TriCities Recycling Disposal Facility

BAAQMD Facility # A2246

Annual Compliance Emissions Test Report #08071
Source Test for Landfill Gas Flare- Source A-3

Located at:

7010 Auto Mall Parkway
Fremont, CA 94538

Performed and Reported by:

Blue Sky Environmental, LLC
624 San Gabriel Avenue
Albany, CA 94706

Prepared For:

Cornerstone Environmental Group, LLC
7600 Dublin Boulevard, Suite 200
Dublin, CA 94568

For Submittal To:

Bay Area Air Quality Management District
939 Ellis Street
San Francisco, CA 94109

Testing Performed On:
June 4th, 2008

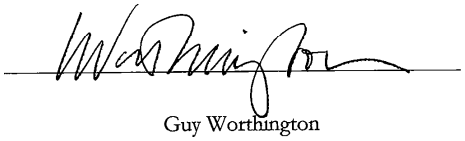
Final Report Submitted On:
7/31/08

REVIEW AND CERTIFICATION

Team Leader:

The work performed herein was conducted under my supervision, and I certify that: a) the details and results contained within this report are to the best of my knowledge an authentic and accurate representation of the test program; b) that the sampling and analytical procedures and data presented in the report is authentic and accurate: c) that all testing details and conclusions are accurate and valid, and: d) that the production rate and/or heat input rate during the source test are reported accurately.

If this report is submitted for Compliance purposes it should only be reproduced in its entirety. If there are any questions concerning this report, please contact me at (510) 525 1261.



Guy Worthington
Principal Project Manager

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SECTION 1. INTRODUCTION

1.1. Summary

Blue Sky Environmental, LLC was contracted to perform the emissions testing on the A-3 Landfill Gas Flare at 7010 Auto Mall Parkway, Fremont, California. Table 1 summarizes the source test information. Table 2 summarizes the results compared to the emission limits. The flare met all compliance emission criteria.

Table 1. Source Test Information

Test Location:	7010 Auto Mall Parkway, Fremont, CA 94538
Source Contact:	Colleen Cassidy (510) 624-5928
Source Tested:	Enclosed Landfill Gas Flare (A-3)
Source Test Date:	June 4th, 2008
Test Objective:	Determine Compliance with Regulation 8, Rule 34 and Title V Permit A2246, Condition 8366
Test Performed By:	Blue Sky Environmental, LLC 624 San Gabriel Ave., Albany, CA 94706 Guy Worthington (510) 508 3469
Test Parameters:	**Landfill Gas** O_2, N_2, CO_2, BTU, THC, CH_4, NMOC, HHV, F-Factor, TRS & Sulfur Species, Volumetric Flow Rate **Flare Emissions** THC, CH_4, NMOC, NOx, CO, O_2, SO_2, Volumetric Flow Rate, Stack Exhaust Temperature.

Table 2. Compliance Summary

	Average Test Result	Permit Limit	Compliance Status
NOx, lbs/MMBTU	**0.03**	**0.06**	**In Compliance**
CO, lbs/MMBTU	**0.16**	**0.3**	**In Compliance**
NMOC, (ppmvd @ 3% O_2 as CH_4)	**9.7**	**30**	**In Compliance**
TRS in Landfill Gas, ppm	**70**	**1300**	**In Compliance**

SECTION 2. SOURCE TEST PROGRAM

2.1. Overview

This annual performance test was conducted to demonstrate that the A-3 landfill gas flare is operating in accordance with the Bay Area Air Quality Management District (BAAQMD) Title V Permit A2246 and Regulation 8 Rule 34.

2.2. Pollutants Tested

The following BAAQMD, EPA and ASTM sampling and analytical methods were used:

BAAQMD ST-5	CO_2
BAAQMD ST-6	CO
BAAQMD ST-7	NMOC
BAAQMD ST-13A	NOx
BAAQMD ST-14	O_2
BAAQMD ST-19A (calculated from TRS)	SO_2 calculated from TRS
EPA 19	Flow Rate Calculation, DSCFM
EPA 25C	LFG Gas analysis for NMOC by GC
ASTM 1945/3588	LFG Gas analysis for BTU and F-Factor
ASTM D-5504	Sulfur Species, H_2S and TRS

2.3. Test Date(s)

Testing was conducted on June 4th, 2008.

