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

## For the Kirby Canyon Recycling & Disposal Facility
## 910 Coyote Creek Golf Drive
## San Jose, California 95037
## Facility Number A1812
## January 1, 2012 through June 30, 2012

Submitted on:
July 31, 2012

Prepared for:
The Kirby Canyon Recycling & Disposal Facility

**For Submittal to:**
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**939 Ellis Street**
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and

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# 2 SEMI-ANNUAL MONITORING REPORT

In accordance with the KCRDF Title V Permit Standard Condition 1.F; Condition 1437, Part 16; BAAQMD Regulation 8-34-411 and 40 CFR §60.757(f), this report is a Combined Semi-Annual Title V Report and Partial 8-34 Annual Report that is required to be submitted by the KCRDF. 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 January 1, 2012 through June 30, 2012. The following table lists the rules and regulations that are required to be included in this Combined Report.

**Table 2-1 Semi-Annual Report Requirements**

| RULE | REQUIREMENT | LOCATION IN REPORT |
|---|---|---|
| 8-34-501.1 §60.757(f)(4) | All collection system downtime, including individual well shutdown times and the reason for the shutdown. | Section 2.1, Appendices B & C |
| 8-34-501.2 §60.757(f)(3) | All emission control system downtime and the reason for the shutdown. | Section 2.2, Appendix B |
| 8-34-501.3, 8-34-507, §60.757(f)(1) | Continuous temperature for all operating flares and any enclosed combustor subject to Section 8-34-507. | Section 2.3, Appendix D |
| 8-34-501.4, 8-34-510 | Testing performed to satisfy any of the requirements of this Rule. | Sections 2.4 & 2.10, Appendix E |
| 8-34-501.5, 8-34-505 | Monthly landfill gas (LFG) flow rates and well concentration readings for facilities subject to 8-34-404. | Sections 2.5, 2.10 & 2.11, Appendices I & L |
| 8-34-501.6, 8-34-503, 8-34-506, §60.757(f)(5) | For operations subject to Section 8-34-503 and 8-34-506, records of all monitoring dates, leaks in excess of the limits in Section 8-34-301.2 or 8-34-303 that are discovered by the operator, including the location of the leak, leak concentration in parts per million by volume (ppmv), date of discovery, the action taken to repair the leak, date of the repair, date of any required re-monitoring, and the re-monitored concentration in ppmv. | Section 2.6 & 2.7, Appendices F & G |
| 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 |
| 8-34-501.9, 8-34-505, §60.757(f)(1) | For operations subject to Section 8-34-505, records of all monitoring dates and any excesses of the limits stated in Section 8-34-305 that are discovered by the operator, including well identification number, the measured excess, the action taken to repair the excess, and the date of repair. | Section 2.10, Appendices I & K |
| 8-34-501.10, 8-34-508, §60.757(f)(1) | Continuous gas flow rate records for any site subject to Section 8-34-508. | Section 2.11, Appendix L |
| 8-34-501.11, 8-34-509 | For operations subject to Section 8-34-509, records of key emission control system operating parameters. | Section 2.2.2 |

**Table 2-1 (Continued)**

| RULE | REQUIREMENT | LOCATION IN REPORT |
|---|---|---|
| 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 |
| §60.10 (d)(5)(i) | Start-up, Shutdown, and Malfunction Events | Section 4, Appendices B & C |

## 2.1 Collection System operation (BAAQMD 8-34-501.1 & §60.757(f)(4))

Appendix A contains a map of the KCRDF's existing landfill GCCS. Section 2.1.1 summarizes the collection system downtime. Section 2.1.2 includes the individual well shutdown times and the reason for each shutdown.

### 2.1.1 Collection System Downtime

During the period covered in this report, the landfill GCCS was not shutdown for more than five days on any one occasion. The downtime for the partial 2012 reporting period of January 1, 2012 through June 30, 2012 is 72.17 hours, out of an allowable 240 hours per year pursuant to BAAQMD Regulation 8-34-113.2 (Limited Exemption, Inspection and Maintenance). The Flare SSM Log that list dates, times, and lengths of shutdowns for the reporting period is included in Appendix B.

### 2.1.2 Well Start-Up and Disconnection Log

There were a total of two (2) Well SSM events during the reporting period. Two wells were decommissioned during the reporting period. Wellfield construction activity is discussed in Section 2.13.

The Wellfield SSM Log that list dates, times, and lengths of shutdowns for the reporting period is included in Appendix C.

## 2.2 Emission Control Device Downtime (BAAQMD 8-34-501.2 & §60.757(f) (3))

No bypassing of the control system or other emissions of raw LFG occurred during the reporting period. The SSM Log that includes all downtimes and reasons for each shutdown for the A-12 Flare is presented in Appendix B. As indicated in Section 2.1.1, the collection system downtime for the partial 2012 calendar year (January 1, 2012 through June 30, 2012) is 72.17 hours.

