

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 November 1, 2011 through April 30, 2012. 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, Appendix E
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 & J
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 L
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 (ppmv), 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 ppmv.	Sections 2.6 & 2.7, Appendices H & I
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

Rule	Requirement	Location in Report
8-34-501.9, 8-34-506, §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 J & K
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 L
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

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, includes the flares and 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)
November 2011	0.00	0.00
December 2011	7.30	7.07
January 2012	1.50	1.73
February 2012	0.00	0.00
March 2012	28.87	10.93
April 2012	32.90	7.87
Total Hours:	70.57	27.60

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.

2.1.2 Well Disconnection Log

There were 10 wellfield SSM events which occurred during the reporting period. See Appendix D, Wellfield SSM Log for details of well disconnection and reconnection events.

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. The total GCCS downtime for the period of November 1, 2011 through April 30, 2012 was 18.90 hours. There were 89.87 hours of GCCS downtime for 2011 and 13.07 hours of GCCS downtime for the partial 2012 calendar year (January 1, 2012 through April 30, 2012), out of 240 hours available per calendar year pursuant to BAAQMD Regulation 8-34-113 (Limited Exemption, Inspection and Maintenance).

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))

A-51 Flare

The A-51 Flare commenced operation in June 2005. The combustion zone temperature of the A-51 Flare is monitored with Omega Type K thermocouples. The temperature is primarily recorded with a Yokogawa DX100 paperless chart recorder. The temperature is also recorded with a backup Yokogawa R10000 paper chart recorder. There were no temperature deviations for the A-51 Flare during the reporting period. A copy of the Temperature Deviation Report for the A-51 Flare is included in Appendix E.

The A-51 Flare operated at an average temperature of 1,450 degrees Fahrenheit (°F) during the March 31, 2011 Source Test, which resulted in a calculated NSPS minimum operating temperature of 1,400°F. 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. As a result, the enforceable minimum combustion zone temperature during this reporting period was 1,400°F. Operating records for the A-51 Flare indicate that the three-hour average combustion zone temperature of the A-51 Flare did not drop below the NSPS minimum operating temperature of 1,400°F on a three-hour average basis while the flare was in operation from November 1, 2011 through April 30, 2012.

The results of the March 21, 2012 source test for the A-51 Flare were not available until after the reporting period ending April 30, 2012, and as such were not used to verify compliance during November 1, 2011 through April 30, 2012. Results of the March 21, 2012 source test for the A-51 Flare are included in Section 3 and Appendix O of this Combined Report.

There were no periods of missing temperature data for the A-51 Flare during the reporting period.

A-60 Flare

The A-60 Flare commenced operation on April 1, 2009. The combustion zone temperature of the A-60 Flare is monitored with Omega Type E thermocouples. The temperature is primarily recorded with a Yokogawa DX100 paperless chart recorder.

The A-60 Flare Zone A operated at an average temperature of 1,450°F during the March 31, 2011 Source Test, which resulted in a calculated NSPS minimum operating temperature of 1,400°F. The A-60 Flare Zone B operated at an average temperature of 1,462°F during the April 5, 2010 Source Test, which

resulted in a calculated NSPS minimum operating temperature of 1,412°F. 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. As a result, the enforceable minimum combustion zone temperature for the A-60 Flare during this reporting period was 1,400°F for Zone A, and 1,412°F for Zone B. 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. Therefore, the source test from Zone B is due by April 5, 2015.

Operating records for Zones A and B of the A-60 Flare indicate that the three-hour average combustion zone temperatures of Zones A and B of the A-60 did not drop below the NSPS minimum operating temperature of 1,400°F on a three-hour average basis while the flare was in operation from November 1, 2011 through April 30, 2012.

The results of the March 21, 2012 source test for the A-60 Zone A Flare were not available until after the reporting period ending April 30, 2012, and as such were not used to verify compliance during November 1, 2011 through April 30, 2012. Results of the March 21, 2012 source test for the A-60 Flare are included in Section 3 and Appendix O of this Combined Report.

