

**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 95198**

**Facility Number A1812**

**July 1, 2011 through December 31, 2011**

Submitted on:  
January 30, 2012

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# 1 INTRODUCTION

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## 1.1 Purpose

This document is a Combined Semi-Annual Title V Report and Partial 8-34 Annual Report for the Kirby Canyon Recycling & Disposal Facility (KCRDF), pursuant to Title V Permit Standard Condition 1.F and Condition Number 1437 Part 16. This Combined Report satisfies the requirements of Regulation 8, Rule 34, Section 411 of the Bay Area Air Quality Management District (BAAQMD) and Title 40 Code of Federal Regulations (CFR) Part 60 Subpart CC, Emission Guidelines (EG) for municipal solid waste (MSW) landfills. This Combined Report meets the requirements of Title V Standard Condition 1.F, BAAQMD Regulation 8-34-411, and 40 CFR §60.757(f) and covers compliance activities conducted from July 1, 2011 through December 31, 2011. This Combined Report also includes the Semi-Annual Report of Start-up, Shutdown and Malfunction (SSM) Plan activities pursuant to National Emission Standards for Hazardous Air Pollutants (NESHAP), 40 CFR Part 63, Subpart AAAA for Landfills.

Section 2 of this Combined Report contains the elements required to satisfy both BAAQMD Regulation 8-34-411 and 40 CFR §60.757(f). A Performance Test Report for the A-12 Flare that meets the requirements of both BAAQMD Regulation 8-34-413 and 40 CFR §60.758(g) was conducted on August 31, 2011. Section 3 of this Combined Report includes performance test data collected during the reporting period as well as a discussion of the data from the Performance Test for the A-12 Flare, in compliance with BAAQMD Regulation 8-34-412, and Title V Permit Condition Number 1437 Parts 12 and 13. The August 31, 2011 Performance Test Report for the A-12 Flare is included in Appendix O of this Combined Report.

Section 4 contains the Semi-Annual Report of SSM Plan activities.

## 1.2 Record Keeping and Reporting

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

## 1.3 Report Preparation

This Combined Report has been prepared by Cornerstone Environmental Group, LLC (Cornerstone) as authorized by the KCRDF.

## 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 July 1, 2011 through December 31, 2011. 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 or 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 2011 reporting period of July 1, 2011 through December 31, 2011 is 63.50 hours, and the downtime for the 2011 calendar year is 91.94 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 fifteen (15) Well SSM events during the reporting period. Two (2) wells were decommissioned and eight (8) wells were started up during the reporting period. GCCS 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 landfill gas (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 2011 calendar year (July 1, 2011 through December 31, 2011) is 63.50 hours, and the downtime for the 2011 calendar year is 91.94 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 1,429 °F on a three-hour average basis or 1,500 °F on a three-hour average basis, while in operation during the reporting period (July 1, 2011 through December 31, 2011), pursuant to the limits respectively established during the October 13, 2010 Performance Test and the August 31, 2011 Performance Test.

Appendix D contains flare temperature deviation/ inoperative monitor/ missing data 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:

- July 13, and 14, 2011
- August 2, and 16, 2011
- September 9, 14, and 15, 2011
- October 3, 2011
- November 9, 2011
- December 5, and 6, 2011

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:

- Third Quarter 2011– August 15, and 16, 2011
- Fourth Quarter 2011 – October 26, 2011

Both a Thermo Scientific Toxic Vapor Analyzer 1000 (TVA1000) and an Organic Vapor Analyzer (OVA) 128 flame ionization detectors (FIDs) were used to perform the SEM during the Third and Fourth Quarter 2011 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 Third and Fourth Quarter 2011 monitoring events, the monitoring equipment was calibrated using zero air and a 500 parts per million by volume (ppmv) methane (CH<sub>4</sub>) calibration gas.

The Third Quarter 2011 SEM was performed on August 15, and 16, 2011 and ten (10) exceedances were detected (FID readings greater than 500 ppm CH<sub>4</sub> above background measurements). Corrective actions were completed and the ten-day re-monitoring event was conducted on August 24, 2011, and no exceedances were detected. The thirty-day follow-up monitoring event was conducted on September 12, 2011, and no exceedances were detected.

The Fourth Quarter 2011 SEM was performed on October 26, 2011 and one (1) exceedance was detected. Corrective actions were completed and the ten-day re-monitoring event was conducted on November 3, 2011, and no exceedances were detected. The thirty-day follow-up monitoring event was conducted on November 21, 2011, and no exceedances were detected.

The Third Quarter 2011 SEM and Fourth Quarter 2011 SEM Reports are included in Appendix F.

