FACILITY PERMIT TO OPERATE
U S A WASTE OF CAL(EL SOBRANTE LANDFILL)

SECTION I: PLANS AND SCHEDULES

This section lists all plans approved by AQMD for the purposes of meeting the requirements of applicable AQMD rules specified below. The operator shall comply with all conditions specified in the approval of these plans.

Documents pertaining to the plan applications listed below are available for public review at AQMD Headquarters. Any changes to plan applications will require permit modification in accordance with Title V permit revision procedures.

List of approved plans:

Application	Rule
343069	1150.1
351821	431.1
486028	1110.2
532329	3003

NOTE: This section does not list compliance schedules pursuant to the requirements of Regulation XXX - Title V Permits; Rule 3004(a)(10)(C). For equipment subject to a variance, order for abatement, or alternative operating condition granted pursuant to Rule 518.2, equipment specific conditions are added to the equipment in Section D or H of the permit.

FACILITY PERMIT TO OPERATE
USA WASTE OF CAL (EL SOBRANTE LANDFILL)

APPLICATION NUMBER **486028**

RULE 1110.2(f)(1)(D) INSPECTION AND MONITORING (I & M) PLAN FOR THE FACILITY LOCATED AT 10910 DAWSON CANYON ROAD, CORONA, CA 92883.

Please refer to the application you submitted for the evaluation of your Inspection and Monitoring (I & M) plan under District Rule 1110.2(f)(1)(D), for the facility described above.

The Rule 1110.2 Inspection & Monitoring plan you submitted has been APPROVED.

A copy of your approved plan, together with any addendum, statements or declarations you provided during the evaluation of your plan, is attached. In accordance with Rule 1110.2(f)(1)(D)(ix), any changes in equipment, control equipment, operating conditions or emission limits will require that you submit an application to the District for the revision of your I & M plan.

WASTE MANAGEMENT

WASTE MANAGEMENT
EL SOBRANTE LANDFILL
10910 Dawson Canyon Road
Corona, CA 92883
(951) 277-1740
(951) 277-1861 Fax

November 8, 2013

Charlie Tupac
South Coast Air Quality Management District
21865 Copley Drive
Diamond Bar, CA 91765

RE: El Sobrante Landfill (Facility ID #113674) - Response to Comments Regarding El Sobrante's Inspection and Monitoring Plan

Dear Mr. Tupac,

USA Waste of California, Inc., owner/operator of the El Sobrante Landfill, is submitting a response to your email dated September 25, 2013 regarding El Sobrante's Inspection and Monitoring (I&M) Plan.

This response consists of the following:

- Attachment 1 : Responses to AQMD Comments
- Attachment 2 : Second Quarter 2013 Portable Analyzer Monitoring Results
- Attachment 3 : Third Quarter 2013 Portable Analyzer Monitoring Results
- Attachment 4 : Table of Malfunctions and Codes from the Total Electronic Management (TEM) unit.

If you have any questions regarding these reports, please contact Cody Cowgill at (951) 277-5106.

Sincerely,

Cody Cowgill Digitally signed by Cody Cowgill
DN: cn=Cody Cowgill, o=Waste Management, ou, email=ccowgill@wm.com, c=US
Date: 2013.11.08 17:03:55 -08'00'

Cody Cowgill
Site Engineer

Attachment 1

Attachment 1 – Responses to AQMD Comments

	Questions from AQMD	WM Responses
1	Name of contractor (was Run Energy), list of current contractors/staff with R1110.2 Portable Analyzer (PA) training certification.	Power Management Inc. (PMI), a Division of American Environmental Group, are contracted to operate the El Sobrante Landfill. A list of current PMI staff at El Sobrante with PA training certification include: -Don Hart -Tom Beaty -Rob Klock -James Smith -Bob Edwards
2	PA calibration schedule and procedure.	PMI uses the ECOM Advanced Data Acquisition System (DAS) to record all PA calibration results. The ECOM is calibrated in the field according to the following calibration gas levels: Carbon Monoxide (CO) (799 ppm), Nitrous Oxide (NO) (102 ppm), and Nitrogen Dioxide (NO2) (98 ppm). The ECOM is calibrated every 10 days or after it is used on 10 engines, whichever comes first. The ECOM is also calibrated and a linearity test is conducted by the local ECOM representative bi-annually. Calibration test results are maintained onsite.
3	PA readings recordkeeping format and manner of storage of records	PMI uses the ECOM Advanced DAS to record all PA readings. The results are electronically saved to the facility field computer. The records are also saved in hard copy format and placed in the Quarterly CO Monitoring binder located in the control room at the facility.
4	PA monitoring schedule, copy of two most recent recording events, method for alerting contractor/staff that monitoring is due.	The PA monitoring is conducted quarterly to measure CO emissions per AQMD Rule 1110.2. PA monitoring results for Quarter 2 and Quarter 3, 2013 are provided in Attachments 2 and 3, respectively. Waste Management utilizes two contractors, CB&I and PMI to coordinate the scheduling of the required monitoring events. PMI has dedicated personnel who perform the PA testing. CB&I coordinates directly with these personnel as well as plant operators to ensure the testing has occurred within the required timeframe.

Attachment 1 – Responses to AQMD Comments

	Questions from AQMD	WM Responses
5	Daily schedule and procedure for monitoring and verifying set points for various loads	The cylinder set points are established at the normal load and the minimum, midpoint, and maximum loads that actually occur during normal operations as described in the current I&M Plan. The average cylinder temperature set points are evaluated and verified for compliance with applicable emission limits during the annual engine source test and quarterly CO emission checks by measuring emissions at low, mid, and high loads. The average engine cylinder temperature is monitored daily and recorded in a daily log to ensure that the cylinder temperature falls within the acceptable range. The daily log is maintained onsite by the plant operator. Oxygen is continuously monitored by the Total Electronic Management (TEM) unit and is maintained in the range of 4.38% to 9.18%. By ensuring that Oxygen is maintained within this permitted range, daily CO emissions are assumed to be below the CO emission limit. The engine's exhaust oxygen value is good indicator of CO emission compliance.
6	List of malfunctions and associated codes, procedure for alerting staff, procedure for correcting out of range parameters, procedure for follow-up emission check.	A list of malfunctions and associated codes has been included in the Attachment 4. Plant operators are notified if parameters are close to becoming out of permit range by an auto-dialer that sends a page with a malfunction code to each operator's cell phone. Plant operators will make adjustments to the system in an attempt to correct out of range parameters. A follow-up emission check will be performed with the PA if the TEM system indicates that the emissions are out of permit range. The PA emission results will assist in verifying the accuracy of the TEM system.
7	CO concentrations corresponding to permit condition limits for CO (9.9 lbs/hr, 2.4 grams/bhp-hr) used to demonstrate compliance at emission checks.	PMI corrects the CO emission reading from the PA to 15% oxygen using the formula below: CO (ppm) corrected to 15% O2 = (20.9-15) / (20.9-Engine O2 %)*CO (ppm) PMI varies that the CO emissions are in compliance with the permit limit of 2000 ppmv corrected to 15% oxygen and 250 ppmv corrected to 15% oxygen, as required by Rule 1110.2.

Attachment 2

Second Quarter 2013 Portable Analyzer Monitoring Results for Engine 1, 2, and 3

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PRE-POST TEST CALIBRATION INFORMATION

DATE OF TEST:	5/3/2013	Quarter:	2
TIME OF TEST:	9:28:54		
AREA:	Corona Ca	FACILITY:	WMRE El Sobrante
AIR PERMIT #:	f86553	PERMIT EQUIP #:	1
PERMIT DATE:	3/30/2012		
EQUIPMENT:	El Sobrante E1	UNIT#:	1
MODEL:	T8G620V16	SERIAL NUMBER:	2202932
ANALYZER MAKE:	ECOM	ANALYZER MODEL:	J2K(N)
ANALYZER S/N:	2975		

PRE TEST PERFORMED: 5/3/2013 8:26:17
POST TEST PERFORMED: 5/3/2013 9:48:09

SAMPLE FLOW RATE: 3.5 l/min
RESPONSE TIME: 2:00 RAMP-UP TIME: 4:00
RAMP-UP TIME OK: YES

MAX O2 ZERO ERROR: 0.3 % O2
MAX CO NO NO2 ZERO ERROR: 3.0 % SPAN
MAX ZERO DRIFT: 5.0 % SPAN
MAX O2 CAL ERROR: 0.5 % O2
MAX CO NO NO2 CAL ERROR: 5.0 % SPAN
MAX SPAN DRIFT: 5.0 % SPAN

PRE TEST CALIBRATION DATA

	ZERO	MAX ZERO	ZERO OK	RESP	CAL ERROR	CAL OK
NO	0	3.1	YES	101	1.00%	YES
NO2	0	2.9	YES	98	0.00%	YES
CO	0	24	YES	799	0.00%	YES
O2	0	0.3	YES	21	0.1 % O2	YES

POST TEST CALIBRATION DATA

	ZERO	MAX ZERO	ZERO OK	ZERO DRIFT	ZERO DRIFT OK	RESP	CAL ERROR	CAL OK	SPAN DRIFT	SPAN DRIFT OK	CAL GAS VALUE	CAL GAS EXP DATE
NO	0	3.1	YES	0.00%	YES	101	1.00%	YES	0.00%	YES	102	9/8/2012
NO2	0	2.9	YES	0.00%	YES	98	0.00%	YES	0.00%	YES	98	9/1/2012
CO	0	24	YES	0.00%	YES	799	0.00%	YES	0.00%	YES	799	9/8/2012
O2	0	0.3	YES	0.00%	YES	21	0.1 % O2	YES	0.00%	YES	20.9	

PRE/POST TEST CALIBRATION CORRECTIONS

Corrected Value = ((Cmea - Cz) * Ccal)/(Cm - Cz)

where

Cmea is the average measured value.
Cz is the average of the pre and post test calibration zero readings.
Cm is the average of the pre and post test calibration span readings.
Ccal is the calibration gas concentration.

NO Corrected =	10
NO Cmea =	9.902
NO Cz =	0
NO Cm =	101
NO Ccal =	102
NO2 Corrected =	39.279
NO2 Cmea =	39.279
NO2 Cz =	0
NO2 Cm =	98
NO2 Ccal =	98
CO Corrected =	532.3
CO Cmea =	532.3
CO Cz =	0
CO Cm =	799
CO Ccal =	799
O2 Corrected =	7.799
O2 Cmea =	7.836
O2 Cz =	0
O2 Cm =	21
O2 Ccal =	20.9

Technician: _____ _____

Donald Hart DATE

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EMISSION TEST RECORDED DATA

DATE OF TEST: 5/3/2013 Quarter: 2

TIME OF TEST: 9:28:54

AREA: Corona Ca FACILITY: WMRE El Sobrante

AIR PERMIT #: f86553 PERMIT EQUIP #: 1

PERMIT DATE: 3/30/2012

EQUIPMENT: El Sobrante E1 UNIT#: 1

MODEL: TBG620V16 SERIAL NUMBER: 2202932

Operator Comments

El Sobrante Unit 1 2nd Qtr CO Monitoring

Starting Cell Temperat 878.0F

Ending Cell Temperatu 878.0F

Average Cell Tempera 878.0F

This test was conducte Test Run As-Found

The following is uncorrected and unadjusted data as received from the analyzer.

The NOx and CO(mass) and NOx(mass) values reported here are calculated from this uncorrected and unadjusted data.

