2 SEMI-ANNUAL MONITORING REPORT

In accordance with Title V Permit Standard Condition 1.F, BAAQMD Regulation 8-34-411 and §60.757(f) in NSPS, this document is a Combined Semi-Annual Title V Report and Partial 8-34 Annual Report that is required to be submitted by the ALRRF. The report contains monitoring data for the operation of the landfill gas collection and control system (GCCS). The operational records have been reviewed and summarized. The timeframe included in this report is December 1, 2015 through May 31, 2016. Table 2-1 lists the rules and regulations that are required to be included in this Combined Report.

Table 2-1. Semi-Annual Report Requirement

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 Appendix B
8-34-501.2 §60.757(f)(3)	All emission control system downtime and the reason for the shutdown.	Section 2.2 Appendices A, C, D, E, & F
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 G & I
8-34-501.4, 8-34-505	Testing performed to satisfy any of the recordkeeping requirements of this rule, including wellhead monitoring.	Sections 2.4 & 2.11 Appendices K & O
8-34-501.5	Monthly landfill gas (LFG) flow rates and well concentration readings for facilities subject to 8-34-404.	Sections 2.4 & 2.7 Appendices G, H, I, J, O, & Q
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 L & M
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 Collection and Control Design Plan.	Section 2.9, Appendix N
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 2.11, Appendices O & P
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 2.12, Appendix G, H, I, J, & Q
8-34-501.11, 8-34-509	For operations subject to Section 8-34-509, records of key emission control system operating parameters.	Section 2.2.2 Appendices G, H, & I
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 2.13, Appendices B & R
§60.10(d)(5)(i)	Startup, Shutdown, and Malfunction Events	Section 4, Appendices B, C, D, E, & F

2.1 COLLECTION SYSTEM OPERATION *(BAAQMD 8-34-501.1 & §60.757(f)(4))*

Appendix A includes collection system downtime logs that list the time, duration, and the reason for each shutdown. Appendix B includes the Wellfield Start-Up, Shutdown, and Malfunction (SSM) events.

2.1.1 Collection System Downtime

During this reporting period, there were no instances in which all emission control devices did not operate. The total GCCS Downtime for the reporting period of December 1, 2015 through May 31, 2016 is 9.47 hours.

The total GCCS downtime for the partial 2016 calendar year is 9.47 hours out of the 240 hours allowed per year by BAAQMD Regulation 8-34-113. Each instance of collection system downtime is described in Appendix A.

2.1.2 Well Disconnection Log

As required by BAAQMD Regulation 8-34-116 and/or 8-34-117, no more than five (5) LFG collection wells or ten percent of the LFG collection wells of the GCCS were shut down at any one time. No LFG collection wells were disconnected from a vacuum source for longer than 24 hours during this reporting period unless fill was actively being placed or compacted in the immediate vicinity of the well pursuant to BAAQMD Regulation 8-34-116. Appendix B includes the Wellfield SSM Log for the reporting period.

2.1.3 S-210 Liquefied Natural Gas Plant

The daily heat input limit for the S-210 Liquefied Natural Gas (LNG) Plant, pursuant to PTO Condition Number 24255, Part 2 is 1,950 MMBTU/day. As summarized in Table 2-2 below, the LNG Plant did not exceed the permitted daily heat input limit at any time during this reporting period. Appendix J includes heat input logs for the reporting period.

Table 2-2. S-210 LNG Plant Maximum Daily Heat Input Summary

Month/Year	12/2015	1/2016	2/2016	3/2016	4/2016	5/2016
LNG Plant*	1,184	1,088	1,191	1,073	1,273	979

* Maximum Daily Heat Input (MMBTU/day)

Pursuant to BAAQMD Regulation 1 Rule 523, parametric periods of in-operation for the S-210 LNG Plant did not exceed 24 hours or 15 consecutive days. Parametric monitor periods of inoperation for the S-210 LNG Plant also did not exceed 30 calendar days per consecutive 12-month period. Please refer to Appendix AF for more details.

2.2 EMISSION CONTROL DEVICE DOWNTIME *(BAAQMD 8-34-501.2 & §60.757(f)(3))*

The A-15 Flare (back-up flare) and A-16 Flare (LNG Plant Flare) SSM Logs, which list downtimes and the reasons for the shutdowns, are located in Appendix C. Appendix D contains the SSM Logs for Turbine Number 1 (S-6) and Turbine Number 2 (S-7). Appendix E contains the SSM Logs for the S-23 and S-24 internal combustion (IC) engines. Appendix F contains the SSM Log for the LNG Plant (S-210). The total downtime hours for the reporting period are summarized in Table 2-3:

Table 2-3. Emissions Control Device

Emission Control Device	Total Downtime December 1 2015 through May 31, 2016 (Hours)
A-15 (Back-up Flare)[1]	4,371.4
A-16 (LNG Plant Flare)	51.4
S-6 (Turbine Number 1)	60.0
S-7 (Turbine Number 2)	312.2
S-23 (IC Engine Number 1)	1,878.5
S-24 (IC Engine Number 2)	2,444.1
S-210 (LNG Plant)	1,629.3

1 – Used to control LFG when other device(s) are shut down

2.2.1 LFG Bypass Operations *(§60.757(f)(2))*

During the period encompassed by this report, LFG was not diverted through a bypass line. No bypass lines have been installed at the ALRRF.

