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, 2011 through May 31, 2012. 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 six (6) instances in which all emission control devices did not operate. On December 9, 2011 from 7:46 through 9:04, 17:44 through 18:46, 18:52 through 19:20 and 19:40 through 20.44 all control devices (A-15, A-16, S-6, S-7, S-23, S-24, and S-210) were shut down for inspection and maintenance of the Wellfield and Gas Control and Collection System during Electrical Maintenance at the site. On April 13, 2012 from 00:44 through 09:32, all control devices (A-15, A-16, S-6, S-7, S-23, S-24, and S-210) were shut down due to a site-wide power outage at the nearby Pacific Gas and Electric (PG&E) Ralph Station. Control device operators were onsite within 24 hours to inspect and manually restart all control devices. On May 23, 2012, the control devices S-6 and S-7 were shutdown for planned maintenance to replace the inlet vessel. On May 23, from 14:28 through 14:36, the control devices A-16, S-23, S-24, and S-210 were shut down for inspection and maintenance of the Wellfield and Gas Control and Collection System due to automatic high temperature shutdown event. Control device operators were onsite within 24 hours to inspect and manually restart all control devices.

All of the time during which the Target Gas Collection Rate (TGCR) was not achieved has been counted as GCCS downtime. The total TGCR of 2,381 standard cubic feet per minute (scfm) or 71.47 million British thermal units per hour (MMBTU/hr) was met for the entire reporting period from December 1, 2011 through May 31, 2012. The total GCCS Downtime for the reporting period of December 1, 2011 through May 31, 2012 is 12.80 hours, all of which can be attributed to periods when all control devices were offline. The total GCCS downtime for the 2011 calendar year was 21.57 hours. The total GCCS downtime for the partial 2012 calendar year is 8.93 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 well was 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	12/2011	1/2012	2/2012	3/2012	4/2012	5/2012
LNG Plant*	1431.1	1182.5	1315.2	1082.9	1168.1	1175.6

* 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, 2011 through May 31, 2012 (Hours)
A-15 (Back-up Flare)[1]	4,370.23
A-16 (LNG Plant Flare)	50.73
S-6 (Turbine Number 1)	183.97
S-7 (Turbine Number 2)	264.77
S-23 (IC Engine Number 1)	391.37
S-24 (IC Engine Number 2)	329.75
S-210 (LNG Plant)	188.47

1 – Used to meet target LFG rate 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	12/2011	1/2012	2/2012	3/2012	4/2012	5/2012
Turbine (S-6)*	1,117.7	1,093.0	1,094.8	1,093.8	1,113.0	1,078.3
Turbine (S-7)*	1,115.4	1,118.4	1,098.7	1,089.2	1,108.0	1,067.1

* 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 Lancom 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 2012 – March 9, 2012
- Second Quarter 2012 – May 10, 2012

Source test reports for the IC Engines 2012 Annual Source Test conducted on March 7, 2012 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	12/2011	1/2012	2/2012	3/2012	4/2012	5/2012
IC Engine (S-23)*	335.4	334.7	340.7	333.5	339.2	344.5
IC Engine (S-24)*	366.4	361.1	367.1	354.7	349.3	358.2

* 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	12/2012	1/2012	2/2012	3/2012	4/2012	5/2012
A-15 Flare[1]	491.2	0.0	78.7	0.0	185.7	73.0
A-16 Flare[1]	2,037.5	1,585.0	1,727.4	1,629.2	1,735.2	2,083.5

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 on December 7, 2010 and February 2012 PTO, the minimum three-hour average operating temperature for the A-15 Flare is 1,481°F. From December 1, 2011 through May 31, 2012, the A-15 Flare combustion zone temperature did not drop below this 1,481°F limit.

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 on December 7, 2010 and February 2012 PTO, the minimum three-hour average operating temperature for the A-16 Flare is 1,509°F. From December 1, 2011 through May 31, 2012, the A-16 Flare combustion zone temperature did not drop below this 1,509°F limit.