2.4. Sampling and Observing Personnel

Guy Worthington and Jeff Mesloh representing Blue Sky Environmental, LLC, performed testing.

Steve Thexton of Cornerstone Environmental Group, LLC was present to operate and oversee the Flare operation and assist in coordinating testing and the collection of process data during testing.

The BAAQMD was notified of the test in a plan submitted by Waste Management on May 7th, 2008. A Source Test Protocol acknowledgement was requested and received by Blue Sky Environmental (NST # 1409), but no agency observers were present to witness the testing. A copy of the source test protocol can be found in Appendix I.

2.5. Source/Process Description

The enclosed landfill gas flare consists of a 75 million British Thermal Units per hour (MMBtu/hr) multiple nozzle burner. The flare shell is approximately 40 feet high and has an approximately 102 inch inside diameter.

2.6. Source Operating Conditions

The flare operating temperature and the landfill gas flow rate records are contained in Appendix-F. There is no condensate injection.

The flare was operated between 1520 and 1534°F average temperature. The average landfill gas flow rate ranged between 1886 and 1914 scfm.

The landfill gas methane content ranged between 47.4% in Run#1 and 48.5% in Run #2. Run #3 Landfill Gas sample is suspected to be erroneously low (CH_4=33.7%) as indicated by the elevated oxygen and nitrogen content in the sample in the exact proportions as in ambient air (1:4). The Flare operation was stable and constant, and the low methane result is therefore likely attributed to a failure in the integrity of the Tedlar sample bag or the analysis, and not representative of the Landfill gas.

SECTION 3. SAMPLING AND ANALYSIS PROCEDURES

3.1. Port location

The A-3 Flare sampling was conducted in the 136 inch diameter ID stack, via ports approximately 35' above grade, accessed by a 40' boom-lift. Two of the four, 4-inch flange ports are available ~4 stack diameters downstream from the burners and ~1 stack diameters upstream from the exit.

3.2. Point description/Labeling – ports/stack

Blue Sky Environmental conducted two perpendicular 8 pt traverses and found O_2 stratification greater than 10%, therefore subsequent CEM sampling was conducted traversing two ports and a total of 16 points per run.

3.3. Sample train description

Sampling system diagrams are included in the Appendix H. Additional descriptive information is included in the following section.

3.4. Sampling procedure description

Three, 32-minute test runs were performed, completely traversing the stack on two diameters during each run.

Continuous Emission Monitoring by BAAQMD Methods ST-5, 6, 7, 13A and 14. These methods are all continuous monitoring techniques using instrumental analyzers to measure carbon dioxide (CO_2), carbon monoxide (CO), total non-methane hydrocarbons (THC & CH_4), nitrogen oxides (NOx) and oxygen (O_2), respectively. Sampling is performed by extracting exhaust flue gas from the stack, conditioning the sample and analyzing it by continuous monitoring gas analyzers in a CEM test van. The sampling system consists of a stainless steel sample probe, Teflon sample line, glass-fiber particulate filter, glass moisture-knockout condensers in ice, Teflon sample transfer tubing, diaphragm pump and a stainless steel/Teflon manifold and flow control/delivery system. A constant sample and calibration gas supply pressure of 5 PSI was provided to each analyzer to avoid pressure variable response differences. The entire sampling system was leak checked prior to and at the end of the sampling program.

Methane in the exhaust was determined per BAAQMD Methods, using a charcoal scrubber to remove the non-methane organics, and determining the difference between the total hydrocarbon and non-methane hydrocarbon concentrations.

The sampling and analytical system (per BAAQMD Methods) was calibrated at the beginning and end of each test run. The calibration gases were selected to fall approximately within 80 to 90 percent of the instrument range. Zero and calibration drift values were determined for each test. All calibration gases are EPA Protocol #1. The analyzer data recording system consists of Omega 3 channel strip chart recorders.