There were no periods of missing temperature data for the A-60 Flare during the reporting period.

2.4 Monthly Cover Integrity Monitoring (BAAQMD 8-34-501.4)

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

- November 7, 9, 14, 15, 25, 28, and 29, 2011
- December 1, 5, 7, 8, 9, and 12, 2011
- January 6, 9, 10, 13, and 26, 2012
- February 2, 6, 8, 13, 14, 15, and 16, 2012
- March 1, 6, 12, 19, 22, 23, 26, 28, and 29, 2012
- April 6, 9, 11, 12, 13, 17, 23, and 24, 2012

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 on the following dates:

- Fourth Quarter 2011 – October 12, 19, and November 9, 2011
- First Quarter 2012 – January 9, 10, 17 and February 6, 2012

A Toxic Vapor Analyzer (TVA) 1000 and an Organic Vapor Analyzer (OVA) 128 (both are flame ionization detectors [FIDs]) were used during the Fourth Quarter 2011 and First Quarter 2012 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-ppmv methane calibration gas.

The Fourth Quarter 2011 SEM event was conducted by Roberts Environmental Services (RES) and WM personnel on October 12, 2011, and six (6) exceedances were detected. Corrective actions were completed and the ten-day re-monitoring event was conducted on October 19, 2011, and no exceedances were detected. The thirty-day follow-up monitoring event was conducted on November 9, 2011, and no exceedances were detected.

The First Quarter 2012 SEM event was conducted by RES and WM personnel on January 9 and 10, 2012, and sixteen (16) exceedances were detected. Corrective actions were completed and the ten-day re-monitoring event was conducted on January 17, 2012, and no exceedances were detected. The thirty-day follow-up monitoring event was conducted on February 6, 2012, and no exceedances were detected.

The Fourth Quarter 2011 and First Quarter 2012 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:

- Fourth Quarter 2011 – December 22, 2011
- First Quarter 2012 – January 17, 2012

No exceedances were identified during either event.

Appendix I contains the Fourth Quarter 2011 and First Quarter 2012 Component Leak Test Reports.

2.8 Solid Waste Placement Records (BAAQMD 8-34-501.7)

The solid waste placement total was calculated for the period of November 1, 2011 through April 30, 2012. The current waste in place figure includes solid waste placed in the landfill through April 30, 2012. Table 2-3 summarizes the RLI solid waste placement records for the reporting period.

Table 2-3 Solid Waste Placement

	Total Waste Landfilled (tons)
Waste Placement (November 1, 2011 through April 30, 2012)	82,179
Current Waste In Place as of April 30, 2012	12,498,134

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 on a monthly basis pursuant to BAAQMD Regulation 8-34-505. The well concentration readings for November 2011 through April 2012 are included in Appendix J. 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:

- November 7, 9, 14, 15, 25, 28 and 30, 2011
- December 1, 5, 7, 8, 9, 12, 13, and 15, 2011
- January 6, 9, 10, 12, 13, 25, 26, 27, and 30, 2012
- February 2, 6, 8, 13, 14, 15, 16, and 24, 2012
- March 1, 6, 12, 19, 22, 23, 26, 28, and 29, 2012
- April 6, 9, 11, 12, 13, 17, 23, and 24, 2012

2.10.1 Wellhead Deviations (BAAQMD 8-34-501.9 & §60.757(f)(1))

There were no LFG collection wells in exceedance of the limits set forth in BAAQMD Regulation 8-34-305 during the reporting period.

A copy of the Wellfield Deviation Log is included in Appendix K.

2.11 Gas Flow Monitoring Results (BAAQMD 8-34-501.10 & 8-34-508, & §60.757(f)(1))

The A-51 Flare LFG flow rate is measured with a Barton flow meter. The LFG flow is recorded with a Yokogawa DX100 paperless chart recorder. The LFG flow is also recorded with a Yokogawa R10000 paper chart recorder. The flare flow meter meets the requirements of BAAQMD Regulation 8-34-508 by recording fuel flow at least every 15 minutes.

