

## 2 SEMI-ANNUAL MONITORING REPORT

In accordance with Title V Permit Standard Condition 1.F and Condition 8366, Part 19, BAAQMD Regulation 8-34-411, and 40 CFR §60.757(f) in the NSPS, this Report is a Combined Title V Semi-Annual and Partial 8-34 Annual Report that is required to be submitted by TCRDF. 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 May 1, 2012 through October 31, 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, 8-34-505, 8-34-510	Testing performed to satisfy any of the requirements of this Rule.	Sections 2.4 & 2.10 Appendices E & I
8-34-501.5	Monthly landfill gas flow rates and well concentration readings for facilities subject to 8-34-404.	Sections 2.5 & 2.11 Appendix K
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 F & G
8-34-501.7	Annual waste acceptance rate and current amount of waste in place.	Section 2.8, Appendix H
8-34-501.8	Records of the nature, location, amount, and date of deposition of non-degradable wastes, for any landfill areas excluded from the collection system requirement as documented in the GCCS Design Plan.	Section 2.9
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 & J

**Table 2-1 Semi-Annual Report Requirements (continued)**

RULE	REQUIREMENT	LOCATION IN REPORT
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, Appendices D & K
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
8-34-501.12	The records required above shall be made available and retained for a period of five years.	Section 1.2
§60.757(f)(2)	Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756.	Section 2.2.1
§60.757(f)(6)	The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), (c)(4) of §60.755.	Section 2.12
§60.10 (d)(5)(i)	Startup, Shutdown, 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 dated February 28, 2012 of TCRDF's existing GCCS. Appendix B includes all collection system downtimes and the reason for the shutdowns. The information contained in Section 2.1.2 and Appendix C 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 gas (LFG) collection system was not shut down for more than five (5) days on any one occasion. Pursuant to BAAQMD Regulation 8-34-113, Limited Exemption, Inspection and Maintenance, the total downtime for the reporting period of May 1, 2012 through October 31, 2012 was 4.10 hours. The total downtime for the partial 2012 calendar year from January 1, 2012 through October 31, 2012 was 12.07 hours. A Flare SSM Log that lists dates, times, and lengths of shutdowns for the reporting period is included in Appendix B.

**2.1.2 Well Disconnection Log**

During the reporting period, zero (0) wellfield SSM events occurred. In addition, 2 wells (out of a possible 3) remain disconnected (Wells 208 and 223), pursuant to BAAQMD Regulation 8-32-116.2 (Limited Exemption, Well Raising).

A Wellfield SSM Log which lists dates, times, and lengths of disconnections for the reporting period is included in Appendix C.

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

The emission control system consists of the A-3 Enclosed Flare. No bypassing of the control system or emissions of raw LFG occurred. A Flare SSM Log for the A-3 Flare is included in Appendix B. The total downtime for the reporting period of May 1, 2012 through October 31, 2012 was 4.10 hours. The total downtime for the partial 2012 calendar year from January 1, 2012 through October 31, 2012 was 12.07 hours.

### **2.2.1 LFG Bypass Operations** (§60.757(F)(2))

Title 40 CFR §60.757(f)(2) is not applicable at the TCRDF because no bypass line is 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)

BAAQMD Regulations 8-34-501.11 and 8-34-509 are not applicable to the A-3 Flare because the A-3 Flare is subject to continuous temperature monitoring as required by BAAQMD Regulation 8-34-507 and §60.757(f)(1).

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

The combustion zone temperature of the A-3 Flare is monitored with a Pyromation Thermocouple. The temperature is displayed and recorded with a General Electric data panel and Yokogawa Digital Recorder. The temperature readings are downloaded and saved to a compact flash card. The data indicate that the A-3 Flare three-hour average combustion zone temperature did not drop below the 1,450 degree Fahrenheit (°F) limit, as required by the TCRDF Title V Permit Condition Number 8366, Part 6, during the reporting period when the A-3 Flare was in operation. The data also indicate that the A-3 Flare three-hour average combustion zone temperature did not drop below the 1,496° F limit established in the April 20, 2011 source test (May 1, 2012 to May 31, 2012) or below the 1,546° F limit established in the April 4, 2012 source test (June 1, 2012 to October 31, 2012) pursuant to 40 CFR §60.758(c)(1)(i) when the A-3 Flare was in operation. Appendix D contains a Temperature and Flow Deviation Report for the A-3 Flare, covering the reporting period of May 1, 2012 through October 31, 2012.

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

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

- May 15, 2012
- June 21, 2012
- July 9, 12, and 19, 2012
- August 7, and 14, 2012

- September 11, 12, 14, and 25, 2012
- October 3, 9, 26, and 31, 2012

No breaches of cover integrity (e.g., cover cracks or exposed garbage) were found during the reporting period.