Test 1 Data:

Sample Tin	O2	CO	NO	NO2	NOx	CO2	Tgas	Tamb	COmass	NOxmass	Signal Status	
09:29:27	7.8	535	9	39	48	7.4	879	113.7	240.954	21.618	OK	First Sample of Test Da
09:29:42	7.8	535	9	39	48	7.4	879	113.9	240.954	21.618	OK	
09:29:57	7.8	535	9	39	48	7.4	879	114	240.954	21.618	OK	
09:30:12	7.8	534	10	39	49	7.4	879	114.2	240.504	22.069	OK	
09:30:27	7.9	534	10	39	49	7.3	879	114.4	242.354	22.238	OK	
09:30:42	7.8	534	10	39	49	7.4	879	114.4	240.504	22.069	OK	
09:30:57	7.8	534	9	39	48	7.4	878	114	240.504	21.618	OK	
09:31:12	7.8	534	9	39	48	7.4	879	113.9	240.504	21.618	OK	
09:31:27	7.8	533	9	39	48	7.4	878	113.9	240.053	21.618	OK	
09:31:42	7.8	533	10	39	49	7.4	878	114	240.053	22.069	OK	
09:31:57	7.8	533	9	39	48	7.4	878	114.4	240.053	21.618	OK	
09:32:12	7.9	533	9	39	48	7.3	878	114.6	241.9	21.785	OK	
09:32:27	7.9	533	9	39	48	7.3	878	114.8	241.9	21.785	OK	
09:32:42	7.8	534	9	38	47	7.4	878	114.9	240.504	21.168	OK	
09:32:57	7.8	534	9	40	49	7.4	878	115.3	240.504	22.069	OK	
09:33:12	7.8	534	10	40	50	7.4	878	115.5	240.504	22.519	OK	
09:33:27	7.8	534	10	40	50	7.4	878	115.7	240.504	22.519	OK	
09:33:42	7.8	534	10	40	50	7.4	878	115.8	240.504	22.519	OK	
09:33:57	7.8	534	10	40	50	7.4	879	116.2	240.504	22.519	OK	
09:34:12	7.9	534	10	39	49	7.3	879	116.2	242.354	22.238	OK	
09:34:27	7.9	533	10	39	49	7.3	879	116.4	241.9	22.238	OK	
09:34:42	7.9	534	10	39	49	7.3	879	116.6	242.354	22.238	OK	
09:34:57	7.9	534	9	39	48	7.3	879	116.7	242.354	21.785	OK	
09:35:12	7.9	534	9	39	48	7.3	879	116.9	242.354	21.785	OK	
09:35:27	7.9	534	9	39	48	7.3	878	117.1	242.354	21.785	OK	
09:35:42	7.9	535	10	39	49	7.3	878	117.1	242.808	22.238	OK	
09:35:57	7.9	534	10	39	49	7.3	878	117.3	242.354	22.238	OK	
09:36:12	7.9	534	10	39	49	7.3	879	117.5	242.354	22.238	OK	
09:36:27	7.9	534	10	39	49	7.3	879	117.6	242.354	22.238	OK	
09:36:42	7.8	533	10	39	49	7.4	879	117.6	240.053	22.069	OK	
09:36:57	7.8	533	10	39	49	7.4	879	117.6	240.053	22.069	OK	
09:37:12	7.8	533	10	38	48	7.4	879	117.5	240.053	21.618	OK	
09:37:27	7.9	534	10	38	48	7.3	878	117.5	242.354	21.785	OK	
09:37:42	7.8	534	10	38	48	7.4	878	117.5	240.504	21.618	OK	
09:37:57	7.8	533	10	39	49	7.4	878	117.5	240.053	22.069	OK	
09:38:12	7.8	533	11	40	51	7.4	878	117.3	240.053	22.969	OK	
09:38:27	7.8	532	11	40	51	7.4	878	116.9	239.603	22.969	OK	
09:38:42	7.8	532	11	40	51	7.4	878	116.7	239.603	22.969	OK	
09:38:57	7.8	531	11	39	50	7.4	878	116.7	239.153	22.519	OK	

09:39:12	7.8	531	11	39	50	7.4	878	116.6	239.153	22.519 OK	
09:39:27	7.9	532	10	39	49	7.3	878	116.2	241.446	22.238 OK	
09:39:42	7.9	531	10	39	49	7.3	878	116	240.992	22.238 OK	
09:39:57	7.9	532	10	39	49	7.3	878	116	241.446	22.238 OK	
09:40:12	7.9	531	10	39	49	7.3	878	115.8	240.992	22.238 OK	
09:40:27	7.8	530	10	39	49	7.4	879	115.8	238.702	22.069 OK	
09:40:42	7.8	530	10	39	49	7.4	879	115.8	238.702	22.069 OK	
09:40:57	7.8	530	11	39	50	7.4	879	115.8	238.702	22.519 OK	
09:41:12	7.8	530	10	39	49	7.4	879	115.7	238.702	22.069 OK	
09:41:27	7.8	530	10	39	49	7.4	879	115.3	238.702	22.069 OK	
09:41:42	7.8	530	10	40	50	7.4	878	114.8	238.702	22.519 OK	
09:41:57	7.8	530	10	40	50	7.4	878	114.4	238.702	22.519 OK	
09:42:12	7.8	529	10	40	50	7.4	878	114.2	238.252	22.519 OK	
09:42:27	7.8	530	10	40	50	7.4	877	114.2	238.702	22.519 OK	
09:42:42	7.8	529	10	40	50	7.4	877	114	238.252	22.519 OK	
09:42:57	7.8	529	10	41	51	7.4	877	113.9	238.252	22.969 OK	
09:43:12	7.8	529	10	40	50	7.4	878	113.9	238.252	22.519 OK	
09:43:27	7.9	528	10	40	50	7.3	878	114	239.631	22.692 OK	
09:43:42	7.8	528	11	40	51	7.4	878	114.2	237.802	22.969 OK	
09:43:57	7.9	529	10	40	50	7.3	878	114.4	240.085	22.692 OK	
09:44:12	7.9	530	10	40	50	7.3	878	114.6	240.538	22.692 OK	
09:44:27	7.9	530	11	40	51	7.3	878	114.8	240.538	23.146 OK	Last Sample of Test Da

Average CO Value = 532.295
Average NO Value = 9.902
Average NO2 Value = 39.279
Average NOx Value = 49.180
Average O2 Value = 7.836
End Of Test 1 Data.

Overall Average CO Value = 532.295
Overall Average NO Value = 9.902
Overall Average NO2 Value = 39.279
Overall Average NOx Value = 49.180
Overall Average O2 Value = 7.836

Technician: _____ _____

Donald Hart DATE

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EMISSION REPORT CALCULATIONS

DATE OF TEST:	5/3/2013	Quarter:	2
TIME OF TEST:	9:28:54		
AREA:	Corona Ca	FACILITY:	WMRE El Sobrante
AIR PERMIT #:	f86553	PERMIT EQUIP #:	1
PERMIT DATE:	3/30/2012		
EQUIPMENT:	El Sobrante E1	UNIT#:	1
MODEL:	TBG620V16	SERIAL NUMBER:	2202932

Mass emission calculations are as follows:

E[lb/hr] = Fd[dscf/MMBTU] * (20.9/(20.9 - O2d%)) * Fc[lb/scf] * Cd[ppm] * Specific Fuel Consumption[BTU/hp-hr] * HP[HP] * 0.0000001[MMBTU/BT
E[g/hp-hr] = Fd[dscf/MMBTU] * (20.9/(20.9 - O2d%)) * Fc[lb/scf] * Cd[ppm] * Specific Fuel Consumption[BTU/hp-hr] * 453.5924[g/lb] * 0.0000001[M

where:

Fd = 10100.000 dscf/MMBTU (40 CFR CHAPTER I PART 60 Appendix A-7 Table 19-2)
Average Measured O2d% = 7.836 % (Corrected value used if Post-Calibration performed)
Fc(CO) = 7.268e-8 lb/dscf
Fc(NOx) = 1.194e-7 lb/dscf
Average Measured CO Cd = 532.295 ppm (Corrected value used if Post-Calibration performed)
Average Measured NOx Cd = 49.180 ppm (Corrected value used if Post-Calibration performed)
Specific Fuel Consumption = 11000.000 BTU/hp-hr (default value)
HP = 1000.000 HP (HP at time of test)

Conversion factors were calculated at 68 F and 14.696 PSI.
Assumptions:
Ambient O2 concentration 20.9%.

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GENERAL EMISSIONS TEST FORM

DATE OF TEST:	5/3/2013	Quarter:	2
TIME OF TEST:	9:28:54		
AREA:	Corona Ca	FACILITY:	WMRE El Sobrante
AIR PERMIT #:	f86553	PERMIT EQUIP #:	1
PERMIT DATE:	3/30/2012		
EQUIPMENT:	El Sobrante E1	UNIT#:	1
MODEL:	TBG620V16	SERIAL NUMBER:	2202932
SERVICE:			
SITE RATED HP:	1	HP DURING TEST:	1
INTAKE PRESS:	20 psi	INTAKE TEMP:	120 F
RPM:	1800	IGINITION TIMING:	26
Fuel:	Landfill Gas	SPECIFIC GRAVITY:	0.99
FUEL FLOW:	1000.000 lb/hr		

AIR/FUEL CONTROLLER

MAKE:	TEMS	MODEL:	TEMS

CATALYTIC CONVERTER

MAKE:	n/a	MODEL:	n/a
STACK HEIGHT:	34 FT IN	SENSOR TEMP:	878.0 F
STACK FLOW:	n/a	STACK TEMP:	840 F

PERMITTED LIMITS:

CO:	250.00 g/bhp-hr	CO emissions are below permitted limits.
NOx:	36.00 g/bhp-hr	NOx emissions are below permitted limits.

CALCULATED EMISSIONS FROM TEST:

CO:	0.000 g/bhp-hr	0.000 lb/hr
NOx:	0.000 g/bhp-hr	0.000 lb/hr

Post Test Calibration adjustments have been applied.