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. No areas of concern were found during the reporting period. Cover integrity monitoring was performed on the following dates:

- December 14, 2011
- January 11, 2012
- February 10, 2012
- March 14, 2012
- April 26, 2012
- May 2, 2012

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:

- First Quarter 2012 – January 16, 17, 18, 25, and February 8, 2012
- Second Quarter 2012 –May 1, 8, 15, 16, and 25, 2012

There were twenty (20) exceedances of the permitted limit of 500 ppmv methane detected during the First Quarter 2012 SEM initial event. After corrective actions were taken, no exceedances were detected during the first ten-day re-monitoring and the thirty-day follow-up monitoring events.

Seventeen (17) exceedances of the permitted limit of 500 ppmv methane were detected during the Second Quarter 2012 SEM initial event. After corrective actions were taken at these locations, no exceedances were detected during the first ten-day re-monitoring and the thirty-day follow-up monitoring events.

See Appendix L for the First Quarter 2012 and Second Quarter 2012 SEM Report.

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:

- First Quarter 2012 – February 17, 2012 and March 20, 2012
- Second Quarter 2012 – May 4, 8, and 9, 2012. LNG Plant related Component leak testing is currently being scheduled for completion by June 29, 2012. Report for Second Quarter LNG Plant Component leak testing will be included in the next SAR.

Pursuant to BAAQMD Section 8-34-301.2, no exceedances above 1,000 ppmv methane limit were detected during the First Quarter 2012 component leak testing event.

Pursuant to BAAQMD Section 8-34-301.2, a total of two (2) leaks that exceeded the 1,000 ppmv methane limit were detected during the Second Quarter 2012 component leak testing event. One leak was detected at the Turbine Skid gas manifold and piping and second leak was detected at the Turbine oil/gas separator vessel on May 4, 2012. 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, 2011, are as follows:

- Waste Acceptance Rate = 566,144 tons between December 1, 2011 to May 31, 2012
- Current Waste In-Place = 43,066,305 tons, as of May 31, 2012 .

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 4,154.31 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 17215 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. The 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).

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, 2011 through May 31, 2012 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, 6, 7, 14, and 16, 2011
- January 4, 5, 6, 9, 10, 11, 19, 26, and 31, 2012
- February 1, 2, 3, 6, 7, 9, 15, 22, and 23, 2012
- March 1, 5, 6, 8, 9, 12, 15, 16, 18, 19, 20, 28, 29, and 28, 2012
- April 4, 5, 6, 9, 10, 12, 19, 20, and 30, 2012
- May 1 and 2, 2012

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.

Listed below is a summary of wellfield deviations during the reporting period. Wellfield monitoring reports for December 2011 through May 2012, including the well identification numbers, dates of initial exceedance, parameters exceeded, duration of exceedance, and corrective actions taken, are included in Appendix P.

December 2011

There were three (3) wellfield deviations in December 2011: one for oxygen (Well 588), one for temperature (Well 592) and one for pressure (Well 528). Corrective action at Wells 588, 592, and 528 was initiated within 5 days of the initial exceedance but all three wells remained in exceedance. All three wells were re-monitored within 15 days of the initial exceedance. No further exceedances were detected at Wells 588 and 592, but Well 528 remained in exceedance.was placed on the 120-day well expansion list. The wellfield was expanded by installing additional collection line to Well 528 on January 3, 2012. Well 528 was re-monitored on January 4, 2012 and no further exceedances were detected.

CO Monitoring / Higher Operating Value for Temperature

No CO monitoring was required in December 2011.

January 2012

There was 1 wellfield deviation in January 2012 for temperature (Well 592). Corrective action was initiated within 5 days of the initial exceedance but the well remained in exceedance. Well 592 was re-monitored within 15 days of the initial exceedance. No further exceedances were detected.

CO Monitoring / Higher Operating Value for Temperature
In January 2011, CO monitoring was initiated at Well 592 to rule out the possibility of subsurface fire and pursue permit modifications for an HOV for temperature pursuant to PTO Condition Number 19235 Part 1(d). CO results at all wells were below 100 ppmv by the end of February 2012.

February 2012
There was 1 wellfield deviation in February 2012 for oxygen (Well 588). Corrective action was initiated within 5 days of the initial exceedance but the well remained in exceedances. Well 588 was re-monitored within 15 days of the initial exceedance. No further exceedances were detected.