System Performance Criteria	
Instrument Linearity	≤2% Full Scale (checked routinely)
Instrument Bias	≤5% Full Scale (checked routinely)
System Response Time	≤± 2 minutes (checked routinely)
NOx Converter Efficiency (EPA 20)	≥ 90% (checked routinely)
Instrument Zero Drift	≤± 3% Full Scale (complied)
Instrument Span Drift	≤± 3% Full Scale

Concurrent with the exhaust sampling, Blue Sky collected a total of three integrated 5-liter Tedlar Bag samples of the LFG for analysis. The samples were collected using Teflon tubing connections, and the tubing and the Tedlar bag were filled and purged prior to sampling. The gas sample was controlled with a rotameter to collect a 30-minute integrated sample. All the samples were analyzed for NMOC, HHV, F-Factor, Fixed Gases. One sample was analyzed for Sulfur Species (incl. H_2S and TRS).

The inlet volumetric flow rate was continuously measured and recorded by the facility monitors.

3.5. Instrumentation and Analytical procedures

The following continuous emissions analyzers were used:

Instrumentation	Parameter	Principle
TECO 42i	NO_x	Chemiluminescence
TECO 48C	CO	GFC/IR
Ratfisch, RS-55	THC	FID
Horiba PIR 2000	CO_2	IR
Rosemount 755R	O_2	Paramagnetic

All calibration gases are EPA Protocol #1. The analyzer data recording system consists of Omega 3 channel strip chart recorders, which can be supported by a Data Acquisition System (DAS).

The instrument response was recorded on strip charts and manually reduced. The averages were corrected for drift using BAAQMD & EPA Method 6C equations.

3.6. Comments: Limitations and Data Qualifications

Blue Sky Environmental has reviewed this report for accuracy, and concluded that the test procedures were followed and accurately described and documented. The review included the following items:

Review of the general text
Review of calculations
Review of CEMS data
Review of supporting documentation

The services described in this report were performed in a manner consistent with the generally accepted professional testing principles and practices. No other warranty, expressed or implied, is made. These services were performed in a manner consistent with our agreement with our client. The report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions contained in this report pertain to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and operating parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations, subsequent to this, and do not warranty the accuracy of information supplied by others.

SECTION 4. APPENDICES

A. Tabulated Results

B. Calculations

C. Laboratory Reports

D. Field Data Sheets

E. Strip Charts

F. Process Information

G. Calibration Certifications and Quality Assurance Records

H. Sample Train Configuration and Stack Diagrams

I. Related Correspondence (Source Test Plan)

J. BAAQMD Permit

A
Tabulated Results

TABLE #1

TriCities Recycling Disposal Facility
Flare A-3
1525°F

RUN	Run 1	Run 2	Run 3	AVERAGE	LIMITS
Test Date	6/4/08	6/4/08	6/4/08		
Test Time	0757-0833	0845-0946	1008-1047		
Standard Temp., °F	70	70	70		
Flare Temperature, °F	1520-1531	1520-1533	1520-1534		
Fuel Flow Rate, DSCFM	1,905	1,906	1,914	1,908	
Fuel Heat Input, MMBTU/Hr	53.8	55.1	38.4	49.1	
Exhaust Flow Rate, DSCFM (Method 19)	22,849	23,223	16,451*	23,036**	
Oxygen, O_2, %	13.0	12.9	13.1	13.0	
Carbon Dioxide, CO_2, %	7.2	7.0	7.1	7.1	
NOx, ppm	11.3	11.3	11.4	11.3	
NOx, ppm @ 15% O_2	8.4	8.4	8.6	8.5	
NOx, lbs/hr	1.84	1.87	1.34	1.68	
NOx, lbs/MMBTU	0.03	0.03	0.03	0.03	**0.06**
CO, ppm	94.2	84.5	85.3	88.0	
CO, ppm @ 15% O_2	70.3	62.6	64.2	65.7	
CO, lbs/hr	9.35	8.53	6.10	7.99	
CO, lbs/MMBTU	0.17	0.15	0.16	0.16	**0.3**
Total Reduced Sulfur as H_2S in fuel, ppm	70.0	70.0	70.0	70.0	**1300**
SO_2, ppm calculated emission	5.8	5.7	8.1	6.6	
THC, ppm	15.2	12.4	16.4	14.7	
THC, lbs/hr as CH_4	0.86	0.72	0.67	0.75	
CH_4, ppm	8.1	9.3	13.8	10.4	
NMHC, ppm as CH_4	7.1	3.1	2.6	4.3	
NMHC, lbs/hr as CH_4	0.4	0.2	0.1	0.2	
NMHC, ppm @ 3% O_2 as CH_4	16.0	7.0	6.0	9.7	**30**
INLET NMHC ppm as CH_4	1,762	1,955	1,467	1,728	
INLET NMHC lbs/hr as CH_4	8.3	9.3	7.0	8.2	
NMHC Removal Efficiency	>95.2%	>98.1%	>98.4%	>97.2%	**98**
INLET CH_4	474,000	485,000	337,000*	479,500**	
INLET THC (TOC) ppm as CH_4	475,762	486,955	338,467*	481,359**	
INLET THC (TOC) lbs/hr as CH_4	2,250	2,304	1,608*	2,054**	
THC (TOC) Removal Efficiency	99.96%	99.97%	99.96%	99.96%	**98**