2.2.2 Key Emission Control Operating Parameters *(BAAQMD 8-34-501.11 & 8-34-509)*

S-6 and S-7 Turbines

The Key Emission Control System Operating Parameter (BAAQMD 8-34-509) for the S-6 and S-7 Turbines was determined to be combustion chamber discharge temperature, based on the Annual Source Test. The combustion temperature of both turbines is monitored on a continuous basis and shall not be less than 855 degrees Fahrenheit (°F) averaged over any three-hour period, pursuant to Title V Permit Condition Number 18773, Part 9.

The normal operating temperature of the turbines is 1,170°F. As required by Title V Permit Condition Number 18773, Part 9, continuous monitoring of the combustion temperature of the S-6 and S-7 Turbines started on December 1, 2003. The combustion temperature of the S-6 and S-7 Turbine was maintained between 855°F and 1,220°F averaged over any three-hour period during this reporting period.

The daily heat input permit limit for each turbine, pursuant to Title V Condition Number 18773, Part 8 is 1,378 MMBTU/day. As summarized in Table 2-4, the turbines did not exceed the permitted daily heat input limit at any time during this reporting period.

Table 2-4. Turbine S-6 and S-7 Maximum Daily Heat Input Summary

Month/Year	12/2015	1/2016	2/2016	3/2016	4/2016	5/2016
Turbine (S-6)*	1,106	1,096	1,116	1,093	1,075	1,067
Turbine (S-7)*	1,117	1,110	1,110	1,099	1,093	1,080

* Maximum Daily Heat Input (MMBTU/day)

Appendix G includes turbine combustion temperature deviation and heat input logs for S-6 and S-7.

Pursuant to BAAQMD Regulation 1 Rule 523, parametric periods of inoperation for the S-6 and S-7 Gas Turbines did not exceed 24 hours or 15 consecutive days. Parametric monitor periods of inoperation for the S-6 and S-7 Gas Turbines also did not exceed 30 calendar days per consecutive 12-month period. Please refer to Appendix AF for more details.

S-23 and S-24 IC Engines

The Key Emission Control System Operating Parameter (BAAQMD 8-34-301.4) for the S-23 and S-24 IC Engines was determined to be the carbon monoxide (CO) concentration in the engine exhaust. Pursuant to Title V Permit Condition Number 19237, Part 9, the CO concentration in the exhaust from S-23 and S-24 shall not exceed 330 parts per million by volume (ppmv) at 15 percent oxygen (O_2), dry basis. A hand-held CO monitor is used to collect daily CO readings to comply with this requirement.

The IC engines did not exceed the daily CO concentration limit of 330 ppmv at 15 percent O_2, dry basis, at any time during the reporting period as required by Permit Condition Number 19237, Part 9.

Quarterly nitrogen oxides (NO_x) emissions were monitored on the following dates:

- First Quarter 2016 – February 9, 2016
- Second Quarter 2016 – May 4, 2016

Source test report summary for the IC Engines 2016 Annual Source Test conducted on February 9, 2016 can be found in Appendix AA of the semi-annual report (SAR).

The IC engines did not exceed the quarterly NO_x concentration limit of 70 ppmv at 15% oxygen during quarterly monitoring events as required by BAAQMD 9-8-302.1.

The daily heat input permit limit for each IC engine pursuant to Title V Permit Condition Number 19237, Part 2 is 420 MMBTU/day. As summarized in Table 2-5 below, the engines did not exceed the permitted daily heat input limit at any time during this reporting period.

Table 2-5. IC Engine S-23 and S-24 Heat Input Summary

Month/Year	12/2015	1/2016	2/2016	3/2016	4/2016	5/2016
IC Engine (S-23)*	342.6	243.5	335.9	372.5	344.8	323.3
IC Engine (S-24)*	349.4	313.7	340.2	346.7	371.1	326.1

* Maximum Daily Heat Input (MMBTU/day)

Appendix H includes CO and NO_x measurement results and heat input logs for the reporting period.

Pursuant to BAAQMD Regulation 1 Rule 523, parametric periods of inoperation for the S-23 and S-24 IC Engines did not exceed 24 hours or 15 consecutive days. Parametric monitor periods of inoperation for the S-23 and S-24 IC Engines also did not exceed 30 calendar days per consecutive 12-month period. Please refer to Appendix AF for more details.

A-15 and A-16 Flares

The Daily Heat Input Permit Limits for the A-15 and A-16 Flares, pursuant to Title V Condition Number 19235, Part 4 are 1,704 MMBTU/day and 3,168 MMBTU/day, respectively. Table 2-6 below shows the maximum daily heat input measured during this reporting period.

The A-15 and A-16 Flares did not exceed the permitted daily heat input limit at any time during this reporting period.

Table 2-6. Flares A-15 and A-16 Maximum Daily Heat Input Summary

Month/Year	12/2015	1/2016	2/2016	3/2016	4/2016	5/2016
A-15 (Back-up Flare)[1]	159.3	405.7	0.0	157.7	0.0	0.0
A-16 Flare[1]	1,524.1	1860.0	2,131,1	1,938.7	1,742.4	2,186.0

1 – Maximum Daily Heat Input (MMBTU/day)

Appendix I includes A-15 and A-16 Flare temperature deviation and heat input logs for the reporting period.