**The Third and Fourth Quarter 2011 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:

- Third Quarter 2011 – September 23, 2011
- Fourth Quarter 2011 – October 10, 2011

A Thermo Scientific TVA1000 Flame Ionization Detector (FID) was used to perform both the Third and Fourth Quarter 2011 leak testing events. No exceedances were identified during the Third Quarter or Fourth Quarter 2011 monitoring events.

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 July 1, 2011 through December 31, 2011. The current waste-in-place figure includes solid waste placed in the landfill through December 31, 2011. A table of monthly totals for the reporting period is provided in Appendix H. The daily total waste 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
July 1, 2011 through December 31, 2011 Waste Placement	83,282.72 tons
Current Waste-In-Place as of December 31, 2011	Approximately 6.07 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 July 1, 2011 through December 31, 2011 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<sub>2</sub>) concentration in each wellhead shall be less than 5 percent (%) by volume.

The wellhead monitoring was performed on the following dates:

- July 13, 14, 20, 21, and 27, 2011
- August 1, 2, 3, 4, 5, 6, 15, and 16, 2011
- September 9, 14, 15, 23, and 30, 2011
- October 3, 4, and 12, 2011
- November 9, 15, and 29, 2011
- December 5, 6, 12, and 13, 2011

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

Please refer to the Wellfield Deviation Log, included in Appendix K, for exceedance records for the reporting period of July 1, 2011 through December 31, 2011.

### **2.10.2 Higher Operating Value (HOV) Wells**

As of December 31, 2011, the following wells are approved to operate at a temperature higher operating value (HOV) of 145°F: 36, 37, 38, 39, 43, 44, 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 (LTCO) (to allow the leachate cleanout riser [LCR] LR08 to be turned off or operated with a positive pressure of up to 0.5 inches of water column vacuum [in.w.c]) and an HOV of 15 percent oxygen. As of January 1, 2012, KCRDF is awaiting a response on the status of the request from the BAAQMD. 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 data readings are downloaded and archived each working day. 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 July 1 through December 31, 2011 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 – July 1, 2011 through December 31, 2011**

Emission Control Device	Average Flow (scfm)	Methane (%)	Total LFG Volume (scf)	Total CH <sub>4</sub> Volume (scf)	Heat Input (MMBTU)
A-12 Flare	2,233.8	49.6*	583,632,455.0	289,329,345.2	293,090.6

scfm = standard cubic feet per minute CH<sub>4</sub> = methane % = percent scf = standard cubic feet

\*Methane concentration from the October 13, 2010 A-12 Source Test and August 31, 2011 Source Test for the A-12 Flare.

## 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) at any time during the reporting period.

Table 2-4 summarizes the condensate injection rate and 12-month (consecutive) throughput in gallons for July 1, 2011 through December 31, 2011. 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)
July -11	3.5	79,726.4	1,032,572.8
August-11	3.6	96,207.5	1,059,647.3
September-11	3.9	85,482.8	1,075,289.8
October-11	3.9	100,641.4	1,098,258.4
November-11	3.7	105,449.1	1,113,984.1
December-11	3.7	104,427.9	1,112,834.6

gpm= gallons per minute

### **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, 2 wells were decommissioned, 8 were started up and 1LCR was started up pursuant to Title V Permit Condition 1437 Part 6. Notification letters detailing these well and LCR actions were submitted to the BAAQMD on August 10, 2011, September 2, 2011 and September 16, 2011. Copies of all BAAQMD correspondence are located in Appendix J.

As of December 31, 2011, the GCCS system consists of 58 vertical wells and 2 leachate collection risers (LCRs).

### **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 not 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 29 hours during the 6-month reporting period, and did not exceed the 1,290 hour limit during any consecutive 12-month period from July 1, 2011 through January 31, 2011. S-8 used a total of approximately 44 gallons of diesel fuel during the 6-month reporting period.

### 3 PERFORMANCE TEST REPORT

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

**Table 3-1 Performance Test Requirements**

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

#### 3.1 A-12 Flare Performance Test Results (BAAQMD 8-34-412)

The most recent A-12 Flare Compliance Demonstration Test (Performance Test) was performed on the A-12 Flare by Blue Sky Environmental, LLC on August 31, 2011, pursuant to Title V Permit A1812 Condition Number 1437, Part 12. The Performance Test Report for the A-12 Flare indicates that the flare is in compliance with BAAQMD Regulation 8-34-301.3. As required by BAAQMD Regulation 8-34-301.3, the flare meets the non-methane organic compound (NMOC) emission rate of less than 30 ppmv. Pursuant to Title V Permit A1812 Condition Number 1437 Part 10, the A-12 Flare meets the oxides of nitrogen (NO<sub>x</sub>) emission concentration limit of less than 0.05 pounds (lbs)/MMBTU. The A-12 Flare meets the carbon monoxide (CO) emission

concentration limit of less than 0.3 lbs/MMBTU, pursuant to Title V Permit A1812 Condition Number 1437 Part 11. Table 3-2 shows the results of the A-12 Flare Performance Test, averaged from six test runs - three with condensate on, and three with condensate off.