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

The TCRDF 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 8-34-506, occurred during the reporting period on the following dates:

- Second Quarter 2012 – April 24, 2012
- Third Quarter 2012 – July 9, 10, and 11, 2012

A Toxic Vapor Analyzer (TVA) 1000 and a Photovac Micro Flame Ionization Detector (FID) were used during the Second Quarter 2012 SEM event to monitor the landfill surface according to the SEM Map. A Toxic Vapor Analyzer (TVA) 1000 and an Organic Vapor Analyzer (OVA) 128 FID were used during the Second Quarter 2012 SEM event to monitor the landfill surface. Any areas suspected of having emission issues by visible observation were also monitored. Prior to all monitoring events, the FID used was zeroed and calibrated using zero air and 500 parts per million (ppm) methane calibration gas.

The Second Quarter 2012 SEM Event was performed on April 24, 2012. There were three (3) locations with exceedances detected during the initial monitoring event. Corrective actions and follow-up monitoring were conducted. The ten-day re-monitoring event was conducted on May 1, 2012 and a thirty-day follow-up monitoring event was conducted on May 22, 2012. No exceedances were detected during either event.

The Third Quarter 2012 SEM Event was performed on July 9, 10, and 11, 2012. There was one (1) location with exceedances detected during the initial monitoring event. Corrective actions and follow-up monitoring were conducted. The ten-day re-monitoring event was conducted on July 12, 2012 and a thirty-day follow-up monitoring event was conducted on August 7, 2012. No exceedances were detected during either event.

The Second Quarter 2012 and Third 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 8-34-503, occurred during the reporting period on the following date:

- Second Quarter 2012 – June 29, 2012

- First Quarter 2012 – July 11, 2012 and July 12, 2012

A Photovac Micro FID was used to perform the leak testing during the Second Quarter 2012 and Third Quarter 2012 monitoring events. No exceedances were detected in the Second Quarter 2012 monitoring event and one (1) exceedance was detected in the Third Quarter 2012 monitoring event. The leak was repaired and re-monitored on July 12, 2012. No further exceedances were observed.

Appendix G contains the Quarterly LFG Component Leak Check log for the reporting period.

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

The total waste acceptance rate was calculated for May 1, 2012 through October 31, 2012. Table 2-2 Waste Acceptance includes waste placed through October 31, 2012. A table of monthly totals for the reporting period can be found in Appendix H. Below is a summary of the waste acceptance records for the reporting period.

**Table 2-2 Waste Acceptance**

	Total Waste Landfilled, Excluding Cover
2012 Partial Annual Waste Acceptance (January 1, 2012 – April 30, 2012)	17,831 tons
Reporting Period Waste-In-Place (May 1, 2012 – October 31, 2012)	14,361 tons
Current Waste-In-Place as of October 31, 2012	12.78 million tons

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

TCRDF does not have non-degradable waste areas that are excluded from the collection system. Therefore, BAAQMD Regulation 8-34-501.8 is not applicable.

## 2.10 WELLHEAD MONITORING DATA (BAAQMD 8-34-501.4 & 8-34-505)

Wellhead monitoring was performed on a monthly basis pursuant to 8-34-505. The wellhead concentration readings for the reporting period 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 (°C) (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:

- May 15, 2012
- June 21, 2012

- July 9, 12, and 19, 2012
- August 7 and 14, 2012
- September 11, 12, 14 and 25, 2012
- October 3, 9, 26, and 31, 2012

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

Zero (0) LFG collection wells deviated from BAAQMD Regulation 8-34-305 requirements during the reporting period. Table 2-3 below is a summary of the wellfield deviation for the reporting period of May 1, 2012 through October 31, 2012. The May 2012 through October 2012 Wellfield Deviation Log is attached in Appendix J.

**Table 2-3 Wellfield Deviation Summary**

Well ID	Exceedance Date	Exceedance Value	Days in Exceedance	Re-monitor Date	Compliant reading
No well deviations during the reporting period from May 1, 2012 through October 31, 2012.					

% – percent O<sub>2</sub> – oxygen “w.c. – inches water column

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

The A-3 Flare gas flow rate is measured with a Fluid Components, Inc. (FCI) flow meter. The LFG flow is displayed and digitally recorded with a General Electric data panel and Yokogawa Digital Recorder, which records flow every two minutes. The flow data readings are saved to a compact flash card. 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 at least every 15 minutes. The flow records for the flare are available for review at the TCRDF.

Appendix K contains a summary of the monthly LFG flow rates for the A-3 Flare. Appendix D contains the Flare Temperature and Flow Deviation Report for May 1, 2012 through October 31, 2012. Title V Permit Condition Number 8366, Part 11 limits daily heat input to 1,800 Million British thermal units (MMBTU) per day and annual heat input to 657,000 MMBTU. The maximum daily heat input was 1,501 MMBTU during this semi-annual reporting period. The heat input for the reporting period (May 1, 2012 through October 31, 2012) was 216,432 MMBTU.