Pursuant to BAAQMD Regulation 1 Rule 523, parametric periods of inoperation for the A-15 and A-16 Flares did not exceed 24 hours or 15 consecutive days. Parametric monitor periods of inoperation for the A-15 and A-16 Flares also did not exceed 30 calendar days per consecutive 12-month period. Please refer to Appendix AF for more details.

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

The combustion zone temperature of the A-15 Flare is continuously monitored using a thermocouple and recorded by a Yokogawa data acquisition system with local digital display. The recorded graphs and tables showing operational data (flow, temperature, operation time) of the flare indicated that the three-hour average combustion zone temperature did not drop below 1,400°F while the flare was in operation during the reporting period. Pursuant to the updated PTO Condition 19235 Part 10(a) issued by the BAAQMD in 2015 and 2016 PTO, the minimum three-hour average operating temperature for the A-15 Flare is 1,481°F. From December 1, 2015 through May 31, 2016, the A-15 Flare three-hour average operating temperature did not drop below 1,526°F.

The combustion zone temperature of the A-16 Flare is continuously monitored using a thermocouple and recorded by a Yokogawa data acquisition system with local digital display. The recorded graphs and tables showing operational data (flow, temperature, operation time) of the flare indicated that the three-hour average combustion zone temperature did not drop below 1,400°F while the flare was in operation during the reporting period. Pursuant to the updated PTO Condition 19235 Part 10(b) issued by the BAAQMD in 2015 and 2016 PTO, the minimum three-hour average operating temperature for the A-16 Flare is 1,509°F. From December 1, 2015 through May 31, 2016, the A-16 Flare three-hour average operating temperature did not drop below 1,565°F.

2.4 MONTHLY COVER INTEGRITY MONITORING *(BAAQMD 8-34-501.4)*

Cover integrity monitoring was performed on a monthly basis. The Monthly Cover Integrity Monitoring Reports are included in Appendix K. Minor ponding was observed in February 2016. ALRRF technicians remediated the location on March 1, 2016. No other areas of concern were found during the reporting period. Cover integrity monitoring was performed on the following dates:

- December 31, 2015
- January 29, 2016
- February 29, 2016
- March 23, 2016
- April 29, 2016
- May 31, 2016

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

The ALRRF does not operate under BAAQMD 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))*

The information contained in Appendix L includes the Surface Emissions Monitoring (SEM) data for the quarterly monitoring events performed during this reporting period on the following dates:

- Fourth Quarter 2015 – October 26 and 27, 2016 and November 23, 2016
- First Quarter 2016 – February 9, 2016

There were twelve (12) exceedances of the permitted limit of 500 ppmv methane detected during the Fourth Quarter 2015 SEM initial event. Corrective actions were taken at these locations, no exceedances were detected during the ten-day re-monitoring and the thirty-day follow-up monitoring events.

There were nine (9) exceedances of the permitted limit of 500 ppmv methane detected during the First Quarter 2016 SEM initial event. Corrective actions were taken at these locations, no exceedances were detected during the ten-day re-monitoring and the thirty-day follow-up monitoring events.

See Appendix L for the Fourth Quarter 2015 and First Quarter 2016 SEM Reports.

2.7 COMPONENT LEAK TESTING *(BAAQMD 8-34-501.6 & 8-34-503)*

"Quarterly tests for operations subject to Sections 8-34-503 and 506, records of all monitoring dates, leaks in excess of the limits in Section 8-34-301.2 or Section 8-34-303 that are discovered by the operator, including the location of the leak, leak concentration in ppm by volume, date of discovery, the action taken to repair the leak, date of repair, date of any required re-monitoring, and the re-monitored concentration in ppm by volume."

The quarterly LFG component leak testing events for this reporting period were performed on:

- Fourth Quarter 2015 – November 17 and 20 and December 10, 11, and 16, 2015
- First Quarter 2016 – January 20, 2016, February 9 and 12, 2016 and March 22, 2016.

Pursuant to BAAQMD Section 8-34-301.2, five (5) leaks exceeding the 1,000 ppmv methane limit were detected during the Fourth Quarter 2015 component leak testing event on November 17, 2015. The leaks were repaired, re-monitored, and found to be less than the 1,000 ppmv methane limit within 7 days. No other leaks were detected during this monitoring period.

Pursuant to BAAQMD Section 8-34-301.2, two (2) leaks exceeding the 1,000 ppmv methane limit were detected during the First Quarter 2016 component leak testing event on March 22, 2016. The leaks were repaired, re-monitored, and found to be less than the 1,000 ppmv methane limit within 7 days. No other leaks were detected during this monitoring period.

See Appendix M for the Component Leak Testing Reports.

2.8 WASTE ACCEPTANCE RECORDS *(BAAQMD 8-34-501.7)*

The waste acceptance rate for this reporting period and the current waste in-place figures, which include waste placed through May 31, 2016, are as follows:

- Waste Acceptance Rate = 380,665 tons between December 1, 2015 to May 31, 2016
- Current Waste In-Place = 47,493,565 tons, as of May 31, 2016

Pursuant to Permit to Operate Condition 19235 18C, the total cumulative amount of decomposable materials placed in existing Fill Area 1 shall not exceed 51, 020, 000 tons.