CO Monitoring / Higher Operating Value for Temperature
In February 2012, CO monitoring was continued at Well 592 to rule out the possibility of subsurface fire and pursue permit modifications for an HOV for temperature pursuant to PTO Condition Number 19235 Part 1(d) in February 2012. CO results at Well 592 were below 100 ppmv by the end of February 2012.

March 2012
There were 3 wellfield exceedances in March 2012: two temperature exceedances (Wells 577 and 605) and one oxygen exceedance (Well 608). Corrective action was initiated within 5 days of the initial exceedance at all wells but all three wells remained in exceedance. All three wells were re-monitored within 15 days and no further exceedances were detected.

CO Monitoring / Higher Operating Value for Temperature
In March 2012, CO monitoring was initiated at Wells 577 and 605 to rule out the possibility of subsurface fire and pursue permit modifications for an HOV for temperature pursuant to PTO Condition Number 19235 Part 1(d). CO results at the wells were below 100 ppmv by the end of March 2012.

April 2012
There was 1 wellfield exceedance in April 2012 on oxygen (Wells 588). Corrective action was initiated within 5 days of the initial exceedance but the well remained in exceedance. Well 588 was re-monitored within 15 days but Well 588 remained in exceedance. The GCCS was improved by replacing the well head on Well 588. Well 588 was re-monitored on April 30, 2012 and no further exceedances were detected.

CO Monitoring / Higher Operating Value for Temperature

In April 2012, CO monitoring was continued at Well 605 to rule out the possibility of subsurface fire and pursue permit modifications for an HOV for temperature pursuant to PTO Condition Number 19235 Part 1(d). CO results at Well 605 were below 100 ppmv by the end of April 2012.

May 2011
There were no wellfield exceedances in May 2012.

CO Monitoring / Higher Operating Value for Temperature
In May 2012, CO monitoring was continued at Well 605 to rule out the possibility of subsurface fire and pursue permit modifications for an HOV for temperature pursuant to PTO Condition Number 19235 Part 1(d) in June 2012. CO results at Well 605 were below 100 ppmv by the end of May 2012.

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 an EMCO flow meter. 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, 2011 – May 31, 2012

Source	Average Flow (scfm)	CH_4 (%)	Total LFG Volume (scf)	Total CH_4 Volume (scf)	Total Heat Input (MMBTU)
A-15 (Backup Flare)[1]	1,057.0	49.5	2,037,061.0	1,010,460.4	1,008.1
A-16 (LNG Plant Flare)[2,5]	1,775.9	53.5	468,245,580.0	250,511,385.3	249,935.2
S-6 (Turbine 1)[3]	1,430.3	50.7	362,979,799.0	183,976,670.9	186,400.4
S-7 (Turbine 2)[3]	1,431.7	50.7	354,787,541.0	179,942,157.0	182,281.4
S-23 (IC Engine 1)[3,4]	391.39	51.1	104,716,634.0	54,598,633.5	53,898.0
S-24 (IC Engine 2)[3,4]	327.87	51.1	113,227,947	58,758,487.6	58,004.4
S-210 (LNG Plant)[5]	N/A	51.1	361,490,628.0	184,610,200.7	187,0195.5

CH_4 – methane N/A – not available

1 – From Annual Source Test (5/12/2011) . average of condensate injection on and off and April 24, 2012.

2 – Annual Source Test (June 22, 2011), average of condensate injection on and off.

3 – Average of daily GC readings

4 – Provided by PMI

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

	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	28	4	16	5
Remaining actions permitted under PTO Condition No. 19235	73	11	104	20

Per the updated PTO Condition Number 19235, Part 1, as of May 31, 2012 there were one hundred and nineteen (119) vertical wells, two (2) horizontal trench collector, and 1 leachate collection system cleanout riser (LCRS) installed at ALRRF pursuant to ATC 20251.