** Fuel Input & CH4 content based on lab analysis believed to be under reported for Run #3, see section 2.3 of the report.*

*** Average Fuel Input & CH4 content based on Runs 1 & 2, since Run #3 lab analysis is believed to be under reported, see section 2.3 of the report.*

WHERE,

ppm = Parts Per Million Concentration
Lbs/hr = Pound Per Hour Emission Rate
Tstd. = Standard Temp. (°R = °F+460)
MW = Molecular Weight
DSCFM = Dry Standard Cubic Feet Per Minute
NOx = Oxides of Nitrogen as NO_2 (MW = 46)
CO = Carbon Monoxide (MW = 28)
TOC = THC = Total Organic Carbon as Methane including CH_4 (MW = 16)
THC = Total Hydrocarbons as Methane (MW = 16)
NMHC = Total Non-Methane Hydrocarbons as Methane (MW = 16)
SO_2 = Sulfur Dioxide as SO_2 (MW = 64.1)

CALCULATIONS,

PPM @ 15% O_2 = ppm * 5.9 / (20.9 - %O_2)
PPM @ 3% O_2 = ppm * 17.9 / (20.9 - %O_2)
Lbs/hr = ppm x 8.223 E-05 x DSCFM x MW / Tstd. °R
Lbs/MMBtu = (Lbs/hr)/(MMBtu/hr)
Lbs/day = Lbs/hr * 24
THC (TOC) Removal Efficiency = (inlet lbs/hr- outlet lbs/hr) / inlet lbs/hr
NMHC Removal Efficiency = (inlet lbs/hr- outlet lbs/hr) / inlet lbs/hr
SO_2 emission ppm = H2S in fuel * Fuel Flow/Stack Gas Flow

B
Calculations

BLUE SKY ENVIRONMENTAL, LLC

CEM BIAS CORRECTION SUMMARY

Facility: TriCities Recycling Disposal Facility
Unit: Flare A-3
Condition: 1525°F
Date: 6/4/08
Traverse 8pts x 2 ports x 2mins/pt

Barometric:
Leak Check: OK
Strat. Check: OK
Personnel: gw, jm

	O_2	CO_2	NOx	CO	THC	CH4	SO_2		
Analyzer	755R	PIR 2000	42i	48C	RS-55	RS-55	721AT		
Range, r	25	15	50	500	50	50	100		r
Units, ppm or %	%	%	ppm	ppm	ppm	ppm	ppm		
Span Gas Value, sgv	20.57	12.64	45.8	454.0	45.0	45.0			Ccal

Run 1	0.00	0.00	0.00	0.0	0.0	0.0			zero (initial), Cib
Test Time:	20.55	12.53	45.0	447.5	45.0	45.0			cal (initial), Cib
0757-0833	13.08	7.16	11.1	92.5	15.0	8.0			TEST AVG, Cavg
	0.61	0.00	0.0	0.0	0.0	0.0			zero (final), Cfb
	20.50	12.60	45.2	444.0	44.0	44.0			cal (final), Cfb
	2%	*0%*	*0%*	*0%*	*0%*	*0%*			% zero drift
	0%	*0%*	*0%*	*-1%*	*-2%*	*-2%*			% cal drift
	13.00	**7.20**	**11.3**	**94.2**	**15.2**	**8.1**			**Cgas**