The paper charts for the A-51 Flare are available for review at the RLI. Appendix L contains a summary of the daily and monthly LFG flow rates and heat input for the flare.

The A-60 Flare LFG flow rate is measured with a Rosemount flow meter. The LFG flow is recorded with a Yokogawa DX100 paperless chart recorder. The flare flow meter meets the requirements of BAAQMD Regulation 8-34-508 by recording fuel flow at least every 15 minutes.

The A-60 Flare is not equipped with a paper chart recorder. Appendix L contains a summary of the daily and monthly LFG flow rates and heat input for the flare.

Table 2-4 displays a summary of the total LFG flow for the reporting period:

Table 2-4 Total LFG Flow

Emission Control Device	Total Runtime (hours)	Average Flow (scfm)	Average Methane (%)	Total LFG Volume (scf)	Total LFG Volume (scf) Corrected to 500 BTU/scf	Total Methane Volume (scf)	Heat Input (MMBTU)
A-51 Flare	4,297.43	1,232.1	51.2 ¹	317,076,069.00	328,906,811.29	162,342,947.33	164,453.41
A-60 Flare	4,340.40	1,583.8	49.7 ²	412,526,663.00	415,382,172.56	205,025,751.51	207,691.09

¹Methane content determined from the March 31, 2011 Source Test. Heating value of methane used in heat input calculations is 1,013 BTU/scf.

²Methane content determined from the March 31, 2011 Source Test. Heating value of methane used in heat input calculations is 1,013 BTU/scf.

Results for the March 21, 2012 Source test were not available until after May 1, 2012 and as such were not used for heat input calculations during the reporting period.

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 A-51 Flare did not exceed 4,320,000 scf during any one day, and the total LFG throughput to the A-60 Flare did not exceed 4,320,000 scf during any one day during the reporting period of November 1, 2011 through April 30, 2012. 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 L contains a summary of the combined daily LFG flow rates for the A-51 and A-60 Flares and the consecutive 12-month summaries.

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.

On February 14, 2012, RLI submitted a request to the BAAQMD to extend Authority to Construct (ATC) Application Number 21623 for the installation, replacement, and decommissioning of LFG extraction wells, which had an expiration date of March 3, 2012. Per BAAQMD Regulation 2-1-407, RLI requested to extend the ATC for an additional two years, in order to allow RLI to modify the wellfield as necessary to meet regulatory standards. A copy of the letter is included in Appendix C, BAAQMD Correspondence.

The well count for RLI as of April 30, 2012, is 95 vertical wells and 7 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.

2.13 Compliance with Title V Permit Condition 13123 (S-34 & S-39)

The S-34 Compost Facility Operations was utilized during the reporting period. The total amount of material processed did not exceed 50,000 tons during any consecutive 12-month period during the reporting period of November 1, 2011 through April 30, 2012.

Pursuant to Title V Permit Condition Number 13123 Part 6, 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 November 1, 2011 through April 30, 2012.

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. The gasoline throughput for the 6-month period of November 1, 2011 through April 30, 2012 was 2,040 gallons. The maximum 12-month rolling total throughput for November 2011 through April 2012 was 4,164 gallons. Monthly gasoline throughput totals for the reporting period are listed in Table 2-5.

Table 2-5 Unleaded Gasoline Throughput

Month	Total Throughput (gallons)	Rolling 12-Month Fuel Usage (gallons)
November-11	341	4340
December-11	348	4106
January-12	415	4202
February-12	321	4229
March-12	325	4167
April-12	290	4164
TOTAL:	2,040	--

2.15 Compliance with Title V Permit Condition 19613 (S-49)

The S-49 Diesel Engine for Emergency Back-Up Generator did not operate during the Semi-Annual reporting period (November 1, 2011 through April 30, 2012), which is less than the 20 hours limit per calendar year for reliability-related activities.