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
12/16/2011	Inlet to Turbines	40 ppmv
01/11/2012	Inlet to Turbines	30 ppmv
02/10/2012	Inlet to Turbines	30 ppmv
03/14/2012	Inlet to Turbines	25 ppmv
04/26/2012	Inlet to Turbines	30 ppmv
05/02/2012	Inlet to Turbines	20 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 2011	0.00	201.3
January 2012	0.00	0.0
February 2012	0.00	89.7
March 2012	0.00	104.8
April 2012	0.00	0.0
May 2012	0.00	2,392.5

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 August 12, 2011 during which S-99 passed all Static Pressure Performance Tests. Leak Test summary results were submitted to the BAAQMD and U.S. Environmental Protection Agency (EPA) Region 9 by the testing firm, and were included in Appendix T of the previous SAR.

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 5,570 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 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.

ALRRF did accept VOC-contaminated soil exceeding 50 ppm volatile organic compounds by weight during this reporting period. The BAAQMD was notified as required by Condition Number 19235, Part 21 of the Title V Permit. Records are available onsite.

VOC-laden soil receipts, soil VOC concentrations, and emission calculations for this reporting period are located in Appendix U.

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 2011	0	0
January 2012	0	0
February 2012	0	0
March 2012	0	0
April 2012	0	0
May 2012	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:

- First Quarter 2012 – March 14, 2012
- Second Quarter 2012 – April 12, 2012

S-19 was in good or fair condition and no leaks were detected above the 500-ppmv limit during the First and Second Quarter 2012 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-190, S-191, S-192, S-193, S-194, S-195, S196, S-197, S-198, S-199, S-200, S-201, S-206, S-207, S-208, S-209, and S-214

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

Operating Hours of Diesel Engines S-190, S-194, S-195, S-196, S-199, S-200, and S-201

Title V Permit Condition Numbers 20800 and 20812 require that ALRRF operate diesel engines S-190, S-194, S-195, and S-196 for no more than 100 hours per calendar year.

Diesel engines S-190, S-194, and S-195 are no longer in use as of February 2008 and diesel engine S-196 is no longer in use as of August 2009. See Appendix R of the previous Combined Report dated June 30, 2010 for the Permit Surrender Letter for S-196, S-197, S-198, and S-214.

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, and the hours are as follows (Table 2-12):

Table 2-12. Diesel Engine Operating Hours

Engine	Hours Operated 2011	Hours Operated 2012	Permit Limit (Hours)
S-190	0	0	100
S-194	0	0	100
S-195	0	0	100
S-196	0	0	100
S-199	2	2	20
S-200	10	0	20
S-201	3	1	20

Fuel Usage of Diesel Engines S-193, S-197, S-198

Title V Permit Condition Number 20801 requires that diesel fuel usage at each remaining engine, S-193, S-197, and S-198, not exceed the rates listed in the table below during any consecutive 12-month period.

Diesel engines S-197 and S-198 are no longer in use as of December 2009. See Appendix R of the previous Combined Report dated June 30, 2010 for the Permit Surrender Letter for S-196, S-197, S-198, and S-214.

ALRRF operated these engines in full compliance with Title V Permit Condition Number 20812 during the consecutive 12-month period ending on May 31, 2012 as follows in Table 2-13.

Table 2-13. Diesel Engines Fuel Usage

Engine	June-11 to May-12 Fuel Usage (Gallons)	Permit Limit (Gallons/year)
S-193	132	62,196
S-197	0	34,690
S-198	0	75,336

Operating Hours of Diesel Engines S-206, S-208, S-217, and S-218

PTO permit Condition Number 24425, issued in August 2009, requires that ALRRF not operate diesel engine S-214 for more than 80 hours in any calendar year. Diesel engine S-214 is no longer in use as of December 2009. See Appendix R of the previous Combined Report dated June 30, 2010 for the Permit Surrender Letter for S-196, S-197, S-198, and S-214.

Pursuant to the conditions of the Waste Management of Alameda County (WMAC)-BAAQMD Compliance and Enforcement Agreement, in effect since February 23, 2010, the total combined operating time for the S-206, S-207, S-208, and S-209 diesel engines shall not exceed 29,120 hours during any consecutive 12-month period.

