
7/24/2022	0.00	47.8	0	0	0	1,013	0	0
7/25/2022	0.00	47.8	0	0	0	1,013	0	0
7/26/2022	0.00	47.8	0	0	0	1,013	0	0
7/27/2022	0.00	47.8	0	0	0	1,013	0	0
7/28/2022	0.00	47.8	0	0	0	1,013	0	0
7/29/2022	0.00	47.8	0	0	0	1,013	0	0
7/30/2022	0.00	47.8	0	0	0	1,013	0	0
7/31/2022	0.00	47.8	0	0	0	1,013	0	0
Totals/ Average:	**0.00**			**0.0**	**0**	**1,013**	**0**	**0**
						Maximum:	**0**	**0**

Notes:

The A-51 Flare commenced operation on June 21, 2005.

*CH_4 content was determined from the January 14, 2021 (March 10, 2021 - March 10, 2022) and January 12, 2022 (March 11, 2022 - present) source tests.

Pursuant to Title V Permit Condition Number 19867 Part 20, as modified by Authority To Construct (ATC) 19098, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-51 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day, and shall not exceed 2,625 million scf combined with the A-60 Landfill Gas Flare during any consecutive 12-month period.

scfm= standard cubic feet per minute

BTU/scf= British thermal unit per square cubic feet

scf= standard cubic feet

MMBTU= million British thermal units

LFG= landfill gas

CH_4= methane

HHV= higher heating value

REDWOOD LANDFILL
Novato, CA

A-51 Flare Heat Input Rate

MONTH: Aug-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total Flow LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU) / Day	Total Flow LFG Volume Corrected to HHV of 500 BTU/scf
8/1/2022	0.00	47.8	0	0	0	1,013	0	0
8/2/2022	0.00	47.8	0	0	0	1,013	0	0
8/3/2022	0.00	47.8	0	0	0	1,013	0	0
8/4/2022	0.00	47.8	0	0	0	1,013	0	0
8/5/2022	0.00	47.8	0	0	0	1,013	0	0
8/6/2022	0.00	47.8	0	0	0	1,013	0	0
8/7/2022	0.00	47.8	0	0	0	1,013	0	0
8/8/2022	0.00	47.8	0	0	0	1,013	0	0
8/9/2022	0.00	47.8	0	0	0	1,013	0	0
8/10/2022	0.00	47.8	0	0	0	1,013	0	0
8/11/2022	0.00	47.8	0	0	0	1,013	0	0
8/12/2022	0.00	47.8	0	0	0	1,013	0	0
8/13/2022	0.00	47.8	0	0	0	1,013	0	0
8/14/2022	0.00	47.8	0	0	0	1,013	0	0
8/15/2022	0.00	47.8	0	0	0	1,013	0	0
8/16/2022	0.00	47.8	0	0	0	1,013	0	0
8/17/2022	0.00	47.8	0	0	0	1,013	0	0
8/18/2022	0.00	47.8	0	0	0	1,013	0	0
8/19/2022	0.00	47.8	0	0	0	1,013	0	0
8/20/2022	0.00	47.8	0	0	0	1,013	0	0
8/21/2022	0.00	47.8	0	0	0	1,013	0	0
8/22/2022	0.00	47.8	0	0	0	1,013	0	0
8/23/2022	0.00	47.8	0	0	0	1,013	0	0
8/24/2022	0.00	47.8	0	0	0	1,013	0	0
8/25/2022	0.00	47.8	0	0	0	1,013	0	0
8/26/2022	0.00	47.8	0	0	0	1,013	0	0
8/27/2022	0.00	47.8	0	0	0	1,013	0	0
8/28/2022	0.00	47.8	0	0	0	1,013	0	0
8/29/2022	0.00	47.8	0	0	0	1,013	0	0
8/30/2022	0.00	47.8	0	0	0	1,013	0	0
8/31/2022	0.00	47.8	0	0	0	1,013	0	0
Totals/ Average:	**0.00**			**0.0**	**0**	**1,013**	**0**	**0**
						Maximum:	**0**	**0**

Notes:

The A-51 Flare commenced operation on June 21, 2005.

*CH_4 content was determined from the January 14, 2021 (March 10, 2021 - March 10, 2022) and January 12, 2022 (March 11, 2022 - present) source tests.

Pursuant to Title V Permit Condition Number 19867 Part 20, as modified by Authority To Construct (ATC) 19098, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-51 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day, and shall not exceed 2,625 million scf combined with the A-60 Landfill Gas Flare during any consecutive 12-month period.

scfm= standard cubic feet per minute

BTU/scf= British thermal unit per square cubic feet

scf= standard cubic feet

MMBTU= million British thermal units

LFG= landfill gas

CH_4= methane

HHV= higher heating value

REDWOOD LANDFILL
Novato, CA

A-51 Flare Heat Input Rate

MONTH: Sep-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total Flow LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU) / Day	Total Flow LFG Volume Corrected to HHV of 500 BTU/scf
9/1/2022	0.00	47.8	0	0	0	1,013	0	0
9/2/2022	0.00	47.8	0	0	0	1,013	0	0
9/3/2022	0.00	47.8	0	0	0	1,013	0	0
9/4/2022	0.00	47.8	0	0	0	1,013	0	0
9/5/2022	0.00	47.8	0	0	0	1,013	0	0
9/6/2022	0.00	47.8	0	0	0	1,013	0	0
9/7/2022	0.00	47.8	0	0	0	1,013	0	0
9/8/2022	0.00	47.8	0	0	0	1,013	0	0
9/9/2022	0.00	47.8	0	0	0	1,013	0	0
9/10/2022	0.00	47.8	0	0	0	1,013	0	0
9/11/2022	0.00	47.8	0	0	0	1,013	0	0
9/12/2022	0.00	47.8	0	0	0	1,013	0	0
9/13/2022	0.00	47.8	0	0	0	1,013	0	0
9/14/2022	0.00	47.8	0	0	0	1,013	0	0
9/15/2022	0.00	47.8	0	0	0	1,013	0	0
9/16/2022	0.00	47.8	0	0	0	1,013	0	0
9/17/2022	0.00	47.8	0	0	0	1,013	0	0
9/18/2022	0.00	47.8	0	0	0	1,013	0	0
9/19/2022	0.00	47.8	0	0	0	1,013	0	0
9/20/2022	0.00	47.8	0	0	0	1,013	0	0
9/21/2022	0.00	47.8	0	0	0	1,013	0	0
9/22/2022	0.00	47.8	0	0	0	1,013	0	0
9/23/2022	0.00	47.8	0	0	0	1,013	0	0
9/24/2022	0.00	47.8	0	0	0	1,013	0	0
9/25/2022	0.00	47.8	0	0	0	1,013	0	0
9/26/2022	0.00	47.8	0	0	0	1,013	0	0
9/27/2022	0.00	47.8	0	0	0	1,013	0	0
9/28/2022	0.00	47.8	0	0	0	1,013	0	0
9/29/2022	0.00	47.8	0	0	0	1,013	0	0
9/30/2022	0.00	47.8	0	0	0	1,013	0	0
Totals/ Average:	**0.00**			**0.0**	**0**	**1,013**	**0**	**0**
Notes:						**Maximum:**	**0**	**0**

The A-51 Flare commenced operation on June 21, 2005.

*CH_4 content was determined from the January 14, 2021 (March 10, 2021 - March 10, 2022) and January 12, 2022 (March 11, 2022 - present) source tests.

Pursuant to Title V Permit Condition Number 19867 Part 20, as modified by Authority To Construct (ATC) 19098, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-51 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day, and shall not exceed 2,625 million scf combined with the A-60 Landfill Gas Flare during any consecutive 12-month period.

scfm= standard cubic feet per minute

BTU/scf= British thermal unit per square cubic feet

scf= standard cubic feet

MMBTU= million British thermal units

LFG= landfill gas

CH_4= methane

HHV= higher heating value

REDWOOD LANDFILL
Novato, CA

A-51 Flare Heat Input Rate

MONTH: Oct-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total Flow LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU) / Day	Total Flow LFG Volume Corrected to HHV of 500 BTU/scf
10/1/2022	0.00	47.8	0	0	0	1,013	0	0
10/2/2022	0.00	47.8	0	0	0	1,013	0	0
10/3/2022	0.00	47.8	0	0	0	1,013	0	0
10/4/2022	0.00	47.8	0	0	0	1,013	0	0
10/5/2022	0.00	47.8	0	0	0	1,013	0	0
10/6/2022	0.00	47.8	0	0	0	1,013	0	0
10/7/2022	0.00	47.8	0	0	0	1,013	0	0
10/8/2022	0.00	47.8	0	0	0	1,013	0	0
10/9/2022	0.00	47.8	0	0	0	1,013	0	0
10/10/2022	8.07	47.8	2,610	1,263,141	603,361	1,013	611	1,222,409
10/11/2022	12.63	47.8	2,563	1,942,937	928,077	1,013	940	1,880,284
10/12/2022	0.00	47.8	0	0	0	1,013	0	0
10/13/2022	0.00	47.8	0	0	0	1,013	0	0
10/14/2022	0.00	47.8	0	0	0	1,013	0	0
10/15/2022	0.00	47.8	0	0	0	1,013	0	0
10/16/2022	0.00	47.8	0	0	0	1,013	0	0
10/17/2022	0.00	47.8	0	0	0	1,013	0	0
10/18/2022	0.00	47.8	0	0	0	1,013	0	0
10/19/2022	0.00	47.8	0	0	0	1,013	0	0
10/20/2022	0.00	47.8	0	0	0	1,013	0	0
10/21/2022	0.00	47.8	0	0	0	1,013	0	0
10/22/2022	0.00	47.8	0	0	0	1,013	0	0
10/23/2022	0.00	47.8	0	0	0	1,013	0	0
10/24/2022	0.00	47.8	0	0	0	1,013	0	0
10/25/2022	0.00	47.8	0	0	0	1,013	0	0
10/26/2022	0.00	47.8	0	0	0	1,013	0	0
10/27/2022	0.00	47.8	0	0	0	1,013	0	0
10/28/2022	0.00	47.8	0	0	0	1,013	0	0
10/29/2022	0.00	47.8	0	0	0	1,013	0	0
10/30/2022	0.00	47.8	0	0	0	1,013	0	0
10/31/2022	0.00	47.8	0	0	0	1,013	0	0
Totals/ Average:	**20.70**	**47.8**	**2,581**	**3,206,078.0**	**1,531,438**	**1,013**	**1,551**	**3,102,693**
						Maximum:	**940**	**1,880,284**

Notes:

The A-51 Flare commenced operation on June 21, 2005.

*CH_4 content was determined from the January 14, 2021 (March 10, 2021 - March 10, 2022) and January 12, 2022 (March 11, 2022 - present) source tests. Pursuant to Title V Permit Condition Number 19867 Part 20, as modified by Authority To Construct (ATC) 19098, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-51 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day, and shall not exceed 2,625 million scf combined with the A-60 Landfill Gas Flare during any consecutive 12-month period.

scfm= standard cubic feet per minute

BTU/scf= British thermal unit per square cubic feet

scf= standard cubic feet

MMBTU= million British thermal units

LFG= landfill gas

CH_4= methane

HHV= higher heating value

MONTHLY LFG Input to Flare (A-60)

WM - REDWOOD LANDFILL, Novato, CA

A-60 (Flare)

Month	Total Available Runtime (hours)	Total Downtime (hours)	Total Runtime (hours)	Average Flow (scfm)	Average CH_4 (%)[1]	Total Flow LFG Volume (scf)	Total Flow LFG Volume Corrected to HHV of 500 BTU/scf	Total CH_4 Volume (scf)	Total Heat Input (MMBTU)	CO Emission Factor (lb/MMBtu)[1]	CO Emissions (tons)	SO2 Emission Factor (lb/MMBtu)[2]	SO2 Emissions (tons)[2]
May-22	744.00	67.73	676.27	1,123	45.7	45,572,158	42,225,186	20,841,652	21,113	0.096	1.01	91.19	2.08
June-22	720.00	41.70	678.30	1,202	45.7	48,924,030	45,330,886	22,374,573	22,665	0.096	1.09	91.19	2.23
July-22	744.00	9.33	734.67	1,228	45.7	54,148,738	50,171,874	24,764,005	25,086	0.096	1.20	98.21	2.66
August-22	744.00	16.73	727.27	1,245	45.7	54,315,346	50,326,245	24,840,200	25,163	0.096	1.21	98.21	2.67
September-22	720.00	38.53	681.47	1,126	46.8	46,031,110	43,640,409	21,540,182	21,820	0.084	0.92	98.21	2.26
October-22	744.00	107.57	636.43	1,288	47.3	49,193,291	47,141,832	23,268,427	23,571	0.084	0.99	TBD	TBD
TOTAL/ AVG:	**4,416.00**	**281.60**	**4,134.40**	**1,202**	**46.2**	**298,184,673**	**278,836,433**	**137,629,039**	**139,418.22**	**--**	**--**	**--**	**--**

NOTES:

The A-60 Flare commenced operation on April 1, 2009.

[1]CH_4 content and CO emission factor was determined from the July 22 & 23, 2020 (9/15/20 - 9/9/21) and July 13, 2021 (9/10/21 - current) source tests.

[2]SO_2 emission factors are calculated on a quarterly basis and are derived from the average of all weekly samples and the quarterly lab sample (flare inlets only). SO2 Emissions are updated at the end of each quarter when the quarterly average emission factor is calculated.

Pursuant to Title V Permit Condition Number 19867 Part 20, as modified by Authority To Construct (ATC) 19098, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-60 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day, and shall not exceed 2,625 million scf combined with the A-51 Landfill Gas Flare during any consecutive 12-month period.

scfm= standard cubic feet per minute

BTU/scf= British thermal unit per square cubic feet

scf= standard cubic feet

MMBTU= million British thermal units

LFG= landfill gas

CH_4= methane

HHV= higher heating value

TBD=To Be Determined.

REDWOOD LANDFILL
Novato, CA

A-60 Flare Heat Input Rate

MONTH: May-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU) / Day	Total Flow Corrected to HHV of 500 BTU/scf
5/1/2022	24.00	45.7	834	1,201,305	549,396	1,013	557	1,113,077
5/2/2022	24.00	45.7	810	1,166,991	533,703	1,013	541	1,081,283
5/3/2022	18.47	45.7	811	898,613	410,965	1,013	416	832,616
5/4/2022	9.30	45.7	772	430,954	197,089	1,013	200	399,303
5/5/2022	13.80	45.7	946	783,661	358,394	1,013	363	726,106
5/6/2022	24.00	45.7	941	1,355,298	619,823	1,013	628	1,255,760
5/7/2022	24.00	45.7	931	1,341,069	613,315	1,013	621	1,242,576
5/8/2022	22.73	45.7	928	1,265,704	578,848	1,013	586	1,172,746
5/9/2022	24.00	45.7	938	1,350,745	617,740	1,013	626	1,251,542
5/10/2022	23.53	45.7	939	1,325,227	606,070	1,013	614	1,227,898
5/11/2022	24.00	45.7	1,026	1,477,192	675,569	1,013	684	1,368,702
5/12/2022	24.00	45.7	1,300	1,872,519	856,365	1,013	867	1,734,995
5/13/2022	23.30	45.7	1,797	2,512,372	1,148,991	1,013	1,164	2,327,855
5/14/2022	24.00	45.7	1,758	2,531,465	1,157,722	1,013	1,173	2,345,546
5/15/2022	24.00	45.7	1,741	2,507,632	1,146,823	1,013	1,162	2,323,463
5/16/2022	24.00	45.7	1,734	2,496,348	1,141,662	1,013	1,157	2,313,008
5/17/2022	23.67	45.7	1,619	2,299,526	1,051,649	1,013	1,065	2,130,641
5/18/2022	17.67	45.7	1,211	1,283,193	586,847	1,013	594	1,188,951
5/19/2022	12.07	45.7	1,129	817,056	373,667	1,013	379	757,049
5/20/2022	24.00	45.7	1,114	1,604,070	733,594	1,013	743	1,486,262
5/21/2022	23.87	45.7	1,093	1,564,658	715,570	1,013	725	1,449,744
5/22/2022	23.60	45.7	1,066	1,509,463	690,327	1,013	699	1,398,603
5/23/2022	24.00	45.7	1,052	1,514,992	692,856	1,013	702	1,403,726
5/24/2022	23.03	45.7	1,028	1,420,587	649,681	1,013	658	1,316,254
5/25/2022	20.50	45.7	1,101	1,354,265	619,350	1,013	627	1,254,803
5/26/2022	19.10	45.7	1,005	1,151,549	526,641	1,013	533	1,066,975
5/27/2022	23.43	45.7	980	1,378,391	630,384	1,013	639	1,277,157
5/28/2022	21.97	45.7	965	1,271,430	581,467	1,013	589	1,178,052
5/29/2022	24.00	45.7	942	1,356,489	620,367	1,013	628	1,256,864
5/30/2022	20.23	45.7	956	1,160,245	530,618	1,013	538	1,075,033
5/31/2022	24.00	45.7	951	1,369,149	626,157	1,013	634	1,268,594
Totals/ Average:	**676.27**	**45.7**	**1,123**	**45,572,158.0**	**20,841,652**	**1,013**	**21,113**	**42,225,186**
						Maximum:	**1,173**	**2,345,546**

Notes:

The A-60 Flare commenced operation on April 1, 2009.

*CH_4 content was determined from the July 22 & 23, 2020 (9/15/20 - 9/9/21) and July 13, 2021 (9/10/21 - current) source test.

Pursuant to Title V Permit Condition Number 19867 Part 30(g), the Annual Source Test at A-60 may be conducted while it is operating in either zone, providing that each operating zone is tested at least once every five years.

Pursuant to Title V Permit Condition Number 19867 Part 20, as modified by Authority To Construct (ATC) 19098, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-60 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day, and shall not exceed 2,625 million scf combined with the A-51 Landfill Gas Flare during any consecutive 12-month period.

scfm= standard cubic feet per minute
BTU/scf= British thermal unit per square cubic feet
scf= standard cubic feet
MMBTU= million British thermal units
LFG= landfill gas
CH_4= methane
HHV= higher heating value

REDWOOD LANDFILL
Novato, CA

A-60 Flare Heat Input Rate

MONTH: Jun-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU) / Day	Total Flow Corrected to HHV of 500 BTU/scf
6/1/2022	22.30	45.7	910	1,218,144	557,097	1,013	564	1,128,679
6/2/2022	19.53	45.7	940	1,101,786	503,883	1,013	510	1,020,867
6/3/2022	21.10	45.7	910	1,152,508	527,080	1,013	534	1,067,864
6/4/2022	24.00	45.7	932	1,342,537	613,986	1,013	622	1,243,937
6/5/2022	24.00	45.7	935	1,346,909	615,986	1,013	624	1,247,988
6/6/2022	19.63	45.7	932	1,097,701	502,015	1,013	509	1,017,082
6/7/2022	13.53	45.7	848	688,770	314,997	1,013	319	638,184
6/8/2022	23.00	45.7	817	1,127,081	515,451	1,013	522	1,044,304
6/9/2022	23.10	45.7	1,007	1,395,421	638,172	1,013	646	1,292,937
6/10/2022	23.73	45.7	1,140	1,623,021	742,261	1,013	752	1,503,821
6/11/2022	24.00	45.7	1,657	2,386,792	1,091,559	1,013	1,106	2,211,498
6/12/2022	24.00	45.7	1,813	2,610,635	1,193,930	1,013	1,209	2,418,901
6/13/2022	23.73	45.7	1,289	1,835,429	839,402	1,013	850	1,700,629
6/14/2022	22.50	45.7	1,012	1,366,874	625,117	1,013	633	1,266,486
6/15/2022	21.33	45.7	1,265	1,619,372	740,592	1,013	750	1,500,440
6/16/2022	23.87	45.7	1,200	1,718,690	786,014	1,013	796	1,592,464
6/17/2022	17.63	45.7	1,196	1,265,034	578,542	1,013	586	1,172,126
6/18/2022	21.50	45.7	1,461	1,884,512	861,850	1,013	873	1,746,107
6/19/2022	23.80	45.7	1,251	1,787,112	817,305	1,013	828	1,655,861
6/20/2022	24.00	45.7	1,309	1,885,512	862,307	1,013	874	1,747,034
6/21/2022	24.00	45.7	1,414	2,036,615	931,411	1,013	944	1,887,039
6/22/2022	24.00	45.7	1,298	1,869,620	855,039	1,013	866	1,732,309
6/23/2022	24.00	45.7	1,292	1,860,846	851,026	1,013	862	1,724,179
6/24/2022	24.00	45.7	1,336	1,923,614	879,732	1,013	891	1,782,337
6/25/2022	22.57	45.7	1,277	1,729,375	790,900	1,013	801	1,602,364
6/26/2022	23.73	45.7	1,262	1,796,767	821,721	1,013	832	1,664,806
6/27/2022	23.77	45.7	1,269	1,809,422	827,508	1,013	838	1,676,532
6/28/2022	23.93	45.7	1,301	1,868,245	854,410	1,013	866	1,731,035
6/29/2022	24.00	45.7	1,251	1,801,386	823,833	1,013	835	1,669,086
6/30/2022	24.00	45.7	1,232	1,774,300	811,446	1,013	822	1,643,989
Totals/ Average:	**678.30**	**45.7**	**1,202**	**48,924,030.0**	**22,374,573**	**1,013**	**22,665**	**45,330,886**
						Maximum:	**1,209**	**2,418,901**

Notes:

The A-60 Flare commenced operation on April 1, 2009.

*CH_4 content was determined from the July 22 & 23, 2020 (9/15/20 - 9/9/21) and July 13, 2021 (9/10/21 - current) source test.

Pursuant to Title V Permit Condition Number 19867 Part 30(g), the Annual Source Test at A-60 may be conducted while it is operating in either zone, providing that each operating zone is tested at least once every five years.

Pursuant to Title V Permit Condition Number 19867 Part 20, as modified by Authority To Construct (ATC) 19098, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-60 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day, and shall not exceed 2,625 million scf combined with the A-51 Landfill Gas Flare during any consecutive 12-month period.

scfm= standard cubic feet per minute
BTU/scf= British thermal unit per square cubic feet
scf= standard cubic feet
MMBTU= million British thermal units
LFG= landfill gas
CH_4= methane
HHV= higher heating value

REDWOOD LANDFILL
Novato, CA

A-60 Flare Heat Input Rate

MONTH: Jul-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU) / Day	Total Flow Corrected to HHV of 500 BTU/scf
7/1/2022	24.00	45.7	1,159	1,669,441	763,490	1,013	773	1,546,832
7/2/2022	24.00	45.7	990	1,425,170	651,777	1,013	660	1,320,501
7/3/2022	18.80	45.7	1,309	1,477,075	675,515	1,013	684	1,368,594
7/4/2022	24.00	45.7	1,428	2,056,986	940,728	1,013	953	1,905,914
7/5/2022	24.00	45.7	1,333	1,920,124	878,136	1,013	890	1,779,104
7/6/2022	24.00	45.7	1,124	1,617,946	739,940	1,013	750	1,499,119
7/7/2022	23.90	45.7	970	1,391,607	636,428	1,013	645	1,289,403
7/8/2022	21.83	45.7	1,115	1,460,985	668,157	1,013	677	1,353,685
7/9/2022	24.00	45.7	996	1,434,655	656,115	1,013	665	1,329,289
7/10/2022	24.00	45.7	1,051	1,513,158	692,017	1,013	701	1,402,027
7/11/2022	24.00	45.7	1,016	1,462,992	669,075	1,013	678	1,355,545
7/12/2022	23.90	45.7	1,184	1,697,391	776,273	1,013	786	1,572,729
7/13/2022	23.83	45.7	1,107	1,582,701	723,821	1,013	733	1,466,462
7/14/2022	23.80	45.7	1,092	1,558,812	712,896	1,013	722	1,444,328
7/15/2022	24.00	45.7	1,304	1,878,305	859,011	1,013	870	1,740,356
7/16/2022	24.00	45.7	1,120	1,612,994	737,675	1,013	747	1,494,530
7/17/2022	24.00	45.7	1,114	1,603,449	733,310	1,013	743	1,485,686
7/18/2022	24.00	45.7	1,595	2,296,764	1,050,386	1,013	1,064	2,128,082
7/19/2022	24.00	45.7	1,759	2,532,547	1,158,217	1,013	1,173	2,346,548
7/20/2022	23.80	45.7	1,475	2,105,831	963,066	1,013	976	1,951,172
7/21/2022	24.00	45.7	1,244	1,791,363	819,249	1,013	830	1,659,799
7/22/2022	23.03	45.7	1,391	1,923,011	879,456	1,013	891	1,781,779
7/23/2022	24.00	45.7	1,405	2,023,437	925,385	1,013	937	1,874,829
7/24/2022	24.00	45.7	1,384	1,993,549	911,716	1,013	924	1,847,136
7/25/2022	24.00	45.7	1,342	1,931,895	883,519	1,013	895	1,790,010
7/26/2022	24.00	45.7	1,274	1,834,240	838,858	1,013	850	1,699,527
7/27/2022	24.00	45.7	1,202	1,730,776	791,541	1,013	802	1,603,662
7/28/2022	24.00	45.7	1,136	1,636,290	748,329	1,013	758	1,516,115
7/29/2022	23.77	45.7	1,137	1,621,237	741,445	1,013	751	1,502,168
7/30/2022	24.00	45.7	1,173	1,689,569	772,696	1,013	783	1,565,481
7/31/2022	24.00	45.7	1,163	1,674,438	765,776	1,013	776	1,551,462
Totals/ Average:	**734.67**	**45.7**	**1,228**	**54,148,738.0**	**24,764,005**	**1,013**	**25,086**	**50,171,874**
						Maximum:	**1,173**	**2,346,548**

Notes:

The A-60 Flare commenced operation on April 1, 2009.