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

Title 40 CFR §60.757(f)(2) is not applicable at the KCRDF because a bypass line has not been installed. LFG cannot be diverted from the control equipment.

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

The A-12 Flare is subject to continuous temperature monitoring as required in BAAQMD Regulation 8-34-507 and §60.757(f)(1). See Section 2.3 for flare temperature monitoring results.

## 2.3 Temperature Monitoring Results (BAAQMD 8-34-501.3, 8-34-507, & §60.757(f)(1))

The combustion zone temperature of the A-12 Flare is monitored with Type K Thermocouples. The temperature is displayed and digitally recorded with a General Electric (GE) data panel and Yokogawa FX112 continuous digital recorder. The temperature readings are downloaded and archived each working day.

Flare operating records indicate that the A-12 Flare three-hour average combustion zone temperature did not drop below the 1,400 degrees Fahrenheit (°F) limit, as required by Title V Permit A1812 Condition 1437 Part 9, during the reporting period when the A-12 Flare was in operation. The flare operating records also indicate that the A-12 Flare combustion zone temperature did not drop below 1,500°F on a three-hour average basis, while in operation during the reporting period (January 1, 2012 through June 30, 2012), pursuant to the limits established during the August 31, 2011 Performance Test.

Appendix D contains flare temperature deviation/ inoperative monitor reports for the reporting period while the A-12 Flare was in operation.

## 2.4 Monthly Cover Integrity Monitoring (BAAQMD 8-34-510)

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

- January 10 and 11, 2012
- February 2, 2012
- March 15, 2012
- April 5, 2012
- May 3, 2012
- June 7 and 13, 2012

No breaches of cover integrity (e.g. cover cracks or exposed garbage) were found during the reporting period. See Appendix E, Cover Integrity Monitoring Reports, for more detail.

## 2.5 Less than Continuous Operation (BAAQMD 8-34-501.5)

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

## 2.6 Surface Emissions Monitoring (BAAQMD 8-34-501.6, 8-34-506, & §60.757(f)(5))

Quarterly Surface Emissions Monitoring (SEM), pursuant to BAAQMD Regulation 8-34-506, occurred during the reporting period on the following dates:

- First Quarter 2012 – January 30 and 31, 2012
- Second Quarter 2012 – May 1, 2012

A Thermo Scientific Toxic Vapor Analyzer 1000 (TVA1000) flame ionization detector (FID) was used to perform the SEM during the First and Second Quarter 2012 events. The landfill surface was monitored along the path delineated on the SEM walking path map. Any areas suspected of having emission problems by visible observations were also monitored. Immediately prior to the First and Second Quarter 2012 monitoring events, the monitoring equipment was calibrated using zero air and a 500 parts per million by volume (ppmv) methane ($CH_4$) calibration gas.

The First Quarter 2012 SEM was performed on January 30 and 31, 2012, and ten (10) exceedances (FID readings greater than 500 ppm $CH_4$ above background measurements) were detected. Corrective actions were completed and the ten-day re-monitoring event was conducted on February 9, 2012, and no exceedances were detected. The thirty-day follow-up monitoring event was conducted on February 27, 2012, and no exceedances were detected.

The Second Quarter 2012 SEM was performed on May 1, 2012 and three (3) exceedances were detected. Corrective actions were completed and the ten-day re-monitoring event was conducted on May 10, 2012, and no exceedances were detected. The thirty-day follow-up monitoring event was conducted on May 25, 2012, and no exceedances were detected.

The First Quarter 2012 and Second Quarter 2012 SEM Reports are included in Appendix F.

## 2.7 Component Leak Testing (BAAQMD 8-34-501.6 & 8-34-503)

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

- First Quarter 2012 – February 9, 2012
- Second Quarter 2012 – May 10, 2012

A Thermo Scientific TVA1000 FID was used to perform both the First and Second Quarter 2012 leak testing events. No exceedances of 1,000 ppm were identified during the First and the Second Quarter 2012 monitoring event.

Appendix G contains the Quarterly Component Leak Check Monitoring Reports.

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

The solid waste placement records were reviewed for the timeframe of January 1, 2012 through June 30, 2012. The current waste-in-place figure includes solid waste placed in the landfill through June 30, 2012. A table of monthly totals for the reporting period is provided in Appendix H. The total waste accepted and placed at the KCRDF landfill did not exceed the 2,600 ton-per-day limit during the reporting period, pursuant to Title V Permit Condition Number 1437, Part 1a. The current waste-in-place tonnage listed below did not exceed the 19.84 million tons limit as required in the Title V Permit Condition Number 1437, Part 1b. Table 2-2 summarizes the solid waste placement records for the reporting period.