On August 31, 2010, WMAC notified the BAAQMD of the start-up of the S-217 and S-218 diesel engines. In September 2010, the S-207 diesel engine was replaced by the S-218 diesel engine at Tipper #93 and the S-209 diesel engine was replaced by the S-217 diesel engine at Tipper #71. Effective October 21, 2010, the S-206, S-208, S-217, and S-218 diesel engines were subject to the operational limits outlined in BAAQMD Permit Condition 24578. Pursuant to BAAQMD PTO Condition 24578 Part 3, the total combined operating time for the S-206, S-208, S-217, and S-218 diesel engines shall not exceed 29,200 hours during any consecutive 12-month period.

Daily operating records for S-206, S-208, S-217 and S-218 are maintained onsite at the ALRRF.

ALRRF operated in full compliance with the PTO Condition 24578, the WMAC-BAAQMD Compliance and Enforcement Agreement and PTO Condition 24425 during the 12-month consecutive period ending May 31, 2012. A summary of operating hours are listed below in Table 2-14.

Table 2-14. Diesel Engines Operating Hours

Engine	Hours Operated 2012	Hours Operated in 12-Month Period Ending May 31, 2012	Operations Limits
S-206	779	1,216	
S-218	668	2,126	
S-208	182	1,169	
S-217	724	1,335	
Combined S-206, S-218, S-208, and S-217	2,353	5,846	29,200 Hours 12-Months*

* Limit according to BAAQMD Condition 24578 Part 3. BAAQMD Condition 24578 supersedes the WMAC-BAAQMD Compliance and Enforcement Agreement effective October 21, 2010.

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, 2012 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)	0.0184	93.268
A-16 (LNG Plant Flare)	7.068	115.632
S-6 (Turbine 1)	14.936	56.064
S-7 (Turbine 2)	16.548	56.064
S-23 (IC Engine 1)	31.424	38.062
S-24 (IC Engine 2)	33.999	38.062
Portable Engines	2.804	N/A
Total (Site-wide)	106.797	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 Fourth Quarter 2011 waste water sampling event on December 4, 2011 and the First Quarter 2012 event on March 26, 2012. For Fourth Quarter 2011 and First Quarter 2012, monitoring was completed by obtaining a sample at the LCRS and at the S-140 Reactor.

Table 2-16 Analytical Results Summary for SBR 1 and SBR 2

Compound	Concentration Limit (ppbw)	Fourth Quarter 2011 Average (ppbw)	First Quarter 2012 Average (ppbw)	Annual Average Results (ppbw)
Benzene	80	2.0	2.20	2.18
Chloroform	470	ND	ND	ND
1,4 Dichlorobenzene	1,020	8.00	6.50	7.63
Methylene Chloride	2,530	ND	ND	ND
Naphthalene	3,590	4.90	3.80	4.50
Perchloroethylene (Tetrachotoroethylene)	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, 2012 were 0.0 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)	Fourth Quarter 2011 Average (ppbw)	First Quarter 2012 Average (ppbw)
TOC concentration	52	0.019	0.016
Average Annual TOC Concentration	52	0.0	

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.

3 PERFORMANCE TEST REPORT

In accordance with BAAQMD Rule 8-34-413 and 40 CFR §60.757(g) in the NSPS, a Performance Test Report is required to be submitted for the ALRRF containing performance and monitoring data for the operation of the GCCS. The following operational records have been reviewed, summarized, and are included in this Performance Test Report.

Table 3-1. Performance Test Requirement

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 AA
§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 AB
§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 Appendices K & AB
§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 Appendix AC

3.1 SOURCE TEST REPORTS *(BAAQMD 8-34-412)*

Compliance demonstration tests (source tests) were performed on the S-6 and S-7 Gas Turbines and the A-15 Flare during this reporting period.

Source tests for the S-6 and S-7 turbines were performed on March 6, 2012, by Blue Sky Environmental, Inc. (Blue Sky) pursuant to BAAQMD Regulation 8-34-412. The S-6 and S-7 2012 Source Test Report was submitted to the BAAQMD on May 4, 2012, within 60 days of the test date.

The source tests performed on the S-23 and S-24 IC engines were performed by Blue Sky on March 7, 2012, pursuant to BAAQMD Regulation 8-34-412. The S-23 and S-24 Source Test Reports were submitted to the BAAQMD on May 4, 2012, within 60 days of the test date.