*CH_4 content was determined from the July 22 & 23, 2020 (9/15/20 - 9/9/21) and July 13, 2021 (9/10/21 - current) source test.

Pursuant to Title V Permit Condition Number 19867 Part 30(g), the Annual Source Test at A-60 may be conducted while it is operating in either zone, providing that each operating zone is tested at least once every five years.

Pursuant to Title V Permit Condition Number 19867 Part 20, as modified by Authority To Construct (ATC) 19098, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-60 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day, and shall not exceed 2,625 million scf combined with the A-51 Landfill Gas Flare during any consecutive 12-month period.

scfm= standard cubic feet per minute

BTU/scf= British thermal unit per square cubic feet

scf= standard cubic feet

MMBTU= million British thermal units

LFG= landfill gas

CH_4= methane

HHV= higher heating value

REDWOOD LANDFILL
Novato, CA

A-60 Flare Heat Input Rate

MONTH: Aug-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU) / Day	Total Flow Corrected to HHV of 500 BTU/scf
8/1/2022	24.00	45.7	1,149	1,654,057	756,455	1,013	766	1,532,578
8/2/2022	24.00	45.7	1,188	1,710,372	782,210	1,013	792	1,584,757
8/3/2022	24.00	45.7	1,131	1,628,045	744,559	1,013	754	1,508,476
8/4/2022	23.90	45.7	1,148	1,645,704	752,635	1,013	762	1,524,838
8/5/2022	24.00	45.7	1,145	1,648,829	754,064	1,013	764	1,527,733
8/6/2022	24.00	45.7	1,144	1,647,317	753,372	1,013	763	1,526,333
8/7/2022	24.00	45.7	1,140	1,641,322	750,631	1,013	760	1,520,778
8/8/2022	24.00	45.7	1,138	1,639,315	749,713	1,013	759	1,518,918
8/9/2022	24.00	45.7	1,127	1,622,459	742,004	1,013	752	1,503,300
8/10/2022	24.00	45.7	1,125	1,620,356	741,042	1,013	751	1,501,352
8/11/2022	23.77	45.7	1,169	1,667,431	762,571	1,013	772	1,544,969
8/12/2022	24.00	45.7	1,184	1,705,358	779,916	1,013	790	1,580,111
8/13/2022	24.00	45.7	1,166	1,678,674	767,713	1,013	778	1,555,387
8/14/2022	24.00	45.7	1,171	1,685,648	770,902	1,013	781	1,561,848
8/15/2022	24.00	45.7	1,189	1,711,463	782,709	1,013	793	1,585,767
8/16/2022	24.00	45.7	1,211	1,743,758	797,478	1,013	808	1,615,691
8/17/2022	24.00	45.7	1,170	1,684,145	770,215	1,013	780	1,560,456
8/18/2022	20.17	45.7	1,228	1,485,883	679,543	1,013	688	1,376,755
8/19/2022	18.63	45.7	1,231	1,376,688	629,605	1,013	638	1,275,579
8/20/2022	23.53	45.7	1,372	1,937,116	885,907	1,013	897	1,794,848
8/21/2022	23.87	45.7	1,264	1,809,443	827,518	1,013	838	1,676,551
8/22/2022	23.77	45.7	1,278	1,822,345	833,419	1,013	844	1,688,506
8/23/2022	23.37	45.7	1,325	1,857,667	849,572	1,013	861	1,721,234
8/24/2022	21.83	45.7	1,375	1,800,825	823,577	1,013	834	1,668,566
8/25/2022	24.00	45.7	1,408	2,027,972	927,459	1,013	940	1,879,031
8/26/2022	24.00	45.7	1,402	2,018,389	923,076	1,013	935	1,870,152
8/27/2022	24.00	45.7	1,386	1,996,494	913,063	1,013	925	1,849,865
8/28/2022	24.00	45.7	1,379	1,986,425	908,458	1,013	920	1,840,535
8/29/2022	24.00	45.7	1,416	2,039,385	932,678	1,013	945	1,889,606
8/30/2022	20.43	45.7	1,484	1,818,807	831,800	1,013	843	1,685,228
8/31/2022	24.00	45.7	1,391	2,003,654	916,337	1,013	928	1,856,499
Totals/ Average:	**727.27**	**45.7**	**1,245**	**54,315,346.0**	**24,840,200**	**1,013**	**25,163**	**50,326,245**
						Maximum:	**945**	**1,889,606**

Notes:

The A-60 Flare commenced operation on April 1, 2009.

*CH_4 content was determined from the July 22 & 23, 2020 (9/15/20 - 9/9/21) and July 13, 2021 (9/10/21 - current) source test.

Pursuant to Title V Permit Condition Number 19867 Part 30(g), the Annual Source Test at A-60 may be conducted while it is operating in either zone, providing that each operating zone is tested at least once every five years.

Pursuant to Title V Permit Condition Number 19867 Part 20, as modified by Authority To Construct (ATC) 19098, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-60 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day, and shall not exceed 2,625 million scf combined with the A-51 Landfill Gas Flare during any consecutive 12-month period.

scfm= standard cubic feet per minute

BTU/scf= British thermal unit per square cubic feet

scf= standard cubic feet

MMBTU= million British thermal units

LFG= landfill gas

CH_4= methane

HHV= higher heating value

REDWOOD LANDFILL
Novato, CA

A-60 Flare Heat Input Rate

MONTH: Sep-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU) / Day	Total Flow Corrected to HHV of 500 BTU/scf
9/1/2022	24.00	45.7	1,173	1,689,104	772,483	1,013	783	1,565,051
9/2/2022	23.67	45.7	1,057	1,500,714	686,326	1,013	695	1,390,497
9/3/2022	24.00	45.7	1,080	1,554,855	711,087	1,013	720	1,440,661
9/4/2022	24.00	45.7	1,078	1,552,750	710,124	1,013	719	1,438,711
9/5/2022	24.00	45.7	1,074	1,546,213	707,134	1,013	716	1,432,654
9/6/2022	14.80	45.7	1,154	1,025,176	468,847	1,013	475	949,884
9/7/2022	14.63	45.7	1,284	1,127,591	515,685	1,013	522	1,044,777
9/8/2022	24.00	45.7	1,185	1,705,958	780,191	1,013	790	1,580,667
9/9/2022	24.00	45.7	1,105	1,591,646	727,912	1,013	737	1,474,750
9/10/2022	24.00	45.7	1,075	1,548,190	708,038	1,013	717	1,434,486
9/11/2022	24.00	47.3	1,076	1,549,656	732,987	1,013	743	1,485,032
9/12/2022	24.00	47.3	1,041	1,498,714	708,892	1,013	718	1,436,215
9/13/2022	24.00	47.3	957	1,377,918	651,755	1,013	660	1,320,456
9/14/2022	22.80	47.3	968	1,324,640	626,555	1,013	635	1,269,400
9/15/2022	21.80	47.3	1,045	1,366,351	646,284	1,013	655	1,309,371
9/16/2022	23.60	47.3	1,052	1,488,959	704,278	1,013	713	1,426,866
9/17/2022	20.43	47.3	1,028	1,260,799	596,358	1,013	604	1,208,221
9/18/2022	17.87	47.3	1,249	1,338,635	633,174	1,013	641	1,282,811
9/19/2022	24.00	47.3	1,396	2,009,717	950,596	1,013	963	1,925,908
9/20/2022	23.50	47.3	1,177	1,659,518	784,952	1,013	795	1,590,313
9/21/2022	24.00	47.3	1,057	1,522,664	720,220	1,013	730	1,459,166
9/22/2022	22.80	47.3	1,159	1,584,892	749,654	1,013	759	1,518,799
9/23/2022	24.00	47.3	1,123	1,617,582	765,116	1,013	775	1,550,126
9/24/2022	24.00	47.3	1,128	1,624,285	768,287	1,013	778	1,556,549
9/25/2022	24.00	47.3	1,174	1,690,916	799,803	1,013	810	1,620,401
9/26/2022	21.67	47.3	1,198	1,556,967	736,445	1,013	746	1,492,038
9/27/2022	22.70	47.3	1,265	1,723,492	815,211	1,013	826	1,651,618
9/28/2022	23.20	47.3	1,138	1,584,438	749,439	1,013	759	1,518,364
9/29/2022	24.00	47.3	1,178	1,696,360	802,378	1,013	813	1,625,618
9/30/2022	24.00	47.3	1,189	1,712,410	809,970	1,013	820	1,640,999
Totals/ Average:	**681.47**	**46.8**	**1,126**	**46,031,109.5**	**21,540,182**	**1,013**	**21,820**	**43,640,409**
						Maximum:	**963**	**1,925,908**

Notes:

The A-60 Flare commenced operation on April 1, 2009.

*CH_4 content was determined from the July 13, 2021 (9/10/21 - 9/10/22) and July 13, 2022 (9/11/22 - current) source tests.

Pursuant to Title V Permit Condition Number 19867 Part 30(g), the Annual Source Test at A-60 may be conducted while it is operating in either zone, providing that each operating zone is tested at least once every five years.

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scfm= standard cubic feet per minute
BTU/scf= British thermal unit per square cubic feet
scf= standard cubic feet
MMBTU= million British thermal units
LFG= landfill gas
CH_4= methane
HHV= higher heating value

REDWOOD LANDFILL
Novato, CA

A-60 Flare Heat Input Rate

MONTH: Oct-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU) / Day	Total Flow Corrected to HHV of 500 BTU/scf
10/1/2022	23.50	47.3	1,150	1,622,036	767,223	1,013	777	1,554,394
10/2/2022	24.00	47.3	1,161	1,671,308	790,529	1,013	801	1,601,611
10/3/2022	23.03	47.3	1,160	1,603,796	758,596	1,013	768	1,536,914
10/4/2022	21.90	47.3	1,223	1,606,987	760,105	1,013	770	1,539,972
10/5/2022	19.80	47.3	1,186	1,409,053	666,482	1,013	675	1,350,293
10/6/2022	21.70	47.3	1,195	1,556,438	736,195	1,013	746	1,491,531
10/7/2022	23.20	47.3	1,551	2,159,629	1,021,505	1,013	1,035	2,069,568
10/8/2022	24.00	47.3	1,647	2,372,210	1,122,055	1,013	1,137	2,273,284
10/9/2022	24.00	47.3	1,630	2,346,537	1,109,912	1,013	1,124	2,248,682
10/10/2022	10.83	47.3	1,679	1,091,357	516,212	1,013	523	1,045,845
10/11/2022	11.17	47.3	1,861	1,246,951	589,808	1,013	597	1,194,951
10/12/2022	23.27	47.3	1,514	2,113,462	999,668	1,013	1,013	2,025,326
10/13/2022	23.47	47.3	1,544	2,174,203	1,028,398	1,013	1,042	2,083,534
10/14/2022	22.80	47.3	1,254	1,715,233	811,305	1,013	822	1,643,704
10/15/2022	13.80	47.3	1,327	1,098,947	519,802	1,013	527	1,053,119
10/16/2022	24.00	47.3	1,443	2,077,568	982,690	1,013	995	1,990,929
10/17/2022	24.00	47.3	1,439	2,072,762	980,416	1,013	993	1,986,324
10/18/2022	24.00	47.3	1,316	1,895,686	896,659	1,013	908	1,816,632
10/19/2022	23.80	47.3	1,246	1,778,771	841,359	1,013	852	1,704,593
10/20/2022	20.67	47.3	1,116	1,383,758	654,518	1,013	663	1,326,053
10/21/2022	10.07	47.3	1,180	712,571	337,046	1,013	341	682,855
10/22/2022	0.00	47.3	0	0	0	1,013	0	0
10/23/2022	11.37	47.3	1,239	845,220	399,789	1,013	405	809,973
10/24/2022	22.77	47.3	1,162	1,587,617	750,943	1,013	761	1,521,410
10/25/2022	21.77	47.3	1,224	1,598,810	756,237	1,013	766	1,532,136
10/26/2022	24.00	47.3	1,192	1,716,659	811,980	1,013	823	1,645,071
10/27/2022	23.87	47.3	1,126	1,612,248	762,593	1,013	773	1,545,014
10/28/2022	24.00	47.3	1,068	1,537,272	727,130	1,013	737	1,473,165
10/29/2022	23.80	47.3	1,046	1,493,532	706,441	1,013	716	1,431,249
10/30/2022	23.87	47.3	1,059	1,515,975	717,056	1,013	726	1,452,756
10/31/2022	24.00	47.3	1,095	1,576,695	745,777	1,013	755	1,510,944
Totals/ Average:	**636.43**	**47.3**	**1,288**	**49,193,291.0**	**23,268,427**	**1,013**	**23,571**	**47,141,832**
						Maximum:	**1,137**	**2,273,284**

Notes:

The A-60 Flare commenced operation on April 1, 2009.

*CH4 content was determined from the July 13, 2021 (9/10/21 - 9/10/22) and July 13, 2022 (9/11/22 - current) source tests.

Pursuant to Title V Permit Condition Number 19867 Part 30(g), the Annual Source Test at A-60 may be conducted while it is operating in either zone, providing that each operating zone is tested at least once every five years.

Pursuant to Title V Permit Condition Number 19867 Part 20, as modified by Authority To Construct (ATC) 19098, the throughput of landfill gas (with an HHV of 500 BTU/scf) to the A-60 Landfill Gas Flare shall not exceed 4,320,000 scf during any one day, and shall not exceed 2,625 million scf combined with the A-51 Landfill Gas Flare during any consecutive 12-month period.

scfm= standard cubic feet per minute

BTU/scf= British thermal unit per square cubic feet

scf= standard cubic feet

MMBTU= million British thermal units

LFG= landfill gas

CH_4= methane

HHV= higher heating value

MONTHLY LFG Input to Landfill Gas Engine (S-64)

WM - REDWOOD LANDFILL, Novato, CA

S-64 (Engine #1)

Month	Total Available Runtime (hours)	Total Downtime (hours)	Total Runtime (hours)	Average Flow (scfm)	Average CH_4 (%)[1]	Total Flow LFG Volume (scf)	Total Flow LFG Volume Corrected to HHV of 500 BTU/scf	Total CH_4 Volume (scf)	Total Heat Input (MMBTU)	CO Emission Factor (lb/MMBtu)[1]	CO Emissions (tons)	SO2 Emission Factor (lb/MMBtu)[2]	SO2 Emissions (tons)[2]
May-22	744.00	145.50	598.50	513	48.5	18,407,241	18,087,139	8,927,512	9,044	0.017	0.08	0.02	1.67E-04
June-22	720.00	170.97	549.03	535	48.5	17,621,317	17,314,882	8,546,339	8,657	0.017	0.07	0.02	1.60E-04
July-22	744.00	471.42	272.58	428	48.5	6,994,846	6,873,205	3,392,500	3,437	0.017	0.03	0.02	6.33E-05
August-22	744.00	153.08	590.92	571	48.5	20,259,681	19,907,365	9,825,945	9,954	0.017	0.08	0.02	1.83E-04
September-22	720.00	49.17	670.83	433	49.1	17,408,368	17,314,437	8,546,119	8,657	0.111	0.48	0.50	4.32E-03
October-22	744.00	57.25	686.75	468	49.4	19,279,071	19,308,349	9,530,281	9,654	0.111	0.54	0.50	4.78E-03
TOTAL/ AVG:	**4,416.00**	**1,047.38**	**3,368.62**	**495**	**48.8**	**99,970,523**	**98,805,377**	**48,768,695**	**49,403**	**--**	**--**	**--**	**--**

NOTES:

The S-64 Engine (#1) commenced operation on April 27, 2017.

[1] CH_4, CO, and SO_2 content was determined from the July 14 & 15, 2021 (9/13/21 - 9/11/22) and July 14 & 15, 2022 (9/12/22 - current) source tests.

REDWOOD LANDFILL
Novato, CA

S-64 Engine (#1) Heat Input Rate

MONTH: May-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU)/Day	Total Flow Corrected to HHV of 500 BTU/scf
5/01/2022	24.00	48.5	654	941,226	456,494	1,013	462	924,858
5/02/2022	24.00	48.5	655	943,500	457,598	1,013	464	927,093
5/03/2022	24.00	48.5	652	938,909	455,371	1,013	461	922,581
5/04/2022	24.00	48.5	647	932,206	452,120	1,013	458	915,995
5/05/2022	24.00	48.5	557	801,951	388,946	1,013	394	788,005
5/06/2022	24.00	48.5	496	714,501	346,533	1,013	351	702,076
5/07/2022	24.00	48.5	493	710,379	344,534	1,013	349	698,025
5/08/2022	24.00	48.5	492	709,056	343,892	1,013	348	696,725
5/09/2022	20.75	48.5	390	560,887	272,030	1,013	276	551,134
5/10/2022	24.00	48.5	441	635,050	307,999	1,013	312	624,006
5/11/2022	24.00	48.5	468	673,659	326,724	1,013	331	661,944
5/12/2022	14.50	48.5	299	430,952	209,012	1,013	212	423,458
5/13/2022	0.00							
5/14/2022	0.00							
5/15/2022	0.00							
5/16/2022	0.00							
5/17/2022	3.50	48.5	34	48,796	23,666	1,013	24	47,948
5/18/2022	7.75	48.5	168	242,340	117,535	1,013	119	238,125
5/19/2022	24.00	48.5	453	651,817	316,131	1,013	320	640,482
5/20/2022	24.00	48.5	451	649,536	315,025	1,013	319	638,241
5/21/2022	24.00	48.5	454	653,923	317,153	1,013	321	642,551
5/22/2022	24.00	48.5	462	664,587	322,325	1,013	327	653,030
5/23/2022	24.00	48.5	467	672,905	326,359	1,013	331	661,203
5/24/2022	24.00	48.5	481	692,109	335,673	1,013	340	680,073
5/25/2022	24.00	48.5	501	721,790	350,068	1,013	355	709,238
5/26/2022	24.00	48.5	497	715,234	346,888	1,013	351	702,796
5/27/2022	24.00	48.5	507	729,482	353,799	1,013	358	716,796
5/28/2022	24.00	48.5	505	726,851	352,523	1,013	357	714,211
5/29/2022	24.00	48.5	509	733,405	355,702	1,013	360	720,651
5/30/2022	24.00	48.5	512	737,058	357,473	1,013	362	724,240
5/31/2022	24.00	48.5	538	775,132	375,939	1,013	381	761,653
Totals/ Average:	**598.50**	**48.5**	**513**	**18,407,241.0**	**8,927,512**	**1,013**	**9,044**	**18,087,139**
Notes:						**Maximum:**	**464**	**927,093**

The S-64 Engine (#1) commenced operation on April 27, 2017.
*Methane (CH4) content was determined from the July 21 & 22, 2020 (9/18/20 - 9/12/21) and July 14 & 15, 2021 (9/13/21 - current) source tests.

REDWOOD LANDFILL
Novato, CA

S-64 Engine (#1) Heat Input Rate

MONTH: Jun-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU)/Day	Total Flow Corrected to HHV of 500 BTU/scf
6/01/2022	24.00	48.5	612	881,239	427,401	1,013	433	865,914
6/02/2022	24.00	48.5	608	875,150	424,448	1,013	430	859,931
6/03/2022	24.00	48.5	593	853,842	414,113	1,013	419	838,994
6/04/2022	24.00	48.5	599	862,339	418,234	1,013	424	847,343
6/05/2022	24.00	48.5	603	868,870	421,402	1,013	427	853,760
6/06/2022	24.00	48.5	602	866,180	420,097	1,013	426	851,117
6/07/2022	24.00	48.5	551	793,624	384,908	1,013	390	779,823
6/08/2022	24.00	48.5	529	761,773	369,460	1,013	374	748,526
6/09/2022	24.00	48.5	505	727,395	352,787	1,013	357	714,746
6/10/2022	16.00	48.5	292	420,593	203,988	1,013	207	413,279
6/11/2022	0.00							
6/12/2022	0.00							
6/13/2022	16.25	48.5	234	337,490	163,682	1,013	166	331,621
6/14/2022	24.00	48.5	434	624,635	302,948	1,013	307	613,772
6/15/2022	10.50	48.5	209	300,598	145,790	1,013	148	295,371
6/16/2022	12.75	48.5	242	349,194	169,359	1,013	172	343,122
6/17/2022	14.50	48.5	251	360,970	175,070	1,013	177	354,692
6/18/2022	4.50	48.5	111	160,071	77,635	1,013	79	157,288
6/19/2022	24.00	48.5	612	881,121	427,344	1,013	433	865,798
6/20/2022	20.75	48.5	549	790,588	383,435	1,013	388	776,840
6/21/2022	9.75	48.5	246	353,654	171,522	1,013	174	347,504
6/22/2022	11.75	48.5	303	436,641	211,771	1,013	215	429,048
6/23/2022	24.00	48.5	612	880,768	427,172	1,013	433	865,451
6/24/2022	21.83	48.5	551	793,713	384,951	1,013	390	779,910
6/25/2022	24.00	48.5	614	884,857	429,155	1,013	435	869,469
6/26/2022	24.00	48.5	621	893,836	433,510	1,013	439	878,292
6/27/2022	23.87	48.5	622	401,208	194,586	1,013	197	394,231
6/28/2022	22.58	48.5	585	333,300	161,650	1,013	164	327,504
6/29/2022	18.75	48.5	461	663,274	321,688	1,013	326	651,739
6/30/2022	9.25	48.5	184	264,393	128,231	1,013	130	259,795
Totals/ Average:	**549.03**	**48.5**	**535**	**17,621,316.5**	**8,546,339**	**1,013**	**8,657**	**17,314,882**
Notes:						**Maximum:**	**439**	**878,292**

The S-64 Engine (#1) commenced operation on April 27, 2017.

*Methane (CH4) content was determined from the July 21 & 22, 2020 (9/18/20 - 9/12/21) and July 14 & 15, 2021 (9/13/21 - current) source tests.

REDWOOD LANDFILL
Novato, CA

S-64 Engine (#1) Heat Input Rate

MONTH: Jul-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU)/Day	Total Flow Corrected to HHV of 500 BTU/scf
7/01/2022	12.50	48.5	242	348,634	169,088	1,013	171	342,572
7/02/2022	24.00	48.5	440	632,916	306,964	1,013	311	621,910
7/03/2022	11.00	48.5	196	282,937	137,224	1,013	139	278,016
7/04/2022	0.00							
7/05/2022	0.00							
7/06/2022	10.75	48.5	209	300,832	145,904	1,013	148	295,601
7/07/2022	24.00	48.5	438	630,554	305,819	1,013	310	619,589
7/08/2022	18.42	48.5	359	479,725	232,667	1,013	236	471,382
7/09/2022	24.00	48.5	439	632,619	306,820	1,013	311	621,618
7/10/2022	20.75	48.5	384	553,222	268,313	1,013	272	543,601
7/11/2022	22.25	48.5	405	583,049	282,779	1,013	286	572,909
7/12/2022	24.00	48.5	436	628,016	304,588	1,013	309	617,094
7/13/2022	24.00	48.5	432	622,649	301,985	1,013	306	611,821
7/14/2022	23.42	48.5	424	610,843	296,259	1,013	300	600,221
7/15/2022	16.00	48.5	325	467,476	226,726	1,013	230	459,347
7/16/2022	0.00							
7/17/2022	0.00							
7/18/2022	0.00							
7/19/2022	8.75	48.5	80	114,566	55,565	1,013	56	112,574
7/20/2022	8.75	48.5	74	106,807	51,801	1,013	52	104,949
7/21/2022	0.00							
7/22/2022	0.00							
7/23/2022	0.00							
7/24/2022	0.00							
7/25/2022	0.00							
7/26/2022	0.00							
7/27/2022	0.00							
7/28/2022	0.00							
7/29/2022	0.00							
7/30/2022	0.00							
7/31/2022	0.00							
Totals/ Average:	**272.58**	**48.5**	**428**	**6,994,845.5**	**3,392,500**	**1,013**	**3,437**	**6,873,205**
						Maximum:	**311**	**621,910**

Notes:

The S-64 Engine (#1) commenced operation on April 27, 2017.

*Methane (CH4) content was determined from the July 21 & 22, 2020 (9/18/20 - 9/12/21) and July 14 & 15, 2021 (9/13/21 - current) source tests.