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 as of April 30, 2012. A total 19,733.12 tons of green waste and yard waste were processed at S-41 during the reporting period (November 1, 2011 through April 30, 2012), and a total of 11,824.75 tons were processed during the partial 2012 calendar year (January 1, 2012 through April 30, 2012). Table 2-6 summarizes the amount of waste processed at S-41 during the monitoring period:

Table 2-6 Waste Processed at S-41

Month	Total Throughput (tons)	Rolling 12-Month Throughput (tons)
November-11	3,317.67	35,048.3
December-11	3,355.09	35,233.5
January-12	3,131.15	35,578.9
February-12	2,915.96	36,314.6
March-12	2,938.14	36,273.0
April-12	4,075.11	37,089.2
TOTAL:	19,733.12	--

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 average vehicle fleet weight for all off-site vehicles traveling on paved roads during the reporting period was 14.58 tons
- The average vehicle fleet weight for all off-site vehicles traveling on gravel and dirt roads during the reporting period was 16.09 tons.
- During the reporting period, the average number of vehicle miles traveled (VMT) per day on dirt roads was 252 which is below the permit limit of 639 VMT per day.
- During the reporting period, the average VMT per day on asphalt roads was 158, which is below the permit limit of 622 VMT per day.
- During the reporting period, the average VMT per day on gravel roads was 95 which is below the permit limit of 280 VMT per day.

- The average vehicle fleet weight for all on-site landfilling and construction-related vehicles during the reporting period was 16.3 tons.
- The total VMT for on-site vehicles during the reporting period was less than 61 VMT per day and less than 19,080 VMT for the partial calendar year 2012 (through April 2012).

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. VOC-laden soil (containing less than 50 ppm of VOCs) was received during this reporting period. The total VOC emission rate for the reporting period (November 1, 2011 through April 30, 2012) is 40.8 lbs. The VOC soil log is included in Appendix M.

2.20 Compliance with Title V Permit Condition 19867, Parts 31 and 33

Pursuant to Title V Permit Condition Number 19867, Part 31b, weekly hydrogen sulfide (H₂S) readings were taken using Draeger tubes. The Fourth Quarter 2011, First Quarter 2012, and partial Second Quarter 2012 weekly H₂S readings and quarterly averages are included in Appendix N, H₂S Weekly and Quarterly Monitoring.

Pursuant to Title V Permit Condition Number 19867, Part 31a, RLI collected the quarterly characterization of the LFG for analysis of sulfur compounds on December 22, 2011 for the Fourth Quarter 2011, and on March 30, 2012 for the First Quarter 2012. The results are included in Tables 2-7 and Appendix N. The H₂S results were less than the peak total reduced sulfur limit of 600 ppmv during the Fourth Quarter 2011 and First Quarter 2012.

Table 2-7 Second and Third Quarter 2011 Landfill Gas Characterization Results

Compound	Fourth Quarter 2011 Result (ppmv)	First Quarter 2012 Result (ppmv)	Permit Limits (ppmv)
Carbon Disulfide	ND	ND	N/A
Carbonyl Sulfide	ND	ND	N/A
Dimethyl Sulfide	ND	ND	N/A
Ethyl Mercaptan	ND	ND	N/A
Hydrogen Sulfide	140	270	505
Methyl Mercaptan	ND	ND	N/A

ND = not detected

N/A = not applicable

Pursuant to Title V Permit Condition Number 19867, Part 33, RLI submitted a proposal, on May 17, 2011, for monitoring ground level H₂S concentrations at or near the fence line or property boundary. RLI will initiate H₂S monitoring within 3 months of approval from the District for the monitoring protocol. As of this Semi-annual reporting period (November 1, 2011 through April 30, 2012), approval from the District has not been received.

