TEST REPORT

For

INITIAL COMPLIANCE TESTING

From

TWO 1.6-MW LANDFILL GAS FUELED CATERPILLAR MODEL NO. G3520C GENERATOR ENGINES

In Service at the

MARION COUNTY BASELINE LANDFILL

Located in

OCALA, MARION COUNTY, FLORIDA

Prepared for

G2 ENERGY (MARION) LLC

Test Completion Date: March 25th, 2009
Report Submittal Date: May 6th, 2009

TRC Project Number 166478.0000.0000

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INTRODUCTION

Exhaust emissions tests were conducted on Units 1 and 2, two 1.6 Megawatt (MW) Caterpillar Model No. G3520C landfill gas fired generator engines. These units, used to generate electrical power, are in service at the Marion County Board of County Commissioners (MCBCC) Baseline Landfill located in Ocala, Marion County, Florida. G2 Energy (Marion) LLC owns this power generation facility which is operated by Autotech II personnel. TRC – Air Measurements, Gainesville Office (TRC) conducted these tests on March 24th and 25th, 2009.

The purpose of this testing was to determine the status of initial compliance for Units 1 and 2 with respect to environmental standards and emission limits. The environmental limits for emissions are set forth by the Florida Department of Environmental Protection (FDEP) Air Construction Permit No. 0830124-006-AC. The testing also satisfied the specific monitoring requirements as set forth in 40 CFR 60, Subpart JJJJ "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines". The tests followed the procedures set forth in 40 CFR 60, Appendix A, Methods 1, 3A, 4, 7E, 9, 10, 19, and 25A. In addition, the landfill gas was sampled and analyzed in accordance with EPA Method 3C.

Emissions from the engine were analyzed for compliance at full load operation in the exhaust stack for oxides of nitrogen (NO_X), carbon monoxide (CO), total hydrocarbon compounds (THC), methane (CH_4), oxygen (O_2), and carbon dioxide (CO_2) using continuous instrumental monitors. Volatile organic compound (VOC) emissions were determined by determining by subtracting the CH_4 emissions from the THC emissions. In addition, a 30-minute visible emissions (VE) test was conducted on each engine exhaust stack. The landfill gas fuel used to fire the engine was analyzed for permanent gases for use in determination of the fuel heating value of the landfill gas. Table 1 summarizes the background information pertinent to these tests.

This test report has been reviewed and approved for submittal to FDEP by the following representatives:

Richard Heyne
TRC – Air Measurements

G2 Energy (Marion) LLC
RODNEY C. JONES

TABLE 1
BACKGROUND DATA

Source Owner:	**G2 Energy (Marion) LLC** 400 Perimeter Center Terraces, Suite 900 Atlanta, Georgia 30346 Attention: Nick King, Managing Member (770) 668-0220 Phone (770) 668-9796 Facsimile Email: n.king@g2energy.com
Testing Organization:	**TRC – Air Measurements, Gainesville Office** 6322 NW 18th Drive, Suite 170 Gainesville, Florida 32653 Attn: Leonard Brenner, Manager – Air Measurements (352) 378-0332 Phone (352) 378-0354 Facsimile Email: lbrenner@trcsolutions.com
Test Participants:	**Florida Department of Environmental Protection** Garry Kuberski, Engineer Allen Rainey, Engineer **Autotech II** Jerry Brewer, Operator **TRC – Air Measurements, Gainesville Office** Leonard Brenner, Manager – Air Measurements Chris Hank, Environmental Technician
Facility Location:	Marion County Board of County Commissioners Baseline Landfill 5601 SE 66th Street Ocala, Florida 34480 (352) 245-2634 Phone
Regulatory Application:	These generator engines are state regulated under FDEP Air Construction Permit Number 0830124-006-AC. Additionally, these engines are federally regulated under 40 CFR 60, Subpart JJJJ "Standards of Performance for Stationary Spark Ignition Internal Combustion Engines".
Test Dates:	March 24th, and 25th, 2009

Emission Sampling Points:

Each unit is equipped with a circular stack, located outside of the building roof is approximately 32 feet tall with an internal diameter of 13 inches. Two 3-inch diameter sample ports are located perpendicular to each other in the horizontal ductwork in-side the building before the stack silencer. See Appendix A for stack diagrams. Access to the sample ports was provided by a ladder.

Source Description:

Two 1.6 MW Caterpillar Model G3520C internal combustion engine and generator sets are used to produce electrical power. These engines are fueled exclusively with landfill gas generated by the Baseline Landfill.

Test Methods:

EPA Method 1 was used to select gaseous stratification sampling point locations.

EPA Method 3A was used to determine carbon dioxide (CO_2) and oxygen (O_2) emissions.

EPA Method 3C was used to determine landfill gas composition, used in the determination of landfill gas as fuel heating values and fuel specific "F-factors".

EPA Method 4 was used for determination of stack gas moisture content using gravimetric analysis.

EPA Method 7E was used for determination of oxides of nitrogen (NO_X) emissions.

EPA Method 9 was used to determine visible emissions (VE) measurements determined as opacity by a certified observer.

EPA Method 10 was used for determination of carbon monoxide (CO) emissions.

EPA Method 19 was used for verification of volumetric flow rates by stoichiometric calculations based on O_2 and CO_2 "F Factors".

EPA Method 25A was used to determine volatile organic compounds (VOC) by using one flame ionization analyzer to determine total hydrocarbon compounds (THC) and by a second flame ionization analyzer equipped with a non-methane cutter as described in 40 CFR 1065.265 to determine methane (CH_4) concentrations. VOC emissions were calculated by subtracting the methane emissions from the total hydrocarbon emissions.

SUMMARY OF RESULTS

G2 Energy (Marion) LLC (G2 Energy) operates a power generation facility at the Marion County Board of County Commissioners – Baseline Landfill in Ocala, Marion County, Florida. Two landfill gas fueled Caterpillar Model No. G3520C generator engines are in service at this facility and are used for the production of electricity. G2 Energy designates these generator engines as Unit 1 and Unit 2. The emissions from these engines are the subject of this report.

Table 2, the executive summary, signifies the performance for the generator engines with respect to initial compliance testing. The initial compliance test results are an average of the three test runs for each engine and are compared to the permit limits set forth in FDEP Air Construction Permit No. 0830124-006-AC and EPA 40 CFR 60, Subpart JJJJ performance specifications. NO_X, CO, and VOC emission rates are reported in terms of parts per million by volume (ppmv) at 15% excess O_2 on a dry basis and grams per brake brake-horsepower hour (g/bhp-hr). Visible emissions are reported in terms of percent opacity.

TABLE 2
Executive Summary

Parameter	Unit 1 Results	Unit 2 Results	FDEP/ EPA JJJJ Performace Specs
Generator Power Output (kW)	1601	1476	-
Unit Load (% of full load = 1.6 MW)	100%	92%	-
Engine Horsepower (bhp)	2235	1979	-
NO_X (ppmv @ 15% O_2, dry basis)	86.9	90.9	220
NO_X (g/bhp-hr)	1.17	1.24	3.0
CO (ppmv @ 15% O_2, dry basis)	447	428	610
CO (g/bhp-hr)	3.68	3.54	5.0
VOC (ppmv @ 15% O_2, dry basis)	8.36	22.4	80
VOC (g/bhp-hr)	0.108	0.293	1.0
VE (% opacity)	0	0	20

The first step in the test matrix consisted of conducting an initial sampling traverse of each engine exhaust stack. The purpose of this sampling traverse was to check for changes in emissions concentration (stratification) within the exhaust stack. CO, O_2 and CO_2 concentrations

were measured at 12 traverse points using a 6 × 2 sample matrix, within the stack. No significant stratification was observed for the CO, O_2, and CO_2 emissions from either unit. The stratification was less than 5% from the mean concentration. Therefore, sampling during the testing was conducted from a single point of average emissions from each stack.

Following the stratification test, TRC conducted three test runs at full load on each unit. Each test run was 60 minutes in duration. Emissions of NO_X, CO, THC, CH_4, VOC, and VE were determined. NO_X, CO, THC, CH_4, O_2, and CO_2 were measured using continuous instrumental monitors. A landfill gas fuel sample was collected during the three test runs on each unit for analysis of fuel composition and gross heating value. Co-incident with one of the test runs on each engine, a 30-minute VE test was conducted to determine opacity.

Tables 3 and 4 represent detailed summaries of the initial compliance results for Units 1 and 2. This tabular summary contains all pertinent operational parameters, landfill gas fuel data, ambient conditions, measured emissions, corrected concentrations, and calculated emission rates. NO_X, CO, and VOC emissions are reported in units of parts per million (ppmv) on a dry basis and ppmv, dry corrected to 15% excess O_2. THC and CH_4 emissions are reported in units of ppmv on a wet basis as propane. Mass emission rates for NO_X, CO, and VOC are reported in terms of pounds per hour (lbs/hr) and g/bhp-hr. VE are reported in terms of % opacity.

Volumetric flow and mass emission rates were determined by EPA Method 19. This technique employed a stoichiometric calculation based on measurements of diluent gas (O_2 or CO_2) concentration, "F Factors" determined from fuel composition, and the engine's fuel consumption rate. Examples of emission rate calculations and other calculations necessary for the presentation of the results of this section are contained in Appendix B.

The fuel analyses are contained in Appendix C of this report. These landfill gas analyses were obtained from the EPA Method 3C samples collected during the testing. One sample was collected for each unit over the entire period of testing. The landfill gas fuel composition was determined for use in EPA Method 19 equations as described above. The fuel composition and the TRC heating value and "F-factor" worksheets are in Appendix C.

A certified EPA Method 9 observer performed opacity readings on each engine exhaust stack. One 30-minute visible emission test run was conducted during the gaseous emissions testing. The testing was conducted when the sun was not directly overhead and with daylight present. EPA Method 9 requires the sun angle to be 140 degrees to the observer's back.

Appendix A contains the stack diagrams, the stratification results, and all field data sheets used during these tests. Appendix B contains examples of all calculations necessary for the reduction of the data presented in this report. Appendix C contains the landfill gas composition analyses and the TRC fuel calculation worksheets used to determine custom EPA Method 19 F-factors. Quality assurance activities are documented in Appendix D. Certificates of calibrations for TRC equipment and gases are contained in Appendix E of this report. Appendix F contains the records of logged data, displayed in one-minute intervals and rolling one-minute averages, used to record the reference method NO_X, CO, THC, CH_4, O_2, and CO_2 concentrations. Appendix G contains unit operational data reported in thirty-minute intervals. "Visible Emissions Observation Forms" and the observer certifications are in Appendix H. The FDEP permit is presented in Appendix I for reference purposes.

TABLE 3: Summary of Results
Unit 1, Emissions Test Results

Company: G2 Energy (Marion) LLC
Plant: MCBCC Baseline Landfill
Location: Ocala, Florida
Technicians: LJB, CDH
Source: Unit 1, a Caterpillar G3520C generator engine

Test Number	U1-C-1	U1-C-2	U1-C-3		
Date	03/25/09	03/25/09	03/25/09		
Start Time (24 hour basis)	09:33	10:56	12:36		FDEP/EPA Performance
Stop Time (24 hour basis)	10:33	11:56	13:36		
Engine/Generator Operation				*Averages*	Specifications
Generator Power Output (kW)	1613	1603	1601	*1606*	
Engine Horsepower (bhp)	2163	2149	2146	*2153*	
Generator Amperage (Amps)	221	224	224	*223*	
Generator Voltage (kVolts)	4202	4186	4174	*4187*	
Generator Frequency (Hertz)	60	60	60	*60*	
Generator Power Factor	1.0	1.0	1.0	*1.0*	
Fuel Manifold Pressure (psig)	2.5	2.5	2.5	*2.5*	
Jacket Water Temperature (Inlet, °F)	127	143	147	*139*	
Jacket Water Temperature (Outlet, °F)	220	220	220	*220*	
Engine Oil Temperature (°F)	195	195	195	*195*	
Landfill Gas Fuel Data					
Fuel Heating Value (Btu/SCF, HHV)	532.8	532.8	532.8	*532.8*	
Fuel Specific Gravity	0.9783	0.9783	0.9783	*0.9783*	
O_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	9432	9432	9432	*9432*	
CO_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	1785	1785	1785	*1785*	
LFG CH_4 Content (% volume, dry basis)	56.5	no data	no data	*56.5*	
LFG O_2 Content (% volume, dry basis)	0.5	0.1	0.1	*0.3*	
Wellhead Vacuum ("H_2O)	11.0	10.3	9.4	*10.3*	
Fuel Flow Rate (SCFM)	513.7	498.3	495.7	*502.6*	
Heat Input (MMBtu/hr, Higher Heat Value)	16.42	15.93	15.85	*16.07*	
Ambient Conditions					
Atmospheric Pressure ("Hg)	30.08	30.09	30.07	*30.08*	
Temperature (°F): Dry bulb	69.3	75.3	80.7	*75.1*	
(°F): Wet bulb	61.5	63.4	64.6	*63.2*	
Humidity (lbs moisture/lb of air)	0.0096	0.0094	0.0090	*0.0094*	
Measured Emissions					
NO_X (ppmv, dry basis)	201.1	194.4	197.1	*197.5*	
NO_X (ppmv @ 15% O_2, dry basis)	**88.3**	**85.4**	**87.1**	*86.9*	**220**
CO (ppmv, dry basis)	1031	1016	1002	*1016*	
CO (ppmv @ 15% O_2, dry basis)	**453**	**446**	**443**	*447*	**610**
THC (ppmv, wet basis as Propane)	488.8	453.0	442.8	*461.5*	
Methane (ppmv, wet basis as Propane)	470.8	432.9	431.8	*445.2*	
VOC (ppmv, dry basis as Propane)	20.8	23.5	12.8	*19.0*	
VOC (ppmv % 15% O_2, dry basis as Propane)	**9.12**	**10.3**	**5.64**	*8.36*	**80**
VE (% opacity)	**0**	-	-	*0*	**20**
O_2 (% volume, dry basis)	7.46	7.47	7.55	*7.49*	
CO_2 (% volume, dry basis)	12.21	12.20	12.12	*12.18*	
H_2O (% volume, from Method 4 sample train)	13.36	14.40	13.80	*13.85*	
Stack Volumetric Flow Rates					
via EPA Method 19 O_2 "F_d-factor" (SCFH, dry basis)	2.41E+05	2.34E+05	2.34E+05	*2.36E+05*	
via EPA Method 19 CO_2 "F_c-factor" (SCFH, dry basis)	2.40E+05	2.33E+05	2.33E+05	*2.36E+05*	
Calculated Emission Rates (from EPA Method 19 flow rates)					
NO_X (lbs/hr)	**5.78**	**5.43**	**5.51**	*5.57*	
CO (lbs/hr)	**18.1**	**17.3**	**17.0**	*17.5*	
VOC (lbs/hr)	**0.573**	**0.629**	**0.342**	*0.514*	
NO_X (g/bhp-hr)	**1.21**	**1.15**	**1.16**	*1.17*	**3.0**
CO (g/bhp-hr)	**3.79**	**3.65**	**3.60**	*3.68*	**5.0**
VOC (g/bhp-hr)	**0.120**	**0.133**	**0.0722**	*0.108*	**1.0**

TABLE 4: Summary of Results
Unit 2, Emissions Test Results

Company: G2 Energy (Marion) LLC
Plant: MCBCC Baseline Landfill
Location: Ocala, Florida
Technicians: LJB, CDH
Source: Unit 2, a Caterpillar G3520C generator engine

Test Number	U2-C-1	U2-C-2	U2-C-3		
Date	03/25/09	03/25/09	03/25/09		
Start Time (24 hour basis)	14:17	16:10	17:27		FDEP/EPA Performance
Stop Time (24 hour basis)	15:17	17:10	18:27		
Engine/Generator Operation				*Averages*	Specifications
Generator Power Output (kW)	1492	1452	1484	***1476***	
Engine Horsepower (bhp)	2001	1948	1990	***1979***	
Generator Amperage (Amps)	209	205	206	***207***	
Generator Voltage (kVolts)	4165	4183	4192	***4180***	
Generator Frequency (Hertz)	60	60	60	***60***	
Generator Power Factor	1.0	1.0	1.0	***1.0***	
Fuel Manifold Pressure (psig)	2.5	2.5	2.5	***2.5***	
Jacket Water Temperature (Inlet, °F)	143	137	140	***140***	
Jacket Water Temperature (Outlet, °F)	221	220	220	***220***	
Engine Oil Temperature (°F)	190	197	197	***195***	
Landfill Gas Fuel Data					
Fuel Heating Value (Btu/SCF, HHV)	546.5	546.5	546.5	***546.5***	
Fuel Specific Gravity	0.9774	0.9774	0.9774	***0.9774***	
O_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	9389	9389	9389	***9389***	
CO_2 "F-factor" (DSCFex/MMBtu @ 0% excess air)	1782	1782	1782	***1782***	
LFG CH_4 Content (% volume, dry basis)	no data	no data	no data	***no data***	
LFG O_2 Content (% volume, dry basis)	0.1	0.1	0.1	***0.1***	
Wellhead Vacuum ("H_2O)	8.2	7.2	7.7	***7.7***	
Fuel Flow Rate (SCFM)	465.0	447.3	455.7	***456.0***	
Heat Input (MMBtu/hr, Higher Heat Value)	15.25	14.67	14.94	***14.95***	
Ambient Conditions					
Atmospheric Pressure ("Hg)	30.02	29.99	29.97	***29.99***	
Temperature (°F): Dry bulb	79.8	80.0	77.5	***79.1***	
(°F): Wet bulb	62.3	62.5	61.9	***62.2***	
Humidity (lbs moisture/lb of air)	0.0077	0.0078	0.0080	***0.0078***	
Measured Emissions					
NO_X (ppmv, dry basis)	203.3	205.8	200.0	***203.0***	
NO_X (ppmv @ 15% O_2, dry basis)	**90.8**	**92.3**	**89.7**	***90.9***	**220**
CO (ppmv, dry basis)	965.2	949.9	948.9	***954.7***	
CO (ppmv @ 15% O_2, dry basis)	**431**	**426**	**426**	***428***	**610**
THC (ppmv, wet basis as Propane)	564.8	579.5	569.9	***571.4***	
Methane (ppmv, wet basis as Propane)	527.0	531.7	525.3	***528.0***	
VOC (ppmv, dry basis as Propane)	43.6	55.2	51.5	***50.1***	
VOC (ppmv % 15% O_2, dry basis as Propane)	**19.5**	**24.7**	**23.1**	***22.4***	**80**
VE (% opacity)	**0**	**-**	**-**	***0***	**20**
O_2 (% volume, dry basis)	7.69	7.74	7.75	***7.73***	
CO_2 (% volume, dry basis)	12.00	11.98	11.96	***11.98***	
H_2O (% volume, from Method 4 sample train)	13.30	13.38	13.33	***13.34***	
Stack Volumetric Flow Rates					
via EPA Method 19 O_2 "F_d-factor" (SCFH, dry basis)	2.27E+05	2.19E+05	2.23E+05	***2.23E+05***	
via EPA Method 19 CO_2 "F_c-factor" (SCFH, dry basis)	2.26E+05	2.18E+05	2.23E+05	***2.22E+05***	
Calculated Emission Rates (from EPA Method 19 flow rates)					
NO_X (lbs/hr)	**5.50**	**5.37**	**5.32**	***5.40***	
CO (lbs/hr)	**15.9**	**15.1**	**15.4**	***15.5***	
VOC (lbs/hr)	**1.13**	**1.38**	**1.31**	***1.28***	
NO_X (g/bhp-hr)	**1.25**	**1.25**	**1.21**	***1.24***	**3.0**
CO (g/bhp-hr)	**3.60**	**3.52**	**3.51**	***3.54***	**5.0**
VOC (g/bhp-hr)	**0.256**	**0.322**	**0.300**	***0.293***	**1.0**

PROCESS DESCRIPTION

G2 Energy (Marion) LLC owns a power generation facility, operated by Autotech II, at the MCBCC Baseline Landfill in Ocala Marion County, Florida. The station uses two landfill gas fueled engines to provide electricity to the local power grid. The exhaust emissions from these units were measured to determine compliance with the FDEP construction permit. This section of the report provides a brief description of these engines.

The generator engines, Units 1 and 2, were manufactured by Caterpillar , Model 3520C, and are fueled exclusively with landfill gas generated from microbial decomposition of solid waste from the landfill. The engines are lean burning, four-cycle, turbo-charged, generator engines which use electronic ignition and air-to-fuel ratio controls to reduce pollutant emissions.

The engines are rated for production of 2233 brake-horsepower (bhp) and 1.6 MW at a speed of 1200 rotations per minute (rpm). The operating schedule for this engine is permitted for 8760 hours per year. These engines are permitted to operate solely on landfill gas as a fuel source.

The stack configurations for both engines are identical. Sample ports meeting the criteria of EPA Method 1 were located in a straight horizontal section of the exhaust pipe inside the building and before the silencer. The sample ports were 56 inches or 4.3 stack diameters upstream from the nearest flow disturbance, the engine silencer. Sampling ports were 151 inches or 11.6 stack diameters downstream from the nearest flow disturbance. Access to the stack was made available via a safety ladder. The diameter of the exhaust stack was 13.0 inches. Appendix A contains a field sketch of the stack configuration and sample port locations.

Autotech II personnel provided operational data from the engine instrument panels. Data sets were recorded at approximate 30-minute intervals during each test run; the average of this data was recorded in the summary tables. Copies of the original data are contained in Appendix G of this report.

ANALYTICAL TECHNIQUES

Emissions from two generator engines were measured at the MCBCC Baseline Landfill located in Ocala, Marion County, Florida. TRC performed these tests on March 24th and 25th, 2009 in order to determine the compliance status with regard to permitted emission limits. This section of the report describes the analytical techniques and procedures used during these tests.

The sampling and analysis procedures used during these tests conformed with those outlined in The Code of Federal Regulations, 40 CFR 60, Appendix A, Methods 1, 3A, 4, 7E, 9, 10, 19, and 25A. The stack gas analyses for NO_X, CO, THC, CH_4, O_2 and CO_2 were performed using continuous instrumental monitors. Exhaust gas analyses were performed on a dry basis for all compounds except THC and CH_4 emissions. Table 5 lists the instruments and detection principles used for these analyses. Manual sampling measurements included sampling for moisture content using a chilled water impingement sampling train. Landfill gas fuel sampling and analysis was conducted in accordance with EPA Method 3C.

The first step in the test matrix consisted of conducting an initial sampling traverse of each engine exhaust stack. The purpose of this sampling traverse was to check for changes in emissions concentration (stratification) within the exhaust stack. CO, O_2 and CO_2 concentrations were measured at 12 traverse points using a 6 × 2 sample matrix, within the stack. No significant stratification was observed for the CO, O_2, and CO_2 emissions. The stratification was less than 5% from the mean concentration. Therefore, sampling during the testing was conducted from a single point of average emissions from each engine stack.

Following the stratification test, TRC conducted three test runs at full load on each unit. Each test run was 60 minutes in duration. Emissions of NO_X, CO, THC, CH_4, VOC, and VE were determined. NO_X, CO, THC, CH_4, O_2, and CO_2 were measured using continuous instrumental monitors. VOC emissions were determined by subtracting the CH_4 emissions from the THC emissions. A landfill gas fuel sample was collected during the entire period of the three test runs for analysis of fuel composition and gross heating value. One 30-minute VE test was conducted during these tests.

Provisions were made to introduce the calibration gases to the instrumental monitors via two paths: 1) directly to the instruments via the sample manifold quick-connects and flow meters, and 2) through the complete sampling system including the sample probe, filter, heat trace, condenser, manifold, and flow meters. The former method was used for quick, convenient calibration checks. The latter method was used to demonstrate that the sample was not altered due to leakage, reactions, or adsorption within the sampling system (sample system bias check). A NO_X standard calibration gas was introduced into the NO_X analyzer directly. Then the response from the NO_X analyzer was noted as the calibration gas was introduced at the probe. Any difference between the two responses in the instrument was attributed to the bias of the sample system. Following the span gas bias check, a zero gas bias check was performed on the NO_X analyzer using nitrogen to check for any zero bias of the sample system. In accordance with EPA Methods 3A and 10 this span and zero bias check procedure was repeated for the CO,

O_2, and CO_2 analyzers. Although not required by EPA Method 25A, this procedure was also conducted for the THC and CH_4 analyzers to maintain consistency in results reporting.

Figure 1 shows the set-up for sampling the engine exhaust stack with the continuous instrumental monitors. The gas sample was continuously pulled through a $^3/_4$-inch diameter stainless steel probe and transported via a 120-foot long, $^3/_8$-inch diameter heat-traced Teflon® line into the mobile laboratory using a stainless steel/Teflon® diaphragm pump. At the pump exit the pressurized sample was pushed into a heated sample manifold. The bulk of the gas stream then passed to a stainless steel minimum contact condenser to dry the sample stream and into the (dry) sample manifold. From the manifold, the sample was partitioned to the analyzers through glass and stainless steel flow meters for flow control of the sample.

All instruments were housed in an air-conditioned trailer-mounted mobile laboratory. Gaseous calibration standards were provided in aluminum cylinders with the concentrations certified by the vendor. EPA Protocol No. 1 was used to determine the cylinder concentrations where applicable, i.e., NO_X calibration gases.

EPA Method 1 procedures were used to determine the stratification test point locations for sampling per the requirements of EPA Methods 3A, 7E, and 10. The locations of the sample ports and traverse point distances for the turbine are denoted in the stack diagram located in Appendix A.

The stack gas analyses for CO_2 and O_2 concentrations were performed in accordance with procedures set forth in EPA Method 3A. Instrumental analyses were used in lieu of an Orsat or a Fyrite procedure due to the greater accuracy and precision provided by the instruments. The CO_2 analyzer was based on the principle of infrared absorption; the O_2 analyzer operated using a paramagnetic cell detector.

EPA Method was used to measure the moisture content of the stack gases. A chilled water impingement system was used in conjunction with a calibrated dry gas meter to pull a sample greater than 21 standard cubic feet (scf). A K-type (chromel-alumel) thermocouple was used in conjunction with a digital thermometer to determine the last impinger temperatures in the chilled liquids impingement sampling train. This parameter is measured to ensure that the gas stream is cooled to a minimum of 68 degrees Fahrenheit as required by sampling methodology. Determination of the moisture content was necessary to convert VOC wet concentrations to a dry basis. EPA Method 5 equations were used to calculate stack moisture content.

NO_X emission concentrations were determined in accordance with EPA Method 7E. The NO_X analyzer operated on the principle of chemiluminescence. As required, the NO_X analyzer was equipped with a NO to NO_2 converter to allow for measurement of all forms of NO_X as per EPA's definition. This analyzer used a high temperature, approximately 650°C, converter to convert nitrogen dioxide (NO_2) in the sample stream to NO. Due to low NO_X concentrations in the engine exhaust, a temperature controlled NO_X analyzer, equipped with a chiller, was used to control instrument drift. NO_X mass emission rates were calculated as if all the NO_X were in the form of NO_2. This approach corresponds to EPA's convention, however, it tends to overestimate the actual NO_X mass emission rates since the majority of NO_X is in the form of NO which has less mass per unit volume (i.e., lbs. of emissions per ppmv concentration) than NO_2.

CO emission concentrations were quantified in accordance with procedures set forth in EPA Method 10. A continuous non-dispersive infrared (NDIR) analyzer was used for this purpose. This reference method analyzer was equipped with a gas correlation filter that removes most interference from moisture, CO_2, and other combustion products.

THC emissions were measured using the instrumental technique of EPA Method 25A for use in determination of VOC emissions. The FID detector used in this method received a heated wet sample to ensure against the possibility of any heavy hydrocarbon condensing out prior to analysis. Calibration gases were on a propane basis in air.

CH_4 emissions were measured using the instrumental technique of EPA Method 25A equipped with a non-methane cutter as described in 40 CFR 1065.265 for use in determination of VOC emissions. The FID detector used in this method received a heated wet sample to ensure against the possibility of any heavy hydrocarbon condensing out prior to analysis. Calibration gases were on a propane basis in air with the analyzer switched from THC mode during calibrations to CH_4-only mode during the test runs.

VOC emissions were determined by subtracting the methane emissions from the THC emissions for each test run. This approach is described in 40 CFR 60, Subpart JJJJ as a procedure for measuring VOC emissions in the stack of an engine. Additional information regarding this sampling technique may be found in 40 CFR 1065 "Engine Testing Procedures".

All data from the continuous monitoring instruments were logged into a computer file in 1-minute intervals and rolling 1-minute averages. A data logger with a computer generated display screen monitored, recorded, and averaged the emission concentrations. The program controlling the logging of data was also used to log quality assurance (QA) data. See Appendix F of this report for copies of the raw data and Appendix D for the QA data.

Visible emissions as opacity were determined via EPA Method 9. A 30-minute opacity test run was performed concurrently with a compliance test run on each engine. The visual emission observer was certified at an FDEP approved smoke school. Appendix H provides both the opacity observation sheets as well as observer certification documents.

The stoichiometric calculations of EPA Method 19 were used to calculate the stack volumetric flow rates and mass emission rates. These calculations are based on the heating value and the O_2 "F_d-factor" (DSCF of exhaust per MMBtu of fuel burned) for landfill gas. Method 19 flow rate determinations are also based on the excess air, as measured from the exhaust diluent concentrations, and the fuel flow rates. EPA Method 19 was used as the stack flow rate measurement technique for all testing. Appendix C contains this analysis as well as the TRC fuel calculation worksheets used for determination of heating values and diluent F-factors.

A landfill gas (LFG) fuel sample, collected into a stainless steel canister at less than 500 milliliters per minute, was analyzed for O_2, CO_2, CH_4, and N_2 in accordance with EPA Method 3C. These measurements were necessary to determine LFG heating value and EPA Method 19 "F-factors". The sampling train consisted of a flow controller, absolute pressure gauge, and an evacuated sample tank. The flow controller was attached to the sample tank through the use of stainless steel quick connects. Triangle Environmental Services, Inc. of Research Triangle Park, North Carolina conducted the analysis. Field sampling sheets are in Appendix A. A detailed

description of the sample analysis and the results are contained in Appendix C. TRC normalized all the results supplied by the analytical laboratory.

TRC personnel collected ambient absolute pressure, temperature, and humidity data during each test run. A wet bulb/dry bulb psychrometer equipped with a battery-operated fan was used to determine ambient temperature and humidity conditions. An aircraft-type aneroid barometer (altimeter) was used to measure absolute atmospheric pressure.

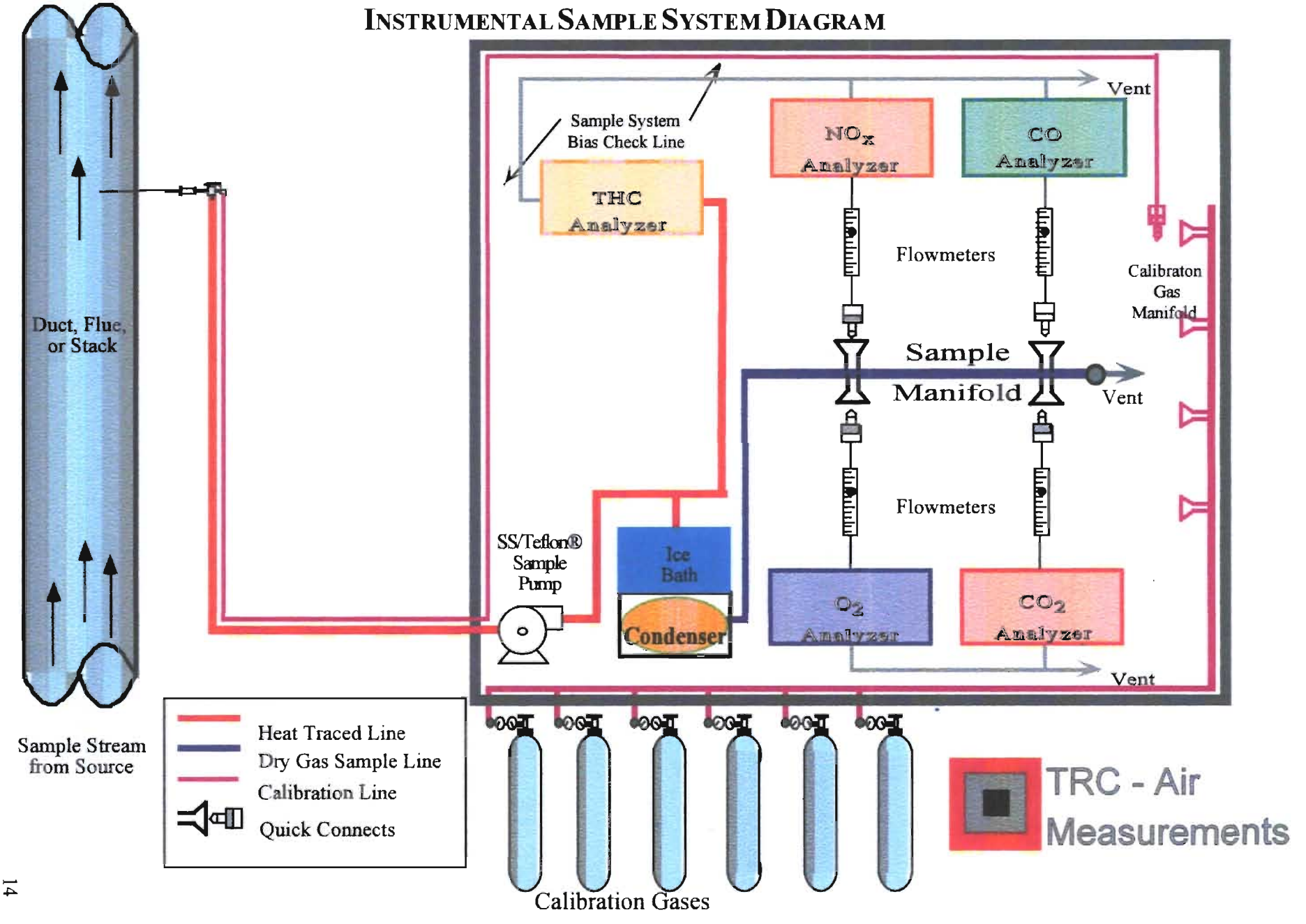
All emission calculations were conducted by a computer spreadsheet as shown in Tables 2 through 4 of this report. Example calculations were performed manually using a hand-held calculator in order to verify the formulas used in the spreadsheets. Example calculations are located in Appendix B of this report.

TABLE 5
ANALYTICAL INSTRUMENTATION

Parameter	Model and Manufacturer	Common Use Ranges	Sensitivity	Response Time (sec.)	Detection Principle
NO_X	TECO	0-10 ppm	0.1 ppm	1.7	Thermal reduction of NO_2 to NO.
	Model 42C	0-25 ppm 0-50, 0-100 ppm 0-200, 500 ppm 0-1,000 ppm 0-5,000 ppm			Chemiluminescence of reaction of NO with O_3. Detection by PMT. Inherently linear within 1% of full scale.
CO	TECO Model 48	0-1 ppm 0-10 ppm 0-30, 0-50 ppm 0-100, 0-200 ppm 0-500, 0-1000 ppm	0.1 ppm	60	Infrared absorption, gas filter correlation detector, micro-processor based linearization.
CO_2	Servomex 1440	0-5% 0-10% 0.05% 0-15% 0.075%	0.025%	< 10	Non-dispersive infrared absorption, electronic linearization of a logarithmic signal (Beer's Law)
O_2	Servomex 1440	0-5% 0-10% 0.02% 0-25% 0.02%	0.02%	< 10	Paramagnetic cell detector, inherently linear.
VOC	California Analytical Model 300-HFID	0-10, 0-100, 0-1000, 0-10000 0-100,000 ppm	10 ppb	2.0	Flame ionization of hydrocarbons inherently linear within 1% over the range of the analyzer.
PM	AND HM-120	0-120 grams	0.0001g	n/a	Spring loaded pressure plate for gravimetric analysis
	Nutech 2010	0-1SCFM	n/a	n/a	Sample Console with temperature controllers, sample pump, dry gas meter, orifice meter, and inclined manometer for isokinetic sampling

NOTE: Higher ranges available by sample dilution.
Other ranges available via signal attenuation.

FIGURE 1
INSTRUMENTAL SAMPLE SYSTEM DIAGRAM



QUALITY ASSURANCE ACTIVITIES

A number of quality assurance activities were undertaken before, during, and after this testing project. This section of the report combined with the documentation in Appendices D and E describe each of those activities.

A multi-point calibration was performed for each instrument in the field prior to the collection of data. The instrument's linearity was checked by first adjusting the instrument's zero and span responses to zero nitrogen and an upscale calibration gas in the range of the expected concentrations. The instrument response was then challenged with other calibration gases of known concentration. The instrument's response was accepted as being linear if the response of the other calibration gases agreed within ±2 percent of the analytical range (high-level calibration gas) from the predicted values. For the THC and CH_4 analyzers, the instrument's response was accepted as being linear if the response of the other calibration gases agreed within ±5 percent of the certified calibration gas value. The response of the infrared absorption type CO and CO_2 analyzers is made linear through electronic suppression.

System bias checks were performed both before and after the sampling system was used for emissions testing. The sampling system's integrity was tested by comparing the responses of the NO_X analyzer to a calibration gas (and a zero gas) introduced via two paths as previously described in the *Analytical Techniques* section of this report. This system bias test was performed to assure that no alteration of the sample had occurred during the test due to leakage, reactions, or absorption. Similarly, system bias checks were performed on the THC, CH_4, CO, O_2, and CO_2 analyzers for added assurance of sample system integrity. The results of the system bias checks are available in Appendix D.

Prior to testing, a NO_X converter efficiency check was conducted as required by EPA Method 7E. The procedures used are detailed in Method 7E, Section 8.2.4. The NO_X analyzer was calibrated and then a NO_2 calibration gas was introduced directly to the analyzer. The average analyzer response over 5 minutes was recorded and the converter efficiency calculated from this average response. If the converter efficiency was at least 90 percent, then the converter is acceptable. Appendix D provides the results for the converter efficiency check.

The residence time of stack sampling and measurement system were estimated using the pump flow rate and the sampling system volume. The pump's rated flow rate is 1.2 scfm at 5 psig. The sampling system volume was approximately 0.28 scf. Therefore, the system had a minimum sample residence time of approximately 14 seconds.

The NO_X, CO, O_2 and CO_2 sampling and analysis system was checked for response time per the procedures outlined in EPA Method 7E, Section 8.2.5 and 8.2.6. The maximum response time did not exceed 80 seconds. The minimum sampling time per point selected was at least twice the maximum response time as determined during the initial system bias tests. The results of these response time tests are contained in Appendix D.

TRC and/or instrument vendors conducted interference response tests on the NO_X, CO, O_2, and CO_2 analyzers. For the NO_X, CO, and O_2 analyzers, the sum of the interference responses for H_2O, C_3H_8, CO, CO_2 and O_2 is less than 2 percent of the applicable full-scale span value. The instruments used for the tests meet the performance specifications for EPA Methods 3A, 7E, and 10 as written prior to the method updates. All of the analyzers predate the methodology updates as effective on August 14th, 2006. The results of the interference tests are available in Appendix D of this report.