REDWOOD LANDFILL
Novato, CA

S-64 Engine (#1) Heat Input Rate

MONTH: Aug-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU)/Day	Total Flow Corrected to HHV of 500 BTU/scf
8/01/2022	0.00							
8/02/2022	10.50	48.5	260	374,941	181,847	1,013	184	368,421
8/03/2022	24.00	48.5	597	860,189	417,192	1,013	423	845,231
8/04/2022	24.00	48.5	595	857,404	415,841	1,013	421	842,493
8/05/2022	24.00	48.5	598	861,642	417,897	1,013	423	846,658
8/06/2022	24.00	48.5	600	863,738	418,913	1,013	424	848,718
8/07/2022	24.00	48.5	600	863,469	418,783	1,013	424	848,453
8/08/2022	24.00	48.5	599	862,555	418,339	1,013	424	847,555
8/09/2022	24.00	48.5	601	866,110	420,064	1,013	426	851,049
8/10/2022	24.00	48.5	602	867,076	420,532	1,013	426	851,997
8/11/2022	24.00	48.5	600	863,855	418,970	1,013	424	848,833
8/12/2022	24.00	48.5	599	861,892	418,017	1,013	423	846,903
8/13/2022	24.00	48.5	595	856,761	415,529	1,013	421	841,862
8/14/2022	24.00	48.5	593	853,528	413,961	1,013	419	838,685
8/15/2022	24.00	48.5	585	841,769	408,258	1,013	414	827,131
8/16/2022	24.00	48.5	576	829,969	402,535	1,013	408	815,536
8/17/2022	8.50	48.5	198	285,767	138,597	1,013	140	280,798
8/18/2022	0.00							
8/19/2022	0.00							
8/20/2022	7.00	48.5	174	250,149	121,322	1,013	123	245,799
8/21/2022	24.00	48.5	589	848,517	411,531	1,013	417	833,761
8/22/2022	24.00	48.5	549	790,078	383,188	1,013	388	776,339
8/23/2022	23.67	48.5	499	718,875	348,654	1,013	353	706,374
8/24/2022	24.00	48.5	529	762,130	369,633	1,013	374	748,876
8/25/2022	24.00	48.5	525	756,508	366,906	1,013	372	743,352
8/26/2022	24.00	48.5	523	753,654	365,522	1,013	370	740,548
8/27/2022	24.00	48.5	523	753,802	365,594	1,013	370	740,693
8/28/2022	24.00	48.5	525	756,163	366,739	1,013	372	743,013
8/29/2022	7.25	48.5	158	228,212	110,683	1,013	112	224,243
8/30/2022	6.00	48.5	144	178,755	86,696	1,013	88	175,646
8/31/2022	24.00	48.5	550	792,171	384,203	1,013	389	778,395
Totals/ Average:	**590.92**	**48.5**	**571**	**20,259,680.5**	**9,825,945**	**1,013**	**9,954**	**19,907,365**
						Maximum:	**426**	**851,997**

Notes:

The S-64 Engine (#1) commenced operation on April 27, 2017.

*Methane (CH4) content was determined from the July 21 & 22, 2020 (9/18/20 - 9/12/21) and July 14 & 15, 2021 (9/13/21 - current) source tests.

REDWOOD LANDFILL
Novato, CA

S-64 Engine (#1) Heat Input Rate

MONTH: Sep-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU)/Day	Total Flow Corrected to HHV of 500 BTU/scf
9/01/2022	24.00	48.5	488	703,014	340,962	1,013	345	690,788
9/02/2022	24.00	48.5	457	658,144	319,200	1,013	323	646,699
9/03/2022	24.00	48.5	444	639,030	309,929	1,013	314	627,917
9/04/2022	24.00	48.5	445	640,288	310,540	1,013	315	629,153
9/05/2022	24.00	48.5	445	641,414	311,086	1,013	315	630,259
9/06/2022	23.33	48.5	248	356,951	173,121	1,013	175	350,743
9/07/2022	23.42	48.5	222	319,287	154,854	1,013	157	313,735
9/08/2022	21.67	48.5	377	542,264	262,998	1,013	266	532,834
9/09/2022	24.00	48.5	417	601,103	291,535	1,013	295	590,650
9/10/2022	24.00	48.5	437	628,967	305,049	1,013	309	618,029
9/11/2022	24.00	48.5	441	635,336	308,138	1,013	312	624,287
9/12/2022	24.00	49.4	458	659,830	326,176	1,013	330	660,832
9/13/2022	24.00	49.4	487	700,620	346,339	1,013	351	701,684
9/14/2022	24.00	49.4	483	695,357	343,738	1,013	348	696,413
9/15/2022	24.00	49.4	452	651,295	321,957	1,013	326	652,285
9/16/2022	24.00	49.4	442	637,109	314,944	1,013	319	638,077
9/17/2022	24.00	49.4	448	645,545	319,114	1,013	323	646,526
9/18/2022	14.50	49.4	266	382,839	189,250	1,013	192	383,421
9/19/2022	0.00							
9/20/2022	15.50	49.4	281	404,971	200,191	1,013	203	405,586
9/21/2022	24.00	49.4	437	629,682	311,273	1,013	315	630,639
9/22/2022	22.25	49.4	398	573,139	283,322	1,013	287	574,010
9/23/2022	24.00	49.4	439	631,628	312,235	1,013	316	632,588
9/24/2022	24.00	49.4	439	632,141	312,488	1,013	317	633,101
9/25/2022	24.00	49.4	442	636,451	314,619	1,013	319	637,417
9/26/2022	24.00	49.4	444	639,319	316,037	1,013	320	640,290
9/27/2022	22.17	49.4	410	590,783	292,043	1,013	296	591,680
9/28/2022	24.00	49.4	447	643,369	318,038	1,013	322	644,346
9/29/2022	24.00	49.4	447	644,117	318,408	1,013	323	645,095
9/30/2022	24.00	49.4	447	644,375	318,536	1,013	323	645,354
Totals/ Average:	**670.83**	**49.1**	**433**	**17,408,368.1**	**8,546,119**	**1,013**	**8,657**	**17,314,437**
						Maximum:	**351**	**701,684**

Notes:

The S-64 Engine (#1) commenced operation on April 27, 2017.

*Methane (CH4) content was determined from the July 14 & 15, 2021 (9/13/21 - 9/11/22) and July 14 & 15, 2022 (9/12/22 - current) source tests.

REDWOOD LANDFILL
Novato, CA

S-64 Engine (#1) Heat Input Rate

MONTH: Oct-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU)/Day	Total Flow Corrected to HHV of 500 BTU/scf
10/01/2022	24.00	49.4	451	649,380	321,010	1,013	325	650,366
10/02/2022	24.00	49.4	458	659,539	326,032	1,013	330	660,541
10/03/2022	24.00	49.4	461	664,242	328,357	1,013	333	665,250
10/04/2022	23.75	49.4	438	630,543	311,698	1,013	316	631,501
10/05/2022	24.00	49.4	462	665,189	328,825	1,013	333	666,199
10/06/2022	24.00	49.4	463	666,386	329,417	1,013	334	667,399
10/07/2022	16.50	49.4	339	487,562	241,018	1,013	244	488,303
10/08/2022	24.00	49.4	527	758,292	374,849	1,013	380	759,443
10/09/2022	24.00	49.4	534	769,677	380,477	1,013	385	770,846
10/10/2022	13.42	49.4	309	445,514	220,232	1,013	223	446,191
10/11/2022	1.67	49.4	14	19,923	9,849	1,013	10	19,953
10/12/2022	12.75	49.4	186	267,770	132,367	1,013	134	268,177
10/13/2022	22.75	49.4	139	200,371	99,050	1,013	100	200,675
10/14/2022	23.25	49.4	437	628,712	310,793	1,013	315	629,667
10/15/2022	24.00	49.4	435	625,984	309,445	1,013	313	626,935
10/16/2022	24.00	49.4	482	693,872	343,004	1,013	347	694,926
10/17/2022	24.00	49.4	486	700,203	346,133	1,013	351	701,266
10/18/2022	24.00	49.4	482	694,523	343,326	1,013	348	695,577
10/19/2022	23.67	49.4	445	640,918	316,827	1,013	321	641,891
10/20/2022	24.00	49.4	499	718,164	355,012	1,013	360	719,254
10/21/2022	24.00	49.4	490	706,211	349,103	1,013	354	707,283
10/22/2022	24.00	49.4	457	657,549	325,048	1,013	329	658,547
10/23/2022	24.00	49.4	458	659,134	325,832	1,013	330	660,135
10/24/2022	24.00	49.4	470	677,139	334,732	1,013	339	678,167
10/25/2022	24.00	49.4	458	659,312	325,919	1,013	330	660,313
10/26/2022	24.00	49.4	463	666,141	329,295	1,013	334	667,152
10/27/2022	24.00	49.4	487	700,914	346,485	1,013	351	701,979
10/28/2022	24.00	49.4	510	734,469	363,072	1,013	368	735,585
10/29/2022	24.00	49.4	517	745,019	368,287	1,013	373	746,150
10/30/2022	24.00	49.4	518	745,639	368,594	1,013	373	746,771
10/31/2022	21.00	49.4	514	740,784	366,194	1,013	371	741,909
Totals/ Average:	**686.75**	**49.4**	**468**	**19,279,071.2**	**9,530,281**	**1,013**	**9,654**	**19,308,349**
						Maximum:	**385**	**770,846**

Notes:

The S-64 Engine (#1) commenced operation on April 27, 2017.

*Methane (CH4) content was determined from the July 14 & 15, 2021 (9/13/21 - 9/11/22) and July 14 & 15, 2022 (9/12/22 - current) source tests.

MONTHLY LFG Input to Landfill Gas Engine (S-65)

WM - REDWOOD LANDFILL, Novato, CA

S-65 (Engine #2)

Month	Total Available Runtime (hours)	Total Downtime (hours)	Total Runtime (hours)	Average Flow (scfm)	Average CH_4 (%)[1]	Total Flow LFG Volume (scf)	Total Flow LFG Volume Corrected to HHV of 500 BTU/scf	Total CH_4 Volume (scf)	Total Heat Input (MMBTU)	CO Emission Factor (lb/MMBtu)[1]	CO Emissions (tons)	SO2 Emission Factor (lb/MMBtu)[2]	SO2 Emissions (tons)[2]
May-22	744.00	132.50	611.50	485	44.1	17,808,083	15,922,931	7,859,295	7,961	0.018	0.07	0.0189	1.68E-04
June-22	720.00	301.75	418.25	508	44.1	12,760,696	11,409,857	5,631,716	5,705	0.018	0.05	0.0189	1.21E-04
July-22	744.00	116.75	627.25	518	44.1	19,496,552	17,432,660	8,604,472	8,716	0.018	0.08	0.0189	1.84E-04
August-22	744.00	613.42	130.58	583	44.1	4,569,135	4,085,449	2,016,510	2,043	0.018	0.02	0.0189	4.32E-05
September-22	720.00	29.17	690.83	422	47.8	17,489,614	16,947,403	8,364,957	8,474	0.049	0.21	0.4990	4.36E-03
October-22	744.00	117.42	626.58	447	49.7	16,791,051	16,907,279	8,345,152	8,454	0.049	0.21	0.4990	4.19E-03
TOTAL/ AVG:	**4,416.00**	**1,311.00**	**3,105.00**	**477**	**45.7**	**88,915,131**	**82,705,579**	**40,822,102**	**41,353**	**--**	**--**	**--**	**--**

NOTES:

The S-65 Engine (#2) commenced operation on April 27, 2017.

[1]CH_4, CO, and SO_2 content was determined from the July 14 & 15, 2021 (9/13/21 - 9/11/22) and July 14 & 15, 2022 (9/12/22 - current) source tests.

REDWOOD LANDFILL
Novato, CA

S-65 Engine (#2) Heat Input Rate

MONTH: May-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU)/Day	Total Flow Corrected to HHV of 500 BTU/scf
5/01/2022	24.00	44.1	616	886,564	391,270	1,013	396	792,713
5/02/2022	24.00	44.1	618	889,479	392,557	1,013	398	795,320
5/03/2022	24.00	44.1	615	885,071	390,611	1,013	396	791,378
5/04/2022	24.00	44.1	610	878,365	387,651	1,013	393	785,382
5/05/2022	24.00	44.1	526	756,792	333,997	1,013	338	676,679
5/06/2022	24.00	44.1	470	677,492	298,999	1,013	303	605,773
5/07/2022	24.00	44.1	467	673,080	297,053	1,013	301	601,829
5/08/2022	24.00	44.1	466	670,777	296,036	1,013	300	599,769
5/09/2022	21.50	44.1	387	557,993	246,261	1,013	249	498,924
5/10/2022	24.00	44.1	419	602,914	266,086	1,013	270	539,090
5/11/2022	24.00	44.1	441	634,449	280,003	1,013	284	567,287
5/12/2022	14.50	44.1	283	407,063	179,650	1,013	182	363,972
5/13/2022	0.00							
5/14/2022	0.00							
5/15/2022	0.00							
5/16/2022	0.00							
5/17/2022	4.50	44.1	88	126,899	56,005	1,013	57	113,466
5/18/2022	22.75	44.1	443	638,564	281,819	1,013	285	570,966
5/19/2022	24.00	44.1	428	616,420	272,046	1,013	276	551,166
5/20/2022	24.00	44.1	427	615,074	271,452	1,013	275	549,962
5/21/2022	24.00	44.1	430	619,899	273,582	1,013	277	554,277
5/22/2022	24.00	44.1	438	630,446	278,237	1,013	282	563,707
5/23/2022	24.00	44.1	445	640,298	282,585	1,013	286	572,517
5/24/2022	24.00	44.1	455	654,895	289,027	1,013	293	585,569
5/25/2022	20.25	44.1	395	568,087	250,716	1,013	254	507,950
5/26/2022	24.00	44.1	470	676,083	298,378	1,013	302	604,513
5/27/2022	24.00	44.1	479	689,173	304,155	1,013	308	616,218
5/28/2022	24.00	44.1	476	685,535	302,549	1,013	306	612,965
5/29/2022	24.00	44.1	481	692,842	305,774	1,013	310	619,499
5/30/2022	24.00	44.1	483	695,761	307,062	1,013	311	622,108
5/31/2022	24.00	44.1	513	738,067	325,733	1,013	330	659,936
Totals/ Average:	**611.50**	**44.1**	**485**	**17,808,083.1**	**7,859,295**	**1,013**	**7,961**	**15,922,931**
Notes:						**Maximum:**	**398**	**795,320**

The S-65 Engine (#2) commenced operation on April 27, 2017.
*Methane (CH4) content was determined from the July 21 & 22, 2020 (9/18/20 - 9/12/21) and July 14 & 15, 2021 (9/13/21 - current) source tests.

REDWOOD LANDFILL
Novato, CA

S-65 Engine (#2) Heat Input Rate

MONTH: Jun-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU)/Day	Total Flow Corrected to HHV of 500 BTU/scf
6/01/2022	24.00	44.1	578	831,620	367,021	1,013	372	743,585
6/02/2022	24.00	44.1	573	824,543	363,898	1,013	369	737,257
6/03/2022	24.00	44.1	558	803,951	354,810	1,013	359	718,845
6/04/2022	24.00	44.1	564	812,568	358,613	1,013	363	726,550
6/05/2022	24.00	44.1	569	819,311	361,589	1,013	366	732,580
6/06/2022	24.00	44.1	568	817,934	360,981	1,013	366	731,348
6/07/2022	24.00	44.1	521	749,632	330,837	1,013	335	670,276
6/08/2022	24.00	44.1	501	720,868	318,143	1,013	322	644,557
6/09/2022	18.50	44.1	371	534,650	235,959	1,013	239	478,053
6/10/2022	24.00	44.1	431	620,760	273,962	1,013	278	555,046
6/11/2022	10.50	44.1	196	282,522	124,686	1,013	126	252,614
6/12/2022	0.00							
6/13/2022	15.50	44.1	281	404,100	178,343	1,013	181	361,322
6/14/2022	24.00	44.1	424	609,977	269,203	1,013	273	545,405
6/15/2022	19.50	44.1	328	472,964	208,735	1,013	211	422,896
6/16/2022	24.00	44.1	417	600,769	265,139	1,013	269	537,172
6/17/2022	24.00	44.1	522	752,321	332,024	1,013	336	672,681
6/18/2022	12.25	44.1	332	477,486	210,730	1,013	213	426,940
6/19/2022	0.00							
6/20/2022	0.25	44.1	12	17,725	7,822	1,013	8	15,848
6/21/2022	8.25	44.1	221	317,715	140,218	1,013	142	284,082
6/22/2022	12.25	44.1	305	438,905	193,703	1,013	196	392,443
6/23/2022	0.00							
6/24/2022	0.00							
6/25/2022	0.00							
6/26/2022	0.00							
6/27/2022	0.00							
6/28/2022	0.00							
6/29/2022	9.25	44.1	158	227,196	100,269	1,013	102	203,145
6/30/2022	24.00	44.1	433	623,181	275,031	1,013	279	557,212
Totals/ Average:	**418.25**	**44.1**	**508**	**12,760,696.1**	**5,631,716**	**1,013**	**5,705**	**11,409,857**
Notes:						**Maximum:**	**372**	**743,585**

The S-65 Engine (#2) commenced operation on April 27, 2017.
*Methane (CH4) content was determined from the July 21 & 22, 2020 (9/18/20 - 9/12/21) and July 14 & 15, 2021 (9/13/21 - current) source tests.

REDWOOD LANDFILL
Novato, CA

S-65 Engine (#2) Heat Input Rate

MONTH: Jul-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU)/Day	Total Flow Corrected to HHV of 500 BTU/scf
7/01/2022	24.00	44.1	463	666,531	294,162	1,013	298	595,972
7/02/2022	24.00	44.1	421	606,506	267,671	1,013	271	542,302
7/03/2022	24.00	44.1	432	622,332	274,656	1,013	278	556,453
7/04/2022	24.00	44.1	441	634,358	279,963	1,013	284	567,205
7/05/2022	24.00	44.1	540	777,984	343,350	1,013	348	695,627
7/06/2022	24.00	44.1	521	749,731	330,881	1,013	335	670,365
7/07/2022	24.00	44.1	421	606,183	267,528	1,013	271	542,013
7/08/2022	19.67	44.1	370	494,168	218,093	1,013	221	441,856
7/09/2022	24.00	44.1	421	606,074	267,480	1,013	271	541,915
7/10/2022	24.00	44.1	426	613,824	270,901	1,013	274	548,845
7/11/2022	24.00	44.1	423	609,684	269,073	1,013	273	545,143
7/12/2022	9.75	44.1	176	252,732	111,539	1,013	113	225,978
7/13/2022	9.25	44.1	169	243,202	107,333	1,013	109	217,457
7/14/2022	16.25	44.1	284	408,849	180,439	1,013	183	365,569
7/15/2022	5.50	44.1	159	228,305	100,758	1,013	102	204,137
7/16/2022	24.00	44.1	658	947,360	418,101	1,013	424	847,073
7/17/2022	24.00	44.1	658	946,959	417,924	1,013	423	846,715
7/18/2022	7.25	44.1	204	293,881	129,699	1,013	131	262,771
7/19/2022	0.00							
7/20/2022	11.33	44.1	273	392,612	173,273	1,013	176	351,050
7/21/2022	24.00	44.1	523	752,739	332,208	1,013	337	673,054
7/22/2022	20.25	44.1	467	672,868	296,959	1,013	301	601,638
7/23/2022	24.00	44.1	522	752,317	332,022	1,013	336	672,677
7/24/2022	24.00	44.1	525	755,796	333,558	1,013	338	675,788
7/25/2022	24.00	44.1	537	773,521	341,380	1,013	346	691,636
7/26/2022	24.00	44.1	556	801,011	353,513	1,013	358	716,216
7/27/2022	24.00	44.1	576	829,771	366,205	1,013	371	741,932
7/28/2022	24.00	44.1	611	879,385	388,102	1,013	393	786,294
7/29/2022	24.00	44.1	615	885,697	390,887	1,013	396	791,938
7/30/2022	24.00	44.1	587	845,086	372,964	1,013	378	755,626
7/31/2022	24.00	44.1	588	847,087	373,847	1,013	379	757,415
Totals/ Average:	**627.25**	**44.1**	**518**	**19,496,552.1**	**8,604,472**	**1,013**	**8,716**	**17,432,660**
						Maximum:	**424**	**847,073**

Notes:

The S-65 Engine (#2) commenced operation on April 27, 2017.

*Methane (CH4) content was determined from the July 21 & 22, 2020 (9/18/20 - 9/12/21) and July 14 & 15, 2021 (9/13/21 - current) source tests.

REDWOOD LANDFILL
Novato, CA

S-65 Engine (#2) Heat Input Rate

MONTH: Aug-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU)/Day	Total Flow Corrected to HHV of 500 BTU/scf
8/01/2022	24.00	44.1	587	845,882	373,316	1,013	378	756,338
8/02/2022	11.83	44.1	288	414,178	182,790	1,013	185	370,333
8/03/2022	0.00							
8/04/2022	0.00							
8/05/2022	0.00							
8/06/2022	0.00							
8/07/2022	0.00							
8/08/2022	0.00							
8/09/2022	0.00							
8/10/2022	0.00							
8/11/2022	0.00							
8/12/2022	0.00							
8/13/2022	0.00							
8/14/2022	0.00							
8/15/2022	0.00							
8/16/2022	0.00							
8/17/2022	15.25	44.1	351	506,028	223,327	1,013	226	452,460
8/18/2022	24.00	44.1	572	823,855	363,594	1,013	368	736,642
8/19/2022	19.25	44.1	486	700,470	309,140	1,013	313	626,318
8/20/2022	13.00	44.1	311	447,286	197,402	1,013	200	399,936
8/21/2022	0.00							
8/22/2022	0.00							
8/23/2022	0.00							
8/24/2022	0.00							
8/25/2022	0.00							
8/26/2022	0.00							
8/27/2022	0.00							
8/28/2022	0.00							
8/29/2022	13.50	44.1	323	464,666	205,072	1,013	208	415,476
8/30/2022	9.75	44.1	295	366,771	161,868	1,013	164	327,945
8/31/2022	0.00							
Totals/ Average:	**130.58**	**44.1**	**583**	**4,569,134.7**	**2,016,510**	**1,013**	**2,043**	**4,085,449**
						Maximum:	**378**	**756,338**

Notes:

The S-65 Engine (#2) commenced operation on April 27, 2017.

*Methane (CH4) content was determined from the July 21 & 22, 2020 (9/18/20 - 9/12/21) and July 14 & 15, 2021 (9/13/21 - current) source tests.

REDWOOD LANDFILL
Novato, CA

S-65 Engine (#2) Heat Input Rate

MONTH: Sep-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU)/Day	Total Flow Corrected to HHV of 500 BTU/scf
9/01/2022	15.50	44.1	273	393,579	173,699	1,013	176	351,915
9/02/2022	24.00	44.1	424	610,284	269,338	1,013	273	545,680
9/03/2022	24.00	44.1	412	593,638	261,992	1,013	265	530,796
9/04/2022	24.00	44.1	414	595,757	262,927	1,013	266	532,690
9/05/2022	24.00	44.1	415	598,039	263,934	1,013	267	534,731
9/06/2022	15.08	44.1	274	394,989	174,322	1,013	177	353,176
9/07/2022	14.08	44.1	243	349,483	154,238	1,013	156	312,487
9/08/2022	24.00	44.1	407	585,717	258,496	1,013	262	523,713
9/09/2022	24.00	44.1	404	581,809	256,772	1,013	260	520,219
9/10/2022	24.00	44.1	407	586,385	258,791	1,013	262	524,310
9/11/2022	24.00	44.1	411	591,382	260,996	1,013	264	528,778
9/12/2022	24.00	49.7	427	614,461	305,387	1,013	309	618,715
9/13/2022	24.00	49.7	452	650,874	323,484	1,013	328	655,379
9/14/2022	24.00	49.7	449	646,344	321,233	1,013	325	650,818
9/15/2022	24.00	49.7	421	605,783	301,074	1,013	305	609,977
9/16/2022	24.00	49.7	420	605,098	300,734	1,013	305	609,286
9/17/2022	24.00	49.7	432	622,644	309,454	1,013	313	626,954
9/18/2022	24.00	49.7	451	649,454	322,779	1,013	327	653,949
9/19/2022	24.00	49.7	486	700,079	347,939	1,013	352	704,925
9/20/2022	24.00	49.7	434	624,508	310,381	1,013	314	628,831
9/21/2022	24.00	49.7	407	585,505	290,996	1,013	295	589,558
9/22/2022	24.00	49.7	412	593,487	294,963	1,013	299	597,595
9/23/2022	24.00	49.7	409	588,867	292,667	1,013	296	592,943
9/24/2022	24.00	49.7	410	590,224	293,341	1,013	297	594,309
9/25/2022	24.00	49.7	412	593,060	294,751	1,013	299	597,166
9/26/2022	24.00	49.7	413	594,707	295,569	1,013	299	598,824
9/27/2022	22.17	49.7	379	545,782	271,254	1,013	275	549,560
9/28/2022	24.00	49.7	415	598,228	297,319	1,013	301	602,369
9/29/2022	24.00	49.7	416	599,012	297,709	1,013	302	603,158
9/30/2022	24.00	49.7	417	600,434	298,416	1,013	302	604,591
Totals/ Average:	**690.83**	**47.8**	**422**	**17,489,613.8**	**8,364,957**	**1,013**	**8,474**	**16,947,403**
						Maximum:	**352**	**704,925**

Notes:

The S-65 Engine (#2) commenced operation on April 27, 2017.

*Methane (CH4) content was determined from the July 14 & 15, 2021 (9/13/21 - 9/11/22) and July 14 & 15, 2022 (9/12/22 - current) source tests.

