

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT ENGINEERING AND COMPLIANCE DIVISION PERMIT APPLICATION EVALUATION AND CALCULATIONS	PAGES 18	PAGE 1
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Compliance Assurance Monitoring (CAM) Plan Evaluation
(40 CFR Part 64)

OWNER/OPERATOR:

LOS ANGELES COUNTY SANITATION DISTRICTS
PUENTE HILLS LANDFILL
P O BOX 4998, WHITTIER, CA 90607

FACILITY LOCATION:

13130 CROSSROADS PARKWAY SOUTH
CITY OF INDUSTRY, CA 91745

CO ID: 025070

CONTACT PERSON:

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Project Engineer
Ph: (562) 908- 4288 ext 2432

APPLICATION NO.: 526754

Compliance Assurance Monitoring (CAM) plan for Non-Methane Hydrocarbons (NMHC) emissions generated by MSW landfill and NMHC control.

INTRODUCTION:

This application was submitted on 08-30-2011 for Compliance Assurance Monitoring (CAM) plan under 40 CFR Part 64. The facility, Puente Hills Landfill, is a Title V facility. This CAM plan is submitted because the landfill gas collected at the landfill is required to be controlled to meet federally enforceable (Reg XIII) hydrocarbon emission limits in the permit and the emissions are greater than the major source thresholds. The control technologies are the enclosed flares, boilers, IC engines, and gas turbine.

Flares:

A/N	Permit No.	Issue Date			Permit Type
Two flares 440820	F82205 Permit Condition No. 9. – SCAQMD Rule 1303 (b)2 offset	5/19/2006	ACTIVE	FLARE, ENCLOSED LANDFILL/DIGESTER GAS 4,500 scfm each ROG limit 1.54 lb/hr per flare Source Test Results (02-15-2011): Stack Exhaust Temperature: 1568 deg F, TGNMOC lb/hr as Methane: 0.323	PERMIT TO OPERATE GRANTED
One flare 440822	F82207 Permit Condition No. 9. – SCAQMD	5/19/2006	ACTIVE	FLARE, ENCLOSED LANDFILL/DIGESTER GAS 6,800 scfm each , ROG limit 2.7 lb/hr per flare Source test results (0-12-2009): Exhaust Temperature: 1631 deg F,	PERMIT TO OPERATE GRANTED

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	Rule 1303 (b)2 offset			TGNMOC lb/hr as Methane: 0.397	
Twenty four flares 440823	F82208 Permit Condition No. 9. – SCAQMD Rule 1303 (b)2 offset	5/19/2006	ACTIVE	FLARE, ENCLOSED LANDFILL/DIGESTER GAS 1,000 scfm each ROG limit 0.14 lb/hr per flare,	PERMIT TO OPERATE GRANTED

Flare	Source Test Date	Exhaust Temperature	TGNMOC as methane (lb/hr)
11	2/7/2011	1539	0.089
13	2/8/2011	1575	0.091
15	2/8/2011	1562	0.097
17	2/9/2011	1439	0.053
19	2/9/2011	1594	0.049

They have 27 permitted flares at this facility even though they are only operating only 26 flares. These flares are only for back up purposes, none of the flare is designed for continuous operation.

The CAM rule became effective November 21, 1997, however requirements of the plan were delayed while Title V program being implemented. Thus, owners and operators were subject to CAM plan requirement at the time of their initial Title V permit renewal. Title V renewal A/N 522460 for this facility was submitted 05/11/11.

APPLICABILITY & REQUIREMENTS:

CAM rule (40 CFR Part 64) covers emission units that are evaluated on a pollutant by pollutant basis for equipment that meet the definition of pollutant specific emission units (PSUEs). The rule applies to each PSUE if the unit is located at a major source that is required to obtain a Part 70 or 71 (Title V) permit. The CAM plan requirements are;

- Describe the indicators to be monitored
- Describe ranges or the process to set indicator ranges
- Describe the performance criteria for the monitoring, including specifications for obtaining representative data, verification procedures to confirm monitoring operational status, QA/QC procedures and monitoring frequency.
- Provide a justification for the use of parameters, ranges, and monitoring approach.
- Provide emissions test data, if necessary
- Provide an implementation plan for installing, testing, and operating the monitoring.

EVALUATION:

SCAQMD BACT Criteria:

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Rating/Size	Criteria Pollutants				
	VOC	NOx	SOx	CO	PM ₁₀
Digester Gas or Landfill Gas from Non-Hazardous Waste Landfill	Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1400 °F, Auto Combustion Air Control, Automatic Shutoff Gas Valve and Automatic Re-Start System (1988)	0.06 lbs/MM Btu (1988)		Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1400 °F, and Auto Combustion Air Control (1988)	Knockout Vessel (1988)
Landfill Gas from Hazardous Waste Landfill	Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1500 °F, Auto Combustion Air Control, Automatic Shutoff Gas Valve and Automatic Re-Start System (1988)	0.06 lbs/MM Btu (1988)		Ground Level, Shrouded, ≥ 0.6 Sec. Retention Time at ≥ 1500 °F, and Auto Combustion Air Control (1988)	Knockout Vessel (1988)

MONITORING & PERFORMANCE:

Indicator:

When the flare is in operation continuous temperature monitoring in the exhaust stack and temperature recorder must be in operation. Temperature shall be measured at a location above the flame zone, at least 0.6 second downstream of the burner and not less than 5 feet from the top of the stack. Temperature monitor shall have an accuracy of +/- 1% of the temperature being measured. Installation, replacement and preventative maintenance for the temperature monitors shall be in accordance with manufacturer's specifications.