Each sampling system was leak checked by demonstrating that it could hold a vacuum greater than 15 inches of mercury ("Hg) for at least 1 minute with a decline of less than 1 "Hg. A leak test was conducted after each sample system was set up, i.e., before testing began, at the beginning and end of each test day, and before the system was dismantled, i.e., after testing was completed. This test was conducted to insure that ambient air was not diluting the sampling system. No leakage was detected.

As a minimum, before and after each test run, the analyzers were checked for zero and span drift. This allows test runs to be bracketed by calibrations and documents the precision of the data just collected. Calibration gases were introduced to the analyzers through the entire sampling system. Appendix D contains quality assurance tables that summarize the zero and span checks that were performed for each test run. The worksheets also contain the data used to correct the data for drift per EPA Method 7E, Equation 7E-5. NO_X, CO, O_2 and CO_2 data were corrected for drift as required by the test methods. Additionally, THC and CH_4 data were corrected for drift in order to be more consistent and accurate in the reporting of results.

The control gases used to calibrate the instruments were analyzed and certified by the compressed gas vendors to ±1% accuracy for all calibration gases. EPA Protocol No. 1 was used, where applicable, i.e., NO_X gases, to assign the concentration values traceable to the National Institute of Standards and Technology (NIST), Standard Reference Materials (SRM's). The gas calibration sheets as prepared by the vendor are contained in Appendix E.

Additional quality assurance activities were performed on the two THC analyzers, used for determination of VOC emissions. Both THC analyzers were calibrated using the same propane gases in air. A comparison against a methane standard was used to verify the consistency of the responses of the two analyzers to a different hydrocarbon. An 895 ppmv standard was used and both analyzers responses were within ±2% of each other and within ±5% of the anticipated response based upon analytical theory. TRC has proposed using a 200 to 300 ppmv standard in the test protocol, but the stack emissions were closer to the 895 ppmv gas and therefore, more representative. In addition, on the THC analyzer used for determination of methane emissions, the efficiency of the non-methane cutter was tested against an ethane and a propane standard. Breakthrough of VOC as ethane was 10.7% and breakthrough as propane was -0.4%; i.e., there was no breakthrough for propane. Since ethane is not classified by EPA as a VOC and propane is classified as a VOC, it was determined that no adjustments were necessary to correct for ethane emission breakthrough.

The moisture train sampling system was leak checked by demonstrating that it could hold a vacuum greater than the highest sampling vacuum for at least 1 minute with a leakage rate less than 0.02 cubic feet per minute (cfm). A leak test was conducted before each test run began and after each test run was completed. This leak check was performed in accordance with EPA

Method 4 to ensure that the sample was not diluted by ambient air. Leak checks were conducted at a vacuum higher than that used during sampling. No leaks greater than 0.02 cfm were detected.

The dry gas meter of the moisture train was calibrated prior to testing in accordance with EPA Method 5. The dry gas meter in the control box was calibrated and a flow curve and dry gas meter factor was generated using the calibrated orifice procedure. A post-test meter calibration check was performed upon return to the TRC Gainesville Office using the Y_{qa} check. All glassware was thoroughly washed, rinsed, dried, and stored to prevent contamination. The calibration certifications of the dry gas meter are found in Appendix E of this report.

Quality assurance procedures for laboratory analysis of the landfill gas for O_2, CO_2, CH_4, and N_2 were conducted in accordance with EPA Method 3C protocols. Upon return to the TRC office samples were packed into a shipping container, sealed, and shipped with a chain-of-custody form to Triangle Environmental Services, Inc. Results of the quality assurance activities are reported with the lab results in Appendix C.

Appendix E also contains calibration data for the ancillary equipment used during this testing. An altimeter/barometer was used for determination of barometric pressure. A fan-operated psychrometer with NIST traceable thermometers was used to determine ambient and dew point temperatures. Other ancillary equipment includes analytical balance calibration data, angle finder calibration data, and caliper calibration data.

TRC collected and reported the enclosed test data in accordance with the procedures and quality assurance activities described in this test report. TRC makes no warranty as to the suitability of the test methods. TRC assumes no liability relating to the interpretation and use of the test data by others.

APPENDIX A:
FIELD DATA SHEETS

SIGN IN SHEET

PROJECT NAME: G 2 Energy Initial Source Performance Test DATE: 3/24-25/ 2009

PROJECT NO.: 166478.0000.0000 PERMIT NO.: FDEP Air Construction 0830124-006-AC

FACILITY/LOCATION: Baseline Land Fill

SOURCE(S): Units 1 + 2

PARTICIPANTS
TRC - Air Measurements, Gainesville Office
FDEP
62 Energy

REPRESENTATIVES:

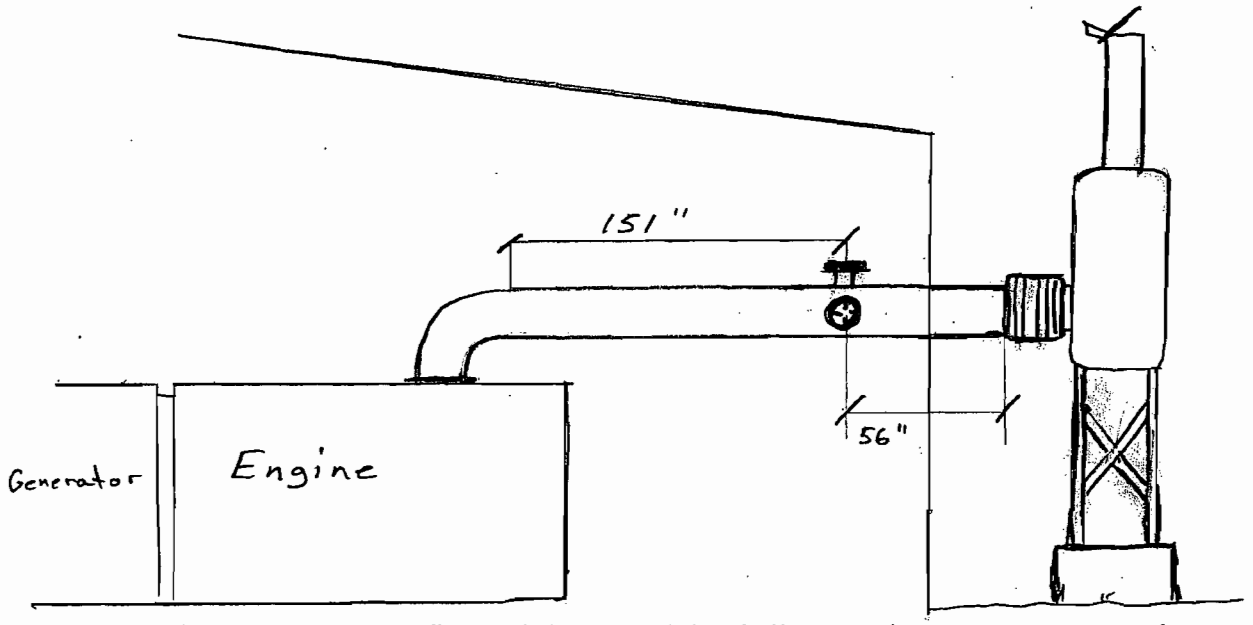
NAME	AFFLIATION	JOB TITLE	PHONE NUMBER	Job Safety Review (Y/N)?
Chris Hank	TRC	Field Technician	352-378-0332	Y
Leonard Breuner	TRC	Manager, Air Measurements	352-378-0332	Y
Barry Kuberka	FDEP	Engineer	407-893-3992	N
Allen Rainey	"	"	407-894-7555	N
Jerry Brewer	Arbotech II	Operator	352 237-4441	N

Circular Stack Sampling Traverse Point Layout
(EPA Method 1)

Date: March 24, 2009
Plant: Marion County Baseline Landfill
Source: Unit 1
Technician(s): LJB, CDH

Port + Stack ID: 22.5 in.
Port Extension: (7 + 2.5) = 9.5 in.
Stack ID: 13 in.
Stack Area: 0.92 ft²
Total Req'd Traverse Pts: 12
No. of Traverse Pts: 6 /diam
No. of Traverse Pts: 6 /port

Stack Diagram (Side View showing major unit components, dimensions and nearest upstream & downstream flow disturbances)



Traverse Point Number	Length Factor (% of diameter) **Number of Points per Diameter**				Distance from Reference Point (inches)
	4	(6)	8	12	
1	6.7	4.4	3.2	2.1	10.07
2	25.0	14.6	10.5	6.7	11.40
3	75.0	29.6	19.4	11.8	13.35
4	93.3	70.4	32.3	17.7	18.65
5		85.4	67.7	25.0	20.60
6		95.6	80.6	35.6	21.93
7			89.5	64.4	
8			96.8	75.0	
9				82.3	
10				88.2	
11				93.3	
12				97.9	

G2 Energy - MCBCC Baseline Landfill
Unit 1 Generator Engine Stratification Test Results

Stratification Test Traverse Point Number	AVE CO (ppmv)	AVE O_2 (% vol)	AVE CO_2 (% vol)	CO (% Dev)	O_2 (% Dev)	CO_2 (% Dev)
1-1	1026.61	7.36	12.18	-0.6%	-0.1%	0.2%
1-2	1026.39	7.33	12.21	-0.6%	0.3%	-0.1%
1-3	1018.42	7.39	12.17	0.2%	-0.6%	0.3%
1-4	1027.27	7.36	12.20	-0.7%	-0.2%	0.0%
1-5	1017.54	7.33	12.24	0.2%	0.3%	-0.3%
1-6	1028.15	7.37	12.20	-0.8%	-0.3%	0.0%
2-1	1029.26	7.31	12.20	-0.9%	0.5%	0.0%
2-2	1021.96	7.31	12.19	-0.2%	0.5%	0.2%
2-3	1021.96	7.33	12.21	-0.2%	0.2%	-0.1%
2-4	1003.38	7.40	12.18	1.6%	-0.7%	0.2%
2-5	1011.34	7.37	12.21	0.9%	-0.3%	0.0%
2-6	1008.69	7.31	12.27	1.1%	0.5%	-0.5%
Averages	**1020.08**	**7.35**	**12.21**			
Minimum Reading	1003.38	7.31	12.17	-0.9%	-0.7%	-0.5%
Maximum Reading	1029.26	7.40	12.27	1.6%	0.5%	0.3%

Notes: Note: Sampling was conducted per EPA Method 7E, Section 8.1 using a 12-point traverse. Sampling conducted in the subsequent test runs using a 12-point traverse for the remainder of testing. Per EPA Methods 3A, 7E, and 10, Section 8.1 sampling may be conducted at a reduced number of sampling points if results of the stratification tests for one pollutant and one diluent meet methodology specifications. If the pollutant emissions are within 5% of the mean of the normalized concentration or within 0.5 ppmv for NO_X and/or CO concentrations and 0.3% volume for O_2 and/or CO_2 concentrations, then sampling may be conducted at a single traverse point. If the pollutant emissions are within 5% of the mean of the normalized concentration or within 1.0 ppmv for NO_X and/or CO concentrations and 0.5% volume for O_2 and/or CO_2 concentrations, then sampling may be conducted using a three point traverse along either the long or short measurement line specified

Testing by TRC - Air Measurements, Gainesville Office

EPA Method 3C Field Data Sheet

Date: 3/25/2009
Plant: G2 Energy
Location: Baseline Land Fill
Run Number: U1-C-1
Technician(s): C. Hank

Sample Location: Blower Skid

Sample Matrix: Landfill Gas

Date canister received from laboratory: 3/23 Canister Serial No.: 8T025

Date canister returned to laboratory: 3/30/09 Canister leak check date: 3/23

Chain of Custody Form included with canister shipment to laboratory (Shipper's Initials): yes

Sampler/Flow controller ID: 0107G703442681002

Time (HH:MM)	Tank Pressure (mbar)	Flowmeter (mm ~~cc~~/min)	Canister Temperature (°F)
09:33	496	35	65.6
09:53	489	35	67.2
10:13	515	35	68.4
10:33	540	35	69.8
10:53	565	35	71.0
11:13	593	35	72.4
11:33	619	35	73.4
11:53	644	35	74.0
13:15	~~647~~ 678	35	78.2
13:35	712	35	79.4
13:41 End	717	35	79.6
			72.6°F

EPA Method 2: Moisture Content

Test Run No.	U1-C-1	U1-C-1	U1-C-3
Date	03/25/09	03/25/09	03/25/09
Start Time	09:33	10:56	12:36
Stop Time	10:33	11:56	13:36
Stack Moisture & Molecular Wt. via EPA Methods 3a & 4			
O_2 (% volume, dry basis)	7.46	7.47	7.55
CO_2 (% volume, dry basis)	12.21	12.20	12.12
Beginning Meter Reading (ft^3)	800.315	843.800	888.305
Ending Meter Reading (ft^3)	843.206	887.110	931.881
Total Volume (ft^3)	42.891	43.310	43.576
Beginning Impingers Weight (g)	2592.6	2876.8	2808.8
Ending Impingers Weight (g)	2731.2	3028.6	2952.6
Net Weight Gain (g)	138.6	151.8	143.8
Dry Gas Meter Factor (K_d)	0.9879	0.9879	0.9879
Dry Gas Meter Temperature (°F average)	70.4	73.9	79.2
Atmospheric Pressure ("Hg, absolute)	30.08	30.09	30.07
Volume of Water Vapor Collected (SCF)	6.535	7.157	6.780
Volume of Air Metered (SCF)	42.392	42.530	42.353
Stack Gas Moisture (% volume)	13.36	14.40	13.80
Dry Gas Fraction	0.8664	0.8560	0.8620
Stack Gas Molecular Wt. (lbs/lb-mole)	28.62	28.49	28.55
Stack Moisture via Stoichiometry			
Combustion Moisture (% volume @ 0% excess air)	17.70	17.70	17.70
Moisture Content (% volume, stoichiometric)	12.93	12.89	12.76

Testing by TRC - Air Measurements, Gainesville Office

40 CFR 60 Methods 2 and 4 -- VELOCITY and MOISTURE

Project No. 166478.0000.0000	Pitot ID NA	Date March 25, 2009
Client G2 Energy	PTCF / Cp NA	Operator L. Brenner
Facility Baseline Landfill	Internal Dimensions (in.) NA	Gauge Sensitivity 0.001
Source Unit # 1	Barometric Pressure (in. Hg) 30.08	Thermocouple ID Imp 4
Sampling Location Stack	Meter Box ID H	Meter Box Y 1.740
Condition Full Load	Meter ID 28914	Meter Box ΔH@ 0.9879

Velocity Traverse Data

Run No.

Stack CO_2 (%)	Stack O_2 (%)	P Static (in. H_2O)

Run Time (24-hr) Start Stop

Traverse Point No.	Flue Gas Temp. (°F)	ΔP (in H_2O)
AVERAGE		

Moisture Sample Data

Run No. U1-C-1

Test Time Clock (24-hr)	Test Time Elapsed (min)	DGM Reading (ft^3)	DGM Temp. (°F) Inlet	DGM Temp. (°F) Outlet	ΔH (in. H_2O)	Vacuum (in. Hg)	Imp. Exit Temp. (°F)
9:33	0	800.315	68	69	1.7	3.2	61
9:43	10	807.535	71	68	1.7	3.4	59
9:53	20	814.565	73	68	1.7	3.4	65
10:03	30	822.232	73	69	1.7	3.4	66
10:13	40	828.906	73	68	1.7	3.5	61
10:23	50	836.165	73	69	1.7	3.4	59
10:33	60	843.206	74	69	1.7	3.5	58

Moisture Analysis Results

	#1	#2	#3	#4	Silica Gel
Reagent	$DI H_2O$	$DI H_2O$	MT	Sil Gel	
Final Weight (g)	740.6	627.9	586.2	777.0	
Initial Weight (g)	626.1	616.2	584.1	766.2	
Net Moisture Weight Gain (g)	114.5	11.2	2.1	10.8	
Total Moisture (g)					138.6

Leak Check Data

Meterbox	Pre-Test	Post-Test
Vacuum (in Hg)	15.8	20.8
Rate (cfm)	0.007	0.002

Pitot Tube	Pre-Test	Post-Test
	+ ___	+ ___
	- ___	- ___

O_2 / CO_2 Data

	Fyrite	Orsat	CEM
O_2 %			
CO_2 %			

Test Location Schematic

1. Include distances to disturbances and note what they are.
2. Show and label all ports. Note which was used for each test type.
3. Indicate the flow direction.

DGM Temp : 70.36
Total Volume : 42.891

NA = Not Applicable
Rev. 1 (5/2005)

Checked By: [signature] 3/25/09 (Project Manager or QA Manager - sign and date)

40 CFR 60 Methods 2 and 4 -- VELOCITY and MOISTURE

Project No.	166798.0000.0000	Pitot ID	NA	Date	3/25/2009
Client	G2 Energy	PTCF / Cp	NA	Operator	L. Brenner
Facility	Baseline Land Fill	Internal Dimensions (in.)	NA	Gauge Sensitivity	0.001
Source	Unit #1	Barometric Pressure (in. Hg)	30.09	Thermocouple ID	Imp 4
Sampling Location	Stack	Meter Box ID	H	Meter Box Y	1.740
Condition	Full Load	Meter ID	28414	Meter Box Δ H@	0.9879

Velocity Traverse Data

Run No.

Stack CO_2 (%)	Stack O_2 (%)	P Static (in. H_2O)

Run Time (24-hr) Start Stop

Traverse Point No.	Flue Gas Temp. (°F)	ΔP (in H_2O)
AVERAGE		

Moisture Sample Data

Test Time		DGM Reading (ft^3)	DGM Temp. (°F)		Run No. U1-C-2		
Clock (24-hr)	Elapsed (min)		Inlet	Outlet	Δ H (in. H_2O)	Vacuum (in. Hg)	Imp. Exit Temp. (°F)
10:56	0	843.800	73	69	1.7	3.5	67
11:06	10	851.009	75	70	1.7	3.5	56
11:16	20	858.348	76	71	1.7	3.5	57
11:26	30	865.458	77	71	1.7	3.5	57
11:36	40	872.685	77	73	1.7	3.5	58
11:46	50	879.850	78	73	1.7	3.5	58
11:56	60	887.110	78	74	1.7	3.5	59

Moisture Analysis Results

	#1	#2	#3	#4	Silica Gel
Reagent	DI H_2O	DI H_2O	MT	Sil Gel	
Final Weight (g)	862.8	644.1	588.1	933.6	
Initial Weight (g)	740.6	627.4	586.2	922.6	
Net Moisture Weight Gain (g)	122.2	16.7	1.9	11.0	
Total Moisture (g)					151.8

Leak Check Data

Meterbox	Pre-Test	Post-Test
Vacuum (in Hg)	20.6	19.5
Rate (cfm)	0.004	0.001

Pitot Tube	Pre-Test	Post-Test
	+ ____	+ ____
	- ____	- ____

O_2 / CO_2 Data

	Fyrite	Orsat	CEM
O_2 %			
CO_2 %			

Test Location Schematic

1. Include distances to disturbances and note what they are.
2. Show and label all ports. Note which was used for each test type.
3. Indicate the flow direction.

DGM_{AVE} Temp 73.93

Total Volume 43.310

NA = Not Applicable
Rev. 1 (5/2005)

Checked By: [signature] 3-25-09 (Project Manager or QA Manager - sign and date)

40 CFR 60 Methods 2 and 4 -- VELOCITY and MOISTURE

Project No.	166978.0000.0000	Pitot ID	NA	Date	3/25/2009
Client	G2 Energy	PTCF / Cp	NA	Operator	L. Brenner
Facility	Baseline Land Fill	Internal Dimensions (in.)	NA	Gauge Sensitivity	0.001
Source	~~Stack~~ Unit ~~&~~ 1	Barometric Pressure (in. Hg)	30.07	Thermocouple ID	Imp 4
Sampling Location	Stack	Meter Box ID	H	Meter Box Y	1.740
Condition	Full Load	Meter ID	28414	Meter Box Δ H@	0.9879

Velocity Traverse Data

Run No.

Stack CO_2 (%)	Stack O_2 (%)	P Static (in. H_2O)

Run Time (24-hr) Start Stop

Traverse Point No.	Flue Gas Temp. (°F)	Δ P (in H_2O)
AVERAGE		

Moisture Sample Data

Run No. U1-C-3

Test Time Clock (24-hr)	Test Time Elapsed (min)	DGM Reading (ft^3)	DGM Temp. (°F) Inlet	DGM Temp. (°F) Outlet	Δ H (in. H_2O)	Vacuum (in. Hg)	Imp. Exit Temp. (°F)
12:36	0	888.305	77	76	1.7	3.8	66
12:46	10	895.760	80	76	1.7	3.8	59
12:56	20	903.035	81	77	1.7	3.8	61
13:06	30	910.147	82	77	1.7	3.8	63
13:16	40	917.478	82	78	1.7	3.8	63
13:26	50	924.675	83	78	1.7	3.9	64
13:36	60	931.881	83	79	1.7	3.8	66

Moisture Analysis Results

	#1	#2	#3	#4	Silica Gel
Reagent	D: H_2O	D: H_2O	MT	Sil Gel	
Final Weight (g)	*848.3	*572.1	*599.8	*932.4	
Initial Weight (g)	643.0	644.1	588.1	933.6	
Net Moisture Weight Gain (g)	205.3	-72.0	11.7	-1.2	
Total Moisture (g)					143.8

Leak Check Data

Meterbox	Pre-Test	Post-Test
Vacuum (in Hg)	19.5	17.4
Rate (cfm)	0.003	0.003

Pitot Tube	Pre-Test	Post-Test
	+ ___	+ ___
	- ___	- ___

O_2 / CO_2 Data

	Fyrite	Orsat	CEM
O_2 %			
CO_2 %			

Test Location Schematic

1. Include distances to disturbances and note what they are.
2. Show and label all ports. Note which was used for each test type.
3. Indicate the flow direction.

* Note 1 impinger was forward flushed during leak check but all moisture was recovered from drained line. YJS

DGM_{AVG} Temp = ~~79~~ 79.2

Total Volume = 43.576

NA = Not Applicable
Rev. 1 (5/2005)

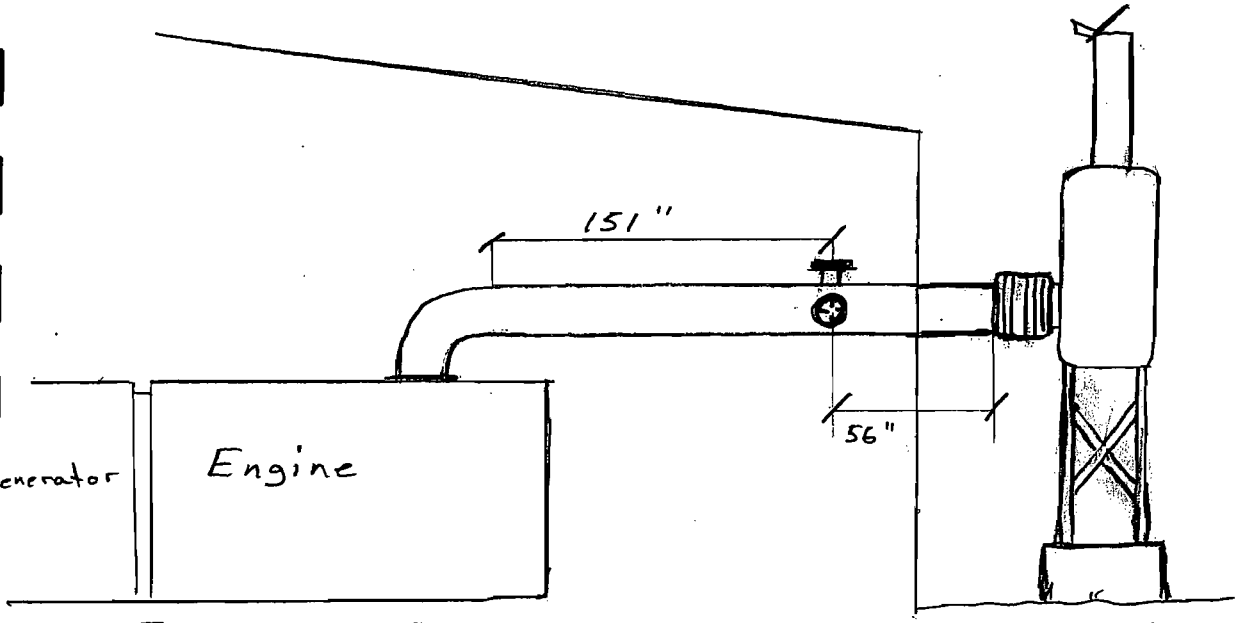
Checked By: _____ 3/25/09 (Project Manager or QA Manager - sign and date)

Circular Stack Sampling Traverse Point Layout
(EPA Method 1)

Date: March 24, 2009
Plant: Marion County Baseline Landfill
Source: Unit 2
Technician(s): LJB, CDH

Port + Stack ID: 22.5 in.
Port Extension: (7 + 2.5) = 9.5 in.
Stack ID: 13 in.
Stack Area: 0.92 ft²
Total Req'd Traverse Pts: 12
No. of Traverse Pts: 6 /diam
No. of Traverse Pts: 6 /port

Stack Diagram (Side View showing major unit components, dimensions and nearest upstream & downstream flow disturbances)



Traverse Point Number	Length Factor (% of diameter) Number of Points per Diameter				Distance from Reference Point (inches)
	4	6	8	12	
1	6.7	4.4	3.2	2.1	10.07
2	25.0	14.6	10.5	6.7	11.40
3	75.0	29.6	19.4	11.8	13.35
4	93.3	70.4	32.3	17.7	18.65
5		85.4	67.7	25.0	20.60
6		95.6	80.6	35.6	21.93
7			89.5	64.4	
8			96.8	75.0	
9				82.3	
10				88.2	
11				93.3	
12				97.9	

G2 Energy - MCBCC Baseline Landill
Unit 2 Generator Engine Stratification Test Results

Stratification Test Traverse Point Number	AVE CO (ppmv)	AVE O_2 (% vol)	AVE CO_2 (% vol)	CO (% Dev)	O_2 (% Dev)	CO_2 (% Dev)
1-1	948.30	7.69	11.85	2.5%	-0.7%	0.4%
1-2	1009.57	7.51	12.01	-3.8%	1.7%	-1.0%
1-3	990.11	7.62	11.89	-1.8%	0.3%	0.1%
1-4	962.68	7.68	11.85	1.0%	-0.6%	0.4%
1-5	928.17	7.63	11.91	4.6%	0.1%	-0.1%
1-6	1012.23	7.57	11.97	-4.0%	1.0%	-0.6%
2-1	962.90	7.70	11.85	1.0%	-0.8%	0.4%
2-2	955.60	7.68	11.82	1.8%	-0.5%	0.6%
2-3	942.33	7.67	11.86	3.1%	-0.4%	0.3%
2-4	995.42	7.48	12.03	-2.3%	2.0%	-1.1%
2-5	1000.73	7.66	11.90	-2.9%	-0.2%	0.0%
2-6	966.22	7.79	11.83	0.7%	-2.0%	0.6%
Averages	**972.85**	**7.64**	**11.90**			
Minimum Reading	928.17	7.48	11.82	-4.0%	-2.0%	-1.1%
Maximum Reading	1012.23	7.79	12.03	4.6%	2.0%	0.6%

Notes: Note: Sampling was conducted per EPA Method 7E, Section 8.1 using a 12-point traverse. Sampling conducted in the subsequent test runs using a 12-point traverse for the remainder of testing. Per EPA Methods 3A, 7E, and 10, Section 8.1 sampling may be conducted at a reduced number of sampling points if results of the stratification tests for one pollutant and one diluent meet methodology specifications. If the pollutant emissions are within 5% of the mean of the normalized concentration or within 0.5 ppmv for NO_X and/or CO concentrations and 0.3% volume for O_2 and/or CO_2 concentrations, then sampling may be conducted at a single traverse point. If the pollutant emissions are within 5% of the mean of the normalized concentration or within 1.0 ppmv for NO_X and/or CO concentrations and 0.5% volume for O_2 and/or CO_2 concentrations, then sampling may be conducted using a three point traverse along either the long or short measurement line

Testing by TRC - Air Measurements, Gainesville Office

EPA Method 3C Field Data Sheet

Date: 3/ /2009
Plant: G2 Energy
Location: Baseline Landfill
Run Number: U2-C-1 to U2-C-3
Technician(s): ~~CDH~~ & LBJ

Sample Location: Blower Skid

Sample Matrix: Landfill Gas

Date canister received from laboratory: 3/23 Canister Serial No.: 8T018

Date canister returned to laboratory: 3/30/09 Canister leak check date: 3/25/09

Chain of Custody Form included with canister shipment to laboratory (Shipper's Initials): YCS

Sampler/Flow controller ID: 0107070344268/002

Time (HH:MM)	Tank Pressure (mbar)	Flowmeter (cc/min)	Canister Temperature (°F)
14:17	~~487~~ 479	35	80.6
14:37	507	35	81.4
14:57	532	35	80.6
15 17	572	35	80.6
15 37	595	35	80.4
1557	616	40	79.8
1617	680	40	79.6
1637	713	35	79.8
1657	738	35	79.4
1717	762	35	78.6
1737	788	35	78.2
1757	821	35	77.8
18:30	842	35	77.4
			79.6°F

Average

Testing by TRC - Air Measurements, Gainesville Office

29.99

EPA Method 2: Moisture Content

Test Run No.	U2-C-1	U2-C-1	U2-C-3
Date	03/25/09	03/25/09	03/25/09
Start Time	14:17	16:10	17:27
Stop Time	15:17	17:10	18:27
Stack Moisture & Molecular Wt. via EPA Methods 3a & 4			
O_2 (% volume, dry basis)	7.69	7.74	7.75
CO_2 (% volume, dry basis)	12.00	11.98	11.96
Beginning Meter Reading (ft^3)	932.351	976.559	21.678
Ending Meter Reading (ft^3)	976.179	1021.087	65.565
Total Volume (ft^3)	43.828	44.528	43.887
Beginning Impingers Weight (g)	2594.8	2908.7	3051.4
Ending Impingers Weight (g)	2733.5	3051.4	3191.7
Net Weight Gain (g)	138.7	142.7	140.3
Dry Gas Meter Factor (K_d)	0.9879	0.9879	0.9879
Dry Gas Meter Temperature (°F average)	77.9	74.1	73.1
Atmospheric Pressure ("Hg, absolute)	30.02	29.99	29.97
Volume of Water Vapor Collected (SCF)	6.540	6.728	6.615
Volume of Air Metered (SCF)	42.619	43.563	42.997
Stack Gas Moisture (% volume)	13.30	13.38	13.33
Dry Gas Fraction	0.8670	0.8662	0.8667
Stack Gas Molecular Wt. (lbs/lb-mole)	28.60	28.59	28.59
Stack Moisture via Stoichiometry			
Combustion Moisture (% volume @ 0% excess air)	17.77	17.77	17.77
Moisture Content (% volume, stoichiometric)	12.47	12.44	12.46

Testing by TRC - Air Measurements, Gainesville Office

40 CFR 60 Methods 2 and 4 -- VELOCITY and MOISTURE

Project No.	166798.0000.0000	Pitot ID	NA	Date	3/25/2009
Client	G2 Energy	PTCF / Cp	NA	Operator	L. Bremmer
Facility	Baseline LandFill	Internal Dimensions (in.)	NA	Gauge Sensitivity	0.001
Source	Unit 2	Barometric Pressure (in. Hg)	30.02	Thermocouple ID	Imp 4
Sampling Location	Stack	Meter Box ID	14	Meter Box Y	1.740
Condition	Full Load	Meter ID	28414	Meter Box ΔH@	0.9879

Velocity Traverse Data

Run No.

Stack CO_2 (%)	Stack O_2 (%)	P Static (in. H_2O)

Run Time (24-hr) Start Stop

Traverse Point No.	Flue Gas Temp. (°F)	ΔP (in H_2O)
AVERAGE		

Moisture Sample Data

Run No. U2-C-1

Test Time Clock (24-hr)	Test Time Elapsed (min)	DGM Reading (ft^3)	DGM Temp. (°F) Inlet	DGM Temp. (°F) Outlet	ΔH (in. H_2O)	Vacuum (in. Hg)	Imp. Exit Temp. (°F)
14:17	0	932.351	78	78	1.7	3.5	61
14:27	10	939.648	80	78	1.7	3.5	57
14:37	20	946.922	81	77	1.7	3.5	59
14:47	30	954.246	80	76	1.7	3.5	58
14:57	40	961.624	79	76	1.7	3.5	59
15:07	50	968.975	79	75	1.7	3.5	59
15:17	60	976.179	79	75	1.7	3.5	60

Moisture Analysis Results

	#1	#2	#3	#4	Silica Gel
Reagent	$D:H_2O$	$D:H_2O$	MT	Sil Gel	
Final Weight (g)	787.8	580.2	601.6	763.9	
Initial Weight (g)	668.9	572.1	599.8	754.0	
Net Moisture Weight Gain (g)	118.9	8.1	1.8	9.9	
Total Moisture (g)				138.7	

Leak Check Data

Meterbox	Pre-Test	Post-Test
Vacuum (in Hg)	17.3	16.5
Rate (cfm)	0.000	0.002

Pitot Tube	Pre-Test	Post-Test
	+ ___	+ ___
	- ___	- ___

O_2 / CO_2 Data

	Fyrite	Orsat	CEM
O_2 %			
CO_2 %			

Test Location Schematic

1. Include distances to disturbances and note what they are.
2. Show and label all ports. Note which was used for each test type.
3. Indicate the flow direction.

DGM Ave Temp 77.9

Total Volume 43.828

NA = Not Applicable
Rev. 1 (5/2005)

Checked By: [signature] 3/25/09 (Project Manager or QA Manager - sign and date)

40 CFR 60 Methods 2 and 4 -- VELOCITY and MOISTURE

Project No.	166478.0000.0000	Pitot ID	NA	Date	3/25/2009
Client	G2 Energy	PTCF / Cp	NA	Operator	L. Brenner
Facility	Baseline Land Fill	Internal Dimensions (in.)	NA	Gauge Sensitivity	0.001
Source	Unit 2	Barometric Pressure (in. Hg)	29.99	Thermocouple ID	Imp 4
Sampling Location	Stack	Meter Box ID	H	Meter Box Y	1.790
Condition	Full Load	Meter ID	28414	Meter Box ΔH@	0.9879

Velocity Traverse Data

Run No.

Stack CO_2 (%)	Stack O_2 (%)	P Static (in. H_2O)

Run Time (24-hr) Start Stop

Traverse Point No.	Flue Gas Temp. (°F)	ΔP (in H_2O)
AVERAGE		

Moisture Sample Data

Test Time		DGM Reading (ft^3)	DGM Temp. (°F)		Run No. U2-C-2		
Clock (24-hr)	Elapsed (min)		Inlet	Outlet	ΔH (in. H_2O)	Vacuum (in. Hg)	Imp. Exit Temp. (°F)
16:19	0	976.559	74	72	1.7	3.2	65
16:20	10	984.751	77	72	1.7	3.1	55
16:30	20	991.834	76	72	1.7	3.1	57
16:40	30	999.897	76	72	1.7	3.2	59
16:50	40	1006.459	77	72	1.7	3.2	61
17:00	50	1013.658	77	72	1.7	3.2	63
17:10	60	1021.087	77	72	1.7	3.2	66

Moisture Analysis Results

	#1	#2	#3	#4	Silica Gel
Reagent	DiH_2O	DiH_2O	MT	Sil Gel	
Final Weight (g)	897.0	600.5	602.7	951.2	
Initial Weight (g)	787.8	580.2	601.6	939.1	
Net Moisture Weight Gain (g)	109.2	20.3	1.1	12.1	
Total Moisture (g)				142.7	

Leak Check Data

Meterbox	Pre-Test	Post-Test
Vacuum (in Hg)	16.7	16.3
Rate (cfm)	0.002	0.005

Pitot Tube	Pre-Test	Post-Test
	+ ____	+ ____
	- ____	- ____

O_2 / CO_2 Data

	Fyrite	Orsat	CEM
O_2 %			
CO_2 %			

Test Location Schematic

1. Include distances to disturbances and note what they are.
2. Show and label all ports. Note which was used for each test type.
3. Indicate the flow direction.

DGM Ave Temp 74.1

Total Volume 44.528

NA = Not Applicable
Rev. 1 (5/2005)

Checked By: _____ 3/25/09 (Project Manager or QA Manager - sign and date)

40 CFR 60 Methods 2 and 4 -- VELOCITY and MOISTURE

Project No.	166478.0000.0000	Pitot ID	NA	Date	3/25/2009
Client	G2 Energy	PTCF / Cp	NA	Operator	L. Brenner
Facility	Baseline Landfill	Internal Dimensions (in.)	NA	Gauge Sensitivity	0.001
Source	Unit 2	Barometric Pressure (in. Hg)	29.97	Thermocouple ID	Imp 4
Sampling Location	Stack	Meter Box ID	4	Meter Box Y	1.740
Condition	Full Load	Meter ID	28414	Meter Box ΔH@	0.9879

Velocity Traverse Data

Run No.

Stack CO_2 (%)	Stack O_2 (%)	P Static (in. H_2O)

Run Time (24-hr) Start Stop

Traverse Point No.	Flue Gas Temp. (°F)	ΔP (in H_2O)
AVERAGE		

Moisture Sample Data

Run No. U2-C-3

Test Time Clock (24-hr)	Test Time Elapsed (min)	DGM Reading (ft^3)	DGM Temp. (°F) Inlet	DGM Temp. (°F) Outlet	ΔH (in. H_2O)	Vacuum (in. Hg)	Imp. Exit Temp. (°F)
17:27	0	21.678	73	71	1.7	3.3	64
17:37	10	29.000	76	71	1.7	3.3	55
17:47	20	36.296	76	72	1.7	3.3	56
17:57	30	43.598	75	72	1.7	3.3	56
18:07	40	50.807	75	71	1.7	3.4	57
18:17	50	58.127	75	71	1.7	3.4	58
18:27	60	65.565	74	71	1.7	3.4	60

Moisture Analysis Results

	#1	#2	#3	#4	Silica Gel
Reagent	Di H_2O	Di H_2O	MT	Silica	
Final Weight (g)	897.7	729.5	603.6	960.9	
Initial Weight (g)	897.0	600.5	602.7	951.2	
Net Moisture Weight Gain (g)	0.7	129.0	0.9	9.7	

Total Moisture (g): 140.3

Leak Check Data

Meterbox	Pre-Test	Post-Test
Vacuum (in Hg)	16.8	16.5
Rate (cfm)	0.004	0.002

Pitot Tube	Pre-Test	Post-Test
	+ ___	+ ___
	- ___	- ___

O_2 / CO_2 Data

	Fyrite	Orsat	CEM
O_2 %			
CO_2 %			

Test Location Schematic

1. Include distances to disturbances and note what they are.
2. Show and label all ports. Note which was used for each test type.
3. Indicate the flow direction.