REDWOOD LANDFILL
Novato, CA

S-65 Engine (#2) Heat Input Rate

MONTH: Oct-22

Date	Runtime (hours)	CH4 (%)*	Average Flow (scfm)	Total LFG Volume (scf)	CH4 Volume (scf)	Heating Value of CH4 (BTU/scf)	Heat Input (MMBTU)/Day	Total Flow Corrected to HHV of 500 BTU/scf
10/01/2022	24.00	49.7	420	604,493	300,433	1,013	304	608,678
10/02/2022	24.00	49.7	426	613,338	304,829	1,013	309	617,583
10/03/2022	24.00	49.7	430	618,726	307,507	1,013	312	623,009
10/04/2022	23.67	49.7	394	567,522	282,058	1,013	286	571,450
10/05/2022	24.00	49.7	430	619,274	307,779	1,013	312	623,561
10/06/2022	24.00	49.7	430	619,638	307,960	1,013	312	623,927
10/07/2022	12.42	49.7	257	370,167	183,973	1,013	186	372,730
10/08/2022	0.00							
10/09/2022	0.00							
10/10/2022	1.25	49.7	8	11,679	5,805	1,013	6	11,760
10/11/2022	8.50	49.7	130	186,606	92,743	1,013	94	187,897
10/12/2022	19.00	49.7	411	591,398	293,925	1,013	298	595,491
10/13/2022	12.08	49.7	423	609,724	303,033	1,013	307	613,944
10/14/2022	23.17	49.7	405	582,973	289,737	1,013	294	587,008
10/15/2022	24.00	49.7	393	566,298	281,450	1,013	285	570,217
10/16/2022	24.00	49.7	446	642,489	319,317	1,013	323	646,937
10/17/2022	24.00	49.7	450	648,404	322,257	1,013	326	652,893
10/18/2022	24.00	49.7	446	641,626	318,888	1,013	323	646,068
10/19/2022	22.50	49.7	411	592,388	294,417	1,013	298	596,489
10/20/2022	24.00	49.7	460	663,080	329,551	1,013	334	667,670
10/21/2022	24.00	49.7	455	654,774	325,423	1,013	330	659,307
10/22/2022	24.00	49.7	424	610,202	303,271	1,013	307	614,426
10/23/2022	24.00	49.7	424	611,222	303,778	1,013	308	615,453
10/24/2022	24.00	49.7	436	627,511	311,873	1,013	316	631,855
10/25/2022	24.00	49.7	424	611,148	303,740	1,013	308	615,378
10/26/2022	24.00	49.7	429	617,748	307,021	1,013	311	622,024
10/27/2022	24.00	49.7	451	649,546	322,824	1,013	327	654,042
10/28/2022	24.00	49.7	472	679,737	337,829	1,013	342	684,442
10/29/2022	24.00	49.7	479	690,234	343,046	1,013	348	695,011
10/30/2022	24.00	49.7	478	688,937	342,402	1,013	347	693,706
10/31/2022	24.00	49.7	417	600,167	298,283	1,013	302	604,322
Totals/ Average:	**626.58**	**49.7**	**447**	**16,791,050.9**	**8,345,152**	**1,013**	**8,454**	**16,907,279**
Notes:						**Maximum:**	**348**	**695,011**

The S-65 Engine (#2) commenced operation on April 27, 2017.

*Methane (CH4) content was determined from the July 14 & 15, 2021 (9/13/21 - 9/11/22) and July 14 & 15, 2022 (9/12/22 - current) source tests.

APPENDIX L

VOC SOILS LOGS

Redwood Landfill

Facility Number A1179

Title V Permit Condition Number 19867, Part 14

VOC Laden Soil

Month	VOC Emission Rate (lbs/month)	12-Month Rolling Total (lbs)
November-21	0.00	0.00
December-21	0.00	0.00
January-22	0.00	0.00
February-22	0.00	0.00
March-22	0.00	0.00
April-22	0.00	0.00
May-22	0.00	0.00
June-22	0.00	0.00
July-22	0.00	0.00
August-22	0.00	0.00
September-22	0.00	0.00
October-22	0.00	0.00
TOTALS:	**0.00**	

VOC Laden Soils is defined as soils containing concentrations of VOC less than 50 parts per million by weight (ppm_w).

APPENDIX M

H_2S TWICE WEEKLY AND QUARTERLY MONITORING

REDWOOD LANDFILL, INC.
Novato, CA

Total Reduced Sulfur Content - Quarter 2 - 2022

Date	H_2S Reading (ppm_v)	Calculated TRS (ppm_v)
4/4/22 13:35	595.8	604.8
4/6/22 8:15	629.1	638.5
4/11/22 13:35	544.6	552.8
4/13/22 10:45	563.6	572.0
4/15/22*	600.0	607.5
4/18/22 13:25	602.6	611.7
4/20/22 8:35	594.0	603.0
4/25/22 11:00	607.9	617.1
4/27/22 11:40	587.8	596.6
5/2/22 14:30	562.8	571.3
5/4/22 11:55	578.7	587.4
5/9/22 8:25	625.4	634.7
5/11/22 9:10	572.7	581.3
5/16/22 9:45	635.0	644.5
5/18/22 9:40	597.2	606.2
5/23/22 8:20	586.8	595.6
5/25/22 7:35	602.4	611.5
5/31/22 12:00	529.4	537.4
6/2/22 8:20	576.3	584.9
6/6/22 8:05	571.6	580.2
6/8/22 10:30	495.4	502.9
6/13/22 10:05	561.1	569.5
6/15/22 9:40	555.6	563.9
6/20/22 9:35	571.8	580.4
6/24/22 17:00	525.0	532.9
6/28/22 16:00	540.5	548.6
6/30/22 16:15	614.1	623.3
Quarterly Average:	578.8	587.4

ppm_v= parts per million by volume

TRS= total reduced sulfur

* Quarterly LFG lab analysis

Title V Permit Condition Number 19867 Part 31b

As of March 31, 2005, the Permit Holder shall analyze the landfill gas for H2S concentration on a weekly basis. The landfill gas sample shall be drawn from the main landfill gas header using a Draeger/RAE tube. The TRS content of the landfill gas shall be calculated using the average ratio of TRS/H2S for this site according to the following equation: TRS=1.015*H2S measured by the Draeger/RAE Tube. The Permit Holder shall maintain records of all Draeger/RAE tube test dates and test results and shall summarize the average H2S concentrations and the calculated TRS content of the landfill gas on a quarterly basis. Each Draeger/RAE tube test result (after conversion to TRS content) and the quarterly laboratory analysis in Part 31a shall be compared to the Peak TRS Limit in Part 18c. The concentration of TRS in collected landfill gas shall not exceed a peak of 410 ppmv, and on a rolling quarterly basis, the Permit Holder shall determine the annual average TRS content for comparison to the Annual Average TRS Limit of 350 ppmv.

November 22, 2016 Compliance Agreement

Per Condition 2.1 of the Compliance Agreement, H2S sampling using Draeger/RAE tubes shall be twice per week. Analytical sampling shall remain on quarterly intervals.

REDWOOD LANDFILL, INC.
Novato, CA

Total Reduced Sulfur Content - Quarter 3 - 2022

Date	H_2S Reading (ppm_v)	Calculated TRS (ppm_v)
7/5/22 14:00	632.4	641.9
7/7/22 7:45	644.7	654.4
7/12/22 12:40	501.9	509.4
7/13/22 8:40	561.8	570.2
7/19/22 8:30	600.0	609.0
7/22/22 13:30	571.0	579.5
7/25/22 15:00	626.6	636.0
7/26/22 7:55	672.7	682.7
8/2/22 13:20	413.1	419.3
8/5/22 9:20	568.5	577.1
8/8/22 14:45	634.3	643.8
8/10/22 11:20	565.6	574.0
8/16/22 11:30	730.0	741.0
8/16/22*	111.5	116.0
8/17/22 13:45	700.0	710.5
8/24/22 8:30	558.9	567.3
8/26/22 15:15	385.3	391.1
8/31/22 16:30	551.9	560.2
9/2/22 13:00	690.2	700.5
9/6/22 15:30	700.0	710.5
9/9/22 7:40	657.5	667.3
9/13/22 14:10	649.9	659.7
9/14/22 6:45	700.0	710.5
9/21/22 8:15	649.1	658.9
9/22/22 9:05	720.5	731.3
9/28/22 7:25	638.3	647.9
9/29/22 8:30	700.0	710.5
Quarterly Average:	597.6	606.7

ppm_v= parts per million by volume TRS= total reduced sulfur * Quarterly LFG lab analysis

Title V Permit Condition Number 19867 Part 31b

As of March 31, 2005, the Permit Holder shall analyze the landfill gas for H2S concentration on a weekly basis. The landfill gas sample shall be drawn from the main landfill gas header using a Draeger/RAE tube. The TRS content of the landfill gas shall be calculated using the average ratio of TRS/H2S for this site according to the following equation: TRS=1.015*H2S measured by the Draeger/RAE Tube. The Permit Holder shall maintain records of all Draeger/RAE tube test dates and test results and shall summarize the average H2S concentrations and the calculated TRS content of the landfill gas on a quarterly basis. Each Draeger/RAE tube test result (after conversion to TRS content) and the quarterly laboratory analysis in Part 31a shall be compared to the Peak TRS Limit in Part 18c. The concentration of TRS in collected landfill gas shall not exceed a peak of 410 ppmv, and on a rolling quarterly basis, the Permit Holder shall determine the annual average TRS content for comparison to the Annual Average TRS Limit of 350 ppmv.

November 22, 2016 Compliance Agreement

Per Condition 2.1 of the Compliance Agreement, H2S sampling using Draeger/RAE tubes shall be twice per week. Analytical sampling shall remain on quarterly intervals.

REDWOOD LANDFILL, INC.
Novato, CA

Total Reduced Sulfur Content - Quarter 4 - 2022

Date	H_2S Reading (ppm_v)	Calculated TRS (ppm_v)
10/6/22 11:45	642.4	652.1
10/7/22 7:25	700.0	710.5
10/12/22 10:30	700.0	710.5
10/14/22 6:55	700.0	710.5
10/18/22 10:05	642.7	652.3
10/19/22 8:20	744.2	755.3
10/25/22 10:54	542.4	550.6
10/27/22 8:28	600.0	609.0
Quarterly Average:	TBD	TBD

H_2S= hydrogen sulfide

ppm_v= parts per million by volume

TRS= total reduced sulfur

Title V Permit Condition Number 19867 Part 31b

As of March 31, 2005, the Permit Holder shall analyze the landfill gas for H2S concentration on a weekly basis. The landfill gas sample shall be drawn from the main landfill gas header using a Draeger/RAE tube. The TRS content of the landfill gas shall be calculated using the average ratio of TRS/H2S for this site according to the following equation: TRS=1.015*H2S measured by the Draeger/RAE Tube. The Permit Holder shall maintain records of all Draeger/RAE tube test dates and test results and shall summarize the average H2S concentrations and the calculated TRS content of the landfill gas on a quarterly basis. Each Draeger/RAE tube test result (after conversion to TRS content) and the quarterly laboratory analysis in Part 31a shall be compared to the Peak TRS Limit in Part 18c. The concentration of TRS in collected landfill gas shall not exceed a peak of 410 ppmv, and on a rolling quarterly basis, the Permit Holder shall determine the annual average TRS content for comparison to the Annual Average TRS Limit of 350 ppmv.

November 22, 2016 Compliance Agreement

Per Condition 2.1 of the Compliance Agreement, H2S sampling using Draeger/RAE tubes shall be twice per week. Analytical sampling shall remain on quarterly intervals.

REDWOOD LANDFILL, INC.
Novato, CA

Rolling Quarterly Average Total Reduced Sulfur Content

Year	Quarter	Calculated TRS (ppm_v)	Rolling Quarterly Average Annual TRS (ppm_v)	Quarterly SO_2 Emission Factor (lb/MMscf)
2021	4	696	810.4	117.55
2022	1	643	681.7	108.71
2022	2	540	599.7	91.19
2022	3	581	615.1	98.21
2022	4*	TBD	TBD	TBD

*Quarterly results will be calculated at the end of the quarter.
H_2S = hydrogen sulfide
ppm_v = parts per million by volume
TRS = total reduced sulfur
TBD = To Be Determined.
Quarterly SO2 Emission Factor based on TRS concentrations to Flares A-51 and A-60 only.

Title V Permit Condition Number 19867 Part 31b
As of March 31, 2005, the Permit Holder shall analyze the landfill gas for H2S concentration on a weekly basis. The landfill gas sample shall be drawn from the main landfill gas header using a Draeger/RAE tube. The TRS content of the landfill gas shall be calculated using the average ratio of TRS/H2S for this site according to the following equation: TRS=1.015*H2S measured by the Draeger/RAE Tube. The Permit Holder shall maintain records of all Draeger/RAE tube test dates and test results and shall summarize the average H2S concentrations and the calculated TRS content of the landfill gas on a quarterly basis. Each Draeger/RAE tube test result (after conversion to TRS content) and the quarterly laboratory analysis in Part 31a shall be compared to the Peak TRS Limit in Part 18c. On a rolling quarterly basis, the Permit Holder shall determine the annual average TRS content for comparison to the Annual Average TRS Limit of 350 ppmv.

SO2 EF = Calculated TRS (ppmv) * 0.0283168 m3/scf * 1000 L/m3 * 1 mol/22.4 L * 64.06 g/mol * 1 lb/453.592 g * 273.15 K / 288.7 K

APPENDIX N

PERFORMANCE TEST REPORT

Redwood Landfill, Inc.

BAAQMD Facility # 1179

Annual Compliance Emissions Test Report #22008

Landfill Gas Flare A-51

Located at:
Redwood Landfill, Inc.
8950 Redwood Highway
Novato, CA 94948

Prepared for:
SCS Engineers
3117 Fite Circle Suite 108
Sacramento, CA 95827
Attn: Maria Bowen
mbowen@scsengineers.com

For Submittal to:
Bay Area Air Quality Management District
375 Beale Street, Suite 600
San Francisco, CA 94105
Attn: Gloria Espena and Marco Hernandez
gespena@baaqmd.gov / mhernandez@baaqmd.gov
sourcetest@baaqmd.gov

Testing Performed on:
January 12th, 2022

Final Report Submitted on:
March 11th, 2022

Performed and Reported by:
Blue Sky Environmental, Inc.
624 San Gabriel Avenue
Albany, CA 94706
bluesky@blueskyenvironmental.com
Office (510) 525-1261 / Cell (510) 508-3469

REVIEW AND CERTIFICATION

Team Leader:

The work performed herein was conducted under my supervision, and I certify that:

a) the details and results contained within this report are to the best of my knowledge an authentic and accurate representation of the test program,

b) that the sampling and analytical procedures and data presented in the report are authentic and accurate,

c) that all testing details and conclusions are accurate and valid, and

d) that the production rate and/or heat input rate during the source test are reported accurately.

If this report is submitted for compliance purposes, it should only be reproduced in its entirety. If there are any questions concerning this report, please contact me at (810) 923-3181.

Jeramie Richardson

Project Manager

Blue Sky Environmental, Inc.

TABLE of CONTENTS

SECTION 1. INTRODUCTION

1.1. Summary

Blue Sky Environmental, Inc. was contracted by SCS Engineers to perform emissions testing for Waste Management of Alameda County, Inc. (WMAC) at the Redwood Landfill Inc. (RLI) in Novato, California. Testing was conducted to demonstrate that Landfill Gas Flare A-51 is operating in compliance with the Bay Area Air Quality Management District (BAAQMD) Permit to Operate for Facility 1179. Results of the test program are presented in this report. The source test information is summarized in Table 1-1. Test results derived from the source test are summarized in Table 1-2. Results for individual test runs are provided in Appendix A. The flare met all compliance emission criteria.

Table 1-1. Source Test Information

Test Location:	Redwood Landfill Inc. 8950 Redwood Highway, Novato, CA 94948
Source Contact:	Maria Bowen, SCS Engineers (619) 455-9518
Source Tested:	Flare A-51 – 90 MMBtu/hr industrial landfill gas flare
Source Test Date:	January 12th, 2022
Test Objective:	Determine compliance with conditions 19867 and 25634 of the Bay Area Air Quality Management District (BAAQMD) permit to operate for Facility #1179
Test Performed by:	Blue Sky Environmental, Inc 624 San Gabriel Avenue, Albany, CA 94706 Jeramie Richardson (810) 923-1198 jrichardson@blueskyenvironmental.com
Test Parameters:	Landfill Gas Fuel Analysis O_2, N_2, CO_2, BTU, THC, CH_4, NMOC, HHV, F-Factor, sulfur, toxic air contaminants and volumetric flow rate Flare Emissions THC, CH_4, NMOC, NO_X, CO, O_2, SO_2, volumetric flow rate and temperature

Table 1-2. Compliance Summary

Emission Parameter	Average Results (Flare A-51)	Permit Limit	Compliance Status
NO_X, ppmvd @ 15% O_2	12.4	15	In Compliance
NO_X, lb/MMBtu	0.051	0.06	In Compliance
CO, ppmvd @ 15% O_2	33.7	82	In Compliance
CO, lb/MMBtu	0.0834	0.20	In Compliance
NMOC, ppmvd @ 3% O_2 as hexane (C_6H_{14})	0.30	360	In Compliance
NMOC, ppmvd @ 3% O_2 as CH_4	1.8	30*	In Compliance
NMOC Destruction Efficiency, %	99.314%	>98%*	In Compliance
CH_4 Destruction Efficiency, %	99.922%	>99%	In Compliance
THC Destruction Efficiency, %	99.915%	>98%	In Compliance
Total Reduced Sulfurs in Fuel, ppmv	1,034	410	Exceeds Limit[1]
SO_2, ppmvd	59.9	300	In Compliance
SO_2, lb/MMBtu	0.366	1.69	In Compliance

**>98% NMOC Destruction Efficiency or 30 ppmvd NMOC as CH_4 @ 3% O_2*

[1]On October 6, 2016, Redwood Landfill proposed a permit modification to increase the peak limit. This modification is still under review by BAAQMD. Per the November 2016 Compliance Agreement between Redwood Landfill and BAAQMD, enforcement actions are not expected if the Agreement is complied with.

SECTION 2. SOURCE TEST PROGRAM

2.1. Overview

This annual source test was performed to demonstrate that landfill gas Flare A-51 is operating in compliance with conditions 19867 and 25634 of the Bay Area Air Quality Management District (BAAQMD) Title V permit to operate for Facility #1179.

2.2. Pollutants Tested

The following U.S. Environmental Protection Agency (EPA), Bay Area Air Quality Management District (BAAQMD) and ASTM International sampling and analytical methods were used:

EPA Method 1	Sample and Traverse Point Determination
EPA Method 3A	O_2 and CO_2, Stack Gas Molecular Weight
EPA Method 10	CO
EPA Method 7E	NO_X and NO_2 Converter Check
EPA Method 4	Moisture Calculation
EPA Method 19	Flow Rate Calculation, DSCFM
EPA Method 25C	Analysis of landfill gas for TNMOC
EPA Method ALT-097	THC, CH_4 and VOC Emissions
ASTM D-1945/3588	Fuel Analysis for BTU, F-Factors and Fixed Gases
ASTM D-5504	Sulfur Species, Hydrogen Sulfide (H_2S) and TRS
EPA Method TO-15	Toxic Organic Compounds
BAAQMD ST-19A	SO_2 calculated from TRS

2.3. Test Date(s)

Testing was conducted on January 12th, 2022.

2.4. Sampling and Observing Personnel

Testing was conducted by Jeramie Richardson and Wesley Alder, representing Blue Sky Environmental, Inc.

John Silva of SCS Engineers and Michael Chan of Waste Management were on-site to oversee flare operations and assist in coordinating testing and the collection of process data to verify the accuracy of digitally recorded data collected during testing.

BAAQMD was notified of the scheduled source test in a source test protocol submitted by SCS Engineers on behalf of Waste Management on December 14th, 2021. A Source Test Protocol acknowledgement (NST #7101) was received on December 15th, 2021; however, no agency observers from BAAQMD were present during the test program. A copy of the source test protocol and email correspondence are provided in Appendix I.

2.5. Source/Process Description

Redwood Landfill Inc. is a multi-material landfill with a gas collection system that is abated by two industrial landfill gas enclosed flares. Flare A-51 consists of a 90 MMBtu/hr multiple nozzle burner manufactured by Perennial Energy. The Flare shell is approximately 45 feet high and 136 inches in diameter.

2.6. Source Operating Conditions

The flare was operated on landfill gas under normal operating conditions during testing with no condensate injection. The average exhaust temperature at normal operating condition was 1,509 °F. The operating exhaust temperature, and flow records are provided in Appendix F.

The fuel volumetric flow rate was continuously measured and recorded by the LFG flow meter at 2-minute intervals and averaged 771 SCFM.

Landfill gas samples collected at the head of the flare had an average methane content of 47.8%. Oxygen content of the fuel samples ranges from 15.3% to 15.5%.

SECTION 3. SAMPLING AND ANALYSIS PROCEDURES

3.1. Port Location

Sampling was conducted at the 136-inch diameter (ID) exhaust stack through ports that were accessed with a 40-foot boom lift. The four-inch flange ports on the flare were located approximately 35 feet above grade, approximately four stack diameters downstream from the burners and one stack diameter upstream from the exhaust.

3.2. Point Description/Labeling – Ports/Stack

Blue Sky Environmental conducted an eight-point traverse at each port (90° apart) to check for the presence of cyclonic flow. O_2 stratification was greater than 10%; therefore, subsequent CEM sampling was conducted using all traverse points. The traverse points for the 136-inch diameter stack with 4-inch ports were 4.4, 14.3, 26.4, 43.9, 92.1, 109.6, 121.7 and 131.6 inches.

3.3. Sample Train Description

Sampling system diagrams are provided in Appendix H. Additional descriptive information is included in the following section.

3.4. Sampling Procedure Description

Three consecutive thirty-minute gaseous emissions tests were performed for oxides of nitrogen (NO_X), nitric oxide (NO), carbon monoxide (CO), carbon dioxide (CO_2), oxygen (O_2), methane (CH_4) and non-methane organic compounds (NMOC) at the flare exhaust stack. The sampling system was checked for leaks before the start of the testing, by plugging the sample probe and observing the sample rotameter flow drop to zero. Instrument linearity and system bias were checked. The system response time for each analyzer was recorded. The temperatures of the heated sample line between the probe and sample conditioner/condenser, and the condenser exhaust temperatures were maintained within limits during each test run.

Analyzer external calibrations were performed before and after each run using EPA protocol certified gas standards. Calibration gases were introduced to the sample manifold at the same flow rate as the sample. Any drift or bias was corrected using EPA Method 7E. A NOx analyzer converter efficiency check was performed before the first test run and achieved an efficiency greater than 90%.

Concurrent with the exhaust sampling, Blue Sky Environmental collected a total of three integrated samples of landfill gas for off-site analysis by Atmospheric Analysis & Consulting, Inc., in Ventura, California. The samples were collected in 6-liter SUMMA canisters and analyzed for NMOC, HHV, F-factor, fixed gases, sulfur species (including H_2S and TRS) and toxic air contaminants. The gas was controlled with a rotameter to collect a 30-minute integrated sample

The sampling and analysis methods are described below:

EPA Method 1 – Sample and Velocity Traverses for Stationary Sources
This method is used to determine the duct or stack area and appropriate traverse points that represent equal areas of the duct for sampling and velocity measurements.

EPA Method 3A – Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)

This method is used to measure oxygen and carbon dioxide in stationary source emissions using a continuous instrumental analyzer to determine the molecular weight of the stack gas. A continuous representative gas sample is extracted from the sampling point and conditioned to remove water and particulate material. A small portion of the sample is passed through a fuel cell type paramagnetic oxygen analyzer which measures the electrical current generated by the oxidation reaction at the gas/fuel cell interface. Carbon dioxide is determined by passing the sample through a non-dispersive infrared analyzer (NDIR) tuned to a frequency at which carbon dioxide absorbs infrared radiation.

EPA Method 7E – Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)

This method is used to measure nitrogen oxides in stationary source emissions using a continuous instrumental analyzer. A continuous representative gas sample is extracted from the sampling point and conditioned to remove water and particulate material. Nitric oxide is determined by passing the sample through a chemiluminescent analyzer. The chemiluminescent process is based on the light given off when nitric oxide and ozone react. Nitrogen dioxide (NO_2) concentrations are determined by passing the sample through a catalyst which reduces the NO_2 to NO. The total oxides of nitrogen concentration (NO_2 + NO) is then determined by chemiluminescence.

Section 16.2.2 of the method is used to determine the NO_X analyzer NO_2 to NO conversion efficiency.

EPA Method 10 – Determination of Carbon Monoxide Emissions from Stationary Sources

This method is used to measure carbon monoxide in stationary source emissions using a continuous instrumental analyzer. A continuous representative gas sample is extracted from the sampling point and conditioned to remove water and particulate material. Carbon monoxide is determined by passing the sample through a non-dispersive infrared analyzer (NDIR) tuned to a frequency at which carbon monoxide absorbs infrared radiation.

EPA Methods 3A, 7E and 10 are all continuous monitoring techniques using instrumental analyzers. Sampling is performed by extracting exhaust flue gas from the stack, conditioning the sample, and analyzing it by continuous monitoring gas analyzers in a continuing emissions monitoring (CEM) test van. The sampling system consists of a stainless-steel sample probe, Teflon sample line, glass-fiber particulate filter, and glass moisture-knockout condensers in ice, followed by thermoelectric coolers (optional), Teflon sample transfer tubing, a diaphragm pump, and a stainless steel/Teflon manifold and flow control/delivery system. A constant sample and calibration gas supply pressure of 5 psi is provided to each analyzer to avoid pressure variable response differences. The entire sampling system is leak checked prior to and at the end of the sampling program.