Technician: Donald Hart

Test Date: 05/03/13

Engine Emission Test Recording

ecom

PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E1*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202932*
Engine Hours: *59874*
Engine Parameters: *1200kW*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *00/00/00*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *00/00/00*

TEST RECORDING

Sample Time	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	Notes
09:29:27	7.8	535	9	39	First Sample of Test Data
09:29:42	7.8	535	9	39	
09:29:57	7.8	535	9	39	
09:30:12	7.8	534	10	39	
09:30:27	7.9	534	10	39	
09:30:42	7.8	534	10	39	
09:30:57	7.8	534	9	39	
09:31:12	7.8	534	9	39	
09:31:27	7.8	533	9	39	
09:31:42	7.8	533	10	39	
09:31:57	7.8	533	9	39	
09:32:12	7.9	533	9	39	
09:32:27	7.9	533	9	39	
09:32:42	7.8	534	9	38	
09:32:57	7.8	534	9	40	
09:33:12	7.8	534	10	40	
09:33:27	7.8	534	10	40	
09:33:42	7.8	534	10	40	
09:33:57	7.8	534	10	40	
09:34:12	7.9	534	10	39	
09:34:27	7.9	533	10	39	
09:34:42	7.9	534	10	39	
09:34:57	7.9	534	9	39	
09:35:12	7.9	534	9	39	
09:35:27	7.9	534	9	39	
09:35:42	7.9	535	10	39	
09:35:57	7.9	534	10	39	
09:36:12	7.9	534	10	39	
09:36:27	7.9	534	10	39	
09:36:42	7.8	533	10	39	
09:36:57	7.8	533	10	39	
09:37:12	7.8	533	10	38	
09:37:27	7.9	534	10	38	
09:37:42	7.8	534	10	38	
09:37:57	7.8	533	10	39	
09:38:12	7.8	533	11	40	
09:38:27	7.8	532	11	40	
09:38:42	7.8	532	11	40	
09:38:57	7.8	531	11	39	
09:39:12	7.8	531	11	39	
09:39:27	7.9	532	10	39	
09:39:42	7.9	531	10	39	
09:39:57	7.9	532	10	39	
09:40:12	7.9	531	10	39	
09:40:27	7.8	530	10	39	
09:40:42	7.8	530	10	39	
09:40:57	7.8	530	11	39	
09:41:12	7.8	530	10	39	
09:41:27	7.8	530	10	39	
09:41:42	7.8	530	10	40	
09:41:57	7.8	530	10	40	
09:42:12	7.8	529	10	40	

Test Date: 05/03/13

Engine Emission Test Recording

ecom

Sample Time	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	Notes
09:42:27	7.8	530	10	40	
09:42:42	7.8	529	10	40	
09:42:57	7.8	529	10	41	
09:43:12	7.8	529	10	40	
09:43:27	7.9	528	10	40	
09:43:42	7.8	528	11	40	
09:43:57	7.9	529	10	40	
09:44:12	7.9	530	10	40	
09:44:27	7.9	530	11	40	Last Sample of Test Data

Test Phase Average Values	7.8361	532.295	9.902	39.279

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PRE-POST TEST CALIBRATION INFORMATION

DATE OF TEST:	5/3/2013	Quarter:	2
TIME OF TEST:	9:28:54		
AREA:	Corona Ca	FACILITY:	WMRE El Sobrante
AIR PERMIT #:	F86554	PERMIT EQUIP #:	2
PERMIT DATE:	30-Mar-12		
EQUIPMENT:	El Sobrante E2	UNIT#:	1
MODEL:	TBG620V16	SERIAL NUMBER:	2202870
ANALYZER MAKE:	ECOM	ANALYZER MODEL:	J2K(N)
ANALYZER S/N:	2975		

PRE TEST PERFORMED:	5/3/2013	8:26:17
POST TEST PERFORMED:	5/3/2013	9:48:09

SAMPLE FLOW RATE:	3.5 l/min		
RESPONSE TIME:	2:00	RAMP-UP TIME:	4:00
		RAMP-UP TIME OK: YES	

MAX O2 ZERO ERROR:	0.3 % O2
MAX CO NO NO2 ZERO ERROR:	3.0 % SPAN
MAX ZERO DRIFT:	5.0 % SPAN
MAX O2 CAL ERROR:	0.5 % O2
MAX CO NO NO2 CAL ERROR:	5.0 % SPAN
MAX SPAN DRIFT:	5.0 % SPAN

PRE TEST CALIBRATION DATA

	ZERO	MAX ZERO	ZERO OK	RESP	CAL ERROR	CAL OK
NO	0	3.1	YES	101	1.00%	YES
NO2	0	2.9	YES	98	0.00%	YES
CO	0	24	YES	799	0.00%	YES
O2	0	0.3	YES	21	0.1 % O2	YES

POST TEST CALIBRATION DATA

	ZERO	MAX ZERO	ZERO OK	ZERO DRIFT	ZERO DRIFT OK	RESP	CAL ERROR	CAL OK	SPAN DRIFT	SPAN DRIFT OK	CAL GAS VALUE	CAL GAS EXP DATE
NO	0	3.1	YES	0.00%	YES	101	1.00%	YES	0.00%	YES	102	9/8/2012
NO2	0	2.9	YES	0.00%	YES	98	0.00%	YES	0.00%	YES	98	9/1/2012
CO	0	24	YES	0.00%	YES	799	0.00%	YES	0.00%	YES	799	9/8/2012
O2	0	0.3	YES	0.00%	YES	21	0.1 % O2	YES	0.00%	YES	20.9	

PRE/POST TEST CALIBRATION CORRECTIONS

Corrected Value = ((Cmea - Cz) * Ccal)/(Cm - Cz)

where

Cmea is the average measured value.
Cz is the average of the pre and post test calibration zero readings.
Cm is the average of the pre and post test calibration span readings.
Ccal is the calibration gas concentration.

NO Corrected =	7.632
NO Cmea =	7.557
NO Cz =	0
NO Cm =	101
NO Ccal =	102
NO2 Corrected =	37.246
NO2 Cmea =	37.246
NO2 Cz =	0
NO2 Cm =	98
NO2 Ccal =	98
CO Corrected =	496.44
CO Cmea =	496.44
CO Cz =	0
CO Cm =	799
CO Ccal =	799
O2 Corrected =	7.456
O2 Cmea =	7.492
O2 Cz =	0
O2 Cm =	21
O2 Ccal =	20.9

Technician: _____ _____

Donald Hart DATE

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GENERAL EMISSIONS TEST FORM

DATE OF TEST:	5/3/2013	Quarter:	2
TIME OF TEST:	8:54:08		
AREA:	Corona Ca	FACILITY:	WMRE El Sobrante
AIR PERMIT #:	F86554	PERMIT EQUIP #:	2
PERMIT DATE:	30-Mar-12		
EQUIPMENT:	El Sobrante E2	UNIT#:	1
MODEL:	TBG620V16	SERIAL NUMBER:	2202870
SERVICE:			
SITE RATED HP:	1	HP DURING TEST:	1
INTAKE PRESS:	n/a	INTAKE TEMP:	120 F
RPM:	1800	IGINITION TIMING:	26
Fuel:	Landfill Gas	SPECIFIC GRAVITY:	0.99
FUEL FLOW:	1000.000 lb/hr		

AIR/FUEL CONTROLLER

MAKE:	TEMS	MODEL:	TEMS

CATALYTIC CONVERTER

MAKE:	n/a	MODEL:	n/a
STACK HEIGHT:	34 FT IN	SENSOR TEMP:	879.0 F
STACK FLOW:	n/a	STACK TEMP:	840 F

PERMITTED LIMITS:

CO:	250.00 g/bhp-hr	CO emissions are below permitted limits.
NOx:	36.00 g/bhp-hr	NOx emissions are below permitted limits.

CALCULATED EMISSIONS FROM TEST:

CO:	0.000 g/bhp-hr	0.000 lb/hr
NOx:	0.000 g/bhp-hr	0.000 lb/hr

Post Test Calibration adjustments have been applied.

Technician: Donald Hart

Test Date: 05/03/13

Engine Emission Test Recording

ecom

PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E2*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202870*
Engine Hours: *55452*
Engine Parameters: *1200kW*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *00/00/00*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *00/00/00*

TEST RECORDING

Sample Time	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	Notes
08:54:52	7.8	526	7	39	First Sample of Test Data
08:55:07	7.8	526	7	39	
08:55:22	0.0	0	0	0	
08:55:37	0.0	0	0	0	
08:55:52	7.8	525	7	39	
08:56:07	7.8	524	8	39	
08:56:22	7.8	524	8	40	
08:56:37	7.8	524	8	40	
08:56:52	7.8	524	8	40	
08:57:07	7.8	524	8	40	
08:57:22	7.9	524	7	39	
08:57:37	7.9	524	7	39	
08:57:52	7.8	524	7	39	
08:58:07	7.8	524	7	39	
08:58:22	7.8	524	8	39	
08:58:37	7.8	523	8	39	
08:58:52	7.9	523	7	39	
08:59:07	7.9	523	8	39	
08:59:22	7.9	523	8	39	
08:59:37	7.9	523	8	39	
08:59:52	7.9	523	7	39	
09:00:07	7.9	522	8	39	
09:00:22	7.9	522	8	39	
09:00:37	7.9	522	8	39	
09:00:52	7.8	522	8	40	
09:01:07	7.9	522	8	40	
09:01:22	7.9	522	8	40	
09:01:37	7.9	522	8	39	
09:01:52	7.9	522	8	39	
09:02:07	7.9	522	8	39	
09:02:22	7.9	523	8	39	
09:02:37	7.9	523	8	39	
09:02:52	7.9	522	8	39	
09:03:07	7.9	521	8	39	
09:03:22	7.9	521	8	39	
09:03:37	7.9	521	8	39	
09:03:52	7.9	521	8	39	
09:04:07	7.9	521	8	39	
09:04:22	7.9	521	8	39	
09:04:37	7.9	521	8	39	
09:04:52	7.9	521	8	39	
09:05:07	7.9	521	8	39	
09:05:22	7.9	521	8	40	
09:05:37	7.9	520	8	40	
09:05:52	7.9	520	8	40	
09:06:07	7.9	520	8	40	
09:06:22	0.0	0	0	0	
09:06:37	7.9	520	8	40	
09:06:52	7.9	519	9	40	
09:07:07	7.9	519	9	39	
09:07:22	7.9	519	9	39	
09:07:37	7.9	519	9	39	

Test Date: 05/03/13

Engine Emission Test Recording

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Sample Time	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	Notes
09:07:52	7.9	519	8	39	
09:08:07	7.9	521	8	38	
09:08:22	8.0	523	8	38	
09:08:37	7.9	525	8	38	
09:08:52	7.9	525	8	38	
09:09:07	7.9	523	8	39	
09:09:22	7.9	521	8	39	
09:09:37	7.9	520	9	39	
09:09:52	7.9	519	9	40	Last Sample of Test Data

Test Phase Average Values	7.4918	496.443	7.557	37.246

Test Date: 05/03/13

Engine Emission Test Report

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PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E2*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202870*
Engine Hours: *55452*
Engine Parameters: *1200kW*

PERMIT INFORMATION

Permit Number: *F86554*
Permit Equipment #: *2*
Permit CO Limit: *250*

Permit Date: *30Aug07*
Permit Units: *ppm @ 15% O2*
Permit NOx Limit: *36*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *00/00/00*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *00/00/00*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION REQUIREMENTS

Max O2 Zero Error: *0.3*
Max O2 Cal Error: *0.5*
Max Zero Drift: *5*

Max CO, NO, NO2 Zero Error: *3*
Max CO, NO, NO2 Cal Error: *5*
Max Span Drift: *5*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION RESULTS

	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	
Pre-Test Zero	0.0	0	0	0	
Post-Test Zero	0.0	0	0	0	
Mean Zero, Ccz	0.0000	0.000	0.000	0.000	
Pre-Test Span	21.0	799	101	98	
Post-Test Span	21.0	799	101	98	
Span Drift (%)	0.0	0.0	0.0	0.0	Drift = ((PostTest R - PreTest R)/PreTest R) * 100
Mean Span, Ccm	21.0000	799.000	101.000	98.000	
Calibration Gas, Ccal	20.9	799 9/8/12	102 9/8/12	98 9/1/12	(Cal gas expiration dates included)

Pre-Test / Post-Test Procedure Results: PASSED

EMISSION TEST RESULTS

Test Run As-Found 05/03/13 08:54:08

	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	
Average Measured, Cmeas	7.4918	496.443	7.557	37.246		
Cal Adjusted, Cadj	7.4561	496.443	7.632	37.246	44.878	NOx = NO + NO2 Cadj = (Cmeas - Ccz) * (Ccal / (Ccm - Ccz))
Cadj @ 15% O2		217.869			19.695	Cadj @ 15% O2 = Cadj * ((5.9) / (20.9 - O2))
Permit Limit (@ 15% O2)		250			36	

Cell Temp. Start: 882.0F End: 879.0F Ambient Temp: 115.1F

Test Result: Measured emission levels are at or below permit limits.. (See attached notes.)

CERTIFICATION: Based on the information and belief formed after reasonable inquiry, I certify that the statements and information contained in this report are true, accurate, and representative of the emissions from this source.