2.21 Compliance with Title V Permit Condition 22940 (S-56)

Conditions from the California Air Resources Board (CARB) Permit Number 117378 for the S-56 Portable Horizontal Grinder have been incorporated by reference into the RLI Title V Permit. Therefore, the compliance records for this equipment have been included in this Combined Report. Pursuant to BAAQMD Condition Number 22940, the emissions of particulate matter less than 10 microns in diameter (PM₁₀) did not exceed 10 tons per year. The PM₁₀ emissions are 1.04 tons for the reporting period (November 1, 2011 through April 30, 2012), and 0.68 tons for the partial 2012 calendar year (through April 30, 2012). The maximum daily throughput for the portable horizontal grinder (S-56) did not exceed 820 tons per day or 200,000 tons per year. Monitoring was performed daily for the recording of total throughput of all registered equipment units operating as part of a project. Table 2-8 lists the PM₁₀ emissions and total throughput of waste processed at S-56 for the reporting period:

Table 2-8 Waste Processed at S-56

Month	Emissions of Particulate Matter Less than 10 microns (tons)	Estimated Total Throughput (tons)
November-11	0.22	4,440
December-11	0.14	2,750
January-12	0.19	3,740
February-12	0.19	3,850
March-12	0.15	3,025
April-12	0.15	3,080
TOTAL:	1.04	20,885

2.22 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 direct rainfall onto the stormwater pond, did not exceed 39.42 million gallons during any consecutive 12-month period. The total leachate flow rate to S-58 for each month (gallons/month) and the total cumulative flow rate to S-58 for each rolling 12-month period (millions of gallons/year) were recorded. Table 2-9 displays the leachate flow information for S-58.

Table 2-9 Leachate Flow Information for S-58

Month	Total Leachate Influent Rate to S-58 (gallons/month)	Total Rolling 12-Month Flow Rate to S-58 (millions of gallons/year)
November-11	1,001,619.0	23,790,929.0
December-11	1,310,603.0	22,275,138.0
January-12	1,305,234.0	20,734,892.0
February-12	1,408,265.0	19,398,252.0
March-12	2,153,650.0	17,048,046.0
April-12	3,347,824.0	16,389,760.0
TOTAL:	10,526,995.0	---

The average concentration of precursor organic compounds (POCs) in the leachate influent to S-58 did not exceed 500 parts per billion (ppb) by weight as required by Title V Permit Condition Number 23052 Part 2. The average concentrations of specified toxic air contaminants in the leachate influent to S-58 did not exceed 19 ppb by weight of benzene, 48 ppb by weight of 1,4-dichlorobenzene, and 7 ppb by weight of vinyl chloride as required by Title V Permit Condition Number 23052, Part 3. Table 2-10 summarizes POC concentrations in the influent to S-58, as determined by the analysis for calendar year 2011.

Table 2-10 POC Concentrations for S-58

Month	Benzene (ppb)	1,4-Dichlorobenzene (ppb)	Vinyl Chloride (ppb)	Total POC Concentration (ppb)
6/2/11	ND<1.6	10.6	ND<1.0	218

The 2012 sample is scheduled to be collected on May 21, 2012. The results will be included in the subsequent Combined Report.

2.23 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 November 1, 2011 through April 30, 2012 reporting period. S-61 and S-62 operated a maximum of 220 hours combined during any 12-month period ending in the November 2011 through April 2012 reporting period, out of the limit of 4,992 hours per rolling 12-month period. Table 2-11 displays runtime hours for S-61 and S-62 during the reporting period.

Table 2-11 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)
November-11	9	17	344
December-11	12	5	300
January-12	20	14	265
February-12	10	0	220
March-12	9	0	220
April-12	16	0	220
TOTALS:	76	36	--

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, Appendix O
§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 Flare (A-51) Source Test Results (BAAQMD 8-34-412)

The 2012 Annual Compliance Demonstration Test (Source Test) was performed on the A-51 Flare by Blue Sky Environmental, LLC on March 21, 2012, pursuant to Title V Permit Condition Number 19867, Part 30. The results of the March 21, 2012 source test (below) for the A-51 Flare indicate that the flare is in compliance with BAAQMD Regulation 8-34-301.3. As required, the flare met the NMOC emission rate of less than 30 ppmv and therefore meets the minimum destruction efficiency for hazardous air pollutants (HAPs) in compliance with Title V Condition 19867 Part 23. Table 3-2 below shows the results of the March 21, 2012 source test, averaged from three test runs.