Range:

Minimum temperature of 1400 deg F for all the flares is required (see BACT requirement above). Temperature shall be recorded in degrees Fahrenheit. The data collected by an electronic data recorder shall record at least every 15 minutes.

Excursion can be defined as anytime during operation when combustion temperature is lower than the minimum combustion temperature specified for the flare in the permit.

Upon detecting any excursion from the acceptable range of readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable.

Frequency:

Continuous temperature monitoring and recording. Valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour. [Minimum 4 times per hr if post-control emissions are ≥ MST; or Minimum 1 time per day if post-control emissions are < MST]. All exceedances shall be reported semi-annually that includes summary of information, at a minimum – number, duration and cause, and corrective actions taken. Same requirements apply for the monitor downtime incidences.

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Monitoring Operation & Maintenance:

The permittee shall be conditioned to comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7

Recordkeeping & Reporting:

The permittee shall be conditioned to comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9.

Performance Test:

Each flare shall be tested annually to show compliance with the NMOC hourly emission rate (offset limit) and flare operating temperature, deg. F. Recent Source Tests Results: (See enclosed S/T Summary Tests Results). Applicant has attached source test reports of some of the flares, and the flares comply with permit limits (see the table above).

Quality Improvement Plan:

If the District or EPA determine that a Quality Improvement Plan (QIP) is required under 40 CFR Part 64.7 (d)(2), the permittee shall develop and implement the QIP in accordance with 40 CFR Part 64.8.

Boiler

A/N	Permit No.	Issue Date			Permit Type
341060	F51926 Permit Condition No. 4. – SCAQMD Rule 1303 (b)2 offset	5/8/2002	ACTIVE	BOILER (>10 MMBTU/HR) LANDFILL GAS, 335 MM BTU/hr, NMOC's as methane 7 lbs/hr, 20 PPMV exhaust limit	PERMIT TO OPERATE GRANTED
341062	F51927 Permit Condition No. 4. – SCAQMD Rule 1303 (b)2 offset	5/8/2002	ACTIVE	BOILER (>10 MMBTU/HR) LANDFILL GAS, 335 MM BTU/hr, NMOC's as methane 7 lbs/hr, 20 PPMV exhaust limit	PERMIT TO OPERATE GRANTED

EVALUATION:

SCAQMD BACT Criteria:

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Subcategory/Rating/ Size	Criteria Pollutants					Inorganic
	VOC	NOx ¹⁾	SOx	CO	PM ₁₀	
Natural Gas or Propane Fired, < 20 MM Btu/hr		≤ 20 ppmv dry corrected to 3% O ₂ ²⁾ (10-20-2000)	Natural Gas (10-20-2000)	≤50 ppmv for firetube type, ≤ 100 ppmv for watertube type, dry corrected to 3% O ₂ (10-20-2000)	Natural Gas (10-20-2000)	
Natural Gas or Propane Fired, ≥ 20 MM Btu/hr		<u>With Low-NOx Burner:</u> ≤ 9 ppmv dry corrected to 3% O ₂ <u>With SCR or LTO:</u> ≤ 7 ppmv dry corrected to 3% O ₂ (10-20-2000)	Natural Gas (10-20-2000)	Same as above. (10-20-2000)	Natural Gas (10-20-2000)	<u>With SCR:</u> ≤ 5 ppmvd NH ₃ , corrected to 3% O ₂ <u>With LTO:</u> ≤ 1 ppmvd ozone, corrected to 3% O ₂ (10-20-2000)

- 1) Rules 1146 and 1146.1 require that boilers rated >2 and <75 MMBtu/hr meet 9 ppm NOx beginning 1/1/2012 for some categories, that natural gas-fired boilers rated at ≥75 MMBtu/hr meet 5 ppm by 1/1/2015 (except boilers at schools and universities), that natural-draft boilers rated >2 and ≤10 MMBtu/hr with unsealed combustion chambers meet 12 ppm by 1/1/2014, and that boilers firing landfill or digester gas meet 25 or 15 ppm, respectively, by 1/1/15 (all ppm are dry, corrected to 3% O₂). Electric utility boilers, refinery boilers rated >40 MMBtu/hr and sulfur plant reaction boilers rated ≥5 MMBtu/hr are excluded; and there are exceptions for low-use boilers and boilers that met a 12-ppm limit prior to 9/5/08. Applicants are advised to review these rules for further details.
- 2) A higher NOx limit may be allowed for facilities required to have a standby fuel, where use of a clean standby fuel is not possible and an ultra low-NOx burner is not available.

MONITORING & PERFORMANCE:

Indicator: When the boilers are in operation, O₂ shall be monitored continuously as per the permit condition no. 5.

Stack O₂ shall be less than 8 % excluding start up and shut down as required in permit condition no. 5. (Start up and shut down have been defined in conditions no. 6 & 7).

CEMS have alarms if the O₂ values fall out of the set limits. CEMS are being maintained and calibrated in accordance with 40 CFR part 60 appendix F.

Range: Oxygen analyzer in the stack shall have range approved by O₂ CEMS plan. If we can keep the O₂ concentration below 8 %, VOC destruction efficiency can be assured.

The data collected by an electronic data recorder shall record at least every 15 minutes.

Excursion for O₂ can be defined as any one hour period in which O₂ concentration is greater than 8 % in the stack. Upon detecting any excursion from the acceptable range of readings,

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the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable.