Donald Hart, Power Management Inc | Title | Date

1.0.4.0

Test Date: 05/03/13

Engine Emission Test Report

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PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E2*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202870*
Engine Hours: *55452*
Engine Parameters: *1200kW*

PERMIT INFORMATION

Permit Number: *F86554*
Permit Equipment #: *2*
Pemit CO Limit: *250*

Permit Date: *30Aug07*
Permit Units: *ppm @ 15% O2*
Permit NOx Limit: *36*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *00/00/00*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *00/00/00*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION REQUIREMENTS

Max O2 Zero Error: *0.3*
Max O2 Cal Error: *0.5*
Max Zero Drift: *5*

Max CO, NO, NO2 Zero Error: *3*
Max CO, NO, NO2 Cal Error: *5*
Max Span Drift: *5*

NOTES

El Sobrante Unit 2 2nd Qtr CO Monitoring

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PRE-POST TEST CALIBRATION INFORMATION

DATE OF TEST:	5/3/2013	Quarter:	2
TIME OF TEST:	9:28:54		
AREA:	Corona Ca	FACILITY:	WMRE El Sobrante
AIR PERMIT #:	F86555	PERMIT EQUIP #:	3
PERMIT DATE:	30-Mar-12		
EQUIPMENT:	El Sobrante E3	UNIT#:	1
MODEL:	TBG620V16	SERIAL NUMBER:	2202931
ANALYZER MAKE:	ECOM	ANALYZER MODEL:	J2K(N)
ANALYZER S/N:	2975		

PRE TEST PERFORMED: 5/3/2013 8:26:17
POST TEST PERFORMED: 5/3/2013 9:48:09

SAMPLE FLOW RATE: 3.5 l/min
RESPONSE TIME: 2:00 RAMP-UP TIME: 4:00
RAMP-UP TIME OK: YES

MAX O2 ZERO ERROR: 0.3 % O2
MAX CO NO NO2 ZERO ERROR: 3.0 % SPAN
MAX ZERO DRIFT: 5.0 % SPAN
MAX O2 CAL ERROR: 0.5 % O2
MAX CO NO NO2 CAL ERROR: 5.0 % SPAN
MAX SPAN DRIFT: 5.0 % SPAN

PRE TEST CALIBRATION DATA

	ZERO	MAX ZERO	ZERO OK	RESP	CAL ERROR	CAL OK
NO	0	3.1	YES	101	1.00%	YES
NO2	0	2.9	YES	98	0.00%	YES
CO	0	24	YES	799	0.00%	YES
O2	0	0.3	YES	21	0.1 % O2	YES

POST TEST CALIBRATION DATA

	ZERO	MAX ZERO	ZERO OK	ZERO DRIFT	ZERO DRIFT OK	RESP	CAL ERROR	CAL OK	SPAN DRIFT	SPAN DRIFT OK	CAL GAS VALUE	CAL GAS EXP DATE
NO	0	3.1	YES	0.00%	YES	101	1.00%	YES	0.00%	YES	102	9/8/2012
NO2	0	2.9	YES	0.00%	YES	98	0.00%	YES	0.00%	YES	98	9/1/2012
CO	0	24	YES	0.00%	YES	799	0.00%	YES	0.00%	YES	799	9/8/2012
O2	0	0.3	YES	0.00%	YES	21	0.1 % O2	YES	0.00%	YES	20.9	

PRE/POST TEST CALIBRATION CORRECTIONS

Corrected Value = ((Cmea - Cz) * Ccal)/(Cm - Cz)

where

Cmea is the average measured value.
Cz is the average of the pre and post test calibration zero readings.
Cm is the average of the pre and post test calibration span readings.
Ccal is the calibration gas concentration.

NO Corrected =	9.139
NO Cmea =	9.049
NO Cz =	0
NO Cm =	101
NO Ccal =	102
NO2 Corrected =	38.639
NO2 Cmea =	38.639
NO2 Cz =	0
NO2 Cm =	98
NO2 Ccal =	98
CO Corrected =	540.36
CO Cmea =	540.36
CO Cz =	0
CO Cm =	799
CO Ccal =	799
O2 Corrected =	7.763
O2 Cmea =	7.8
O2 Cz =	0
O2 Cm =	21
O2 Ccal =	20.9

Technician: _____ _____

Donald Hart DATE

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GENERAL EMISSIONS TEST FORM

DATE OF TEST:	5/3/2013	Quarter:	2
TIME OF TEST:	8:26:29		
AREA:	Corona Ca	FACILITY:	WMRE El Sobrante
AIR PERMIT #:	F86555	PERMIT EQUIP #:	3
PERMIT DATE:	30-Mar-13		
EQUIPMENT:	El Sobrante E3	UNIT#:	1
MODEL:	TBG620V16	SERIAL NUMBER:	2202931
SERVICE:			
SITE RATED HP:	1	HP DURING TEST:	1
INTAKE PRESS:	n/a	INTAKE TEMP:	120 F
RPM:	1800	IGINITION TIMING:	26
Fuel:	Landfill Gas	SPECIFIC GRAVITY:	0.99
FUEL FLOW:	1000.000 lb/hr		

AIR/FUEL CONTROLLER

MAKE:	TEMS	MODEL:	TEMS

CATALYTIC CONVERTER

MAKE:	n/a	MODEL:	n/a
STACK HEIGHT:	34 FT IN	SENSOR TEMP:	876.0 F
STACK FLOW:	n/a	STACK TEMP:	840 F

PERMITTED LIMITS:

CO:	250.00 g/bhp-hr	CO emissions are below permitted limits.
NOx:	36.00 g/bhp-hr	NOx emissions are below permitted limits.

CALCULATED EMISSIONS FROM TEST:

CO:	0.000 g/bhp-hr	0.000 lb/hr
NOx:	0.000 g/bhp-hr	0.000 lb/hr

Post Test Calibration adjustments have been applied.

Technician: Donald Hart

Test Date: 05/03/13

Engine Emission Test Recording

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PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E3*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202931*
Engine Hours: *54641*
Engine Parameters: *1200kW*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *00/00/00*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *00/00/00*

TEST RECORDING

Sample Time	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	Notes
08:28:03	7.8	543	10	38	First Sample of Test Data
08:28:18	7.8	544	10	38	
08:28:33	7.8	544	10	38	
08:28:48	7.8	544	9	38	
08:29:03	7.8	544	9	38	
08:29:18	7.8	544	9	38	
08:29:33	7.8	543	9	38	
08:29:48	7.8	544	9	38	
08:30:03	7.8	544	9	37	
08:30:18	7.8	543	9	37	
08:30:33	7.8	543	9	37	
08:30:48	7.8	543	9	38	
08:31:03	7.8	542	9	38	
08:31:18	7.8	542	9	38	
08:31:33	7.8	542	9	38	
08:31:48	7.8	541	9	38	
08:32:03	7.8	542	9	39	
08:32:18	7.8	542	9	39	
08:32:33	7.8	542	9	39	
08:32:48	7.8	541	9	39	
08:33:03	7.8	542	9	39	
08:33:18	7.8	542	9	39	
08:33:33	7.8	541	9	39	
08:33:48	7.8	541	9	39	
08:34:03	7.8	541	9	39	
08:34:18	7.8	541	9	39	
08:34:33	7.8	541	9	39	
08:34:48	7.8	541	9	39	
08:35:03	7.8	541	9	39	
08:35:18	7.8	541	9	39	
08:35:33	7.8	541	9	39	
08:35:48	7.8	541	9	39	
08:36:03	7.8	540	9	38	
08:36:18	7.8	540	9	38	
08:36:33	7.8	540	9	38	
08:36:48	7.8	540	9	39	
08:37:03	7.8	540	9	39	
08:37:18	7.8	540	9	39	
08:37:33	7.8	539	9	39	
08:37:48	7.8	539	9	39	
08:38:03	7.8	539	9	39	
08:38:18	7.8	539	9	39	
08:38:33	7.8	539	9	39	
08:38:48	7.8	539	9	39	
08:39:03	7.8	538	9	39	
08:39:18	7.8	538	9	39	
08:39:33	7.8	538	9	39	
08:39:48	7.8	538	9	39	
08:40:03	7.8	538	9	39	
08:40:18	7.8	538	9	39	
08:40:33	7.8	538	9	39	
08:40:48	7.8	537	9	39	

Test Date: 05/03/13

Engine Emission Test Recording

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Sample Time	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	Notes
08:41:03	7.8	537	9	39	
08:41:18	7.8	537	9	39	
08:41:33	7.8	537	9	39	
08:41:48	7.8	536	9	39	
08:42:03	7.8	537	9	39	
08:42:18	7.8	537	9	39	
08:42:33	7.8	538	9	39	
08:42:48	7.8	538	9	39	
08:43:03	7.8	537	9	39	Last Sample of Test Data

Test Phase Average Values	7.8000	540.361	9.049	38.639

Test Date: 05/03/13

Engine Emission Test Report

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PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E3*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202931*
Engine Hours: *54641*
Engine Parameters: *1200kW*

PERMIT INFORMATION

Permit Number: *F86555*
Permit Equipment #: *3*
Pemit CO Limit: *250*

Permit Date: *30Aug07*
Permit Units: *ppm @ 15% O2*
Permit NOx Limit: *36*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *00/00/00*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *00/00/00*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION REQUIREMENTS

Max O2 Zero Error: *0.3*
Max O2 Cal Error: *0.5*
Max Zero Drift: *5*

Max CO, NO, NO2 Zero Error: *3*
Max CO, NO, NO2 Cal Error: *5*
Max Span Drift: *5*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION RESULTS

	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	
Pre-Test Zero	0.0	0	0	0	
Post-Test Zero	0.0	0	0	0	
Mean Zero, Ccz	0.0000	0.000	0.000	0.000	
Pre-Test Span	21.0	799	101	98	
Post-Test Span	21.0	799	101	98	
Span Drift (%)	0.0	0.0	0.0	0.0	Drift = ((PostTest R - PreTest R)/PreTest R) * 100
Mean Span, Ccm	21.0000	799.000	101.000	98.000	
Calibration Gas, Ccal	20.9	799 9/8/12	102 9/8/12	98 9/1/12	(Cal gas expiration dates included)

Pre-Test / Post-Test Procedure Results: PASSED

EMISSION TEST RESULTS

Test Run As-Found 05/03/13 08:26:29

	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	
Average Measured, Cmeas	7.8000	540.361	9.049	38.639		
Cal Adjusted, Cadj	7.7629	540.361	9.139	38.639	47.778	NOx = NO + NO2 Cadj = (Cmeas - Ccz) * (Ccal / (Ccm - Ccz))
Cadj @ 15% O2		242.681			21.458	Cadj @ 15% O2 = Cadj * ((5.9) / (20.9 - O2))
Permit Limit (@ 15% O2)		250			36	

Cell Temp. Start: 877.0F End: 876.0F Ambient Temp: 115.1F

Test Result: Measured emission levels are at or below permit limits.. (See attached notes.)

CERTIFICATION: Based on the information and belief formed after reasonable inquiry, I certify that the statements and information contained in this report are true, accurate, and representative of the emissions from this source.