The average of the A-51 Flare and Zone A of the A-60 Flare LFG characterization tests' results indicated that Total Reduced Sulfur (TRS) calculated as H₂S did not exceed the limit of 505 ppmv. The average of the Zone B of the A-60 Flare LFG characterization test results indicated that Benzene exceeded the limit of 340 parts per billion by volume (ppbv) and that ethylene dichloride exceeded the limit of 70 ppbv. On February 17, 2011, the BAAQMD issued a Change of Permit Conditions Number 20807, which increased the permitted limits of benzene to 1,500 ppbv, and ethylene dichloride to 200 ppbv. These new limits were included in the most recent Title V Permit issued during the reporting period. The Zone B of the A-60 Flare is not required to be source tested again until April 5, 2015, pursuant to Title V Permit Condition Number 19867 Part 30(g), therefore the most recent results from the April 5, 2010 Source Test indicate compliance with the benzene and ethylene dichloride limits in the current Title V permit for RLI.

LFG characterization samples were collected at the A-51 Flare and Zone A of the A-60 Flare on March 21, 2012, and Zone B of the A-60 Flare on April 5, 2010, during the most recent LFG characterization tests for the A-51 and A-60 Flares. TRS (calculated as H₂S) for the A-51 Flare and Zone A of the A-60 Flare was detected at an average of 314.3 ppmv and 336.7 ppmv, respectively, which did not exceed the 505 ppmv permit limit pursuant to Title V Permit Condition Number 19867 Part 18c. The Combined A-51 and A-60 Flares Source Test Report is included in Appendix O.

Table 3-2 A-11 Flare Source Test Results

Condition	Flare (A-51) Average Results	Permit Limit	8-34-301.3 Limit	Compliance Status
NO _x (ppmv @ 15% O ₂)	11.1	15	--	In Compliance
CO (ppmv @ 15% O ₂)	12.8	82	---	In Compliance
NMOC (ppmv @ 3% O ₂)	<5.3	--	30	In Compliance

A LFG characterization test was conducted at the A-51 Flare during the March 21, 2012 source test pursuant to the RLI Title V Permit Condition Number 19867, Part 31. Compounds detected in the A-51 Flare LFG analysis are shown in Tables 3-3 and 3-4.

Table 3-3 A-51 Flare LFG Analysis Non-Methane Organic Compounds

Compound	Result (ppbv)	Concentration Limit* (ppbv)
Acrylonitrile	<100	300
Benzene	1,080	1,500
Benzyl Chloride	50	500
Carbon Tetrachloride	<50	200
Chlorobenzene	84.3	200
Chloroethane	124	500
Chloroform	<50	200
1,1-Dichloroethane	<50	150
1,1-Dichloroethene (Vinylidene Chloride)	<50	500
1,2-Dichloroethane (Ethylene Dichloride)	87	200
1,4-Dichlorobenzene	323	1,000
Ethylbenzene	3,257	4,000
1,2 Dibromoethane	<50	200
Hexane	644	2,000
Isopropanol	578	10,000
Methyl Alcohol	<500	300,000
Methyl Ethyl Ketone	2,400	15,000
Methylene Chloride	<100	1,000
Methyl tert-Butyl Ether	<50	500
Perchloroethylene (Tetrachloroethylene)	114	1,000
Styrene	189	500
Toluene	5,983	20,000
1,1,1-Trichloroethane	<50	200
1,1,2,2-Tetrachloroethane	<50	200
Trichloroethylene	88	500
Vinyl Chloride	281	2,000
Xylenes	6,277	20,000
NMOC (as Hexane)	268 ppmv	360 ppmv

ppbv = parts per billion by volume

NA = not applicable

Table 3-4 A-51 Flare LFG Analysis Total Reduced Sulfur Compounds

Compound	Result (ppmv)	Permit Limits (ppmv)
Carbon Disulfide	0.061	NA
Carbonyl Sulfide	<0.025	NA
Dimethyl Sulfide	0.106	NA
Ethyl Mercaptan	0.127	NA
Hydrogen Sulfide	311.0	NA
Methyl Mercaptan	0.285	NA
TRS (as H ₂ S)	314.3	505