Frequency: Continuous temperature monitoring and recording. Valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour.
[Minimum 4 times per hr if post-control emissions are \geq MST; or
Minimum 1 time per day if post-control emissions are $<$ MST].
All exceedances shall be reported semi-annually that includes summary of information, at a minimum – number, duration and cause, and corrective actions taken.
Same requirements apply for the monitor downtime incidences.

Monitoring Operation & Maintenance:
The permittee shall be conditioned to comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7

Recordkeeping & Reporting:
The permittee shall be conditioned to comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9

Performance Test:
Each boiler shall be tested annually to show compliance with the NMOC hourly emission rate (offset limit) and exhaust O₂.

Recent Source Tests Results: (See enclosed S/T Summary Tests Results)
Applicant has attached source test reports for the boilers and the boilers comply with permit limits including destruction efficiency of VOC's.

Boiler 300 – Source Test Date - 04-28-2010
Inlet LFG flow dscfm 10,946
Flare operating temperature limit (3 min 1400 deg F)
TNMOC lb/hr emission limit as CH₄ = 1.22 lbs/hr (actual) 7 lbs/hr (permit limit)
CO lbs/hr 0.22 (actual) 11.5 lbs/hr (permit limit)
PM-10 = 4.29 lbs/hr (actual) = 10 lb/hr permit limit
NOX ppmv @ 3% O₂ in exhaust stream = 19.8
O₂ concentration in exhaust = 4.90 %
TNMOC ppmv in exhaust @ 3% O₂, as hexane, and
TNMOC DRE wt% limit (F-3 source tests had <98% DRE, but with <3% deviation).

Boiler 400 – Source Test Date - 04-27-2010
Inlet LFG flow dscfm 12,194
Flare operating temperature limit (3 min 1400 deg F)
TNMOC lb/hr emission limit as CH₄ = 0.697 lbs/hr (actual) 7 lbs/hr (permit limit)
CO lbs/hr 0.24 (actual) 11.5 lbs/hr (permit limit)
PM-10 = 3.74 lbs/hr (actual) = 10 lb/hr permit limit
NOX ppmv @ 3% O₂ in exhaust stream = 17.9
O₂ concentration in exhaust = 6.25 %
TNMOC ppmv in exhaust @ 3% O₂, as hexane, and
TNMOC DRE wt% limit (F-3 source tests had <98% DRE, but with <3% deviation).

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Quality Improvement Plan:

If the District or EPA determine that a Quality Improvement Plan (QIP) is required under 40 CFR Part 64.7 (d)(2), the permittee shall develop and implement the QIP in accordance with 40 CFR Part 64.8.

CAM Plan for IC Engines

We have the following applications in the system for ICE's:

A/N	Permit No.	Issue Date			Permit Type
394362	G3774 Permit Condition No. 15. – SCAQMD Rule 1303 (b)2 offset	7/17/2009	ACTIVE	ICE (>500 HP) LANDFILL GAS, Caterpillar 4261 BHP, Driving 3 MW Generator, 34 MMBTU/hr,	PERMIT TO OPERATE GRANTED
394363	G3775 Permit Condition No. 15. – SCAQMD Rule 1303 (b)2 offset	7/17/2009	ACTIVE	ICE (>500 HP) LANDFILL GAS	PERMIT TO OPERATE GRANTED
394364	G3776 Permit Condition No. 15. – SCAQMD Rule 1303 (b)2 offset	7/17/2009	ACTIVE	ICE (>500 HP) LANDFILL GAS	PERMIT TO OPERATE GRANTED

A/N	A/N Date			Permit Type
501721	09/01/2009 Condition No. 15. – SCAQMD Rule 1303 (b)2 offset	ACTIVE	ICE (>500 HP) LANDFILL GAS, Caterpillar 4261 BHP, Driving 3 MW Generator, 34 MMBTU/hr,	PERMIT TO CONSTRUCT GRANTED
501722	09/01/2009 Condition No. 15. – SCAQMD Rule 1303 (b)2 offset	ACTIVE	ICE (>500 HP) LANDFILL GAS	PERMIT TO CONSTRUCT GRANTED
501723	09/01/2009 Condition No. 15. – SCAQMD Rule 1303 (b)2 offset	ACTIVE	ICE (>500 HP) LANDFILL GAS	PERMIT TO CONSTRUCT GRANTED

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Total landfill gas flow rate not be exceeded at landfill = 39,800 scfm
Total Natural Gas Usage = not to exceed 25 percent of total heat input
ROG emissions limit = 1.69 lbs/hr

ICE Number	Source Test Date	Exhaust O2 Concentration %ge	TGNMOC as methane (lb/hr)
ICE No. 1	9/23/2010	10.35	1.2
ICE No. 2	11/4/2009	10.21	1.53
ICE No. 3	9/24/2010	9.8	0.95

MONITORING & PERFORMANCE:

Indicator Measurement approach:

Stack O2 CEMS, part of Rule 218 CEMS for O2 has been required by permit condition no. 17, in the P/C's issued for these three ICE's, applicant has been required to monitor O2 continuously (with CEMS).

Indicator Range:

Applicant has proposed the stack O2 concentration to be between 8% and 12%.

The IC Engines (Caterpillar G3616) are lean burn combustion engines. Lean burn engines run with high amounts of excess air in the exhaust stream to lower combustion temperatures and create less NOx.