Run 2	0.61	0.00	0.0	0.0	0.0	0.0			zero (initial), Cib
Test Time:	20.50	12.60	45.2	444.0	44.0	44.0			cal (initial), Cib
0845-0946	12.94	6.98	11.1	82.5	12.0	9.0			TEST AVG, Cavg
	0.50	0.00	0.0	0.0	0.0	0.0			zero (final), Cfb
	20.00	12.68	45.0	442.0	43.0	43.0			cal (final), Cfb
	0%	*0%*	*0%*	*0%*	*0%*	*0%*			% zero drift
	-2%	*1%*	*0%*	*0%*	*-2%*	*-2%*			% cal drift
	12.94	**6.98**	**11.3**	**84.5**	**12.4**	**9.3**			**Cgas**

Run 3	0.50	0.00	0.0	0.0	0.0	0.0			zero (initial), Cib
Test Time:	20.00	12.68	45.0	442.0	43.0	43.0			cal (initial), Cib
1008-1047	12.68	7.13	11.2	82.9	15.0	12.5			TEST AVG, Cavg
	0.30	0.00	0.0	0.0	-1.0	-1.0			zero (final), Cfb
	19.50	12.68	44.8	440.0	41.0	41.0			cal (final), Cfb
	-1%	*0%*	*0%*	*0%*	*-2%*	*-2%*			% zero drift
	-2%	*0%*	*-1%*	*0%*	*-4%*	*-4%*			% cal drift
	13.05	**7.11**	**11.4**	**85.3**	**16.4**	**13.8**			**Cgas**

Pollutant Concentration (Cgas) = (Cavg - Co) x Ccal / (Cbcal - Co)
Zero and Calibration Drift = 100 x (Cfb - Cib) / r
Bias = 100 x (Cfb - Ca) / r

Co = (Cib + Cfb) / 2 for zero gas
Cbcal = (Cif + Cfb) / 2 for cal gas

BLUE SKY ENVIRONMENTAL, LLC

STACK GAS FLOW RATE DETERMINATION -- Method 19

Facility: TriCities Recycling Disposal Facility
Unit: Flare A-3
Condition: 1525°F
Date: 6/4/08

		Time:	0757-0833	0845-0946	1008-1047	
		Run:	**1**	**2**	**3**	
# cubic feet/rev	Average Max		1,905	1,906	1,914	ft^3
# of seconds/rev			60	60	60	seconds
Gas Line Pressure (PSIG)			0.0	0.0	0.0	PSI Gauge
Gas Line Pressure (PSIA)			14.7	14.7	14.7	PSI Absolute
Gross Calorific Value @ 60°F	avg		479.9	491.1	341.2	Btu / ft^3
Stack Oxygen			13.0	12.9	13.1	%
Gas Fd-Factor @ 60°F	avg		9,451.1	9,455.2	9,456.9	DSCF/MMBtu
Gas Temperature (°F)			70	70	70	°F
Standard Temperature (°F) Tstd			70	70	70	°F
Realtime Fuel Rate (CFM)			1905.0	1906.0	1914.0	CFM
Corrected Fuel Rate (SCFM) @ Tstd			1905.0	1906.0	1914.0	SCFM
Fuel Flowrate (SCFH)			114,300	114,360	114,840	SCFH
Million Btu per minute			0.897	0.918	0.641	MMBtu/min
Heat Input (MMBtu/hour)			53.8	55.1	38.4	MMBtu/Hr
Stack Gas Flow Rate @ Tstd			**22,849**	**23,223**	**16,451**	**DSCFM**

WHERE:

Gas Fd-Factor = Fuel conversion factor (ratio of combustion gas volumes to heat inputs)
MMBtu = Million Btu

CALCULATIONS:

SCFM = CFM * (460+Tstd) * (PSIA) / 14.7 / (460+Gas°F))
SCFH = SCFM * 60
MMBtu/min = SCFM * (Btu/ft^3) * (520/(460+Tstd)) / 1,000,000
MMBtu/hr Heat Input = MMBtu/min * 60
DSCFM = Gas Fd-Factor * ((460+Tstd)/520) * MMBtu/min * 20.9/ (20.9 - O_2%)