3.2 Flare (A-60) Source Test Results (BAAQMD 8-34-412)

The Annual Compliance Demonstration Tests (Source Tests) for Zones A and B of the A-60 Flare were performed by Blue Sky Environmental, LLC on March 21, 2012, and April 5, 2010, respectively, pursuant to Title V Permit Condition Number 19867, Part 30. The results of the 2010 source test (below) for Zones B of the A-60 Flare indicate that the flare is in compliance with BAAQMD Regulation 8-34-301.3. The results of the 2012 source test (below) for Zone A of the A-60 Flare indicate that the flare is in compliance with BAAQMD Regulation 8-34-301.3. As required, both zones of the flare met the NMOC emission rate of less than 30 ppmv, and therefore meet the minimum destruction efficiency for HAPs in compliance with Title V Permit Condition 19867 Part 23. Tables 3-5 and 3-6 below show the results of the April 5, 2010 and March 21, 2012 source tests for Zones A and B of the A-60 Flare, averaged from three test runs.

Table 3-5 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 (ppmv @ 15% O ₂)	10.0	15	—	In Compliance
CO (ppmv @ 15% O ₂)	18.3	82	—	In Compliance
NMOC (ppmv @ 3% O ₂)	<4.9	—	30	In Compliance

Table 3-6 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 (ppmv @ 15% O ₂)	10.7	15	—	In Compliance
CO (ppmv @ 15% O ₂)	35.4	82	—	In Compliance
NMOC (ppmv @ 3% O ₂)	<6.5	—	30	In Compliance

A LFG characterization test was conducted at Zone A of the A-60 Flare during the March 21, 2012 source test pursuant to the RLI Title V Permit Condition Number 19867, Part 31. Compounds detected in the Zone A of the A-60 Flare LFG analysis are shown in Tables 3-7 and 3-8.

Table 3-7 A-60 Flare Zone A LFG Analysis Non-Methane Organic Compounds

Compound	Result (ppbv)	Concentration Limit* (ppbv)
Acrylonitrile	<100	300
Benzene	1,006	1,500
Benzyl Chloride	<50	500
Carbon Tetrachloride	<50	200
Chlorobenzene	70	200
Chloroethane	111	500
Chloroform	<50	200
1,1-Dichloroethane	<50	500
1,1-Dichloroethene (Vinylidene Chloride)	<50	500
1,2-Dichloroethane (Ethylene Dichloride)	79	200
1,4-Dichlorobenzene	162	1,000
Ethylbenzene	2,903	4,000
1,2 Dibromomethane	<50	200
Hexane	601	2,000
Isopropanol	827	10,000
Methyl Alcohol	538	300,000
Methyl Ethyl Ketone	2,577	15,000
Methylene Chloride	<100	1,000
Methyl tert-Butyl Ether	50	500
Perchloroethylene (Tetrachloroethylene)	103	1,000
Styrene	146	500
Toluene	5,410	20,000
1,1,1-Trichloroethane	<50	200
1,1,2,2-Tetrachloroethane	<50	200
Trichloroethylene	81	500
Vinyl Chloride	279	2,000
Xylenes	5,587	20,000
NMOC (as Hexane)	260 ppmv	360 ppmv

ppbv = parts per billion by volume
NA = not applicable

Table 3-8 A-60 Flare Zone A LFG Analysis Total Reduced Sulfur Compounds

Compound	Result (ppmv)	Permit Limits (ppmv)
Carbon Disulfide	0.062	NA
Carbonyl Sulfide	<0.025	NA
Dimethyl Sulfide	0.101	NA
Ethyl Mercaptan	0.127	NA
Hydrogen Sulfide	333.7	NA
Methyl Mercaptan	0.280	NA
TRS (as H ₂ S)	336.7	505

A LFG characterization test was conducted at Zone B of the A-60 Flare during the April 5, 2010 source test pursuant to the RLI Title V Permit Condition Number 19867, Part 31. Compounds detected in the Zone B of the A-60 Flare LFG analysis are shown in Tables 3-9 and 3-10.