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

The ALRRF includes an approximately 8-acre landfill area on the eastern side of Unit 2 that has been historically segregated for asbestos disposal, as stated in the June 2003 Amended and Restated Collection and Control System Design Plan.

The amount of non-degradable asbestos waste that was placed in this area during this reporting period is 5,609 tons (Appendix N).

2.10 GREENWASTE GRINDING OPERATION *(BAAQMD 2-1-105.3)*

The ALRRF was issued PTO 17215 on July 21, 2008, incorporating the following 3 sources:

S-29 – Green Waste Stockpiles (subject to Condition Number 24061)
S-30 – Portable Green Waste Grinding Operation (subject to Condition Number 24062)
S-31 – Portable Diesel Engine for Green Waste Grinder (subject to Condition Number 24063)

Pursuant to PTO Condition Number 24063 Part 2, the S-31 engine did not use more than 76,205 gallons of fuel during any consecutive 12-month period. Pursuant to PTO 17215 Condition Number 24061 Part 1, the total amount of green waste received at S-29 from off-site locations did not exceed 68,040 tons during any consecutive 12-month period. No food wastes were stored or processed at S-29. Appendix AD details the total waste received and fuel usage data for the Portable Green Waste Operation.

Pursuant to ALRRF's October 2009 Compliance Plan to satisfy Alameda County Ordinance 2008-01 ("Alameda County Plant Debris Landfill Ban"), ALRRF no longer receives plant debris for disposal or alternative daily cover (ADC) as of January 1, 2010 but does accept the materials for transfer offsite to a composting and/or biofuels facility and/or onsite grinding through third party. The ALRRF green waste grinding operation, including the S-31 Portable Diesel Engine for the Green Waste Grinder stopped in January 2010, although this operation may occur in the future under allowances provided in Ordinance 2008-01 (i.e. grinding of purchase green waste for erosion control or final cover materials). Currently the grinding operation of accepted green waste is done at the site by third party.

2.11 WELLFIELD MONITORING DATA *(BAAQMD 8-34-501.4 & 8-34-505)*

Wellfield monitoring was conducted on a monthly basis pursuant to BAAQMD Regulation 8-34-505. The wellfield concentration readings for December 1, 2015 through May 31, 2016 are included in Appendix O. Each well was monitored for the following:

- 8-34-305.1 – Each wellhead shall operate under a vacuum; and,
- 8-34-305.2 – The LFG temperature in each wellhead shall be less than 55 degrees Celsius (131°F); and,

- 8-34-305.4 – The oxygen concentration in each wellhead shall be less than 5 percent by volume.

The wellfield monitoring was performed on the following dates:

- December 1, 2, 3, 4, 5, 7, 8, 9, 11, 12, 14, 15, 16, 17, 18, 21, 22, 29 and 31, 2015
- January 8, 11, 13, 14, 15, 16, 18, 21, 22, and 28, 2016
- February 2, 3, 4, 5, 8, 12, 15, 17, 18, 19, 22, and 26, 2016
- March 2, 3, 4, 8, 9, 10, 11, 16, 21, 22, and 31, 2016
- April 4, 5, 6, 13, 15, 20, 26, 27 and 28, 2016
- May 2, 3, 5, 10, 12, 13, 16, 17, 18, 19, and 26, 2016

2.11.1 Wellfield Deviations *(BAAQMD 8-34-501.9 & §60.757(f)(1))*

BAAQMD Regulation 8-34-305 (Wellhead Requirements) requires that each wellhead shall operate under a vacuum; wellhead temperature shall be less than 131°F (55 Degrees Celsius); and either the nitrogen concentration shall be less than 20 percent or the oxygen concentration shall be less than 5 percent.

Please refer to the Wellfield Deviation Log, included in Appendix P, for exceedance records for the reporting period of December 1, 2015 through May 31, 2016.

2.12 GAS FLOW MONITORING RESULTS *(BAAQMD 8-34-501.10, 8-34-508, & §60.757(f)(1))*

The LFG flow rate for the A-15 Flare is measured with a Fluid Components International (FCI) thermal mass flow meter connected to a Yokogawa digital readout and data acquisition system. The LFG flow rate for the A-16 Flare is measured with a Rosemount Annubar flow meter connected to a Yokogawa digital readout and data acquisition system. Pursuant to BAAQMD Regulation 8-34-508 the flow is monitored continuously and recorded digitally at least every 15 minutes.

Both of the turbines (S-6 and S-7) are equipped with a Daniels flow meter. Pursuant to BAAQMD Regulation 8-34-508, the flow is monitored continuously and recorded digitally at least every 15 minutes.

Both of the IC engines (S-23 and S-24) are equipped with ABB flow meters. Pursuant to BAAQMD Regulation 8-34-508, the flow is monitored continuously and recorded digitally by the EMCO flow meters and by the GC at least every 15 minutes.

The LNG Plant (S-210) is equipped with a Rosemount 485 Annubar flow meter. Pursuant to BAAQMD Regulation 8-34-508 the flow is monitored continuously and recorded digitally at least every 15 minutes.