The sampling and analytical system is checked for linearity with zero, mid (40-60%) and high span (80-100%) calibrations and is checked for system bias at the beginning and end of each run. System bias is determined by introducing calibration gas to the probe and pulling it through the entire sampling system. Individual test run calibrations use the calibration gas that most closely matches the stack gas effluent. All calibrations during testing are performed externally to incorporate any system bias that may exist. Sampling system bias, zero and calibration drift values are determined for each test. EPA Methods 3A, 7E and 10 all defer to EPA Method 7E

for the calculations of effluent concentration, span, calibration gas, analyzer calibration error (linearity), sampling system bias, zero drift, calibration drift and response time.

EPA Method 4 – Determination of Moisture Content in Stack Gas

This method is used to determine the moisture content of stack gas. The sample is extracted and condensed in Greenburg-Smith impingers immersed in an ice bath and in a final impinger silica gel trap. The moisture is condensed in a solution of de-ionized water, or solutions of another type of sampling train if the moisture is being determined as part of another sampling method, such as EPA Method 5, SCAQMD Method 201.7 or BAAQMD ST-32. The moisture gain in the impinger solutions and silica gel is determined volumetrically and gravimetrically respectively.

QA/QC procedures require that a minimum of 21 cubic feet of sample is pulled using a leak tight pump. The sample volume is measured with a calibrated dry gas meter. The impingers are immersed in an ice bath to maintain a gas outlet temperature of less than 68°F. Pre-test leak checks are performed for each run using a minimum 15 inches of mercury vacuum. Post-test leak checks are performed at the highest sample vacuum or greater. The leak test is acceptable if the leak rate is less than 0.02 cubic feet per minute or 4% of the average sampling rate, whichever is less. If the final leak check exceeds the criteria, either the volume is corrected based on the leak rate or the run is voided and repeated.

EPA Method 19 – Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxide Emission Rates

This method is used to determine stack gas volumetric flow rates using oxygen-based F-factors. F-factors are ratios of combustion gas volumes to heat inputs. The heating value of the fuel in Btu per cubic foot is determined from analysis of fuel gas samples using ASTM D-1946/1945 gas chromatography analytical procedures. The total cubic feet per hour of fuel multiplied times the Btu/cf provides million Btu per hour (MMBtu) heat input. The heat input in MMBtu/hr is multiplied by the F-factor (DSCF/MMBtu) and adjusted for the measured oxygen content of the source to determine volumetric flow rate. The flow rates are used to determine emission rates.

EPA Method 25C – Determination of Nonmethane Organic Compounds (NMOC) in Landfill Gas

This method is used to sample and measure NMOC in landfill gases. The method is written for evacuated tank sampling but is adaptable to Tedlar bag sampling procedures. The sampling equipment consists of a stainless steel or glass lined probe with a short stainless-steel or Teflon transfer line to a Tedlar bag housed in a sealed chamber. The chamber is evacuated by pump at a prescribed rate for the test duration and the Tedlar bag capacity, so the sample is integrated over the test period. The sample is injected into a GC column where the methane and CO_2 are flushed through and removed then the NMOC (ROC) fraction is oxidized to form CO_2 then reduced to methane and analyzed.

EPA Method ALT-097 Determination of Total Gaseous Organic Concentration using a Flame Ionization Analyzer

This is an acceptable alternative to EPA Method 25A for the determination of total hydrocarbons, methane, and non-methane organic compounds in stationary source emissions. The test uses TECO 55C GC/FID methane/non-methane analyzer. Heated Teflon sample gas transfer lines are used to provide a continuous sample to the analyzer. Heated lines are used to avoid moisture or hydrocarbon condensation.

The sampling and analytical system is checked for linearity with zero, low (25-35%), mid (45-55%), and high (80-90%) span calibrations. All calibrations during testing are performed

externally to incorporate any system bias that may exist. A system linearity check is performed prior to testing and during testing and calibration drift checks are performed after every run. All data is corrected according to EPA Method 25A.

EPA Compendium Method TO-15 – Determination of Toxic Organic Compounds in Ambient Air

This method is used to measure volatile organic compounds that are included in the hazardous air pollutants (HAPs) listed in Title III of the Clean Air Act Amendments of 1990 by GC/MS (gas chromatography/mass spectroscopy). Samples are collected in pre-evacuated 6-Liter SUMMA canisters with pre-set flow controllers set to integrate over the desired test duration. The SUMMA® passivated canisters allow holding times up to 14 days for the TO-15 Method list of volatile organics. The sample gas is drawn by the canister vacuum through a micro-filter, pre-set orifice flow controller and on/off valve into the canister. The canister vacuum is monitored with a vacuum gauge to verify sample collection. The flow controller consisted of capillary orifice tubing designed to sample for a pre-set duration of 0.75hrs.

ASTM D-1945 – Analysis of Natural Gas by Gas Chromatography

This method is used to measure fixed gases (such as oxygen, nitrogen, carbon monoxide, and carbon dioxide) and methane by gas chromatography (GC/TCD). Light hydrocarbons, including C1-C7, are analyzed by GC/FID.

ASTM D-3588 – Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels

This method uses the molar composition of gaseous fuel determined from Method ASTM D-1945 to calculate the heating value and F-factor.

ASTM D-5504 – Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence

This method is used for the determination of speciated volatile sulfur-containing compounds in high methane content gaseous fuels by gas chromatography. Sulfur compounds are processed using a flame ionization detector (GC/FID). The products are then analyzed with a sulfur chemiluminescence detector (GC/SCD). Samples may be collected in Tedlar bags and analyzed within 24 hours or in Silco SUMMA canisters and analyzed 7 days.

BAAQMD Source Test Procedure ST-19 – Sulfur Dioxide, Continuous Sampling

This method is used to quantify sulfur dioxide emissions and determine compliance with Regulations 9-1-302, 9-1-304 through 310, and 10-1-301.

3.5. Instrumentation and Analytical Procedures

The following continuous emissions analyzers were used:

Instrumentation	Parameter	Principle
TECO Model 42C	$NO/NO_2/NO_X$	Chemiluminescence
TECO Model 48C	CO	Gas Filter Correlation (GFC)/IR
TECO Model 55C	CH_4/NMOC/THC	Flame Ionization (FID)
Servomex Model 1440	CO_2	Infrared (IR)
Servomex Model 1440	O_2	Paramagnetic

3.6. System Performance Criteria

The analyzer data recording system consists of a Honeywell DPR300 strip chart recorder supported by a data acquisition system (DAS). The instrument response is recorded on strip charts and DAS. The averages are corrected for drift using BAAQMD and EPA Method 7E equations

Instrument Linearity	≤2% Full Scale
Instrument Bias	≤5% Full Scale
System Response Time	≤± 2 minutes
NO_X Converter Efficiency *(EPA Method 7E)*	≥ 90%
Instrument Zero Drift	≤± 3% Full Scale
Instrument Span Drift	≤± 3% Full Scale

3.7. Comments: Limitations and Data Qualifications

This source test was performed in accordance with the protocol submitted to BAAQMD. The total reduced sulfur content of the landfill gas exceeded the permit limit. On October 6, 2016, Redwood Landfill proposed a permit modification to increase the peak limit for this compound. This modification is still under review by BAAQMD. Per the November 2016 Compliance Agreement between Redwood Landfill and BAAQMD, enforcement actions are not expected if the Agreement is complied with.

The measured emissions from Flare A-51 met the permit-required limits for all compounds except isopropyl alcohol. It was suspected that these results were an anomaly; therefore, Blue Sky Environmental returned to the site on March 4, 2022 to collect three additional fuel samples for analysis by EPA Method TO-15. Laboratory reports for both tests are included in Appendix C.

Blue Sky Environmental has reviewed this report for accuracy and concluded that the test procedures were followed and accurately described and documented. The review included the following items:

Review of the general text
Review of calculations
Review of CEMS data
Review of supporting documentation

The services described in this report were performed in a manner consistent with the generally accepted professional testing principles and practices. No other warranty, expressed or implied, is made. These services were performed in a manner consistent with our agreement with our client. The report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions contained in this report pertain to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and operating parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations, subsequent to this, and do not warranty the accuracy of information supplied by others.

SECTION 4. APPENDICES

A.	**Tabulated Results**
B.	**Calculations**
C.	**Laboratory Reports**
D.	**Field Data Sheets**
E.	**Strip Chart Records**
F.	**Process Information**
G.	**QC Calibration Certificates and Quality Assurance Records**
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A
Tabulated Results

TABLE #1

Redwood Landfill
Flare A-51
1,509°F

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Date	1/12/22	1/12/22	1/12/22		
Test Time	1250-1337	1354-1439	1455-1540		
Standard Temperature, °F	70	70	70		
Process Parameters:					
Flare Temperature, °F	1,508	1,510	1,509	1,509	>1,400
Fuel:					
Fuel Flow Rate, SCFM	762	761	792	771	
Fuel Heat Input, MMBtu/hr	21.2	21.6	22.3	21.7	
Total Reduced Sulfurs as H_2S, ppmv in Fuel	907	1,037	1,159	1,034	410
Stack Gas:					
Exhaust Flow Rate, DSCFM *(EPA Method 19)*	13,068	13,487	13,379	13,311	
Oxygen (O_2), % volume dry	15.45	15.52	15.30	15.43	
Carbon Dioxide (CO_2), % volume dry	4.98	4.99	5.15	5.04	
Water Vapor (H_2O), % volume *(EPA Method 4)*	6.04	6.35	6.44	6.28	
$NO/NO_2/NO_X$ Emissions:					
NO, ppmvd	7.5	6.2	6.0	6.6	
NO_2, ppmvd	3.9	5.2	5.8	5.0	
NO_2/NO Ratio	0.52	0.83	0.97	0.77	
NOx, ppmvd	11.4	11.4	11.8	11.5	
NOx, ppmvd @ 15% O_2	12.4	12.5	12.5	12.4	15
NOx, lb/hr	1.06	1.09	1.13	1.10	
NOx, lb/MMBtu	0.050	0.051	0.051	0.051	0.06
CO Emissions:					
CO, ppmvd	31.8	30.0	31.9	31.3	
CO, ppmvd @ 15% O_2	34.5	32.9	33.7	33.7	82
CO, lb/hr	1.81	1.76	1.86	1.81	
CO, lb/MMBtu	0.0855	0.0814	0.0833	0.0834	0.20
SO_2 Emissions:					
SO_2, ppmvd *(calculated)*	52.9	58.5	68.6	59.9	300
SO_2, ppmvd @ 15% O_2	57.3	64.1	72.3	64.6	
SO_2, ppmvd @ 3% O_2	173.8	194.6	219.5	195.9	
SO_2, lb/hr	6.87	7.85	9.13	7.95	
SO_2, lb/MMBtu	0.325	0.363	0.410	0.366	1.69
THC Emissions (reported as CH_4):					
THC, ppmv wet *(EPA Method ALT-097)*	24.18	22.09	20.11	22.13	
THC, ppmvd	25.74	23.59	21.49	23.61	
THC, lb/hr	0.835	0.790	0.714	0.779	
Methane (CH_4) Emissions:					
CH_4, ppmvd *(EPA Method ALT-097)*	23.53	21.55	19.63	21.57	
CH_4, lb/hr	0.763	0.722	0.652	0.712	
NMOC Emissions (reported as CH_4):					
NMOC, ppmvd *(EPA Method ALT-097)*	0.65	0.54	0.47	0.55	
NMOC, lb/hr	0.021	0.018	0.016	0.018	
NMOC, ppmvd as hexane (C_6H_{14}) @ 3% O_2	0.36	0.30	0.25	0.30	360
NMOC, ppmvd @ 3% O_2 as CH_4	2.1	1.8	1.5	1.8	30*
Inlet Hydrocarbons (reported as CH_4):					
Inlet NMOC, ppmvd *(EPA Method 25C)*	1,403	1,388	1,390	1,394	
Inlet NMOC, lb/hr	2.65	2.62	2.73	2.67	
NMOC Destruction Efficiency, %	99.206%	99.313%	99.423%	99.314%	>98%*
Inlet CH_4, % *(ASTM D-1945)*	472,000	483,000	478,000	477,667	
Inlet CH_4, lb/hr	892.5	912.2	939.7	915	
CH_4 Destruction Efficiency, %	99.914%	99.921%	99.931%	99.922%	>99%
Inlet THC (TOC), %	473,403	484,388	479,390	479,060	
Inlet THC (TOC), lb/hr	895.2	914.8	942.4	917.5	
THC (TOC) Destruction Efficiency, %	99.907%	99.914%	99.924%	99.915%	>98%

* NMOC permit limits are 30 ppmvd @ 3% O_2 or DE >98%

WHERE,

ppmvd = parts per million concentration by volume expressed on a dry gas basis
lb/hr = pound per hour emission rate
Tstd. = standard temperature (°R = °F+460)
MW = molecular weight
DSCFM = dry standard cubic feet per minute
NO_X = oxides of nitrogen, reported as NO_2 (MW = 46)
CO = carbon monoxide (MW = 28)
TOC = THC = total organic compounds as CH_4, including CH_4 (MW = 16)
THC = total hydrocarbons, reported as CH_4 (MW = 16)
NMOC = total non-methane organic compounds, reported as CH_4 (MW = 16)
SO_2 = Sulfur dioxide (MW = 64.1)

CALCULATIONS,

ppm @ 15% O_2 = ppm · 5.9 / (20.9 - %O_2)
ppm @ 3% O_2 = ppm · 17.9 / (20.9 - %O_2)
lb/hr = ppm · 8.223 E-05 · DSCFM · MW / Tstd. °R
lb/MMBtu = lb/hr / fuel heat input, MMBtu/hr
Destruction Efficiency (DE) = (inlet, lb/hr- outlet, lb/hr) / inlet, lb/hr
NMOC, ppm as CH_4 = THC - CH_4
NMOC, ppm as hexane = NMOC, ppm as CH_4 / 6
< Value = 2% of Analyzer Range

TABLE # 2

Landfill Gas Characterization

Redwood Landfill

Flare A-51

Parameter		Run 1	Run 2	Run 3	Average Results	Permit Limits
Sample ID		RLI LFG 1	RLI LFG 2	RLI LFG 3		
Sample Date		1/12/22	1/12/22	1/12/22		
Acrylonitrile	ppb	<162	<161	<177	<167	300
Benzene	ppb	1,120	1,080	1,080	1,093	1,500
Benzyl Chloride (Chloromethylbenzene)	ppb	<40.5	<40.4	<44.3	<41.7	500
Carbon Tetrachloride	ppb	<40.5	<40.4	<44.3	<41.7	200
Chlorobenzene	ppb	<40.5	<40.4	<44.3	<41.7	200
Chloroethane	ppb	<40.5	253	<44.3	<112.6	500
Chloroform	ppb	<40.5	<40.4	<44.3	<41.7	200
1,1 Dichloroethane (Ethylidene Dichloride)	ppb	<40.5	<40.4	<44.3	<41.7	500
1,1 Dichloroethene (Vinylidene Chloride)	ppb	<40.5	<40.4	<44.3	<41.7	500
1,2 Dichloroethane (Ethylene Dichloride)	ppb	444	437	463	448	200
1,4 Dichlorobenzene	ppb	180	166	193	179.7	1,000
Ethylbenzene	ppb	3,830	3,820	3,950	3,867	4,000
Ethlyene Dibromide (1,2 Dibromoethane)	ppb	<40.5	<40.4	<44.3	<41.7	200
Hexane	ppb	1430	1490	1520	1480	2,000
Isopropyl Alcohol (IPA)*	ppb	8,190	10,100	8,640	8,977	10,000
Methyl Alcohol (Methanol)	ppb	32,100	31,500	28,000	30,533	300,000
2-Butanone (Methyl Ethyl Ketone) (MEK)	ppb	8,440	8,140	7,000	7,860	15,000
Methylene Chloride	ppb	192	190	<88.6	<156.9	1,000
Methyl tert Butyl Ether (MTBE)	ppb	<40.5	<40.4	<44.3	<41.7	500
Perchloroethylene (Tetrachloroethane)	ppb	228	243	244	238	1,000
Styrene	ppb	275	274	286	278	500
Toluene	ppb	3,870	3,940	3,350	3,720	20,000
1,1,1 Trichlororethane	ppb	<40.5	<40.4	<44.3	<41.7	200
1,1,2,2 Tetrachloroethane	ppb	<40.5	<40.4	<44.3	<41.7	200
Trichloroethylene (Trichloroethane)	ppb	<40.5	<40.4	<44.3	<41.7	500
Vinyl Chloride	ppb	<40.5	<40.4	<44.3	<41.7	2,000
Xylenes	ppb	8,430	8,310	8,650	8,463	20,000
Carbon Disulfide	ppm	0.182	0.121	0.157	0.153	
Carbonyl Sulfide (COS/SO_2)	ppm	1.66	1.85	0.935	1.48	
Dimethyl Sulfide	ppm	0.993	1.094	0.931	1.006	
Ethyl Mercaptan	ppm	0.229	0.174	0.188	0.197	
Methyl Mercaptan	ppm	1.67	1.58	1.53	1.59	
Hydrogen Sulfide	ppm	899	1,029	1,152	1,027	
Total Reduced Sulfurs as H_2S	ppm	907	1,037	1,159	1,034	410

*The original analysis for IPA from January 12, 2022 can be found in the Appendix C. The second analysis for IPA show that the flare/site are in compliance with the permit thresholds and the additional samples occurred March 4, 2022

Redwood Landfill, Inc

BAAQMD Facility # A1179

Annual Compliance Emissions Test Report #22192

Landfill Gas Flare A-60(A) and Gas Treatment System S-71

Located at:
Redwood Landfill
8950 Redwood Highway
Novato, California 94948

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Testing Performed on:
July 13, 2022

Final Report Submitted on:
September 11, 2022

Performed and Reported by:
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REVIEW AND CERTIFICATION

Team Leader:

The work performed herein was conducted under my supervision, and I certify that:

a) the details and results contained within this report are to the best of my knowledge an authentic and accurate representation of the test program,

b) that the sampling and analytical procedures and data presented in the report are authentic and accurate,

c) that all testing details and conclusions are accurate and valid, and

d) that the production rate and/or heat input rate during the source test are reported accurately.

If this report is submitted for compliance purposes it should only be reproduced in its entirety. If there are any questions concerning this report, please contact me at (810) 923-3181.

Jeramie Richardson

Project Manager

Blue Sky Environmental, Inc.

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SECTION 1. INTRODUCTION

1.1. Summary

Blue Sky Environmental, Inc was contracted by Waste Management to perform compliance emissions testing at Redwood Landfill, Inc. located in Novato, California. Testing was conducted to demonstrate that the facility's Landfill Gas Flare A-60 (A) and Willexa Gas Treatment and Desorption System (S-71) are operating in compliance with their associated Bay Area Air Quality Management District's (BAAQMD) air contaminant discharge permit. The source test information is summarized in Table 1.1. Test results derived from the source test are summarized in Tables 1.2 and 1.3. Results for individual test runs are included in Appendix A.

Table 1.1 Source Test Information

Test Location:	Redwood Landfill, Inc. 8950 Redwood Highway, Novato, California 94948
Source Contact:	Michael Chan (510) 613-2852
Source Tested:	Enclosed Landfill Gas Flare A-60 (A) and LFG Treatment & Desorption System (S-71)
Source Test Dates:	July 12 and 13, 2022
Test Objective:	Determine compliance with Bay Area Air Quality Management District (BAAQMD) Title V Permit A1179, condition 19867 and condition 25635, part 13, and BAAQMD Regulation 8, Rule 34
Test Performed by:	Blue Sky Environmental, Inc 624 San Gabriel Avenue, Albany, CA 94706 Jeramie Richardson (810) 923 -3181 jrichardson@blueskyenvironmental.com
Test Parameters:	**Landfill Gas** O_2, N_2, CO_2, BTU, THC, CH_4, NMOC, HHV, F-Factor, Sulfur & VOC Species, Volumetric Flow Rate, Landfill Gas **Flare Emissions** THC, CH_4, NMOC, NOx, CO, O_2, SO_2, Volumetric Flow Rate, Temperature

Table 1.2
Enclosed Landfill Gas Flare A-60 (A) Compliance Summary

Emission Parameter	Average Test Result	Permit Limit	Compliance Status
NOx, lb/MMBtu	0.0484	0.06	In Compliance
NOx, ppmvd @ 15% O_2	12.2	15	In Compliance
CO, lb/MMBtu	0.0842	0.20	In Compliance
CO, ppmvd @ 15% O_2	34.7	82	In Compliance
SO_2, ppmvd	0.86	300	In Compliance
SO_2, lb/MMBtu	0.0042	1.69	In Compliance
NMOC, ppmvd @ 3% O_2 as CH_4	<2.9	30 or	In Compliance
NMOC Destruction Efficiency, %	>98.7%	>98%	
CH_4 Destruction Efficiency %	>99.97%	>99%	In Compliance

SECTION 2. SOURCE TEST PROGRAM

2.1. Overview

This performance test was conducted to demonstrate compliance of Enclosed Landfill Gas Flare A-60 (A) with the emission limits specified in Bay Area Air Quality Management District (BAAQMD) Title V Permit A1179, Permit Condition 19867, Part 30 and Permit Condition 25636, Part 4. This testing also satisfies the compliance requirements of BAAQMD Regulation 8 Rule 34.

This report also includes results of fuel gas samples collected from the Willexa Waste Gas Treatment System S-71. There are no compliance limits associated with the results of this system.

2.2. Pollutants Tested

The following U.S. Environmental Protection Agency (EPA) and ASTM International sampling and analytical methods were used:

EPA Method 1	Sample and Velocity Traverses
EPA Method 3A	O_2, CO_2
EPA Method 10	CO
EPA Method 25A/ALT-097	THC/CH_4/NMOC
EPA Method 7E	NOx
EPA Method 6C	SO_2
EPA Method 4	Moisture
EPA Method 19	Flow Rate Calculation, DSCFM
EPA Method 25C	LFG Gas analysis for NMOC by GC
EPA Method TO-15	VOC Species
ASTM D-1945/3588	LFG Gas analysis for BTU and F-Factor
ASTM D-5504	Sulfur Species, H_2S and TRS in fuel

2.3. Test Date(s)

Testing was conducted on the Willexa Waste Gas Treatment System S-71 on July 12 . Enclosed Landfill Gas Flare A60 (A) was tested on July 13, 2022.

2.4. Sampling and Observing Personnel

Testing was performed by Jeramie Richardson, Wesley Alder, Timothy Eandi and Jeff Mesloh representing Blue Sky Environmental, Inc.

Charles Johnson (WMRE Plant Manager) and Ben Tarver and James Dutra (Operators) of Waste Management, and Jonathan Silva of SCS Engineers was present to operate and oversee flare operations and assist in coordinating testing and the collection of process data during testing.

BAAQMD was notified of the scheduled testing in a plan submitted by SCS Engineers on June 9, 2022 (revised June 17, 2022). A Source Test Protocol acknowledgement was requested and received by SCS Engineers (NST 7487 and 7488); however, no agency observers were on site during the test program. A copy of the source test protocol and agency correspondence are provided in Appendix I.

2.5. Source/Process Description

Redwood Landfill and Recycling Center is a multi-material landfill with gas collection system treated by a Willexa landfill gas treatment system-desorption process (S-71) and abated by a landfill gas enclosed flare (A-60). Flare A-60 is divided into two discreet zones, A and B. Zone A is the large zone, with 4 sampling ports that requteire unique (not perpendicular) traverses of 133-inches in length. The Willexa treatment system is designed to remove non-methane organics, sulfurs, siloxanes and chlorinated compounds from up to 1,875 SCFM of landfill gas prior to its use as a fuel in the facility's engines. The Willexa treatment system has four cycles, Depress Cycle #1, Regen Cycle, Depress Cycle #2 and Stabilization. The treated waste gas is vented at separate times through 1-inch and 12-inch diameter pipes to zone A of Flare A60.

2.6. Source Operating Conditions

The A60 (A) flare was operated on landfill gas fuel at an average of 1,582 °F during the test program. Process data collected by the facility (LFG and waste gas flow rate records) are provided in Appendix F. There was no condensate injection. LFG flow rate averaged 951 SCFM with an average methane content of 47.3%. The Willexa (S-71) was not purging to the flare during this test.

The Willexa treatment system has main four stages (cycles) consisting of multiple steps that are generally described below:

1 Depress Cycle #1 – 1" line, ~100 SCFM initially for a few minutes. This cycle removes the landfill gas from the vessel and sends it to the Flare and introduces O_2 before the regen cycle starts.

2. Regen Cycle – 12" line from Willexa to the Flare.
   a. Starts at 300 SCFM and ramps up to ~2000 SCFM ~25 minutes.
   b. Once at 2000 SCFM system then starts the heating cycle.
   c. Heats media for an extended time ~ 10-12 hours.
   d. Heat Off, while blower continues to cool down media to 170 degrees or for approximately 6 hours.
   e. Blower ramps down from ~2000 SCFM to 0 SCFM in a few minutes.
   f. Shuts down blower.
3. Depress Cycle #2 – O_2 Purge – 1" line, for ~ 30-45 minutes at ~60 SCFM.
4. Stabilization Cycle – Shuts off valve to flare to stabilize methane.

SECTION 3. SAMPLING AND ANALYSIS PROCEDURES

3.1. Port Location

The two unequal stack segments (A and B) in Flare A-60 flare present a unique sampling configuration, as the cross-section is neither round, square, rectangular, or oval. The A-60 (A) Flare sampling was conducted via adjacent flange ports, both with a 133-inch traverse path length. The 4-inch flange port was located 35 feet above grade, approximately four stack diameters downstream from the burners and one stack diameter upstream from the exhaust exit. The port was accessed by a 40-foot boom-lift.

