

## 2 SEMI-ANNUAL REPORT

In accordance with Title V Permit Standard Condition 1.F, BAAQMD Regulation 8-34-411, 40 CFR §60.757(f) in the NSPS, and 17 CCR §95470(b)(3), this report is a Combined Semi-Annual Title V Report, Partial 8-34, and Partial Methane Control Annual Report that is required to be submitted for the Central Disposal Site. 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 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), §95470(a)(1)(A)	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), §95470(a)(1)(B)	All emission control system downtime and the reason for the shutdown.	Section 2.1 & 2.2, Appendices B, C, D, & E
8-34-501.3, 8-34-507, §60.757(f)(1), §95470(a)(1)(K)	Continuous temperature for all operating flares and any enclosed combustor.	Section 2.3, Appendices F & T
8-34-501.5	Monthly landfill gas flow rates and well concentration readings for facilities that operate under less than continuous operation.	Section 2.5
8-34-501.6, 8-34-503, 8-34-506, §60.757(f)(5), §95470(a)(1)(D)	For operations subject to component leak testing and surface emission monitoring, records of all monitoring dates, leaks in excess of the limits that are discovered by the operator, including the location of the leak, leak concentration in ppmv, date of discovery, wind speed, 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 H & I
8-34-501.7, §95470(a)(1)(F)	Annual waste acceptance rate and current amount of waste in-place.	Section 2.10, Appendix L
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 2.11
8-34-501.9, 8-34-505, §60.757(f)(1), §95470(a)(1)(E)	For operations subject to wellhead monitoring, records of all monitoring dates and any excesses of the limits 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 2.12, 2.12.1, Appendices N & O
8-34-501.10,	Continuous gas flow rate records and heat input	Section 2.13,

RULE	REQUIREMENT	LOCATION IN REPORT
8-34-508, §60.757(f)(1), §95470(b)(3)(B), §95470(b)(3)(D)	records.	Appendices P & T
8-34-501.11, 8-34-509, §95470(a)(1)(K)	Records of key emission control system-operating parameters.	Section 2.2.2 Appendix U
8-34-501.12, §95470(a)(1)	The records required shall be made available and retained for a period of five years.	Section 1.2
8-34-510	The surface shall be monitored for cover integrity on a monthly basis.	Section 2.4 Appendix G
§60.757(f)(2), §95470(b)(3)(G)	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. Type and amount of supplemental fuels burned in each device.	Section 2.2.1
§60.757(f)(6), §95470(b)(3)(E)	The date of installation and the location of each well or collection system expansion added.	Section 2.14, Appendices A & C
§95470(b)(3)(H)	Total volume of landfill gas shipped off-site, the composition of the landfill gas collected, and the recipient of the gas.	Section 2.16
§60.752(b)(2)(ii), §95470(a)(1)(C)	Expected gas generation flow rate.	Section 2.17, Appendix V
§60.10(d)(5)(i),	Startup, Shutdown, Malfunction Events	Section 4, Appendices C, D & E

## 2.1 COLLECTION SYSTEM OPERATION

The County has consistently installed, upgraded, and operated the GCCS since the system was initially constructed in 1987 with an enclosed flare (A-2). The A-2 flare was dismantled and replaced by a John Zink ZTOF® enclosed flare (A-3) in 2010. The current GCCS includes LFG collection devices (vertical extraction wells and horizontal collectors), collection piping, and LFG-to-electrical power generating (LFGTE) facility, an enclosed flare (A-3), and an LFG compression facility (S-15). The LFGTE was constructed in three separate phases. Phase I was constructed in 1993 consisting of Units 1 through 4 (Sources S-4 through S-7). Phase II was constructed in 1996 consisting of Units 5 through 8 (S-9 through S-12). Phase III was constructed in 2004 consisting of Units 9 and 10 (S-13 and S-14). Appendix A contains a current map of Central disposal Site's existing GCCS.

The primary emission control devices for the landfill (source S-1) are the ten Caterpillar® 3516 IC engines within the LFGTE (S-4, S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13 and S-14). The enclosed A-3 backup flare is operated as necessary when one or more IC engines are shut down and whenever flow of landfill gas exceeds the capacity of the IC engines.