Fd-FACTOR CALCULATION

Landfill Gas - Run 1

Sample ID: TriCities Recycling Disposal Facility
Date: 6/4/2008

	Molecular Weight	Ideal Gas Specific Gravity, G_i	Ideal Gas Total Calorific Value, H_i	Compressibility Summation Factor, $\sqrt{b_i}$	Specific Volume, ft³/lb	Composition Mole Fraction, x_i	Specific Gravity Fraction, x_iG_i	Calorific Value Fraction, x_iH_i	Compressibility Fraction, $x_i\sqrt{b_i}$	x_iMW	Weight Fraction, $\xi_iMW / \Sigma x_iMW$	CARBON Weight Fraction	HYDROGEN Weight Fraction	OXYGEN Weight Fraction	NITROGEN Weight Fraction	SULFUR Weight Fraction	CHONS SUM	Specific Volume, ft³/lb
Helium‡	4.00	0.1382	0.0	-0.0170		**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000							
Hydrogen (H_2) ‡	2.02	0.0696	324.9		187.723	**0.0000**	0.0000	0.0	0.0000	0.0000							0.0000	
Nitrogen	28.01	0.9672	0.0	0.0164	13.443	**0.1420**	0.1373	0.0	0.0023	3.9774	0.1405				0.1405		0.1405	1.8885
Oxygen	32.00	1.1053	0.0		11.819	**0.0140**	0.0155	0.0	0.0000	0.4480	0.0158			0.0158			0.0158	0.1870
Carbon Monoxide	28.01	0.9671	321.3	0.0217	13.506	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000
Carbon Dioxide‡	44.01	1.5194	0.0	0.0640	8.548	**0.3700**	0.5622	0.0	0.0237	16.2837	0.5752	0.1570	0.0000	0.4182			0.5752	4.9164
Methane	16.04	0.5539	1012.0	0.0436	23.565	**0.4740**	0.2625	479.7	0.0207	7.6030	0.2685	0.2011	0.0675				0.2686	6.3282
Ethane	30.01	1.0382	1772.9	0.0917	12.455	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Propane	44.09	1.5224	2523.0	0.1342	8.365	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Isobutane	58.12	2.0067	3260.1	0.1744	6.321	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
n-Butane	58.12	2.0067	3269.6	0.1825	6.321	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Isopentane	72.14	2.4910	4009.4	0.2276	5.252	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
n-Pentane	72.14	2.4910	4018.5	0.2377	5.252	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Hexanes	86.17	2.9753	4758.0	0.2830	4.398	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Total						1.0000	**0.978** **SG**	**479.7** **Btu/ft³**	0.0230 **$\Sigma x_i\sqrt{b_i}$**	28.3121 **ΣxiMW**	1.0000	0.3580 **35.80%**	0.0675 **6.75%**	0.4340 **43.40%**	0.1405 **14.05%**	0.0000 **0.00%**	1.0000	**13.32** **ft³/lb**

‡ Omitted from Compressibility Factor Calculation

Calculated Specific Gravity (SG) *(Air = 1.000 @ 760mm Hg, 60°F)*	**0.978**	
Compressibility Factor (Z)	**0.9995**	
$Z = 1 - [(\Sigma x_i \sqrt{b_i})^2 + (2x_H - x_H^2)(0.0005)]$		
Specific Gravity (corrected)	**0.978**	
Specific Volume, (SV) ft³/lb	**13.32**	**ft³/lb**
Gross Calorific Value (GCV) @ 60°F	**479.9**	**Btu/ft³ Gross**
Gross Calorific Value (GCV) @ 68°F	**472.7**	**Btu/ft³ Gross**
Gross Calorific Value (GCV)	**6,393**	**Btu/lb**
*Btu/lb = Btu/ft³ * ft³/lb*		
Gas Fd-Factor @ 68°F	**9,596**	**DSCF/MMBtu**
*DSCF/MMBtu = 10⁶ * ((3.64*%H₂)+(1.53*%C)+(0.57*%S)+(0.14*%N₂)-(0.46*%O₂)) / Btu/lb*		
Gas Fd-Factor @ 60°F	**9,451**	**DSCF/MMBtu**