DGM Ave Temp 73.1

Total Volume 43.887

NA = Not Applicable
Rev. 1 (5/2005)

Checked By: _____ 4/28/09 (Project Manager or QA Manager - sign and date)

APPENDIX B:
EXAMPLE CALCULATIONS

EXAMPLE COMPLIANCE TEST CALCULATIONS

Moisture Content via EPA Method 4

Refers to Test Run #U1-C-1

M_{WC}	= net impinger weight gain = 2731.2-2592.6	= 138.6 g
Y	= dry gas meter correction factor	= 0.9879
V_m	= volume metered = (843.206-800.315)	= 42.891 ft^3
P_{atm}	= atmospheric pressure	= 30.08 "Hg
P_{met}	= average meter pressure = P_{atm}	= 30.205
T_{met}	= average meter temperature = 70.36 °F + 460	= 530.36 °R
K_2	= conversion factor, water weight to vapor	= 0.04715 ft^3/g
K_3	= standard temp, pressure (STP) correction factor	= 17.64 °R/ "Hg

V_{WC} = total volume of water vapor collected at STP

$= K_2 \times M_{WC}$

$= (0.04715 \times 138.6)$

$= 6.53499\ ft^3$

$V_{m(std)}$ = total volume metered at STP

$$= K_3 \times Y \times V_m \times \frac{P_{met}}{T_{met}}$$

$$= 17.64 \times .9879 \times 42.891 \times \frac{30.08}{530.4}$$

$= 42.392\ ft^3$

B_{ws} = moisture content by EPA Method 4 w/ M-5 equations

$$= \frac{V_{WC}}{V_{WC} + V_{STP}}$$

$$= \frac{6.53499}{6.53499 + 42.392}$$

B_{ws} = **0.13356**

= **13.35(6)% moisture**

Stack Gas Molecular Weight, MW
Refers to Test Run #U1-C-1

MW_{H2O}	= molecular wt of H_2O	= 18 lb/lb-mole
MW_{CO2}	= molecular wt of CO_2	= 44 lb/lb-mole
MW_{O2}	= molecular wt of O_2	= 32 lb/lb-mole
MW_{N2}	= molecular wt of N_2	= 28 lb/lb-mole
C_{CO2}	= concentration of CO_2	= 0.1221 (from analyzer)
C_{O2}	= concentration of O_2	= 0.0746 (from analyzer)
C_{N2}	= concentration of N_2	= 1- (C_{CO2} + C_{O2}) = 0.8033
F_d	= dry gas fraction = 1-B_{ws}	= 0.86644

$\mathbf{M_S}$ = molecular weight of stack gas (lb/lb-mole)
= wt of H_2O + wt. of CO_2 + wt. of O_2 + wt. of N_2

$= (MW_{H2O} \times B_{ws}) + (F_d \times ((MW_{CO2} \times C_{CO2}) + (MW_{O2} \times C_{O2}) + (MW_{N2} \times C_{N2})))$

$= (18 \times 0.13356) + (0.86644 \times ((44 \times 0.1221) + (32 \times 0.0746) + (28 \times 0.8033)))$

M_S = 28.62 lb/lb-mole

Stack Gas Flow Rates via F-factors (Qd)
refers to Test Run #U1-C-1

Convert fuel flow to heat input:

Hg	= heating value of nat. gas	= 532.8 Btu/SCF (HHV) from fuel analysis
F	= metered fuel flow	= 513.7 SCFM
H	= heat input (MMBtu/hr)	
	= Hg x F x 60/(1 x 10^6)	= 16.42 MMBtu/hr

Calculate flow rate using **O_2 F-factor**:
C_{O2} = O_2 concentration in exhaust = 7.46% by vol, dry
O_2 F-factor = 9432 DSCF of Exhaust/MMBtu of fuel burned @ 0% excess air

Qd_1 = Stack Exhaust Gas Flow Rate via O_2 F-factor

$$Qd_1 = \frac{H \times O_2F\text{ - factor} \times 20.9}{20.9 - C_{O_2}}$$

$$Qd_1 = \frac{16.42 \times 9432 \times 20.9}{20.9 - 7.46}$$

Qd_1 = 2.40(8) x 10^5 DSCFH

Calculate flow rate using **CO_2 F-factor:**
Using same data as above, except:
C_{CO_2} = Concentration of CO_2 in exhuast = 12.21 % vol,dry (stack ave)
CO_2 F-factor = 1785 DSCF of CO_2/ MMBtu of fuel burned @ 0% excess air

Qd_2 = Stack Exhaust Gas Flow Rate via CO_2 F-factor

$$Qd_2 = \frac{H \times CO_2 \text{ F-factor} \times 100}{C_{CO2}}$$

$$Qd_2 = \frac{16.42 \times 1785 \times 100}{12.21}$$

Qd_2 = 2.40×10^5 DSCFH

Correction of NO_x Gas Concentrations, C_{NO_x}
Refers to Test Run #U1-C-1

The logged data records were used for continuous instrumental monitor data. Analytical instruments tend to drift in their calibrations over time and with changes in atmospheric conditions. Span and zero gas bias drift checks (calibrations) were conducted prior to and following each test. The results of these calibrations were used to bracket and thus correct the raw gas concentrations into corrected (more accurate) gas concentrations. The calculation used for these correction is 40 CFR 60, Appendix A, Method 7E, Equation 7E-5.

C_{Avg} = analyzer NO_x gas concentration, uncorrected for drift and bias
C_{Avg} = 199.16 ppmv, uncorrected
C_o = Average of initial/final zero gas concentrations
= 4.03 ppmv
C_m = Average of initial/final span gas concentrations
= 249.48 ppmv
C_{ma} = Actual upscale cylinder span gas concentrations
= 253 ppmv
C_{NOx} = Effluent NO_x gas concentration, ppmv corrected

$$= (C_{NOx} - C_o) \times \frac{C_{ma}}{C_m - C_o}$$

$$= (199.16 - (4.03)) \times \frac{253}{249.48 - (4.03)}$$

C_{NOx} = 201.1(3) ppmv NO_x, dry basis corrected

NOx Correction to 15% O_2
refers to Test Run #U1-C-1

C_{NOx} = observed NOx concentration = 201.13 ppmv (from analyzer)
C_{O_2} = concentration of oxygen = 7.46% volume (from analyzer)

NOx @15% O_2 = NO_x emission concentration, corrected to 15% excess oxygen

$$= \frac{(C_{NOx} \times (20.9 - 15.0\%\ O_2))}{20.9 - C_{O2}}$$

$$= \frac{201.13 \times 5.9}{20.9 - 7.46}$$

NOx @15% O_2 = 88.3 ppmv @ 15% excess O_2

NOx Mass Emission Rate (lbs/hr)
Refers to Test Run #U1-C-1

C_{NOx} = observed concentration of NOx = 201.13 ppmv
MW_{NOx} = 46.01 lb/lb-mole for nitrogen dioxide
for an ideal gas, 385.15 SCF = 1.0 lb/mole
Q_d = 2.408×10^5 SCFH, dry (from O_2 "F-factor" calculated ex. flow)

$\mathbf{E_{NOx}}$ = mass emission rate of NOx in (lb/hr)

$$= C_{NOx} \times 10^{-6} \times Q_d \times \frac{MW_{NOx}}{385.15}$$

$$= 201.13 \times 10^{-6} \times 2.408 \times 10^5 \times \frac{46.01}{385.15}$$

E_{NOx} = 5.78 lbs/hr of NO_x

CO Correction to 15% O_2
refers to Test Run #U1-C-1

C_{CO} = observed CO concentration = 1031 ppmv (from analyzer)
C_{O_2} = concentration of oxygen = 7.46 % volume (from analyzer)

CO @15% O_2 = CO emission concentration, corrected to 15% excess oxygen

$$= \frac{(C_{CO} \times (20.9 - 15.0\%\ O_2))}{20.9 - C_{O_2}}$$

$$= \frac{1031 \times 5.9}{20.9 - 7.46}$$

CO @15% O_2 = 453 ppmv @ 15% excess O_2

CO Mass Emission Rate (lbs/hr)
Refers to Test Run #U1-C-1

CO = observed concentration of CO = 1031 ppmv
MW_{CO} = 28.01 lb/lb-mole for carbon monoxide
Q_d = 2.408 x 10^5 SCFH, dry (from O_2 "F-factor" calculated ex. flow)

E_{CO} = mass emission rate of CO in (lb/hr)

$$= C_{CO} \times 10^{-6} \times Q_{d1} \times \frac{MW_{CO}}{385.15}$$

$$= 1031 \times 10^{-6} \times 2.408 \times 10^5 \times \frac{28.01}{385.15}$$

E_{CO} = 18.0(5) lbs/hr of CO

VOC emission concentration (ppmv, dry basis)
refers to Test Run #U1-C-1

C_{THC} = observed THC concentration = 488.8 ppmv as Propane, wet
C_{CH_4} = observed Methane concentration = 470.8 ppmv as Propane, wet
F_d = dry gas fraction = 1-B_{ws} = 0.86644

C_{VOC} = VOC emission concentration, ppmv, dry basis

$$= \frac{(C_{THC} - C_{CH_4})}{Fd}$$

$$= \frac{488.8 - 470.8}{0.86644}$$

C_{VOC} = 20.7(7) ppmv @ 15% excess O_2

VOC Correction to 15% O_2
refers to Test Run #U1-C-1

C_{VOC} = observed VOC concentration = 20.77 ppmv as Propane, dry
C_{O2} = concentration of oxygen = 7.46% volume (from analyzer)

VOC @15% O_2 = VOC emission concentration, corrected to 15% excess oxygen

$$= \frac{(C_{VOC} x (20.9 - 15.0\%O_2))}{20.9 - C_{O2}}$$

$$= \frac{20.77 \times 5.9}{20.9 - 7.46}$$

VOC @15% O_2 = 9.12 ppmv @ 15% excess O_2

VOC Mass Emission Rate (lbs/hr)
Refers to Test Run #U1-C-1

C_{VOC} = observed concentration of VOC = 20.77 ppmv as Propane, dry
$MW_{C_3H_8}$ = 44.1 lb/lb-mole for Propane
Q_{d1} = 2.408 x 10^5 SCFH, dry (from O_2 "F-factor" calculated ex. flow)

E_{VOC} = mass emission rate of VOC in (lb/hr), including THC (e.g, methane)

$$= C_{THC} \times 10^{-6} \times Q_d \times \frac{MW_{C_3H_8}}{385.15}$$

$$= 20.77 \times 10^{-6} \times 2.408 \times 10^5 \times \frac{44.1}{385.15}$$

E_{VOC} = 0.572(6) lbs/hr of VOC

NOx Mass Emission Rate (g/bhp•hr)
Refers to Test Run #U1-C-1

E_{NOx} = 5.78 lb/hr
HP = engine brake-specific horsepower = 2163 bhp

NO_X em. = total mass emission rate of NO_X in (g/bhp•hr)

$$= \frac{E_{NOx} \times 454 \text{ g/lb}}{\text{BHP}}$$

$$= \frac{5.78 \text{ lb/hr} \times 454 \text{ g/lb}}{2163 \text{ hp}}$$

NO_X em. = 1.21 g/bhp•hr

CO Mass Emission Rate (g/bhp•hr)
Refers to Test Run #U1-C-1

E_{CO} = 18.05 lb/hr
using the same formula as for the NO_X mass emission rate

CO em. = total mass emission rate of CO in (g/bhp•hr)

$$= \frac{18.05 \text{ lb/hr x } 454 \text{ g/lb}}{2163 \text{ hp}}$$

CO em. = 3.79 g/bhp•hr (Differences due to rounding)

VOC Mass Emission Rate (g/bhp•hr)
Refers to Test Run #U1-C-1

E_{VOC} = 0.572(6) lb/hr
using the same formula as for the NO_X mass emission rate

VOC em. = total mass emission rate of VOC in (g/bhp•hr)

$$= \frac{0.5726 \text{ lb/hr x } 454 \text{ g/lb}}{2163 \text{ hp}}$$

VOC em. = 0.120 g/bhp•hr

APPENDIX C:
LANDFILL GAS ANALYSIS

Gas Fuel F Factor & Heating Value Calculation

Company: G2 Energy
Location: Baseline Landfill - Ocala, Florida
Sample Identification: Unit 1, Normalized
Date: March 25, 2009
Times: 9:33 to 13:41

CALCULATION OF DENSITY AND HEATING VALUE @ 60°F and 30 in Hg

Component	% Volume	Molecular Wt.	Density (lb/ft3)	% volume x Density	weight %	Component Gross Btu/lb	Weight Fract. Btu	Gross Heating Value (Btu/SCF)	Volume Fract. Btu
Hydrogen		2.016	0.0053	0.00000	0.0000	61100	0.00	319.1	0
Oxygen	0.9211	32.000	0.0846	0.00078	1.0412	0	0.00	0.0	0
Nitrogen	6.2835	28.016	0.0744	0.00467	6.2466	0	0.00	0.0	0
CO2	40.2687	44.010	0.1170	0.04711	62.9535	0	0.00	0.0	0
CO		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	0
Methane	52.5267	16.041	0.0424	0.02227	29.7586	23879	7106.07	996.7	523.538947
Ethane		30.067	0.0803	0.00000	0.0000	22320	0.00	1756.1	0
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane		44.092	0.1196	0.00000	0.0000	21661	0.00	2518.4	0
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane		58.118	0.1582	0.00000	0.0000	21308	0.00	3303.3	0
n-butane		58.118	0.1582	0.00000	0.0000	21257	0.00	3318.1	0
Isobutene		56.102	0.1480	0.00000	0.0000	20840	0.00	3068.0	0
Isopentane		72.144	0.1904	0.00000	0.0000	21091	0.00	3940.5	0
n-pentane		72.144	0.1904	0.00000	0.0000	21052	0.00	3948.4	0
n-hexane		86.169	0.2274	0.00000	0.0000	20940	0.00	4684.1	0
n-heptane		86.169	0.2274	0.00000	0.0000	20940	0.00	5419.8	0
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0
total	100.00	Average Density		0.07484	100.0000	Gross Heating Value		Gross Heating Value	
		Specific Gravity		0.97830		Btu/lb	7106	Btu/SCF	532.8

CALCULATION OF F FACTORS

Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Weight Percents Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.00	0.0000		0		
Oxygen	32.000	0	0	0.92	29.4755				1.04511091
Nitrogen	28.016	0	0	6.28	176.0391			6.24181502	
CO2	44.010	0.272273	0	40.27	1772.2239	17.10900954			45.6830091
CO	28.010	0.42587	0	0.00	0.0000	0			0
Methane	16.041	0.75	0.25	52.53	842.5809	22.40652931	7.4688431		
Ethane	30.067	0.8	0.2	0.00	0.0000	0	0		
Ethylene	28.051	0.85714	0.14286	0.00	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.00	0.0000	0	0		
Propene	42.077	0.85714	0.14286	0.00	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.00	0.0000	0	0		
n-butane	58.118	0.82759	0.17247	0.00	0.0000	0	0		
Isobutene	56.102	0.85714	0.14286	0.00	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.00	0.0000	0	0		
n-pentane	72.144	0.83333	0.16667	0.00	0.0000	0	0		
n-hexane	86.169	0.83721	0.16279	0.00	0.0000	0	0		
H2S	34.076	0	0.05869233	0.00	0.0000	0	0		
Totals				100.00000	2820.3194	39.51553886	7.47	6.24181502	46.72812

CALCULATED VALUES		
O2 F Factor (dry)	**9432**	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
O2 F Factor (wet)	**11461**	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
Moisture F Factor	**2029**	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
Combust. Moisture	**17.70**	volume % water in flue gas @ 0% excess air
CO2 F Factor	**1785**	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
Carbon Dioxide	**18.93**	volume % CO2 in flue gas @ 0% O2
Predicted Fo Factor	**1.10**	EPA Method 3a Fo value
Fuel VOC % (non-C1)	**0.00%**	non-methane fuel VOC content
Fuel VOC % (non-C1,C2)	**0.00%**	non-methane non-ethane fuel VOC content

Testing by TRC - Air Measurements, Gainesville Office

Gas Fuel F Factor & Heating Value Calculation

Company: G2 Energy
Location: Baseline Landfill - Ocala, Florida
Sample Identification: Unit 2, Normalized
Date: March 25, 2009
Times: 14:17 to 18:30

CALCULATION OF DENSITY AND HEATING VALUE @ 60°F and 30 in Hg

Component	% Volume	Molecular Wt.	Density (lb/ft3)	% volume x Density	weight %	Component Gross Btu/lb	Weight Fract. Btu	Gross Heating Value (Btu/SCF)	Volume Fract. Btu
Hydrogen		2.016	0.0053	0.00000	0.0000	61100	0.00	319.1	0
Oxygen	0.8756	32.000	0.0846	0.00074	0.9907	0	0.00	0.0	0
Nitrogen	4.1100	28.016	0.0744	0.00306	4.0897	0	0.00	0.0	0
CO2	41.1336	44.010	0.1170	0.04813	64.3655	0	0.00	0.0	0
CO		28.010	0.0740	0.00000	0.0000	4347	0.00	322.0	0
Methane	53.8808	16.041	0.0424	0.02285	30.5542	23879	7296.03	996.7	537.035213
Ethane		30.067	0.0803	0.00000	0.0000	22320	0.00	1756.1	0
Ethylene		28.051	0.0746	0.00000	0.0000	21644	0.00	1614.0	0
Propane		44.092	0.1196	0.00000	0.0000	21661	0.00	2518.4	0
propylene		42.077	0.1110	0.00000	0.0000	21041	0.00	2336.0	0
Isobutane		58.118	0.1582	0.00000	0.0000	21308	0.00	3303.3	0
n-butane		58.118	0.1582	0.00000	0.0000	21257	0.00	3318.1	0
Isobutene		56.102	0.1480	0.00000	0.0000	20840	0.00	3068.0	0
Isopentane		72.144	0.1904	0.00000	0.0000	21091	0.00	3940.5	0
n-pentane		72.144	0.1904	0.00000	0.0000	21052	0.00	3948.4	0
n-hexane		86.169	0.2274	0.00000	0.0000	20940	0.00	4684.1	0
n-heptane		86.169	0.2274	0.00000	0.0000	20940	0.00	5419.8	0
H2S		34.076	0.0911	0.00000	0.0000	7100	0.00	647.0	0
total	100.00	Average Density		0.07477	100.0000	Gross Heating Value		Gross Heating Value	
		Specific Gravity		0.97739		Btu/lb	7296	Btu/SCF	546.5

CALCULATION OF F FACTORS

Component	Mol. Wt.	C Factor	H Factor	% volume	Fract. Wt.	Weight Percents Carbon	Hydrogen	Nitrogen	Oxygen
Hydrogen	2.016	0	1	0.00	0.0000		0		
Oxygen	32.000	0	0	0.88	28.0183				0.99434879
Nitrogen	28.016	0	0	4.11	115.1465			4.086459021	
CO2	44.010	0.272273	0	41.13	1810.2903	17.49239541			46.7066931
CO	28.010	0.42587	0	0.00	0.0000	0			0
Methane	16.041	0.75	0.25	53.88	864.3017	23.0050477	7.66834923		
Ethane	30.067	0.8	0.2	0.00	0.0000	0	0		
Ethylene	28.051	0.85714	0.14286	0.00	0.0000	0	0		
Propane	44.092	0.81818	0.181818	0.00	0.0000	0	0		
Propene	42.077	0.85714	0.14286	0.00	0.0000	0	0		
Isobutane	58.118	0.82759	0.17247	0.00	0.0000	0	0		
n-butane	58.118	0.82759	0.17247	0.00	0.0000	0	0		
Isobutene	56.102	0.85714	0.14286	0.00	0.0000	0	0		
Isopentane	72.144	0.83333	0.16667	0.00	0.0000	0	0		
n-pentane	72.144	0.83333	0.16667	0.00	0.0000	0	0		
n-hexane	86.169	0.83721	0.16279	0.00	0.0000	0	0		
H2S	34.076	0	0.05869233	0.00	0.0000	0	0		
Totals				100.00000	2817.7568	40.49744311	7.67	4.086459021	47.7010419

CALCULATED VALUES		
O2 F Factor (dry)	**9389**	DSCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
O2 F Factor (wet)	**11418**	SCF of Exhaust/MM Btu of Fuel Burned @ 0% excess air
Moisture F Factor	**2028**	SCF of Water/MM Btu of Fuel Burned @ 0% excess air
Combust. Moisture	**17.77**	volume % water in flue gas @ 0% excess air
CO2 F Factor	**1782**	DSCF of CO2/MM Btu of Fuel Burned @ 0% excess air
Carbon Dioxide	**18.98**	volume % CO2 in flue gas @ 0% O2
Predicted Fo Factor	**1.10**	EPA Method 3a Fo value
Fuel VOC % (non-C1)	**0.00%**	non-methane fuel VOC content
Fuel VOC % (non-C1,C2)	**0.00%**	non-methane non-ethane fuel VOC content

Testing by TRC - Air Measurements, Gainesville Office

Method 3-C
Analytical Results

prepared for

TRC ENVIRONMENTAL CORPORATION
6322 NW 18th Drive, Suite 170
Gainesville, FL 32653

by

Triangle Environmental Services, Inc.

We, the undersigned, certify to the best of our knowledge that all analytical data presented in this report have been checked for completeness; that the results are accurate, error-free, legible, and have been obtained in accordance with approved protocol; and that all deviations and analytical problems are summarized in the "Comments on the Analyses" page(s).

Reviewed by:

Donna Nolen-Weathington
Method 25 Supervisor

Approved by:

Wayne A. Stollings
President

Approved by:

John Y. Morimoto
QA Officer

Report
09066-25C

April 10, 2009

P.O. Box 13294 Research Triangle Park, NC 27709 (800) 367-4862

Triangle Environmental Services, Inc.
COMMENTS ON THE ANALYSES

Report #09066-25C for TRC Environmental Corporation
Project ID: 166478.0000.0000

Tanks Received: 4/1/09

Samples Analyzed: 4/2-7/09
Client Chain-of-Custody forms: 1 p

Abbreviations and Definitions:

DF: dilution factor(s)
CL: calibration limit = lowest concentration of initial calibration standard ×DF
RL: report limit = minimum detection limit (MDL) × DF
J: flag for reported concentrations between RL and CL

Both samples: Laboratory preshipment and receipt pressure and temperature readings were used for the tank pre- and post-test tank data, respectively. However, client post-test barometric pressure and temperature data were used to determine the water vapor fraction.

Sample #2: The tank for this sample was partially depressurized prior to analysis, repressurized, and analyzed. The reported final tank pressure is the original final tank pressure multiplied by the dilution factor.

TRIANGLE ENVIRONMENTAL SERVICES, INC.

METHOD 3-C TABLE OF RESULTS

Name: TRC Environmental Corporation ID#09066-25C Analyzed: 4/2-7/09

Project ID: 166478.0000.0000

	Sample Description	Concentrations (ppm) O2	N2	CH4	CO2
1	Unit 1	9080	61941	517792	396956
2	Unit 2	8846	41524	544363	415577

Triangle Environmental Services, Inc.
METHOD 3-C PROCEDURES

Report #09066-25C

CALIBRATION

Triplicate injections of a calibration gas mixture consisting of oxygen (≈2.5%), nitrogen (≈10%), carbon dioxide (≈25%), and methane (≈2%) are made immediately before and after each batch of samples. Daily response factors are calculated from the pre-batch integrated responses (average area count / concentration in ppm) and must agree within 20% of the response factors of the initial calibrations. Further, the post-batch response factors must agree within 5% of the pre-batch response factors. Both criteria must be met before the analyses are considered valid.

ANALYSIS

All samples, which include the daily calibration gas mixture and sample tanks, are analyzed in triplicate using a computer-interfaced gas chromatograph equipped with an automated gas sampling system and a thermal conductivity detector (TCD). O_2, N_2, CO, CH_4, and CO_2 are eluted from the column and pass to the TCD.

CALCULATIONS

Calculations are done in accord with USEPA Method 3-C procedures. A sample calculation for one of the samples is provided in the report.

EQUIPMENT

Tanks are at a minimum twice evacuated and filled with ambient air filtered through charcoal and are then evacuated to below 10 mm Hg and monitored for at least an hour to check that the tanks do not leak more than 1 mm Hg/hour. They are then pressurized to greater than ambient pressure with helium, analyzed to ensure < 2 ppm CH_4 and < 20 ppm CO_2, and stored for later use.

Certifications:

South Coast Air Quality Management District: ID# 94 LA 0401
New Jersey NELAP ID: NC004
Pennsylvania DEP: Registration #68-3321

TRIANGLE ENVIRONMENTAL SERVICES, INC.

METHOD 3-C SAMPLE CALCULATION

Note: All pressure values have been converted when necessary to mm Hg and all temperature values to Kelvin.

Name: TRC Environmental Corporation ID#09066-25C Analyzed: 4/2-7/09
Project ID: 166478.0000.0000

Sample # 1 Unit 1

D A T A

Tank 8T025:
Volume (cu.m) = 0.008670

	Pressure (mm Hg)	Temp.(K)
Presampling	325.0	295.15
Postsampling	513.0	300.65
Final	1943.0	300.65
Barometric	764.0	
Water Vapor	20.6	

Calibration Data:

	O2	N2	CH4	CO2
Response Factor (area units/ppmC)	28.71	31.19	25.75	37.20

Areas:

O2	23,773	23,724	23,762
N2	176,158	176,281	175,654
CH4	1,214,428	1,215,349	1,214,807
CO2	1,345,369	1,345,309	1,345,784

C A L C U L A T I O N S

Measured Concentrations (ppmC):

Cm(O2) = Area(O2) / RF(O2)
= 23773 / 28.7 = 828.0
= 23724 / 28.7 = 826.3
= 23762 / 28.7 = 827.7

Cm(N2) = Area(N2)/RF(N2)
= 176158 / 31.2 = 5647.9
= 176281 / 31.2 = 5651.8
= 175654 / 31.2 = 5631.7

Cm(CH4) = Area(CH4)/RF(CH4)
= 1214428 / 25.8 = 47162.3
= 1215349 / 25.8 = 47198.0
= 1214807 / 25.8 = 47177.0

Cm(CO2) = Area(CO2)/RF(CO2)
= 1345369 / 37.2 = 36165.8
= 1345309 / 37.2 = 36164.2
= 1345784 / 37.2 = 36177.0

Pressure-Temperature Ratio, Q(i) = P(i)/T(i):

postsampling tank: Q(1) = 513 / 300.65 = 1.706303
presampling tank: Q(2) = 325 / 295.15 = 1.101135
final tank: Q(3) = 1943 / 300.65 = 6.462664

Volume Sampled (dscm) = 0.3857 x Tank Volume x [Q(1)-Q(2)]
= 0.3857 x 8.670001E-03 x [1.7063 - 1.1011]
= 0.002024

Averages and % Relative Standard Deviations (%RSD) of Cm's are calculated. (%RSD of C = %RSD of Cm)

Moisture Correction Factor, MCF:

MCF = 1 - Water Vapor Pressure/Barometric Pressure
= 1 - 20.6/ 764.0 = 0.9730

Calculated Concentrations (ppm):

C(O2) = Q(3)/[Q(1)-Q(2)] x Cm(O2)/MCF
= 6.4627/(1.7063 - 1.1011) x 827.3/0.9730 = 9080.1

C(N2) = Q(3)/[Q(1)-Q(2)] x Cm(N2)/MCF
= 6.4627/(1.7063 - 1.1011) x 5643.8/0.9730 = 61941.2

C(CH4) = Q(3)/[Q(1)-Q(2)] x Cm(CH4)/MCF
= 6.4627/(1.7063 - 1.1011) x 47179.1/0.9730 = 517792.1

C(CO2) = Q(3)/[Q(1)-Q(2)] x Cm(CO2)/MCF
= 6.4627/(1.7063 - 1.1011) x 36169.0/0.9730 = 396956.2

Triangle Environmental Services, Inc.
METHOD 3-C SAMPLE QA/QC DATA

Report #09066-25C

DAILY ANALYZER CHECKS

Daily Calibration

Response Factor (RF) Checks

Requirement: Daily RF = Initial RF ± 20%

Triplicate injections of a mixture of O_2, N_2, CH_4, and CO_2 are made before and after each batch of samples.

Initial Calibration/Linearity

Triplicate injections of a calibration gas is made for each compound at three levels:

	Nominal Concentrations (ppm)			Initial RF 10/10/08
O_2	500	10,000	200,000	30.01
N_2	500	50,000	700,000	31.27
CH_4	500	50,000	500,000	25.50
CO_2	500	50,000	200,000	36.61

Analyzer Linearity Check 2/5/98

	$100x(1-RF/RF_{average})$	Requirement:
max. dev. O_2:	- 3.4%	± 10%
max. dev. N_2:	+ 1.5%	± 10%
max. dev. CH_4:	- 1.7%	± 10%
max. dev. CO_2:	+ 0.6%	± 10%

EQUIPMENT CHECKS

Clean Sampling Equipment Check

Tank	< 2 ppm CH_4	@ 100%
	<20 ppm CO_2	@ 100%

Sample Tank Evacuation and Leak Check

Tank evacuated to ≤ 10 mm Hg absolute pressure, monitored for ≥ 1 hour, and passed for use if no pressure change (< 1 mm Hg/hr) is noted.

Sample Tank Volumes

Tank weighed empty, filled with deionized distilled water (temperature recorded), and weighed to the nearest 2 g. Volume calculated based on density of water at that temperature and results recorded in permanent file.

Triangle Environmental Services, Inc.
CALIBRATION DATA FOR THE ANALYSES

Client: TRC Environmental Corporation ID#09066-25C

Project ID: 166478.0000.0000

7-APR-9 2: Analyzer F

Preanalysis Calibration

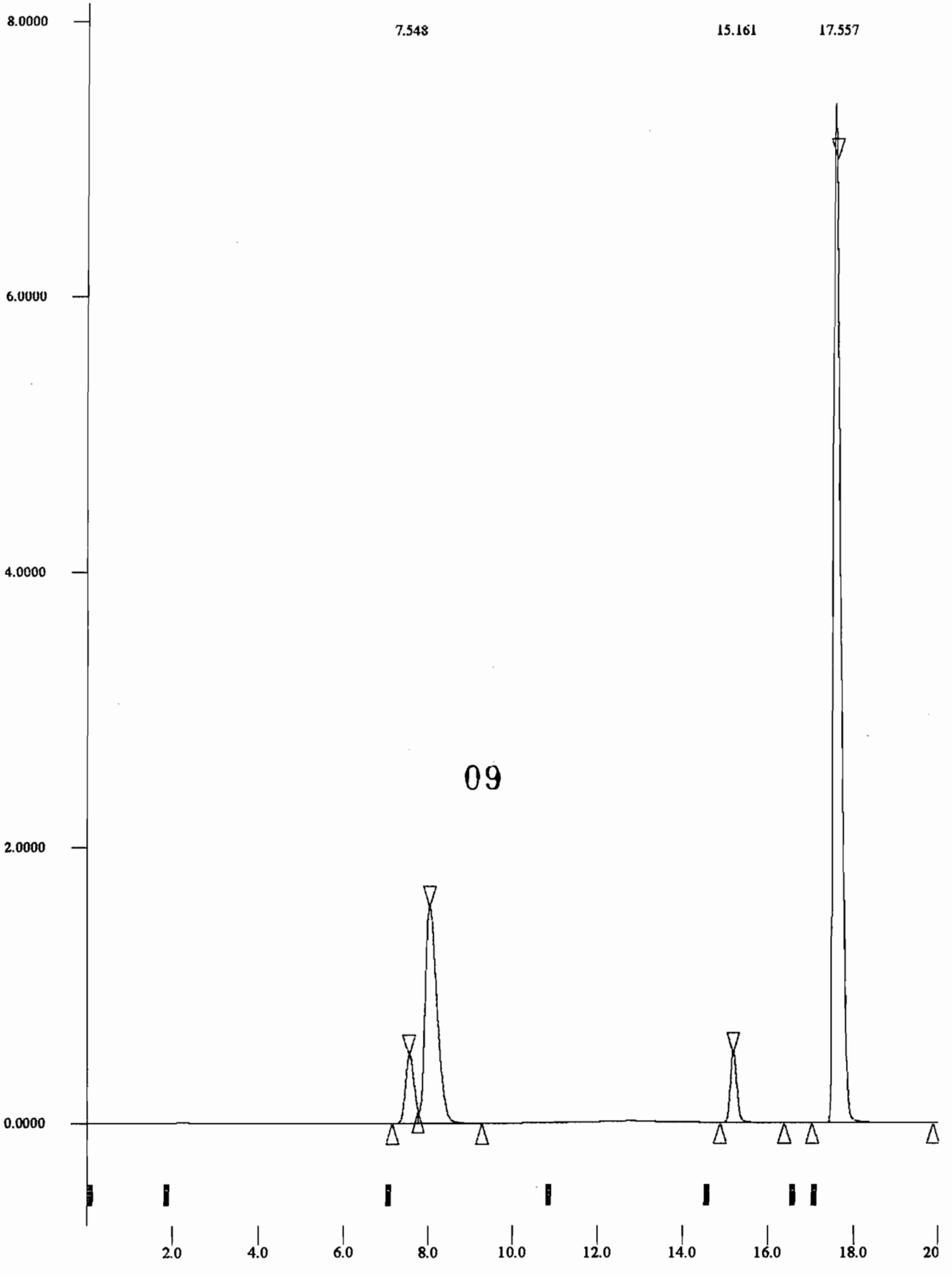
Compound	Conc.	Area(1)	Area(2)	Area(3)	Average	%RSD	RF	IRF	%Diff.
O2	24600.0	706160	707234	705170	706188	0.1%	28.71	30.01	-4.34%
N2	99500.0	3108390	3105569	3096438	3103466	0.2%	31.19	31.27	-0.25%
CH4	20500.0	529192	527667	526785	527881	0.2%	25.75	25.50	0.98%
CO2	243000.0	9037749	9045846	9037497	9040364	0.1%	37.20	36.61	1.62%

Postanalysis Calibration

Compound	Conc.	Area(1)	Area(2)	Area(3)	Average	RF(post)	RF(pre)	%Diff
O2	24600	703478	703918	703621	703672	28.60	28.71	-0.4%
N2	99500	3121874	3123161	3122154	3122396	31.38	31.19	0.6%
CH4	20500	530342	530136	529532	530003	25.85	25.75	0.4%
CO2	243000	9046390	9049763	9045557	9047236	37.23	37.20	0.1%

Sample # 2 8T018
1 8T025

Conc. = concentration in ppmC, %RSD = % relative standard deviation,
RF = response factor = Average Area/Conc., IRF = response factor from initial calibration,
%Diff. = %(RF-IRF)/IRF for preanalysis/= %(RF(post)-RF(pre)/RF(pre), C2+ = propane



Filename: C:\STAR\RECALCF\TES_F024.RUN Channel: A = A

Title :
Run File : C:\STAR\RECALCF\TES_F024.RUN
Method File : C:\STAR\CAL3C.MTH
Sample ID : 1- 3C MIX CC93314

Injection Date: 7-APR-9 2:53 PM Calculation Date: 7-APR-9 3:13 PM

Operator :
Workstation: MS-DOS_6
Instrument : Varian Star #1
Channel : A = A

Detector Type: ADCB (10 Volts)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 20.002 min

********** Star Chromatography Workstation ******* Version 4.5 **********

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: Percent

Peak No.	Peak Name	Result ()	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	O2	5.2771	7.548	-0.052	706160	BV	13.6	
2	N2	23.2290	8.024	-0.046	3108390	VB	18.4	
3	CH4	3.9547	15.161	-0.089	529192	BB	9.7	
4	CO2	67.5392	17.556	-0.044	9037749	BB	12.2	
	Totals:	100.0000		-0.231	13381491			

Total Unidentified Counts : 0 counts

Detected Peaks: 4 Rejected Peaks: 0 Identified Peaks: 4

Multiplier: 1 Divisor: 1

Baseline Offset: 21 microVolts

Noise (used): 30 microVolts - fixed value
Noise (monitored before this run): 80 microVolts

Could not format the injection information for this run.
Install the driver for the module at address 17 (type 8) to format this data.

Revision Log:

7-APR-9 3:13 PM: Calculated results from channel A using method:
'C:\STAR\CAL3C.MTH'

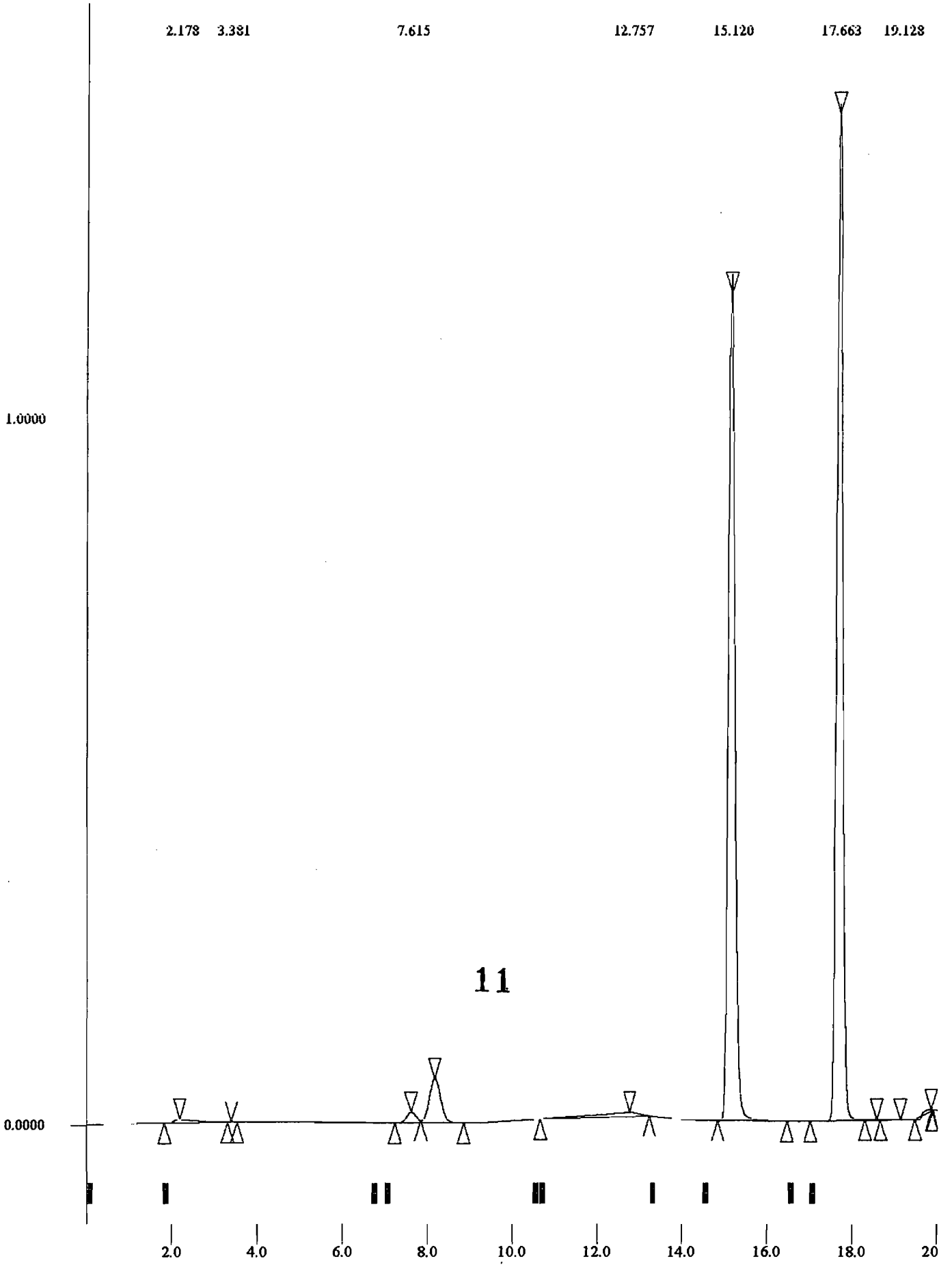
Error Log:

Could not format the error log for the module at address 17 (type 8).
Install the appropriate module driver to format this data.