### **2.1.1 Collection System Downtime**

During the period covered in this report, the GCCS was not shut down for more than five consecutive days on any one occasion pursuant to BAAQMD Regulation 8-34-113 and 95470(a)(1)(A).

The total GCCS downtime for the reporting period (July 31, 2013 through January 31, 2014) is 5.42 hours (out of 240 hours allowed per year pursuant to BAAQMD Regulation 8-34-113). The GCCS Downtime Log is included in Appendix B. The Downtime Log for the backup flare is included in Appendix D. The individual IC Engine downtime Logs are included in Appendix E.

### **2.1.2 Well Disconnection Log**

Wells that have been disconnected from the LFG collection system during the reporting period and the applicable exemption from BAAQMD Regulation 8-34-305 have been recorded on the well disconnection log. The majority of these wells were shut off for a short period and isolated from the GCCS system in order to conduct maintenance activities.

Appendix C contains the Well Disconnection Log, including the individual well numbers, the shutdown times, the restart times, and reasons for the shutdowns. This well disconnection log comprises the Startup, Shutdown, Malfunction (SSM) Reports for the current reporting period. During the reporting period 35 wellfield SSM events occurred for short durations as allowed by BAAQMD 8-34-117, Limited Exemption, Gas Collection System Components. The time and duration of each event are presented in the Wellfield SSM form contained in Appendix C.

In addition to the regular SSM events during the reporting period (and starting in the previous reporting period, June 2013) ten vertical wells in LF1 were shut down for an extended period due to new fill that was being placed and compacted in the area immediately surrounding the wells, as is allowed by BAAQMD 8-34-116, Limited Exemption, Well Raising. The operation required that the individual wells be raised several times with the recurring lifts of fill. The wells were capped until the filling phase was complete at which time the wells were reconnected to the collection system and vacuum applied. A complete list of the individual wells, and the date and time each well was removed and reconnected to the system is provided in Appendix C.

The County applied for and received accelerated ATC #25782 in October 2013. ATC # 25782 allows for the replacement or construction of 20 new gas extraction wells and the decommissioning of 20 existing gas extraction wells. Four new horizontal wells were commissioned under ATC #25782. No wells were decommissioned during this reporting period.

## **2.2 EMISSION CONTROL DEVICE DOWNTIME**

The primary emission control devices for the landfill (source S-1) are the ten IC engines (S-4, S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13 and S-14). The enclosed A-3 backup flare is operated as necessary when one or more IC engines are shut down and whenever flow of landfill gas exceeds the capacity of the IC engines.

Landfill operations were temporarily suspended for 5 years and were resumed in September 2010, as described in Section 2.10, and the current gas generation projections predict a reduction in the landfill gas generation rate by about 125 standard cubic feet per minute (scfm) per year. This is evident by the decline of landfill gas flow to the emission control devices. Currently there is not a sufficient flow of landfill gas to operate all 10 IC Engines there Engines No. 9 and 10 (S-13 and S-14) were put in long-term storage pursuant to BAAQMD Application No. 22513. Additionally, one or more engines may be placed in standby mode and alternated into service based on maintenance cycles and GCCS demands.

The information contained in Appendix D includes the A-3 backup flare downtimes and the reason for each shutdown. Appendix E contains all engine downtimes and the reasons for the shutdowns for the IC engines.

The total downtime for each source during the reporting period is as follows:

**Table 2-2: Control Device Downtime**

Source	Total Downtime (Hours)
A-3 (Backup flare)	3,671
S-4 (IC Engine 1)	683
S-5 (IC Engine 2)	1,474
S-6 (IC Engine 3)	835
S-7 (IC Engine 4)	2,343
S-9 (IC Engine 5)	1,476
S-10 (IC Engine 6)	1,338
S-11 (IC Engine 7)	2,239
S-12 (IC Engine 8)	690
S-13 (IC Engine 9)	4,416
S-14 (IC Engine 10)	4,416

**2.2.1 LFG Bypass Operations and Supplemental Fuel**

LFG cannot be diverted from the control equipment because no by-pass lines are installed at Central Disposal Site. Landfill gas is the only fuel burned in the IC Engines; no supplemental fuel is used. A small amount of propane is used to startup the backup flare.