Donald Hart, Power Management Inc	Title	Date

1040

Test Date: 05/03/13

Engine Emission Test Report

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PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E3*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202931*
Engine Hours: *54641*
Engine Parameters: *1200kW*

PERMIT INFORMATION

Permit Number: *F86555*
Permit Equipment #: *3*
Pemit CO Limit: *250*

Permit Date: *30Aug07*
Permit Units: *ppm @ 15% O2*
Permit NOx Limit: *36*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *00/00/00*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *00/00/00*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION REQUIREMENTS

Max O2 Zero Error: *0.3*
Max O2 Cal Error: *0.5*
Max Zero Drift: *5*

Max CO, NO, NO2 Zero Error: *3*
Max CO, NO, NO2 Cal Error: *5*
Max Span Drift: *5*

NOTES

El Sobrante Unit 3 2nd Qtr CO Monitoring

Attachment 3

Third Quarter 2013 Portable Analyzer Monitoring Results for Engine 1, 2, and 3

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EMISSION REPORT CALCULATIONS

DATE OF TEST:	9/12/2013	Quarter:	3
TIME OF TEST:	11:26:01		
AREA:	Corona Ca	FACILITY:	WMRE El Sobrante
AIR PERMIT #:	f86553	PERMIT EQUIP #:	1
PERMIT DATE:	3/30/2012		
EQUIPMENT:	El Sobrante E1	UNIT#:	1
MODEL:	TBG620V16	SERIAL NUMBER:	2202932

Mass emission calculations are as follows:

E[lb/hr] = Fd[dscf/MMBTU] * (20.9/(20.9 - O2d%)) * Fc[lb/scf] * Cd[ppm] * Specific Fuel Consumption[BTU/hp-hr] * HP[HP] * 0.0000001[MMBTU/BTU]
E[g/hp-hr] = Fd[dscf/MMBTU] * (20.9/(20.9 - O2d%)) * Fc[lb/scf] * Cd[ppm] * Specific Fuel Consumption[BTU/hp-hr] * 453.5924[g/lb] * 0.0000001[MMBTU/BTU

where:

Fd = 10100.000 dscf/MMBTU (40 CFR CHAPTER I PART 60 Appendix A-7 Table 19-2)
Average Measured O2d% = 7.562 % (Corrected value used if Post-Calibration performed)
Fc(CO) = 7.268e-8 lb/dscf
Fc(NOx) = 1.194e-7 lb/dscf
Average Measured CO Cd = 547.918 ppm (Corrected value used if Post-Calibration performed)
Average Measured NOx Cd = 47.869 ppm (Corrected value used if Post-Calibration performed)
Specific Fuel Consumption = 11000.000 BTU/hp-hr (default value)
HP = 1000.000 HP (HP at time of test)

Conversion factors were calculated at 68 F and 14.696 PSI.
Assumptions:
Ambient O2 concentration 20.9%.

Test Date: 09/12/13

Engine Emission Test Report

ECOM

PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E1*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202932*
Engine Hours: *62922*
Engine Parameters: *1200kW*

PERMIT INFORMATION

Permit Number: *f86553*
Permit Equipment #: *1*
Permit CO Limit: *250*

Permit Date: *8/30/07*
Permit Units: *ppm @ 15% O2*
Permit NOx Limit: *36*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *08/05/13*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *08/05/13*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION REQUIREMENTS

Max O2 Zero Error: *0.3*
Max O2 Cal Error: *0.5*
Max Zero Drift: *5*

Max CO, NO, NO2 Zero Error: *3*
Max CO, NO, NO2 Cal Error: *5*
Max Span Drift: *5*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION RESULTS

	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)
Pre-Test Zero	0.0	0	0	0
Post-Test Zero	0.0	0	0	0
Mean Zero, Ccz	0.0000	0.000	0.000	0.000
Pre-Test Span	21.0	799	101	98
Post-Test Span	21.0	799	101	98
Span Drift (%)	0.0	0.0	0.0	0.0
Mean Span, Ccm	21.0000	799.000	101.000	98.000
Calibration Gas, Ccal	20.9	799 9/8/13	102 9/8/13	98 9/1/13

Drift = ((PostTest R - PreTest R)/PreTest R) * 100

(Cal gas expiration dates included)

Pre-Test / Post-Test Procedure Results: PASSED

EMISSION TEST RESULTS

Test Run As-Found 09/12/13 11:26:01

	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)
Average Measured, Cmeas	7.5623	547.918	5.311	42.557	
Cal Adjusted, Cadj	7.5263	547.918	5.364	42.557	47.921
Cadj @ 15% O2		241.722			21.141
Permit Limit (@ 15% O2)		250			36

NOx = NO + NO2
Cadj = (Cmeas - Ccz) * (Ccal / (Ccm - Ccz))

Cadj @ 15% O2 = Cadj * ((5.9) / (20.9 - O2))

Cell Temp. Start: 887.0F End: 887.0F Ambient Temp: 0.0F

Test Result: Measured emission levels are at or below permit limits.. (See attached notes.)

CERTIFICATION: Based on the information and belief formed after reasonable inquiry, I certify that the statements and information contained in this report are true, accurate, and representative of the emissions from this source.

Donald Hart, Power Management Inc | Title | Date

1.0.4.0

Test Date: 09/12/13

Engine Emission Test Report

ecom

PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E1*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202932*
Engine Hours: *62922*
Engine Parameters: *1200kW*

PERMIT INFORMATION

Permit Number: *f86553*
Permit Equipment #: *1*
Pemit CO Limit: *250*

Permit Date: *8/30/07*
Permit Units: *ppm @ 15% O2*
Permit NOx Limit: *36*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *08/05/13*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *08/05/13*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION REQUIREMENTS

Max O2 Zero Error: *0.3*
Max O2 Cal Error: *0.5*
Max Zero Drift: *5*

Max CO, NO, NO2 Zero Error: *3*
Max CO, NO, NO2 Cal Error: *5*
Max Span Drift: *5*

NOTES

El Sobrante Unit 1 3rd Qtr CO monitoring

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EMISSION REPORT CALCULATIONS

DATE OF TEST:	9/12/2013	Quarter:	3
TIME OF TEST:	10:49:43		
AREA:	Corona Ca	FACILITY:	WMRE El Sobrante
AIR PERMIT #:	F86554	PERMIT EQUIP #:	2
PERMIT DATE:	30-Mar-12		
EQUIPMENT:	El Sobrante E2	UNIT#:	1
MODEL:	TBG620V16	SERIAL NUMBER:	2202870

Mass emission calculations are as follows:

E[lb/hr] = Fd[dscf/MMBTU] * (20.9/(20.9 - O2d%)) * Fc[lb/scf] * Cd[ppm] * Specific Fuel Consumption[BTU/hp-hr] * HP[HP] * 0.0000001[MMBTU/BTU]
E[g/hp-hr] = Fd[dscf/MMBTU] * (20.9/(20.9 - O2d%)) * Fc[lb/scf] * Cd[ppm] * Specific Fuel Consumption[BTU/hp-hr] * 453.5924[g/lb] * 0.0000001[MMBTU/BTU

where:

Fd = 10100.000 dscf/MMBTU (40 CFR CHAPTER I PART 60 Appendix A-7 Table 19-2)
Average Measured O2d% = 7.030 % (Corrected value used if Post-Calibration performed)
Fc(CO) = 7.268e-8 lb/dscf
Fc(NOx) = 1.194e-7 lb/dscf
Average Measured CO Cd = 560.066 ppm (Corrected value used if Post-Calibration performed)
Average Measured NOx Cd = 56.443 ppm (Corrected value used if Post-Calibration performed)
Specific Fuel Consumption = 11000.000 BTU/hp-hr (default value)
HP = 1000.000 HP (HP at time of test)

Conversion factors were calculated at 68 F and 14.696 PSI.
Assumptions:
Ambient O2 concentration 20.9%.

Test Date: 09/12/13

Engine Emission Test Recording

ecom

PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E2*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202870*
Engine Hours: *58456*
Engine Parameters: *1200kW*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *08/05/13*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *08/05/13*

TEST RECORDING

Sample Time	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	Notes
10:50:55	7.0	563	9	46	First Sample of Test Data
10:51:10	7.1	564	9	46	
10:51:25	7.1	563	9	46	
10:51:40	7.1	561	9	46	
10:51:55	7.0	561	9	45	
10:52:10	7.0	561	9	45	
10:52:25	7.1	561	9	46	
10:52:40	7.1	563	9	46	
10:52:55	7.1	563	9	47	
10:53:10	7.1	564	8	47	
10:53:25	7.1	563	8	47	
10:53:40	7.1	563	8	47	
10:53:55	7.1	563	9	47	
10:54:10	7.0	564	9	48	
10:54:25	7.0	565	9	48	
10:54:40	7.0	564	9	48	
10:54:55	7.0	564	9	48	
10:55:10	7.0	564	9	48	
10:55:25	7.0	564	9	47	
10:55:40	7.0	563	9	47	
10:55:55	7.0	563	9	47	
10:56:10	7.0	562	9	47	
10:56:25	7.1	562	9	47	
10:56:40	7.1	562	8	47	
10:56:55	7.0	561	8	47	
10:57:10	7.0	561	8	47	
10:57:25	7.0	561	9	48	
10:57:40	7.0	561	10	48	
10:57:55	7.0	561	9	48	
10:58:10	7.0	559	9	48	
10:58:25	7.0	560	9	48	
10:58:40	7.0	560	10	48	
10:58:55	7.0	560	10	47	
10:59:10	7.0	560	9	47	
10:59:25	7.0	559	9	47	
10:59:40	7.0	560	10	48	
10:59:55	7.0	561	9	48	
11:00:10	7.1	560	9	48	
11:00:25	7.1	560	10	48	
11:00:40	7.1	559	10	47	
11:00:55	7.1	558	9	47	
11:01:10	7.0	557	9	47	
11:01:25	7.0	558	10	47	
11:01:40	7.0	558	10	47	
11:01:55	7.0	558	9	47	
11:02:10	7.0	557	10	48	
11:02:25	7.0	558	9	48	
11:02:40	7.0	558	9	48	
11:02:55	7.0	557	9	48	
11:03:10	7.0	557	9	48	
11:03:25	7.0	557	9	48	
11:03:40	7.0	557	9	48	

Test Date: 09/12/13

Engine Emission Test Recording

ecom

Sample Time	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	Notes
11:03:55	7.0	557	9	48	
11:04:10	7.0	556	10	48	
11:04:25	7.0	557	9	48	
11:04:40	7.1	556	9	48	
11:04:55	7.1	555	9	48	
11:05:10	7.0	555	10	48	
11:05:25	7.0	556	10	48	
11:05:40	7.0	555	9	48	
11:05:55	7.0	554	9	48	Last Sample of Test Data

Test Phase Average Values	7.0295	560.066	9.098	47.344

Test Date: 09/12/13

Engine Emission Test Report

ECOM

PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E2*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202870*
Engine Hours: *58456*
Engine Parameters: *1200kW*

PERMIT INFORMATION

Permit Number: *F86554*
Permit Equipment #: *2*
Pemit CO Limit: *250*

Permit Date: *30Aug07*
Permit Units: *ppm @ 15% O2*
Permit NOx Limit: *36*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *08/05/13*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *08/05/13*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION REQUIREMENTS

Max O2 Zero Error: *0.3*
Max O2 Cal Error: *0.5*
Max Zero Drift: *5*

Max CO, NO, NO2 Zero Error: *3*
Max CO, NO, NO2 Cal Error: *5*
Max Span Drift: *5*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION RESULTS

	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	
Pre-Test Zero	0.0	0	0	0	
Post-Test Zero	0.0	0	0	0	
Mean Zero, Ccz	0.0000	0.000	0.000	0.000	
Pre-Test Span	21.0	799	101	98	
Post-Test Span	21.0	799	101	98	
Span Drift (%)	0.0	0.0	0.0	0.0	Drift = ((PostTest R - PreTest R)/PreTest R) * 100
Mean Span, Ccm	21.0000	799.000	101.000	98.000	
Calibration Gas, Ccal	20.9	799 9/8/13	102 9/8/13	98 9/1/13	(Cal gas expiration dates included)

Pre-Test / Post-Test Procedure Results: PASSED

EMISSION TEST RESULTS

Test Run As-Found 09/12/13 10:49:43

	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)	
Average Measured, Cmeas	7.0295	560.066	9.098	47.344		
Cal Adjusted, Cadj	6.9960	560.066	9.188	47.344	56.532	NOx = NO + NO2 Cadj = (Cmeas - Ccz) * (Ccal / (Ccm - Ccz))
Cadj @ 15% O2		237.657			23.989	Cadj @ 15% O2 = Cadj * ((5.9) / (20.9 - O2))
Permit Limit (@ 15% O2)		250			36	

Cell Temp. Start: 887.0F End: 887.0F Ambient Temp: 0.0F

Test Result: Measured emission levels are at or below permit limits.. (See attached notes.)