ADC Board:

Original Notes:

****



Filename: C:\STAR\RECALCF\IES_F027.RUN Channel: A - A

Print Date: Wed Apr 08 08:44:20 2009 Page 1 of 1

Title :
Run File : C:\STAR\RECALCF\TES_F027.RUN
Method File : C:\STAR\3C.MTH
Sample ID : 11- tank 8T018

Injection Date: 7-APR-9 4:15 PM Calculation Date: 7-APR-9 4:36 PM

Operator :
Workstation: MS-DOS_6
Instrument : Varian Star #1
Channel : A = A

Detector Type: ADCB (10 Volts)
Bus Address : 16
Sample Rate : 10.00 Hz
Run Time : 20.002 min

********** Star Chromatography Workstation ******* Version 4.5 **********

Run Mode : Analysis
Peak Measurement: Peak Area
Calculation Type: Percent

Peak No.	Peak Name	Result ()	Ret. Time (min)	Time Offset (min)	Area (counts)	Sep. Code	Width 1/2 (sec)	Status Codes
1	O2	0.8078	7.615	0.015	23302	BV	14.7	
2	N2	4.0108	8.155	0.085	115698	VB	17.0	
3	CH4	44.2652	15.120	-0.130	1276886	BB	10.0	
4	CO2	48.7746	17.663	0.063	1406966	BP	9.2	
	Totals:	97.8584		0.033	2822852			

Total Unidentified Counts : 61774 counts

Detected Peaks: 10 Rejected Peaks: 2 Identified Peaks: 4

Multiplier: 1 Divisor: 1

Baseline Offset: 100 microVolts

Noise (used): 110 microVolts - monitored before this run

Could not format the injection information for this run.
Install the driver for the module at address 17 (type 8) to format this data.

Error Log:

Could not format the error log for the module at address 17 (type 8).
Install the appropriate module driver to format this data.

ADC Board:

****

TRIANGLE ENVIRONMENTAL SERVICES, INC.

METHOD 3-C DATA REPORT

Name: TRC Environmental Corporation ID#09066-25C Analyzed: 4/2-7/09

Project ID: 166478.0000.0000

Sample # 1 Unit 1

TANK 8T025:
Volume (cu.m) = 0.008670

	Pressure (mm Hg)	Temperature (K)	P/T
Presampling	325.0	295.15	1.101
Postsampling	513.0	300.65	1.706
Lab receipt	513.0	300.65	1.706
Final	1943.0	300.65	6.463
Barometric	764.0		
Water Vapor	20.6		

Field and laboratory postsampling pressure-temperature comparison:

Laboratory receipt P/T / Field postsampling P/T = 1.000

Volume Sampled (dscm) = 0.002024

Calibration Data:

	O2	N2	CH4	CO2
Response Factor (area units/ppmC)	28.71	31.19	25.75	37.20
Report Limit [RL] (ppm)	374	801	161	267
Calibration Limit [CL] (ppm)	5361	5361	5244	5372

Areas:

O2	23,773	23,724	23,762
N2	176,158	176,281	175,654
CH4	1,214,428	1,215,349	1,214,807
CO2	1,345,369	1,345,309	1,345,784

Concentrations:

	ppm			
	Amount	±	SD	%RSD
O2	9080	±	10	0.1
N2	61941	±	117	0.2
CH4	517792	±	197	0.0
CO2	396956	±	76	0.0

TRIANGLE ENVIRONMENTAL SERVICES, INC.

METHOD 3-C DATA REPORT

Name: TRC Environmental Corporation ID#09066-25C Analyzed: 4/2-7/09

Project ID: 166478.0000.0000

Sample # 2 Unit 2

TANK 8T018:
Volume (cu.m) = 0.008680

	Pressure (mm Hg)	Temperature (K)	P/T
Presampling	325.0	295.15	1.101
Postsampling	619.0	300.65	2.059
Lab receipt	619.0	300.65	2.059
Final	3047.0	300.65	10.135
Barometric	761.7		
Water Vapor	25.8		

Field and laboratory postsampling pressure-temperature comparison:

Laboratory receipt P/T / Field postsampling P/T = 1.000

Volume Sampled (dscm) = 0.003206

Calibration Data:

	O2	N2	CH4	CO2
Response Factor (area units/ppmC)	28.71	31.19	25.75	37.20
Report Limit [RL] (ppm)	371	794	159	265
Calibration Limit [CL] (ppm)	5313	5313	5196	5323

Areas:

O2	23,302	23,211	23,051
N2	115,698	118,773	120,272
CH4	1,276,886	1,280,630	1,281,864
CO2	1,406,966	1,413,815	1,413,596

Concentrations:

	ppm			
	Amount	±	SD	%RSD
O2	8846	±	48	0.5
N2	41524	±	819	2.0
CH4	544363	±	1103	0.2
CO2	415577	±	1146	0.3

Chain of Custody

Triangle Environmental Services, Inc.
LABORATORY SAMPLE INFORMATION AND CHAIN-OF-CUSTODY FORM

Company Name: TRC		Project/Client ID: 166478.0000.0000	Date: 3/30/09
Contact Person: Leonard Brenner	Phone #: 352-378-0332	Process Type: landfill Gas	
Latest Date Complete Set of Samples Expected at Lab: 4-1-09	Note: Normal Turnaround is 15 working days after receipt of complete set of samples	Results Due Date: Normal Report Package Due Date: Normal	Extra charge will apply for rush results

Send Report to: (Street address required for Fed Ex shipment of report)	Person: Leonard Brenner	Send Invoice to: (if different from report address)	Person: Karen Byrd
	Company: TRC		Company: TRC
	Address: 6322 NW 18th Drive, Suite 170		Address: 5540 Centerview Drive,
	Gainesville, Florida 32653		Raleigh, NC 27606
	Phone # 352-378-0332 FAX # 352-378-0354		PO# G50019

✓ all applicable boxes

Analysis

US EPA: ☐ Method 25 ☒ Method 3-C ☐ Method 25-C (NMOC as C [default]) ☐ Method 10-B SCAQMD: ☐ Method 25.1 ☐ Method 25.2

# of Tank & Trap Samples:	# of Tank-Only Samples: 2	# of Trap-Only Samples:	# of Bag Samples:
☐ Audit with Delay (*extra charge*)	☐ Rush Turnaround (*extra charge*)	☐ High Concentrations Possible ☐ Call if Concentrations High	☐ Dilute High Concentrations (*extra charge*)

Special Instructions: Please email results to lbrenner@trcsolutions.com

Tanks for Analysis (Bags) (List IDs): 8T025, 8T018

Traps for Analysis (List IDs): _____

☒ TES Equipment	☐ Client Equipment	☐ Client Equipment to be Reconditioned
Tanks, Unused for Reconditioning (List IDs): _____		Traps, Unused for Reconditioning (List IDs): _____

Relinquished by: Roger Paul Oslin		Date: 3/30/09	Time: 12:00pm	To: (Carrier) Fed Ex			
Tanks received at TES by:	Condition: good	Date: 4/1/09	Time: 1:30	Traps received at TES by:	Condition:	Date:	Time:

(919) 361-2890 6661 S. Alston Avenue Durham, NC 27713 FAX (919) 361-3474

APPENDIX D:
QUALITY ASSURANCE ACTIVITIES

Quality Assurance Activities
Calibration Error, Bias, and Drift Checks

Unit 1

Linearity Check	NO_X-A	CO-A	O_2-A	CO_2-A	THC-A	THC-B
Analyzer Range (ppmv), O2 & CO2 in % vol	454.00	2389.0	21.99	14.54	2000.0	2000.0
Low Level Certified Value (ppm or % vol)	na	na	na	na	562.0	562.0
Mid Level Certified Value (ppm or % vol)	253.00	1062.00	11.97	8.62	949.0	949.0
High Level Certified Value (ppm or % vol)	454.00	2389.00	21.99	14.54	1750.0	1750.0
Zero Target (% Span)	0.0	0.0	0.0	0.0	0.0	0.0
Low Level Target (% Span)	na	na	na	na	28.1	28.1
Mid Level Target (% Span)	55.7	44.5	54.4	59.3	47.5	47.5
High Level Target (% Span)	100.0	100.0	100.0	100.0	87.5	87.5
Zero Observed (% Span)	0.0	0.0	0.0	0.0	-0.5	0.0
Low Level Observed (% Span)	na	na	na	na	27.9	28.9
Mid Level Observed (% Span)	55.4	44.7	54.6	58.9	47.6	48.3
High Level Observed (% Span)	100.0	100.2	100.0	100.0	87.6	87.5
Zero Observed (ppm or % vol)	0.00	0.00	0.00	0.00	-9.00	0.00
Low Level Observed (ppm or % vol)	na	na	na	na	558.03	577.33
Mid Level Observed (ppm or % vol)	251.49	1067.09	12.00	8.56	951.05	965.00
High Level Observed (ppm or % vol)	454.10	2394.31	22.00	14.54	1752.10	1750.33
% Difference From Zero to Target	0.0	0.0	0.0	0.0	-0.5	0.0
% Difference From Low to Target	na	na	na	na	-0.7	2.7
% Difference From Mid to Target	0.3	-0.2	-0.1	0.4	0.2	1.7
% Difference From High to Target	0.0	-0.2	0.0	0.0	0.1	0.0
EPA Allowable % Difference from Target	±2% Span	±2% Span	±2% Span	±2% Span	±5% Cal Gas	±5% Cal Gas
Test Run U1-C-1	NO_X-A	CO-A	O_2-A	CO_2-A	THC-A	THC-B
Analyzer Range (ppm), O2 & CO2 in %	454	2389	21.99	14.54	2000	2000
Calibration Gas Certified Value (ppm or %)	253	1062	11.97	14.54	562	562
Target Calibration Gas (Span %)	55.7	44.5	54.4	100.0	28.1	28.1
Actual Zero Gas from Direct (Span %)	0.0	0.0	0.0	0.0	-0.5	0.0
Actual Calibration Gas from Direct (Span %)	55.4	44.7	54.6	100.0	27.9	28.9
Initial Readings						
Zero Gas (Span %)	0.0	0.0	0.2	0.4	-0.5	0.0
Calibration Gas (Span %)	54.1	45.4	54.3	99.9	27.9	28.9
Zero Gas (ppmv)	0.00	0.00	0.05	0.06	-9.00	0.00
Calibration Gas (ppmv)	245.45	1085.67	11.95	14.52	558.03	577.33
Final Readings						
Zero Gas (Span %)	1.8	0.0	0.2	0.4	-0.5	-0.1
Calibration Gas (Span %)	55.8	45.4	54.6	99.6	28.1	28.7
Zero Gas (ppmv)	8.06	0.00	0.05	0.06	-9.00	-1.67
Calibration Gas (ppmv)	253.51	1085.67	12.00	14.48	561.03	574.67
Bias and Drift Calculations						
Zero Bias (% Span) (Run-Direct Cal) ≤5%	1.8	0.0	0.2	0.4	0.0	-0.1
Calibration Bias (% Span) ≤5%	0.4	0.8	0.0	-0.4	0.2	-0.1
Zero Drift (Span %) (Run-Run) ≤3%	-1.8	0.0	0.0	0.0	0.0	0.1
Calibration Drift (Span %) ≤3%	-1.8	0.0	-0.2	0.3	-0.2	0.1
Run Results						
Raw Results (Span %)	43.9	44.1	34.0	83.8	23.4	25.0
Raw Results (ppmv or % vol)	199.16	1054.37	7.48	12.19	467.23	500.86
Corrected Results (ppmv or % vol)	201.1	1031	7.46	12.21	470.8	488.8

Quality Assurance Activities
Calibration Error, Bias, and Drift Checks

Unit 1

Test Run U1-C-2	NO_X-A	CO-A	O_2-A	CO_2-A	THC-A	THC-B
Analyzer Range (ppm), O2 & CO2 in %	454	2389	21.99	14.54	2000	2000
Calibration Gas Certified Value (ppm or %)	253	1062	11.97	14.54	562	562
Target Calibration Gas (Span %)	55.7	44.5	54.4	100.0	28.1	28.1
Actual Zero Gas from Direct (Span %)	0.0	0.0	0.0	0.0	-0.5	0.0
Actual Calibration Gas from Direct (Span %)	55.4	44.7	54.6	100.0	27.9	28.9
Initial Readings						
Zero Gas (Span %)	1.8	0.0	0.2	0.4	-0.5	-0.1
Calibration Gas (Span %)	55.8	45.4	54.6	99.6	28.1	28.7
Zero Gas (ppmv)	8.06	0.00	0.05	0.06	-9.00	-1.67
Calibration Gas (ppmv)	253.51	1085.67	12.00	14.48	561.03	574.67
Final Readings						
Zero Gas (Span %)	1.4	0.0	0.3	0.7	-0.5	-0.1
Calibration Gas (Span %)	54.8	46.8	54.8	99.2	27.9	29.9
Zero Gas (ppmv)	6.55	0.00	0.07	0.10	-9.00	-2.33
Calibration Gas (ppmv)	248.97	1117.52	12.05	14.42	558.03	598.33
Bias and Drift Calculations						
Zero Bias (% Span) (Run-Direct Cal) ≤5%	1.4	0.0	0.3	0.7	0.0	-0.1
Calibration Bias (% Span) ≤5%	-0.6	2.1	0.2	-0.8	0.0	1.1
Zero Drift (Span %) (Run-Run) ≤3%	0.3	0.0	-0.1	-0.3	0.0	0.0
Calibration Drift (Span %) ≤3%	1.0	-1.3	-0.2	0.4	0.2	-1.2
Run Results						
Raw Results (Span %)	42.9	44.1	34.2	83.5	21.4	23.6
Raw Results (ppmv or % vol)	194.71	1053.88	7.53	12.14	428.95	472.41
Corrected Results (ppmv or % vol)	194.4	1016	7.47	12.20	432.9	453.0

Test Run U1-C-3	NO_X-A	CO-A	O_2-A	CO_2-A	THC-A	THC-B
Analyzer Range (ppm), O2 & CO2 in %	454	2389	21.99	14.54	2000	2000
Calibration Gas Certified Value (ppm or %)	253	1062	11.97	14.54	562	562
Target Calibration Gas (Span %)	55.7	44.5	54.4	100.0	28.1	28.1
Actual Zero Gas from Direct (Span %)	0.0	0.0	0.0	0.0	-0.5	0.0
Actual Calibration Gas from Direct (Span %)	55.4	44.7	54.6	100.0	27.9	28.9
Initial Readings						
Zero Gas (Span %)	1.4	0.0	0.3	0.7	-0.5	-0.1
Calibration Gas (Span %)	54.8	46.8	54.8	99.2	27.9	29.9
Zero Gas (ppmv)	6.55	0.00	0.07	0.10	-9.00	-2.33
Calibration Gas (ppmv)	248.97	1117.52	12.05	14.42	558.03	598.33
Final Readings						
Zero Gas (Span %)	1.3	0.0	0.3	0.7	-0.5	-0.1
Calibration Gas (Span %)	54.3	47.2	54.8	99.2	28.1	29.6
Zero Gas (ppmv)	6.05	0.00	0.07	0.10	-9.00	-2.33
Calibration Gas (ppmv)	246.45	1128.14	12.05	14.42	561.03	592.67
Bias and Drift Calculations						
Zero Bias (% Span) (Run-Direct Cal) ≤5%	1.3	0.0	0.3	0.7	0.0	-0.1
Calibration Bias (% Span) ≤5%	-1.1	2.6	0.2	-0.8	0.2	0.8
Zero Drift (Span %) (Run-Run) ≤3%	0.1	0.0	0.0	0.0	0.0	0.0
Calibration Drift (Span %) ≤3%	0.6	-0.4	0.0	0.0	-0.2	0.3
Run Results						
Raw Results (Span %)	42.8	44.4	34.7	82.8	21.4	23.4
Raw Results (ppmv or % vol)	194.33	1059.81	7.63	12.04	427.78	468.69
Corrected Results (ppmv or % vol)	197.1	1002	7.55	12.12	431.8	442.8

Linearity Check	NO_X-A	CO-A	O_2-A	CO_2-A	THC-A	THC-B
Analyzer Range (ppmv), O2 & CO2 in % vol	454.00	2389.0	21.99	14.54	2000.0	2000.0
Low Level Certified Value (ppm or % vol)	na	na	na	na	562.0	562.0
Mid Level Certified Value (ppm or % vol)	253.00	1062.00	11.97	8.62	949.0	949.0
High Level Certified Value (ppm or % vol)	454.00	2389.00	21.99	14.54	1750.0	1750.0
Zero Target (% Span)	0.0	0.0	0.0	0.0	0.0	0.0
Low Level Target (% Span)	na	na	na	na	28.1	28.1
Mid Level Target (% Span)	55.7	44.5	54.4	59.3	47.5	47.5
High Level Target (% Span)	100.0	100.0	100.0	100.0	87.5	87.5
Zero Observed (% Span)	0.0	0.0	0.0	0.0	-0.5	0.0
Low Level Observed (% Span)	na	na	na	na	27.9	28.9
Mid Level Observed (% Span)	55.4	44.7	54.6	58.9	47.6	48.3
High Level Observed (% Span)	100.0	100.2	100.0	100.0	87.6	87.5
Zero Observed (ppm or % vol)	0.00	0.00	0.00	0.00	-9.00	0.00
Low Level Observed (ppm or % vol)	na	na	na	na	558.03	577.33
Mid Level Observed (ppm or % vol)	251.49	1067.09	12.00	8.56	951.05	965.00
High Level Observed (ppm or % vol)	454.10	2394.31	22.00	14.54	1752.10	1750.33
% Difference From Zero to Target	0.0	0.0	0.0	0.0	-0.5	0.0
% Difference From Low to Target	na	na	na	na	-0.7	2.7
% Difference From Mid to Target	0.3	-0.2	-0.1	0.4	0.2	1.7
% Difference From High to Target	0.0	-0.2	0.0	0.0	0.1	0.0
EPA Allowable % Difference from Target	±2% Span	±2% Span	±2% Span	±2% Span	±5% Cal Gas	±5% Cal Gas
Test Run U2-C-1	NO_X-A	CO-A	O_2-A	CO_2-A	THC-A	THC-B
Analyzer Range (ppm), O2 & CO2 in %	454	2389	21.99	14.54	2000	2000
Calibration Gas Certified Value (ppm or %)	253	1062	11.97	14.54	562	562
Target Calibration Gas (Span %)	55.7	44.5	54.4	100.0	28.1	28.1
Actual Zero Gas from Direct (Span %)	0.0	0.0	0.0	0.0	-0.5	0.0
Actual Calibration Gas from Direct (Span %)	55.4	44.7	54.6	100.0	27.9	28.9
Initial Readings						
Zero Gas (Span %)	1.3	0.0	0.3	0.7	-0.5	-0.1
Calibration Gas (Span %)	54.3	47.2	54.8	99.2	28.1	29.6
Zero Gas (ppmv)	6.05	0.00	0.07	0.10	-9.00	-2.33
Calibration Gas (ppmv)	246.45	1128.14	12.05	14.42	561.03	592.67
Final Readings						
Zero Gas (Span %)	1.6	0.0	0.3	0.6	-0.5	-0.1
Calibration Gas (Span %)	53.6	48.0	54.6	98.9	28.2	30.2
Zero Gas (ppmv)	7.06	0.00	0.07	0.08	-9.00	-2.67
Calibration Gas (ppmv)	243.43	1146.72	12.00	14.38	564.03	604.00
Bias and Drift Calculations						
Zero Bias (% Span) (Run-Direct Cal) ≤5%	1.6	0.0	0.3	0.6	0.0	-0.1
Calibration Bias (% Span) ≤5%	-1.8	3.3	0.0	-1.1	0.3	1.3
Zero Drift (Span %) (Run-Run) ≤3%	-0.2	0.0	0.0	0.1	0.0	0.0
Calibration Drift (Span %) ≤3%	0.7	-0.8	0.2	0.3	-0.1	-0.6
Run Results						
Raw Results (Span %)	43.6	43.3	35.2	81.8	26.3	30.1
Raw Results (ppmv or % vol)	198.12	1033.72	7.75	11.90	526.92	601.34
Corrected Results (ppmv or % vol)	203.3	965.2	7.69	12.00	527.0	564.8

Quality Assurance Activities
Calibration Error, Bias, and Drift Checks

Unit 2

Test Run U2-C-2	NO_X-A	CO-A	O_2-A	CO_2-A	THC-A	THC-B
Analyzer Range (ppm), O2 & CO2 in %	454	2389	21.99	14.54	2000	2000
Calibration Gas Certified Value (ppm or %)	253	1062	11.97	14.54	562	562
Target Calibration Gas (Span %)	55.7	44.5	54.4	100.0	28.1	28.1
Actual Zero Gas from Direct (Span %)	0.0	0.0	0.0	0.0	-0.5	0.0
Actual Calibration Gas from Direct (Span %)	55.4	44.7	54.6	100.0	27.9	28.9
Initial Readings						
Zero Gas (Span %)	1.6	0.0	0.3	0.6	-0.5	-0.1
Calibration Gas (Span %)	53.6	48.0	54.6	98.9	28.2	30.2
Zero Gas (ppmv)	7.06	0.00	0.07	0.08	-9.00	-2.67
Calibration Gas (ppmv)	243.43	1146.72	12.00	14.38	564.03	604.00
Final Readings						
Zero Gas (Span %)	1.6	0.0	0.3	0.6	-0.5	-0.1
Calibration Gas (Span %)	53.4	48.1	54.6	98.5	28.4	31.8
Zero Gas (ppmv)	7.06	0.00	0.07	0.08	-9.00	-2.33
Calibration Gas (ppmv)	242.42	1149.37	12.00	14.32	567.03	636.67
Bias and Drift Calculations						
Zero Bias (% Span) (Run-Direct Cal) ≤5%	1.6	0.0	0.3	0.6	0.0	-0.1
Calibration Bias (% Span) ≤5%	-2.0	3.4	0.0	-1.5	0.5	3.0
Zero Drift (Span %) (Run-Run) ≤3%	0.0	0.0	0.0	0.0	0.0	0.0
Calibration Drift (Span %) ≤3%	0.2	-0.1	0.0	0.4	-0.2	-1.6
Run Results						
Raw Results (Span %)	43.8	43.0	35.4	81.4	26.7	32.0
Raw Results (ppmv or % vol)	198.91	1026.81	7.78	11.84	534.58	639.78
Corrected Results (ppmv or % vol)	205.8	949.9	7.74	11.98	531.7	579.5

Test Run U2-C-3	NO_X-A	CO-A	O_2-A	CO_2-A	THC-A	THC-B
Analyzer Range (ppm), O2 & CO2 in %	454	2389	21.99	14.54	2000	2000
Calibration Gas Certified Value (ppm or %)	253	1062	11.97	14.54	562	562
Target Calibration Gas (Span %)	55.7	44.5	54.4	100.0	28.1	28.1
Actual Zero Gas from Direct (Span %)	0.0	0.0	0.0	0.0	-0.5	0.0
Actual Calibration Gas from Direct (Span %)	55.4	44.7	54.6	100.0	27.9	28.9
Initial Readings						
Zero Gas (Span %)	1.6	0.0	0.3	0.6	-0.5	-0.1
Calibration Gas (Span %)	53.4	48.1	54.6	98.5	28.4	31.8
Zero Gas (ppmv)	7.06	0.00	0.07	0.08	-9.00	-2.33
Calibration Gas (ppmv)	242.42	1149.37	12.00	14.32	567.03	636.67
Final Readings						
Zero Gas (Span %)	1.1	0.0	0.2	0.6	-0.5	-0.1
Calibration Gas (Span %)	53.8	47.9	54.6	98.9	28.5	31.1
Zero Gas (ppmv)	5.04	0.00	0.05	0.08	-9.00	-2.33
Calibration Gas (ppmv)	244.44	1144.07	12.00	14.38	570.03	622.00
Bias and Drift Calculations						
Zero Bias (% Span) (Run-Direct Cal) ≤5%	1.1	0.0	0.2	0.6	0.0	-0.1
Calibration Bias (% Span) ≤5%	-1.6	3.2	0.0	-1.1	0.6	2.2
Zero Drift (Span %) (Run-Run) ≤3%	0.4	0.0	0.1	0.0	0.0	0.0
Calibration Drift (Span %) ≤3%	-0.4	0.2	0.0	-0.4	-0.1	0.7
Run Results						
Raw Results (Span %)	42.7	42.9	35.4	81.3	26.5	31.9
Raw Results (ppmv or % vol)	193.66	1024.56	7.79	11.82	530.77	638.17
Corrected Results (ppmv or % vol)	200.0	948.9	7.75	11.96	525.3	569.9

G2 Energy - MCMCC Baseline Landfill, Unit 1, Logged QA Calibration Records

Run U1-C-1 3/25/2009 9:33:01 AM 10:33:01 AM

Initial Linearity Test	Zero	Low	Mid	Span	L-Lin	M-Lin	S-Lin
NOx-A (ppmv)	0	0	454.1	251.49	0	-0.02	0.33
CO-A (ppmv)	0	0	2394.31	1067.09	0	-0.22	-0.21
O2-A (% vol)	0	0	22	12	0	-0.05	-0.14
CO2-A (% vol)	0	0	8.56	14.54	0	0.4	0
THC-A (ppmv)	-9	951.05	1752.1	558.03	0.22	0.12	-0.71
THC-B (ppmv)	0	965	1750.33	577.33	1.69	0.02	2.73

Initial and Final Bias and Drift	I-Zero	I-Span	F-Zero	F-Span	Z-Bias	S-Bias	Z-Drift	S-Drift
NOx-A (ppmv)	0	245.45	8.06	253.51	1.78	0.44	-1.78	-1.78
CO-A (ppmv)	0	1085.67	0	1085.67	0	0.78	0	0
O2-A (% vol)	0.05	11.95	0.05	12	0.23	0	0	-0.23
CO2-A (% vol)	0.06	14.52	0.06	14.48	0.4	-0.4	0	0.27
THC-A (ppmv)	-9	558.03	-9	561.03	0	0.17	0	-0.17
THC-B (ppmv)	0	577.33	-1.67	574.67	-0.1	-0.15	0.1	0.15

Run Results and Cal Gases Used	Raw	Corrected	Ranges	Low Gas	Mid Gas	Span Gas
NOx-A (ppmv)	199.16	201.1	454	0	454	253
CO-A (ppmv)	1054.37	1031	2389	0	2389	1062
O2-A (% vol)	7.48	7.46	21.99	0	21.99	11.97
CO2-A (% vol)	12.19	12.21	14.54	0	8.62	14.54
THC-A (ppmv)	467.23	470.8	2000	949	1750	562
THC-B (ppmv)	500.86	488.8	2000	949	1750	562

G2 Energy - MCMCC Baseline Landfill, Unit 1, Logged QA Calibration Records

Run U1-C-2 3/25/2009 10:56:00 AM 11:56:00 AM

Initial Linearity Test	Zero	Low	Mid	Span	L-Lin	M-Lin	S-Lin
NOx-A (ppmv)	0	0	454.1	251.49	0	-0.02	0.33
CO-A (ppmv)	0	0	2394.31	1067.09	0	-0.22	-0.21
O2-A (% vol)	0	0	22	12	0	-0.05	-0.14
CO2-A (% vol)	0	0	8.56	14.54	0	0.4	0
THC-A (ppmv)	-9	951.05	1752.1	558.03	0.22	0.12	-0.71
THC-B (ppmv)	0	965	1750.33	577.33	1.69	0.02	2.73

Initial and Final Bias and Drift	I-Zero	I-Span	F-Zero	F-Span	Z-Bias	S-Bias	Z-Drift	S-Drift
NOx-A (ppmv)	8.06	253.51	6.55	248.97	1.44	-0.56	0.33	1
CO-A (ppmv)	0	1085.67	0	1117.52	0	2.11	0	-1.33
O2-A (% vol)	0.05	12	0.07	12.05	0.34	0.23	-0.11	-0.23
CO2-A (% vol)	0.06	14.48	0.1	14.42	0.67	-0.8	-0.27	0.4
THC-A (ppmv)	-9	561.03	-9	558.03	0	0	0	0.17
THC-B (ppmv)	-1.67	574.67	-2.33	598.33	-0.13	1.2	0.04	-1.35

Run Results and Cal Gases Used	Raw	Corrected	Ranges	Low Gas	Mid Gas	Span Gas
NOx-A (ppmv)	194.71	194.4	454	0	454	253
CO-A (ppmv)	1053.88	1016	2389	0	2389	1062
O2-A (% vol)	7.53	7.47	21.99	0	21.99	11.97
CO2-A (% vol)	12.14	12.20	14.54	0	8.62	14.54
THC-A (ppmv)	428.95	432.9	2000	949	1750	562
THC-B (ppmv)	472.41	453.0	2000	949	1750	562

G2 Energy - MCMCC Baseline Landfill, Unit 1, Logged QA Calibration Records

Run U1-C-3 3/25/2009 12:36:01 PM 1:36:01 PM

Initial Linearity Test	Zero	Low	Mid	Span	L-Lin	M-Lin	S-Lin
NOx-A (ppmv)	0	0	454.1	251.49	0	-0.02	0.33
CO-A (ppmv)	0	0	2394.31	1067.09	0	-0.22	-0.21
O2-A (% vol)	0	0	22	12	0	-0.05	-0.14
CO2-A (% vol)	0	0	8.56	14.54	0	0.4	0
THC-A (ppmv)	-9	951.05	1752.1	558.03	0.22	0.12	-0.71
THC-B (ppmv)	0	965	1750.33	577.33	1.69	0.02	2.73

Initial and Final Bias and Drift	I-Zero	I-Span	F-Zero	F-Span	Z-Bias	S-Bias	Z-Drift	S-Drift
NOx-A (ppmv)	6.55	248.97	6.05	246.45	1.33	-1.11	0.11	0.56
CO-A (ppmv)	0	1117.52	0	1128.14	0	2.56	0	-0.44
O2-A (% vol)	0.07	12.05	0.07	12.05	0.34	0.23	0	0
CO2-A (% vol)	0.1	14.42	0.1	14.42	0.67	-0.8	0	0
THC-A (ppmv)	-9	558.03	-9	561.03	0	0.17	0	-0.17
THC-B (ppmv)	-2.33	598.33	-2.33	592.67	-0.13	0.88	0	0.32

Run Results and Cal Gases Used	Raw	Corrected	Ranges	Low Gas	Mid Gas	Span Gas
NOx-A (ppmv)	194.33	197.1	454	0	454	253
CO-A (ppmv)	1059.81	1002	2389	0	2389	1062
O2-A (% vol)	7.63	7.55	21.99	0	21.99	11.97
CO2-A (% vol)	12.04	12.12	14.54	0	8.62	14.54
THC-A (ppmv)	427.78	431.8	2000	949	1750	562
THC-B (ppmv)	468.69	442.8	2000	949	1750	562

G2 Energy - MCBCC Baseline Landfill, Unit 2, Logged QA Calibration Records

Run U2-C-1 3/25/2009 2:17:01 PM 3:17:01 PM

Initial Linearity Test	Zero	Low	Mid	Span	L-Lin	M-Lin	S-Lin
NOx-A (ppmv)	0	0	454.1	251.49	0	-0.02	0.33
CO-A (ppmv)	0	0	2394.31	1067.09	0	-0.22	-0.21
O2-A (% vol)	0	0	22	12	0	-0.05	-0.14
CO2-A (% vol)	0	0	8.56	14.54	0	0.4	0
THC-A (ppmv)	-9	951.05	1752.1	558.03	0.2	0.1	-0.7
THC-B (ppmv)	0	965	1750.33	577.33	1.7	0.0	2.7

Initial and Final Bias and Drift	I-Zero	I-Span	F-Zero	F-Span	Z-Bias	S-Bias	Z-Drift	S-Drift
NOx-A (ppmv)	6.05	246.45	7.06	243.43	1.55	-1.78	-0.22	0.67
CO-A (ppmv)	0	1128.14	0	1146.72	0	3.33	0	-0.78
O2-A (% vol)	0.07	12.05	0.07	12	0.34	0	0	0.23
CO2-A (% vol)	0.1	14.42	0.08	14.38	0.53	-1.07	0.13	0.27
THC-A (ppmv)	-9	561.03	-9	564.03	0	0.3	0	-0.15
THC-B (ppmv)	-2.33	592.67	-2.67	604	-0.13	1.33	0.02	-0.57

Run Results and Cal Gases Used	Raw	Corrected	Ranges	Low Gas	Mid Gas	Span Gas
NOx-A (ppmv)	198.12	203.3	454	0	454	253
CO-A (ppmv)	1033.72	965.2	2389	0	2389	1062
O2-A (% vol)	7.75	7.69	21.99	0	21.99	11.97
CO2-A (% vol)	11.9	12.00	14.54	0	8.62	14.54
THC-A (ppmv)	526.92	527.0	2000	949	1750	562
THC-B (ppmv)	601.34	564.8	2000	949	1750	562

G2 Energy - MCBCC Baseline Landfill, Unit 2, Logged QA Calibration Records

Run U2-C-2 3/25/2009 4:10:15 PM 5:10:15 PM

Initial Linearity Test	Zero	Low	Mid	Span	L-Lin	M-Lin	S-Lin
NOx-A (ppmv)	0	0	454.1	251.49	0	-0.02	0.33
CO-A (ppmv)	0	0	2394.31	1067.09	0	-0.22	-0.21
O2-A (% vol)	0	0	22	12	0	-0.05	-0.14
CO2-A (% vol)	0	0	8.56	14.54	0	0.4	0
THC-A (ppmv)	-9	951.05	1752.1	558.03	0.2	0.1	-0.7
THC-B (ppmv)	0	965	1750.33	577.33	1.7	0.0	2.7

Initial and Final Bias and Drift	I-Zero	I-Span	F-Zero	F-Span	Z-Bias	S-Bias	Z-Drift	S-Drift
NOx-A (ppmv)	7.06	243.43	7.06	242.42	1.55	-2	0	0.22
CO-A (ppmv)	0	1146.72	0	1149.37	0	3.44	0	-0.11
O2-A (% vol)	0.07	12	0.07	12	0.34	0	0	0
CO2-A (% vol)	0.08	14.38	0.08	14.32	0.53	-1.47	0	0.4
THC-A (ppmv)	-9	564.03	-9	567.03	0	0.45	0	-0.15
THC-B (ppmv)	-2.67	604	-2.33	636.67	-0.12	2.97	-0.02	-1.63

Run Results and Cal Gases Used	Raw	Corrected	Ranges	Low Gas	Mid Gas	Span Gas
NOx-A (ppmv)	198.91	205.8	454	0	454	253
CO-A (ppmv)	1026.81	949.9	2389	0	2389	1062
O2-A (% vol)	7.78	7.74	21.99	0	21.99	11.97
CO2-A (% vol)	11.84	11.98	14.54	0	8.62	14.54
THC-A (ppmv)	534.58	531.7	2000	949	1750	562
THC-B (ppmv)	639.78	579.5	2000	949	1750	562

G2 Energy - MCBCC Baseline Landfill, Unit 2, Logged QA Calibration Records

Run U2-C-3 3/25/2009 5:27:02 PM 6:27:02 PM

Initial Linearity Test	Zero	Low	Mid	Span	L-Lin	M-Lin	S-Lin
NOx-A (ppmv)	0	0	454.1	251.49	0	-0.02	0.33
CO-A (ppmv)	0	0	2394.31	1067.09	0	-0.22	-0.21
O2-A (% vol)	0	0	22	12	0	-0.05	-0.14
CO2-A (% vol)	0	0	8.56	14.54	0	0.4	0
THC-A (ppmv)	-9	951.05	1752.1	558.03	0.2	0.1	-0.7
THC-B (ppmv)	0	965	1750.33	577.33	1.7	0.0	2.7

Initial and Final Bias and Drift	I-Zero	I-Span	F-Zero	F-Span	Z-Bias	S-Bias	Z-Drift	S-Drift
NOx-A (ppmv)	7.06	242.42	5.04	244.44	1.11	-1.55	0.44	-0.44
CO-A (ppmv)	0	1149.37	0	1144.07	0	3.22	0	0.22
O2-A (% vol)	0.07	12	0.05	12	0.23	0	0.11	0
CO2-A (% vol)	0.08	14.32	0.08	14.38	0.53	-1.07	0	-0.4
THC-A (ppmv)	-9	567.03	-9	570.03	0	0.6	0	-0.15
THC-B (ppmv)	-2.33	636.67	-2.33	622	-0.12	2.23	0	0.73

Run Results and Cal Gases Used	Raw	Corrected	Ranges	Low Gas	Mid Gas	Span Gas
NOx-A (ppmv)	193.66	200.0	454	0	454	253
CO-A (ppmv)	1024.56	948.9	2389	0	2389	1062
O2-A (% vol)	7.79	7.75	21.99	0	21.99	11.97
CO2-A (% vol)	11.82	11.96	14.54	0	8.62	14.54
THC-A (ppmv)	530.77	525.3	2000	949	1750	562
THC-B (ppmv)	638.17	569.9	2000	949	1750	562

Instrumental Analyses
Quality Assurance Data

Dates: March 24 and 25, 2009
Company: G2 Energy
Facility: Marion County BCC Baseline Landfill
Source ID: Units 1 and 2, two Caterpillar Model G3520C Generator Engines
Location: Ocala, Florida
Technicians: LJB, CFF

Hydrocarbon Analyzer Response Factor Check

Methane Calibration Gas: 895.00 ppmv Date: March 24, 2009

Response Factor Predicited = MW Propane / MW Methane
= 44.0962/16.0426 = 2.7487

Response Factor Measured = Methane Concentration / Methane Response
THC-A = 895 / 327.0 THC-B = 895 / 334.3
THC-A = 2.7370 THC-B = 2.6764

% Difference = (Measured - Predicted) / Predicted * 100
THC -A = -0.4% THC-B = -2.6%

THC-A Hydrocarbon Analyzer Non-methane Cutter Breakthrough Check

Ethane Test Gas: 1409.2 ppmv Date: March 24, 2009
Propane Test Gas: 1750 ppmv

% Breakthrough = (Measured Response) / Test Gas Concentration × 100 × (# Carbons Cal Gas/#Carbons Test Gas)
Ethane = 10.7% Propane = -0.4%

System NO_X Converter Efficiency Test

Criteria: "At least 90% conversion efficiency" (EMC ALT-013)

Test Date: 03/24/09 Technician: LJB

NO_2 / N_2 Balance	Results
Certified Value	50.2 ppmv
Observed Value	49.21 ppmv
Converter Temperature	635.0 °C
Observation Time	5 minutes
Converter Efficiency	98.0%

Instrumental Sample System Leak Checks

Date	Run Number	Vacuum (inches Hg)	Leak Rate (inches Hg/min)	Pass
03/24/09	pre U2-Strat	25.5	0.5	yes
03/24/09	post U2-Strat	24.1	0.8	yes
03/24/09	pre U1-Strat	25.9	0.1	yes
03/24/09	post U1-Strat	27.3	0.4	yes
03/25/09	pre U1-C-1	26.2	0.5	yes
03/25/09	post U1-C-3	27.8	0.1	yes
03/25/09	pre U2-C-1	26.2	0.3	yes
03/25/09	post U2-C-3	27.0	0.2	yes

Leak check criteria is a decline of ≤1.0" Hg vacuum/min at greater than 15.0" Hg vacuum.