**2.2.2 Key Emission Control Operating Parameters**

The IC engines (S-4, S-5, S-6, S-7, S-9, S-10, S-11, and S-12) are subject to key emission control system operating parameters. Pursuant to Permit to Operate (PTO) condition 19933 Part 11, Central Disposal Site must operate each IC Engine at the fuel-to-air ratio established during the most recent complying source test. In addition, the exhaust oxygen concentration for each engine must be maintained with a range of 6.4 to 8.3 percent as established in Permit Application No. 9277. In order to demonstrate compliance with this requirement, the exhaust gas oxygen concentration for each engine is to be measured and recorded in a District approved log on at least a monthly basis.

Exhaust oxygen concentrations for all IC engines were in compliance with PTO Condition No. 19933 Part 11. The Monthly Exhaust Oxygen Content Log is included in Appendix U.

### **2.3 BACKUP FLARE TEMPERATURE MONITORING RESULTS**

The A-3 flare combustion zone temperature while the flare is in operation must not drop below 1,400 degrees Fahrenheit (F) or 50 degrees F below the average combustion temperature during the most recent source test. Compliance with temperature limitations is determined on the basis of the 3-hour rolling average temperature.

The combustion zone temperature of the A-3 backup flare is continuously monitored during operation. The temperature is recorded by a Yokogawa data logger. Summaries of the backup flare temperature records review are noted in the Monthly Backup Flare Temperature Deviation Logs in Appendix F. The electronic files of backup flare temperature records are saved on a CD included in Appendix T of this report.

On October 29, 2013 the County contracted to perform repair work to the switch gear, located adjacent to the power plant. The repairs were performed beginning on October 29, 2013 at 13:14 hours and extended through October 30 at 15:40 hours. Approximately five hours into the repair, the power back-up supply to the Yokogawa data recorder was unknowingly depleted (there is no power available at the plant when the plant is "black plant" mode) and the Yokogawa stopped collecting data on the A-3 flare. Other than this one exception the A-3 backup flare temperature was maintained within compliance during the entire reporting period.

### **2.4 MONTHLY COVER INTEGRITY MONITORING**

The Cover Integrity Monitoring was performed on a monthly basis during the reporting period. The Monthly Cover Integrity Monitoring reports are included in Appendix G. The cover integrity monitoring was performed on the following dates:

- August 11, 2013
- September 8, 2013
- October 13, 2013
- November 10, 2013
- December 8, 2013
- January 5, 2013

### **2.5 LESS THAN CONTINUOUS OPERATION**

Central Disposal Site does not operate under "Less Than Continuous Operation."

### **2.6 SURFACE EMISSIONS MONITORING**

A surface emissions monitoring plan (SEMP) was submitted as part of a Revised GCCS Design Plan, dated June 15, 2011, in accordance with the requirements of the NSPS, BAAQMD, and CARB. Monitoring methods include both Instantaneous and Integrated Surface Emissions Monitoring.

Surface emissions will be monitored quarterly or annually, as required by the regulations and as described in the SEMP. But in either case, both instantaneous and integrated monitoring were conducted concurrently. CARB approved the GCCS Design Plan (and subsequent SEMP) in a letter dated August 30, 2011. A copy of the CARB approval letter is included in Appendix Q. Monitoring events conducted during the reporting period occurred on the following dates:

- Third Quarter: September 16, 2013 – October 5, 2013
- Fourth Quarter: December 16, 2013 – December 20, 2013

Surface emission monitoring reports for both the instantaneous and integrated surface emission monitoring are included in Appendix H.

### **2.6.1 Instantaneous Surface Emission Monitoring**

For instantaneous surface monitoring, the average methane level must be less than 500 ppmv at any location on the landfill surface as required in 8-34-303 and §95465(a)(1). A Surface Emission Monitor (SEM-500) manufactured by CES-Landtec is used to monitor the path along the landfill surface for the total organic compound concentrations according to the Landfill SEMP map. Immediately prior to monitoring events, the SEM-500 instrument was zeroed and calibrated in accordance with manufacturers' recommendations. Grids with instantaneous point sources greater than 200 ppmv have been identified and are listed in Appendix H.