3.2. Point Description/Labeling – Ports/Stack

Blue Sky Environmental conducted sampling at the mid-point of the Flare A60 (A) stack. The stack was traversed during all three runs. Sampling points for the 12-inch diameter stack were 4.3, 14.0, 25.8, 43.0, 90.0, 107.2, 119.0 and 128.7 inches.

The Willexa (S-71) stack was also traversed during all three runs. Sampling points for the 12-inch diameter stack were 0.5, 1.3, 2.3, 3.9, 8.1, 9.7, 10.7 and 11.6 inches.

3.3. Sample Train Description

Sampling system diagrams are provided in Appendix H. Additional descriptive information is included in the following section.

3.4. Sampling Procedure Description

Three 32-minute test runs were performed for oxides of nitrogen (NO_X), carbon monoxide (CO), carbon dioxide (CO_2), oxygen (O_2), methane (CH_4), and non-methane organic compounds (NMOC) at the flare exhaust.

The sampling system was checked for leaks before the start of the testing, by plugging the sample probe and observing the sample rotameter flow drop to zero. Instrument linearity and system bias were checked. The system response time for each analyzer was recorded. The temperatures of the heated sample line between the probe and sample conditioner/condenser, and the condenser exhaust temperatures were maintained within limits during each test run.

Analyzer external calibrations were performed before and after each run using EPA protocol certified gas standards. Calibration gases were introduced to the sample manifold at the same flow rate as the sample. A NOx analyzer converter efficiency check was performed before the first test run and achieved an efficiency greater than 90%.

Concurrent with the exhaust sampling, Blue Sky collected a total of ten integrated 6-liter summa canister samples. Three LFG samples were collected from the Flare A60-A exhaust and analyzed for M18. An additional three LFG samples were collected from the A-60-A Flare One sample of the Willexa 1" purge line was collected. Three samples of the Willexa 12-inch purge gas were sampled. The samples were collected using Teflon tubing connections that were filled and purged prior to sampling. All the samples were analyzed for NMOC, HHV, F-Factor, Fixed Gases and Sulfur Species (incl. H_2S and TRS) and VOC Compounds.

Waste gas testing occurred over an approximate 5 hour period on July 12th, 2022. Testing was performed during the period of highest concentrations of emissions from the Willexa treatment system. The first event is the LFG purge of the 1-inch line to the Flare. The second and third events were integrated samples taken a period spanning Steps 6,7,8 and 9. During this period the

flows were recorded using an Shortridge AIRFOIL pitot fixed in the center of the duct approximately every 15 seconds, additional flows were performed using EPA Method 2 using a standard pitot tube.

The sampling and analysis methods are summarized below:

EPA Method 1 – Sample and Velocity Traverses for Stationary Sources
This method is used to determine the duct or stack area and appropriate traverse points that represent equal areas of the duct for sampling and velocity measurements.

EPA Method 3 – Gas Analysis for the Determination of Dry Molecular Weight
This method is used to determine the dry molecular weight of stack gas. Measurements of gas constituents % O_2 and % CO_2 were made by BAAQMD Methods ST-14 and ST-5.

EPA Method 3A – Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)
This method is used to measure oxygen and carbon dioxide in stationary source emissions using a continuous instrumental analyzer to determine the molecular weight of the stack gas.

EPA Method 7E – Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)
This method is used to measure nitrogen oxides in stationary source emissions using a continuous instrumental analyzer. Section 16.2.2 of the method is used to determine the NO_X analyzer NO_2 to NO conversion efficiency.

EPA Method 10 – Determination of Carbon Monoxide Emissions from Stationary Sources
This method is used to measure carbon monoxide from integrated or continuous gas samples extracted from a sampling point.

EPA Methods 3A, 7E and 10 are all continuous monitoring techniques using instrumental analyzers. Sampling is performed by extracting exhaust flue gas from the stack, conditioning the sample, and analyzing it by continuous monitoring gas analyzers in a continuing emissions monitoring (CEM) test van. The sampling system consists of a stainless steel sample probe, Teflon sample line, glass-fiber particulate filter, and glass moisture-knockout condensers in ice, followed by thermoelectric coolers (optional), Teflon sample transfer tubing, a diaphragm pump, and a stainless steel/Teflon manifold and flow control/delivery system. A constant sample and calibration gas supply pressure of 5 PSI is provided to each analyzer to avoid pressure variable response differences. The entire sampling system is leak checked prior to and at the end of the sampling program.

The sampling and analytical system is checked for linearity with zero, mid (40-60%) and high span (80-100%) calibrations and is checked for system bias at the beginning and end of each run. System bias is determined by introducing calibration gas to the probe and pulling it through the entire sampling system. Individual test run calibrations use the calibration gas that most closely matches the stack gas effluent. All calibrations during testing are performed externally to incorporate any system bias that may exist. Sampling system bias, zero and calibration drift values are determined for each test. EPA Methods 3A, 7E and 10 all defer to EPA Method 7E for the calculations of effluent concentration, span, calibration gas, analyzer calibration error (linearity), sampling system bias, zero drift, calibration drift and response time.

All calibration gases are EPA Protocol #1. The analyzer data recording system consists of a a Data Acquisition System (DAS).

System Performance Criteria

Instrument Linearity	≤ 2% Full Scale (checked)
Instrument Bias	≤ 5% Full Scale (checked)
System Response Time	≤± 2 minutes (checked)
NOx Converter Efficiency *(EPA Method 7E)*	≥ 90% (checked)

EPA Method ALT-097 Determination of Total Gaseous Organic Concentration using a Flame Ionization Analyzer

This is an acceptable alternative to EPA Method 25A for the determination of total hydrocarbons, methane, and non-methane organic compounds in stationary source emissions. The test uses TECO 55C GC/FID methane/non-methane analyzer. Heated Teflon sample gas transfer lines are used to provide a continuous sample to the analyzer. Heated lines are used to avoid moisture or hydrocarbon condensation.

The sampling and analytical system is checked for linearity with zero, low (25-35%), mid (45-55%), and high (80-90%) span calibrations. All calibrations during testing are performed externally to incorporate any system bias that may exist. A system linearity check is performed prior to testing and during testing and calibration drift checks are performed after every run. All data is corrected according to EPA Method 25A.

EPA Method 4 – Determination of Moisture Content in Stack Gas

This method is used to determine the moisture content of stack gas. The sample is extracted and condensed in Greenburg-Smith impingers immersed in an ice bath and in a final impinger silica gel trap. The moisture is condensed in a solution of de-ionized water, or solutions of another type of sampling train if the moisture is being determined as part of another sampling method, such as EPA Method 5, SCAQMD Method 201.7 or BAAQMD ST-32. The moisture gain in the impinger solutions and silica gel is determined volumetrically and gravimetrically respectively. QA/QC procedures require that a minimum of 21 cubic feet of sample is pulled using a leak tight pump. The sample volume is measured with a calibrated dry gas meter. The impingers are immersed in an ice bath to maintain a gas outlet temperature of less than 68°F. Pre-test leak checks are performed for each run using a minimum 15 inches of mercury vacuum. Post-test leak checks are performed at the highest sample vacuum or greater. The leak test is acceptable if the leak rate is less than 0.02 cubic feet per minute or 4% of the average sampling rate, whichever is less. If the final leak check exceeds the criteria, either the volume is corrected based on the leak rate or the run is voided and repeated.

EPA Compendium Method TO-15 – Determination of Toxic Organic Compounds in Ambient Air

This method is used to measure volatile organic compounds that are included in the hazardous air pollutants (HAPs) listed in Title III of the Clean Air Act Amendments of 1990 by GC/MS (gas chromatography/mass spectroscopy). Samples are collected in pre-evacuated 6-Liter SUMMA canisters with pre-set flow controllers set to integrate over the desired test duration. The SUMMA® passivated canisters allow holding times up to 14 days for the TO-15 Method list of volatile organics. The sample gas is drawn by the canister vacuum through a micro-filter, pre-set orifice flow controller and on/off valve into the canister. The canister vacuum is monitored with a vacuum gauge to verify sample collection. The flow controller consisted of capillary orifice tubing designed to sample for a pre-set duration of 0.75hrs.

ASTM D1945 – Analysis of Natural Gas by Gas Chromatography
This method is used to measure fixed gases (such as oxygen, nitrogen, carbon monoxide, and carbon dioxide) and methane by gas chromatography (GC/TCD). Light hydrocarbons, including C1-C7, are analyzed by GC/FID.

ASTM D-5504 – Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence
This method is used for the determination of speciated volatile sulfur-containing compounds in high methane content gaseous fuels by gas chromatography. Sulfur compounds are processed using a flame ionization detector (GC/FID). The products are then analyzed with a sulfur chemiluminescence detector (GC/SCD). Samples may be collected in Tedlar bags and analyzed within 24 hours or in Silco SUMMA canisters and analyzed within 7 days.

EPA Method 19 – Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxide Emission Rates
This method is used to determine stack gas volumetric flow rates using oxygen-based F-factors. F-factors are ratios of combustion gas volumes to heat inputs. The heating value of the fuel in Btu per cubic foot is determined from analysis of fuel gas samples using ASTM D1946/1945 gas chromatography analytical procedures. The total cubic feet per hour of fuel multiplied times the Btu/cf provides million Btu per hour (MMBtu) heat input. The heat input in MMBtu/hr is multiplied by the F-factor (DSCF/MMBtu) and adjusted for the measured oxygen content of the source to determine volumetric flow rate. The flow rates are used to determine emission rates.

Willexa Gas Samples			
07/12/22	LFG Gas Sample	Willexa Purge Gas Sample 12”	Willexa Purge Gas Sample 1”
Run 1-Stage 4 1315 - 1330	-		1”-2
Run 2 Stage 6-7-8 1345 - 1545	-	12” - 1	-
Run 3 Stage 9 1545 - 1745	-	12” - 2	-
LFG Gas Samples			
07/13/22	-	-	-
Run 1 0917-1004	R1 LFG	-	-
Run 2 1033-1120	R2 LFG	-	-
Run 3 1145-1231	R3 LFG	-	-

The inlet volumetric Flow Rate and Flare Temperature was continuously measured and recorded by the facility Yokogawa monitors.

3.5. Instrumentation and Analytical Procedures

The following continuous emissions analyzers were used:

Instrumentation	Parameter	Principle
TECO 43C	SO_2	Pulsed Fluorescence
TECO 42C	NO_x	Chemiluminescence
TECO 48C	CO	GFC/IR
TECO 55C	$THC/CH_4/NMOC$	FID
Servomex 1440	CO_2	IR
Servomex 1440	O_2	Paramagnetic

All calibration gases are EPA Protocol #1. The analyzer data recording system consists of a Data Acquisition System (DAS), which can be supported by strip chart recorders.

The instrument response was recorded on DAS and some data is manually reduced. The averages were corrected for drift using BAAQMD & EPA Method 7E equations.

3.6. Summary and Comments

This source test was performed in accordance with the protocol submitted to BAAQMD. No deviations from the protocol or anomalies were observed during testing.

Blue Sky Environmental has reviewed this report for accuracy and concluded that the test procedures were followed and accurately described and documented. The review included the following items:

Review of the general text
Review of calculations
Review of CEMS data
Review of supporting documentation

The services described in this report were performed in a manner consistent with the generally accepted professional testing principles and practices. No other warranty, expressed or implied, is made. These services were performed in a manner consistent with our agreement with our client. The report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk. Opinions contained in this report pertain to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and operating parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations, subsequent to this, and do not warranty the accuracy of information supplied by others.

SECTION 4. APPENDICES

A. Tabulated Results

B. Calculations

C. Laboratory Reports

D. Field Data Sheets

E. Process Information

F. Calibration Gas Certificates & Equipment Calibrations

G. Sample Train Configuration and Stack Diagrams

H. Related Correspondence (Source Test Plan)

I. Permit to Operate

J. Willexa Purge Gas Characterization Results

- J-1. Summary Tables
- J-2. Calculations
- J-3. Flow Measurements, Field Data Sheets & Calibrations
- J-4. Lab Reports

A
Tabulated Results

TABLE #1

Redwood Landfill, Inc
Flare A-60 (A)

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Date	7/13/22	7/13/22	7/13/22		
Test Time	0917-1004	1033-1120	1145-1231		
Standard Temperature, °F	70	70	70		
Process Parameters:					
Flare Temperature, °F	1,582	1,583	1,582	1,582	
Fuel Gas:					
LFG Fuel Flow Rate, SCFM	947	950	955	951	
Total Fuel Heat Input, MMBtu/hr	25.3	27.6	27.5	26.8	
Total Reduced Sulfur Compounds as H_2S, ppmv	399	469	384	417	410
Inlet CH_4, ppmv	448,000	488,000	483,000	473,000	
Inlet CH_4, lb/hr	1,053	1,150	1,145	1,116	
Inlet NMOC, ppmv as CH_4 *(EPA Method 25C)*	1,138	1,156	1,220	1,171	
Inlet NMOC, lb/hr as CH_4	2.68	2.73	2.89	2.76	
Inlet THC, ppmv as CH4	1,056	1,153	1,148	1,119	
Stack Gas:					
Exhaust Flow Rate, DSCFM *(EPA Method 19)*	12,230	13,450	13,181	12,954	
Oxygen (O_2), % volume dry	14.1	14.1	14.0	14.1	
Carbon Dioxide (CO_2), % volume dry	6.18	6.09	6.14	6.14	
Moisture (H_2O), % volume dry	8.04	7.42	8.21	7.89	
NO_X Emissions (reported as NO_2):					
NOx, ppmvd	14.7	13.4	14.1	14.0	
NOx, ppmvd @ 15% O_2	12.7	11.7	12.1	12.2	15
NOx, lb/hr	1.28	1.28	1.33	1.30	
NOx, lb/MMBtu	0.0506	0.0465	0.0482	0.0484	0.06
NO, ppmvd	12.6	10.0	11.3	11.3	
NO_2, ppmvd	2.09	3.41	2.80	2.77	
CO Emissions:					
CO, ppmvd	28.3	51.5	40.4	40.1	
CO, ppmvd @ 15% O_2	24.5	44.9	34.7	34.7	82
CO, lb/hr	1.51	3.01	2.31	2.28	
CO, lb/MMBtu	0.0595	0.109	0.0841	0.0842	0.20
Sulfur Dioxide (SO_2) Emissions:					
SO_2, ppmvd (calculated)	0.83	0.96	0.80	0.86	300
SO_2, lb/hr	0.10	0.13	0.11	0.11	
SO_2, lb/MMBtu	0.0040	0.0047	0.0038	0.0042	1.69
THC Emissions (reported as CH_4):					
THC, ppmvd *(EPA Method ALT 097)*	<12.0	<11.9	<12.0	<11.9	
THC, lb/hr	<0.363	<0.397	<0.392	<0.384	
THC Destruction Efficiency, %	>99.97%	>99.97%	>99.97%	>99.97%	
Methane (CH_4) Emissions:					
CH_4, ppmv wet *(EPA Method ALT 097)*	<10.0	<10.0	<10.0	<10.0	
CH_4, ppmvd	<10.9	<10.8	<10.9	<10.9	
CH_4, lb/hr	<0.330	<0.361	<0.356	<0.349	
CH_4 Destruction Efficiency, %	>99.97%	>99.97%	>99.97%	>99.97%	> 99%
NMOC Emissions (reported as CH_4):					
NMOC, ppmv wet *(EPA Method ALT 097)*	<1.0	<1.0	<1.0	<1.0	
NMOC, ppmvd	<1.1	<1.1	<1.1	<1.1	
NMOC, ppmvd @ 3% O_2	<2.9	<2.9	<2.8	<2.9	30
NMOC, lb/hr	<0.033	<0.036	<0.036	<0.035	
NMOC Destruction Efficiency, %	>98.8%	>98.7%	>98.8%	>98.7%	>98%

Results meet the requirements of the "Compliance Agreement" between the BAAQMD and RLI, which was renewed through January 15, 2023 on June 10, 2022.

WHERE,

ppm = parts per million concentration by volume expressed on a dry gas basis
lb/hr = pound per hour emission rate
Tstd. = standard temperature (°R = °F+460)
MW = molecular weight
DSCFM = dry standard cubic foot per minute
NO_X = oxides of nitrogen, reported as NO_2 (MW = 46)
CO = carbon monoxide (MW = 28)
THC = total hydrocarbons reported as methane (MW = 16)
NMOC = non-methane organic compounds, reported as methane
SO_2 = sulfur dioxide (MW = 64.1)

CALCULATIONS,

PPM @ 15% O_2 = ppm · 5.9 / (20.9 - %O_2)
PPM @ 3% O_2 = ppm · 17.9 / (20.9 - %O_2)
lb/hr = ppm · 8.223 E-05 · DSCFM · MW / Tstd. °R
lb/MMBtu = (lb/hr)/(MMBtu/hr)
ppm dry = ppm wet · 100 / (100 - %$H_2$0)
SO_2 emission ppm = H_2S in fuel · fuel flow rate / stack gas flow rate
Destruction Efficiency, % = (inlet lb/hr- outlet lb/hr) / inlet lb/hr

<Value = 2% of Analyzer Range

TABLE #2

Redwood Landfill, Inc

Landfill Gas Characterization

Parameter		Units	R1 LFG	R2 LFG	R3 LFG	Permit Limits
Test Date			7/13/22	7/13/22	7/13/22	
Average NMOC as Hexane		ppm	190	193	203	
EPA TO-15 Results:						
Acrylonitrile		ppb	<85.0	<86.7	<104	300
Benzene		ppb	609	609	456	1,500
Benzyl Chloride	Chloromethylbenzene	ppb	<42.5	<43.4	<52.1	500
Carbon Tetrachloride		ppb	<42.5	<43.4	<52.1	200
Chlorobenzene		ppb	<42.5	<43.4	<52.1	200
Chloroethane		ppb	127	150.0	110	500
Chloroform		ppb	<42.5	<43.4	<52.1	200
1,1 Dichloroethane	Ethylidene Dichloride	ppb	<42.5	<43.4	<52.1	500
1,1 Dichloroethene	Vinylidene Chloride	ppb	<42.5	<43.4	<52.1	500
1,2 Dichloroethane	Ethylene Dichloride	ppb	168	171	173	200
1,4 Dichlorobenzene		ppb	178	199	203	1,000
Ethylbenzene		ppb	1,980	2,080	2,200	4,000
Ethlyene Dibromide	1,2 Dibromoethane	ppb	<42.5	<43.4	<52.1	200
Hexane		ppb	521	535	531	2,000
Isopropyl Alcohol	IPA	ppb	2,530	3,040	3,590	10,000
Methyl Alcohol	Methanol	ppb	5,380	6,200	7,110	300,000
Methyl Ethyl Ketone	MEK	ppb	4,960	5,660	6,350	15,000
Methylene Chloride		ppb	<85.0	<86.7	55.22	1,000
Methyl tert Butyl Ether	MTBE	ppb	<42.5	<43.4	<52.1	500
Perchloroethylene	Tetrachloroethylene	ppb	99.4	104	104	1,000
Styrene		ppb	135	145	148	500
Toluene		ppb	3,640	3,820	3,880	20,000
1,1,1 Trichlororethane		ppb	<42.5	<43.4	<52.1	200
1,1,2,2 Tetrachloroethane		ppb	<42.50	<43.4	<52.1	200
Trichloroethylene	Trichloroethene	ppb	80.7	79.8	85.4	500
Vinyl Chloride		ppb	61.2	62.4	64.6	2,000
Xylenes		ppb	4,520	4,740	4,890	20,000
ASTM D-5504 Results:						
Carbon Disulfide		ppm	0.144	0.023	0.171	
Carbonyl Sulfide	COS	ppm	<0.017	<0.017	<0.021	
Dimethyl Sulfide		ppm	0.303	0.439	0.348	
Ethyl Mercaptan		ppm	<0.112	0.147	0.133	
Methyl Mercaptan		ppm	0.643	0.872	0.758	
Hydrogen Sulfide		ppm	395	463	377	
Total Reduced Sulfur Compounds as H_2S		ppm	399	469	384	410

Results meet the requirements of the "Compliance Agreement" between the BAAQMD and RLI, which was renewed through January 15, 2023 on June 10, 2022.

J
Willexa Purge Gas Characterization Results

TABLE # 3

REDWOOD LANDFILL

7/13/22

S-71 Willexa Waste Gas Characterization (Permit Condition 30)

RUN			1"	12-1	12-2
SOURCE			**1"**	**12"**	**12"**
PROCESS STEP			**1**	**6/7/8**	**9**
Test Date			7/13/22	7/13/22	7/13/22
Test Time			1315-1330	1345-1545	1545-1745
GAS FLOW VELOCITY, SFPM			2,403	2,046	2,400
GAS MOISTURE, % (WB/DB)			5.2	5.1	5.3
GAS FLOW RATE, SCFM			13	1,607	1,885
GAS FLOW RATE, DSCFM			12	1,525	1,785
O_2		%	0.9	21.8	22.0
N_2		%	11.1	77.5	78.0
CO_2		%	38.9	0.5	<0.2
CH_4		%	49.2%	0.2%	0.005%
TRS as H2S		ppm	0.399	1.46	0.959
NMOC (as Carbon)		ppm	1,154	1,693	1,455
NMOC (as Hexane)		ppm	192	282	243
Acrylonitrile		ppb	<81.2	<92.7	<81.9
Benzene		ppb	498	<46.4	<41.0
Benzyl Chloride	Chloromethylbenzene	ppb	<40.6	<46.4	<41.0
Carbon Tetrachloride		ppb	<40.6	<46.4	<41.0
Chlorobenzene		ppb	44.7	<46.4	<41.0
Chloroethane		ppb	124	<46.4	<41.0
Chloroform		ppb	<40.6	<46.4	<41.0
1,1 Dichloroethane	Ethylidene Dichloride	ppb	<40.6	<46.4	<41.0
1,1 Dichloroethene	Vinylidene Chloride	ppb	<40.6	<46.4	<41.0
1,2 Dichloroethane	Ethylene Dichloride	ppb	127	<46.4	<41.0
1,4 Dichlorobenzene		ppb	49.6	92.7	<41.0
Ethylbenzene		ppb	2,090	1,960	208
Ethlyene Dibromide	1,2 Dibromoethane	ppb	<40.6	<46.4	<41.0
Hexane		ppb	522	<46.4	<41.0
Isopropyl Alcohol	2-propanol(IPA)	ppb	2,500	7,270	6,980
Methyl Alcohol	Methanol	ppb	5,520	12,100	7,130
Methyl Ethyl Ketone	MEK	ppb	3,950	8,780	5,220
Methylene Chloride		ppb	<81.2	<92.7	<81.9
Methyl tert Butyl Ether	MTBE	ppb	<40.6	<46.4	<41.0
Perchloroethylene (PCE)	Tetrachloroethylene	ppb	78.8	<46.4	<41.0
Styrene		ppb	<40.6	<46.4	<41.0
Toluene		ppb	3,500	1,130	53.3
1,1,1 Trichlororethane		ppb	<40.6	<46.4	<41.0
1,1,2,2 Tetrachloroethane		ppb	<40.6	<46.4	<41.0
Trichloroethylene (TCE)	Trichloroethene	ppb	59.3	<46.4	<41.0
Vinyl Chloride		ppb	53.6	<46.4	<41.0
Xylenes		ppb	4,710	5,380	634
Carbon Disulfide		ppm	0.656	0.046	0.016
Carbonyl Sulfide		ppm	0.585	0.026	<0.016
Dimethyl Sulfide		ppm	<0.437	0.028	<0.016
Ethyl Mercaptan		ppm	<0.016	<0.019	<0.016
Methyl Mercaptan		ppm	0.179	0.035	<0.016
Hydrogen Sulfide		ppm	0.093	1.16	0.369
TRS as H2S		ppm	2.29	3.06	1.43

TNMOC= (Ethane (C2) *2) + Propane (C3)*3) + (Isobutane (C4)*4) + Isopentane (C5)*5) + (Hexanes (C6)*6) + (C6*8)

Redwood Landfill, Inc.

BAAQMD Facility #1179

Annual Compliance Emissions Test Report #22194
Landfill Gas Engines-Source S-64 and S-65

Located at:
Redwood Landfill
8950 Redwood Highway
Novato, California 94948

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Testing Performed on:
July 14 - 15, 2022

Final Report Submitted on:
September 12, 2022

Performed and Reported by:
Blue Sky Environmental, Inc.
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REVIEW AND CERTIFICATION

Team Leader:

The work performed herein was conducted under my supervision, and I certify that:

a) the details and results contained within this report are to the best of my knowledge an authentic and accurate representation of the test program,

b) that the sampling and analytical procedures and data presented in the report are authentic and accurate,

c) that all testing details and conclusions are accurate and valid, and

d) that the production rate and/or heat input rate during the source test are reported accurately.

If this report is submitted for compliance purposes it should only be reproduced in its entirety. If there are any questions concerning this report, please contact me at (810) 923 - 3181.

Jeramie Richardson

Project Manager

Blue Sky Environmental, Inc.

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SECTION 1. INTRODUCTION

1.1. Summary

Blue Sky Environmental, Inc. was contracted by SCS Engineers to perform annual emissions testing for Waste Management at Redwood Landfill, Inc. located in Novato, California. Testing was conducted to demonstrate that the facility's two 2,739 BHP landfill gas-fired lean-burn IC engines are operating in compliance with their associated Bay Area Air Quality Management District's (BAAQMD) air contaminant discharge permit. The source test information is summarized in Table 1.1. Test results derived from the source test are summarized in Tables 1.2 and 1.3. Results for individual test runs are included in Appendix A. The engines met all compliance emission criteria.