The source test for the A-15 Flare was performed by Blue Sky on April 24, 2012 pursuant to 8-34-412. The A-15 Source Test Report was submitted to the BAAQMD on June 22, 2012, within 60 days of the test date.

A source test of the A-16 Flare, including simultaneous operation with the LNG Plant, was performed by Blue Sky on June 22, 2011. The A-16 2011 Source Test Report was submitted to the BAAQMD on August 19, 2011, within 60 days of the test date.

The 2012 annual source test of the A-16 Flare, including simultaneous operation with the LNG Plant, was performed by Blue Sky on June 6, 2012. The A-16 2012 Source Test Report will be submitted to the BAAQMD within 60 days of the test date.

The results from the S-6 and S-7 Gas Turbine source tests performed during this reporting period are summarized in the following sections. For brevity, only the source test summary results pages are included in Appendix AA. The complete source test reports were completed and submitted to the BAAQMD as detailed above and are available upon request.

3.1.1 A-15 Flare Test Results

The April 24, 2012, source test results for the A-15 Flare indicate that the flare is in compliance with 8-34-301.4 and PTO Condition Number 19235. As required by 8-34-301.3 and Condition Number 19235, the flare meets the NMOC emission rate of less than 30 ppmv as methane, corrected to 3 percent O_2. Table 3-2 shows the results of the April 24, 2012 source test. The 2012 source test was conducted without condensate injection after seeking District approval. The last time condensate was injected into the A-15 Flare was during the 2011 Source Test. WM does not anticipate injecting any condensate into the system in the future.

Table 3-2. A-15 Source Test Results

Parameter	April 24, 2012 A-15 Flare Results (condensate on)	April 24, 2012 A-15 Flare Results (condensate off)	Permit Limit
NMOC (ppmv as CH_4 @ 3% O_2)	-	<4.4	30
NO_x Emission Rate (lb/MMBTU)	-	0.04	0.06
CO Emission Rate (lb/MMBTU)	-	0.02	0.30
SO_2 Emission Rate (ppmv)	-	2.3	300

3.1.2 A-16 Flare Test Results

The June 22, 2011 source test results for the A-16 Flare indicate that the flare is in compliance with 8-34-301.4 and PTO Condition Number 19235. As required by 8-34-301.3 and Condition Number 19235, the flare meets the NMOC emission rate of less than 30 ppmv as methane, corrected to 3 percent O_2. Table 3-3 shows the results of the source test.

Table 3-3. A-16 Source Test Results

Parameter	June 22, 2011 A-16 Flare Results (condensate on)	June 22, 2011 A-16 Flare Results (condensate off)	June 22, 2011 A-16 Flare Results (LNG and condensate on)	Permit Limit
NMOC (ppmv as CH_4 @ 3% O_2)	<1.9	<1.8	<1.8	30
NO_x Emission Rate (lb/MMBTU)	0.04	0.04	0.03	0.06
CO Emission Rate (lb/MMBTU)	0.004	0.02	0.006	0.20
SO_2 Emission Rate (ppmv)	13.0	12.6	15.0	300

3.1.3 S-6 Gas Turbine Test Results

The March 6, 2012 source test results for the S-6 Gas Turbine indicate that the turbine is in compliance with 8-34-301.4 and Title V Permit Condition Number 18773 and that, as

required by 8-34-301.4 and Condition Number 18773, the turbine meets the NMOC emission rate of less than 120 ppmv. The final results of the source test are shown in Table 3-4 below.

Table 3-4. S-6 Source Test Results

Parameter	March 6, 2012 S-6 Gas Turbine Results	Permit Limit
NMOC (ppmv as CH_4 @ 3% O_2)	<20	120
NO_x Emission Rate (lb/MMBTU)	0.11	0.1567
CO Emission Rate (lb/MMBTU)	0.08	0.2229
TRS Content (ppmv)	38.0	150

3.1.4 S-7 Gas Turbine Test Results

The March 6, 2012 source tests results for the S-7 Gas Turbine indicate that the turbine is in compliance with 8-34-301.4 and Title V Permit Condition Number 18773 and that, as required by 8-34-301.4 and Condition Number 18773, the turbine meets the NMOC emission rate of less than 120 ppmv. The final results of the source test are shown in Table 3-5 below.