**Table 2-2 Solid Waste Placement**

| Waste Placement | Total Waste Landfilled Excluding Cover |
|---|---|
| January 1, 2012 through June 30, 2012 Waste Placement | 84,085.38 tons |
| Current Waste-In-Place as of June 30, 2012 | Approximately 6.16 Million tons |

## 2.9 Non-degradable Waste Acceptance Records (BAAQMD 8-34-501.8)

The GCCS Design Plan for the KCRDF does not include non-degradable waste areas that are excluded from the collection system. Therefore, BAAQMD Regulation 8-34-501.8 is not applicable.

## 2.10 Wellhead Monitoring Data (BAAQMD 8-34-501.4 & 8-34-505)

Wellhead monitoring was performed on a monthly basis pursuant to BAAQMD Regulation 8-34-505. The well readings for January 1, 2012 through June 30, 2012 are included in Appendix I. Each well was monitored in accordance with the following requirements:

- 8-34-305.1 – Each wellhead shall operate under a vacuum.
- 8-34-305.2 – The LFG temperature in each wellhead shall be less than 55 degrees Celsius (131°F).
- 8-34-305.4 – The oxygen ($O_2$) concentration in each wellhead shall be less than 5 percent (%) by volume.

The wellhead monitoring was performed on the following dates:

- January 10, 11, and 12, 2012
- February 1, 2, 3, and 7, 2012
- March 9, 15, and 20, 2012
- April 5, and 6, 2012
- May 2, and 3. 2012
- June 6, 7, 13, and 14, 2012

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

There were six (6) wellfield exceedances during this reporting period. Corrective actions were initiated within the required period and no further exceedances were detected. Please refer to the Wellfield Deviation Log, included in Appendix K, for exceedance records for the reporting period of January 1, 2012 through June 30, 2012.

### 2.10.2 Higher Operating Value (HOV) Wells

As of July 1, 2012, the following wells are approved to operate at a temperature higher operating value (HOV) of 145°F: 36, 37, 38, 39, 45, 51, 52, 53, 57, 58, 59, 60, 64, 65, 66, 74, 76, 77, 78, 79, 81, 86, and 87. Wells 56, 75, and 80 are approved to operate at a temperature HOV of 156°F.

A Request Letter was submitted to BAAQMD on December 30, 2011 to request written approval for less than continuous operation and an HOV of 15 percent oxygen for a Leachate Cleanout Riser. Copies of all BAAQMD correspondence are located in Appendix J.

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

The A-12 Flare LFG flow rate is measured continuously with a Fluid Components International (FCI) flow meter. The LFG flow is displayed and digitally recorded with a General Electric data panel and Yokogawa FX112 continuous digital recorder. The flow meter is maintained and calibrated pursuant to the manufacturer's recommendations. The flare flow meter meets the requirements of BAAQMD Regulation 8-34-508 by recording fuel flow at least every fifteen (15) minutes. The flow data for the flare are available for review at the KCRDF. Appendix L contains a summary of the monthly LFG flow rates and heat input for the flare.

Table 2-3 below is a summary of the LFG flow from January 1, 2012 through June 30, 2012 for the A-12 Flare. The A-12 Flare did not exceed the annual heat input rate of 1,305,240 million British Thermal Units (MMBTU), pursuant to Title V Permit A1812 Condition Number 1437, Part 8.

**Table 2-3 Total LFG Flow A-12 Flare – January 1, 2012 through June 30, 2012**

| Emission Control Device | Average Flow (scfm) | Methane (%) | Total LFG Volume (scf) | Total $CH_4$ Volume (scf) | Heat Input (MMBTU) |
|---|---|---|---|---|---|
| A-12 Flare | 1,940.5 | 48.3* | 500,070,725.0 | 241,534,160.2 | 244,674.1 |

scfm = standard cubic feet per minute $CH_4$ = methane % = percent scf = standard cubic feet
*Methane concentration from the August 31, 2011 Source Test for the A-12 Flare.

During the reporting period, the flow meter experienced an inoperative monitor incident. On February 20, 2012, Cornerstone Environmental Group, LLC (CEG) on behalf of the KCRDF, submitted a Reportable Compliance Activity (RCA) Form to the Bay Area Air Quality Management District (BAAQMD) Compliance and Enforcement Division. The RCA Form for inoperative monitor was submitted the same day as discovery of the issue, to address a potential non-compliance event. RCA Number 06D74 for inoperative monitor was assigned to this event by BAAQMD. The duration of the inoperative monitor event was approximately 56.63 hours. During this period the flare operated continuously above the permitted minimum temperature of 1,400 degrees Fahrenheit (°F), and the heat input did not exceed the permitted daily limit of 3,576 million British Thermal Units (BTU) for the duration of this event, and KCRDF believes that no excess emissions were generated during the period of flow meter inoperation. Copies of all BAAQMD correspondence are located in Appendix J.