#### Third Quarter 2013 Instantaneous Monitoring Event

There was one grid with an exceedance of the 500 ppm surface concentration standard identified during the third quarter surface monitoring event. The area was identified and repaired. The results of the 30 day follow-up indicated that the area was in compliance.

#### Fourth Quarter 2013 Instantaneous Monitoring Event

There were no exceedances of the 500 ppm surface concentration standard identified during the fourth quarter instantaneous surface monitoring event on either Landfill 1 or Landfill 2.

### **2.6.2 Integrated Surface Emissions Monitoring**

For integrated surface monitoring, the average methane level must be less than 25 ppmv for each grid as required in §95465(a)(2). When methane levels of 500 ppmv or greater were encountered, integrated monitoring was suspended and instantaneous monitoring was conducted to determine the areal extent and maximum concentration of the exceedance. Grids with an integrated sampling average greater than 25 ppmv were remediated and re-monitored within 10 calendar days of the initial exceedance.

#### Third Quarter 2013 Integrated Monitoring Event

Three (3) grids exceeded the 25 ppm integrated standard during the third quarter surface monitoring event that began on September 16, 2013 and ended on October 5, 2013. The only grid that exceeded the integrated methane regulatory limit in Landfill 1 was corrected on the first re-monitoring event.

The County installed 15 landfill gas extraction wells on Landfill 2 in June 2013 as a result of the second quarter 2013 integrated monitoring event. Third quarter monitoring indicated that two of the grids, 89 and 98, were still out of compliance. County crews attempted to mitigate the problem by placing and compacting over 700 cubic yards of soil over the grids but re-monitoring indicated that the grids were still out of compliance. In a letter to Mr. Wayne Kino, dated October 29, 2013, the County requested temporary relief under Title 17, CCR §95468, Alternative Compliance Options (see Appendix Q, Correspondences). Specifically, the County requested a waiver from surface emissions monitoring of grids 89 and 98 on Landfill 2 until the first quarterly monitoring event in March 2014. This should allow the County sufficient time to develop and implement a plan and stay off the LF2 surface through the rainy season. The County has hired a consultant expert in the field of landfill gas services to help develop and execute a plan. The County has not yet received a reply from the District concerning the matter and, therefore, assumes that the District has accepted the County's request for an alternative compliance plan.

Fourth Quarter 2013 Integrated Monitoring Event

There were no exceedances of the 25 ppm surface concentration standard identified during the fourth quarter surface integrated monitoring event on either Landfill 1 or Landfill 2.

**2.7 COMPONENT LEAK TESTING**

Pursuant to Section 8-34-301 of BAAQMD's Regulation 8, Rule 34, the regulatory limit for methane concentration at LFG components and connections is 1,000 parts per million by volume (ppmv). However, pursuant to requirements effective July 1, 2011, §95464(b)(1)(B) of CCR Title 17 establishes the regulatory limit at 500 ppmv methane for components and connections leaks at municipal landfills. The quarterly component leak monitoring data are presented in Appendix I. Pacific GeoScience performed component leak monitoring on the following dates:

- Fourth quarter, 2013 – October 23 and 25, 2013; and
- First quarter, 2014 – January 24, 2014;

There were no component leaks exceeding 500 ppmv methane identified during the fourth quarter 2013 and first quarter 2014 component monitoring events.

**2.8 SULFUR MONITORING RECORDS**

The concentration of total reduced sulfur compounds in the LFG must not exceed 1,300 ppmv pursuant to Permit Condition 4044 Part 7. Total sulfur content in LFG was analyzed during the annual gas characterization tests, pursuant to Condition 4044 Part 18. The concentration of total reduced sulfur compounds in the LFG did not exceed 1,300 ppmv during either reporting period.

**Table 2-3: Sulfur Monitoring Records**

	Date	Readings (ppmv)
Total Sulfur as H <sub>2</sub> S	11/08/12	132.0
	10/08/13	74.6

**2.9 DUST SUPPRESSION RECORDS**

Water was used as a dust suppressant pursuant to Permit Condition 4044 Part 19n. Dust Suppression Records Monthly dust suppression records are presented in Appendix K.