Table 3-5. S-5 Source Test Results

Parameter	March 6, 2012 S-7 Gas Turbine Results	Permit Limit
NMOC (ppmv as CH_4 @ 3% O_2)	<24	120
NO_x Emission Rate (lb/MMBTU)	0.11	0.1567
CO Emission Rate (lb/MMBTU)	0.09	0.2229
TRS Content (ppmv)	36.4	150

3.1.5 S-23 Internal Combustion Engine Test Results

The March 7, 2012 source test results for the S-23 IC Engine indicate that the engine is in compliance with 8-34-301.4 and Title V Permit Condition Number 19237 and that, as required by 8-34-301.4 and Condition Number 19237, the engine meets the NMOC emission rate of less than 120 ppmv. The final results of the source test are shown in Table 3-6 below.

Table 3-6. S-23 Source Test Results

Parameter	March 7, 2012 S-23 IC Engine Results	Permit Limit
NMOC (ppmv as CH_4 @ 3% O_2)	<24	120
NO_x Emission Rate (g/hp-hr)	0.47	0.60
CO Emission Rate (g/hp-hr)	1.42	2.10

3.1.6 S-24 Internal Combustion Engine Test Results

The March 7, 2012 source test results for the S-24 IC Engine indicate that the engine is in compliance with 8-34-301.4 and Title V Permit Condition Number 19237 and that, as required by 8-34-301.4 and Condition Number 19237, the engine meets the NMOC emission rate of less than 120 ppmv as methane, corrected to 3 percent O_2. The final results of the source test are shown in Table 3-7 below.

Table 3-7. S-23 Source Test Results

Parameter	March 7, 2012 S-24 IC Engine Results	Permit Limit
NMOC (ppmv as CH_4 @ 3% O_2)	<25	120
NO_x Emission Rate (g/hp-hr)	0.41	0.60
CO Emission Rate (g/hp-hr)	1.48	2.10

3.2 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 dated July 28, 2011 showing the locations of all vertical wells, horizontal collectors, and other LFG extraction devices is included in Appendix AB. The map also illustrates proposed vertical well installations, main header and sub-header piping, and proposed decommissioning of vertical and horizontal collectors, which were described in the latest Amended GCCS Design Plan that was submitted to the BAAQMD in December 2010.

3.3 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."

In general, the sufficient capacities of the GCCS components will be based on establishing, maintaining, and documenting the target LFG collection flow rate, as required by Title V Permit Condition Number 19235, Part 2. Over the initial monitoring period covered by this Partial Annual Report, the sufficiency of the GCCS components was based as follows:

The existing GCCS has historically provided LFG wells and collectors spaced in accordance with standard industry practices. The installed density appears more than adequate for controlling surface emissions, based on continuous compliance and operational experience. This installation density also provides sufficient methane quality and flows to sustain the energy generating control devices. Additional LFG collectors are installed regularly, as required to maintain compliance and provide maximum available LFG extraction for fueling the energy generating control devices.

The total capacity of the LFG mover equipment exceeds the current EPA extraction rates and the historic LFG extraction rates determined to be continuously available from the landfill. Sufficient LFG control device and mover capacity is provided such that the A-15 flare is only required to be operated when one or more of the power generating control devices is down.

The landfill operator will conduct routine monitoring in accordance with NSPS requirements. If the GCCS at the landfill does not meet the measures of performance set forth in the NSPS, the GCCS will be adjusted or modified in accordance with the NSPS requirements. In May 18, 2009, ALRRF received BAAQMD approval for ATC Number 20251 for the installation of up to 120 new vertical wells and 20 horizontal wells and the decommissioning of up to 50 vertical wells and 15 horizontal wells, providing flexibility to meet future compliance and energy generation requirements.

On March 25, 2011, WM submitted a change of permit conditions for new well actions, including the installation of up to 120 new vertical wells and 25 horizontal wells and the decommissioning of up to 100 vertical wells and 15 horizontal wells. The BAAQMD approved the application, which was assigned to Application Number (AN) 23198 and is referenced in the current PTO.