CERTIFICATION: Based on the information and belief formed after reasonable inquiry, I certify that the statements and information contained in this report are true, accurate, and representative of the emissions from this source.

Donald Hart, Power Management Inc | Title | Date

1.0.4.0

Test Date: 09/12/13

Engine Emission Test Report

ECOM

PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E2*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202870*
Engine Hours: *58456*
Engine Parameters: *1200kW*

PERMIT INFORMATION

Permit Number: *F86554*
Permit Equipment #: *2*
Permit CO Limit: *250*

Permit Date: *30Aug07*
Permit Units: *ppm @ 15% O2*
Permit NOx Limit: *36*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *08/05/13*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *08/05/13*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION REQUIREMENTS

Max O2 Zero Error: *0.3*
Max O2 Cal Error: *0.5*
Max Zero Drift: *5*

Max CO, NO, NO2 Zero Error: *3*
Max CO, NO, NO2 Cal Error: *5*
Max Span Drift: *5*

NOTES

El Sobrante 3rd Qtr CO monitoring

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EMISSION REPORT CALCULATIONS

DATE OF TEST:	9/12/2013	Quarter:	3
TIME OF TEST:	12:11:00		
AREA:	Corona Ca	FACILITY:	WMRE El Sobrante
AIR PERMIT #:	F86555	PERMIT EQUIP #:	3
PERMIT DATE:	30-Mar-12		
EQUIPMENT:	El Sobrante E3	UNIT#:	1
MODEL:	TBG620V16	SERIAL NUMBER:	2202931

Mass emission calculations are as follows:

E[lb/hr] = Fd[dscf/MMBTU] * (20.9/(20.9 - O2d%)) * Fc[lb/scf] * Cd[ppm] * Specific Fuel Consumption[BTU/hp-hr] * HP[HP] * 0.0000001[MMBTU/BTU]
E[g/hp-hr] = Fd[dscf/MMBTU] * (20.9/(20.9 - O2d%)) * Fc[lb/scf] * Cd[ppm] * Specific Fuel Consumption[BTU/hp-hr] * 453.5924[g/lb] * 0.0000001[MMBTU/BTU

where:

Fd = 10100.000 dscf/MMBTU (40 CFR CHAPTER I PART 60 Appendix A-7 Table 19-2)
Average Measured O2d% = 7.615 % (Corrected value used if Post-Calibration performed)
Fc(CO) = 7.268e-8 lb/dscf
Fc(NOx) = 1.194e-7 lb/dscf
Average Measured CO Cd = 536.459 ppm (Corrected value used if Post-Calibration performed)
Average Measured NOx Cd = 43.131 ppm (Corrected value used if Post-Calibration performed)
Specific Fuel Consumption = 11000.000 BTU/hp-hr (default value)
HP = 1000.000 HP (HP at time of test)

Conversion factors were calculated at 68 F and 14.696 PSI.
Assumptions:
Ambient O2 concentration 20.9%.

Test Date: 09/12/13

Engine Emission Test Recording

ecom

PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E3*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202931*
Engine Hours: *57656*
Engine Parameters: *1200kW*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *08/05/13*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *08/05/13*

TEST RECORDING

Sample Time	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	Notes
12:12:33	7.6	536	4	39	First Sample of Test Data
12:12:48	7.6	536	4	39	
12:13:03	7.6	537	4	39	
12:13:18	7.7	537	4	39	
12:13:33	7.7	537	4	39	
12:13:48	7.6	537	4	39	
12:14:03	7.7	538	4	39	
12:14:18	7.7	538	4	39	
12:14:33	7.7	537	4	39	
12:14:48	7.6	537	4	39	
12:15:03	7.7	537	4	39	
12:15:18	7.7	537	4	39	
12:15:33	7.6	537	4	39	
12:15:48	7.6	537	4	39	
12:16:03	7.6	537	4	39	
12:16:18	7.6	536	4	39	
12:16:33	7.6	536	4	39	
12:16:48	7.6	538	4	39	
12:17:03	7.6	538	4	39	
12:17:18	7.6	538	4	39	
12:17:33	7.6	538	4	39	
12:17:48	7.6	539	4	39	
12:18:03	7.6	538	4	39	
12:18:18	7.7	537	4	39	
12:18:33	7.6	538	4	39	
12:18:48	7.6	537	4	39	
12:19:03	7.6	537	4	39	
12:19:18	7.6	537	4	39	
12:19:33	7.6	537	4	39	
12:19:48	7.6	537	4	39	
12:20:03	7.6	537	4	39	
12:20:18	7.6	537	4	39	
12:20:33	7.6	537	4	39	
12:20:48	7.7	537	4	39	
12:21:03	7.6	538	4	39	
12:21:18	7.6	537	4	38	
12:21:33	7.6	536	4	38	
12:21:48	7.6	536	4	39	
12:22:03	7.6	536	4	39	
12:22:18	7.6	536	4	39	
12:22:33	7.6	535	4	39	
12:22:48	7.6	535	4	39	
12:23:03	7.6	535	4	39	
12:23:18	7.6	535	4	40	
12:23:33	7.6	536	4	39	
12:23:48	7.6	536	4	39	
12:24:03	7.6	536	4	40	
12:24:18	7.6	536	4	40	
12:24:33	7.6	535	4	39	
12:24:48	7.6	535	4	40	
12:25:03	7.6	536	4	40	
12:25:18	7.6	535	4	40	

Test Date: 09/12/13

Engine Emission Test Recording

ecom

Sample Time	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	Notes
12:25:33	7.6	535	4	39	
12:25:48	7.6	536	4	39	
12:26:03	7.6	536	4	39	
12:26:18	7.6	536	4	39	
12:26:33	7.6	536	4	39	
12:26:48	7.6	535	4	40	
12:27:03	7.6	534	4	40	
12:27:18	7.6	534	4	40	
12:27:33	7.6	534	4	40	Last Sample of Test Data

Test Phase Average Values	7.6148	536.459	4.000	39.131

Test Date: 09/12/13

Engine Emission Test Report

ecom

PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E3*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202931*
Engine Hours: *57656*
Engine Parameters: *1200kW*

PERMIT INFORMATION

Permit Number: *F86555*
Permit Equipment #: *3*
Permit CO Limit: *250*

Permit Date: *30Aug07*
Permit Units: *ppm @ 15% O2*
Permit NOx Limit: *36*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *08/05/13*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *08/05/13*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION REQUIREMENTS

Max O2 Zero Error: *0.3*
Max O2 Cal Error: *0.5*
Max Zero Drift: *5*

Max CO, NO, NO2 Zero Error: *3*
Max CO, NO, NO2 Cal Error: *5*
Max Span Drift: *5*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION RESULTS

	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)
Pre-Test Zero	0.0	0	0	0
Post-Test Zero	0.0	0	0	0
Mean Zero, Ccz	0.0000	0.000	0.000	0.000
Pre-Test Span	21.0	799	101	98
Post-Test Span	21.0	799	101	98
Span Drift (%)	0.0	0.0	0.0	0.0
Mean Span, Ccm	21.0000	799.000	101.000	98.000
Calibration Gas, Ccal	20.9	799 9/8/13	102 9/8/13	98 9/1/13

Drift = ((PostTest R - PreTest R)/PreTest R) * 100

(Cal gas expiration dates included)

Pre-Test / Post-Test Procedure Results: PASSED

EMISSION TEST RESULTS

Test Run As-Found 09/12/13 12:11:00

	O2 (%)	CO (ppm)	NO (ppm)	NO2 (ppm)	NOx (ppm)
Average Measured, Cmeas	7.6148	536.459	4.000	39.131	
Cal Adjusted, Cadj	7.5785	536.459	4.040	39.131	43.171
Cadj @ 15% O2		237.594			19.120
Permit Limit (@ 15% O2)		250			36

NOx = NO + NO2
Cadj = (Cmeas - Ccz) * (Ccal / (Ccm - Ccz))

Cadj @ 15% O2 = Cadj * ((5.9) / (20.9 - O2))

Cell Temp. Start: 906.0F End: 906.0F Ambient Temp: 0.0F

Test Result: Measured emission levels are at or below permit limits.. (See attached notes.)

CERTIFICATION: Based on the information and belief formed after reasonable inquiry, I certify that the statements and information contained in this report are true, accurate, and representative of the emissions from this source.

Donald Hart, Power Management Inc | Title | Date

1.0.4 0

Test Date: 09/12/13

Engine Emission Test Report

ecom

PHYSICAL LOCATION

Operational Area: *Corona*

Facility Name:

EQUIPMENT INFORMATION

Equipment Name: *El Sobrante E3*
Model: *TBG620V16*
Service:

Unit Number: *1*
Serial Number: *2202931*
Engine Hours: *57656*
Engine Parameters: *1200kW*

PERMIT INFORMATION

Permit Number: *F86555*
Permit Equipment #: *3*
Permit CO Limit: *250*

Permit Date: *30Aug07*
Permit Units: *ppm @ 15% O2*
Permit NOx Limit: *36*

ANALYZER INFORMATION

Model: *ECOM J2K(N)*
Last Stability Test: *08/05/13*

Serial No. / EC: *02975 / OCVNX*
Last Linearity Test: *08/05/13*

PRE-TEST CALIBRATION / POST-TEST VERIFICATION REQUIREMENTS

Max O2 Zero Error: *0.3*
Max O2 Cal Error: *0.5*
Max Zero Drift: *5*

Max CO, NO, NO2 Zero Error: *3*
Max CO, NO, NO2 Cal Error: *5*
Max Span Drift: *5*