Lower limit 8%: See attached Caterpillar document for gas burning engines. The document lists exhaust gas oxygen concentration for various engine loads. According to the document, at a load of 50%, oxygen could approach 8.3%. Excess oxygen would continue to drop for lower engine loads. We typically have much higher oxygen in the exhaust of the IC Engines because of NOx restrictions (If oxygen drops, the engine is running a richer air fuel ratio and NOx levels increase). However, this is where the 8% lower limit came from.

Upper limit of 12%: Limit was chosen based on the conditions that lean burn engines run at. In order to create less NOx, the engines run higher excess oxygen. More air equates to less NOx. Attached document from Caterpillar (Caterpillar Excess Air) states an operating range of 6% to 13% free oxygen for lean burn engines. From looking at engine operating conditions, although NOx drops significantly as the engine approaches 12% excess oxygen, misfire of the cylinder increases and therefore hydrocarbon emissions should theoretically increase as well. Therefore we suggest a cap of 12% excess oxygen to minimize misfire while maximizing NOx control.

Frequency:

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When the engines are in operation continuous oxygen monitoring in the exhaust stack and oxygen recorder must be in operation.

The oxygen measuring instrument shall have a range approved by O2 CEMS plan or 40 CFR part 60 Appendix F.

The data collected by an electronic data recorder shall record at least every 15 minutes.

Excursion can be defined as any period of operation during which the oxygen concentration is less than 8% or more than 12%, for one hour average except during periods of engine startup and shutdown.

Upon detecting any excursion from the acceptable range of readings, the permit holder shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable.

Continuous oxygen monitoring and recording. Valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour.

[Minimum 4 times per hr if post-control emissions are > MST; or Minimum 1 time per day if post-control emissions are < MST].

All exceedances shall be reported semi-annually that includes summary of information, at a minimum - number, duration and cause, and corrective actions taken.

Same requirements apply for the monitor downtime incidences.

Monitoring Operation & Maintenance:

The permit holder shall be conditioned to comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7

Recordkeeping & Reporting:

The permit holder shall be conditioned to comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9

Performance Test:

Each engine shall be tested at least every two years or 8760 hours, whichever comes first, to show compliance with the NMOC hourly emission rate (offset limit).

Quality Improvement Plan:

If the District or EPA determine that a Quality Improvement Plan (QIP) is required under 40 CFR Part 64.7 (d)(2), permit holder shall develop and implement the QIP in accordance with 40 CFR Part 64.8.

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GAS TURBINE

A/N	Permit No.	Issue Date			Permit Type
341073	F51928	5/8/2002	ACTIVE	LFG Turbine, Solar Turbine, 39 MMBTU/hr, 2800 KW Generator , ROG Limit = 0.40 lb/hr, NOx PPMV = 25 PPMV @ 15 % O2.	PERMIT TO OPERATE GRANTED

Subcategory/ Rating/Size	Criteria Pollutants					Inorganic
	VOC	NOx	SOx	CO	PM10	
Natural Gas Fired, < 3 MWe		9 ppmvd @ 15% O ₂ (10-20-2000)		10 ppmvd @ 15% O ₂ (10-20-2000)		9 ppmvd ammonia @ 15% O ₂ (10-20-2000)
Natural Gas Fired, ≥ 3 MWe and < 50 MWe		2.5 ppmvd @ 15% O ₂ x <u>efficiency (%)¹⁾</u> 34% (6-12-98)		10 ppmvd @ 15% O ₂ (6-12-98)		5.0 ppmvd ammonia @ 15% O ₂ (10-20-2000)
Natural Gas Fired, ≥ 50 MWe	2.0 ppmvd (as methane) @ 15% O ₂ , 1-hour avg. OR 0.0027 lbs/MMBtu (higher heating value) (10-20-2000)	2.5 ppmvd @ 15% O ₂ , 1-hour rolling avg. OR 2.0 ppmvd @ 15 %O ₂ , 3-hour rolling avg. x <u>efficiency (%)¹⁾</u> 34% (10-20-2000)		6.0 ppmvd @ 15% O ₂ , 3-hour rolling avg. (10-20-2000)		5.0 ppmvd ammonia @ 15% O ₂ (10-20-2000)
Emergency		See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)	See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)		See Clean Fuels Policy in Part C of the BACT Guidelines (10-20-2000)	
Landfill or Digester Gas Fired		25 ppmv, dry, corrected to 15 %O ₂ (1990)	Compliance with Rule 431.1 (10-20-2000)	130 ppmv, dry, corrected to 15 %O ₂ (10-20-2000)		Fuel Gas Treatment for Particulate Removal (1990)

Notes: 1) The turbine efficiency correction for NOx is limited to 1.0 as a minimum. The turbine efficiency is the demonstrated percent efficiency at full load (corrected to the higher heating value of the fuel) without consideration of any downstream heat recovery (12-3-2004).

* Means those facilities that are not major polluting facilities as defined by Rule 1302 - Definitions

MONITORING & PERFORMANCE:

Indicator: When the gas turbine is in operation continuous temperature monitoring and recording is in operation, Indicator Temperature T5 - measured at the third stage of the turbine inlet, if the temperature is greater than equal to 800 deg F that means normal operation.

Temperature monitor shall have an accuracy of +/- 1% of the temperature being measured.