Table 1.1 Source Test Information

Test Location:	Redwood Landfill, Inc. 8950 Redwood Highway, Novato, California 94948
Source Contact:	Alisha McCutcheon (415) 892-2851
Source Tested:	Engine #1 (S-64) – 2,739 BHp Caterpillar model G3502C landfill gas-fired IC engine equipped with oxidation catalyst and SCR with urea injection (S/N LGS00188). Engine #2 (S-65) – 2,739 BHp Caterpillar model G3502C landfill gas-fired IC engine equipped with oxidation catalyst and SCR with urea injection (S/N LGS0189).
Source Test Date:	July 14th – 15th, 2022
Test Objective:	Determine compliance with Bay Area Air Quality Management District (BAAQMD) air contaminant discharge permit for Facility #1179, Condition 25635, Part 13, and 40 CFR 60 Subpart JJJJ
Test Performed by:	Blue Sky Environmental, Inc. 624 San Gabriel Avenue, Albany, California 94706 Jeramie Richardson (810) 923 - 3181 jrichardson@blueskyenvironmental.com
Test Parameters:	**Landfill Gas** O_2, CO_2, BTU, THC, NMOC, HHV, F-Factor, Sulfur & Volumetric Flow Rate **Engine Emissions** THC, NMOC, CH_4, NO_X, CO, O_2, SO_2, PM_{10} (S-64), NH_3, Formaldehyde (S-64) & Volumetric Flow Rate.

Table 1.2
Engine #1 (S-64) Compliance Summary

Emission Parameter	Average Test Result	Permit Limit	Compliance Status
NO_X, g/BHp-hr	0.0119	0.15	In Compliance
CO, g/BHp-hr	0.402	1.8	In Compliance
SO_2, ppm @ 15% O_2	<0.1795	9	In Compliance
SO_2, g/BHp-hr	<0.00358	0.18	In Compliance
Ammonia, ppm @ 15% O_2	0.04	10	In Compliance
CH_4, ppm @ 15% O_2	933.4	3,000	In Compliance
NMOC, ppm @ 15% O_2 as CH_4	4.1	32	In Compliance
NMOC, g/BHp-hr as CH_4	0.021	0.16	In Compliance
Formaldehyde, lb/hr	0.0373	0.51	In Compliance
Total Particulate, as PM_{10}, g/BHp	0.047	0.10	In Compliance
TRS in fuel, ppm as H_2S	2.99	150	In Compliance

Table 1.3
Engine #2 (S-65) Compliance Summary

Emission Parameter	Average Test Result	Permit Limit	Compliance Status
NO_X, g/BHp-hr	0.086	0.15	In Compliance
CO, g/BHp-hr	0.168	1.8	In Compliance
SO_2, ppm @ 15% O_2	<0.1796	9	In Compliance
SO_2, g/BHp-hr	<0.00342	0.18	In Compliance
Ammonia, ppm @ 15% O_2	0.47	10	In Compliance
CH_4, ppm @ 15% O_2	781.0	3,000	In Compliance
NMOC, ppm @ 15% O_2 as CH_4	3.4	32	In Compliance
NMOC, g/BHp-hr as CH_4	0.016	0.16	In Compliance
TRS in fuel, ppm as H_2S	3.01	150	In Compliance

SECTION 2. SOURCE TEST PROGRAM

2.1. Overview

This annual test was performed to demonstrate compliance of Engine #1 (S-64) and Engine #2 (S-65) with the emission limits specified in Bay Area Air Quality Management District (BAAQMD) Permit to Operate (PTO) for Facility 1179, Permit Condition 25635, Part 13. This testing also satisfies compliance requirements of 40 CFR 60, Subpart JJJJ – New Source Performance Standards for Spark Ignition Internal Combustion Engines

2.2. Pollutants Tested

The following U.S. Environmental Protection Agency (EPA), Bay Area Air Quality Management District (BAAQMD), California Air Resources Board (CARB) and ASTM International sampling and analytical methods were used:

EPA Method 1	Sample and Velocity Traverses
EPA Method 2	Flow Rate Calculation, DSCFM
EPA Method 3A	O_2, CO_2
EPA Method 10	CO
EPA Method ALT-078	NMOC, CH_4
EPA Method 7E	NO_X
EPA Method 19	Flow Rate Calculation, DSCFM
EPA Method 25C	LFG Gas analysis for NMOC by GC
ASTM D-1945/3588	LFG Gas analysis for BTU and F-Factor
ASTM D-5504	Sulfur Species, H_2S and TRS
CARB Method 430	Formaldehyde
BAAQMD ST-1B/1A	NH_3
EPA Method 5/202	Particulate Matter (PM_{10} as total PM)

2.3. Test Date(s)

Testing was conducted on July 14th – 15th, 2022.

2.4. Sampling and Observing Personnel

Testing was performed by Jeramie Richardson, Wesley Alder, Zach Sales, Anthony Bomprezzi and Timothy Eandi representing Blue Sky Environmental, Inc.

Jon Silva of SCS Engineers and Michael Chan of Waste Management, were present to operate and oversee the Engine operations and assist in coordinating testing and the collection of process data during testing.

EPA and BAAQMD were notified of the scheduled testing in a plan submitted on June 14th, 2022 and revised June 17th, 2022. Source Test Protocol acknowledgements were received by Blue Sky Environmental (NST #7501 S-64 and NST #7502 S-65). No agency observers were on site during the test program. A copy of the source test protocol and BAAQMD acknowledgments are provided in Appendix I.

2.5. Source/Process Description

Redwood Landfill and Recycling Center generates clean renewable electricity from landfill gas produced from decomposing organic materials received at the site. The facility operates two identical 2,739 Bhp-hr Caterpillar G3502C, landfill gas engines equipped with oxidation catalysts and SCR with urea injection. Engine #1 (S-64) and Engine #2 (S-65) emissions vent through 30-inch diameter stacks (inner diameter approx. 28.5 inches).

2.6. Source Operating Conditions

The engines were operated on biogas fuel under normal conditions during the test program. Process data provided by the facility was recorded at 5-minute intervals. The operating kilowatt (kW) and fuel flow rate records are provided in Appendix F.

The average values are listed below.

Parameter	Engine #1 (S-64)	Engine #2 (S-65)
Generator Load, kW	1,197	1,201
Fuel Consumption Rate, SCFM	442.1	421.2

LFG samples collected at the header of Engine #1 (S-64) showed that the methane quality averaged 49.4% and the Oxygen content was 1.03%. LFG samples collected at the header of Engine #2 (S-65) showed that the Methane quality averaged 49.7% and the Oxygen content was 0.93%. Additional LFG data is provided in Appendix C.

Engine serial numbers and hours of operation at time of test

Engine #1 (S-64), SN: LGS00188, Hours of Operation: 41,123

Engine #2 (S-65), SN: LGS00189, Hours of Operation: 40,510

SECTION 3. SAMPLING AND ANALYSIS PROCEDURES

3.1. Port Location

Sampling was conducted at the 30-inch diameter exhaust stack of each engine through 4-inch ports that were accessible from ground-level. Sampling ports were located approximately four stack diameters downstream from the nearest disturbance and approximately 1 ½ stack diameters upstream of nearest disturbance or exhaust.

3.2. Point Description/Labeling – Ports/Stack

Blue Sky Environmental, Inc. conducted two perpendicular 12-point traverses of each stack to check for the presence of cyclonic flow. The traverse points for the 30-inch diameter stacks with 4-inch deep ports were 0.6, 1.9, 3.4, 5.1, 7.3, 10.3, 18.7, 21.8, 23.9, 25.6, 27.1 and 28.4 inches from the stack wall. Stratification was less than 10%; however, subsequent CEM and PM sampling was conducted using a full traverse across two axis of the stack. Ammonia and formaldehyde samples were collected from a point mid-stack.

3.3. Sample Train Descriptions

Sampling system diagrams are included in the Appendix G. Additional descriptive information is included in the following section.

3.4. Sampling Procedure Descriptions

Three consecutive 60-minute gaseous emissions tests were performed for oxides of nitrogen (NO_X), carbon monoxide (CO), carbon dioxide (CO_2), oxygen (O_2), ammonia (NH_3), methane (CH_4), and non-methane organic compounds (NMOC) at each engine exhaust stack.

The sampling system was checked for leaks before the start of the testing, by plugging the sample probe and observing the sample rotameter flow drop to zero. Instrument linearity and system bias were checked. The system response time for each analyzer was recorded. The temperatures of the heated sample line between the probe and sample conditioner/condenser, and the condenser exhaust temperatures were maintained within limits during each test run.

Analyzer external calibrations were performed before and after each run using EPA protocol certified gas standards. Calibration gases were introduced to the sample manifold at the same flow rate as the sample. A NOx analyzer converter efficiency check was performed before the first test run and achieved an efficiency greater than 90%.

Three 60-minute tests for particulate matter (PM) and three 30-minute test runs for formaldehyde were performed on Engine #1 (S-64).

Concurrent with the exhaust sampling, Blue Sky Environmental collected a total of six digester gas samples (three per engine) to determine the average Btu value by ASTM D-1945, and sulfur content by ASTM D-5504. The samples were collected in 6-liter SUMMA cannisters and analyzed by Atmospheric Analysis & Consulting, Inc (AAC) in Ventura, CA. Laboratory test results are provided in Appendix C.

The sampling and analysis methods are summarized below:

EPA Method 1 – Sample and Velocity Traverses for Stationary Sources
This method is used to determine the duct or stack area and appropriate traverse points that represent equal areas of the duct for sampling and velocity measurements.

CARB/EPA Method 2 – Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)
This method is used to determine the average velocity and the volumetric flow rate of stack gas using a standard S-type pitot tube and inclined manometer. Temperature is monitored using a K-type thermocouple and calibrated Omega temperature meter. The entire sampling system is leak checked prior to and at the end of the sampling program. Thermometer calibrations are performed using an Omega Model CL-601K simulator. Geometric calibrations of S-type pitot tubes are performed every 6 months or according to the guidelines outlined in California Air Resources Board (CARB) QA/QC Volume VI, Table 3.

EPA Method 3A – Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrumental Analyzer Procedure)
This method is used to measure oxygen and carbon dioxide in stationary source emissions using a continuous instrumental analyzer to determine the molecular weight of the stack gas.

EPA Method 7E – Determination of Nitrogen Oxides Emissions from Stationary Sources (Instrumental Analyzer Procedure)
This method is used to measure nitrogen oxides in stationary source emissions using a continuous instrumental analyzer. Section 16.2.2 of the method is used to determine the NO_X analyzer NO_2 to NO conversion efficiency.

EPA Method 10 – Determination of Carbon Monoxide Emissions from Stationary Sources
This method is used to measure carbon monoxide from integrated or continuous gas samples extracted from a sampling point.

EPA Methods 3A, 7E and 10 are all continuous monitoring techniques using instrumental analyzers. Sampling is performed by extracting exhaust flue gas from the stack, conditioning the sample, and analyzing it by continuous monitoring gas analyzers in a continuing emissions monitoring (CEM) test van. The sampling system consists of a stainless steel sample probe, Teflon sample line, glass-fiber particulate filter, and glass moisture-knockout condensers in ice, followed by thermoelectric coolers (optional), Teflon sample transfer tubing, a diaphragm pump, and a stainless steel/Teflon manifold and flow control/delivery system. A constant sample and calibration gas supply pressure of 5 PSI is provided to each analyzer to avoid pressure variable response differences. The entire sampling system is leak checked prior to and at the end of the sampling program.

The sampling and analytical system is checked for linearity with zero, mid (40-60%) and high span (80-100%) calibrations and is checked for system bias at the beginning and end of each run. System bias is determined by introducing calibration gas to the probe and pulling it through the entire sampling system. Individual test run calibrations use the calibration gas that most closely matches the stack gas effluent. All calibrations during testing are performed externally to incorporate any system bias that may exist. Sampling system bias, zero and calibration drift values are determined for each test. EPA Methods 3A, 7E and 10 all defer to EPA Method 7E for the calculations of effluent concentration, span, calibration gas, analyzer calibration error (linearity), sampling system bias, zero drift, calibration drift and response time.

EPA Method 5 – Determination of Particulate Matter Emissions from Stationary Sources
This method is used to determine filterable particulate matter (PM) emissions from stationary sources. Particulate matter is withdrawn isokinetically from the source and collected on a glass fiber filter maintained at 248 ± 25°F. The sampling equipment consists of a stainless steel or glass nozzle, a heated probe, heated filter box and filter holder with glass fiber filter, followed by a Teflon line and umbilical to four Greenburg-Smith impingers, a pump and a meter control module. Filterable particulate is determined gravimetrically from the probe/nozzle acetone rinse and filter, following evaporation and desiccation of these fractions. The first two impingers contain 100ml of de-ionized water each, a third short-stem impinger is left empty and the fourth impinger contains silica gel desiccant to dry the gas before the pump and gas meter. Moisture is condensed in the solution of de-ionized water and absorbed in the silica gel. The moisture gain in the impinger solutions and silica gel is determined volumetrically and gravimetrically respectively.

QA/QC: consists of pitot leak checks performed by pressurizing each leg of the pitot separately to a pressure greater than 3" H2O. The leak check is passed when no movement in the manometer fluid occurs over 15 seconds. Sampling system leak checks are performed before and after each test run by capping the nozzle, then pulling a vacuum greater than 15 inches of mercury and observing the meter rate. The leak check is passed, when the leak rate is less than 0.02 CFM or 4% of the average sample rate, whichever is less. The final leak check is performed at a vacuum at least as high as the highest vacuum pulled during the run. The impingers are kept in ice to maintain the temperature of the gas exiting the last impinger to below 68°F. No silicone grease is used on the components of the sampling train. The dry gas meter, pitot, thermocouples, gauges, and nozzles are all calibrated according to the methods and with a frequency of between 6 to 12 months as specified in CARB QA/QC Volume VI, Table 3. Nozzles are calibrated in the field to within 0.001" diameter and are inspected for damage prior to each test. Acetone rinse blanks are collected using equipment, reagents, proportions, and techniques that are identical to the test samples.

EPA Method 202 – Dry Impinger Method for Determining Condensable Particulate Emissions from Stationary Sources
This method is used to measure condensable particulate matter (CPM) emissions from stationary sources after filterable particulate matter (PM) has been removed. The concentrations and emission rates of PM_{10} are measured using a combination of EPA Methods 5 and EPA Method 202. The CPM is collected in dry impingers followed by a nitrogen purge after filterable PM has been collected. Test runs are ≥60 minutes in duration to collect sufficient sample volume to provide detection limits low enough to determine compliance with the permit conditions.
The apparatus includes a Pyrex/quartz sampling nozzle and Pyrex/quartz probe liner attached to a glass filter holder with glass-fiber filter heated to 248 ± 25°F. The filter holder is mounted to the end of the probe liner, which is attached to a length of heated Teflon tubing to connect the filter holder to the impinger train. The impinger train is connected to the control box, which contains the sampling pump and dry gas meter. A nozzle size is chosen to allow isokinetic sampling (i.e., within 10%) at all the traverse points at the calculated sampling rate.

The filterable "front-half" PM_{10} is recovered from the sampling apparatus as described in EPA Method 5. The sample fractions include the rinses of the internal sections of the nozzle, probe liner, the front-half of the filter holder, and the filter. The sample fractions are analyzed gravimetrically to determine the concentration of filterable PM_{10}.

The "back-half" contents are recovered and analyzed for condensable PM_{10} as described in EPA Method 202. The probe extension, condenser and first impinger contents are rinsed with water into the second impinger. Water is added as necessary for the subsequent purge. The condenser

and first impinger are reattached to the second impinger and the condenser, and the impingers and CPM filter are purged with nitrogen for one hour.

After the purge, the sample is recovered in three fractions: 1) the CPM filter, 2) the water contents and rinses of the condenser, impingers, and filter holder, and 3) the acetone/hexane rinses of the condenser, impingers, and filter holder. The sample containers are transported to an environmental testing laboratory for analysis.

CARB Method 430 – Determination of Formaldehyde and Acetaldehyde in Emissions from Stationary Sources

This method is used to determine emissions of aldehydes and ketone compounds from stationary sources. Gaseous emissions are drawn through a short 1/8 inch Teflon sample line and two midget impingers in series, each containing a 10 ml aqueous acidic solution of 2,4-dinitrophenyl-hydrazine (DNPH). Ice is used to cool the impingers during sampling. The sample is drawn at a rate of 0.1 to 0.5 liters per minute for 12 to 60 minutes. After organic solvent extraction, the samples are analyzed using reverse phase HPLC with an ultraviolet (UV) absorption detector operated at 360 nm. Each impinger is analyzed separately.

EPA Method 25A/ALT-078: Sampling for Total Hydrocarbons, Methane and Non-Methane Hydrocarbons. EPA Method 25A (FID/GC Method) employs a heated TECO 55C FID with GC column, heated Teflon sample gas transfer lines to provide a continuous sample to the heated FID/GC Hydrocarbon Analyzer. Heated lines are used to avoid moisture or hydrocarbon condensation. Methane is determined by the calibrated GC method in the TECO 55C NMHC/CH_4/THC Analyzer. Calibration gases are selected to fall within 25-35%, 45-55% and 80-90% of Range for Methane, Total Hydrocarbon and Non-Methane Hydrocarbons

EPA Method 25C – Determination of Nonmethane Organic Compounds (NMOC) in Landfill Gas

This method is used to sample and measure NMOC in landfill gases. Gases are collected in a pre-evacuated 6-Liter SUMMA canister with pre-set flow controller set to integrate over the desired test duration. The SUMMA® passivated canisters allow holding times up to 14 days. The sample gas is drawn by the canister vacuum through a micro-filter, pre-set orifice flow controller and on/off valve into the canister. The canister vacuum is monitored with a vacuum gauge to verify sample collection. The flow controller consists of capillary orifice tubing designed to sample for a pre-set duration of 0.5 hrs. The sample is injected into a GC column where the methane and CO_2 are flushed through and removed then the NMOC (ROC) fraction is oxidized to form CO_2 then reduced to methane and analyzed.

EPA Method 18 – Measurement of Gaseous Organic Compound Emissions by Gas Chromatography

This method is used to determine emissions of volatile organics by gas chromatograph/mass spectroscopy (GC/MS). Gaseous emissions are drawn through a Teflon sample transfer line to a Tedlar bag held in a rigid leak proof bag container. The sample is drawn into the bag by evacuating the container to stack gas pressure to allow sample flow without using a pump to avoid contamination. Negative pressure is adjusted to maintain an integrated sample flow for the collection time. The bag samples are taken to a laboratory and analyzed within 72 hours.

EPA Method 19 – Determination of Sulfur Dioxide Removal Efficiency and Particulate Matter, Sulfur Dioxide, and Nitrogen Oxide Emission Rates

This method is used to determine stack gas volumetric flow rates using oxygen-based F-factors. F-factors are ratios of combustion gas volumes to heat inputs. The heating value of the fuel in Btu per cubic foot is determined from analysis of fuel gas samples using ASTM D1946/1945 gas chromatography analytical procedures. The total cubic feet per hour of fuel multiplied times the Btu/cf provides million Btu per hour (MMBtu) heat input. The heat input in MMBtu/hr is multiplied by the F-factor (DSCF/MMBtu) and adjusted for the measured oxygen content of the source to determine volumetric flow rate. The flow rates are used to determine emission rates.

BAAQMD Source Test Procedure ST-1B – Ammonia Integrated Sampling

This method is used to quantify ammonia emissions and determine compliance with Regulation 7-303. The sample is extracted from the gas stream using a Teflon or stainless-steel probe and the ammonia is condensed/adsorbed in two Greenburg-Smith impingers containing 200ml of 0.1N HCl, followed by an empty knock-out impinger, and a fourth impinger containing 200g of pre-weighed silica gel. The moisture gained is determined volumetrically and gravimetrically. A minimum of 20 cubic feet of sample is pulled using a leak tight pump and sampling assembly and the volume is measured with a calibrated dry gas meter. Ammonia is analyzed according to BAAQMD Analytical Procedure Lab-1 with a Specific Ion Electrode, or Nessler's reagent and a spectrophotometer. Results are recorded on the field data sheet. The entire sampling system is leak checked prior to and at the end of each test run. All the sampling equipment is calibrated according to CARB schedules and this documentation is included in the final report. Reagent blanks are collected. Analytical QA/QC includes testing a reagent blank, laboratory blanks, and sample duplicates.

BAAQMD Method 1A – Determination of Ammonia in Effluents Collected in Acid Media using the Specific Ion Electrode

This method is used to determine the ammonia content in effluents absorbed in a dilute HCl solution according to BAAQMD Source Test Procedure ST-1B. A 49ml aliquot of sample is placed into a clean polypropylene beaker and made alkaline with the addition of an ammonia pH adjusting solution. This releases the ammonia for determination by the specific ion electrode method. The sample is placed on top of a magnetic stirrer and a clean Teflon coated magnetic stirring bar is added. The ammonia-specific ion electrode is placed into the sample and a concentration of ammonia (as N_2) is displayed on the meter.

An Orion 920A pH/Concentration/ISE meter with an Orion #95-11 ion-specific electrode is calibrated with 1mg/ml and 10mg/ml ammonia (NH_3) as nitrogen (N_2). The ammonia working standards are produced by diluting 100mg/ml ammonia as nitrogen with 0.1N HCl in 100:1 and 10:1 ratios, respectively. The standards are enhanced with a pH adjusting ionic strength adjuster to help the electrode read the nitrogen more effectively. Once the calibration is completed, the meter will calculate a standard curve for the electrode. The standard curve is acceptable between –54mv (millivolts) and –60mv.

ASTM D1945 – Analysis of Natural Gas by Gas Chromatography

This method is used to measure fixed gases (such as oxygen, nitrogen, carbon monoxide, and carbon dioxide) and methane by gas chromatography (GC/TCD). Light hydrocarbons, including C1-C7, are analyzed by GC/FID.

ASTM D-3588 – Standard Practice for Calculating Heat Value, Compressibility Factor, and Relative Density of Gaseous Fuels

This method uses the molar composition of gaseous fuel determined from Method ASTM D-1945 to calculate the heating value and F-factor.

ASTM D-5504 – Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence

This method is used for the determination of speciated volatile sulfur-containing compounds in high methane content gaseous fuels by gas chromatography. Sulfur compounds are processed using a flame ionization detector (GC/FID). The products are then analyzed with a sulfur chemiluminescence detector (GC/SCD). Samples may be collected in Tedlar bags and analyzed within 24 hours or in Silco SUMMA canisters and analyzed within 7 days.

3.5. Instrumentation and Analytical Procedures

The following continuous emissions analyzers were used

Instrumentation	Parameter	Principle
TECO Model 42C	$NO_X/NO/NO_2$	Chemiluminescence
TECO Model 48C	CO	GFC/IR
Servomex Model 1440	CO_2	Infrared (IR)
Servomex Model 1440	O_2	Paramagnetic
TECO Model 43C	SO_2	Pulsed Fluorescence
TECO Model 55C	$THC/CH_4/NMOC$	Flame Ionization (FID)

3.6. System Performance Criteria

All calibration gases are EPA Protocol #1. The analyzer data recording system consists of a Honeywell DPR 3000 chart recorder, supported by a Data Acquisition System (DAS). The instrument response is recorded on strip charts and DAS. The averages are corrected for drift and bias using EPA Method 7E equations. All system performance criteria were met.

Instrument Linearity	≤2% Full Scale
Instrument Bias	≤5% Full Scale
System Response Time	≤± 2 minutes
NO_X Converter Efficiency *(EPA Method 7E)*	≥ 90%
Instrument Zero Drift	≤± 3% Full Scale
Instrument Span Drift	≤± 3% Full Scale

3.7. Comments: Limitations and Data Qualifications

This source test was performed in accordance with the protocol submitted to BAAQMD. No deviations from the protocol or anomalies were observed during testing. The measured emissions comply with the permitted limits.

Blue Sky Environmental has reviewed this report for accuracy and concluded that the test procedures were followed and accurately described and documented. The review included the following items:

Review of the general text
Review of calculations
Review of CEMS data
Review of supporting documentation

The services described in this report were performed in a manner consistent with the generally accepted professional testing principles and practices. No other warranty, expressed or implied, is made. These services were performed in a manner consistent with our agreement with our client. The report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions contained in this report pertain to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and operating parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations, subsequent to this, and do not warranty the accuracy of information supplied by others.