NOTES

El Sobrante 3rd Qtr CO Monitoring

Attachment 4

Table of Malfunctions and Codes from the TEM Unit

11 Total List of Logic Informations

bit	no.	type	logic 0	logic 1	specification
0.0		message	manual	auto	genset operating mode "auto"
0.1		message	auto	manual	power control operating mode "manual "
0.2		message	auto	manual	mixture control operating mode "manual "
0.4	103	message	mains parallel	island	operating mode island
1.4	203	message	OK	message	overtemp. air inlet
2.0	156	message	OK	failure	pre-heating failure
2.3		message	disable	enable	enable pre-heating
3.0		message	inactive	active	oil change active
3.3		message	alarm	OK	collective alarm
3.4		message	fault	OK	collective fault
4.1		message	off	running	engine running
4.3	106	message	off	on	power circuit breaker On
4.4	105	message	disabled	enabled	key switch manual op. mode
4.5		message	inactive	active	ramp down for low CH4 value
4.6		message	inactive	active	calibration of CH4 sensor
8.2	868	message		stop limit	MK ctrl. valve limit stop warm
8.3	867	message		stop limit	MK ctrl. valve limit stop cold
9.2	885	message		stop limit	GK ctrl. valve limit stop warm
9.3	886	message		stop limit	GK ctrl. valve limit stop cold
13.2		message		SP n. reached	gas mixer start pos. not reached
13.3		message		SP n. reached	gas mixer stop pos. not reached
15.6	124	message		available	gas available
16.0	124	message	OK	too low	gas pressure gas regul. section
17.0	197	message		LR active	power red. due to throttle position
17.1	207	message		LR active	power red. due to jacket water temp.
17.2	201	message		LR active	power red. due to receivertemp.
17.4	311	message		LR active	power red. due to CH4-value
18.7		message	off	on	test mode collective message
20.0		message	off	on	ignition
20.1		message	off	on	starter
20.2		message	off	on	speed governor
20.3		message	off	on	pre-lube pump
20.4		message	off	on	pre-heating
20.5		message	off	on	engine cool. circuit pump
20.7		message	off	on	intercooler circuit pump
21.3		message	off	on	refilling lube oil
21.4		message	off	on	pump off lube oil
22.6		message	closed	open	gas valve A1
22.7		message	closed	open	gas valve A2
26.0		message	off	on	reset emerg. shutdown unit
26.2		message	disable	enable	enable (request) power circuit breaker on
27.0		message		active	GK dry cooler stage 2
27.1		message		active	GK dry cooler stage 3

total list of logic informations (continuation)

bit	no.	type	logic 0	logic 1	specification
27.2		message		active	GK dry cooler stage 4
27.3		message		active	NK dry cooler stage 2
27.4		message		active	NK dry cooler stage 3
27.5		message		active	NK dry cooler stage 4
33.0	196	alarm		too low	P196 lube oil pressure too low
33.1	196	alarm		too low	interval pre-/re-lube pressure too low
33.2	208	alarm		too high	T208 lube oil overtemperature
33.3	234	alarm		too low	L234 lube oil level too low
33.4	234	alarm		too high	L234 lube oil level too high
33.5		alarm		alarm	lube oil filter dirty
34.0	157	alarm		too high	P157 exhaust back pressure too high
34.1	200	alarm		too high	S200 speed before start too high
34.2	145	alarm		too low	P145 low pressure crank case
37.0	461	alarm		low temp.	T461 low temperature comb. chamber A1
37.1	462	alarm		low temp.	T462 low temperature comb. chamber A2
37.2	463	alarm		low temp.	T463 low temperature comb. chamber A3
37.3	464	alarm		low temp.	T464 low temperature comb. chamber A4
37.4	465	alarm		low temp.	T465 low temperature comb. chamber A5
37.5	466	alarm		low temp.	T466 low temperature comb. chamber A6
37.6	467	alarm		low temp.	T467 low temperature comb. chamber A7
37.7	468	alarm		low temp.	T468 low temperature comb. chamber A8
38.2	471	alarm		low temp.	T471 low temperature comb. chamber B1
38.3	472	alarm		low temp.	T472 low temperature comb. chamber B2
38.4	473	alarm		low temp.	T473 low temperature comb. chamber B3
38.5	474	alarm		low temp.	T474 low temperature comb. chamber B4
38.6	475	alarm		low temp.	T475 low temperature comb. chamber B5
38.7	476	alarm		low temp.	T476 low temperature comb. chamber B6
39.0	477	alarm		low temp.	T477 low temperature comb. chamber B7
39.1	478	alarm		low temp.	T478 low temperature comb. chamber B8
40.4	206	alarm		overtemp	T206 overtemp. jacket water engine outlet
43.0	198	alarm		alarm	power too long below 30%
44.0	311	alarm		too low	Q311 CH4-value too low
44.1		alarm		too long	calibration ch4 sensor (ramp down)
46.0	209	alarm		overtemp	T209 overtemperature generator winding U1
46.1	210	alarm		overtemp	T210 overtemperature generator winding V1
46.2	211	alarm		overtemp	T211 overtemperature generator winding W1
46.5	459	alarm		overtemp	T459 overtemperature generator bearing A
46.6	460	alarm		overtemp	T460 overtemperature generator bearing B
47.0		alarm		alarm	ignition system collective alarm
47.7		alarm		alarm	stepper motor board collective alarm
48.0		alarm		alarm	CAN-bus collective alarm
48.2		alarm		alarm	earth fault analog inputs
48.3		alarm		alarm	speed governor collective alarm
48.4		alarm		below 18V	supply voltage below 18 V
48.5		alarm		over 30V	supply voltage above 30 V
50.3	203	sensor a.			T203 air inlet
53.0	405	sensor a.			T405 GK dry cooler outlet
53.1	419	sensor a.			T419 NK dry. cooler outlet

total list of logic informations (continuation)

bit	no.	type	logic 0	logic 1	specification
55.0	311	sensor a.			Q311 CH4-value
57.0		sensor a.			collective alarm digital inputs bus
57.1		sensor a.			collective alarm digital outputs bus
57.2		sensor a.			collective alarm digital outputs TEM
58.0		sensor a.			parametrizable measurement 01
58.1		sensor a.			parametrizable measurement 02
64.0	196	fault		too low	P196 lube oil pressure too low
64.1	196	fault		too low	interval pre-/post-lube pressure too low
64.2	196	fault		too low	P196 pre-lube pressure at start
64.3	208	fault		too high	T208 lube oil overtemperature
64.4	234	fault		too low	L234 lube oil level too low
64.5	234	fault		too high	L234 lube oil level too high
64.6		fault		fault	lube oil filter dirty
65.2	201	fault		too high	T201 overtemperature receiver
66.1	200	fault		too high	S200 overspeed
66.2	200	fault		too low	S200 low speed
66.3	145	fault		too high	P145 overpressure crank case
66.4		fault		fault	engine does not start
68.0	461	fault		too high	T461 overtemp. comb. chamber A1
68.1	462	fault		too high	T462 overtemp. comb. chamber A2
68.2	463	fault		too high	T463 overtemp. comb. chamber A3
68.3	464	fault		too high	T464 overtemp. comb. chamber A4
68.4	465	fault		too high	T465 overtemp. comb. chamber A5
68.5	466	fault		too high	T466 overtemp. comb. chamber A6
68.6	467	fault		too high	T467 overtemp. comb. chamber A7
68.7	468	fault		too high	T468 overtemp. comb. chamber A8
69.2	471	fault		too high	T471 overtemp. comb. chamber B1
69.3	472	fault		too high	T472 overtemp. comb. chamber B2
69.4	473	fault		too high	T473 overtemp. comb. chamber B3
69.5	474	fault		too high	T474 overtemp. comb. chamber B4
69.6	475	fault		too high	T475 overtemp. comb. chamber B5
69.7	476	fault		too high	T476 overtemp. comb. chamber B6
70.0	477	fault		too high	T477 overtemp. comb. chamber B7
70.1	478	fault		too high	T478 overtemp. comb. chamber B8
70.4	461	fault		too low	T461 low temp. comb. chamber A1
70.5	462	fault		too low	T462 low temp. comb. chamber A2
70.6	463	fault		too low	T463 low temp. comb. chamber A3
70.7	464	fault		too low	T464 low temp. comb. chamber A4
71.0	465	fault		too low	T465 low temp. comb. chamber A5
71.1	466	fault		too low	T466 low temp. comb. chamber A6
71.2	467	fault		too low	T467 low temp. comb. chamber A7
71.3	468	fault		too low	T468 low temp. comb. chamber A8
71.6	471	fault		too low	T471 low temp. comb. chamber B1
71.7	472	fault		too low	T472 low temp. comb. chamber B2
72.0	473	fault		too low	T473 low temp. comb. chamber B3
72.1	474	fault		too low	T474 low temp. comb. chamber B4
72.2	475	fault		too low	T475 low temp. comb. chamber B5
72.3	476	fault		too low	T476 low temp. comb. chamber B6

total list of logic informations (continuation)

bit	no.	type	logic 0	logic 1	specification
72.4	477	fault		too low	T477 low temp. comb. chamber B7
72.5	478	fault		too low	T478 low temp. comb. chamber B8
73.0	46x	fault		fault	comb. chamber monitoring A (mean v.)
73.1	47x	fault		fault	comb. chamber monitoring B (mean v.)
73.2	46x	fault			
73.3	47x	fault			
75.0	207	fault		too high	T207 overtemp. jacket water engine inlet
75.1	206	fault		too high	T206 overtemp. jacket water engine outlet
79.2	126	fault		fault	dp flow monitoring engine cooling circuit
79.3	309	fault		fault	dp flow monitoring intercooler circuit
80.0	123	fault		fault	low water engine cooling circuit
80.1	308	fault		fault	low water intercooler circuit
82.0		fault		fault	mixture controller
82.6		fault		too long	calibration ch4 sensor
82.7	311	fault		too low	Q311 CH4-value too low
83.0		fault		overload	engine overload
83.1		fault		fault	power control
83.2		fault		fault	power reduction below 80% necessary
83.3	198	fault		fault	power too long below 30%
84.2	124	fault		fault	P124 gas pressure
84.4	147	fault		fault	temperature monitoring gas regul. section
86.0	209	fault		too high	T209 overtemp. generator winding U1
86.1	210	fault		too high	T210 overtemp. generator winding V1
86.2	211	fault		too high	T211 overtemp. generator winding W1
86.3	459	fault		too high	T459 overtemp. generator bearing A
86.4	460	fault		too high	T460 overtemp. generator bearing B
87.0		fault		fault	synchronization failure
87.1	198	fault		rev. power	reverse power
87.6	121	fault		fault	collective fault generator protection
89.2		fault		fault	circuit breaker TEM
90.0		fault		fault	reset while engine was running
90.1		fault		fault	internal quick stop
90.2	117	fault		fault	external quick stop without heat removal
90.3	116	fault		fault	external quick stop with heat removal
90.7		fault		fault	security chain open
92.0		fault		fault	ingition system collective fault
93.0		fault		fault	speed governor collective fault
93.1		fault		fault	stepper motor board collective fault
93.2		fault		fault	CAN-Bus collective fault
94.0		fault		fault	control parameters
97.0	196	sensor f.			P196 lube oil pressure before filter
97.2	208	sensor f.			T208 lube oil
97.4	234	sensor f.			L234 lube oil level
98.0	201	sensor f.			T201 receiver
98.4	145	sensor f.			P145 crank case pressure
99.2	200	sensor f.			S200 speed governor actual speed
100.0	203	sensor f.			T203 air inlet
101.0	461	sensor f.			T461 comb. chamber A1

WASTE MANAGEMENT

WASTE MANAGEMENT
EL SOBRANTE LANDFILL
P.O. Box 77908
Corona, CA 92877
(951) 277-1740
(951) 277-1861 Fax

July 29, 2008

Mr. Charlie Tupac
Engineering and Compliance Division
South Coast AQMD
21865 E. Copley Drive
Diamond Bar, CA 19765

Subject: USA Waste of California (El Sobrante), Facility ID 113674

- Rule 1110.2 Inspection and Monitoring Plan Submission;
- Application for Change of Conditions in Permits to Operate for the Engines; and
- Application for Administrative Revision to Title V Permit

Dear Mr. Tupac:

USA Waste of California (El Sobrante) is submitting this application package consisting of the following:

- Rule 1110.2 Inspection & Monitoring Plan, Forms 400-A, 400-CEQA;
- Application for Change of Conditions in Permits to Operate (PTO) F86553, F86554, F86555, Forms 400-A, 400-CEQA;
- Application for Administrative Revision to Title V Permit, Forms 400-A, 400-CEQA, 500-A2, 500-C1;
- Check for the plan and applications fees.