Installation, replacement and preventative maintenance for the temperature monitors shall be in

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accordance with manufacturer's specifications. As per the applicant, there is no exhaust temperature gauge and they do not have any measurement device such as CEMS for turbine. They only have one temperature gauge at the third stage inlet of turbine and as long as the temperature at the third stage inlet is greater than 800 deg F, it means normal operation. In the recent source test report sent to SCAQMD or in previous source tests, this parameter (third stage inlet temperature) was not being measured. Applicant has mentioned that this parameter will be measured while completing source test in the future.

Range: Minimum temperature of 800 deg F for all the turbine is required. Temperature shall be recorded in degrees Fahrenheit. The data collected by an electronic data recorder shall record at least every 15 minutes.

Excursion is defines as when the third stage inlet temperature is less than 800 deg F except the start up and shutdown events lasting for maximum one hour, starting events can occur simultaneously. Upon detecting any excursion from the acceptable range of readings, the permittee shall investigate the excursion and take corrective action to minimize excessive emissions and prevent recurrence of the excursion as expeditiously as practicable.

Frequency: Continuous temperature monitoring and recording. Valid hour of data must have measured values for at least three 15-minute monitoring periods within the hour. [Minimum 4 times per hr if post-control emissions are \geq MST; or Minimum 1 time per day if post-control emissions are $<$ MST]. All exceedances shall be reported semi-annually that includes summary of information, at a minimum – number, duration and cause, and corrective actions taken. Same requirements apply for the monitor downtime incidences.

Monitoring Operation & Maintenance:

The permittee shall be conditioned to comply with the compliance assurance monitoring operation and maintenance requirements of 40 CFR Part 64.7

Recordkeeping & Reporting:

The permittee shall be conditioned to comply with the recordkeeping and reporting requirements of 40 CFR Part 64.9

Performance Test:

Turbine shall be tested annually to show compliance with the NMOC hourly emission rate (offset limit), and operating temperature, deg. F,

Recent Source Tests Results: (See enclosed S/T Summary Tests Results)

Applicant has attached source test report of some of the turbine and the turbine complies with permit limits,

Test Date: Dec 28-2010

Inlet LFG flow rate limit = 1342 dscfm

NOx PPMV at 15 % O2 = 24.9 PPMV in exhaust

TNMOC lb/hr emission limit = 0.40 (Permit limit)

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TNMOC lb/hr emissions = 0.350 (tested on Dec 2 -2010) = 3.5 PPMV (average)
 TNMOC ppmv in exhaust @ 3% O₂, as hexane, and
 TNMOC DRE wt% 97 percent (less than 98% percent)

Quality Improvement Plan:

If the District or EPA determine that a Quality Improvement Plan (QIP) is required under 40 CFR Part 64.7 (d)(2), the permittee shall develop and implement the QIP in accordance with 40 CFR Part 64.8.

[RULE 3004(A) (4)-PERIODIC MONITORING, 40CFR PART 64]

Rules:

Proposed CAM plan for TNMOC control is expected to comply with the applicable requirements of the 40CFR Part 64 and Rule 1303 (b) (2)-Emission offsets.

RECOMMENDATION:

It is recommended that the CAM plan be approved with additional Title V permit conditions as follows:

Section D:

TWO BOILERS:

PERMIT TO OPERATE – PAGE 15

Permit No. F51926, A/N 341060

PERMIT TO OPERATE - PAGE 18

Permit No. F51927, A/N 341062

CONDITION NO. 10 IN BOTH PERMITS:

THE RANGE OF O₂ CONTINUOUS EXHAUST RECORDING AND MEASUREMENT SYSTEMS SHALL BE ESTABLISHED AS PER 40 CFR PART 64.3.

CONTINUOUS EXHAUST O₂ MONITORING AND RECORDING SYSTEM SHALL BE MAINTAINED PURSUANT TO THE OPERATION AND MAINTENANCE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.3 AND 40 CFR PART APPENDIX F. SUCH A SYSTEM SHALL BE INSPECTED, MAINTAINED, AND CALIBRATED ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS USING AN APPLICABLE AQMD OR EPA APPROVED METHOD.

FOR THE PURPOSE OF THIS CONDITION, A DEVIATION SHALL BE DEFINED AS WHEN THE HOURLY AVERAGE O₂ CONCENTRATION IN THE STACK EXCEEDS 8% BY VOLUME EXCEPT DURING STARTUPS OR SHUTDOWNS AS DEFINED IN PERMIT CONDITIONS NO. 6 & 7. THE EXHAUST HOURLY AVERAGE O₂ SHALL BE SHALL BE COMPUTED FROM O₂ RECORDINGS MADE ATLEAST EVERY 15 MINUTES. THE OPERATOR SHALL INSTALL AN ALARM SYSTEM TO ALERT THE OPERATOR WHEN A DEVIATION OCCURS.

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THE OPERATOR SHALL TAKE IMMEDIATE CORRECTIVE ACTION, AND KEEP RECORDS OF THE DURATION AND CAUSE (INCLUDING UNKNOWN CAUSE, IF APPLICABLE) OF THE DEVIATION AND THE CORRECTIVE ACTION TAKEN.

ALL DEVIATIONS SHALL BE REPORTED TO THE AQMD ON A SEMI-ANNUAL BASIS PURSUANT TO THE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.9 AND CONDITION NOS. 22 AND 23 IN SECTION K OF THIS PERMIT.