Table 2-4 below is a summary of the total LFG flow for the reporting period of May 1, 2012 through October 31, 2012.

**Table 2-4 LFG Input to A-3 Flare**

Emission Control Device	Average Flow (scfm)	Average CH <sub>4</sub> (%)	Total LFG Volume (scf)	Total CH <sub>4</sub> Volume (scf)	Heat Input (MMBtu)
A-3 Flare	1,821	44.22 <sup>1</sup>	482,064,629	213,654,577	216,432

(1) The methane contents of 52.05 and 42.65 percent were determined from the April 20, 2011 and April 4, 2012 source tests (respectively).

CH<sub>4</sub> – methane scf – standard cubic feet MMBTU – Million British Thermal Units  
scfm - standard cubic feet per minute

## 2.12 COMPLIANCE WITH §60.757(f)(6)

*"The date of installation and the location of each well or collection system expansion added pursuant to (a)(3), (b), (c)(4) of §60.755."*

As of October 31, 2012, the GCCS system consisted of thirty-four (34) vertical LFG collection wells. No wells were decommissioned or placed in service during the reporting period.

## 2.13 COMPLIANCE WITH TITLE V PERMIT CONDITION 8366, PART 12

Table 2-5 below shows the quarterly hydrogen sulfide (H<sub>2</sub>S) readings. No readings were above the 1,300 ppm<sub>v</sub> (dry) limit specified in Title V Condition Number 8366, Part 12. The samples were taken at the flare inlet using a Draeger tube. The results of the Second Quarter 2012 and Third Quarter 2012 H<sub>2</sub>S Monitoring events are included in Appendix M.

**Table 2-5 Quarterly H<sub>2</sub>S Readings**

Event	Date	Reading
Second Quarter 2012	June 29, 2012	65 ppm <sub>v</sub>
Third Quarter 2012	September 25, 2012	75 ppm <sub>v</sub>

## 2.14 COMPLIANCE WITH TITLE V PERMIT CONDITION 8366, PART 17 AND 18

The TCRDF did not accept Volatile Organic Compound (VOC)-laden soil with VOCs at a concentration greater than 50 ppm<sub>v</sub> during the reporting period of May 1, 2012 through October 31, 2012.

## 2.15 COMPLIANCE WITH TITLE V PERMIT CONDITION 17682 FOR S-10

The permit for the S-10 Parts Cleaner was surrendered by the TCRDF on November 28, 2007 and the equipment was removed from site. Therefore, Title V Permit Condition 17682 is no longer applicable.

## 2.16 COMPLIANCE WITH TITLE V PERMIT CONDITION 21617, PART 1 FOR S-9, S-14, S-15, S-16, S-17 SMALL DIESEL ENGINES

The permit for the S-17 Diesel IC Engine – Street Sweeper was surrendered by the TCRDF on August 31, 2007. The permit for the S-9 Portable Diesel internal combustion (IC) Engine was surrendered by the TCRDF on January 9, 2008. The permits for the S-14, S-15, and S-16 Diesel IC Engines were surrendered by the TCRDF on December 23, 2009. All five sources were removed from the site. Therefore, Title V Permit Condition 21617 is no longer applicable.

## **4 STARTUP, SHUTDOWN, MALFUNCTION (SSM) REPORT**

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### **SSM Report for the GCCS at the Tri-Cities Recycling and Disposal Facility**

The NESHAP contained in 40 CFR Part 63, AAAA for MSW landfills to control hazardous air pollutants include the regulatory requirements for submittal of a semi-annual report (under 40 CFR 63.10(d)(5) of the general provisions) if an SSM event occurred during the reporting period. The reports required by 40 CFR §63.1980(a) of the NESHAP and 40 CFR §60.757(f) of the NSPS summarize the GCCS exceedances. These two semi-annual reports contain similar information and have been combined as allowed by 40 CFR §63.10(d)(5)(i) of the General Provisions.

NESHAP 40 CFR Part 63, AAAA became effective on January 16, 2004. Those SSM events that occurred during the NSPS semi-annual reporting period (May 1, 2012 through October 31, 2012) are reported in this section. The following information is included as required:

- During the reporting period, four (4) flare SSM events occurred. The cause, time and duration of each event are presented in the Flare SSM Log, which is contained in Appendix B.
- During the reporting period, zero (0) wellfield SSM events occurred to allow for active filling, and well raising. In addition, 2 wells (out of a possible 3) remains disconnected (Wells 208 and 223), pursuant to BAAQMD Regulation 8-32-116.2 (Limited Exemption, Well Raising). The time and duration of each event are presented in the Wellfield SSM Log, which is contained in Appendix C.
- During the reporting period, zero (0) recorder SSM events occurred.
- In all, four (4) 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 landfill's 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)).