The LFG flow data is available for review at the ALRRF. Appendix Q contains a summary of the monthly LFG flow rates for the flares, turbines, IC engines, and LNG Plant. Table 2-7, below, summarizes the total LFG flow for the reporting period.

Table 2-7. Control Devices LFG Flow Summary December 1, 2015 – May 31, 2016

Source	Average Flow (scfm)	CH_4 (%)	Total LFG Volume (scf)	Total CH_4 Volume (scf)	Total Heat Input (MMBTU)
A-15 (Backup Flare)[1]	1,415	52.5	1,668,731	876,084	874
A-16 (LNG Plant Flare)[2,5]	2,170	51.0	564,639,310	287,853,120	287,191
S-6 (Turbine 1)[3]	1,469	49.2	381,782,350	187,788,767	190,230
S-7 (Turbine 2)[3]	1,469	49.2	362,302,061	178,637,250	180,960
S-23 (IC Engine 1)[3,4]	334	52.9	59,124,326	31,432,408	31,588.8
S-24 (IC Engine 2)[3,4]	295	52.9	45,521,179	24,193,471	24,343
S-210 (LNG Plant)[3]	N/A	54.1	211,428,999	114,372,333	115,859

CH_4 – methane N/A – not available
1 – From Annual Source Test dated March 25, 2015.
2 – Annual Source Test (May 13, 2015), average of condensate injection on and off.
3 – Monthly reading
4 – Provided by Tetratech
5 – Byproduct gas flow from the LNG Plant to the A-16 Flare has been incorporated into the flare's total throughput.

2.13 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."

This section summarizes changes made to the ALRRF GCCS which were permitted by the BAAQMD and implemented for the reporting period. The Wellfield SSM Log listing well decommissions and start-ups is located in Appendix B. Correspondence detailing the decommissioning of wells can be found in Appendix R.

PTO Condition Number 19235, Part 1, which was assigned Application Number (AN) 23198 issued on May 26, 2011 allows the ALRRF to decommission up to one hundred (100) vertical wells and fifteen (15) horizontal wells and/or tire trench collectors, and to install up to one hundred and twenty (120) vertical wells and twenty five (25) horizontal wells and/or tire trench collectors.

The BAAQMD approved the application, which was assigned to Application Number (AN) 23198, and issued a PTO for the requested actions on May 26, 2011.

Table 2-8 below summarizes the status of permitted wellfield decommissionings and installations per the PTO Condition Number 19235 Part 1(b), as updated by Application Number (AN) 23198 issued on May 26, 2011.

Table 2-8. Wellfield Decommissionings and Installations per PTO Condition Number 19235, Part 1, Updated by Application Number (AN) 23198

As of May 31, 2016	Decommissioning Actions		Installations	
	Vertical Wells	Horizontal wells/ Tire Trench Collectors	Vertical Wells	Horizontal wells/ Tire Trench Collectors
Actions permitted under PTO Condition No. 19235	100	15	120	25
Actions performed by WMAC per PTO Condition No. 19235	100	4	97	5
Remaining actions permitted under PTO Condition No. 19235	0	11	23	20

Per the updated PTO Condition Number 19235, Part 1, as of May 31, 2016 there were one hundred and twenty-seven (127) vertical wells, two (2) horizontal trench collector, and 1 leachate collection system cleanout riser (LCRS) installed at ALRRF.

2.14 MONITORING REPORTS

Section I.F of the Title V Permit requires the ALRRF to submit all monitoring records to the BAAQMD at least once every six months, except where more frequent reporting is required. Monitoring was conducted for the following sources during this reporting period.

2.14.1 A-6 and A-7 – Fogging System

Title V Permit Condition Number 18773, Part 4 allows discretionary operation of the turbines' fogging system (A-6 and A-7). Permit Condition Number 18773, Part 5 requires ALRRF to maintain operational records on the days each of the turbines and the fogging system are operated.

ALRRF did not operate the fogging system during this reporting period. A logbook for the fogging system is maintained at the ALRRF.

2.14.2 Sulfur Monitoring

Title V Permit Condition Number 18773, Part 10 requires that a monthly sulfur (as hydrogen sulfide [H_2S]) sample be collected. The sample must be taken at the main LFG header with a Draeger tube, and the reading shall not exceed 150 ppmv. Table 2-9, below, summarizes all H_2S samples collected during this reporting period.

Table 2-9. Monthly H_2S Sampling Results

Date	Location Sample Taken	H_2S Concentration
12/4/2015	Inlet to Turbines	40 ppmv
1/5/2016	Inlet to Turbines	40 ppmv
2/2/2016	Inlet to Turbines	50 ppmv
3/1/2016	Inlet to Turbines	55 ppmv
4/11/2016	Inlet to Turbines	30 ppmv
5/4/2016	Inlet to Turbines	35 ppmv

2.14.3 LFG Condensate Injection

Title V Permit Condition Number 19235, Part 3 allows injection of LFG condensate into Flares A-15 and A-16 providing that the condensate injection rate does not exceed 3,600 and 7,200

gallons during any day, respectively. On February 2, 2010, the BAAQMD updated the A-15 Flare condensate injection rate pursuant to Permit Application Number 21044. The revised LFG condensate injection rate for the A-15 Flare pursuant to Permit Condition No. 19235, Part 3, is 4,320 gallons per day.