THE OPERATOR SHALL SUBMIT AN APPLICATION WITH A QUALITY IMPROVEMENT PLAN (QIP) IN ACCORDANCE WITH 40 CFR PART 64.8 TO THE AQMD IF AN ACCUMULATION OF DEVIATIONS EXCEEDS 5 PERCENT DURATION OF THIS EQUIPMENT'S TOTAL OPERATING TIME FOR ANY SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K OF THIS PERMIT. THE REQUIRED QIP SHALL BE SUBMITTED TO THE AQMD WITHIN 90 CALENDAR DAYS AFTER THE DUE DATE FOR THE SEMI-ANNUAL MONITORING REPORT.

THE OPERATOR SHALL INSPECT AND MAINTAIN THIS EQUIPMENT ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE OPERATOR SHALL KEEP ADEQUATE RECORDS IN A FORMAT THAT IS ACCEPTABLE TO THE AQMD TO DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS SPECIFIED IN THIS CONDITION AND 40 CFR PART 64.9 FOR A MINIMUM OF FIVE YEARS.

[RULE 3004(A) (4)-PERIODIC MONITORING, 40CFR PART 64]

ONE TURBINE:

PERMIT TO OPERATE - PAGE 21

Permit No. F51928, A/N 341073

CONDITION NO. 7:

THE THIRD STAGE INLET TEMPERATURE SHALL BE MAINTAINED AT A MINIMUM OF 800 DEGREES FAHRENHEIT WHENEVER THE EQUIPMENT IS IN OPERATION.

CONTINUOUS THIRD STAGE INLET TEMPERATURE MONITORING AND RECORDING SYSTEM SHALL BE MAINTAINED PURSUANT TO THE OPERATION AND MAINTENANCE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.7. SUCH A SYSTEM SHALL HAVE AN ACCURACY OF WITHIN $\pm 1\%$ OF THE TEMPERATURE BEING MONITORED AND SHALL BE INSPECTED, MAINTAINED, AND CALIBRATED ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS USING AN APPLICABLE AQMD OR EPA APPROVED METHOD.

FOR THE PURPOSE OF THIS CONDITION, A DEVIATION SHALL BE DEFINED AS WHEN THE THIRD STAGE INLET TEMPERATURE DROPS BELOW 800 DEGREES FAHRENHEIT DURING OPERATION EXCEPT DURING START UP AND SHUTDOWN EVENTS LASTING FOR MAXIMUM ONE HOUR, MULTIPLE START UP AND SHUTDOWN EVENTS CAN OCCUR CONSECUTIVELY.

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THE THIRD STAGE INLET TEMPERATURE SHALL BE RECORDED ATLEAST EVERY 15 MINUTES, AND HOURLY AVERAGE SHALL BE COMPUTED FROM SUCH DATA POINTS. THE OPERATOR SHALL REVIEW THE RECORDS OF TEMPERATURE ON A DAILY BASIS TO DETERMINE IF A DEVIATION OCCURED OR SHALL INSTALL AN ALARM SYSTEM TO ALERT THE OPERATOR WHEN A DEVIATION OCCURS.

FOR EACH SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K, WHENEVER A DEVIATION OCCURS FROM 800 DEGREES FAHRENHEIT, THE OPERATOR SHALL TAKE IMMEDIATE CORRECTIVE ACTION, AND KEEP RECORDS OF THE DURATION AND CAUSE (INCLUDING UNKNOWN CAUSE, IF APPLICABLE) OF THE DEVIATION AND THE CORRECTIVE ACTION TAKEN.

ALL DEVIATIONS SHALL BE REPORTED TO THE AQMD ON A SEMI-ANNUAL BASIS PURSUANT TO THE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.9 AND CONDITION NOS. 22 AND 23 IN SECTION K OF THIS PERMIT.

THE OPERATOR SHALL SUBMIT AN APPLICATION WITH A QUALITY IMPROVEMENT PLAN (QIP) IN ACCORDANCE WITH 40 CFR PART 64.8 TO THE AQMD IF AN ACCUMULATION OF DEVIATIONS EXCEEDS 5 PERCENT DURATION OF THIS EQUIPMENT'S TOTAL OPERATING TIME FOR ANY SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K OF THIS PERMIT. THE REQUIRED QIP SHALL BE SUBMITTED TO THE AQMD WITHIN 90 CALENDAR DAYS AFTER THE DUE DATE FOR THE SEMI-ANNUAL MONITORING REPORT.

THE OPERATOR SHALL INSPECT AND MAINTAIN ALL COMPONENTS OF THIS EQUIPMENT ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE OPERATOR SHALL KEEP ADEQUATE RECORDS IN A FORMAT THAT IS ACCEPTABLE TO THE AQMD TO DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS SPECIFIED IN THIS CONDITION AND 40 CFR PART 64.9 FOR A MINIMUM OF FIVE YEARS.

[RULE 3004(A) (4)-PERIODIC MONITORING, 40CFR PART 64]

THREE IC ENGINES:

PERMIT TO OPERATE - PAGE 29

Permit No. G3774, A/N 394362

PERMIT TO OPERATE - PAGE 34

Permit No. G3775, A/N 394363

PERMIT TO OPERATE - PAGE 39

Permit No. G3776, A/N 394364

CONDITION NO. 20 IN ALL THREE PERMITS MENTIONED ABOVE:

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THE EXHAUST OXYGEN SHALL BE MAINTAINED IN THE RANGE OF 8% TO 12% AVERAGED OVER 1-HOUR WHENEVER THE ENGINE IS IN OPERATION, EXCEPT DURING PERIODS OF STARTUP AND SHUTDOWN.