**2.10 WASTE ACCEPTANCE RECORDS**

Pursuant to Condition 4044 Part 1, the total amount of solid waste received at the S-1 landfill must not exceed 2,500 tons per day (tpd), or 897,500 tons per year (tpy). Monthly waste tonnage acceptance records are provided in Appendix L. Table 2-4 summarizes the monthly waste acceptance rate during the report period.

**Table 2-4: Waste Disposal Records Summary**

Month	Quantity (tons)	Daily Avg. (tons)
August 2013	14194	526
September 2013	11412	476
October 2013	16700	619
November 2013	15126	605
December 2013	15,245	610
January 2014	15,205	563
<b>Semi-Annual Total</b>	<b>167,500</b>	<b>542</b>

Pursuant to Condition 4044 Part 1, the total cumulative amount of all wastes and cover materials placed in the landfill shall not exceed 19.59 million tons, daily waste acceptance shall not exceed 2,500 tons, and annual waste acceptance shall not exceed 897,500 tons. The total waste in place is 14.0 million tons.

Pursuant to Condition 4044 Part 17c, the 12-month waste acceptance total for the preceding 12-month period (August 1, 2013 through January 31, 2014) was 167,500 tons. Daily waste acceptance did not exceed 2,500 tons as required by Condition 4044 Part 1.

**2.10.1 Low-VOC Content Soil Acceptance Records**

Pursuant to Permit Condition 4044 Part 21, the amount of volatile organic compound (VOC) laden soil disposed of in the landfill must be limited so that no more than 15 pounds per day (lbs/day) of total carbon could be emitted to the atmosphere per day. VOC laden soil is soil that contains VOC in concentrations that are less than 50 parts million by weight (ppmw) threshold for contaminated soil. The amount and VOC concentrations of all VOC laden soils must be recorded on a daily basis.

VOC laden soil was accepted at the Central Disposal Site during the reporting period. There were no days during the reporting period when potential carbon emissions from the low VOC soil exceeded the 15 lbs/day limit. Records of the amount of low VOC soil are provided in Appendix M.

No VOC contaminated (greater than 50 ppmw) soil was accepted during the reporting period.

## 2.11 NON-DEGRADABLE WASTE ACCEPTANCE RECORDS

The Collection and Control System Design Plan for Central Disposal site does not indicate non-degradable waste areas that are excluded from the collection system.

## 2.12 WELLHEAD MONITORING DATA

Wellhead monitoring was performed on a monthly basis. The Monthly Well Monitoring Records for the reporting period are provided in Appendix N. Each well was monitored for the following:

- Each wellhead shall operate under a vacuum; and
- The landfill gas temperature in each wellhead shall be less than 55°C (131°F); and
- The oxygen concentration in each wellhead shall be less than 5 percent by volume.

The County requested exemption from BAAQMD Rule 8-34 wellhead standards and alternate wellhead monitoring limits for 11 extraction wells. BAAQMD approved the alternate wellhead monitoring limits for these extraction wells, Authority to Construct No. 16582. Permit Condition 4044 Part 5b was added to the Permit to Operate allowing up to 15 percent oxygen in gas extraction wells V-58, V-61, V-62, V-117, EC-9.1, EC-15, EC-19, EC-24, EC-25, EC-26, and EC-26.1. However, wells EC-9.1, EC-25, EC-26, and EC-26.1 failed and were decommissioned in December 2009, pursuant to Authority to Construct Application No. 16497.

### 2.12.1 Wellhead Deviations

The wells that deviated from BAAQMD Regulation 8-34-305, Permit Condition 4044 Part 5b, and 17 CCR §95469(c) limits were repaired pursuant to the regulations. The Well Deviation Logs for the reporting period are provided in Appendix O. The Well Deviation Log includes the well identification number, parameter exceedance, date of initial exceedance, corrective actions taken, date of follow-up monitoring, compliance status, and summarizes the gas collection wells that exceeded applicable limits.

## 2.13 LFG FLOW MONITORING RESULTS

Continuous IC engine gas flow readings and backup flare combustion temperature and gas flow readings are recorded by a Yokogawa data logger. The total amount of LFG combusted in each control device is provided in Appendix P. The monthly total and daily average LFG flow records and heat input for the A-3 backup flare and the IC engines are provided in Appendix P. The Electronic Files of the Yokogawa IC Engines Flow Records and Backup Flare Temperature and Flow Records are provided in Appendix T.