Table 2-10 below summarizes the maximum daily LFG condensate injection for every month during this reporting period:

Table 2-10. Monthly LFG Condensate Injection

Month/Year	A-15 Flare Maximum Daily LFG Condensate Injection[1]	A-16 Flare Maximum Daily LFG Condensate Injection[1]
December 2015	0.00	141
January 2016	0.00	26
February 2016	0.00	100
March 2016	0.00	39
April 2016	0.00	617
May 2016	0.00	376

1 – Permit limit for the A-15 Flare was 3,600 gallons per day until February 2010, when the limit was increased to 4,320 gallons per day. Permit limit for the A-16 Flare is 7,200 gallons per day.

As shown in Table 2-10, LFG condensate injection in the A-15 Flare did not exceed 4,320 gallons per day and the A-16 Flare did not exceed 7,200 gallons per day during this reporting period, in compliance with Permit Condition Number 19235, Part 3. Appendix S contains daily condensate injection rate tables for the reporting period.

2.14.4 S-99 - Non-Retail Gasoline Dispensing Facility

Title V Permit Condition Number 16516 requires that a Static Pressure Performance Test (Leak Test) ST-38 be conducted on the S-99 Gasoline Dispensing Facility at least once in each consecutive 12-month period. ALRRF performed a Leak Test on July 17, 2015 during which S-99 passed all Static Pressure Performance Tests. Leak Test summary results were submitted to the BAAQMD by the testing firm, and are included in Appendix T of previous report.

Permit Condition Number 20813 requires that the facility's annual gasoline throughput not exceed 30,000 gallons in any consecutive 12-month period.

The ALRRF maintains monthly records of the gasoline throughput at S-99 that shows full compliance with the approved throughput limit. Appendix T contains monthly throughput records for this reporting period. The records indicate that 4,774 gallons of gasoline fuel was dispensed during this semi-annual reporting period.

2.14.5 VOC-Laden Soil

Volatile organic compound laden (VOC-laden) soil is defined by the BAAQMD as any soil that contains VOCs, as defined in BAAQMD Regulation 8-40-206, at a concentration of 50 parts per million by weight (ppmw) or less. Condition Number 19235, Part 20 of the Title V Permit requires that ALRRF limit the quantity of low VOC-laden soil handled per day so that no more than 15 pounds of total carbon could be emitted to the atmosphere per day. ALRRF is in compliance with this requirement. VOC-laden soil receipts, soil VOC concentrations, and emission calculations for this reporting period are located in Appendix U

ALRRF accepted high VOC-contaminated soil exceeding 50 ppm volatile organic compounds by weight during this reporting period. All records required by the permit are available onsite.

2.14.6 S-19 - Transfer Tank with Siphon Pump

Title V Permit Condition Number 20774, Parts 1 and 3, limit the wastewater throughput from S-19 to 1,576,800 gallons in any consecutive 12-month period. Table 2-11 compares the actual consecutive 12-month rolling wastewater throughput for the S-19 transfer tank with the permit limit. During the reporting period, no wastewater was directed through S-19 (all wastewater went directly to S-12) and no waste material was collected from the siphon pump during this reporting period.

Table 2-11 Monthly 12-Month Rolling LFG Condensate Throughput

	Consecutive 12-Month S-19 Throughput (Gallons)	Waste Material Collected from the Siphon Pump (Gallons)
PERMIT LIMIT	**1,576,800**	**20,750**
December 2015	0	0
January 2016	0	0
February 2016	0	0
March 2016	0	0
April 2016	0	0
May 2016	0	0

The S-19 transfer tank is also subject to the requirements of BAAQMD Regulation 8, Rule 8 (Oil/Water Separators). This regulation requires an inspection and leak check (readings not to exceed 500 ppmv methane) of all gaskets, all flanges, tank condition, and connections of gauges and pipes on a quarterly basis.

The quarterly S-19 Inspection and Leak Checks were conducted on the following dates:

- Fourth Quarter 2015 –December 11, 2015
- First Quarter 2016 – March 14, 2016

S-19 was in good condition and no leaks were detected above the 500-ppmv limit during the Fourth Quarter 2015 and First Quarter 2016 inspection.

All of the records for S-19 covering this reporting period are included in Appendices V and Z, and are in full compliance with the terms of Permit Condition Number 20774 and the requirements of BAAQMD Regulation 8, Rule 8.

2.14.7 Diesel Engines S-199, S-200, S-201, S-221, S-222, S-217, S-218, S-224, and S-225

Fuel usage and operating hour records for all the engines are included in Appendix W.

Operating Hours of Diesel Engines S-199, S-200, and S-201

Emergency use diesel engines S-199, S-200 and S-201 commenced operation in March 2008. S-199, S-200, and S-201 were added to PTO 16864 and operated in compliance pursuant to PTO Condition Number 22850, which limits operation of S-199, S-200, and S-201 to no more than 50 hours per calendar year for maintenance and testing. ALRRF operated these engines in compliance with Title V Permit Condition Number 20812 and PTO Condition Number 22850 for the reporting period.