CONTINUOUS EXHAUST OXYGEN MONITORING AND RECORDING SYSTEM SHALL BE PURSUANT TO THE OPERATION AND MAINTENANCE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.7. SUCH A SYSTEM SHALL BE INSPECTED, MAINTAINED, AND CALIBRATED ON AN QUARTERLY BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS USING AN APPLICABLE AQMD OR EPA APPROVED METHOD.

FOR THE PURPOSE OF THIS CONDITION, A DEVIATION SHALL BE DEFINED AS WHEN 1-HOUR AVERAGE OXYGEN PERCENTAGE OF LESS THAN 8% OR GREATER THAN 12% OCCURS DURING OPERATION EXCEPT DURING STARTUPS OR SHUTDOWNS. STARTUP OR SHUTDOWN PERIOD SHALL NOT EXCEED 30 MINUTES. THE OPERATOR SHALL REVIEW THE RECORDS OF OXYGEN PERCENTAGE ON A DAILY BASIS TO DETERMINE IF A DEVIATION OCCURED OR SHALL INSTALL AN ALARM SYSTEM TO ALERT THE OPERATOR WHEN A DEVIATION OCCURS.

FOR EACH SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K, WHENEVER AN DEVIATION OCCURS FROM THE OXYGEN RANGE, THE OPERATOR SHALL TAKE IMMEDIATE CORRECTIVE ACTION, AND KEEP RECORDS OF THE DURATION AND CAUSE (INCLUDING UNKNOWN CAUSE, IF APPLICABLE) OF THE DEVIATION AND THE CORRECTIVE ACTION TAKEN.

ALL DEVIATIONS SHALL BE REPORTED TO THE AQMD ON A SEMI-ANNUAL BASIS PURSUANT TO THE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.9 AND CONDITION NOS. 22 AND 23 IN SECTION K OF THIS PERMIT.

THE OPERATOR SHALL SUBMIT AN APPLICATION WITH A QUALITY IMPROVEMENT PLAN (QIP) IN ACCORDANCE WITH 40 CFR PART 64.8 TO THE AQMD IF AN ACCUMULATION OF DEVIATIONS EXCEEDS 5 PERCENT DURATION OF THIS EQUIPMENT'S TOTAL OPERATING TIME FOR ANY SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K OF THIS PERMIT. THE REQUIRED QIP SHALL BE SUBMITTED TO THE AQMD WITHIN 90 CALENDAR DAYS AFTER THE DUE DATE FOR THE SEMI-ANNUAL MONITORING REPORT.

THE OPERATOR SHALL INSPECT AND MAINTAIN THIS EQUIPMENT ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE OPERATOR SHALL KEEP ADEQUATE RECORDS IN A FORMAT THAT IS ACCEPTABLE TO THE AQMD TO DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS SPECIFIED IN THIS CONDITION AND 40 CFR PART 64.9 FOR A MINIMUM OF FIVE YEARS.

[RULE 3004(A) (4)-PERIODIC MONITORING, 40CFR PART 64]

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THREE LANDFILL FLARE PERMITS (FOR MULTIPLE FLARES):

PERMIT TO OPERATE - PAGE 44

Permit No. F82205, A/N 440820

PERMIT TO OPERATE - PAGE 49

Permit No. F82207, A/N 440822

PERMIT TO OPERATE - PAGE 54

Permit No. F82208, A/N 440823

CONDITION NO. 21 (IN THREE PERMITS MENTIONED ABOVE):

THE EXHAUST TEMPERATURE SHALL BE MAINTAINED AT A MINIMUM OF 1,400 (FOR ALL FLARES) DEGREES FAHRENHEIT AVERAGED OVER 15-MINUTE PERIOD WHENEVER THE EQUIPMENT IT SERVES IS IN OPERATION, EXCLUDING START UP AND SHUTDOWN.

EACH FLARE SHALL BE EQUIPPED WITH A CONTINUOUS EXHAUST TEMPERATURE MONITORING AND RECORDING SYSTEM PURSUANT TO THE OPERATION AND MAINTENANCE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.7 AND THE RECORDING SYSTEM SHALL BE IN OPERATION WHEN THE FLARE IS OPERATING. SUCH A SYSTEM SHALL HAVE AN ACCURACY OF WITHIN $\pm 1\%$ OF THE TEMPERATURE BEING MONITORED AND SHALL BE INSPECTED, MAINTAINED, AND CALIBRATED ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS USING AN APPLICABLE AQMD OR EPA APPROVED METHOD.

FOR THE PURPOSE OF THIS CONDITION, A DEVIATION SHALL BE DEFINED AS WHEN A 15-MINUTE AVERAGE TEMPERATURE OF LESS THAN 1,400 DEGREES FAHRENHEIT OCCURS DURING OPERATION EXCLUDING START UP AND SHUTDOWN. THE EXHAUST TEMPERATURE SHALL BE RECORDED ATLEAST ONCE IN EVERY 15-MINUTE PERIOD. THE OPERATOR SHALL REVIEW THE RECORDS OF TEMPERATURE ON A DAILY BASIS TO DETERMINE IF A DEVIATION OCCURED OR SHALL INSTALL AN ALARM SYSTEM TO ALERT THE OPERATOR WHEN A DEVIATION OCCURS.

FOR EACH SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K, WHENEVER AN DEVIATION OCCURS FROM 1,400 DEGREES FAHRENHEIT, THE OPERATOR SHALL TAKE IMMEDIATE CORRECTIVE ACTION, AND KEEP RECORDS OF THE DURATION AND CAUSE (INCLUDING UNKNOWN CAUSE, IF APPLICABLE) OF THE DEVIATION AND THE CORRECTIVE ACTION TAKEN.