NOx Converter Efficiency Test - and - Hydrocarbon Analyzer Quality Assurance Tests
G2 Energy - MCBCC Baseline Landfill

Run Number	Date	Time	NOx	AVE NOx		
			(ppmv)	(ppmv)		
START NOx-B Converter, 50.2	3/24/2009	13:19:02	49.15	49.15		
NOx-B Converter, 50.2	3/24/2009	13:20:02	49.24	49.14		
NOx-B Converter, 50.2	3/24/2009	13:21:02	49.15	49.16		
NOx-B Converter, 50.2	3/24/2009	13:22:02	49.24	49.19		
NOx-B Converter, 50.2	3/24/2009	13:23:02	49.34	49.21		
END NOx-B Converter, 50.2	3/24/2009	13:24:02	49.24	**49.21**		
Run Number	Date	Time	THC-A	THC-B	AVE THC-A	AVE THC-B
			(ppmv)	(ppmv)	(ppmv)	(ppmv)
START 895 Methane Response (THC)	3/24/2009	14:22:01	327.0	333.3	327.0	333.3
895 Methane Response (THC)	3/24/2009	14:23:01	327.0	334.0	327.0	334.1
895 Methane Response (THC)	3/24/2009	14:24:01	327.0	335.0	327.0	334.2
END 895 Methane Response (THC)	3/24/2009	14:25:01	327.0	334.7	**327.0**	**334.3**
Run Number	Date	Time	THC-A	THC-B	AVE THC-A	AVE THC-B
			(ppmv)	(ppmv)	(ppmv)	(ppmv)
START 1750 Propane Response	3/24/2009	14:31:07	-9.0	1753.0	-9.0	1753.0
1750 Propane Response	3/24/2009	14:32:07	-6.0	1764.0	-8.6	1759.7
1750 Propane Response	3/24/2009	14:33:07	-6.0	1764.0	-7.3	1761.7
END 1750 Propane Response	3/24/2009	14:34:07	-6.0	1762.7	**-7.0**	1762.0
START 1409.2 Ethane Response	3/24/2009	14:35:31	105.0	978.0	105.0	978.0
1409.2 Ethane Response	3/24/2009	14:36:30	102.0	979.7	102.3	979.5
1409.2 Ethane Response	3/24/2009	14:37:31	99.0	980.3	100.8	979.7
END 1409.2 Ethane Response	3/24/2009	14:38:31	99.0	979.0	**100.4**	979.5

Quality Assurance Report
EPA M-3A, 7E, and 10: NO_X, CO, O_2, and CO_2 THC Response Time
G2 Energy - MCBCC Baseline Landfill

Date: March 24, 2009
Technician: LJB
Lab Unit #: Trailer 13

Test Instrumentation				
Analyzer	**Make**	**Model**	**Serial Number**	**Detection Method**
NO_X-A Analyzer	TECO	42C	42CHL-69541-363	Photodetection (of a chemi-luminescent reaction of nitric oxide and ozone
CO-A Analyzer	TECO	48C	48C-70472-365	IR Absorption/GFC Detector
O_2-A Analyzer	Servomex	1440	1420C/2647	Paramagnetic Cell Detector
CO_2-A Analyzer	Servomex	1440	01415/2537	IR Absorption/Solid State Detector

HRSG Stack Test Conditions	
Sample Line Vacuum	12.0 " Hg
Sample Manifold Pressure	9 psig
Analyzer Flow Meter Setting	1.0 lpm
Gas Standard Pressure	18 psig
Sample System Configuration:	120 ft. Heat Trace + Condenser

Response Time Test Results					
Parameter	**NO_X**	**CO**	**O_2**	**CO_2**	
Zero Gas Concentration	0.00	0.00	0.00	0.00	
Span Gas Concentration	147.30	1062.00	11.97	14.54	
Analyzer Full Scale Range	253.00	2389.00	22.00	14.54	
Upscale Reponse Time Testing					
Starting Value	4.75	0.00	0.00	0.00	
Final Average Response	150.71	1072.40	11.95	14.50	
Calculated 95% Response	143.41	1018.78	11.35	13.78	
Actual Response (≥95%)	149.22	1056.47	11.9	14.32	
Upscale Response Time (sec)	80	80	40	40	
Downscale Reponse Time Testing					
Starting Value	150.41	1069.74	11.93	14.50	
Final Response	2.08	0.00	-0.03	0.00	
Calculated 95% Response	9.50	53.49	0.57	0.73	
Actual Response (≥95%)	5.04	2.65	0.05	0.16	
Downscale Response Time (sec)	80	80	40	40	
Maximum System Response Time (seconds)				**80**	**seconds**
Minmum Sampling Time Each Sample Point				**160**	**seconds**
Sample Time Selected For Each Sample Point				**180**	**seconds**

Testing conducted by TRC - Air Measurements, Gainesville Office

Response Time Data
G2 Energy - MCBCC Baseline Landfill

Run Number	Date	Time	NOx	CO	O2	CO2
			(ppmv)	(ppmv)	(% vol)	(% vol)
NOx Upscale Response Time						
NOx Upscale	3/24/2009	13:49:00	**4.75**	0.00	0.03	0.00
NOx Upscale	3/24/2009	13:49:20	4.75	0.00	0.03	0.00
NOx Upscale	3/24/2009	13:49:40	53.10	0.00	0.03	0.00
NOx Upscale	3/24/2009	13:50:00	118.07	0.00	0.00	0.00
NOx Upscale	3/24/2009	13:50:20	149.22	0.00	0.03	0.00
NOx Upscale	3/24/2009	13:50:40	150.41	0.00	0.00	0.00
NOx Upscale	3/24/2009	13:51:00	150.71	0.00	0.00	0.00
NOx Upscale	3/24/2009	13:51:20	150.71	0.00	0.00	0.00
NOx Upscale	3/24/2009	13:51:40	150.71	0.00	0.00	0.00
NOx Upscale	3/24/2009	13:52:00	**150.71**	0.00	0.00	0.00
O2 Upscale and NOx Downscale Response Time						
O2 Upscale	3/24/2009	13:53:01	**150.41**	0.00	**0.00**	0.00
O2 Upscale	3/24/2009	13:53:21	150.41	0.00	0.00	0.00
O2 Upscale	3/24/2009	13:53:41	121.63	0.00	11.90	8.42
O2 Upscale	3/24/2009	13:54:01	56.66	0.00	11.93	8.46
O2 Upscale	3/24/2009	13:54:22	5.04	0.00	11.93	8.48
O2 Upscale	3/24/2009	13:54:42	2.97	0.00	11.93	8.50
O2 Upscale	3/24/2009	13:55:02	2.67	0.00	11.93	8.50
O2 Upscale	3/24/2009	13:55:22	2.37	0.00	11.93	8.50
O2 Upscale	3/24/2009	13:55:42	2.08	0.00	11.93	8.50
O2 Upscale	3/24/2009	13:56:02	**2.08**	0.00	**11.95**	8.50
O2 Downscale Response Time						
O2 Downscale	3/24/2009	13:56:43	1.78	0.00	**11.93**	8.52
O2 Downscale	3/24/2009	13:57:03	1.78	0.00	11.93	8.52
O2 Downscale	3/24/2009	13:57:23	1.78	0.00	0.05	0.12
O2 Downscale	3/24/2009	13:57:43	1.78	0.00	0.03	0.04
O2 Downscale	3/24/2009	13:58:03	1.78	0.00	0.00	0.04
O2 Downscale	3/24/2009	13:58:23	1.78	0.00	0.03	0.02
O2 Downscale	3/24/2009	13:58:43	1.78	0.00	0.00	0.02
O2 Downscale	3/24/2009	13:59:03	1.78	0.00	0.00	0.00
O2 Downscale	3/24/2009	13:59:23	1.48	0.00	0.00	0.00
O2 Downscale	3/24/2009	13:59:43	1.48	0.00	**-0.03**	0.00

Response Time Data
G2 Energy - MCBCC Baseline Landfill

Run Number	Date	Time	NOx	CO	O2	CO2
			(ppmv)	(ppmv)	(% vol)	(% vol)
CO2 Upscale Response Time						
CO2 Upscale	3/24/2009	14:00:05	1.48	0.00	0.00	**0.00**
CO2 Upscale	3/24/2009	14:00:25	1.48	0.00	0.00	0.00
CO2 Upscale	3/24/2009	14:00:45	1.48	0.00	8.40	14.32
CO2 Upscale	3/24/2009	14:01:05	1.48	0.00	8.43	14.44
CO2 Upscale	3/24/2009	14:01:25	1.19	0.00	8.43	14.48
CO2 Upscale	3/24/2009	14:01:45	0.89	0.00	8.43	14.48
CO2 Upscale	3/24/2009	14:02:05	0.89	0.00	8.43	14.50
CO2 Upscale	3/24/2009	14:02:25	0.89	0.00	8.43	14.50
CO2 Upscale	3/24/2009	14:02:45	0.89	0.00	8.43	14.50
CO2 Upscale	3/24/2009	14:03:05	0.89	0.00	8.43	**14.50**
CO Upscale and CO2 Downscale Response Time						
CO Upscale	3/24/2009	14:04:01	0.89	**0.00**	8.43	**14.50**
CO Upscale	3/24/2009	14:04:21	0.89	0.00	8.45	14.52
CO Upscale	3/24/2009	14:04:41	0.89	310.57	20.70	0.16
CO Upscale	3/24/2009	14:05:01	0.59	899.86	20.73	0.08
CO Upscale	3/24/2009	14:05:21	0.59	1056.47	20.75	0.06
CO Upscale	3/24/2009	14:05:41	0.59	1077.70	20.75	0.04
CO Upscale	3/24/2009	14:06:01	0.59	1069.74	20.78	0.04
CO Upscale	3/24/2009	14:06:21	0.59	1072.40	20.75	0.02
CO Upscale	3/24/2009	14:06:41	0.59	1067.09	20.78	0.02
CO Upscale	3/24/2009	14:07:01	0.59	**1072.40**	20.78	**0.00**
CO Downscale Response Time						
CO Downscale	3/24/2009	14:08:01	0.59	**1069.74**	20.78	0.00
CO Downscale	3/24/2009	14:08:21	0.59	1069.74	20.78	0.00
CO Downscale	3/24/2009	14:08:41	0.59	700.77	0.08	0.00
CO Downscale	3/24/2009	14:09:01	0.59	106.18	0.03	0.00
CO Downscale	3/24/2009	14:09:21	0.30	2.65	0.03	0.00
CO Downscale	3/24/2009	14:09:41	0.30	0.00	0.00	0.00
CO Downscale	3/24/2009	14:10:01	0.30	0.00	0.00	0.00
CO Downscale	3/24/2009	14:10:21	0.30	0.00	0.03	0.00
CO Downscale	3/24/2009	14:10:41	0.30	0.00	0.00	0.00
CO Downscale	3/24/2009	14:11:01	0.30	**0.00**	0.00	0.00

Continuous Emission Analyzer
Interference Response Tests

Analyzer Interference Response Checks

(Frequency: Prior to initial use of sampling system or after alteration or modification.)

Test Date: September 27, 2002 *Technician:* RPO
Mobile Lab: T-13(System A) *Location:* Gainesville, Florida

Analyzer	Manufacturer	Model	Serial Number	Detection Method/Comments
NO_X Analyzer	TECO	42C	42CHL-69541-363	Chemiluminescence with Ozone
CO Analyzer	TECO	48C	48C-70472-365	Infrared Absorption/GFC Detector
O_2 Analyzer	Servomex	1440	1420C/2647	Paramagnetic Cell Detector
CO_2 Analyzer	Servomex	1440	01415/2537	Infrared Absorption/ Solid State Detector
THC	California Analytical	300-HMFID	5N05002	Flame Ionization Detector

Interferrent Test Gases		Analyzer Response (ppmv or % as applicable)				
Type Gas	Conc.	NO_X 0-25 ppmv	CO 0-50 ppmv	O_2 0-25% vol	CO_2 0-15% vol	THC 0-100 ppmv
CO/Methane in air	885/919	0.1 ppmv			0.00 %	
Propane in air	2000	0.1 ppmv	0.4 ppmv		0.03 %	
SO_2 in N_2	4400	0.2 ppmv	-0.3 ppmv	0.00 %	0.00 %	no data
Air	dry instrument	< 0.1 ppmv	0.4 ppmv		0.03 %	no data
Nitrogen	pre-purified	0.0 ppmv	0.3 ppmv	0.00 %	0.00 %	no data
Air	UHC, CO free	0.0 ppmv	0.0 ppmv		0.01 %	no data
CO_2/ O_2	4.54%/20.8%	< 0.1 ppmv	-0.2 ppmv			no data
CO_2/ O_2	8.004%/11.91%	< 0.1 ppmv	-0.4 ppmv			no data
CO_2/ O_2	12.62%/4.53%	< 0.1 ppmv	-0.6 ppmv			no data
NO_X in N_2	1209		0.4 ppmv	0.18 %	0.03 %	no data

Testing by TRC - Air Measurements, Gainesville Office

Continuous Emission Analyzer
Interference Response Tests

Analyzer Interference Response Checks

(Frequency: Prior to initial use of sampling system or after alteration or modification.)

Test Date: *July 8, 2004* *Technician:* *JTH*
Mobile Lab: *T-13(System B)* *Location:* *Gainesville, Florida*

Analyzer	Manufacturer	Model	Serial Number	Detection Method/Comments
NO_X Analyzer	TECO	42C	42CHL-69796-364	Chemiluminescence with Ozone
CO Analyzer	TECO	48	48-30083-237	Infrared Absorption/GFC Detector
O_2 Analyzer	Servomex	1440	01440C1ST0/2868	Paramagnetic Cell Detector
CO_2 Analyzer	Servomex	1440	01415C/1240	Infrared Absorption/ Solid State Detector
THC	California Analytical	300-HFID CE	4J11003	Flame Ionization Detector

Interferrent Test Gases		Analyzer Response (ppmv or % as applicable)				
Type Gas	Conc.	NO_X 0-25 ppmv	CO 0-50 ppmv	O_2 0-25% vol	CO_2 0-15% vol	THC 0-100 ppmv
CO/Methane in air	451/453	0.1 ppmv			0.00 %	
Propane in air	20.3	0.1 ppmv	0.30 ppmv		0.02 %	
SO_2 in N_2	258	0.2 ppmv	-0.20 ppmv	0.00 %	0.00 %	no data
Air	UHC, CO free	- 0.07 ppmv	0.4 ppmv		0.03 %	no data
Nitrogen	pre-purified	0.0 ppmv	0.3 ppmv	0.00 %	0.00 %	no data
CO_2/ O_2	4.5%/21.0%	< 0.1 ppmv	-0.10 ppmv			no data
CO_2/ O_2	8.52%/12.08%	< 0.1 ppmv	-0.4 ppmv			no data
NO_X in N_2	2725		0.4 ppmv	0.15 %	0.02 %	no data

APPENDIX E:
CALIBRATION CERTIFICATIONS

Spectra Gases, Inc.

3434 Route 22 West, Branchburg, New Jersey 08876 USA

ISO 9001:2000

Shipped from: 80 Industrial Drive, Alpha, NJ 08865

CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

CUSTOMER:	TRC Environmental	**CYLINDER # :**	CC-118522
SGI ORDER # :	125363	**CYLINDER PRES:**	2000 PSIG
ITEM# :	7	**CGA OUTLET:**	660
P.O.# :	G49048	**PRODUCT CODE:**	TRC 4

CERTIFICATION DATE: 3/12/2008
EXPIRATION DATE: 3/12/2010

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Nitric Oxide	3/4/2008 3/12/2008	253.1 ppm 252.8 ppm	253 ppm	+/- 1%
NOx			253 ppm	Reference Value Only

BALANCE Nitrogen

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Nitric Oxide	GMIS-1	CC-256058	254 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Nitric Oxide	CAI-400-CLD	6L09004	Chemi	2/26/2008

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: _____ **DATE:** 3/12/2008

FRED PIKULA

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Spectra Gases, Inc.

3434 Route 22 West, Branchburg, New Jersey 08876 USA

ISO 9001:2000

Shipped from: 80 Industrial Drive, Alpha, NJ 08865

CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

CUSTOMER:	TRC Environmental	**CYLINDER # :**	CC-17785
SGI ORDER # :	129419	**CYLINDER PRES:**	2000 PSIG
ITEM# :	6	**CGA OUTLET:**	660
P.O.# :	G49602	**PRODUCT CODE:**	TRC 4

CERTIFICATION DATE: 5/28/2008
EXPIRATION DATE: 5/28/2010

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Nitric Oxide	5/21/2008 5/28/2008	454.1 ppm 454.1 ppm	454 ppm	+/- 1%
NOx			454 ppm	Reference Value Only

BALANCE Nitrogen

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Nitric Oxide	NTRM-81687	CC-131153	992 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Nitric Oxide	CAI-400-CLD	6L09004	Chemi	5/6/2008

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: _____ DATE: 5/28/2008

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CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

CUSTOMER: TRC Environmental
SGI ORDER # : 125363
ITEM# : 6
P.O.# : G49048

CYLINDER # : CC-250095
CYLINDER PRES: 2000 PSIG
CGA OUTLET: 660
PRODUCT CODE: TRC 4

CERTIFICATION DATE: 3/12/2008
EXPIRATION DATE: 3/12/2010

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Nitric Oxide	3/4/2008 3/12/2008	147.8 ppm 146.9 ppm	147.3 ppm	+/- 1%
NOx			147.3 ppm	Reference Value Only

BALANCE Nitrogen

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Nitric Oxide	GMIS-1	CC-256058	254 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Nitric Oxide	CAI-400-CLD	6L09004	Chemi	2/26/2008

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: _____ **DATE:** 3/12/2008

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ISO 9001:2000

Shipped from: 80 Industrial Drive, Alpha, NJ 08865

RECERTIFICATION OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

CUSTOMER: TRC Cubix
SGI ORDER # : 131901
ITEM# : 3
P.O.# : G49607

CYLINDER # : CC-133604
CYLINDER PRES: 1100 PSIG
CGA OUTLET: 660

CERTIFICATION DATE: 7/11/2008
EXPIRATION DATE: 7/11/2010

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Nitrogen Dioxide	12/19/2006 7/11/2008	50.40 ppm 49.97 ppm	50.2 ppm	+/- 3%

BALANCE Nitrogen

PREVIOUS CERTIFICATION DATES: 4/5/2006,12/19/2006 by Spectra Gases

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Nitrogen Dioxide	GMIS-1	CC-230086	100 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Nitrogen Dioxide	Thermo 42i-HL	621417605	Cheml	7/11/2008

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: _____ **DATE:** 7/11/2008
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Spectra Gases, Inc.

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ISO 9001:2000

Shipped from: 80 Industrial Drive, Alpha, NJ 08865

RECERTIFICATION OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

CUSTOMER: Cubix Corporation
SGI ORDER # : 109383
ITEM# : 8
P.O.# : G48500

CYLINDER # : CC-118610
CYLINDER PRES: 1800 PSIG
CGA OUTLET: 590

CERTIFICATION DATE: 6/5/2007
EXPIRATION DATE: 6/5/2010

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Carbon Monoxide	3/4/2004 6/5/2007	912.0 ppm 912.7 ppm	912.4 ppm	+/- 1%
Methane	3/4/2004 6/5/2007	894 ppm 895 ppm	895 ppm	+/- 1%

BALANCE Air

PREVIOUS CERTIFICATION DATES: 3/4/2004 by Spectra Gases

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Carbon Monoxide	NTRM-81681	CC-133272	988 ppm
Methane	GMIS-1	CC-55777	993 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Carbon Monoxide	Horiba VIA-510	H0002L2Y	NDIR	5/24/2007
Methane	Horiba VIA-510	57141706	NDIR	6/5/2007

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: _____ **DATE:** 6/5/2007
CODY HAMLIN

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Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

Customer	TRC Environmental (Gainesville, Florida)
Date	March 13, 2009
Delivery Receipt	DR-24174
Product:	1400.0 ppm Ethane/Air - Certified Standard

Mixture Specifications

Cylinder Number: CC-311352

Components	Requested	Actual
Ethane	1400.0 ppm	1409.2 ppm
Air	Balance	Balance

- Certified Standard -

Traceability Information	Traceability Type	Traceable to
Blending Process:	Gravimetric	Mole Percent
Blend Tolerance:	Weight	NIST
Analytical Tolerance:	Gas Standard	NIST
Traceability Certificate:	822/266926-02	

Cylinder Data

Cylinder Outlet:	CGA 590
Cylinder Volume:	140 Cubic Feet
Cylinder Pressure:	2000 psig, 70°F
Analytical Tolerance:	+/- 2.0%
Expiration Date:	March 13, 2012

Certified by: *Mike Duncan*

2564 Pemberton Drive ~ Apopka, Florida 32703 ~ Phone (407)-292-2990 ~ Fax (407)-292-3313
~ www.liquidtechcorp.com ~

Spectra Gases, Inc.

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CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

CUSTOMER: TRC Air Measurements
SGI ORDER # : 120899
ITEM# : 4
P.O.# : G49039

CYLINDER # : CC-106662
CYLINDER PRES: 2000 PSIG
CGA OUTLET: 590
PRODUCT CODE: TRC 21

CERTIFICATION DATE: 12/26/2007
EXPIRATION DATE: 12/26/2010

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Carbon Monoxide	12/19/2007 12/26/2007	1064 ppm 1059 ppm	1062 ppm	+/- 1%
Propane	12/26/2007	562 ppm	562 ppm	+/- 1%

BALANCE Air

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Carbon Monoxide	GMIS-1	CC-80922	2489 ppm
Propane	GMIS-1	CC-94356	501 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Carbon Monoxide	Horiba VIA-510	42331960012	NDIR	12/19/2007
Propane	H. Packard 6890	US00001434	GC - FID	12/12/2007

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: CP
CHERYL PATINO

DATE: 12/26/2007

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Shipped from: 80 Industrial Drive, Alpha, NJ 08865

CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

CUSTOMER:	TRC Air Measurements	**CYLINDER # :**	CC-68312
SGI ORDER # :	120899	**CYLINDER PRES:**	2000 PSIG
ITEM# :	3	**CGA OUTLET:**	590
P.O.# :	G49039	**PRODUCT CODE:**	TRC 21

CERTIFICATION DATE: 12/26/2007
EXPIRATION DATE: 12/26/2010

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Carbon Monoxide	12/19/2007 12/26/2007	2385 ppm 2392 ppm	2389 ppm	+/- 1%
Propane	12/26/2007	949 ppm	949 ppm	+/- 1%

BALANCE Air

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Carbon Monoxide	GMIS-1	CC-80922	2489 ppm
Propane	GMIS-1	CC-94356	501 ppm

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Carbon Monoxide	Horiba VIA-510	42331960012	NDIR	12/19/2007
Propane	H. Packard 6890	US00001434	GC - FID	12/12/2007

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: CP
CHERYL PATINO

DATE: 12/26/2007

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Shipped from: 80 Industrial Drive, Alpha, NJ 08865

RECERTIFICATION OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

CUSTOMER:	TRC Environmental Corp	**CYLINDER # :**	CC-94790
SGI ORDER # :	120865	**CYLINDER PRES:**	1700 PSIG
ITEM# :	2	**CGA OUTLET:**	590
P.O.# :	G49039	**PRODUCT CODE:**	TRC 21

CERTIFICATION DATE: 12/26/2007
EXPIRATION DATE: 12/26/2010

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Carbon Monoxide	4/30/2004 12/26/2007	4564 ppm 4554 ppm	4559 ppm	+/- 1%
Propane	4/30/2004 12/26/2007	1746 ppm 1754 ppm	1750 ppm	+/- 1%

BALANCE Air

PREVIOUS CERTIFICATION DATES: 4/30/2004 by Spectra Gases

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Carbon Monoxide	GMIS-1	CC-114160	5011 ppm
Propane	GMIS-1	CC-79858	1.002 %

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Carbon Monoxide	Horiba VIA-510	42331960012	NDIR	12/26/2007
Propane	H. Packard 6890	US00001434	GC - FID	12/26/2007

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: CP
CHERYL PATINO

DATE: 12/26/2007

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ISO 9001:2000

Shipped from: 80 Industrial Drive, Alpha, NJ 08865

CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

CUSTOMER: TRC Cubix
SGI ORDER # : 104875
ITEM# : 5
P.O.# : ~~G47531~~ G98024
CERTIFICATION DATE: 2/28/2007
EXPIRATION DATE: 2/28/2010

CYLINDER # : CC-75772
CYLINDER PRES: 2000 PSIG
CGA OUTLET: 590

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Carbon Dioxide	2/28/2007	14.54 %	14.54 %	+/- 1%
Oxygen	2/28/2007	8.47 %	8.47 %	+/- 1%

BALANCE Nitrogen

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Carbon Dioxide	NTRM-82745x	CC-79933	20.0 %
Oxygen	NTRM-82659x	CC-83906	22.8 %

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Carbon Dioxide	CIA-300	S03001	NDIR	2/20/2007
Oxygen	CAI-300	S03001	PM	2/28/2007

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: JAMES SCHMIDT

DATE: 2/28/2007

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www.spectragases.com

Liquid Technology Corporation

Industry Leader in Specialty Gases, Equipment and Service

Certificate of Analysis

- EPA PROTOCOL GAS -

Customer	TRC Environmental (Gainesville, Florida): **SECI Coop, Inc**
Date	January 30, 2009
Delivery Receipt	DR-23652
Gas Standard	4.50% CO2, 22.00% Oxygen/Nitrogen-EPA PROTOCOL
Final Analysis Date	January 30, 2009
Expiration Date	January 30, 2012
Component	Carbon Dioxide, Oxygen
Balance Gas	Nitrogen

Analytical Data: **DO NOT USE BELOW 150 psig**

EPA Protocol, Section No. 2.2, Procedure G-1

Reported Concentrations

Carbon Dioxide: 4.27% +/- 0.04%

Oxygen: 21.99% +/- 0.21%

Nitrogen: Balance

Reference Standards:

SRM/GMIS:	GMIS/GMIS	GMIS/GMIS
Cylinder Number:	CC-184980/CC-115946	CC-125554/CC-85469
Concentration:	1.02% CO2/N2-6.01% CO2/N2	20.99% O2/N2 - 25.30% O2/N2
Expiration Date:	11/24/10 - 07/23/10	04/02/11 - 08/09/10

Certification Instrumentation

Component:	Carbon Dioxide	Oxygen
Make/Model:	Hewlett Packard 5890 II	Servomex 244a
Serial Number:	3336A59393	1847
Principal of Measurement:	TCD	Paramagnetic
Last Calibration:	January 05, 2009	January 02, 2009

Cylinder Data

Cylinder Serial Number:	EB-0014648	Cylinder Outlet:	CGA 590
Cylinder Volume:	140 Cubic Feet	Cylinder Pressure:	2000 psig, 70°F

Analytical Uncertainty and NIST Traceability are in compliance with EPA-600/R-97/121.

Certified by:

Date: January 30, 2009

Unmatched Excellence

2564 Pemberton Drive ~ Apopka, Florida 32703 ~ Phone (407)-292-2990 ~ Fax (407)-292-3313
~ www.liquidtechcorp.com ~

Spectra Gases, Inc.

3434 Route 22 West, Branchburg, New Jersey 08876 USA

ISO 9001:2000

Shipped from: 80 Industrial Drive, Alpha, NJ 08865

CERTIFICATE OF ANALYSIS

EPA PROTOCOL MIXTURE

PROCEDURE # : G1

CUSTOMER: TRC Cubix
SGI ORDER # : 131933
ITEM# : 1
P.O.# : G49607

CYLINDER # : CC-130890
CYLINDER PRES: 2000 PSIG
CGA OUTLET: 590
PRODUCT CODE: TRC 22

CERTIFICATION DATE: 7/8/2008
EXPIRATION DATE: 7/8/2011

CERTIFICATION HISTORY

COMPONENT	DATE OF ASSAY	MEAN CONCENTRATION	CERTIFIED CONCENTRATION	ANALYTICAL ACCURACY
Carbon Dioxide	7/8/2008	8.62 %	8.62 %	+/- 1%
Oxygen	7/8/2008	11.97 %	11.97 %	+/- 1%

BALANCE Nitrogen

PREVIOUS CERTIFICATION DATES: None

REFERENCE STANDARDS

COMPONENT	SRM/NTRM#	CYLINDER#	CONCENTRATION
Carbon Dioxide	NTRM-82745x	CC-79933	20.0 %
Oxygen	NTRM-82659x	CC-237212	24.52 %

INSTRUMENTATION

COMPONENT	MAKE/MODEL	SERIAL #	DETECTOR	CALIBRATION DATE(S)
Carbon Dioxide	CAI-300	S03001	NDIR	7/8/2008
Oxygen	CAI-300	S03001	PM	6/23/2008

THIS STANDARD IS NIST TRACEABLE. IT WAS CERTIFIED ACCORDING TO THE EPA PROTOCOL PROCEDURES.
DO NOT USE THIS STANDARD IF THE CYLINDER PRESSURE IS LESS THAN 150 PSIG.

ANALYST: _____ **DATE:** 7/8/2008

FRED PIKULA

Tel: +1 908-252-9300 Fax: +1 908-252-0811
www.spectragases.com

Product/Calibration Data Sheet

Device Information

Serial Number
0107070344268

Model Number
Sho-Rate

Customer Name
OMEGA ENGINEERING INC

Customer PO Number
66928

Customer Fluid
AIR

Full Scale Flow
250 CCM

Reference Temperature
70.00 °F

Customer Pressure
0 psi(g)

Customer Viscosity
0.018cP

Customer Temperature
70 °F

Customer Fluid Density
1.000 S.G.

Calibration Information

Calibration Location
Hatfield

Calibration Procedure
na

Mechanical Information

Tube
R-2-15-AA

Float
1/8 Ball 316 SS, 316 SS

Meter Accuracy
5

Accuracy Scale
% FS

Customer Tag or Part #

Reference Number
1

Predicted Data

Scale Reading (mm)	Flow (CCM)	Scale Reading (mm)	Flow (CCM)	Scale Reading (mm)	Flow (CCM)
150	255	99	110	48	27.8
149	251	98	107	47	26.8
148	248	97	105	46	25.9
147	244	96	103	45	25
146	241	95	101		
145	238	94	98.5		
144	234	93	96.3		
143	231	92	94.2		
142	228	91	92.1		
141	224	90	90		
140	221	89	87.8		
139	218	88	85.7		
138	215	87	83.6		
137	212	86	81.6		
136	209	85	79.5		
135	205	84	77.6		
134	202	83	75.7		
133	199	82	73.8		
132	196	81	72		
131	193	80	70.2		
130	190	79	68.4		
129	187	78	66.7		
128	185	77	65		
127	182	76	63.4		
126	179	75	61.8		
125	176	74	60.3		
124	173	73	58.9		
123	170	72	57.4		
122	168	71	56		
121	165	70	54.6		
120	162	69	53.3		
119	159	68	51.9		
118	157	67	50.6		
117	154	66	49.3		
116	151	65	48		
115	149	64	46.7		
114	146	63	45.4		
113	144	62	44.2		
112	141	61	43		
111	139	60	41.8		
110	136	59	40.4		
109	134	58	39.1		
108	131	57	37.9		
107	129	56	36.6		
106	126	55	35.4		
105	124	54	34.2		
104	121	53	33.1		
103	119	52	32		
102	117	51	30.9		
101	114	50	29.8		
100	112	49	28.8		

OMEGA ENGINEERING, INC.
An OMEGA Technologies Company

Ref. OPN-001

EPA Method 5
Initial Dry Gas Meter Calibration
Critical Orifice Calibration

Model #: 2010-A-MST-C1
Serial #: 90450 Meter Box H

Date: 25-Nov-08
Barometric Pressure: 29.88 in Hg

METER CALIBRATION READINGS

dH (in H2O)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)	Initial Temperatures Inlet (deg F)	Initial Temperatures Outlet (deg F)	Final Temperatures Inlet (deg F)	Final Temperatures Outlet (deg F)	Vacuum (in Hg)	Orifice Serial# (number)	K' Orifice Coefficient (see above)	Ambient Temperatures Initial (deg F)	Ambient Temperatures Final (deg F)
0.280	22.00	917.912	924.827	6.915	71.0	71.0	72.0	71.0	17.0	OV-40	0.2392	72.5	73.4
0.600	18.00	936.348	944.542	8.194	73.0	71.0	74.0	71.0	17.0	OV-48	0.3459	74.3	74.3
1.060	19.00	924.929	936.192	11.263	72.0	71.0	73.0	71.0	17.0	OV-55	0.4505	73.4	74.3
1.800	19.00	945.288	959.830	14.542	74.0	72.0	74.0	72.0	17.0	OV-63	0.5804	74.3	74.3
3.300	16.00	960.311	976.768	16.457	74.0	72.0	74.0	72.0	16.0	OV-73	0.7800	74.3	74.3

METER CALIBRATION RESULTS

********* DRY GAS METER ********* VOLUME CORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	FLOW RATE (SCFM)	******* ORIFICE ******* VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	*** DRY GAS METER ** CALIBRATION FACTOR Y Value (number)	Variation (number)	****** ORIFICE ****** CALIBRATION FACTOR dH@ Value (in H2O)	Variation (in H2O)
6.868	194.5	0.312	6.811	192.9	0.992	0.004	1.634	-0.105
8.130	230.2	0.452	8.048	227.9	0.990	0.002	1.679	-0.061
11.198	317.1	0.589	11.069	313.4	0.989	0.001	1.752	0.013
14.450	409.2	0.761	14.255	403.7	0.987	-0.001	1.797	0.057
16.413	464.8	1.026	16.133	456.8	0.983	-0.005	1.837	0.097

FACTOR	CRITERIA	CALIBRATION TEST RESULTS	PASS/FAIL
Y	Note: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.	Average Y: 0.9879	PASS
dH@	For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.	Average dH@ 1.740	PASS

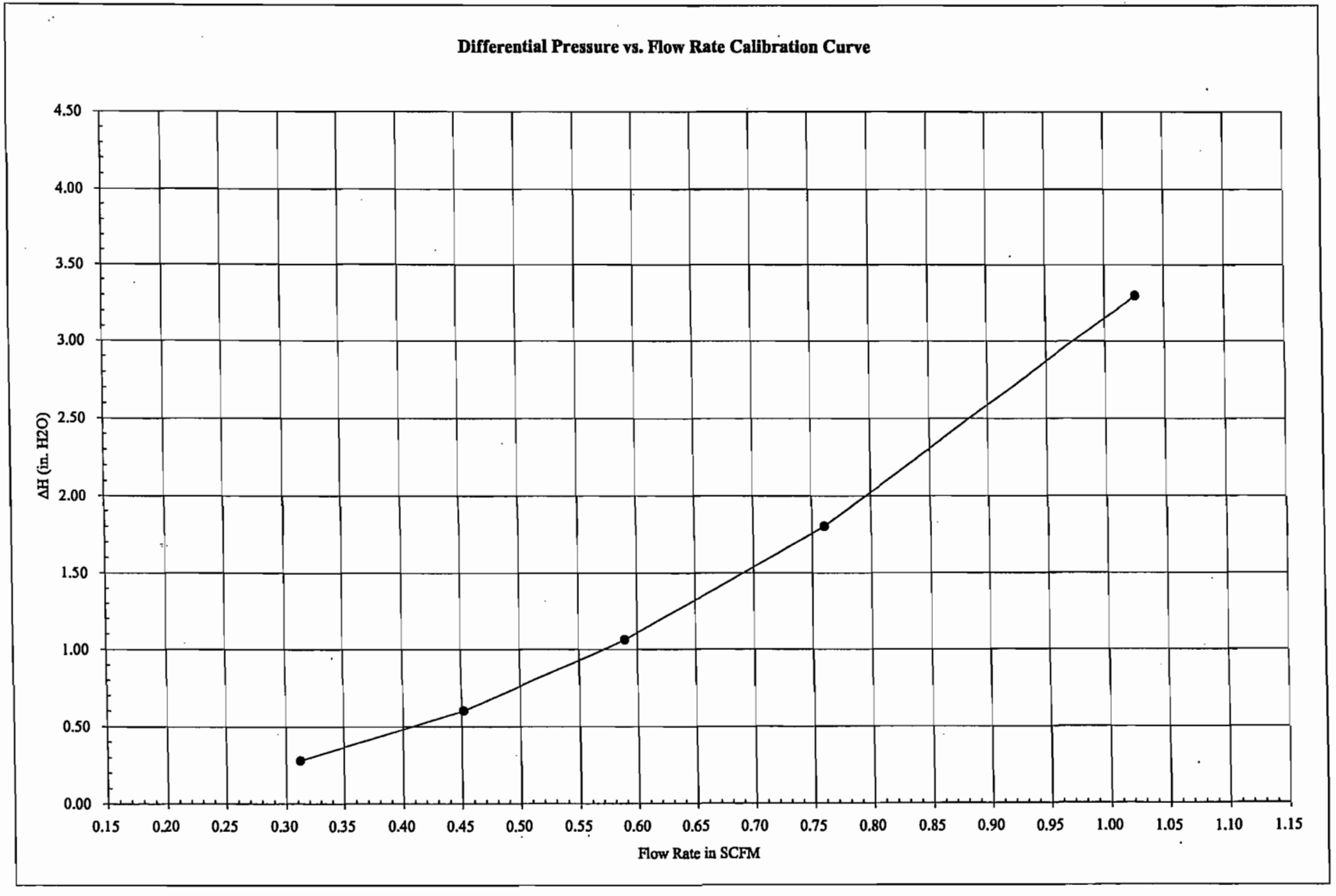
SIGNED: Roger Paul Osei

EPA Method 5
Initial Dry Gas Meter Calibration
K-Factor Selection Curve

Meter Box H

Model #: 2010-A-MST-C1
Serial #: 90450 Meter Box H

Date: 25-Nov-08
Barometric Pressure: 29.88 in Hg



Dry Gas Meter Temperature Display Calibration

Meter Box ID	**H**	**Reference Calibrator**	**CL 23A**
Date	**12/4/2008**	**Serial Number**	**T 243911**
Calibrated By	**Roger Osier**	**Reference Calibration Date**	**11/24/2008**

Input Temperature		Temperature Reading from Individual Thermocouple Input[1]									
		Channel Number									
Deg. F	Deg. R	1	% Diff	2	% Diff	3	% Diff	4	% Diff	5	% Diff
0	460	2	-0.4%	3	-0.7%	3	-0.7%	3	-0.7%	3	-0.7%
50	510	50	0.0%	51	-0.2%	51	-0.2%	51	-0.2%	50	0.0%
100	560	100	0.0%	100	0.0%	100	0.0%	100	0.0%	100	0.0%
500	960	500	0.0%	500	0.0%	500	0.0%	500	0.0%	500	0.0%
900	1360	902	-0.1%	902	-0.1%	902	-0.1%	902	-0.1%	902	-0.1%
1900	2360	1904	-0.2%	1905	-0.2%	1905	-0.2%	1904	-0.2%	1904	-0.2%
		Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass	Pass

[1] - Channel temperatures must agree with +/- 5 °F or 3 °C

[2] - Acceptable temperature difference is less than 1.5 %

Dry Gas Meter Thermocouple Calibration[3]

	Readout Display Temperature oF	Reference Thermometer °F	Percent Difference
Inlet Temp	72	72.6	-0.11%
Outlet Temp	72	73	-0.19%

[3] - Dry gas meter thermicouple is compared to an ASTM type mercury in glass reference thermometer

TRC

QA / QC Check: Sign and Date Roger Paul Osier

[redacted]0-73 Th[redacted]nmenta[redacted].xls

APEX INSTRUMENTS METHOD 5 (M5CO-SET) ORIFICE SET CALIBRATION

Orifice Series	OV
Serial Number	40-73
Meter Gamma	0.9922

Calibration Conditions	
Date Started	20-Nov-08
Date Completed	20-Nov-08
Calibration Technician	EW

Factors/Conversions			
Std Temp		293	K
Std Press		760	mm Hg
K_1		0.386	K/mm Hg

APEX INSTRUMENTS

[1]The Critical Orifice Coefficient, K', in English units, $(ft^3 \cdot R^{1/2})/(in.Hg \cdot min)$.
[2]The Critical Orifice Coefficient, K', in Metric units, $(m^3 \cdot K^{1/2})/(mmHg \cdot min)$.