Table 3-9 A-60 Flare Zone B LFG Analysis Non-Methane Organic Compounds

Compound	Result (ppbv)	Concentration Limit* (ppbv)
Acrylonitrile	<100	280
Benzene	553	340
Carbon Tetrachloride	<50	70
Chlorobenzene	87	NA
Chlorodifluoromethane	635	NA
Chloroethane	126	NA
Chloroform	<50	70
1,1-Dichloroethane	<50	150
1,1-Dichloroethene (Vinylidene Chloride)	<50	NA
1,2-Dichloroethane (Ethylene Dichloride)	76	70
1,4-Dichlorobenzene	249	400
Dichlorodifluoromethane	561	NA
Dichlorofluoromethane	162	NA
Ethylbenzene	3,023	NA
1,2 Dibromomethane	<50	70
Fluorotrichloromethane	58	NA
Hexane	768	NA
Isopropanol	2,323	NA
Methyl Ethyl Ketone	3,467	NA
Methylene Chloride	104	320
Perchloroethylene (Tetrachloroethylene)	120	450
Toluene	5,127	NA
1,1,1-Trichloroethane	<50	NA
1,1,2,2-Tetrachloroethane	<50	70
Trichloroethylene	97	250
Vinyl Chloride	300	880
Xylenes	5,587	NA
NMOC (as Hexane)	133 ppmv	360 ppmv

ppbv = parts per billion by volume

NA = not applicable

*Pursuant to Title V Permit Condition Number 19867 Part 30(g), the Annual Source Test at A-60 Zone B is not due to be performed until April 5, 2015, at which time the compounds as required by the most recent Title V Permit will be tested.

Table 3-10 A-60 Flare Zone B LFG Analysis Total Reduced Sulfur Compounds

Compound	Result (ppmv)	Permit Limits (ppmv)
Carbon Disulfide	0.14	NA
Carbonyl Sulfide	<0.10	NA
Dimethyl Sulfide	0.19	NA
Ethyl Mercaptan	0.16	NA
Hydrogen Sulfide	386	505
Methyl Mercaptan	0.49	NA

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. With the addition of the A-60 Flare, new LFG extraction wells, and piping, the present LFG mover equipment capacity is 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.

3.5 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. The combined LFG extraction rate for the A-51 and A-60 Flares is approximately 2,815.9 scfm continuous, as averaged from November 1, 2011 through April 30, 2012, at a 50.5 percent methane concentration, averaged from the A-51 and A-60 Flares 2011 source tests. The LFG generation flow rates over time were estimated using the EPA's LFG generation model. The current extraction rate is 74.7 percent of the LFG generation rate predicted by the EPA model. The prediction of future LFG generation rates will be revised as more data becomes available. The EPA equations are provided in 40 CFR §60.755 and the LFG generation and extraction estimates for the landfill using these equations are summarized in Table 3-11:

Table 3-11 LFG Generation and Extraction Estimates

Year	EPA with AP-42 Generation (scfm)	Recovery Efficiency (%)	Extraction (scfm)
Current	3,766	74.7	2,815.9 (Actual)
2019	4,114	75.0	N/A
2029	3,333	75.0	N/A

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.

No wells were decommissioned or started-up during the reporting period (November 1, 2011 through April 30, 2012).

As of April 30, 2012, there were 95 vertical wells and 7 horizontal collectors 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.

3.10 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.

4 STARTUP, SHUTDOWN, MALFUNCTION (SSM) PLAN

4.1 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 (November 1, 2011 through April 30, 2012) are noted in this section and included in Appendix B. The following information is included as required:

During the reporting period, 9 A-51 Flare SSM events, and 8 A-60 Flare SSM events occurred. The time, duration, and cause of each event are included in Appendix B, Flare SSM Logs.

During the reporting period, 10 wellfield SSM events occurred. The time and duration of these events are included in Appendix D, Wellfield SSM Log.

- During the reporting period, no monitoring equipment SSM events occurred, as noted in Appendix B, Flare SSM Logs.
- In all 27 flare 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)).