Fuel Usage of Diesel Engines S-193

Title V Permit Condition Number 20801 requires that diesel fuel usage at remaining engine, S-193, not exceed the rates listed in the table below during any consecutive 12-month period.

ALRRF operated these engines in full compliance with Title V Permit Condition Number 20812 during the consecutive 12-month period ending on May 31, 2016 as follows in Table 2-12.

Table 2-12. Diesel Engines Fuel Usage

Engine	June 1 -2015 to May 31, 2016 Fuel Usage (Gallons)	Permit Limit (Gallons/year)
S-193	0	62,196

Operating Hours of Diesel Engines S-221, S-222, S-217, S-218, S-S-224 and S-225

Pursuant to BAAQMD PTO Condition 24578 Part 3, the total combined operating time for the S-221, S-222, S-217, S-218, S-224 and S-225 diesel engines shall not exceed 29,200 hours during any consecutive 12-month period.

Daily operating records for S-221, S-222, S-217, S-218, S-224 and S-225 are maintained onsite at the ALRRF.

ALRRF submitted surrender notification for S -217 and S-218 to the BAAQMD on March 18, 2016. ALRRF submitted startup notification for S -224 and S-225 to the BAAQMD on March 18, 2016 seven days before scheduled startup date. ALRRF Tipper S-224 replaced S-217 and S-225 replaced S-218. As of May 31, 2016 ALRRF Tippers S-221, S-222, S-224 and S-225 are operational.

ALRRF operated in full compliance with the PTO Condition 24578 during the 12-month consecutive period ending May 31, 2016. A summary of operating hours are listed below in Table 2-13. As of May 31, 2016 ALRRF Tippers S-221, S-222, S-224 and S-225 are operational.

Table 2-13. Diesel Engines Operating Hours

Engine	Hours Operated December 31, 2015-May 31, 2016	Hours Operated in 12-Month Period Ending May 31, 2016	Operations Limits
S-206/S-221	1,451	2,927	14,600 Hours 12-Months*
S-208/S-222	816	1,092	
S-218	206	1,295	14,600 Hours 12-Months*
S-217	186	1,679	
S-224	452	452	14,600 Hours 12-Months*
S-225	2	2	
Combined S-221,S-222, S-218, S-217, S-224, and S-225	3,113	7,447	29,200 Hours 12-Months*

* Limit according to BAAQMD Condition 24578 Part 3 and Condition 25448 Part 3.

2.14.8 Carbon Monoxide Emissions Tracking

PTO Condition Number 24373 limits the rolling 12-month CO emissions rate for each non-mobile combustion device onsite and for the entire site as a whole.

CO Emissions for the A-15 and A-16 Flares; the S-6 and S-7 Turbines; the S-23 and S-24 IC Engines; the S-31, S-193, S-197, S-198, S-199, S-200, S-201, S-206, and S-208 portable diesel-fired engines; and other portable diesel-fired sources under 50 horsepower were calculated using CO emissions factors and monthly operating hours as stipulated in PTO Condition Number 24373. Please refer to Appendices P, W, and X for details. The maximum

potential CO emissions for the portable diesel-fired engines as required by PTO Condition Number 24373 Part 3(b) can also be found in Appendix W.

ALRRF operated in full compliance with PTO Condition Numbers 24373 during the 12-month consecutive period ending May 31, 2015 as follows in Table 2-15.

Table 2-15. Site-Wide CO Emissions

Source	12-Month CO Emissions (Tons)	Rolling 12- Month Permit Limit (Tons)
A-15 (Backup Flare)	0.00205	93.268
A-16 (LNG Plant Flare)	10.819	115.632
S-6 (Turbine 1)	15.056	56.064
S-7 (Turbine 2)	16.649	56.064
S-23 (IC Engine 1)	17.559	38.062
S-24 (IC Engine 2)	16.580	38.062
Portable Engines	2.360	N/A
Total (Site-wide)	79.024	225.0

2.14.9 S-140 SBR 1 and S-141 SBR 2 – Aerated Biological Reactors

Title V Permit Condition Number 20922 was revised on August 3, 2006 to include an alternative compliance demonstration method. Permit Condition Number 20922, Part 1 limits the quarterly average total organic carbon (TOC) concentration in the wastewater to less than 52 ppmw with a maximum daily throughput of 52,400 gallons to each tank. Alternatively, emissions of precursor organic compounds (POC) are limited to 10 pounds per day. Part 2 of the revised permit condition limits either the rolling 12-month wastewater throughput for S-140 and S-141 to 6,460,000 gallons or 12-month total POC emissions to less than 1,230 pounds. The rolling 12-month wastewater throughput for S-140 and S-141 was zero (0) gallons as of the end of this reporting period. See Appendix Z for flow records for S-140 and S-141.

Table 2-16 below compares Permit Condition Number 20922 concentration limits for S-140 (SBR 1) and S-141 (SBR 2) followed by the actual analytical results for selected constituents obtained during the First Quarter 2016 event on February 25, 2016 and Second Quarter 2016 event on May 25, 2016. For all Quarters, monitoring was completed by obtaining a sample at the LCRS and at the S-140 Reactor.