Standard Flow is in Liters/minute

Calibration Data															Results			
					Reference Meter										Critical Orifice			
Date	Orifice Number	Barometric Pressure	Theoretical Critical Vacuum[1]	Run Time Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Volume Total	Standardized Volume	Outlet Temp Initial	Outlet Temp Final	Amb Temp Initial	Amb Temp Final	Actual Vacuum	Coefficient Metric Units	Coefficient English Units	% Variation from Avg	Standard Flow
				(θ)	(P_{ar})	(V_{mi})	(V_{mf})	(V_m)	(Vstd)	(t_{mi})	(t_{mf})	($t_{amb(i)}$)	($t_{amb(f)}$)		K'	K'	(<0.5%)	Q'
		mm Hg	mm Hg	min	mm H_2O	m^3	m^3	m^3	m^3	°C	°C	°C	°C	mm Hg	see above[2]	see above[1]	%	Lpm
22-Jan-02	OV-40	753	355.416	10	6.2	4.1216	4.2111	0.0895	0.0874	24	25	25	26	571.5	1.989E-04	0.2394	0.08	8.6706
22-Jan-02	OV-40	753	355.416	10	6.2	4.2111	4.3006	0.0895	0.0874	25	24	26	26	571.5	1.991E-04	0.2396	0.17	8.6706
22-Jan-02	OV-40	753	355.416	10	6.2	4.3006	4.3898	0.0892	0.0871	24	25	26	25	571.5	1.983E-04	0.2386	-0.25	8.6415
														Average	1.988E-04	0.2392		8.6609
22-Jan-02	OV-48	753	355.416	10	13.4	4.3898	4.5190	0.1292	0.1260	25	25	25	27	533.4	2.871E-04	0.3456	-0.11	12.5044
22-Jan-02	OV-48	753	355.416	10	13.4	4.5190	4.6482	0.1292	0.1260	25	25	27	26	533.4	2.874E-04	0.3459	-0.02	12.5044
22-Jan-02	OV-48	753	355.416	10	13.4	4.6482	4.7776	0.1294	0.1262	25	25	26	27	533.4	2.878E-04	0.3464	0.13	12.5237
														Average	2.875E-04	0.3459		12.5108
22-Jan-02	OV-55	753	355.416	10	23.2	4.7776	4.9460	0.1684	0.1644	25	25	27	26	495.3	3.749E-04	0.4512	0.15	16.3139
22-Jan-02	OV-55	753	355.416	10	23.2	4.9460	5.1144	0.1684	0.1641	25	26	26	27	495.3	3.743E-04	0.4505	-0.02	16.2865
22-Jan-02	OV-55	753	355.416	10	23.2	5.1144	5.2826	0.1682	0.1637	26	26	27	28	495.3	3.739E-04	0.4499	-0.14	16.2400
														Average	3.744E-04	0.4505		16.2801
22-Jan-02	OV-63	752	354.944	10	38	5.2826	5.4991	0.2165	0.2107	26	26	28	28	457.2	4.823E-04	0.5804	0.02	20.9059
22-Jan-02	OV-63	752	354.944	10	38	5.4991	5.7162	0.2171	0.2109	26	27	28	27	457.2	4.824E-04	0.5806	0.04	20.9288
22-Jan-02	OV-63	752	354.944	15	38	5.7162	6.0418	0.3256	0.3158	27	27	27	29	457.2	4.820E-04	0.5800	-0.06	20.8907
														Average	4.822E-04	0.5804		20.9085
22-Jan-02	OV-73	752	354.944	10	70	6.0418	6.3330	0.2912	0.2829	27	28	29	30	393.7	6.491E-04	0.7812	0.15	28.0660
22-Jan-02	OV-73	752	354.944	10	70	6.3330	6.6244	0.2914	0.2826	28	28	30	28	393.7	6.480E-04	0.7798	-0.03	28.0386
22-Jan-02	OV-73	752	354.944	10	70	6.6244	6.9158	0.2914	0.2826	28	28	28	29	393.7	6.474E-04	0.7791	-0.12	28.0386
														Average	6.482E-04	0.7800		28.0477

I certify that the above Orifice Set was calibrated in accordance with USEPA Methods, CFR 40 Part 60, Appendix A, Method 5, Item 7.1

Signature [signature] Date 11/20/08

$$V_{m(std)} = \frac{K_1 V_m (P_{bar} + \frac{\Delta H}{13.6})}{T_m}$$

Equation to Calculate Standardized Flowrate (Given Ambient Barometric Pressure and Temperature Conditions: P_{bar} & T_{amb}):

$$Q_{cr(std)} = K' * P_{bar} / T_{amb}^{1/2}$$

CALIBRATION CERTIFICATIONS - APPENDIX TABLE

Alternative Method 5 Post-Test Calibration
EPA Approved Alternative Method (ALT-009)

Post Test for G2 Energy (Baseline Landfill)

Meter Box #: Box H

Calibrated by: R.Osier
5-Pt Cal Date: 11/25/2008

Delta H @ 1.740
Gamma, initial 0.9879

1) Does the Meter Box pass the leak check procedure defined in 5.6 of Method 5' X Yes
____ No

2) Calculate Yqa for each test run using the following equation:

$$Y_{qa} = \frac{\theta}{V_m}\sqrt{\frac{0.0319\,T_m}{\Delta H_@\left(P_b + \Delta\frac{H_{avg}}{13.6}\right)}\frac{29}{M_d}}\left(\sqrt{\Delta H}\right)_{avg}$$

where:

Yqa	dry gas meter calibration check value, dimensionless.
q	total run time, min.
Vm	total sample volume measured by dry gas meter, dcf.
Tm	absolute average dry gas meter temp., °R.
Pb	barometric pressure, in. Hg.
0.0319	= (29.92/528)(0.75)2 (in. Hg/°/R) cfm2.
DHavg	average orifice meter differential, in. H20.
DH@	orifice meter calibration coefficient, in. H2O.
Md	dry molecular weight of stack gas, lb/lb-mole.
29	dry molecular weight of air, lb/lb-mole.
13.6	specific gravity of mercury.

After each test run series, do the following:

Average the three or more Yqa's obtained from the test run series and compare this average with the dry gas meter calibration factor, Y. The average must be within 5 percent of Y.

If the average Yqa does not meet the +5 percent criterion, recalibrate the meter over the full range of orifice settings, as detailed in Section 5.3.1 of method 5. Then follow the procedure in Section 5.3.3 of Method 5.

METHOD 5 - ISOKINETIC SAMPLING							
Data from unit #2, 3/25/09	Test 1		Test 2		Test 3		Average
time	60		60		60		
Vm - total	43.828		44.528		43.887		
Tm avg	77.9		74.1		73.1		
Tm -R	538		534		533		
Barometric	30.02		29.99		29.97		
DH_{avg}	1.70		1.70		1.70		
DH@	1.7400		1.7400		1.7400		
Md stack gas (dry MW)	30.21		30.22		30.23		
Md Air	29.00		29.00		29.00		
Meter Box Gamma	0.9879		0.9879		0.9879		
QA Gamma	1.0003		0.9814		0.9949		
Difference:	1.3%		0.7%		0.7%		0.9%
within 5%?	YES		YES		YES		PASS

THERMOCOUPLE CALIBRATION FORM (for TRC SOP AM-103)

ASTM Thermometer Serial No.: 061000 1483
Thermocouple Calibrator
Make: N/A Model: N/a Serial No.: N/a
Operator: R. Osier Date: 12/30/08
Pretest: ✓ Posttest:

Thermocouple ID	Reference Temp 1, °F	Temp. Reading 1, °F	Criteria	Criteria Met	Reference Temp 2, °F	Temp. Reading 2, °F	Criteria	Criteria Met
Last Impinger #1	71.8°F	71.1°F	±1.5%°R	✓	32°F	31.5°F	±1.5%°R	✓

Thermocouple ID	Reference Temp 3, °F	Temp. Reading 3, °F	Criteria	Criteria Met	Reference Temp 4, °F	Temp. Reading 4, °F	Criteria	Criteria Met

Criteria: Percent difference between the Reference Temperature and the Average Temperature can be only ± 1.5%°R.

Equation: $\frac{[(\text{Ref. Temp.} + 460) - (\text{Temp. Reading} + 460)] \times 100}{(\text{Ref. Temp.} + 460)}$

QA/QC Check By:
Date: 12-31-08

Figure 1. Thermocouple Calibration Sheet

PreciseCal Services, Inc.

NIST Traceable Calibration Services

CERTIFICATE OF CALIBRATION

Company : TRC Air Measurements - FL
6322 NW 16th Dr. Ste. 170
Gainesville FL 32656

Cert No: 1682-13697

PO Number N/A

Item:	Scale, Precision	Cal Date:	21-Nov-08
Model No:	VIC-1501	Cal Due Date:	21-Nov-09
Control#	**17956263**	Item Found:	Within Tolerance
SN/ Other:	17956263	Item Returned:	Within Tolerance
Manufacturer:	Acculab	Procedure#:	4-SCP-002

Tolerance: ± 0.2 g

Standard:	20	100	500	1000	1500			grams
Unit:	20.0	100.0	500.0	1000.0	1500.0			
Final Rdg:								

Tolerance:

Standard:								
Unit:								
Final Rdg:								

Location: On-site Temperature: 70 Humidity 56

It is hereby certified that the above described Instruments meets or exceeds all specifications as stated in the referenced procedure. This calibration is in accordance with the requirements of ANSI/NCSL Z540-1 and MIL STD 45662A, and is traceable to the National Institute of Standards and Technologies (NIST), or to intrinsic standards accepted as such by NIST.

Standard#	Due Date	NIST#	Standard#	Due Date	NIST#
025	3/27/2009	27123-62			

This certificate shall not be reproduced, except in full, without the written approval of PreciseCal Services.

Created by: J. Costello Technician: A. Ramos QC'd by QC PCS

PreciseCal Services, Inc.
3044 Scherer Drive North
St. Petersburg, FL 33716
Tel: 727-573-5063 Toll Free 877-450-4CAL
FAX: 727-572-4227
Email: Services@PreciseCal.com

ALTIMETER TEST RECORD

This unit was tested and inspected IAW FAR Part 43,
Appendix E, and is approved for return to service.

DATE: 12/23/2008

WORK ORDER #: 15072

SCALE ERROR

-1000	-10
0	0
+ 500	-5
+1000	0
+1500	-5
+2000	0
+3000	+10
+4000	+20
+6000	+30
+8000	+25
+10,000	+25
+12,000	+20
+14,000	+15
+16,000	+20
+18,000	+10
+20,000	-10
+22,000	
+25,000	
+30,000	
+35,000	
+40,000	
+45,000	
+50,000	

START PRESSURE 30.23

FINAL PRESSURE 30.20

BAROMETRIC SCALE ERROR TEST

28.10	+15	30.50	-10
28.50	+25	30.90	-5
29.00	+10	30.99	-5
29.50	+25		
29.92	0		

FRICTION TEST

1000	30'	20,000	60'
2000	30'	25,000	
3000	30'	30,000	
5000	25'	35,000	
10,000	35'	40,000	
15,000	45'	50,000	

CASE LEAK TEST @ 18,000 0

CASE LEAK TEST @ 1,200 0

HYSTERESIS TEST @ 50% 30'

HYSTERESIS TEST @ 40% 30'

AFTER EFFECT 15'

SERIAL NUMBER J5924

INSPECTOR [signature]

PreciseCal Services, Inc.

NIST Traceable Calibration Services

CERTIFICATE OF CALIBRATION

Company : TRC Air Measurements - FL
6322 NW 18th Dr. Ste. 170
Gainesville FL 32656

Cert No: 1682-13710

PO Number N/A

Item:	Psychrometer	Cal Date:	21-Nov-08
Model No:	3312-20 Dual Thermometer	Cal Due Date:	21-Nov-09
Control#	57778	Item Found:	Within Tolerance
SN/ Other:	57778	Item Returned:	Within Tolerance
Manufacturer:	Cole Parmer	Procedure#:	3-SCP-003

Wet Bulb

Tolerance: ± 1°F

Standard:	39.6	67.2	114.7					°F
Unit:	40	67	115					
Final Rdg:								

Dry Bulb

Tolerance: ± 1°F

Standard:	39.6	67.2	114.7					°F
Unit:	39	68	115					
Final Rdg:								

Location	On-site	Temperature:	70	Humidity	56

It is hereby certified that the above described instruments meets or exceeds all specifications as stated in the referenced procedure. This calibration is in accordance with the requirements of ANSI/NCSL Z540-1 and MIL STD 45662A, and is traceable to the National Institute of Standards and Technologies (NIST), or to intrinsic standards accepted as such by NIST.

Standard#	Due Date	NIST#	Standard#	Due Date	NIST#
T475	3/8/2009	11881			

Created by: J. Costello Technician: A. Ramos QC'd by QC PCS

PreciseCal Services, Inc.
3044 Scherer Drive North
St. Petersburg, FL 33716
Tel: 727-573-5063 Toll Free 877-450-4CAL
FAX: 727-572-4227
Email: Services@PreciseCal.com

THERMOCOUPLE DIGITAL INDICATOR CALIBRATION

Digital Thermometer	Temp Controller	Reference Calibartor	CL23A
Manufacturer	Envirnmental Supply Comp	Manufacturer	Omega
Model	na	Model	CL23A
Serial Number	FL-TRC-2	Serial Number	T-243911
Date	December 9, 2008	Reference Calib. Date	November 24, 2008

Thermometer - Filter

Test Point Number	Calibration Device (°F)	Digital Indicator (°F)	[1] Difference (°F)	[2] Difference (% abs)	Pass / Fail
1	100.0	98.0	NA	-0.54	Pass
2	125.0	123.0	NA	-0.50	Pass
3	150.0	148.0	NA	-0.47	Pass
4	175.0	173.0	NA	-0.45	Pass
5	200.0	198.0	NA	-0.42	Pass
6	225.0	224.0	NA	-0.20	Pass
7	250.0	250.0	NA	0.00	Pass
8	275.0	273.0	NA	-0.36	Pass
9	300.0	298.0	NA	-0.35	Pass
10	325.0	324.0	NA	-0.17	Pass

Thermometer - Probe

Test Point Number	Calibration Device (°F)	Digital Indicator (°F)	[1] Difference (°F)	[2] Difference (% abs)	Pass / Fail
1	100.0	100.0	NA	0.00	Pass
2	125.0	125.0	NA	0.00	Pass
3	150.0	150.0	NA	0.00	Pass
4	175.0	174.0	NA	-0.22	Pass
5	200.0	199.0	NA	-0.21	Pass
6	225.0	224.0	NA	-0.20	Pass
7	250.0	249.0	NA	-0.19	Pass
8	275.0	274.0	NA	-0.18	Pass
9	300.0	300.0	NA	0.00	Pass
10	325.0	326.0	NA	0.17	Pass

1) Acceptable EPA Method 4 tolerance must be within 2 deg F and 1.5% of absolute temperature (Deg R)
2) Acceptable EPA Method 2 tolerance must be within 1.5% of absolute temperature (Deg R)

Calibrated By: Roger Paul Osier

Date: 09 Dec. 2008

PreciseCal Services, Inc.

NIST Traceable Calibration Services

CERTIFICATE OF CALIBRATION

Company : TRC Air Measurements - FL

6322 NW 18th Dr. Ste. 170
Gainesville FL 32656

Cert No: 1700-13832

PO Number: N/A

Item:	Calibrator, Temperature, Electronic	Cal Date:	24-Nov-08
Model No:	CL23A	Cal Due Date:	24-Nov-09
Control#	**T-243911**	Item Found:	Within Tolerance
SN/ Other:	T-243911	Item Returned:	Within Tolerance
Manufacturer:	Omega	Procedure#:	MFR Manual

Tolerance: MFR SPECS

See attached data sheet for test results.

Location: Lab Temperature: 75 Humidity 42

It is hereby certified that the above described instruments meets or exceeds all specifications as stated in the referenced procedure. This calibration is in accordance with the requirements of ANSI/NCSL Z540-1 and MIL STD 45662A, and is traceable to the National Institute of Standards and Technologies (NIST), or to intrinsic standards accepted as such by NIST.

Standard#	Due Date	NIST#	Standard#	Due Date	NIST#
804	4/17/2009	27078-1			

Created by: J. Costello Technician J. Geschwender QC'd by QC PCS

PreciseCal Services, Inc.
3044 Scherer Drive North
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Email: Services@PreciseCal.com

PreciseCal Services, Inc.

NIST Traceable Calibration Services

CERTIFICATE OF CALIBRATION

Company : TRC Air Measurements - FL
6322 NW 18th Dr. Ste. 170
Gainesville FL 32656

Cert No: 1700-14012

PO Number N/A

Item:	Thermometer, Glass Precision <0.2°C	Cal Date:	25-Nov-08
Model No:	063C-4	Cal Due Date:	25-Nov-09
Control#	0610001483	Item Found:	Within Tolerance
SN/ Other:	N/A	Item Returned:	Within Tolerance
Manufacturer:	Ertco	Procedure#:	3-SCP-004

Tolerance: ± 0.1°C

Standard:	-7.990	15.976	31.964					°C
Unit:	-8	16.0	32.0					
Final Rdg:								

Tolerance:

Standard:								
Unit:								
Final Rdg:								

Location	Lab	Temperature:	74	Humidity	48

It is hereby certified that the above described instruments meets or exceeds all specifications as stated in the referenced procedure. This calibration is in accordance with the requirements of ANSI/NCSL Z540-1 and MIL STD 45662A, and is traceable to the National Institute of Standards and Technologies (NIST), or to intrinsic standards accepted as such by NIST.

Standard#	Due Date	NIST#	Standard#	Due Date	NIST#
T725	4/10/2009	27625-1			
921	8/19/2009	27603-1			

Created by: J. Costello Technician: J. Geschwender QC'd by QC JAC

PreciseCal Services, Inc.
3044 Scherer Drive North
St. Petersburg, FL 33716
Tel: 727-573-5063 Toll Free 877-450-4CAL
FAX: 727-572-4227
Email: Services@PreciseCal.com

THERMOCOUPLE DIGITAL INDICATOR CALIBRATION

Digital Thermometer	Fluke 51	Reference Calibartor	CL23A
Manufacturer	Fluke	Manufacturer	Omega
Model	Fluke 51	Model	CL23A
Serial Number	4470643	Serial Number	T-243911
Date	December 8, 2008	Reference Calib. Date	November 24, 2008

Thermometer - Low Range (EPA Methods 2 and 4)

Test Point Number	Calibration Device (°F)	Digital Indicator (°F)	[1] Difference (°F)	[2] Difference (% abs)	Pass / Fail
1	0.0	0.0	0.00	0.00	Pass
2	20.0	20.2	-0.20	0.04	Pass
3	40.0	40.8	-0.80	0.16	Pass
4	60.0	60.8	-0.80	0.15	Pass
5	80.0	80.6	-0.60	0.11	Pass
6	100.0	100.0	0.00	0.00	Pass
7	120.0	120.2	-0.20	0.03	Pass
8	140.0	140.0	0.00	0.00	Pass
9	160.0	160.0	0.00	0.00	Pass
10	180.0	180.6	-0.60	0.09	Pass

Thermometer - High Range (EPA Method 2)

Test Point Number	Calibration Device (°F)	Digital Indicator (°F)	[1] Difference (°F)	[2] Difference (% abs)	Pass / Fail
1	0.0	0.0	NA	0.00	Pass
2	200.0	200.6	NA	0.13	Pass
3	400.0	400.0	NA	0.00	Pass
4	600.0	600.6	NA	0.07	Pass
5	800.0	800.0	NA	0.00	Pass
6	1000.0	1000.8	NA	0.06	Pass
7	1200.0	1201.2	NA	0.08	Pass
8	1400.0	1400.6	NA	0.04	Pass
9	1600.0	1599.8	NA	-0.01	Pass
10	1800.0	1801.0	NA	0.05	Pass

1) Acceptable EPA Method 4 tolerance must be within 2 deg F and 1.5% of absolute temperature (Deg R)
2) Acceptable EPA Method 2 tolerance must be within 1.5% of absolute temperature (Deg R)

Calibrated By: _____ Date: 12/8/2008

PreciseCal Services, Inc.

NIST Traceable Calibration Services

CERTIFICATE OF CALIBRATION

Company : TRC Air Measurements - FL
6322 NW 18th Dr. Ste. 170
Gainesville FL 32656

Cert No: 1700-13833

PO Number N/A

Item:	Thermocouple Probe	Cal Date:	25-Nov-08
Model No:	N/A	Cal Due Date:	25-Nov-09
Control#:	**TRC-1004**	Item Found:	As Noted
SN/ Other:	N/A	Item Returned:	Charted
Manufacturer:	N/A	Procedure#:	3-SCP-004

Tolerance: Charted

Standard:	0.028	50.006	100.022					°C
Unit:	0.0	50.2	100.4					
Final Rdg:								

Tolerance:

Standard:								
Unit:								
Final Rdg:								

Location: Lab Temperature: 74 Humidity 48

It is hereby certified that the above described instruments meets or exceeds all specifications as stated in the referenced procedure. This calibration is in accordance with the requirements of ANSI/NCSL Z540-1 and MIL STD 45662A, and is traceable to the National Institute of Standards and Technologies (NIST), or to intrinsic standards accepted as such by NIST.

Standard#	Due Date	NIST#	Standard#	Due Date	NIST#
T725	4/10/2009	27625-1			
921	8/19/2009	27603-1			

Created by: J. Costello Technician: J. Geschwender QC'd by QC JAC

PreciseCal Services, Inc.
3044 Scherer Drive North
St. Petersburg, FL 33716
Tel: 727-573-5063 Toll Free 877-450-4CAL
FAX: 727-572-4227
Email: Services@PreciseCal.com

APPENDIX F:
LOGGED DATA RECORDS

G2 Energy - MCBCC Baseline Landfill, Unit 1, Logged Data Records

									AVE	AVE	AVE	AVE	AVE	AVE
			NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B	NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B
Run Number	Date	Time	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)
START Run U1-C-1	3/25/2009	9:33:01	223.27	1101.59	7.33	12.30	441.03	484.00	223.27	1101.59	7.33	12.30	441.03	484.00
Run U1-C-1	3/25/2009	9:34:01	246.96	1114.87	7.45	12.20	489.03	528.67	216.53	1094.99	7.36	12.27	461.58	504.25
Run U1-C-1	3/25/2009	9:35:01	195.55	1019.31	7.40	12.24	459.03	488.33	222.91	1086.76	7.42	12.22	466.76	489.25
Run U1-C-1	3/25/2009	9:36:01	232.85	1101.59	7.48	12.18	507.03	358.33	211.00	1070.51	7.41	12.23	468.03	489.88
Run U1-C-1	3/25/2009	9:37:01	153.21	865.35	8.10	11.64	690.04	771.00	211.81	1061.36	7.50	12.15	507.63	528.48
Run U1-C-1	3/25/2009	9:38:01	122.47	878.62	7.38	12.24	384.02	435.67	193.11	1009.05	7.58	12.09	516.55	540.54
Run U1-C-1	3/25/2009	9:39:01	286.77	1207.77	6.95	12.64	366.02	400.67	192.84	1017.19	7.49	12.17	488.48	515.02
Run U1-C-1	3/25/2009	9:40:01	318.02	1194.50	7.30	12.36	450.03	477.00	205.95	1043.75	7.43	12.22	476.45	504.33
Run U1-C-1	3/25/2009	9:41:01	239.40	1061.78	7.43	12.24	459.03	506.33	216.64	1056.05	7.43	12.22	474.75	501.47
Run U1-C-1	3/25/2009	9:42:01	184.97	1051.16	7.40	12.26	465.03	508.33	215.43	1055.46	7.43	12.22	472.52	501.25
Run U1-C-1	3/25/2009	9:43:01	227.30	1069.74	7.50	12.18	492.03	535.00	214.80	1057.45	7.43	12.22	472.72	503.28
Run U1-C-1	3/25/2009	9:44:01	201.60	1021.96	7.48	12.20	462.03	495.67	214.49	1056.98	7.44	12.22	473.40	504.26
Run U1-C-1	3/25/2009	9:45:01	182.95	1064.43	7.33	12.32	453.03	496.33	211.35	1053.68	7.43	12.22	471.11	503.47
Run U1-C-1	3/25/2009	9:46:01	233.35	1090.98	7.53	12.14	480.03	533.00	211.58	1056.93	7.44	12.22	471.32	502.13
Run U1-C-1	3/25/2009	9:47:01	163.29	1000.73	7.40	12.26	444.03	495.67	210.51	1055.15	7.44	12.22	470.64	501.00
Run U1-C-1	3/25/2009	9:48:01	218.73	1109.56	7.40	12.24	468.03	502.33	208.36	1054.56	7.44	12.22	469.04	500.26
Run U1-C-1	3/25/2009	9:49:01	230.83	1069.74	7.50	12.18	462.03	503.33	209.94	1057.83	7.44	12.22	469.16	499.48
Run U1-C-1	3/25/2009	9:50:01	170.85	1032.58	7.38	12.28	432.02	468.33	208.90	1056.56	7.44	12.22	467.82	498.94
Run U1-C-1	3/25/2009	9:51:01	237.38	1104.25	7.50	12.16	468.03	508.33	208.09	1057.88	7.44	12.22	467.36	498.99
Run U1-C-1	3/25/2009	9:52:01	176.40	1040.54	7.45	12.22	474.03	506.67	208.14	1058.20	7.44	12.22	467.22	499.38
Run U1-C-1	3/25/2009	9:53:01	211.68	1037.89	7.50	12.16	462.03	509.00	208.10	1058.67	7.44	12.21	467.74	498.79
Run U1-C-1	3/25/2009	9:54:01	172.37	1043.20	7.33	12.30	441.03	281.00	206.66	1057.06	7.44	12.22	466.60	497.64
Run U1-C-1	3/25/2009	9:55:01	244.94	1098.94	7.50	12.18	486.03	531.67	206.59	1058.61	7.44	12.22	466.41	496.88
Run U1-C-1	3/25/2009	9:56:01	198.07	1021.96	7.48	12.20	459.03	502.67	207.08	1059.25	7.45	12.21	466.98	498.04
Run U1-C-1	3/25/2009	9:57:01	176.90	1059.12	7.35	12.30	453.03	499.67	205.69	1057.81	7.44	12.22	466.04	497.57
Run U1-C-1	3/25/2009	9:58:01	235.37	1101.59	7.53	12.16	492.03	537.00	205.72	1059.36	7.44	12.22	466.21	496.92
Run U1-C-1	3/25/2009	9:59:01	169.34	1003.38	7.45	12.22	465.03	490.67	206.07	1059.40	7.45	12.21	466.59	498.01
Run U1-C-1	3/25/2009	10:00:01	179.42	1061.78	7.35	12.30	450.03	493.00	204.70	1058.23	7.45	12.21	465.71	497.68
Run U1-C-1	3/25/2009	10:01:01	235.87	1104.25	7.55	12.14	492.03	543.67	204.74	1059.66	7.45	12.21	465.94	498.31
Run U1-C-1	3/25/2009	10:02:01	186.48	1006.03	7.50	12.18	459.03	510.00	205.16	1059.78	7.45	12.21	466.55	499.12
Run U1-C-1	3/25/2009	10:03:01	191.52	1085.67	7.50	12.16	477.03	420.00	204.11	1058.69	7.45	12.21	466.37	499.36

G2 Energy - MCBCC Baseline Landfill, Unit 1, Logged Data Records

									AVE	AVE	AVE	AVE	AVE	AVE
			NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B	NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B
Run Number	Date	Time	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)
Run U1-C-1	3/25/2009	10:04:01	192.53	1043.20	7.55	12.14	471.03	531.00	204.42	1059.18	7.45	12.21	466.70	499.30
Run U1-C-1	3/25/2009	10:05:01	166.32	1021.96	7.45	12.22	453.03	493.33	203.65	1058.04	7.45	12.21	466.34	498.03
Run U1-C-1	3/25/2009	10:06:01	181.44	1075.05	7.45	12.20	459.03	457.33	202.92	1057.94	7.45	12.21	465.74	497.85
Run U1-C-1	3/25/2009	10:07:01	223.27	1080.36	7.60	12.08	483.03	466.33	203.26	1059.03	7.46	12.21	466.18	497.72
Run U1-C-1	3/25/2009	10:08:01	158.76	1006.03	7.43	12.22	444.03	494.67	202.91	1058.10	7.46	12.21	466.11	497.93
Run U1-C-1	3/25/2009	10:09:01	193.03	1069.74	7.43	12.24	447.03	487.67	202.18	1057.87	7.46	12.21	465.65	497.09
Run U1-C-1	3/25/2009	10:10:01	192.53	1093.63	7.45	12.22	468.03	515.67	201.70	1058.07	7.45	12.21	465.24	497.05
Run U1-C-1	3/25/2009	10:11:01	202.61	1056.47	7.55	12.14	471.03	527.00	202.19	1059.00	7.46	12.21	465.60	497.94
Run U1-C-1	3/25/2009	10:12:01	172.87	1051.16	7.48	12.20	456.03	496.67	201.74	1058.44	7.46	12.21	465.45	498.12
Run U1-C-1	3/25/2009	10:13:01	220.25	1072.40	7.58	12.12	492.03	539.33	201.77	1058.94	7.46	12.21	465.85	497.96
Run U1-C-1	3/25/2009	10:14:01	198.57	1037.89	7.58	12.12	477.03	529.33	201.86	1058.69	7.46	12.20	466.46	499.04
Run U1-C-1	3/25/2009	10:15:01	165.31	1032.58	7.43	12.26	450.03	498.67	201.15	1057.43	7.46	12.20	466.15	499.04
Run U1-C-1	3/25/2009	10:16:01	223.27	1085.67	7.58	12.12	486.03	507.33	201.11	1057.80	7.46	12.20	466.25	499.09
Run U1-C-1	3/25/2009	10:17:01	185.47	1006.03	7.53	12.16	465.03	505.00	201.34	1057.66	7.47	12.20	466.60	499.83
Run U1-C-1	3/25/2009	10:18:01	165.81	1037.89	7.35	12.28	438.03	483.67	200.55	1056.45	7.46	12.20	466.07	499.69
Run U1-C-1	3/25/2009	10:19:01	227.30	1098.94	7.53	12.14	480.03	462.33	200.47	1057.06	7.47	12.20	466.11	499.22
Run U1-C-1	3/25/2009	10:20:01	192.53	1016.65	7.55	12.14	450.03	510.00	200.79	1057.25	7.47	12.20	466.40	499.11
Run U1-C-1	3/25/2009	10:21:01	179.93	1064.43	7.48	12.20	468.03	514.33	200.21	1056.37	7.47	12.20	466.13	498.86
Run U1-C-1	3/25/2009	10:22:01	219.74	1072.40	7.60	12.08	489.03	515.33	200.40	1056.90	7.47	12.20	466.47	499.10
Run U1-C-1	3/25/2009	10:23:01	179.93	1006.03	7.55	12.14	456.03	514.67	200.29	1056.35	7.47	12.20	466.71	499.52
Run U1-C-1	3/25/2009	10:24:01	187.49	1061.78	7.50	12.16	462.03	515.67	199.72	1055.55	7.47	12.20	466.57	499.69
Run U1-C-1	3/25/2009	10:25:01	209.16	1056.47	7.60	12.10	486.03	356.00	199.85	1055.86	7.47	12.19	466.91	499.91
Run U1-C-1	3/25/2009	10:26:01	157.25	992.76	7.45	12.24	441.03	489.67	199.63	1055.15	7.47	12.19	466.77	499.88
Run U1-C-1	3/25/2009	10:27:01	187.99	1061.78	7.40	12.28	447.03	489.67	199.11	1054.71	7.47	12.19	466.30	499.63
Run U1-C-1	3/25/2009	10:28:01	228.81	1090.98	7.55	12.16	498.03	547.67	199.21	1055.27	7.47	12.19	466.42	499.46
Run U1-C-1	3/25/2009	10:29:01	195.05	1027.27	7.58	12.10	486.03	540.33	199.47	1055.31	7.48	12.19	466.94	500.35
Run U1-C-1	3/25/2009	10:30:01	159.77	998.07	7.43	12.26	441.03	476.00	199.07	1054.35	7.48	12.19	466.79	500.09
Run U1-C-1	3/25/2009	10:31:01	218.23	1106.90	7.45	12.22	477.03	421.67	198.71	1054.24	7.48	12.19	466.54	499.80
Run U1-C-1	3/25/2009	10:32:01	216.21	1059.12	7.60	12.10	498.03	560.33	199.13	1054.78	7.48	12.19	466.98	500.43
END Run U1-C-1	3/25/2009	10:33:01	181.44	1008.69	7.53	12.16	468.03	295.00	**199.16**	**1054.37**	**7.48**	**12.19**	**467.23**	**500.86**

G2 Energy - MCBCC Baseline Landfill, Unit 1, Logged Data Records

									AVE	AVE	AVE	AVE	AVE	AVE
			NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B	NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B
Run Number	Date	Time	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)
START Run U1-C-2	3/25/2009	10:56:01	199.58	1085.67	7.43	12.24	420.02	433.67	199.58	1085.67	7.43	12.24	420.02	433.67
Run U1-C-2	3/25/2009	10:57:01	222.26	1056.47	7.63	12.08	447.03	487.33	223.45	1085.89	7.54	12.15	445.09	413.68
Run U1-C-2	3/25/2009	10:58:01	163.80	979.49	7.40	12.26	408.02	437.67	207.92	1043.14	7.53	12.15	433.42	439.67
Run U1-C-2	3/25/2009	10:59:01	215.71	1090.98	7.50	12.18	441.03	477.33	200.28	1041.40	7.50	12.18	429.34	446.23
Run U1-C-2	3/25/2009	11:00:01	210.67	1037.89	7.60	12.08	444.03	479.33	206.42	1047.47	7.52	12.16	434.92	456.59
Run U1-C-2	3/25/2009	11:01:01	162.29	984.80	7.43	12.26	405.02	337.33	202.48	1037.96	7.51	12.16	432.29	457.95
Run U1-C-2	3/25/2009	11:02:01	198.07	1088.32	7.43	12.24	432.02	470.00	198.56	1037.18	7.49	12.18	428.87	445.08
Run U1-C-2	3/25/2009	11:03:01	220.75	1051.16	7.58	12.10	450.03	491.33	202.68	1043.72	7.50	12.17	431.61	448.45
Run U1-C-2	3/25/2009	11:04:01	162.29	990.11	7.45	12.20	420.02	456.67	200.54	1038.15	7.50	12.17	430.90	451.00
Run U1-C-2	3/25/2009	11:05:01	207.65	1056.47	7.53	12.14	441.03	449.00	199.38	1038.63	7.50	12.17	430.71	447.70
Run U1-C-2	3/25/2009	11:06:01	205.13	1027.27	7.55	12.12	420.02	456.33	200.37	1039.88	7.51	12.17	431.97	451.24
Run U1-C-2	3/25/2009	11:07:01	170.85	1048.51	7.48	12.20	426.02	456.67	198.37	1037.30	7.50	12.17	431.01	452.01
Run U1-C-2	3/25/2009	11:08:01	182.45	1006.03	7.43	12.24	414.02	450.67	199.16	1039.13	7.51	12.17	430.50	450.75
Run U1-C-2	3/25/2009	11:09:01	221.25	1101.59	7.55	12.14	447.03	419.67	197.90	1039.33	7.50	12.17	430.15	452.04
Run U1-C-2	3/25/2009	11:10:01	213.19	1040.54	7.63	12.04	462.03	518.00	199.78	1041.51	7.51	12.17	431.96	453.09
Run U1-C-2	3/25/2009	11:11:01	154.73	966.22	7.45	12.22	417.02	460.00	199.05	1038.81	7.51	12.16	432.18	455.34
Run U1-C-2	3/25/2009	11:12:01	174.89	1053.81	7.40	12.26	402.02	451.67	197.02	1037.41	7.51	12.17	430.54	452.89
Run U1-C-2	3/25/2009	11:13:01	229.32	1096.29	7.53	12.12	441.03	493.33	197.43	1040.37	7.50	12.17	430.54	454.44
Run U1-C-2	3/25/2009	11:14:01	172.37	998.07	7.45	12.18	414.02	426.00	198.26	1041.20	7.51	12.16	430.76	456.22
Run U1-C-2	3/25/2009	11:15:01	191.52	1093.63	7.45	12.20	429.02	481.67	196.90	1040.84	7.50	12.17	429.91	453.56
Run U1-C-2	3/25/2009	11:16:01	221.25	1037.89	7.58	12.10	426.02	486.33	198.24	1043.40	7.50	12.16	430.79	455.96
Run U1-C-2	3/25/2009	11:17:01	170.85	1040.54	7.43	12.24	405.02	451.67	197.10	1041.77	7.50	12.17	429.76	456.28
Run U1-C-2	3/25/2009	11:18:01	242.42	1117.52	7.55	12.12	447.03	492.00	197.13	1043.81	7.50	12.17	429.59	454.46
Run U1-C-2	3/25/2009	11:19:01	205.63	1016.65	7.58	12.08	426.02	487.67	198.31	1044.88	7.50	12.16	430.54	456.68
Run U1-C-2	3/25/2009	11:20:01	176.90	1051.16	7.45	12.20	420.02	477.00	197.27	1043.17	7.50	12.16	429.92	457.42
Run U1-C-2	3/25/2009	11:21:01	228.81	1085.67	7.63	12.04	456.03	514.00	197.72	1044.99	7.50	12.16	430.42	458.61
Run U1-C-2	3/25/2009	11:22:01	160.77	992.76	7.45	12.20	417.02	473.00	197.67	1044.36	7.51	12.16	430.38	460.14
Run U1-C-2	3/25/2009	11:23:01	182.95	1069.74	7.45	12.20	417.02	321.67	196.86	1044.37	7.50	12.16	429.76	460.52
Run U1-C-2	3/25/2009	11:24:01	229.82	1093.63	7.63	12.04	456.03	519.33	197.32	1046.25	7.51	12.16	430.13	460.76
Run U1-C-2	3/25/2009	11:25:01	175.89	1027.27	7.55	12.12	438.03	511.00	197.48	1046.28	7.51	12.16	430.51	462.59
Run U1-C-2	3/25/2009	11:26:01	166.32	1021.96	7.45	12.20	411.02	288.33	196.82	1045.75	7.51	12.16	430.06	462.92