## 2.12 Compliance with Title V Permit Cond. No. 1437, Part 14

The condensate injection rate did not exceed five (5) gallons per minute (gpm) during injection events (excluding startup times).

Table 2-4 summarizes the condensate injection rate and 12-month (consecutive) throughput in gallons for January 1, 2012 through June 30, 2012. Per Title V Permit A1812 Condition Number 1437 Part 14, the 12-month rolling average is below the permitted condensate injection limit of 1.5 million gallons per year. The monthly condensate injection logs are included in Appendix M.

**Table 2-4 Condensate Injection Rates**

| Month | Average Condensate Injection Rate (gpm) | Condensate Injection Throughput (gallons) | Condensate Injection Throughput 12-Month Total (gallons) |
|---|---|---|---|
| January-12 | 3.6 | 102,496.9 | 1,111,897.6 |
| February-12 | 3.8 | 84,773.7 | 1,118,101.0 |
| March-12 | 3.6 | 93,768.6 | 1,101,020.7 |
| April-12 | 3.7 | 91,074.0 | 1,119,954.6 |
| May-12 | 3.7 | 87,282.6 | 1,116,895.4 |
| June-12 | 3.9 | 73,529.3 | 1,104,856.1 |

gpm= gallons per minute

On January 23, 2012, CEG on behalf of the KCRDF, submitted a Change of Permit Conditions Request to increase the annual condensate injection limit from 1.5 million to 2.0 million gallons. On March 21, 2012 KCRDF was notified by BAAQMD that the Accelerated Permit for the Change of Conditions for increased condensate injection was received and assigned Application Number 24246. BAAQMD requested a landfill gas (LFG) condensate analysis to demonstrate the sulfur compound and halogenated compound content. KCRDF provided the BAAQMD condensate data.

## 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."*

The GCCS was modified pursuant to Title V Permit Number A1812 during the reporting period.

During the reporting period, two wells were decommissioned pursuant to Title V Permit Condition 1437 Part 6. A letter noting details of these well actions was submitted to the BAAQMD on February 10, 2012. Copies of all BAAQMD correspondence are located in Appendix J.

As of July 1, 2012, the GCCS system consists of 56 vertical wells and 2 leachate collection riser (LCR).

## 2.14 Compliance with Title V Permit Cond. No. 1437, Parts 2 and 3

Contaminated soil containing volatile organic compounds (VOCs) greater than 50 parts per million (ppm) was received during the reporting period. Low-VOC soil (containing less than 50 ppm of VOCs) was received during the reporting period. Required records of soil acceptance are available for review at the KCRDF.

## 2.15 Compliance with Title V Permit Cond. No. 23022, Part 2

Diesel Engine S-8 (the diesel engine for the portable compressor) is required to be operated less than 1,290 hours during any consecutive 12-month period. S-8 operated a total of 42 hours during the 6-month reporting period, January 1, 2012 through June 30, 2012. S-8 did not exceed the 1,290 hour limit during any consecutive 12-month period. S-8 used a total of approximately 97 gallons of diesel fuel during the 6-month reporting period.

# 4 START-UP, SHUTDOWN, MALFUNCTION REPORT

## 4.1 SSM Report for the Collection and Control Systems at the KCRDF

The NESHAPS contained in 40 CFR Part 63, AAAA for MSW landfills to control hazardous air pollutants include the regulatory requirements for submittal of a Semi-Annual Report (under 40 CFR §63.10(d)(5) of the general provisions) if an SSM event occurred during the reporting period. The reports required by §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.

NESHAP 40 CFR Part 63, AAAA became effective on January 16, 2004. Those SSM events that occurred during the semi-annual reporting period are reported in this section (January 1, 2012 through June 30, 2012). The following information is included as required:

- During the reporting period, seventeen (17) A-12 Flare SSM events occurred. The A-12 Flare shut down and restarted during the reporting period due to the reasons noted in the Flare SSM Log, located in Appendix B.
- During the reporting period, two (2) wellfield SSM events occurred. Details are included in the Wellfield SSM Log, located in Appendix C.
- In all nineteen (19) events, automatic systems and operator actions were consistent with the standard operating procedures contained in the SSM Plan.
- No exceedances of any applicable emission limitation in the landfills NESHAP (63.10(d)(5)(i)) occurred.
- Revisions of the SSM Plan to correct deficiencies in the landfill operations or procedures were neither required, nor prepared (§63.6(e)(3)(viii)).