Table 2-16 Analytical Results Summary for LCRS and SBR1

Compound	Concentration Limit (ppbw)	First Quarter 2016 Average (ppbw)	Second Quarter 2016 Average (ppbw)	Annual Average Results (ppbw)
Benzene	80	2.40	1.50	1.29
Chloroform	470	ND	ND	ND
1,4 Dichlorobenzene	1,020	6.10	4.70	4.35
Methylene Chloride	2,530	ND	ND	ND
Naphthalene	3,590	2.50	2.10	2.00
Perchloroethylene (Tetracholoroethylene)	430	ND	ND	ND
Trichloroethylene (Trichloroethene)	1,290	ND	ND	ND
Vinyl Chloride	30	ND	ND	ND

ppbw – parts per billion by weight
ND – Non-Detect (below detection limit)

Table 2-17 presents the results of TOC testing by quarter and by annual average. Pursuant to Permit Condition Number 20922 if the TOC concentration exceeds the permit limit of 52 ppmw, POC emissions must be calculated using the equation in Permit Condition Number 20922, Part 5h. The calculated total POC emissions for the 12-month period ending in May 31, 2015 were 0.25 pounds. This is less than the 1,230 pound POC emission limit set in the permit.

Table 2-17. Total Organic Compounds Results Summary

Constituents	Concentration Limit (ppmw)	First Quarter 2016 Average (ppbw)	Second Quarter 2016 Average (ppbw)
TOC concentration	52	0.04374	0.02117
Average Annual TOC Concentration	52	0.02147	

Appendix Z contains the laboratory VOC analytical results and the monthly throughput records for S-140 and S-141. The monitored quarterly and annual concentrations are within the Permit Condition Number 20922 limits.

2.14.10 Non-Methane Organic Compound Content in Collected Landfill Gas

Pursuant to Permit Condition No. 19235, Part 17a, effective upon the commencement of waste disposal in Fill Area 2, the rolling three-year average NMOC concentration in LFG extracted from the site is limited to 600 ppmv expressed as C6, corrected to 50 percent methane content. Although waste disposal operations have not commenced in Fill Area 2, Appendix AE has been established as a placeholder for future reporting of the rolling three-year NMOC average concentrations in the LFG.

4 STARTUP, SHUTDOWN, AND MALFUNCTION REPORT

4.1 SSM REPORTS FOR THE GCCS AT ALRRF

The NESHAP contained in 40 CFR part 63, AAAA for Municipal Solid Waste 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 a Startup, Shutdown, and Malfunction (SSM) event occurred during the reporting period. The reports required by §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 §63.10(d)(5)(i) of the General Provisions.

The following is information covering SSM events that occurred during this reporting period:

- During the reporting period, sixty-one (61) wellfield SSM events occurred. The time and duration of each event is presented in the SSM Log contained in Appendix B.
- During the reporting period, five (5) Backup Flare (A-15) SSM events occurred. A-15 was shut down to allow for continuous operation of the LNG Plant and the A-16 Flare. The time and duration of each event is presented in the SSM Log contained in Appendix C.
- During the reporting period, twenty-three (23) LNG Plant Flare (A-16) SSM events occurred. A-16 was shut down and restarted in response to varying LFG demand, to allow for construction in the wellfield, in response to LNG Plant Operations, for forced utility outages and/or for maintenance activities. The time and duration of each event is presented in the SSM Log contained in Appendix C.
- During the reporting period, twenty-one (21) Turbine Number 1 (S-6) SSM events occurred. S-6 was shut down and restarted during the period for forced utility outages and/or to perform routine maintenance tasks. The time and duration of each event is presented in the SSM Log contained in Appendix D.
- During the reporting period, forty-five (45) Turbine Number 2 (S-7) SSM events occurred. S-7 was shut down and restarted during the period for forced utility outages and/or to perform routine maintenance tasks. The time and duration of each event is presented in the SSM Log contained in Appendix D.
- During the reporting period, ninety-two (92) IC Engine Number 1 (S-23) SSM events occurred. S-23 was shut down and restarted during the period for forced utility outages, to perform routine maintenance tasks, and/or because of low LFG supply. The time and duration of each event is presented in the SSM Log contained in Appendix E.
- During the reporting period, ninety-eight (98) IC Engine Number 2 (S-24) SSM events occurred. S-24 was shut down and restarted during the period for forced utility outages, to perform routine maintenance tasks, and/or because of low LFG

supply. The time and duration of each event is presented in the SSM Log contained in Appendix E.

- During the reporting period, sixty-three (63) LNG Plant (S-210) SSM events occurred. S-210 was shutdown and restarted during the reporting period for forced utility outages, to perform routine maintenance tasks, to allow for construction in the wellfield, and/or in response to A-16 shutdowns. The time and duration of each event is presented in the SSM Log contained in Appendix F.
- During the reporting period zero (0) monitoring/recorder equipment SSM events occurred.
- In all four hundred and eight (408) events, automatic systems and operator actions were consistent with the standard operating procedures contained in the SSM Plan and there were no deviations from the SSM Plan.
- No exceedances of any applicable emission limitation in the landfills NESHAP (63.10(d)(5)(i)) occurred during this reporting period.
- Revisions of the SSM Plan to correct deficiencies in the landfill operations or procedures were neither required, nor prepared (§63.6(e)(3)(viii)).