**Table 3-2 A-12 Flare Performance Test Results – August 31, 2011**

Condition	Flare (A-12) Average Results	8-34-301.3 limit	Compliance Status
NMOC (ppmv @ 3% O <sub>2</sub> as CH <sub>4</sub> )	<18.3	30 ppmv	In Compliance
NMOC Destruction Efficiency (%)	>99.98%	>98%	In Compliance
NO <sub>x</sub> , lbs/MMBTU	0.04	0.05	In Compliance
CO, lbs/MMBTU	0.15	0.30	In Compliance

### 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 landfill GCCS showing the positioning of all vertical wells, horizontal collectors, and other LFG extraction devices is included in Appendix A.

### 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 density of wells and collectors comprising the GCCS will be based on establishing, maintaining, and documenting the LFG flow rate and lack of LFG surface emissions. During the monitoring period covered by this Combined Report, the sufficiency of the GCCS components was based as follows:

- The existing GCCS has historically consisted of LFG wells and collectors spaced in accordance with standard industry practices. The installed collector density appears more than adequate for controlling surface emissions, based on continuous compliance and operational experience.
- The total capacity of the LFG mover equipment exceeds the current USEPA Model AP-42 projections of LFG generation and the historic LFG extraction rates determined to be continuously available from the facility.
- 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/EG, the GCCS will be adjusted or modified as required.

### Demonstrating Compliance with §60.757(g)(2)

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

Compliance with 40 CFR §60.757(g)(2) is maintained by performing quarterly SEM events. Refer to Section 2.6, Surface Emissions Monitoring, for information pertaining to the SEM results. The average LFG extraction rate for the last month of the reporting period (December 2011) is approximately 2,071.1 standard cubic feet per minute (scfm), at a 48.3 percent methane concentration (determined from the source test conducted on August 31, 2011). The LFG generation rate over time was estimated using EPA's LFG generation model. The current theoretical generation and recovery estimates correlate well with the actual GCCS extraction rates. The EPA equations are provided in §60.755 and the LFG generation and extraction estimates for the landfill using these equations and 75 percent recovery efficiency are summarized in Table 3-3.

**Table 3-3 LFG Generation and Extraction Estimates**

Year	EPA with AP-42 Generation (scfm)	75% Extraction (scfm)	Actual Extraction as of December 2011 (scfm)
Current	2,706	2,030	2,071.1
2035 (peak)	2,950	2,215	N/A
2045	1,975	1,480	N/A

%= percent scfm = standard cubic feet per minute

The existing GCCS conveyance piping and emission control devices will be expanded as needed to maintain sufficient capacity. The planned GCCS conveyance piping and emission control devices have sufficient capacity to handle all current and future LFG flow rates (based on actual flow rate and well vacuum data).

### 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."*

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

### 3.5 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."*

No non-productive areas have been excluded from the coverage of the GCCS. Therefore, 40 CFR §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."*

The A-12 Flare and new blower system were installed in October and November 2007 and started up on December 3, 2007. The A-12 Flare and blower system is anticipated to be able to accommodate the expected LFG flow rate over the life of the landfill.

### **3.7 Compliance with §60.757(g)(6)**

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

Quarterly LFG migration monitoring, including all on-site buildings, occurred on the following dates:

- Third Quarter 2011 – September 27, 2011
- Fourth Quarter 2011 – December 7, 2011

There have been no significant LFG migration occurrences at the KCRDF, and no areas of concern were identified during the Third or Fourth Quarter 2011 monitoring events. The LFG migration monitoring and building monitoring results for both quarterly events are included in Appendix N.

### **Demonstrating Compliance with §60.757(g)(6)**

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

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

## 4 START-UP, SHUTDOWN, MALFUNCTION REPORT

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### 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 (July 1, 2011 through December 31, 2011). The following information is included as required:

- During the reporting period, fifteen (15) 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, fifteen (15) wellfield SSM events occurred. Details are included in the Wellfield SSM Log, located in Appendix C.
- In all thirty (30) 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)).