G2 Energy - MCBCC Baseline Landfill, Unit 1, Logged Data Records

									AVE	AVE	AVE	AVE	AVE	AVE
			NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B	NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B
Run Number	Date	Time	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)
Run U1-C-2	3/25/2009	11:27:01	181.44	1080.36	7.43	12.24	405.02	462.33	196.07	1045.94	7.50	12.16	429.01	460.93
Run U1-C-2	3/25/2009	11:28:01	232.34	1120.18	7.55	12.12	450.03	520.00	196.29	1047.97	7.50	12.16	428.92	461.77
Run U1-C-2	3/25/2009	11:29:01	209.16	1067.09	7.68	12.02	459.03	338.33	197.00	1049.25	7.51	12.16	429.70	463.05
Run U1-C-2	3/25/2009	11:30:01	171.86	998.07	7.50	12.16	417.02	474.67	196.77	1048.67	7.51	12.16	429.91	463.73
Run U1-C-2	3/25/2009	11:31:01	176.40	1061.78	7.43	12.22	405.02	471.00	195.91	1047.98	7.51	12.16	429.17	463.00
Run U1-C-2	3/25/2009	11:32:01	235.37	1128.14	7.55	12.12	453.03	515.00	196.18	1049.75	7.51	12.16	429.16	463.60
Run U1-C-2	3/25/2009	11:33:01	209.66	1051.16	7.65	12.04	447.03	508.67	196.96	1050.76	7.51	12.16	429.80	465.02
Run U1-C-2	3/25/2009	11:34:01	158.25	1016.65	7.43	12.24	405.02	448.33	196.29	1049.49	7.51	12.16	429.47	465.20
Run U1-C-2	3/25/2009	11:35:01	185.47	1112.21	7.48	12.18	441.03	500.33	195.74	1049.91	7.51	12.16	428.90	463.99
Run U1-C-2	3/25/2009	11:36:01	220.25	1061.78	7.60	12.08	435.02	497.00	196.48	1051.25	7.51	12.16	429.10	465.07
Run U1-C-2	3/25/2009	11:37:01	163.29	1040.54	7.48	12.22	408.02	477.33	195.93	1050.43	7.51	12.16	428.60	465.13
Run U1-C-2	3/25/2009	11:38:01	230.33	1098.94	7.63	12.06	453.03	526.00	195.99	1051.37	7.51	12.16	428.65	466.04
Run U1-C-2	3/25/2009	11:39:01	185.47	1048.51	7.60	12.08	444.03	523.67	196.17	1051.60	7.51	12.15	429.02	466.19
Run U1-C-2	3/25/2009	11:40:01	178.92	1032.58	7.50	12.16	408.02	475.00	195.92	1051.25	7.52	12.15	429.01	466.41
Run U1-C-2	3/25/2009	11:41:01	175.89	1072.40	7.45	12.20	405.02	459.00	195.37	1051.12	7.51	12.15	428.53	466.63
Run U1-C-2	3/25/2009	11:42:01	222.77	1112.21	7.60	12.08	444.03	504.67	195.40	1052.21	7.52	12.15	428.48	467.04
Run U1-C-2	3/25/2009	11:43:01	209.16	1056.47	7.65	12.04	462.03	533.00	195.89	1052.87	7.52	12.15	429.04	467.83
Run U1-C-2	3/25/2009	11:44:01	197.06	995.42	7.60	12.08	426.02	482.00	196.03	1052.56	7.52	12.15	429.51	469.07
Run U1-C-2	3/25/2009	11:45:01	165.31	1037.89	7.45	12.20	396.02	464.00	195.36	1051.51	7.52	12.15	429.11	469.10
Run U1-C-2	3/25/2009	11:46:01	175.89	1106.90	7.53	12.18	426.02	496.00	194.88	1051.89	7.52	12.15	428.57	468.48
Run U1-C-2	3/25/2009	11:47:01	223.27	1090.98	7.65	12.04	450.03	528.00	195.47	1053.23	7.52	12.15	428.86	469.49
Run U1-C-2	3/25/2009	11:48:01	177.41	1003.38	7.53	12.18	414.02	487.67	195.63	1053.21	7.52	12.15	428.98	470.10
Run U1-C-2	3/25/2009	11:49:01	172.37	1053.81	7.48	12.20	396.02	469.00	195.18	1052.89	7.52	12.15	428.57	469.41
Run U1-C-2	3/25/2009	11:50:01	210.17	1122.83	7.58	12.10	441.03	518.67	195.01	1053.51	7.52	12.15	428.42	469.84
Run U1-C-2	3/25/2009	11:51:01	206.13	1064.43	7.70	11.98	453.03	535.67	195.40	1054.26	7.53	12.15	428.92	470.80
Run U1-C-2	3/25/2009	11:52:01	154.73	990.11	7.50	12.18	402.02	476.00	195.06	1053.54	7.53	12.14	428.82	471.37
Run U1-C-2	3/25/2009	11:53:01	187.99	1088.32	7.50	12.18	420.02	488.00	194.51	1053.37	7.53	12.15	428.42	470.90
Run U1-C-2	3/25/2009	11:54:01	218.73	1088.32	7.68	12.04	453.03	434.00	194.91	1054.50	7.53	12.14	428.65	471.28
Run U1-C-2	3/25/2009	11:55:01	186.48	1027.27	7.68	12.02	453.03	535.00	195.10	1054.54	7.53	12.14	429.12	472.27
END Run U1-C-2	3/25/2009	11:56:01	163.80	1029.92	7.50	12.16	405.02	483.00	**194.71**	**1053.88**	**7.53**	**12.14**	**428.95**	**472.41**

G2 Energy - MCBCC Baseline Landfill, Unit 1, Logged Data Records

									AVE	AVE	AVE	AVE	AVE	AVE
			NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B	NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B
Run Number	Date	Time	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)
START Run U1-C-3	3/25/2009	12:36:01	195.05	1019.31	7.70	12.00	435.02	496.00	195.05	1019.31	7.70	12.00	435.02	496.00
Run U1-C-3	3/25/2009	12:37:01	168.84	1014.00	7.50	12.16	396.02	301.00	171.37	994.03	7.59	12.09	414.27	458.36
Run U1-C-3	3/25/2009	12:38:01	218.73	1117.52	7.58	12.10	429.02	479.33	179.34	1036.07	7.56	12.11	413.92	439.36
Run U1-C-3	3/25/2009	12:39:01	226.29	1083.01	7.73	11.96	450.03	512.67	196.66	1059.55	7.59	12.09	425.65	461.64
Run U1-C-3	3/25/2009	12:40:01	168.84	987.45	7.60	12.08	420.02	472.00	198.23	1052.85	7.61	12.07	427.74	468.71
Run U1-C-3	3/25/2009	12:41:01	181.44	1059.12	7.53	12.14	411.02	462.00	192.46	1048.49	7.60	12.08	423.29	467.10
Run U1-C-3	3/25/2009	12:42:01	238.39	1114.87	7.73	11.96	456.03	334.00	195.26	1057.99	7.60	12.08	425.11	466.18
Run U1-C-3	3/25/2009	12:43:01	175.39	998.07	7.60	12.08	414.02	472.67	197.79	1057.07	7.61	12.07	426.65	462.59
Run U1-C-3	3/25/2009	12:44:01	185.47	1072.40	7.50	12.16	414.02	464.33	194.39	1054.28	7.60	12.08	423.23	460.89
Run U1-C-3	3/25/2009	12:45:01	220.25	1096.29	7.68	12.02	426.02	482.00	197.40	1061.30	7.60	12.07	424.33	464.07
Run U1-C-3	3/25/2009	12:46:01	171.86	1045.85	7.55	12.10	423.02	471.33	196.03	1059.36	7.60	12.07	423.53	463.78
Run U1-C-3	3/25/2009	12:47:01	230.33	1098.94	7.73	11.96	462.03	343.33	197.22	1062.75	7.60	12.07	425.26	466.47
Run U1-C-3	3/25/2009	12:48:01	185.97	1024.62	7.65	12.02	426.02	485.33	198.21	1062.25	7.61	12.06	427.07	467.28
Run U1-C-3	3/25/2009	12:49:01	173.37	1045.85	7.50	12.16	411.02	452.33	195.95	1058.74	7.61	12.07	425.85	464.86
Run U1-C-3	3/25/2009	12:50:01	235.87	1120.18	7.70	11.98	459.03	519.67	196.94	1061.95	7.61	12.07	426.56	466.67
Run U1-C-3	3/25/2009	12:51:01	210.17	1061.78	7.70	11.96	450.03	508.33	198.15	1062.61	7.61	12.06	428.29	469.47
Run U1-C-3	3/25/2009	12:52:01	164.81	1011.34	7.53	12.14	402.02	460.67	197.48	1060.21	7.61	12.06	427.86	467.36
Run U1-C-3	3/25/2009	12:53:01	196.56	1128.14	7.53	12.14	420.02	466.33	196.13	1060.73	7.60	12.07	426.42	466.58
Run U1-C-3	3/25/2009	12:54:01	221.25	1090.98	7.68	12.00	456.03	495.67	197.55	1064.34	7.61	12.07	427.33	466.21
Run U1-C-3	3/25/2009	12:55:01	206.13	1048.51	7.73	11.98	432.02	489.33	198.39	1064.88	7.61	12.06	428.75	468.63
Run U1-C-3	3/25/2009	12:56:01	159.77	1016.65	7.55	12.12	402.02	345.67	197.34	1062.11	7.61	12.06	428.30	468.69
Run U1-C-3	3/25/2009	12:57:01	209.16	1120.18	7.65	12.02	441.03	491.00	196.37	1062.39	7.61	12.07	427.59	466.19
Run U1-C-3	3/25/2009	12:58:01	179.42	1024.62	7.58	12.10	414.02	464.33	197.13	1063.25	7.61	12.06	427.45	466.79
Run U1-C-3	3/25/2009	12:59:01	177.91	1072.40	7.53	12.14	417.02	462.33	196.23	1062.76	7.61	12.07	426.43	466.18
Run U1-C-3	3/25/2009	13:00:01	221.76	1080.36	7.63	12.04	435.02	487.00	196.47	1064.52	7.61	12.07	426.60	466.88
Run U1-C-3	3/25/2009	13:01:01	185.47	1067.09	7.58	12.10	435.02	480.67	196.39	1064.23	7.61	12.07	426.73	467.07
Run U1-C-3	3/25/2009	13:02:01	221.76	1093.63	7.73	11.98	459.03	515.00	196.68	1065.32	7.61	12.07	427.47	468.28
Run U1-C-3	3/25/2009	13:03:01	190.01	1011.34	7.73	11.98	438.03	494.33	197.20	1065.13	7.61	12.06	428.45	469.53
Run U1-C-3	3/25/2009	13:04:01	162.29	1032.58	7.55	12.12	399.02	458.67	196.06	1062.66	7.61	12.06	427.95	468.83
Run U1-C-3	3/25/2009	13:05:01	184.46	1104.25	7.55	12.12	420.02	469.00	195.21	1062.52	7.61	12.06	426.91	468.08
Run U1-C-3	3/25/2009	13:06:01	219.24	1101.59	7.68	12.00	453.03	503.33	195.66	1064.18	7.61	12.06	427.10	467.23

G2 Energy - MCBCC Baseline Landfill, Unit 1, Logged Data Records

									AVE	AVE	AVE	AVE	AVE	AVE
			NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B	NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B
Run Number	Date	Time	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)
Run U1-C-3	3/25/2009	13:07:01	211.17	1053.81	7.78	11.92	465.03	523.67	196.36	1064.65	7.61	12.06	428.01	468.54
Run U1-C-3	3/25/2009	13:08:01	181.94	995.42	7.70	11.98	441.03	500.00	196.45	1063.70	7.62	12.06	428.71	469.71
Run U1-C-3	3/25/2009	13:09:01	163.29	1037.89	7.53	12.14	399.02	451.33	195.35	1061.38	7.62	12.06	428.18	469.36
Run U1-C-3	3/25/2009	13:10:01	200.59	1112.21	7.60	12.06	435.02	446.00	194.85	1061.76	7.62	12.06	427.64	467.95
Run U1-C-3	3/25/2009	13:11:01	216.21	1059.12	7.73	11.96	450.03	503.33	195.59	1062.91	7.62	12.05	428.17	467.82
Run U1-C-3	3/25/2009	13:12:01	161.78	992.76	7.58	12.08	417.02	473.00	195.41	1061.81	7.62	12.05	428.29	468.35
Run U1-C-3	3/25/2009	13:13:01	169.34	1069.74	7.50	12.14	396.02	452.00	194.53	1060.80	7.62	12.05	427.54	468.00
Run U1-C-3	3/25/2009	13:14:01	235.37	1114.87	7.68	12.00	450.03	504.67	194.68	1062.06	7.62	12.06	427.48	467.97
Run U1-C-3	3/25/2009	13:15:01	201.09	1014.00	7.75	11.92	432.02	499.00	195.37	1062.43	7.62	12.05	428.24	468.84
Run U1-C-3	3/25/2009	13:16:01	161.78	1037.89	7.53	12.12	396.02	449.67	194.74	1060.78	7.62	12.05	427.89	468.15
Run U1-C-3	3/25/2009	13:17:01	201.60	1120.18	7.60	12.06	432.02	476.67	194.29	1061.11	7.62	12.05	427.44	467.97
Run U1-C-3	3/25/2009	13:18:01	218.23	1077.70	7.73	11.96	450.03	510.67	194.97	1062.24	7.62	12.05	427.90	468.67
Run U1-C-3	3/25/2009	13:19:01	172.87	995.42	7.58	12.08	399.02	448.00	195.10	1061.84	7.62	12.05	427.95	468.10
Run U1-C-3	3/25/2009	13:20:01	193.53	1104.25	7.60	12.08	426.02	472.67	194.55	1061.38	7.62	12.05	427.50	467.90
Run U1-C-3	3/25/2009	13:21:01	224.78	1077.70	7.75	11.94	444.03	509.33	195.22	1062.49	7.62	12.05	427.84	468.50
Run U1-C-3	3/25/2009	13:22:01	168.33	982.14	7.63	12.04	420.02	471.67	195.33	1061.91	7.62	12.05	428.09	468.38
Run U1-C-3	3/25/2009	13:23:01	173.88	1061.78	7.53	12.12	393.02	447.67	194.67	1061.04	7.62	12.05	427.48	468.05
Run U1-C-3	3/25/2009	13:24:01	234.86	1117.52	7.68	12.00	444.03	448.33	194.76	1061.85	7.62	12.05	427.35	468.07
Run U1-C-3	3/25/2009	13:25:01	213.69	1053.81	7.78	11.92	462.03	385.00	195.40	1062.31	7.62	12.05	427.91	468.71
Run U1-C-3	3/25/2009	13:26:01	186.98	987.45	7.73	11.94	426.02	492.33	195.57	1061.77	7.63	12.05	428.41	468.87
Run U1-C-3	3/25/2009	13:27:01	166.32	1048.51	7.58	12.10	411.02	462.00	194.93	1060.39	7.62	12.05	428.08	468.44
Run U1-C-3	3/25/2009	13:28:01	231.84	1090.98	7.75	11.92	450.03	516.33	195.07	1060.97	7.63	12.05	428.27	468.72
Run U1-C-3	3/25/2009	13:29:01	186.48	1003.38	7.70	11.98	420.02	483.00	195.32	1060.75	7.63	12.04	428.57	469.40
Run U1-C-3	3/25/2009	13:30:01	168.84	1051.16	7.55	12.10	396.02	451.67	194.80	1059.84	7.63	12.04	428.18	469.31
Run U1-C-3	3/25/2009	13:31:01	183.45	1101.59	7.53	12.12	417.02	302.67	194.43	1059.91	7.62	12.05	427.64	468.78
Run U1-C-3	3/25/2009	13:32:01	225.29	1093.63	7.73	11.94	453.03	515.67	194.81	1060.94	7.62	12.05	427.85	468.51
Run U1-C-3	3/25/2009	13:33:01	205.63	1048.51	7.75	11.92	459.03	524.00	195.10	1061.03	7.63	12.04	428.35	469.36
Run U1-C-3	3/25/2009	13:34:01	177.41	966.22	7.63	12.04	414.02	468.00	195.16	1060.37	7.63	12.04	428.61	469.79
Run U1-C-3	3/25/2009	13:35:01	169.85	1048.51	7.50	12.14	393.02	292.67	194.61	1059.51	7.63	12.04	428.23	469.38
END Run U1-C-3	3/25/2009	13:36:01	208.65	1138.76	7.55	12.10	429.02	475.33	**194.33**	**1059.81**	**7.63**	**12.04**	**427.78**	**468.69**

G2 Energy - MCBCC Basleline Landfill, Unit 2, Logged Data Records

									AVE	AVE	AVE	AVE	AVE	AVE
			NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B	NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B
Run Number	Date	Time	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)
START Run U2-C-1	3/25/2009	14:17:01	145.65	1008.69	7.58	12.04	432.02	475.33	145.65	1008.69	7.58	12.04	432.02	475.33
Run U2-C-1	3/25/2009	14:18:01	161.28	1051.16	7.58	12.04	435.02	509.33	158.39	1037.73	7.58	12.05	432.62	501.67
Run U2-C-1	3/25/2009	14:19:01	221.76	1109.56	7.73	11.92	489.03	555.33	176.94	1070.81	7.62	12.01	450.76	518.38
Run U2-C-1	3/25/2009	14:20:01	200.09	1053.81	7.78	11.90	519.03	583.00	187.63	1073.62	7.66	11.97	468.33	532.73
Run U2-C-1	3/25/2009	14:21:01	192.02	1035.23	7.75	11.90	528.03	618.00	189.16	1064.91	7.68	11.95	481.69	541.05
Run U2-C-1	3/25/2009	14:22:01	196.56	1045.85	7.73	11.92	519.03	620.33	189.92	1059.52	7.69	11.95	489.57	555.37
Run U2-C-1	3/25/2009	14:23:01	193.53	1027.27	7.78	11.88	531.03	618.00	191.06	1055.70	7.70	11.94	494.95	559.89
Run U2-C-1	3/25/2009	14:24:01	194.04	1029.92	7.75	11.90	519.03	584.33	191.29	1051.84	7.71	11.93	498.74	567.77
Run U2-C-1	3/25/2009	14:25:01	196.05	1024.62	7.75	11.90	528.03	637.00	192.04	1049.36	7.72	11.93	502.15	574.73
Run U2-C-1	3/25/2009	14:26:01	191.01	1016.65	7.75	11.90	516.03	600.33	192.16	1045.92	7.72	11.92	505.03	580.64
Run U2-C-1	3/25/2009	14:27:01	199.58	1021.96	7.75	11.90	522.03	625.00	192.52	1044.07	7.72	11.92	507.02	580.22
Run U2-C-1	3/25/2009	14:28:01	196.56	1021.96	7.75	11.90	528.03	620.00	192.94	1042.17	7.73	11.92	508.85	584.34
Run U2-C-1	3/25/2009	14:29:01	201.09	1032.58	7.75	11.88	534.03	455.00	193.32	1040.81	7.73	11.92	510.01	583.91
Run U2-C-1	3/25/2009	14:30:01	195.05	1027.27	7.75	11.88	528.03	613.33	193.66	1039.52	7.73	11.92	511.49	584.70
Run U2-C-1	3/25/2009	14:31:01	199.08	1027.27	7.75	11.90	528.03	620.33	193.96	1038.50	7.73	11.92	512.54	586.30
Run U2-C-1	3/25/2009	14:32:01	199.08	1024.62	7.75	11.88	531.03	616.67	194.30	1037.64	7.73	11.91	513.51	588.06
Run U2-C-1	3/25/2009	14:33:01	198.57	1032.58	7.75	11.90	531.03	626.00	194.52	1036.78	7.73	11.91	514.45	589.44
Run U2-C-1	3/25/2009	14:34:01	200.59	1040.54	7.75	11.90	537.03	621.33	194.83	1036.39	7.73	11.91	515.20	590.94
Run U2-C-1	3/25/2009	14:35:01	193.53	1019.31	7.73	11.92	537.03	614.00	195.10	1035.95	7.73	11.91	516.03	591.76
Run U2-C-1	3/25/2009	14:36:01	198.57	1032.58	7.70	11.94	528.03	528.00	195.22	1035.57	7.73	11.91	516.85	592.19
Run U2-C-1	3/25/2009	14:37:01	201.09	1032.58	7.70	11.92	525.03	601.00	195.61	1035.59	7.73	11.91	517.53	593.02
Run U2-C-1	3/25/2009	14:38:01	200.09	1032.58	7.73	11.92	528.03	511.00	195.87	1035.58	7.73	11.91	518.08	592.61
Run U2-C-1	3/25/2009	14:39:01	199.08	1024.62	7.73	11.90	534.03	602.67	195.99	1035.44	7.73	11.91	518.69	592.76
Run U2-C-1	3/25/2009	14:40:01	201.60	1035.23	7.73	11.90	528.03	602.67	196.07	1035.34	7.73	11.91	519.18	593.28
Run U2-C-1	3/25/2009	14:41:01	201.09	1037.89	7.75	11.90	525.03	602.67	196.22	1035.31	7.73	11.91	519.50	593.66
Run U2-C-1	3/25/2009	14:42:01	203.61	1040.54	7.75	11.90	534.03	611.67	196.41	1035.38	7.73	11.91	519.69	593.96
Run U2-C-1	3/25/2009	14:43:01	198.57	1035.23	7.75	11.88	522.03	447.33	196.56	1035.42	7.73	11.91	520.11	594.06
Run U2-C-1	3/25/2009	14:44:01	198.07	1027.27	7.75	11.90	522.03	619.33	196.62	1035.17	7.73	11.91	520.46	593.87
Run U2-C-1	3/25/2009	14:45:01	202.10	1037.89	7.75	11.88	534.03	630.33	196.73	1035.07	7.73	11.91	520.53	594.46
Run U2-C-1	3/25/2009	14:46:01	194.54	1027.27	7.78	11.86	531.03	628.00	196.75	1034.87	7.73	11.91	520.78	594.67
Run U2-C-1	3/25/2009	14:47:01	195.05	1029.92	7.80	11.86	534.03	455.33	196.63	1034.49	7.74	11.91	521.08	594.60

G2 Energy - MCBCC Basleline Landfill, Unit 2, Logged Data Records

									AVE	AVE	AVE	AVE	AVE	AVE
			NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B	NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B
Run Number	Date	Time	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)
Run U2-C-1	3/25/2009	14:48:01	190.01	1029.92	7.75	11.90	537.03	627.00	196.44	1034.12	7.74	11.91	521.52	594.67
Run U2-C-1	3/25/2009	14:49:01	199.58	1032.58	7.75	11.90	522.03	612.67	196.37	1033.99	7.74	11.91	521.73	595.51
Run U2-C-1	3/25/2009	14:50:01	204.12	1037.89	7.73	11.92	528.03	604.00	196.52	1034.17	7.74	11.91	521.83	595.54
Run U2-C-1	3/25/2009	14:51:01	203.61	1043.20	7.75	11.88	534.03	626.00	196.71	1034.34	7.74	11.91	521.96	595.92
Run U2-C-1	3/25/2009	14:52:01	200.59	1035.23	7.75	11.90	531.03	623.67	196.84	1034.35	7.74	11.91	522.17	596.63
Run U2-C-1	3/25/2009	14:53:01	199.08	1032.58	7.75	11.88	528.03	619.00	196.90	1034.33	7.74	11.91	522.41	597.38
Run U2-C-1	3/25/2009	14:54:01	201.09	1035.23	7.73	11.92	540.03	625.00	196.93	1034.24	7.74	11.91	522.64	596.93
Run U2-C-1	3/25/2009	14:55:01	200.09	1029.92	7.75	11.88	531.03	610.67	197.04	1034.25	7.74	11.91	522.85	596.53
Run U2-C-1	3/25/2009	14:56:01	201.09	1027.27	7.78	11.86	543.03	628.67	197.14	1034.15	7.74	11.91	523.07	597.08
Run U2-C-1	3/25/2009	14:57:01	201.09	1027.27	7.73	11.88	537.03	631.33	197.18	1034.04	7.74	11.91	523.43	597.79
Run U2-C-1	3/25/2009	14:58:01	202.61	1032.58	7.75	11.90	537.03	578.67	197.20	1033.90	7.74	11.91	523.66	598.27
Run U2-C-1	3/25/2009	14:59:01	203.11	1032.58	7.78	11.86	534.03	444.33	197.35	1034.00	7.74	11.90	523.82	598.51
Run U2-C-1	3/25/2009	15:00:01	200.09	1029.92	7.80	11.86	522.03	608.67	197.42	1033.90	7.74	11.90	523.94	598.47
Run U2-C-1	3/25/2009	15:01:01	194.04	1019.31	7.85	11.82	525.03	617.00	197.41	1033.65	7.74	11.90	524.06	598.82
Run U2-C-1	3/25/2009	15:02:01	194.54	1016.65	7.80	11.82	531.03	614.33	197.31	1033.28	7.74	11.90	524.21	598.48
Run U2-C-1	3/25/2009	15:03:01	192.53	1021.96	7.75	11.88	531.03	608.67	197.23	1033.02	7.74	11.90	524.43	598.11
Run U2-C-1	3/25/2009	15:04:01	195.55	1032.58	7.75	11.90	531.03	618.67	197.25	1033.05	7.74	11.90	524.60	598.51
Run U2-C-1	3/25/2009	15:05:01	196.56	1029.92	7.78	11.86	534.03	617.67	197.29	1033.04	7.74	11.90	524.80	598.84
Run U2-C-1	3/25/2009	15:06:01	199.58	1024.62	7.75	11.90	543.03	605.33	197.32	1033.00	7.75	11.90	525.10	599.19
Run U2-C-1	3/25/2009	15:07:01	198.57	1035.23	7.73	11.90	534.03	623.67	197.33	1032.91	7.75	11.90	525.33	599.62
Run U2-C-1	3/25/2009	15:08:01	200.09	1037.89	7.73	11.92	540.03	626.33	197.40	1033.03	7.75	11.90	525.59	600.12
Run U2-C-1	3/25/2009	15:09:01	200.59	1037.89	7.73	11.90	534.03	621.33	197.51	1033.18	7.75	11.90	525.84	599.87
Run U2-C-1	3/25/2009	15:10:01	201.09	1045.85	7.73	11.92	534.03	620.33	197.61	1033.32	7.74	11.90	525.95	600.33
Run U2-C-1	3/25/2009	15:11:01	210.67	1048.51	7.78	11.88	528.03	621.67	197.75	1033.61	7.74	11.90	526.04	600.68
Run U2-C-1	3/25/2009	15:12:01	206.64	1037.89	7.78	11.88	534.03	554.67	197.92	1033.70	7.74	11.90	526.14	600.20
Run U2-C-1	3/25/2009	15:13:01	196.56	1019.31	7.80	11.84	534.03	625.00	198.00	1033.64	7.75	11.90	526.22	600.31
Run U2-C-1	3/25/2009	15:14:01	198.57	1029.92	7.78	11.86	537.03	621.67	197.96	1033.49	7.75	11.90	526.40	600.74
Run U2-C-1	3/25/2009	15:15:01	200.59	1037.89	7.73	11.90	540.03	621.67	197.96	1033.46	7.75	11.90	526.58	601.10
Run U2-C-1	3/25/2009	15:16:01	204.12	1045.85	7.75	11.90	540.03	623.00	198.02	1033.61	7.75	11.90	526.79	601.06
END Run U2-C-1	3/25/2009	15:17:01	204.12	1037.89	7.78	11.86	531.03	613.00	**198.12**	**1033.72**	**7.75**	**11.90**	**526.92**	**601.34**

G2 Energy - MCBCC Basleline Landfill, Unit 2, Logged Data Records

									AVE	AVE	AVE	AVE	AVE	AVE
			NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B	NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B
Run Number	Date	Time	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)
START Run U2-C-2	3/25/2009	16:10:15	208.65	1024.62	7.78	11.84	534.03	634.33	208.65	1024.62	7.78	11.84	534.03	634.33
Run U2-C-2	3/25/2009	16:11:15	202.10	1011.34	7.78	11.84	534.03	642.33	205.88	1012.86	7.79	11.84	535.07	638.74
Run U2-C-2	3/25/2009	16:12:15	205.63	1011.34	7.80	11.82	546.03	654.33	205.70	1014.19	7.79	11.83	536.77	622.93
Run U2-C-2	3/25/2009	16:13:15	203.61	1021.96	7.78	11.86	543.03	654.33	204.62	1014.06	7.79	11.84	537.86	631.52
Run U2-C-2	3/25/2009	16:14:15	204.62	1024.62	7.78	11.86	540.03	647.00	204.79	1015.31	7.78	11.84	537.01	634.37
Run U2-C-2	3/25/2009	16:15:15	204.62	1021.96	7.78	11.84	534.03	645.67	205.07	1016.74	7.78	11.84	536.69	636.65
Run U2-C-2	3/25/2009	16:16:15	202.61	1021.96	7.80	11.84	531.03	451.33	205.00	1017.45	7.78	11.84	535.81	636.67
Run U2-C-2	3/25/2009	16:17:15	197.57	1016.65	7.80	11.84	531.03	570.00	204.61	1017.88	7.78	11.83	535.76	627.95
Run U2-C-2	3/25/2009	16:18:15	195.55	1011.34	7.80	11.84	537.03	662.00	203.69	1017.82	7.79	11.83	536.25	631.17
Run U2-C-2	3/25/2009	16:19:15	197.06	1024.62	7.80	11.82	534.03	655.00	202.82	1017.83	7.79	11.83	536.08	633.92
Run U2-C-2	3/25/2009	16:20:15	200.59	1035.23	7.78	11.84	540.03	640.00	202.32	1018.41	7.79	11.83	535.52	635.19
Run U2-C-2	3/25/2009	16:21:15	196.05	1027.27	7.78	11.86	534.03	654.33	202.09	1019.07	7.79	11.83	535.55	636.97
Run U2-C-2	3/25/2009	16:22:15	201.09	1032.58	7.75	11.86	540.03	667.33	201.90	1019.82	7.78	11.83	535.79	637.66
Run U2-C-2	3/25/2009	16:23:15	199.58	1029.92	7.75	11.86	543.03	444.33	201.74	1020.72	7.78	11.84	536.11	638.11
Run U2-C-2	3/25/2009	16:24:15	204.12	1035.23	7.78	11.84	540.03	664.67	201.74	1021.41	7.78	11.84	536.21	637.19
Run U2-C-2	3/25/2009	16:25:15	197.06	1027.27	7.80	11.82	543.03	665.67	201.78	1021.97	7.78	11.84	536.33	638.38
Run U2-C-2	3/25/2009	16:26:15	198.07	1019.31	7.80	11.82	537.03	667.67	201.52	1021.92	7.78	11.84	536.45	638.85
Run U2-C-2	3/25/2009	16:27:15	196.56	1027.27	7.78	11.86	537.03	661.33	201.12	1022.07	7.78	11.84	536.36	639.71
Run U2-C-2	3/25/2009	16:28:15	202.61	1037.89	7.78	11.84	537.03	654.67	200.87	1022.48	7.78	11.84	536.38	640.57
Run U2-C-2	3/25/2009	16:29:15	202.61	1040.54	7.78	11.84	540.03	663.33	200.77	1023.17	7.78	11.84	536.33	641.52
Run U2-C-2	3/25/2009	16:30:15	200.59	1029.92	7.80	11.84	537.03	660.33	200.74	1023.79	7.78	11.84	536.43	638.82
Run U2-C-2	3/25/2009	16:31:15	202.10	1027.27	7.78	11.84	540.03	661.67	200.64	1023.93	7.78	11.84	536.34	638.16
Run U2-C-2	3/25/2009	16:32:15	200.59	1035.23	7.78	11.84	537.03	669.67	200.59	1024.23	7.78	11.84	536.32	639.04
Run U2-C-2	3/25/2009	16:33:15	199.58	1029.92	7.75	11.88	534.03	664.00	200.56	1024.48	7.78	11.84	536.26	640.01
Run U2-C-2	3/25/2009	16:34:15	202.10	1037.89	7.78	11.84	537.03	659.33	200.55	1025.01	7.78	11.84	536.27	640.24
Run U2-C-2	3/25/2009	16:35:15	207.65	1032.58	7.80	11.82	537.03	660.67	200.58	1025.41	7.78	11.84	535.92	640.02
Run U2-C-2	3/25/2009	16:36:15	189.50	1021.96	7.80	11.82	540.03	668.00	200.45	1025.31	7.78	11.84	535.81	640.86
Run U2-C-2	3/25/2009	16:37:15	195.05	1029.92	7.78	11.84	540.03	669.33	200.16	1025.30	7.78	11.84	535.83	641.53
Run U2-C-2	3/25/2009	16:38:15	193.53	1035.23	7.78	11.84	543.03	643.33	200.01	1025.49	7.78	11.84	535.98	642.38
Run U2-C-2	3/25/2009	16:39:15	199.08	1035.23	7.78	11.86	543.03	660.00	199.86	1025.65	7.78	11.84	536.00	640.76
Run U2-C-2	3/25/2009	16:40:15	196.05	1032.58	7.78	11.86	528.03	661.67	199.78	1025.84	7.78	11.84	535.88	641.35

G2 Energy - MCBCC Basleline Landfill, Unit 2, Logged Data Records

									AVE	AVE	AVE	AVE	AVE	AVE
			NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B	NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B
Run Number	Date	Time	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)
Run U2-C-2	3/25/2009	16:41:15	201.60	1032.58	7.75	11.86	531.03	659.00	199.74	1026.11	7.78	11.84	535.82	641.83
Run U2-C-2	3/25/2009	16:42:15	200.59	1032.58	7.75	11.88	531.03	656.00	199.80	1026.31	7.78	11.84	535.78	642.21
Run U2-C-2	3/25/2009	16:43:15	201.09	1027.27	7.78	11.86	540.03	423.00	199.89	1026.62	7.78	11.84	535.70	641.86
Run U2-C-2	3/25/2009	16:44:15	200.59	1029.92	7.75	11.88	537.03	655.67	199.91	1026.67	7.78	11.84	535.76	640.89
Run U2-C-2	3/25/2009	16:45:15	199.58	1019.31	7.78	11.84	534.03	647.33	200.02	1026.82	7.78	11.84	535.83	640.99
Run U2-C-2	3/25/2009	16:46:15	202.61	1021.96	7.78	11.84	537.03	661.67	200.00	1026.71	7.78	11.84	535.85	640.88
Run U2-C-2	3/25/2009	16:47:15	202.10	1016.65	7.80	11.82	531.03	645.00	200.02	1026.56	7.78	11.84	535.86	641.31
Run U2-C-2	3/25/2009	16:48:15	198.57	1021.96	7.78	11.84	531.03	652.00	200.05	1026.40	7.78	11.84	535.80	641.61
Run U2-C-2	3/25/2009	16:49:15	197.57	1027.27	7.75	11.86	534.03	646.67	200.06	1026.27	7.78	11.84	535.68	641.48
Run U2-C-2	3/25/2009	16:50:15	197.57	1019.31	7.78	11.84	531.03	635.67	200.09	1026.25	7.78	11.84	535.62	641.40
Run U2-C-2	3/25/2009	16:51:15	199.58	1021.96	7.78	11.84	522.03	631.67	200.06	1026.22	7.78	11.84	535.51	641.58
Run U2-C-2	3/25/2009	16:52:15	195.05	1019.31	7.78	11.84	528.03	645.33	200.05	1026.15	7.78	11.84	535.28	641.60
Run U2-C-2	3/25/2009	16:53:15	189.50	1006.03	7.78	11.82	525.03	525.67	199.91	1025.91	7.78	11.84	535.19	640.69
Run U2-C-2	3/25/2009	16:54:15	192.02	1019.31	7.75	11.86	525.03	641.33	199.78	1025.71	7.78	11.84	535.05	640.35
Run U2-C-2	3/25/2009	16:55:15	198.07	1021.96	7.78	11.84	528.03	644.33	199.72	1025.77	7.78	11.84	534.91	640.50
Run U2-C-2	3/25/2009	16:56:15	197.06	1029.92	7.80	11.84	531.03	643.67	199.66	1025.77	7.78	11.84	534.71	640.53
Run U2-C-2	3/25/2009	16:57:15	192.02	1027.27	7.78	11.84	534.03	652.67	199.55	1025.76	7.78	11.84	534.62	640.71
Run U2-C-2	3/25/2009	16:58:15	200.59	1029.92	7.78	11.84	534.03	654.33	199.46	1025.79	7.78	11.84	534.51	640.69
Run U2-C-2	3/25/2009	16:59:15	200.59	1029.92	7.73	11.88	534.03	581.00	199.46	1025.86	7.78	11.84	534.55	639.87
Run U2-C-2	3/25/2009	17:00:15	193.53	1027.27	7.80	11.84	525.03	649.00	199.49	1026.00	7.78	11.84	534.51	639.87
Run U2-C-2	3/25/2009	17:01:15	192.02	1021.96	7.78	11.82	537.03	651.00	199.40	1026.00	7.78	11.84	534.52	640.19
Run U2-C-2	3/25/2009	17:02:15	200.59	1035.23	7.78	11.84	534.03	653.00	199.31	1026.10	7.78	11.84	534.51	640.51
Run U2-C-2	3/25/2009	17:03:15	195.05	1029.92	7.75	11.84	531.03	615.33	199.33	1026.21	7.78	11.84	534.52	640.69
Run U2-C-2	3/25/2009	17:04:15	196.56	1040.54	7.78	11.84	525.03	648.33	199.27	1026.43	7.78	11.84	534.42	640.71
Run U2-C-2	3/25/2009	17:05:15	194.04	1027.27	7.78	11.82	534.03	651.67	199.24	1026.60	7.78	11.84	534.39	640.90
Run U2-C-2	3/25/2009	17:06:15	199.08	1035.23	7.80	11.84	531.03	608.33	199.17	1026.66	7.78	11.84	534.32	640.67
Run U2-C-2	3/25/2009	17:07:15	196.56	1024.62	7.83	11.80	549.03	665.00	199.16	1026.71	7.78	11.84	534.34	640.77
Run U2-C-2	3/25/2009	17:08:15	194.54	1027.27	7.78	11.84	540.03	656.67	199.06	1026.67	7.78	11.84	534.49	640.12
Run U2-C-2	3/25/2009	17:09:15	198.07	1032.58	7.78	11.82	540.03	665.00	198.98	1026.75	7.78	11.84	534.54	640.48
END Run U2-C-2	3/25/2009	17:10:15	197.06	1043.20	7.75	11.86	537.03	656.33	**198.91**	**1026.81**	**7.78**	**11.84**	**534.58**	**639.78**