Rule 1110.2 Inspection and Monitoring Plan

El Sobrante is submitting the Inspection and Monitoring Plan (I&M Plan) per the requirements of Rule 1110.2, as amended on February 1, 2008. The I&M Plan is applicable to the three Landfill Gas (LFG) fired Internal Combustion (IC) engines operating in the facility.

Change of Conditions: PTO Nos. F86553, F86554, F86555

Per Rule 1110.2, as amended on February 1, 2008, the IC engines at El Sobrante are subject to a new concentration limit for NOx emissions (different from the present limit in PTO). The present concentration limit for NOx emissions is 36 PPMV. The new concentration limit is 36 x ECF PPMV. El Sobrante is submitting applications for a change of the NOx emission concentration limit and to add a new condition in all three engine PTOs as follows:

1. Change of NOx emission concentration limit

   Present Condition No. 19 (Emissions and Requirements)
   NOx: 36 PPMV @ 15% OXYGEN, 15 MINUTE AVERAGE, AT 25% EFF

   Desired Change **NOx: 36 x ECF PPMV @ 15% OXYGEN**

The ECF will be determined by conducting a performance test for the engines following ASME PTC 17 -1973, per Rule 1110.2 (d)(1)(C)(i) and (ii). After performing the test, El Sobrante will submit the test results to the District so that the ECF-corrected NOx concentration becomes the new concentration limit for NOx emissions.

2. Add a new permit condition

   The concentration limits for emissions from the engine exhaust shall not apply during an engine start-up. The start-up period shall not exceed 30 minutes.

The above two changes are applicable to the PTO of all three engines, i.e. PTO Nos. F86553, F86554, F86555.

Administrative Revision to Title V Permit

The El Sobrante engines operate with a Total Electronic Management System (TEM) air-fuel mixture control. El Sobrante is submitting this application to add the TEM system to the engine description in all engine PTOs, i.e. PTO Nos. F86553, F86554, F86555. Please refer to Section 2.2 of the attached I&M Plan for a description of the air-fuel mixture control.

I certify under penalty of law that based on information and belief, formed after reasonable inquiry, the statements and information in this application package are true,

accurate, and complete. I also certify under penalty of law that I am the authorized representative for this facility as defined in SCAQMD Regulation XXX.

If you have any questions regarding this test report, please contact our consultant, Mr. Andrew Washington of Shaw Environmental, at (661) 775-9635.

Sincerely,

Damon De Frates
Senior District Manager

Encl:

1. I&M Plan
2. SCAQMD Forms
3. Check for $ 7,365.51

USA WASTE OF CALIFORNIA

Inspection and Monitoring Plan – Rule 1110.2
Landfill Gas Fired Internal Combustion Engines 1 to 3
Permit Nos. F86553, F86554, F86555
Facility ID 113674

July 2008

Prepared for:

WASTE MANAGEMENT, INC.

El Sobrante Landfill
10910 Dawson Canyon Road,
Corona, CA 92883

Prepared by:

Shaw Environmental, Inc.

3347 Michelson Drive, Suite 200
Irvine, California 92612

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1.0 Introduction

USA Waste of California (El Sobrante) operates three internal combustion (IC) engines. Each engine is an 1877 BHP Deutz Model TBG620V16K landfill gas (LFG) fired lean burn engine with 16 cylinders, turbocharged, and aftercooled. Each engine drives a 1358 KW electrical generator and is equipped with Rule 218 approved continuous emissions monitoring system (CEMS) for Oxides of Nitrogen (NOx) and Oxygen (O_2).

1.1 Purpose

El Sobrante is submitting this document to serve as the inspection and monitoring (I&M) plan for the engines as required by South Coast Air Quality Management District (SCAQMD) Rule 1110.2, amended February 1, 2008. The engines will be inspected and maintained per this I&M plan.

2.0 Engine Operating Parameters

The IC engines have spark ignition and burn LFG generated in the landfill to generate electricity. Each engine drives a 1358 KW generator.

2.1 Operating Parameters

The engine operating parameters include: i) engine cylinder or combustion temperature; ii) water jack temperature; iii) crankcase pressure; and iv) engine operating load.

2.2 Air-Fuel Mixture Control

Each Deutz engine is equipped with a Total Electronic Management (TEM) system that provides complete engine control. The TEM controls functions such as engine start/stop, output control, gas-air (or fuel-air) mixture control with short correction time, integrated digital speed control, component system monitoring including the cooling and lube oil systems. The TEM also transmits measured values, operation, alarm and fault messages via a serial interface to the master control system.

The TEM, through a fuel-air mixer, controls the gas-air mixture going into the combustion chamber based on the average combustion cylinder temperature. The objective of the TEM is to maintain the average temperature of the 16 cylinders at the established set point. The set point of the average cylinder temperature is established such that the performance of the engine is optimum at any given operating load. The fuel-air mixer works by allowing more or less gas into the inlet manifold to make sure the average cylinder temperature is at the established set point.

At any given load, as long as the engine operates with the average cylinder temperature in the range corresponding to the set point, the engine's performance is optimized. The emissions will also be within the permissible limits. However, there maybe deviations in the emissions in certain situations such as drop in the fuel quality, water in the fuel line, etc.

2.2.1 Control Set Points

At El Sobrante, the cylinder set points are established at the normal load and the minimum, midpoint, and maximum loads that actually occur during normal operations. Following are the cylinder temperature set points for the various operating loads at El Sobrante:

Table 2.1 Operating Load and Temperature Set Points

Engine Operating Condition	Operating Load	Average Cylinder Temperature Set Point
Minimum Load	40 %	Between 260 °C and 295 °C

Engine Operating Condition	Operating Load	Average Cylinder Temperature Set Point
Midpoint Load	60 %	Between 280 °C and 320 °C
Normal Load	70 %	Between 285 °C and 320 °C
Maximum Load	80 %	Between 297 °C and 330 °C

The set points will be checked for compliance with the applicable emission limits during the annual engine source test and CO emission checks using a portable analyzer (discussed later). The set points will be reestablished as necessary.

2.2.2 Malfunctions

The TEM system monitors the cylinder temperature and compares it with the average cylinder temperature set point. If the temperature of any cylinder drops 70 °C below the average cylinder temperature set point for a period exceeding 15 minutes, the TEM sends out a Low Cylinder Temperature alarm. If the cylinder temperature remains low for 30 minutes, the engine shuts down. The engine also shut down if temperature in any cylinder temperature reaches 600 °C.

A fuel-air mixer malfunction is a deviation of the combustion control and will result in a fault.

2.2.3 Emission Limits

Compliance with the applicable emission limits for the engines are demonstrated during the annual compliance engine source test, conducted by a District-approved contractor. Additionally, compliance with the applicable CO emission limit will be demonstrated during the CO emission checks performed with a CO portable analyzer. NOx emissions are monitored continuously through the CEMS.

3.0 Carbon Monoxide Emission Checks

The engine is equipped with Rule 218 approved CEMS for NOx and O_2. Per the requirements of Rule 1110.2, a portable CO analyzer will be used to check the engine exhaust for CO emissions at least quarterly, or every 2000 engine operating hours, whichever occurs later. No engine maintenance or tuning will be scheduled within 72 hours prior to the emission check.

3.1 Portable Analyzer

A portable CO analyzer will be used to conduct CO emission checks. The analyzer will be calibrated, maintained and operated in accordance with the manufacturer's specifications and recommendations and per the requirements of SCAQMD published protocol for the periodic monitoring of CO from stationary engines subject to Rule 1110.2, or subsequent protocol approved by EPA and the Executive Officer.

The CO emission checks will be performed by a person who has completed the District-approved training program for the portable analyzer and has received certification from the District.

4.0 Monitoring and Inspection

The engine load and fuel input rate is measured continuously and recorded. The data is compiled in the form of a daily heat input report, which is reviewed the following day for compliance determination. Following are the acceptable ranges of the engine operating parameters:

- Water Jacket Outlet Temperature – Alarm is generated at a temperature of 96 °C while the engine shuts down at a temperature of 98 °C.
- Crankcase Pressure – The engine shuts down at a pressure of 20 mbar.
- Cylinder or Combustion Temperature – Alarm is generated if the temperature is 70 °C below the set point for more than 15 minutes and the engine shuts down if the temperature continues to remain low for 30 minutes. The engine also shuts down if the temperature of any cylinder reaches 600 °C.
- Engine Operating Load

The TEM system records the operating hours of the engine. The site engine operator takes daily notes of operating hours, load settings, mixer readings, throttle position, oil hours, engine water temperature, and air inlet temperature and oil pressure. The operating hours since the last CO emission check can be obtained by subtracting the operating hours on the day of emission check from the current operating hours.

A fuel-air mixer malfunction is a deviation of the combustion control and will generate a fault alarm.

5.0 Maintenance

The engines at El Sobrante are operated and maintained by Run Energy, a contractor hired by El Sobrante. Run Energy has a 24-hour on-call operator who responds to any engine malfunction alarm and other call. The operator diagnoses the cause of the alarm and repairs the malfunction, if any, in accordance with Run Energy procedures.

Any breakdown resulting in a violation of Rule 1110.2 or a permit condition, any excess emissions, or any incident resulting in the parameters going out-of-range will be addressed in the manner specified in Rule 1110.2 (February 1, 2008).

5.1 Preventive Maintenance

Run Energy's maintenance plan is based on engine hours of operation.

The preventive maintenance program consists of four progressive levels of service G1, G2, G3 and G4. Each level consists of measurements, adjustments, calibration check, and visual inspection of the engine and generator. The corrective and preventive maintenance plan is as follows:

- G1, G2, G3, and G4 levels of service every 1000 $\pm$ 100 hours of operation;
- Engine oil changes, spark plug cleaning, and air filter cleaning are performed once every 168 to 225 hours of operation;
- Fuel mixer cleaning is performed once every 2000-4000 hours of operation;
- Top end de-coat is performed once every 4000-8000 hours of operation;
- Top end overhaul is performed once every 8000-12000 hours of operation;
- Bottom end overhaul is performed once every 12000-16000 hours of operation

All maintenance and overhaul is performed in according with Run Energy procedures.

6.0 Notification

Run Energy has a 24-hour on-call support operator who responds to the malfunction alarms and other calls. The operator diagnoses the cause of the problem and performs the necessary repairs. If the problem is beyond the operator's knowledge or expertise, the operator calls the supervisor for further action.

Run Energy coordinates with Waste Management and Shaw Environmental, Inc to facilitate the notification procedure to the SCAQMD. All notifications are made per the requirements of SCAQMD Rules 1110.2, 430, and 218.

7.0 Recordkeeping

The following documents are retained on site:

- The daily heat input reports for all engines
- The daily readings taken by the engine site operator. The TEM electronically stores the engine operating hours and other information.
- The engine source test reports, CEMS units Relative Accuracy Test Audit (RATA) and calibration gas audit (CGA) reports
- All engine operating parameters, engine start-ups, shutdowns, and malfunctions, and emission monitoring data

All other data collected and recorded as described in this plan and required by Rule 1110.2 will be maintained on-site for five years and made available to SCAQMD upon request.

8.0 Revisions to I&M Plan

El Sobrante will follow all the procedures outlined in this plan. If any changes are planned to the operating procedures, the I&M plan will be updated and submitted to the SCAQMD for approval. Following the approval of the revised/updated plan, the planned changes will be made effective.