SECTION 4. APPENDICES

A. Tabulated Results

B. Calculations

C. Laboratory Reports

D. Field Data Sheets

E. Process Information

F. Calibration Certificates and Quality Assurance Records

G. Sample Train Configuration and Stack Diagrams

H. Related Correspondence (Source Test Plan)

I. Bay Area Air Quality Management District (BAAQMD) PTO

A
Tabulated Results

TABLE #1

Redwood Landfill, Inc
Engine #1 (S-64)

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Date	7/15/22	7/15/22	7/15/22	--	
Test Time	0943-1124	1256-1419	1520-1644	--	
Standard Temperature, °F	70	70	70	--	
Process Parameters:					
Generator, kW	1,190	1,194	1,206	1,197	
Engine, BHp	1,658	1,664	1,680	1,667	
Urea Injection Rate, gph	1.2	1.2	1.2	1.2	
Fuel:					
Fuel Flow Rate, SCFM	442.0	443.1	441.2	442.1	
Fuel Gross Calorific Value, Btu/cf @ 68°F	494.6	491.6	492.6	493.0	
Fuel Fd-Factor, DSCF/MMBtu @ 68°F	9,546	9,548	9,554	9,550	
Inlet NMOC, ppmv as CH_4 *(EPA Method 25C)*	732	749	596	692	
Inlet NMOC, lb/hr as CH_4	0.8	0.8	0.7	0.8	
Inlet CH_4, ppmv	496,000	493,000	494,000	494,333	
Inlet CH_4, lb/hr	544.2	542.3	541.1	542.6	
H_2S, ppm *(ASTM D5504)*	0.450	0.222	0.237	0.303	
TRS as H_2S, ppm *(ASTM D5504)*	2.87	3.16	2.95	2.99	150
Stack Gas:					
SCR Temperature, °F	825	825	825	825	
Exhaust Flow Rate, DSCFM *(EPA Method 19)*	3,765	3,754	3,760	3,760	
Oxygen (O_2), % volume dry	9.3	9.3	9.4	9.3	
Carbon Dioxide (CO_2), % volume dry	10.3	10.4	10.3	10.3	
Moisture (H_2O), % volume dry	10.8	15.4	11.4	12.5	
NO_X Emissions (reported as NO_2):					
NO_X, ppm	17.7	15.4	16.0	16.4	
NO_X, ppm @ 15% O_2	9.0	7.9	8.2	8.3	
NOx, lb/hr	0.48	0.41	0.43	0.44	
NOx, g/BHp-hr	0.130	0.113	0.116	0.119	0.15
CO Emissions:					
CO, ppm	94.8	89.5	86.9	90.4	
CO, ppm @ 15% O_2	48.3	45.6	44.4	46.1	
CO, lb/hr	1.55	1.46	1.42	1.48	
CO, g/BHp-hr	0.424	0.398	0.383	0.402	1.8
SO_2 Emissions:					
SO_2, ppm *(calculated emission)*	<0.337	<0.373	<0.346	<0.352	
SO_2, ppm @ 15% O_2	<0.1716	<0.1900	<0.1769	<0.1795	9
SO_2, lb/hr	<0.01262	<0.01393	<0.01295	<0.01316	
SO_2, g/BHp-hr	<0.00345	<0.00380	<0.00350	<0.00358	0.18
Ammonia Emissions:					
Ammonia, ppm	0.05	0.04	0.13	0.07	
Ammonia, ppm @ 15% O_2	0.03	0.02	0.07	0.04	10
Methane (CH_4) Emissions:					
CH_4, ppm wet *(EPA Method ALT 078)*	1,605.1	1,639.3	1,555.3	1,599.9	
CH_4, ppm	1,799.5	1,936.9	1,754.9	1,830.4	
CH_4, ppm @ 15% O_2	916.5	986.8	897.0	933.4	3,000
CH_4, lb/hr	16.82	18.05	16.38	17.1	
CH_4, g/BHp-hr	4.60	4.92	4.42	4.65	
NMOC Emissions (reported as CH_4):					
NMOC, ppm wet *(EPA Method ALT 078)*	7.0	7.5	6.8	7.1	
NMOC, ppm	7.9	8.8	7.6	8.1	
NMOC, ppm @ 15% O_2	4.0	4.5	3.9	4.1	32
NMOC, lb/hr	0.07	0.08	0.07	0.08	
NMOC, g/BHp-hr	0.020	0.022	0.019	0.021	0.16
THC Emissions (reported as CH_4):					
THC, ppm	1,807.4	1,945.7	1,762.5	1,838.5	
THC, lb/hr	16.89	18.13	16.45	17.16	
THC g/BHp-hr	4.62	4.94	4.44	4.67	
CH_4 Destruction Efficiency, %	96.9%	96.7%	97.0%	96.9%	
NMOC Destruction Efficiency, %	>95.5%	>89.9%	>91.9%	>92.4%	

WHERE:

ppm = parts per million concentration by volume expressed on a dry gas basis
lb/hr = pound per hour emission rate
lb/MMBtu = pound per million Btu
Tstd. = standard temperature (°R = °F+460)
MW = molecular weight
DSCFM = dry standard cubic foot per minute
NO_X = oxides of nitrogen, reported as NO_2 (MW = 46)
CO = carbon monoxide (MW = 28)
CH_4 = methane (MW = 16)
SO_2 = sulfur dioxide (MW = 64.1)
NMOC = non-methane organic compounds = POC

CALCULATIONS:

PPM @ 15% O_2 = ppm · 5.9 / (20.9 - %O_2)
lb/hr = ppm · 8.223 E-05 · DSCFM · MW / Tstd. °R
g/BHp-hr = lb/hr · 453.6/BHp-hr
Engine BHp = Engine kW · 1.3932 hp/kW
ppm dry = ppm wet · 100 / (100 - %$H_2$0)

Table #2

Total Particulate Results

Redwood Landfill, Inc
Engine #1 (S-64)

Parameter	Run #1	Run #2	Run #3	Average Results	Permit Limits
Test Date	07/15/22	07/15/22	07/15/22	--	
Test Time	0943-1124	1256-1418	1520-1643	--	
Engine kW	1,190	1,194	1,206	1,197	
Engine BHp	1,658	1,664	1,680	1,667	
Sample Volume, DSCF	31.51	32.58	32.57	32.22	
Isokinetic, %	99.3	99.4	109.1	102.6	
Duct Temperature, °F	911.0	917.7	919.3	916.0	
Stack Gas:					
Velocity, ft/sec	39.2	40.9	41.0	40.4	
Flow Rate, ACFM	10,788	11,259	11,292	11,113	
Flow Rate, DSCFM	3,716	3,839	3,885	3,813	
Water Vapor (H_2O), %	11.00	11.58	10.68	11.08	
Oxygen (O_2), %	9.32	9.32	9.36	9.33	
Carbon Dioxide (CO_2), %	10.29	10.40	10.32	10.34	
Filterable Particulate Emissions:					
Filterable Particulate, mg	22.64	0.72	0.05	7.80	
Filterable Particulate, gr/DSCF	0.01109	0.00034	0.00002	0.00382	
Filterable Particulate, lb/hr	0.3531	0.0112	0.0008	0.1217	
Condensable Particulate Emissions:					
Condensable Particulate, mg	3.37	4.03	2.50	3.30	
Condensable Particulate, gr/DSCF	0.00165	0.00073	0.00080	0.00106	
Condensable Particulate, lb/hr	0.0526	0.0241	0.0265	0.0344	
Total Particulate Emissions:					
Total Particulate as PM_{10}, mg	26.01	4.75	2.55	11.10	
Total Particulate as PM_{10}, gr/DSCF	0.0127	0.00225	0.0012	0.0054	
Total Particulate as PM_{10}, lb/hr	0.406	0.074	0.040	0.173	
Total Particulate as PM_{10}, g/BHp-hr	0.111	0.020	0.011	0.047	0.10

WHERE
DSCF = sample volume in dry standard cubic foot
DSCFM = dry standard cubic foot per minute
ACFM = actual cubic foot per minute
H_2O, volume % = stack gas percent water vapor
gr/DSCF = particulate concentration in grains per DSCF
Total Particulate = filterable and condensable particulate matter
Filterable (F/H)
Condensible (B/H)

CALCULATIONS
lb/hr Emission Rate = 0.00857 · gr/DSCF · DSCFM
12% CO_2 Correction = gr/DSCF · 12% / Actual CO_2%
Engine BHp = Engine kW · 1.3932 hp/kW

Table #3

Formaldehyde Method CARB 323

Redwood Landfill, Inc
Engine #1 (S-64)

Parameter	Run 1	Run 2 B	Run 3	Average Results	Permit Limits
Test Date	7/15/22	7/15/22	7/15/22		
Test Time	0943-1124	1256-1419	1520-1644		
Sample Duration, minutes	60	60	60	60	
Standard Temperature, °F	70	70	70	70	
Exhaust Flow Rate, DSCFM *(EPA Method 5/202)*	3,716	3,839	3,885	3,813	
Test Parameters:					
Meter Yd	1.0696	1.0696	1.0696	1.0696	
Average Meter Temperature, °C	26.1	32.5	36.1	31.6	
Average Meter Temperature, °F	79.0	90.5	97.0	88.8	
Meter Volume, L	9.372	9.756	9.848	9.659	
Total Corrected Volume, L	9.857	10.046	10.023	9.975	
Formaldehyde Emissions:					
Formaldehyde, ug/sample	13.6	31.5	32.8	26.0	
Formaldehyde, ug/DSCM	1,380	3,135	3,273	2,596	
Formaldehyde, ppb	1,110	2,523	2,633	2,089	
Formaldehyde, g/hr	8.7	20.46	21.6	16.9	
Formaldehyde, lb/hr	0.0192	0.0451	0.0476	0.0373	0.51

WHERE:
ml = milliliter
g = gram
ug = microgram
DSCFM = dry standard cubic feet per minute
DSCM = dry standard cubic meter
L = Liters

CALCULATIONS:
Formaldehyde, ppb = 1,000 · (ug/sample) · 24.14 / (30.0 MW · Vm std liters)
ug/DSCM = (1,000 L/DSCM) · (ug/sample) / (sample volume, L)
g/hr = ug/DSCM · (DSCFM · 60 min-hr / 35.3)/(1,000,000 g/ug)
lb/hr = (g/hr) / 453.6

TABLE #4

Redwood Landfill, Inc
Engine #2 (S-65)

Parameter	Run 1	Run 2	Run 3	Average Results	Permit Limits
Test Date	7/14/22	7/14/22	7/14/22	--	
Test Time	0837-0940	0958-1102	1119-1227	--	
Standard Temperature, °F	70	70	70	--	
Process Parameters:					
Generator, kW	1,199	1,203	1,200	1,201	
Engine, BHp	1,671	1,676	1,672	1,673	
Urea Injection Rate, gph	1.2	1.2	1.2	1.2	
Fuel:					
Fuel Flow Rate, SCFM	421.0	420.0	422.6	421.2	
Fuel Gross Calorific Value, Btu/cf @ 68°F	490.6	499.6	496.6	495.6	
Fuel Fd-Factor, DSCF/MMBtu @ 68°F	9,553	9,539	9,548	9,547	
Inlet NMOC, ppmv as CH_4 *(EPA Method 25C)*	536	570	582	563	
Inlet NMOC, lb/hr as CH_4	0.6	0.6	0.6	0.6	
Inlet CH_4, ppmv	492,000	501,000	498,000	497,000	
Inlet CH_4, lb/hr	514.2	522.4	522.4	519.7	
H_2S, ppm *(ASTM D5504)*	1.32	0.662	0.488	0.823	
TRS as H_2S, ppm *(ASTM D5504)*	3.22	3.19	2.62	3.01	150
Stack Gas:					
SCR Temperature, °F	825	825	825	825	
Exhaust Flow Rate, DSCFM *(EPA Method 19)*	4,126	4,214	4,232	4,191	
Oxygen (O_2), % volume dry	10.9	11.0	11.0	11.0	
Carbon Dioxide (CO_2), % volume dry	8.9	8.9	8.9	8.9	
Moisture (H_2O), % volume dry	10.0	10.4	10.1	10.2	
NO_X Emissions (reported as NO_2):					
NO_X, ppm	10.9	10.6	10.5	10.7	
NO_X, ppm @ 15% O_2	6.4	6.3	6.3	6.3	
NOx, lb/hr	0.32	0.32	0.32	0.32	
NOx, g/BHp-hr	0.087	0.086	0.086	0.086	0.15
CO Emissions:					
CO, ppm	32.9	33.4	36.0	34.1	
CO, ppm @ 15% O_2	19.4	19.9	21.5	20.3	
CO, lb/hr	0.59	0.61	0.66	0.62	
CO, g/BHp-hr	0.160	0.166	0.180	0.168	1.8
SO_2 Emissions:					
SO_2, ppm *(calculated emission)*	<0.329	<0.318	<0.262	<0.303	
SO_2, ppm @ 15% O_2	<0.1939	<0.1890	<0.1560	<0.1796	9
SO_2, lb/hr	<0.01348	<0.01333	<0.01101	<0.01261	
SO_2, g/BHp-hr	<0.00366	<0.00361	<0.00299	<0.00342	0.18
Ammonia Emissions:					
Ammonia, ppm	0.64	1.28	0.47	0.80	
Ammonia, ppm @ 15% O_2	0.38	0.76	0.28	0.47	10
Methane (CH_4) Emissions:					
CH_4, ppm wet *(EPA Method ALT 078)*	1,095.2	1,083.7	1,366.4	1,181.8	
CH_4, ppm	1,216.7	1,209.9	1,519.5	1,315.4	
CH_4, ppm @ 15% O_2	718.2	719.0	905.9	781.0	3,000
CH_4, lb/hr	12.46	12.66	15.96	13.7	
CH_4, g/BHp-hr	3.38	3.42	4.33	3.71	
NMOC Emissions (reported as CH_4):					
NMOC, ppm wet *(EPA Method ALT 078)*	4.8	4.6	5.8	5.1	
NMOC, ppm	5.4	5.2	6.5	5.7	
NMOC, ppm @ 15% O_2	3.2	3.1	3.9	3.4	32
NMOC, lb/hr	0.05	0.05	0.07	0.06	
NMOC, g/BHp-hr	0.015	0.015	0.018	0.016	0.16
THC Emissions (reported as CH_4):					
THC, ppm	1,222.1	1,215.1	1,526.0	1,321.0	
THC, lb/hr	12.52	12.71	16.03	13.75	
THC g/BHp-hr	3.40	3.44	4.35	3.73	
CH_4 Destruction Efficiency, %	97.6%	97.6%	96.9%	97.4%	
NMOC Destruction Efficiency, %	>98.9%	>97.8%	>96.2%	>97.6%	

WHERE:

ppm = parts per million concentration by volume expressed on a dry gas basis
lb/hr = pound per hour emission rate
lb/MMBtu = pound per million Btu
Tstd. = standard temperature (°R = °F+460)
MW = molecular weight
DSCFM = dry standard cubic foot per minute
NO_X = oxides of nitrogen, reported as NO_2 (MW = 46)
CO = carbon monoxide (MW = 28)
CH_4 = methane (MW = 16)
SO_2 = sulfur dioxide (MW = 64.1)
NMOC = non-methane organic compounds = POC

CALCULATIONS:

PPM @ 15% O_2 = ppm · 5.9 / (20.9 - %O_2)
lb/hr = ppm · 8.223 E-05 · DSCFM · MW / Tstd. °R
g/BHp-hr = lb/hr · 453.6/BHp-hr
Engine BHp = Engine kW · 1.3932 hp/kW
ppm dry = ppm wet · 100 / (100 - %H_2O)

APPENDIX O

S-55 STATIC PRESSURE PERFORMANCE TEST (LEAK TEST)

MB SERVICES

P.O. Box 1299 Suisun City, CA 94585

707-290-7716 Mbservices1@yahoo.com

Letter of Transmittal

Date
03/21/2022

To:	RE:
REDWOOD LANDFILL 8950 REDWOOD HIGHWAY NOVATO, CA 94945	**Testing Results** **GDF# 8573**

Enclosed are copies of the Air Quality test results for your location for test performed Please see below for brief summary.

Test	Passed	Failed	Notes
Air Quality	✓	----	
TP-206.3	✓	----	

State law requires that you keep a copy of these test results at your location. For you convenience the test results were submitted to your local agency.

If you have any question please feel free to contact us at:
707-290-7716
707-439-3778
mbservices1@yahoo.com

Thank you,
MB Services

TP-206.3
AST Static Pressure Performance Test Report Form

Permit Number: GDF# 8573		Test Company: MB Services	
Site Name: Redwood Landfill		Technician: Brian Dunahay	
Site Address: 8950 Redwood Highway		Certification Number	Expiration Date
City: Novato CA	Zip: 94945	ICC: 8021436	08/03/2022
Date of Test: 3/21/2022			

TEST INFORMATION			
Total number of nozzles: 1		Are the tanks manifolded? ☐ Yes ☒ No	
Phase I vapor recovery system executive order			VR-101
Phase I vapor recovery system configuration	☒ Direct-fill Remote-fill		
Phase II vapor recovery system executive order			N/A
Nitrogen introduction point	X Phase I vapor coupler	☐ Phase I vent line	☐ Phase II vapor riser
Pressure measuring device	X digital manometer		
Calibration date for pressure measuring device (must be within 180 days of the test)			01/15/2022
Ending value for digital manometer drift test if applicable (must be 0.01 in. w.c. or less)			0.00wc
Nitrogen introduction flow rate, F (must be between 1 and 5 CFM)			2 CFM
Number of hoses with over 100 ml (balance hoses must be drained prior to testing)			0

TANK INFORMATION					
Tank No.	1	2	3	4	ALL
Product grade	87				
Actual tank capacity (gallons)	1,000				1,000
Gasoline volume (gallons)	736				736
Ullage (gallons)[1]	264				264
If tanks are not manifolded, number of nozzles	1				1

2 IN. W.C. STATIC PRESSURE TEST					
Test No.	1	2	3	4	5
Start time	2:30 pm				
Initial Pressure, inches of water column (in. w.c.)	2.00				
Pressure at one minute, in. w.c.	2.06				
Pressure at two minutes, in. w.c.	2.14				
Pressure at three minutes, in. w.c.	2.25				
Pressure at four minutes, in. w.c.	2.34				
Pressure at five minutes, in. w.c.	2.50				
Allowable minimum pressure, in. w.c.	**88**				
Pass / Fail	**Pass**				

NOTE: [1]The minimum ullage shall be 25 percent and the maximum shall be 75% of the tank capacity.

I declare, under penalty of perjury under the laws of the state of California that based on information and belief formed after reasonable inquiry, the statements and information provided in this document are true, accurate, and complete.

Signature of Technician: Brian Dunahay Date: 03/21/2022

TABLE 1
TP-206.3

Leak Rate Criteria

ULLAGE (GALLONS)	MINIMUM PRESSURE AFTER 5 MINUTES, (INCHES OF WATER COLUMN)
100	**0.21**
150	0.45
200	**0.65**
250	0.82
300	**0.95**
350	1.05
400	**1.14**
450	1.22
500	**1.28**
550	1.33
600	**1.38**
650	1.42
700	**1.45**
750	1.48
800	**1.51**
850	1.54
900	**1.56**
950	1.58
1,000	**1.60**
1,200	1.66
1,400	**1.70**
1,600	1.74
1,800	**1.77**
2,000	1.79
2,200	**1.81**
2,400	1.82
2,600	**1.83**
2,800	1.85
3,000	**1.86**
3,500	1.88
4,000	**1.89**
4,500	1.90
5,000	**1.91**
6,000	1.93
7,000	**1.94**
8,000	1.94
9,000	**1.95**
10,000	1.96
15,000	**1.97**
20,000	1.98

NOTE: [1]The minimum ullage shall be 25 percent and the maximum shall be 75% of the tank capacity.

APPENDIX P

ROLLING QUARTERLY LFG INPUT AND CO AND SO2 EMISSIONS

QUARTERLY LFG Input to all LFG-Fired Combustion Equipment

WM - REDWOOD LANDFILL, Novato, CA

Quarter	Month	Total LFG Throughput (MMscf)				Monthly Total (MMscf)	Quarterly Total (MMscf)	Rolling 4-Qtr Total (MMscf)
		A-51	A-60	S-64	S-65			
2021 Q1	January	0.25	37.74	29.16	27.17	94.32	276.05	1,184
	February	0.00	37.00	25.37	22.58	84.94		
	March	0.00	43.52	27.30	25.97	96.79		
2021 Q2	April	0.00	37.47	28.42	24.39	90.28	269.56	1,127
	May	0.00	46.39	27.28	18.05	91.73		
	June	0.00	55.98	23.92	7.65	87.55		
2021 Q3	July	0.00	56.37	23.90	9.07	89.34	254.42	1,086
	August	0.00	36.09	27.79	23.66	87.53		
	September	0.00	41.75	14.96	20.83	77.55		
2021 Q4	October	0.00	57.12	12.98	19.35	89.45	292.80	1,093
	November	0.00	44.64	29.43	27.55	101.63		
	December	0.00	45.06	29.06	27.62	101.73		
2022 Q1	January	0.69	42.98	24.31	24.23	92.21	285.56	1,102
	February	0.00	46.17	23.61	24.22	94.00		
	March	0.00	45.76	27.82	25.78	99.36		
2022 Q2	April	0.00	41.68	27.54	23.81	93.03	254.15	1,087
	May	0.03	45.57	18.41	17.81	81.81		
	June	0.00	48.92	17.62	12.76	79.31		
2022 Q3	July	0.00	54.15	6.99	19.50	80.64	240.71	1,073
	August	0.00	54.32	20.26	4.57	79.14		
	September	0.00	46.03	17.41	17.49	80.93		
2022 Q4	October	3.21	49.19	19.28	16.79	88.47	88.47	869
	November							
	December							

Pursuant to Title V Permit Condition Number 25634 Part 1, the total landfill gas throughput to the landfill gas combustion equipment at Plant #1179 shall not exceed 2,625 million scf of landfill gas during any consecutive rolling 4-quarter period.

S-66, and S-67 have not been installed.

QUARTERLY CO EMISSIONS From All LFG-Fired Combustion Equipment

WM - REDWOOD LANDFILL, Novato, CA

Quarter	Month	Total CO Emissions (tons)				Monthly Total (tons)	Quarterly Total (tons)	Rolling 4-Qtr Total (tons)
		A-51	A-60	S-64	S-65			
2021 Q1	January	0.00	0.98	0.65	0.65	2.28	6.71	28.2
	February	0.00	0.96	0.57	0.54	2.07		
	March	0.00	1.13	0.61	0.62	2.36		
2021 Q2	April	0.00	0.97	0.63	0.59	2.19	6.60	27.2
	May	0.00	1.20	0.61	0.43	2.24		
	June	0.00	1.45	0.53	0.18	2.17		
2021 Q3	July	0.00	1.46	0.53	0.22	2.21	5.44	25.7
	August	0.00	0.93	0.62	0.57	2.12		
	September	0.00	0.95	0.07	0.09	1.11		
2021 Q4	October	0.00	1.27	0.05	0.08	1.40	3.87	22.6
	November	0.00	0.99	0.12	0.11	1.23		
	December	0.00	1.00	0.12	0.11	1.24		
2022 Q1	January	0.01	0.96	0.10	0.10	1.17	3.63	19.5
	February	0.00	1.03	0.10	0.10	1.22		
	March	0.00	1.02	0.12	0.11	1.24		
2022 Q2	April	0.00	0.93	0.11	0.10	1.14	3.52	16.5
	May	0.00	1.01	0.08	0.07	1.16		
	June	0.00	1.09	0.07	0.05	1.21		
2022 Q3	July	0.00	1.20	0.03	0.08	1.31	4.23	15.2
	August	0.00	1.21	0.08	0.02	1.31		
	September	0.00	0.92	0.48	0.21	1.61		
2022 Q4	October	0.06	0.99	0.54	0.21	1.80	1.80	13.2
	November							
	December							

Pursuant to Title V Permit Condition Number 25634 Part 2, the total CO emissions from all landfill gas combustion equipment at Plant #1179 shall not exceed 237.5 tons during any consecutive rolling 4-quarter period.

S-66, and S-67 have not been installed.

QUARTERLY SO_2 EMISSIONS From All LFG-Fired Combustion Equipment

WM - REDWOOD LANDFILL, Novato, CA

Quarter	Month	Total SO_2 Emissions (tons)				Monthly Total (tons)	Quarterly Total (tons)	Rolling 4-Qtr Total (tons)
		A-51	A-60	S-64	S-65			
2021 Q1	January	0.02	3.69	0.02	0.02	3.76	11.72	47.6
	February	0.00	3.62	0.02	0.02	3.66		
	March	0.00	4.26	0.02	0.02	4.30		
2021 Q2	April	0.00	2.75	0.02	0.02	2.79	10.35	46.5
	May	0.00	3.40	0.02	0.01	3.43		
	June	0.00	4.10	0.02	0.01	4.13		
2021 Q3	July	0.00	2.47	0.02	0.01	2.50	5.96	40.5
	August	0.00	1.58	0.02	0.02	1.62		
	September	0.00	1.83	0.00	0.00	1.83		
2021 Q4	October	0.00	3.36	0.00	0.00	3.36	8.63	36.65
	November	0.00	2.62	0.00	0.00	2.62		
	December	0.00	2.65	0.00	0.00	2.65		
2022 Q1	January	0.04	2.34	0.00	0.00	2.37	7.37	32.31
	February	0.00	2.51	0.00	0.00	2.51		
	March	0.00	2.49	0.00	0.00	2.49		
2022 Q2	April	0.00	1.90	0.00	0.00	1.90	6.21	28.17
	May	0.00	2.08	0.00	0.00	2.08		
	June	0.00	2.23	0.00	0.00	2.23		
2022 Q3	July	0.00	2.66	0.00	0.00	2.66	7.60	29.81
	August	0.00	2.67	0.00	0.00	2.67		
	September	0.00	2.26	0.00	0.00	2.27		
2022 Q4	October	TBD	TBD	0.00	0.00	TBD	TBD	TBD
	November							
	December							

Pursuant to Title V Permit Condition Number 25634 Part 3, the total SO2 emissions from all landfill gas combustion equipment at Plant #1179 shall not exceed 99 tons during any consecutive rolling 4-quarter period.

TBD=To Be Determined.

SO2 emissions from flares are updated at the end of each quarter when the quarterly average emission factor is calculated.