G2 Energy - MCBCC Basleline Landfill, Unit 2, Logged Data Records

									AVE	AVE	AVE	AVE	AVE	AVE
			NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B	NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B
Run Number	Date	Time	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)
START Run U2-C-3	3/25/2009	17:27:02	176.90	1037.89	7.78	11.82	561.03	637.33	176.90	1037.89	7.78	11.82	561.03	637.33
Run U2-C-3	3/25/2009	17:28:02	180.43	1037.89	7.78	11.82	561.03	643.33	176.21	1033.04	7.78	11.82	557.66	632.58
Run U2-C-3	3/25/2009	17:29:02	190.51	1040.54	7.78	11.84	564.03	612.00	180.40	1034.35	7.78	11.83	559.03	631.00
Run U2-C-3	3/25/2009	17:30:02	197.06	1040.54	7.80	11.82	570.03	637.67	184.44	1035.06	7.77	11.83	559.94	629.59
Run U2-C-3	3/25/2009	17:31:02	198.57	1035.23	7.78	11.84	561.03	626.33	187.24	1034.94	7.77	11.83	560.75	625.15
Run U2-C-3	3/25/2009	17:32:02	197.06	1024.62	7.80	11.82	567.03	632.33	189.33	1034.39	7.77	11.83	560.31	623.81
Run U2-C-3	3/25/2009	17:33:02	199.08	1029.92	7.78	11.82	561.03	631.67	190.27	1032.18	7.78	11.83	560.58	624.36
Run U2-C-3	3/25/2009	17:34:02	198.07	1032.58	7.75	11.84	549.03	625.67	191.34	1031.16	7.78	11.83	560.10	624.48
Run U2-C-3	3/25/2009	17:35:02	201.09	1032.58	7.78	11.84	561.03	609.33	192.44	1031.11	7.77	11.83	559.50	620.29
Run U2-C-3	3/25/2009	17:36:02	205.13	1043.20	7.78	11.84	555.03	621.67	193.23	1031.06	7.77	11.84	558.58	619.75
Run U2-C-3	3/25/2009	17:37:02	193.03	1016.65	7.80	11.82	561.03	622.67	194.00	1030.58	7.78	11.83	558.04	619.79
Run U2-C-3	3/25/2009	17:38:02	190.01	1006.03	7.78	11.84	558.03	619.33	193.82	1029.08	7.78	11.83	558.29	619.93
Run U2-C-3	3/25/2009	17:39:02	196.05	1008.69	7.78	11.84	555.03	617.67	193.89	1028.17	7.78	11.83	558.57	620.48
Run U2-C-3	3/25/2009	17:40:02	197.57	1016.65	7.78	11.84	552.03	521.33	194.18	1027.60	7.78	11.83	558.45	618.70
Run U2-C-3	3/25/2009	17:41:02	199.08	1024.62	7.78	11.82	543.03	608.67	194.55	1027.38	7.78	11.83	557.78	617.62
Run U2-C-3	3/25/2009	17:42:02	197.57	1021.96	7.80	11.82	546.03	610.33	194.94	1027.39	7.78	11.83	557.55	617.57
Run U2-C-3	3/25/2009	17:43:02	197.06	1014.00	7.80	11.80	561.03	535.67	195.16	1026.97	7.78	11.83	557.32	613.45
Run U2-C-3	3/25/2009	17:44:02	197.06	1021.96	7.78	11.82	555.03	619.33	195.01	1026.37	7.78	11.83	557.36	613.21
Run U2-C-3	3/25/2009	17:45:02	198.07	1027.27	7.78	11.82	552.03	617.33	195.08	1026.36	7.78	11.83	557.03	613.38
Run U2-C-3	3/25/2009	17:46:02	196.56	1027.27	7.80	11.82	549.03	524.67	195.17	1026.38	7.78	11.83	556.78	612.34
Run U2-C-3	3/25/2009	17:47:02	195.05	1024.62	7.78	11.82	552.03	618.33	195.24	1026.29	7.78	11.83	556.66	611.57
Run U2-C-3	3/25/2009	17:48:02	199.08	1024.62	7.78	11.82	555.03	622.00	195.32	1026.33	7.78	11.83	556.63	612.09
Run U2-C-3	3/25/2009	17:49:02	198.57	1032.58	7.80	11.80	564.03	619.00	195.47	1026.31	7.78	11.83	556.57	612.34
Run U2-C-3	3/25/2009	17:50:02	195.05	1027.27	7.75	11.86	543.03	553.33	195.43	1026.26	7.78	11.83	556.52	610.63
Run U2-C-3	3/25/2009	17:51:02	194.04	1029.92	7.78	11.82	555.03	617.67	195.44	1026.52	7.78	11.83	556.50	610.50
Run U2-C-3	3/25/2009	17:52:02	198.07	1029.92	7.75	11.84	558.03	612.00	195.45	1026.63	7.78	11.83	556.51	610.70
Run U2-C-3	3/25/2009	17:53:02	193.03	1021.96	7.78	11.82	564.03	616.00	195.50	1026.84	7.78	11.83	556.72	611.11
Run U2-C-3	3/25/2009	17:54:02	194.04	1019.31	7.80	11.82	570.03	620.67	195.44	1026.69	7.78	11.83	556.92	611.26
Run U2-C-3	3/25/2009	17:55:02	193.03	1027.27	7.80	11.82	555.03	605.33	195.40	1026.53	7.78	11.83	556.91	609.54
Run U2-C-3	3/25/2009	17:56:02	188.49	1016.65	7.80	11.80	555.03	607.67	195.24	1026.38	7.78	11.83	556.81	609.57
Run U2-C-3	3/25/2009	17:57:02	185.97	1014.00	7.80	11.80	555.03	613.67	194.99	1026.25	7.78	11.83	556.76	609.67

G2 Energy - MCBCC Basleline Landfill, Unit 2, Logged Data Records

									AVE	AVE	AVE	AVE	AVE	AVE
			NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B	NOx-A	CO-A	O2-A	CO2-A	THC-A	THC-B
Run Number	Date	Time	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)	(ppmv)	(ppmv)	(% vol)	(% vol)	(ppmv)	(ppmv)
Run U2-C-3	3/25/2009	17:58:02	186.98	1021.96	7.83	11.80	532.03	651.33	194.77	1026.14	7.78	11.83	530.99	640.16
Run U2-C-3	3/25/2009	17:59:02	192.53	1029.92	7.78	11.82	526.03	564.00	194.58	1026.19	7.78	11.82	531.00	640.24
Run U2-C-3	3/25/2009	18:00:02	196.56	1037.89	7.75	11.86	526.03	646.00	194.63	1026.42	7.78	11.83	530.94	640.38
Run U2-C-3	3/25/2009	18:01:02	197.57	1035.23	7.75	11.84	529.03	644.00	194.71	1026.79	7.78	11.83	530.90	638.94
Run U2-C-3	3/25/2009	18:02:02	194.04	1029.92	7.75	11.84	538.03	655.33	194.81	1027.07	7.78	11.83	530.96	639.13
Run U2-C-3	3/25/2009	18:03:02	195.05	1032.58	7.78	11.84	535.03	657.67	194.83	1027.30	7.78	11.83	531.11	639.61
Run U2-C-3	3/25/2009	18:04:02	195.55	1029.92	7.80	11.82	544.03	658.67	194.83	1027.42	7.78	11.83	531.27	639.90
Run U2-C-3	3/25/2009	18:05:02	196.05	1037.89	7.78	11.84	532.03	607.00	194.79	1027.41	7.78	11.83	531.30	640.11
Run U2-C-3	3/25/2009	18:06:02	191.01	1024.62	7.78	11.84	532.03	644.00	194.77	1027.45	7.78	11.83	531.43	640.38
Run U2-C-3	3/25/2009	18:07:02	195.05	1027.27	7.80	11.82	526.03	644.33	194.73	1027.38	7.78	11.83	531.40	640.13
Run U2-C-3	3/25/2009	18:08:02	194.04	1027.27	7.83	11.80	526.03	595.00	194.70	1027.29	7.78	11.83	531.24	638.61
Run U2-C-3	3/25/2009	18:09:02	189.50	1016.65	7.80	11.80	535.03	649.00	194.63	1027.04	7.78	11.83	531.24	638.55
Run U2-C-3	3/25/2009	18:10:02	192.53	1019.31	7.78	11.82	526.03	649.33	194.56	1026.87	7.78	11.82	531.18	638.74
Run U2-C-3	3/25/2009	18:11:02	194.04	1021.96	7.78	11.84	526.03	643.00	194.55	1026.75	7.78	11.82	531.11	638.97
Run U2-C-3	3/25/2009	18:12:02	194.54	1019.31	7.80	11.82	526.03	587.00	194.57	1026.69	7.78	11.82	530.97	638.05
Run U2-C-3	3/25/2009	18:13:02	191.52	1011.34	7.83	11.78	535.03	655.67	194.53	1026.44	7.78	11.82	530.91	637.97
Run U2-C-3	3/25/2009	18:14:02	186.98	1000.73	7.83	11.80	544.03	660.00	194.42	1026.06	7.79	11.82	530.93	638.27
Run U2-C-3	3/25/2009	18:15:02	182.95	1003.38	7.80	11.80	517.03	634.67	194.22	1025.56	7.79	11.82	530.88	637.78
Run U2-C-3	3/25/2009	18:16:02	185.97	1011.34	7.83	11.80	529.03	640.33	194.06	1025.28	7.79	11.82	530.87	637.97
Run U2-C-3	3/25/2009	18:17:02	186.48	1006.03	7.83	11.80	523.03	638.00	193.95	1025.00	7.79	11.82	530.81	638.17
Run U2-C-3	3/25/2009	18:18:02	185.47	1006.03	7.80	11.80	526.03	650.00	193.80	1024.67	7.79	11.82	530.80	638.42
Run U2-C-3	3/25/2009	18:19:02	187.49	1019.31	7.80	11.80	535.03	659.00	193.66	1024.49	7.79	11.82	530.83	638.71
Run U2-C-3	3/25/2009	18:20:02	192.02	1019.31	7.80	11.80	535.03	634.00	193.59	1024.38	7.79	11.82	530.87	638.00
Run U2-C-3	3/25/2009	18:21:02	194.54	1021.96	7.78	11.82	535.03	657.00	193.58	1024.39	7.79	11.82	530.91	638.26
Run U2-C-3	3/25/2009	18:22:02	195.55	1021.96	7.78	11.82	529.03	443.00	193.60	1024.41	7.79	11.82	530.97	638.40
Run U2-C-3	3/25/2009	18:23:02	195.55	1027.27	7.78	11.80	523.03	642.00	193.61	1024.43	7.79	11.82	530.95	638.03
Run U2-C-3	3/25/2009	18:24:02	196.05	1027.27	7.78	11.80	529.03	643.33	193.61	1024.40	7.79	11.82	530.89	638.13
Run U2-C-3	3/25/2009	18:25:02	194.04	1037.89	7.78	11.82	532.03	650.67	193.61	1024.41	7.79	11.82	530.93	638.33
Run U2-C-3	3/25/2009	18:26:02	195.55	1024.62	7.80	11.80	526.03	638.33	193.63	1024.47	7.79	11.82	530.88	638.48
END Run U2-C-3	3/25/2009	18:27:02	195.05	1029.92	7.83	11.78	532.03	651.00	**193.66**	**1024.56**	**7.79**	**11.82**	**530.77**	**638.17**

APPENDIX G:
OPERATIONAL DATA

Unit Operational Data
Baseline Landfill Unit 1

933 1003 1033

Test Run No.		U1-C-1A	U1-C-1B	U1-C-1C	
Date	3/25/09	3/25/09	3/25/09	3/25/09	
Time		9:33	10:03	10:33	
Engine/Generator Operation					**Averages**
Generator Power Output (kW)	1604	1625	1606	1609	1613
Generator Amperage (Amps)	221	220	221	222	221
Generator Voltage (kVolts)	4225	4206	4205	4196	4202
Generator Frequency (Hertz)	60	60	60	60	60
Generator Power Factor	1.0	1.0	1.0	1.0	1.0
Fuel Manifold Pressure (psig)	2.5	2.5	2.5	2.5	2.5
Jacket Water Temperature (°F)	Inlet outlet 110/7 219/8	Inlet outlet 110/7 219/8	130/6 220/7	140/6 220/7	127 220 Inlet Outlet
Engine Oil Temperature (°F)	195	195	195	195	195
Engine Fuel Data (Landfill Gas)					
LFG CH_4 (% volume, dry basis)	~~50~~ 52.0	56.5	56.5	No data	56.5
LFG O_2 (% volume, dry basis)	2.0	1.1	.3	.2	0.53
Wellhead Vacuum ("H_2O)	30.9	12.1	10.7	10.3	16.0
LFG Fuel Flow (SCFM)	1180	540	503	~~510~~ 498	513.67

Unit Operational Data
Baseline Landfill Unit 1

10:52 11:26 11:56

Test Run No.	U1-C-2A	U1-C-2B	U1-C-2C	
Date 3/25/09	3/25/09	3/25/09	3/25/09	
Time	10:56	11:26	11:56	
Engine/Generator Operation				**Averages**
Generator Power Output (kW)	1606	1611	1591	1603
Generator Amperage (Amps)	226	225	222	224
Generator Voltage (kVolts)	4181	4186	4191	4186
Generator Frequency (Hertz)	60	60	60	60
Generator Power Factor	1.0	1.0	1.0	1.0
Fuel Manifold Pressure (psig)	2.5	2.5	2.5	2.5
Jacket Water Temperature (°F)	140/6 220/7	145/6 220/7	145/6 220/7	Inlet 143 Outlet 220
Engine Oil Temperature (°F)	195	195	195	195
Engine Fuel Data (Landfill Gas)				
LFG CH_4 (% volume, dry basis)	No data	No data	No data	No Data
LFG O_2 (% volume, dry basis)	.2	.1	.1	0.13
Wellhead Vacuum ("H_2O)	10.3	10.3	10.3	10.3
LFG Fuel Flow (SCFM)	500	498	497	498.3

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Unit Operational Data
Baseline Landfill Unit 1

	1236	106	136	
Test Run No.	U1-C-3A	U1-C-3B	U1-C-3C	
Date 3/25/09	3/25/09	3/25/09	3/25/09	
Time	12:36	13:06	13:36	
Engine/Generator Operation				**Averages**
Generator Power Output (kW)	1601	1608	1593	1601
Generator Amperage (Amps)	224	224	225	224
Generator Voltage (kVolts)	4181	4168	4173	4174
Generator Frequency (Hertz)	60	60	60	60
Generator Power Factor	1.0	1.0	1.0	1.0
Fuel Manifold Pressure (psig)	2.5	2.5	2.5	2.5
Jacket Water Temperature (°F)	140/1 220/8	150/1 220/8	150/1 220/8	Inlet Outlet 147 220
Engine Oil Temperature (°F)	195	196	195	195
Engine Fuel Data (Landfill Gas)				
LFG CH_4 (% volume, dry basis)	no data	no data	no data	no data
LFG O_2 (% volume, dry basis)	.1	.1	.1	0.1
Wellhead Vacuum ("H_2O)	9.4	9.6	9.3	9.43
LFG Fuel Flow (SCFM)	503	498	486	495.7

Testing By TRC - Air Measurements, Gainesville Office

Unit Operational Data
Baseline Landfill Unit 2

	2:17	2:47	3:17	
Test Run No.				
Date 3/25/09	3/25/09	3/25/09	3/25/09	
Time	14:17	14:47	15:17	
Engine/Generator Operation				**Averages**
Generator Power Output (kW)	1579	1436	1462	1492
Generator Amperage (Amps)	222	202	202	209
Generator Voltage (kVolts)	4168	4150	4178	4165
Generator Frequency (Hertz)	60	60	60	60
Generator Power Factor	1.0	1.0	1.0	1.0
Fuel Manifold Pressure (psig)	2.5	2.5	2.5	2.5
Jacket Water Temperature (°F)	150/12 221/12	140/8 220/8	140/8 221/7	Inlet 143 Outlet 221
Engine Oil Temperature (°F)	178	197	195	190
Engine Fuel Data (Landfill Gas)				
LFG CH_4 (% volume, dry basis)	no data	no data	no data	no data
LFG O_2 (% volume, dry basis)	.1	.1	.1	0.1
Wellhead Vacuum ("H_2O)	9.6	7.5	7.5	8.2
LFG Fuel Flow (SCFM)	500	445	450	465.0

Testing By TRC - Air Measurements, Gainesville Office

Unit Operational Data
Baseline Landfill Unit 2

	4:10	4:40	5:10	
Test Run No.				
Date 3/25/09	3/25/09	3/25/09	3/25/09	
Time	16:10	16:40	17:10	
Engine/Generator Operation				**Averages**
Generator Power Output (kW)	1463	1463	1441	1452
Generator Amperage (Amps)	207	205	204	205
Generator Voltage (kVolts)	4178	4186	4184	4183
Generator Frequency (Hertz)	60.	60.	60	60
Generator Power Factor	1.0	1.0	1.0	1.0
Fuel Manifold Pressure (psig)	2.5	2.5	2.5	2.5
Jacket Water Temperature (°F)	130/220	140/220	140/210	Inlet 137 Outlet 220
Engine Oil Temperature (°F)	197	197	197	197
Engine Fuel Data (Landfill Gas)				
LFG CH_4 (% volume, dry basis)	no data	no data	no data	no data
LFG O_2 (% volume, dry basis)	.1	.1	.1	0.1
Wellhead Vacuum ("H_2O)	7.1	7.3	7.2	7.2
LFG Fuel Flow (SCFM)	445	451	446	447.3

Testing By TRC - Air Measurements, Gainesville Office

Unit Operational Data
Baseline Landfill Unit 2

	5:27	5:57	6:27	
Test Run No.				
Date 3/25/09	3/25/09	3/25/09	3/25/09	
Time	17:27	17:57	18:27	
Engine/Generator Operation				**Averages**
Generator Power Output (kW)	1474	1494	1483	1483.7
Generator Amperage (Amps)	205	207	205	206
Generator Voltage (kVolts)	4194	4189	4194	4192
Generator Frequency (Hertz)	60	60	60	60
Generator Power Factor	1.0	1.0	1.0	1.0
Fuel Manifold Pressure (psig)	2.5	2.5	2.5	2.5
Jacket Water Temperature (°F)	140/220	140/220	140/220	Inlet 140 outlet 220
Engine Oil Temperature (°F)	197	197	197	197
Engine Fuel Data (Landfill Gas)				
LFG CH_4 (% volume, dry basis)	no data	no data	no data	no data
LFG O_2 (% volume, dry basis)	.1	.1	.1	0.1
Wellhead Vacuum ("H_2O)	7.5	7.9	7.6	7.67
LFG Fuel Flow (SCFM)	452	461	454	455.67

Testing By TRC - Air Measurements, Gainesville Office

APPENDIX H:
OPACITY OBSERVATIONS

Visible Emission Observation Form

TRC
Environmental Corporation

Method Used (Circle One)			
(Method 9)	203A	203B	Other:

Project Number	Page	of
166478.0000.0000	1	1

Company Name	
G2 Energy	
Facility Name	
Baseline Landfill	
Street Address	
5601 SE 66 Street	
City	State / Zip
Ocala	FL 34480

Process	Unit #	Operating Mode
IC Engine	1	1613 kW
Control Equipment		Operating Mode
Low Burn Combustion		Normal

Describe Emission Point
~32' tall stack w/ cover, rusted ~12" diameter 1st From East, North of Bldg.

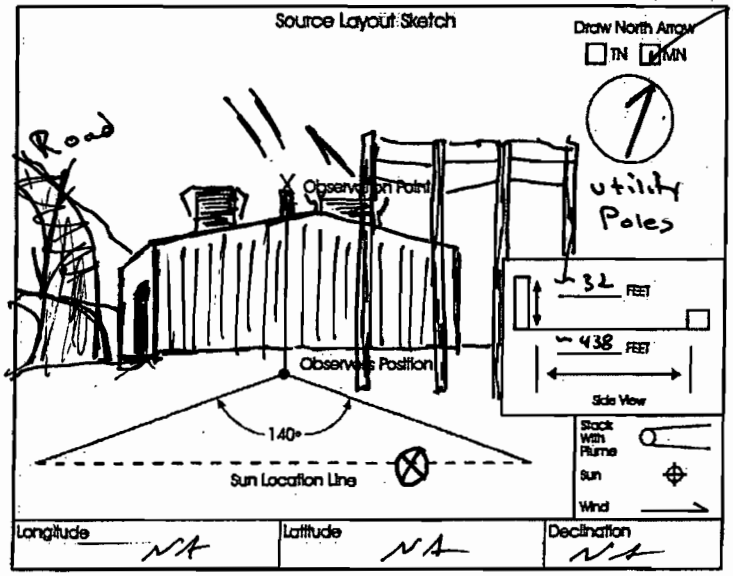
Height of Emiss. Pt. Start ~32' End same	Height of Emiss. Pt. Rel. to Observer Start ~45' End same
Distance to Emiss. Pt. Start ~196yds End same	Direction to Emiss. Pt. (Degrees) Start ~348° End same
Vertical Angle to Obs. Pt. Start ~4° End same	Direction to Obs. Pt. (Degrees) Start ~348° End same

Distance and Direction to Observation Point from Emission Point
Start same as above End same

Describe Emissions Start None Visible	End same
Emission Color Start clear End same	Water Droplet Plume Attached ☐ Detached ☐ None ☑

Describe Plume Background Start Sky		End same	
Background Color Start Blue	End same	Sky Conditions Start clear	End same
Wind Speed Start 0-4mph	End same	Wind Direction Start SE	End same
Ambient Temp. Start 70	End 72	Wet Bulb Temp. 62	RH Percent ~63%

Source Layout Sketch



Longitude	Latitude	Declination
NA	NA	NA

Observation Date	Start Time	End Time
3/25/2009	1002	1032

Sec / Min	0	15	30	45	Sec / Min	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

Observer's Name (Print)	
Chris Hank	
Observer's Signature	Date 3/25/2009
Organization TRC	
Certified By Whitlow	Date 1/9/09

Additional Information
Conducted during Run U1-C-1

Visible Emission Observation Form

TRC
Environmental Corporation

Method Used (Circle One): (Method 9) 203A 203B Other: _____

Project Number: 166478.0000.0000 | Page 1 of 1

Company Name: G2 Energy
Facility Name: Baseline LandFill
Street Address: 5601 SE 66 Street
City: Ocala | State: FL | Zip: 34480

Process: IC Engine | Unit #: 2 | Operating Mode: 1492 kW
Control Equipment: Lean Burn Combustion | Operating Mode: Normal

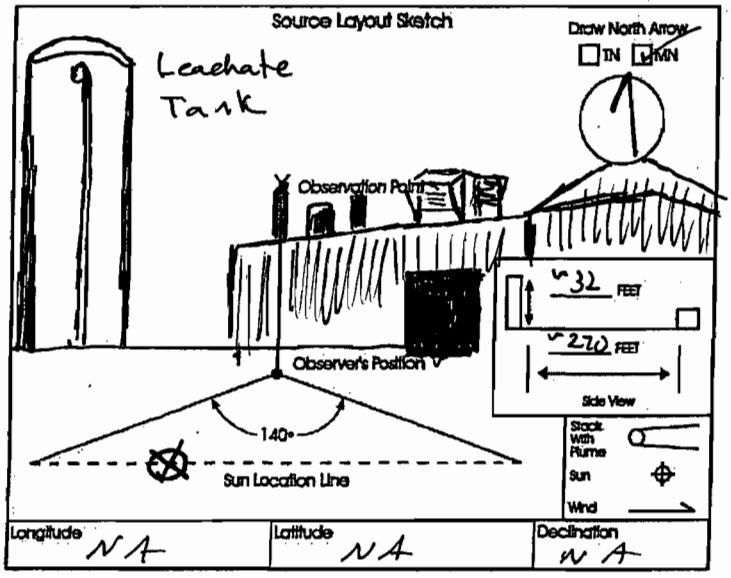
Describe Emission Point: ~32' tall stack w/cover, rusted, ~12" diameter. 1st From West. North of Bldg
Height of Emiss. Pt. Start: ~32' End: same | Height of Emiss. Pt. Rel. to Observer Start: ~32' End: same
Distance to Emiss. Pt. Start: ~90 yds End: same | Direction to Emiss. Pt. (Degrees) Start: ~10° End: same

Vertical Angle to Obs. Pt. Start: ~0° End: same | Direction to Obs. Pt. (Degrees) Start: End: same
Distance and Direction to Observation Point from Emission Point Start: same as above End: same

Describe Emissions Start: None Visible End: same
Emission Color Start: Clear End: same | Water Droplet Plume: Attached ☐ Detached ☐ None ☑

Describe Plume Background Start: Sky End: same
Background Color Start: White End: same | Sky Conditions Start: Scattered End: same
Wind Speed Start: 0-4 mph End: same | Wind Direction Start: SE End: same
Ambient Temp. Start: 80 End: | Wet Bulb Temp.: 62 | RH Percent: ~35%

Source Layout Sketch



Longitude: NA | Latitude: NA | Declination: NA

Additional Information: Conducted during Run U2-C-1

Observation Date	Start Time	End Time
3/25/2009	1426	1456

Min \ Sec	0	15	30	45	Min \ Sec	0	15	30	45
1	0	0	0	0	31				
2	0	0	0	0	32				
3	0	0	0	0	33				
4	0	0	0	0	34				
5	0	0	0	0	35				
6	0	0	0	0	36				
7	0	0	0	0	37				
8	0	0	0	0	38				
9	0	0	0	0	39				
10	0	0	0	0	40				
11	0	0	0	0	41				
12	0	0	0	0	42				
13	0	0	0	0	43				
14	0	0	0	0	44				
15	0	0	0	0	45				
16	0	0	0	0	46				
17	0	0	0	0	47				
18	0	0	0	0	48				
19	0	0	0	0	49				
20	0	0	0	0	50				
21	0	0	0	0	51				
22	0	0	0	0	52				
23	0	0	0	0	53				
24	0	0	0	0	54				
25	0	0	0	0	55				
26	0	0	0	0	56				
27	0	0	0	0	57				
28	0	0	0	0	58				
29	0	0	0	0	59				
30	0	0	0	0	60				

Observer's Name (Print): Chris Hank
Observer's Signature: [signature] | Date: 3/25/2009
Organization: TRC
Certified By: Whitlow | Date: 1/9/2008

Whitlow Enterprises, LLC
www.smokeschool.net
Certifies that

Christopher Hank of TRC Environmental

Has passed the certification test required by 40 CFR 60Appendix A
and is qualified as a visible emissions evaluator
Certification Date: January 9, 2009 Location: Keystone Heights, FL

George Whitlow
President

KHFL010909-22

Visible Emissions Evaluation

This certifies that...

Christopher Hank

...successfully completed a course in the methods of measurement of visible emissions from sources as specified by Federal Reference Methods 9 and 22 conducted by Eastern Technical Associates of Raleigh, North Carolina.

Jacksonville, Florida		May 30, 2006
Course Location		Date
President	Director of Training	Instructor
	Michael W. Smurfoord	Marty J. Hughes

APPENDIX I:
FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
AIR CONSTRUCTION PERMIT NO. 0830124-006-AC

Florida Department of Environmental Protection

Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

NOTICE OF PERMIT

E-CORRESPONDENCE
leonard.whitehead@marioncountyfl.org

Marion County Board of County Commissioners
5601 SE 66th Street
Ocala, FL 34480

Attention: Leonard K. Whitehead, P.E., Director

Marion County - AP
Two Internal Combustion Engines
DEP File Number: 0830124-006-AC

Dear Mr. Whitehead:

Enclosed is Permit Number 0830124-006-AC to construct the above referenced source issued pursuant to Section(s) 403.087, Florida Statutes (F.S.).

Any party to this order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68 F.S., by the filing of a Notice of Appeal pursuant to Rule 9.110 of the Florida Rules of Appellate Procedure with the Clerk of the permitting authority in the Legal Office; and by filing a copy of the Notice of Appeal accompanied by the applicable filing fees with the appropriate District Court of Appeal. The Notice of Appeal must be filed within 30 (thirty) days from the date this Notice is filed with the Clerk of the permitting authority.

Executed in Orlando, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

James N. Bradner

James N. Bradner, P.E.
Program Administrator
Air Resources Management

Date: July 15, 2008

JNB/az/jt

Copy: David H. Penoyer, P.E. **(dpenoyer@scsengineers.com)**
Nick King **(nking@g2energy.com)**

FILED, on this date, pursuant to Section 120.52, F. S., with the designated Department Clerk, receipt of which is hereby acknowledged.

Tracy L Cooper

Clerk

July 15, 2008

Date

CERTIFICATE OF SERVICE

This is to certify that this NOTICE OF PERMIT ISSUANCE and all copies were mailed before the close of business on July 15, 2008 to the listed persons, by Tracy L Cooper.

Florida Department of Environmental Protection

Central District
3319 Maguire Boulevard, Suite 232
Orlando, Florida 32803-3767

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

Permittee:
Marion County Board of County Commissioners
5601 SE 66th Street
Ocala, FL 34480

Attn: Leonard K. Whitehead, P.E., Director

I.D. Number: 0830124
Permit Number: 0830124-006-AC
Expiration Date: June 30, 2013
County: Marion
Latitude/Longitude:
29° 07' 30"N/82° 03' 45"W
Project: Two Internal Combustion Engines

This permit is issued under the provisions of Chapter(s) 403, F.S., and Florida Administrative Code Rule(s) 62-210. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

The permittee may construct Two Internal Combustion Engines and generator sets. The spark ignition engines are Caterpillar, Model G3520C (2,233 bhp and 1.6 MW each). The engines are fired only by landfill gas conveyed from the existing flare station through a treatment system that consists of compression, dehydrating, and filtering processes prior to being combusted in the engines. The existing flare at the municipal solid waste facility will continue to operate to burn any excess landfill gas collected but not sent to the engines.

The existing municipal solid waste facility is classified as a **Title V** facility and is located at 5601 SE 66th Street, Ocala, Marion County, Florida.

GENERAL CONDITIONS:

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit, are "permit conditions" and are binding and enforceable pursuant to Sections 403.141, 403.727, or 403.859 through 403.861, Florida Statutes (F.S.) The permittee is placed on notice that the Department will review this permit periodically and may initiate enforcement action for any violation of these conditions.

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this permit may constitute grounds for revocation and enforcement action by the Department.

3. As provided in subsections 403.087(6) and 403.722(5), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit that may be required for other aspects of the total project which are not addressed in this permit.

4. This permit conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

5. This permit does not relieve the permittee from liability for harm or injury to human health or welfare, animal, or plant life, or property caused by the construction or operation of this permitted source, or from penalties therefore; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department.

6. The permittee shall properly operate and maintain the facility and systems of treatment and control (and related appurtenances) that are installed and used by the permittee to achieve compliance with the conditions of this permit, as required by Department rules. This provision includes the operation of backup and auxiliary facilities or similar systems when necessary to achieve compliance with the conditions of the permit and when required by Department rules.

7. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, upon presentation of credentials or other documents as may be required by law and at reasonable times, access to the premises where the permitted activity is located or conducted to:

   (a) Have access to and copy any records that must be kept under conditions of this permit;
   (b) Inspect the facility, equipment, practices, or operations regulated or required under this permit; and
   (c) Sample or monitor any substances or parameters at any location reasonably necessary to assure compliance with this permit or Department rules.

   Reasonable time may depend on the nature of the concern being investigated.

8. If, for any reason, the permittee does not comply with or will be unable to comply with any condition or limitation specified in this permit, the permittee shall immediately provide the Department with the following information:

   (a) A description of and cause of noncompliance; and
   (b) The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance.

   The permittee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this permit.

GENERAL CONDITIONS:

9. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except where such use is prescribed by Section 403.111 and 403.73, F.S. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

10. The permittee agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided, however, the permittee does not waive any other rights granted by Florida Statutes or Department rules.

11. This permit is transferable only upon Department approval in accordance with Rules 62-4.120 and 62-730.300, Florida Administrative Code (F.A.C.), as applicable. The permittee shall be liable for any non-compliance of the permitted activity until the transfer is approved by the Department.

12. This permit or a copy thereof shall be kept at the work site of the permitted activity.

13. This permit also constitutes:

( ) Determination of Best Available Control Technology (BACT)
( ) Determination of Prevention of Significant Deterioration (PSD)
( ) Certification of compliance with State Water Quality Standards (Section 401, PL 92-500)
(X) Compliance with New Source Performance Standards

14. The permittee shall comply with the following:

(a) Upon request, the permittee shall furnish all records and plans required under Department rules. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department.

(b) The permittee shall hold at the facility or other location designated by this permit records of all monitoring information (including all calibration and maintenance records and all original strip chart recordings for continuous monitoring information) required by the permit, copies of all reports required by this permit, and records of all data used to complete the application for this permit. These materials shall be retained at least three years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

(c) Records of monitoring information shall include:
1. The date, exact place, and time of sampling or measurements;
2. The person responsible for performing the sampling or measurements;
3. The dates analyses were performed;
4. The person responsible for performing the analyses;
5. The analytical techniques or methods used;
6. The results of such analyses.

15. When requested by the Department, the permittee shall within a reasonable time furnish any information required by law which is needed to determine compliance with the permit. If the permittee becomes aware the relevant facts were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be corrected promptly.

SPECIFIC CONDITIONS:

OPERATING CONDITIONS

1. There is no limitation on the annual hours of operation.
[Rule 62-210.200, (PTE), F.A.C. and permit 0830124-006-AC]

2. No person shall circumvent any pollution control device or allow the emissions of air pollutants without the applicable air pollution control device operating properly.
[Rule 62-210.650, F.A.C.]

3. Each engine will be fired with landfill gas only at 1.6 MW of electrical power.
[Rule 62-210.200(PTE), F.A.C. and permit 0830124-006-AC]

4. Excess landfill gas not used as fuel in an engine must be flared in accordance with the requirements of 40 CFR60, Subpart WWW.
[Rule 62-4.070, F.A.C.]

EMISSION LIMITS

5. No person shall cause, suffer, allow or permit the discharge of air pollutants which cause or contribute to an objectionable odor. An objectionable odor is defined as any odor present in the outdoor atmosphere which by itself or in combination with other odors, is or may be harmful or injurious to human health or welfare, which unreasonably interferes with the comfortable use and enjoyment of life or property, or which creates a nuisance.
[Rules 62-296.320(2) and 62-210.200, F.A.C.]

6. Visible emissions from each source must comply with Rule 62-296.320(4)(b)1., F.A.C., and are limited to less than 20 percent opacity.

7. **Each engine will be subject to the applicable emission limitations of 40CFR60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.**
[Rule 62-204.800, F.A.C.]

COMPLIANCE

8. **Each engine will be subject to the applicable compliance and testing requirements of 40CFR60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines.[Rule 62-204.800, F.A.C.]**

9. The permittee shall design each engine stack to accommodate adequate testing and sampling locations in order to determine compliance with the applicable emission limits specified by this permit.
[Rule 62-297.310(6), F.A.C.]

10. At least 15 days prior to the date on which each formal compliance test is due to begin, the permittee shall provide written notification of the test to the air compliance section of this office. The notification must include the following information: the date, time and location of each test; the name and telephone number of the facility's contact person who will be responsible for coordinating the test; and the name, company, and telephone number of the person conducting the test [Rule 62-297.310(7)(a)9, F.A.C.].

SPECIFIC CONDITIONS:

11. Testing of emissions shall be conducted with the emissions unit operation at permitted capacity. The maximum operating rate for each engine is 1.6 MW. Permitted capacity is defined as 90 to 100 percent of the maximum operation rate allowed by the permit. If it is impractical to test at permitted capacity, an emissions unit may be tested at less than the minimum permitted capacity; in this case, subsequent emissions unit operation is limited to 110 percent of the test load until a new test is conducted. Once the unit is so limited, operation at higher capacities is allowed for no more than 15 consecutive days for the purpose of additional compliance testing to regain the authority to operate at the permitted capacity [Rule 62-297.310(2), F.A.C.].

RECORDKEEPING AND DOCUMENT SUBMITTAL

12. **Each engine will be subject to the applicable recordkeeping and document submittal requirements of 40CFR60, Subpart JJJJ, Standards of Performance for Stationary Spark Ignition Internal Combustion Engines. [Rule 62-204.800, F.A.C.]**

13. The owner or operator shall submit a copy of the compliance test results to the air compliance section of this office within 45 days after the last sampling run of each test is completed [Rule 62-297.310(8), F.A.C].

14. The owner or operator shall complete DEP Form 62-210.900(5), F.A.C., "Annual Operating Report for Air Pollutant Emitting Facility" for each calendar year and submit it either electronically using the latest Department Electronic Annual Operating Report software or by hard copy to the air compliance of this office on or before March 1 of the following year, in accordance with Rule 62-210.370(3), F.A.C. The emissions shall be computed in accordance with the provisions of Rule 62-210.370(2), F.A.C., for purposes of the annual operating report.

PERMIT APPLICATION

15. The construction shall reasonably conform to the plans and schedule submitted in the application. If the permittee is unable to complete construction on schedule, he must notify the department in writing at least 90 days prior to the expiration of the construction permit and submit an application for an extension of the construction permit.

A Title V operating permit revision is required for operation of this source. To obtain a permit, the permittee must demonstrate compliance with the conditions of the construction permit and submit the application fee, along with the compliance test results, if required, and Application for Air Permit to the Department's Central Florida District Office [Rule 62-4.220, F.A.C.]. **The application shall be submitted no later than 180 days after completion of construction and compliance testing.**
[Rule 62-4.220, F.A.C.]

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

James N. Bradner

James N. Bradner, P.E.
Program Administrator
Air Resources Management

Issued: July 15, 2008