Seven (7) existing wells were decommissioned during the period of December 1, 2011 through May 31, 2012. One (1) new well was installed and started during the period of December 1, 2011 through May 31, 2012. Appendix B contains the Wellfield SSM Log for the 7 wells that were decommissioned during the reporting period. See Appendix R for BAAQMD Correspondence for well start-up and decommissioning notifications and correspondence regarding AN 23198.

Compliance with §60.757(g)(2) is confirmed by performing quarterly SEM events. Refer to Section 2.6, Surface Emissions Monitoring, in this report for information pertaining to the surface emissions monitoring results. New wells will be installed as needed in the future to further control emissions.

3.4 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."

The GCCS Design Plan dated December 2000 (amended and restated in June 2003, August 2009, and December 2010) for ALRRF does not include asbestos or non-degradable waste areas that are excluded from the collection system. Therefore, §60.757(g)(3) is not applicable.

3.5 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."

The GCCS Design Plan dated December 2000 (amended and restated in June 2003, August 2009, and December 2010) for ALRRF does not include asbestos or non-degradable waste areas that are excluded from the collection system. The current 8-acre area that is segregated for asbestos disposal is covered by the GCCS. Therefore, §60.757(g)(4) is not applicable.

3.6 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."

On March 19, 2012, ALRRF submitted a 45-Day Advanced Asbestos Disturbance Notification to begin construction of new wells on May 21, 2012 and conclude by July 31, 2012. The BAAQMD assigned Job Number 3U245 to the work described in the Notification on March 19, 2012. Due to adjustments in the construction schedule, the ALRRF submitted 14-Day Delay Notifications May 7, 2012 to postpone the start of construction to May 30, 2012. On May 23, 2012, ALRRF submitted a Request for Limited Exemption from 8-34-303 and the corresponding 8-34-118 Construction Plan for

the construction project to the BAAQMD. Construction commenced as scheduled on May 30, 2012 and is ongoing as of the end of the reporting period.

The GCCS capacity will be increased as warranted and as required by regulations. See Appendix R for related correspondence.

3.7 COMPLIANCE WITH §60.757(g)(6)

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

In compliance with §60.752(b)(2)(ii)(A)(3) and (4), the GCCS was, and future expansions will be, designed to extract LFG at a sufficient rate to minimize the subsurface lateral migration and surface emissions of LFG. This is achieved by sizing and installing sufficient collection elements, transmission piping, blower(s), and control devices for the estimated maximum rate of LFG to be generated within the refuse at a given point in time. The GCCS will be operated to collect LFG at a sufficient rate, (per the definition in §60.751) by maintaining a negative gauge pressure at all wellheads sufficient to extract a total LFG flow rate exceeding the target LFG collection flow rate on a continuous basis, as established by the operator per Title V Permit Condition Number 9235, Part 2.

Compliance with §60.757(g)(6) is demonstrated by performing quarterly LFG migration monitoring.

The LFG migration monitoring during the reporting period was performed pursuant to the 2011 Landfill Gas Migration Monitoring Plan. The quarterly LFG migration monitoring results for this reporting period are included in Appendix AC.

The LFG migration monitoring and the structure monitoring event for this reporting period were conducted on the following dates:

- First Quarter 2012 – February 20, 21, and 22, 2012
- Second Quarter 2012 – May 3, and 7, 2012

Results of First Quarter 2012 and Second Quarter 2012 LFG migration monitoring indicated no exceedances of Subtitle D (40 CFR 258.23) and California Code of Regulations (CCR) Title 27, Division 2, Section 20919.5.

The results of monitoring can be found in Appendix AC.

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-six (66) 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, thirteen (13) Backup Flare (A-15) SSM events occurred. A-15 was shut down and restarted to allow for continuous operation of the LNG Plant and the A-16 Flare, in response to low temperature, and/or to allow for maintenance. The time and duration of each event is presented in the SSM Log contained in Appendix C.
- During the reporting period, fourteen (14) 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-seven (27) 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, twenty (20) 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 (90) 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, seventy-eight(78) 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, twenty-seven (27) 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 E.
- In all three hundred and thirty-five (335) 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(c)(3)(viii)).