**Table 2.5: Total Flow**

Month	A-3 Backup Flare (total scf)	Phase I (S-4, S-5, S-6 and S-7) (total scf)	Phase II (S-9, S-10, S-11 and S-12) (total scf)	Phase III (S-13 and S-14) (total scf)	All (total scf)
August 2013	343,393	36,254,762	35,099,427	0	71,697,582
September 2013	645,237	34,074,295	33,751,176	0	68,470,708
October 2013	2,822,766	33,771,327	24,112,841	0	60,706,934
November 2013	0	26,563,880	35,075,609	0	61,639,489

December 2013	0	29,282,298	29,993,588	0	59,275,886
January 2014	0	33,826,064	30,831,540	0	64,657,604
<b>Period Total</b>	<b>3,811,396</b>	<b>193,772,626</b>	<b>188,864,181</b>	<b>0</b>	<b>386,448,203</b>

**Table 2-6: Total Heat Input**

Month	A-3 Backup Flare (MMBtu)	Phase I (S-4, S-5, S-6 and S-7) (total MMBtu per unit)	Phase II (S-9, S-10, S-11 and S-12) (total MMBtu per unit)	Phase III (S-13 and S-14) (total MMBtu per unit)	All (total MMBtu)
August 2013	187	6,562	6,572	0	13,321
September 2013	350	6,167	6,545	0	13,062
October 2013	1,533	6,323	6,546	0	14,402
November 2013	0	5,528	5,474	0	11,002
December 2013	0	6,093	4,681	0	10,774
January 2014	0	7,039	4,812	0	11,851
<b>Period Total:</b>	<b>2,070</b>	<b>37,712</b>	<b>34,630</b>	<b>0</b>	<b>74,412</b>

Permit Condition 4044 Part 13 applies to the A-3 backup flare, the heat input to the A-3 flare shall not exceed 547,680 million BTU per year (MMBtu/yr) and shall be summarized monthly. For the reporting period, the A-3 backup flare remained in compliance and did not exceed the annual heat input limit set by Permit conditions.

Pursuant to Permit Condition 19933 Part 10, the heat input to each IC engine shall not exceed 252.6 MMBtu/day, or 92,199 MMBtu/year, and shall be summarized monthly. Phase I, Phase II, and Phase III LFG daily flow records are divided by the number of engines that operated to calculate heat input per engine per day (MMBtu/unit). During the reporting period none of the IC engines exceeded the daily or annual heat input limits set by Permit Conditions.

**2.14 DATE OF INSTALLATION AND LOCATION OF EACH COLLECTOR**

On November 1, 2013, the County notified BAAQMD of the startup of four (4) horizontal gas extraction wells within Landfill 1 under ATC No. 25782. Refer to the GCCS Design Plan for the Central Disposal Site, Amended, and Restated June 15, 2011, for a complete description of the installation and operation of the GCCS.

**2.15 NOTICES OF VIOLATION ISSUED BY THE BAAQMD**

Central Disposal Site did not receive any Notices of Violation (NOVs) during the reporting period.

**2.16 VOLUME OF LANDFILL GAS CONVERTED IN S-15**

The landfill gas compression plant (S-15) is a pilot scale unit designed to operate as a closed loop system with all waste gases vented to either the flare or IC engines pursuant to Permit Condition 23087. The unit was completed in February 2009. Compressed natural gas (CNG) produced at the Central Disposal Site has historically been used to fuel select vehicles in the Sonoma County Transit bus fleet. In October of 2013 the plant experienced a critical mechanical

failure. As a result, the plant has not been used during the entire reporting period and, therefore, no CNG was produced at the plant.