ALL DEVIATIONS SHALL BE REPORTED TO THE AQMD ON A SEMI-ANNUAL BASIS PURSUANT TO THE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.9 AND CONDITION NOS. 22 AND 23 IN SECTION K OF THIS PERMIT.

THE OPERATOR SHALL SUBMIT AN APPLICATION WITH A QUALITY IMPROVEMENT PLAN (QIP) IN ACCORDANCE WITH 40 CFR PART 64.8 TO THE AQMD IF AN ACCUMULATION OF DEVIATION EXCEEDS 5 PERCENT DURATION OF THIS EQUIPMENT'S TOTAL OPERATING TIME FOR ANY SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN

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SECTION K OF THIS PERMIT. THE REQUIRED QIP SHALL BE SUBMITTED TO THE AQMD WITHIN 90 CALENDAR DAYS AFTER THE DUE DATE FOR THE SEMI-ANNUAL MONITORING REPORT.

THE OPERATOR SHALL INSPECT AND MAINTAIN ALL COMPONENTS OF THIS EQUIPMENT ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE OPERATOR SHALL KEEP ADEQUATE RECORDS IN A FORMAT THAT IS ACCEPTABLE TO THE AQMD TO DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS SPECIFIED IN THIS CONDITION AND 40 CFR PART 64.9 FOR A MINIMUM OF FIVE YEARS. [RULE 3004(A) (4)-PERIODIC MONITORING, 40CFR PART 64]

SECTION H:

THREE IC ENGINES:

PERMIT TO CONSTRUCT - PAGE 3
A/N 501721

PERMIT TO CONSTRUCT- PAGE 8
A/N 501722

PERMIT TO CONSTRUCT- PAGE 13
A/N 501723

CONDITION NO. 21 IN ALL THREE PERMITS MENTIONED ABOVE:

THE EXHAUST OXYGEN SHALL BE MAINTAINED IN THE RANGE OF 8% TO 12% AVERAGED OVER 1-HOUR WHENEVER THE ENGINE IS IN OPERATION, EXCEPT DURING PERIODS OF STARTUP AND SHUTDOWN.

CONTINUOUS EXHAUST OXYGEN MONITORING AND RECORDING SYSTEM SHALL BE PURSUANT TO THE OPERATION AND MAINTENANCE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.7. SUCH A SYSTEM SHALL BE INSPECTED, MAINTAINED, AND CALIBRATED ON AN QUARTERLY BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS USING AN APPLICABLE AQMD OR EPA APPROVED METHOD.

FOR THE PURPOSE OF THIS CONDITION, A DEVIATION SHALL BE DEFINED AS WHEN 1-HOUR AVERAGE OXYGEN PERCENTAGE OF LESS THAN 8% OR GREATER THAN 12% OCCURS DURING OPERATION EXCEPT DURING STARTUPS OR SHUTDOWNS. STARTUP OR SHUTDOWN PERIOD SHALL NOT EXCEED 30 MINUTES. THE OPERATOR SHALL REVIEW THE RECORDS OF OXYGEN PERCENTAGE ON A DAILY BASIS TO DETERMINE IF A DEVIATION OCCURED OR SHALL INSTALL AN ALARM SYSTEM TO ALERT THE OPERATOR WHEN A DEVIATION OCCURS.

FOR EACH SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K, WHENEVER AN DEVIATION OCCURS FROM THE OXYGEN RANGE, THE OPERATOR SHALL TAKE IMMEDIATE CORRECTIVE ACTION, AND KEEP RECORDS OF

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THE DURATION AND CAUSE (INCLUDING UNKNOWN CAUSE, IF APPLICABLE) OF THE DEVIATION AND THE CORRECTIVE ACTION TAKEN.

ALL DEVIATIONS SHALL BE REPORTED TO THE AQMD ON A SEMI-ANNUAL BASIS PURSUANT TO THE REQUIREMENTS SPECIFIED IN 40 CFR PART 64.9 AND CONDITION NOS. 22 AND 23 IN SECTION K OF THIS PERMIT.

THE OPERATOR SHALL SUBMIT AN APPLICATION WITH A QUALITY IMPROVEMENT PLAN (QIP) IN ACCORDANCE WITH 40 CFR PART 64.8 TO THE AQMD IF AN ACCUMULATION OF DEVIATIONS EXCEEDS 5 PERCENT DURATION OF THIS EQUIPMENT'S TOTAL OPERATING TIME FOR ANY SEMI-ANNUAL REPORTING PERIOD SPECIFIED IN CONDITION NO. 23 IN SECTION K OF THIS PERMIT. THE REQUIRED QIP SHALL BE SUBMITTED TO THE AQMD WITHIN 90 CALENDAR DAYS AFTER THE DUE DATE FOR THE SEMI-ANNUAL MONITORING REPORT.

THE OPERATOR SHALL INSPECT AND MAINTAIN THIS EQUIPMENT ON AN ANNUAL BASIS IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.

THE OPERATOR SHALL KEEP ADEQUATE RECORDS IN A FORMAT THAT IS ACCEPTABLE TO THE AQMD TO DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS SPECIFIED IN THIS CONDITION AND 40 CFR PART 64.9 FOR A MINIMUM OF FIVE YEARS.

[RULE 3004(A) (4)-PERIODIC MONITORING, 40CFR PART 64]