**2.17 EXPECTED GAS GENERATION FLOW RATE**

The USEPA LandGEM, Version 3.02, generation model was used to estimate the site's maximum LFG generation rate in accordance with 40 CFR Section 60.755(a)(1). Following the method described in 40 CFR 60.755 (a)(1), LandGEM calculated a LFG generation estimate for 2013 of approximately 2,824 scfm. Using the USEPA-recognized default GCCS collection efficiency of 75 percent as published in AP-42, the estimated 2013 LFG extraction rate was estimated to be 2,118 scfm. A summary table of the LandGEM gas generation modeling is included in Appendix V along with the model input and results report.

As required in §95471(e), the expected gas generation flow rate was determined, as prescribed in the 2006 Intergovernmental Panel on Climate Change (IPCC) Guidelines for National Greenhouse Gas Inventories, using a recover rate of 75 percent. The 2013 LFG extraction rate was estimated to be 1,734 scfm. A summary table of the IPCC gas generation modeling is included in Appendix V along with the model inputs and results.

As represented in the summary tables for both the LandGEM and IPCC models in Appendix V, the LFG generation rate peaked in 2005 when the CDS suspended landfilling operations. As a result, LFG generation at the CDS has been in a state of steady decline. The current actual and modeled LFG generation and extraction estimates, as well as the modeled projections for 2020 and 2030 are presented below in Table 2.7.

**Table 2-7: LFG Generation and Extraction Estimates**

Year	USEPA LandGEM Generation at (75% Recovery) (scfm)	2006 IPCC GHG Methodology (75% Recovery) (scfm)	Actual Extraction (scfm)	Existing Capacity (scfm)
2012	2,146	1,766	1,523	4,375
2013	2,118	1,734	1,532	4,375
2020	1,965	1,841	N/A	-
2030	1,554	1,900	N/A	-

The total LFG treatment capacity of the LFGTE facility is approximately 2,875 standard cubic feet per minute (scfm). The enclosed flare (A-3) has a design capacity of 1,500 scfm. The flare is a back up device to the LFGTE facility; however it is permitted for continuous operation when sufficient LFG is available. The flare can be operated parallel and simultaneously with all ten engines to sustain a maximum LFG extraction rate of approximately 4,375 scfm.

## 4     **STARTUP, SHUTDOWN, MANFUNCTION PLAN REPORT**

The National Emission Standards for Hazardous Air Pollutants (NESHAPS), contained in 40 CFR Part 63, Subpart AAAA for Municipal Solid Waste (MSW) landfills to control hazardous air pollutants, include regulatory requirements for submittal of a semi-annual report (under 40 CFR §63.10(d)(5) of the general provisions) if an SSMP 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, Subpart AAAA became effective on January 16, 2004. SSM events that occurred between August 1, 2013 and January 31, 2014 are included in this Combined Semi-Annual Report.

- During the reporting period, four flare SSM events occurred. The backup LFG control device (A-3 flare) was started and shut down during this period to combust LFG when the power plant was off line for PG&E scheduled maintenance, switch gear repairs, and annual source testing of A-3. The time and duration of the events are presented in the A-3 Flare Downtime Log contained in Appendix D.
- During the reporting period 35 Wellfield SSM events occurred for short durations as allowed by BAAQMD 8-34-117, Limited Exemption, Gas Collection System components. The time and duration of each event are presented in the Wellfield SSM form contained in Appendix C. Four (4) new wells were connected to the GCCS during the reporting period.
- During the Reporting Period 10 Wellfield SSM events occurred as wells were taken off line in June/July for a longer period of time as allowed by BAAQMD 8-334-116, Limited Exemption, Well Raising. All but one well, V-128, has been reconnected to the GCCS.
- During the reporting period 203 SSM events occurred for all 12 IC Engines. The number of events for each engine is listed in Table 4-1 below. The time and duration of each SSM event for each of the IC Engines is presented in the IC Engines SSM forms contained in Appendix E. No SSM events occurred for IC Engines S-13 and S-14; these units are placed in long-term storage until further notice due to the lack of landfill gas production.

**Table 4-1: I.C. Engine SSM Events**

IC Engine No.	BAAQMD Source ID	No. of SSM Events
1	S-4	22
2	S-5	29
3	S-6	25
4	S-7	44
5	S-9	20
6	S-10	19

7	S-11	24
8	S-12	20
9	S-13	0
10	S-14	0

- Automatic systems and operator actions were consistent with the standard operating procedures contained in the site's 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)).