Fd-FACTOR CALCULATION

Landfill Gas - Run 2

Sample ID: TriCities Recycling Disposal Facility
Date: 6/4/2008

	Molecular Weight	Ideal Gas Specific Gravity, G_i	Ideal Gas Total Calorific Value, H_i	Compressibility Summation Factor, $\sqrt{bi}$	Specific Volume, ft^3/lb	Composition Mole Fraction, x_i	Specific Gravity Fraction, x_iG_i	Calorific Value Fraction, x_iH_i	Compressibility Fraction, $x_i\sqrt{bi}$	x_iMW	Weight Fraction, $\xi_iMW / \Sigma xiMW$	CARBON Weight Fraction	HYDROGEN Weight Fraction	OXYGEN Weight Fraction	NITROGEN Weight Fraction	SULFUR Weight Fraction	CHONS SUM	Specific Volume, ft^3/lb
Helium‡	4.00	0.1382	0.0	-0.0170		**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000							
Hydrogen (H_2) ‡	2.02	0.0696	324.9		187.723	**0.0000**	0.0000	0.0	0.0000	0.0000							0.0000	
Nitrogen	28.01	0.9672	0.0	0.0164	13.443	**0.1270**	0.1228	0.0	0.0021	3.5573	0.1257				0.1257		0.1257	1.6895
Oxygen	32.00	1.1053	0.0		11.819	**0.0090**	0.0099	0.0	0.0000	0.2880	0.0102			0.0102			0.0102	0.1203
Carbon Monoxide	28.01	0.9671	321.3	0.0217	13.506	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000
Carbon Dioxide‡	44.01	1.5194	0.0	0.0640	8.548	**0.3790**	0.5759	0.0	0.0243	16.6798	0.5893	0.1608	0.0000	0.4285			0.5893	5.0373
Methane	16.04	0.5539	1012.0	0.0436	23.565	**0.4850**	0.2686	490.8	0.0211	7.7794	0.2748	0.2058	0.0691				0.2749	6.4768
Ethane	30.01	1.0382	1772.9	0.0917	12.455	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Propane	44.09	1.5224	2523.0	0.1342	8.365	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Isobutane	58.12	2.0067	3260.1	0.1744	6.321	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
n-Butane	58.12	2.0067	3269.6	0.1825	6.321	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Isopentane	72.14	2.4910	4009.4	0.2276	5.252	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
n-Pentane	72.14	2.4910	4018.5	0.2377	5.252	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Hexanes	86.17	2.9753	4758.0	0.2830	4.398	**0.0000**	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Total						1.0000	**0.977** **SG**	**490.8** **Btu/ft^3**	0.0232 **$\Sigma x_i\sqrt{b_i}$**	28.3045 **$\Sigma xiMW$**	1.0000	0.3666 **36.66%**	0.0691 **6.91%**	0.4387 **43.86%**	0.1257 **12.57%**	0.0000 **0.00%**	1.0000	**13.32** **ft^3/lb**

‡ Omitted from Compressibility Factor Calculation

Calculated Specific Gravity (SG) *(Air = 1.000 @ 760mm Hg, 60°F)*	**0.977**	
Compressibility Factor (Z)	**0.9995**	
$Z = 1 - [(\Sigma x_i \sqrt{b_i})^2 + (2x_H - x_H^2)(0.0005)]$		
Specific Gravity (corrected)	**0.978**	
Specific Volume, (SV) ft^3/lb	**13.32**	ft^3/lb
Gross Calorific Value (GCV) @ 60°F	**491.1**	**Btu/ft^3 Gross**
Gross Calorific Value (GCV) @ 68°F	**483.6**	**Btu/ft^3 Gross**
Gross Calorific Value (GCV)	**6,543**	**Btu/lb**
$Btu/lb = Btu/ft^3 * ft^3/lb$		
Gas Fd-Factor @ 68°F	**9,601**	**DSCF/MMBtu**
$DSCF/MMBtu = 10^6 * ((3.64*\%H_2)+(1.53*\%C)+(0.57*\%S)+(0.14*\%N_2)-(0.46*\%O_2)) / Btu/lb$		
Gas Fd-Factor @ 60°F	**9,455**	**DSCF/MMBtu**

Fd-FACTOR CALCULATION

Landfill Gas - Run 3

Sample ID: TriCities Recycling Disposal Facility
Date: 6/4/2008

	Molecular Weight	Ideal Gas Specific Gravity, G_i	Ideal Gas Total Calorific Value, H_i	Compressibility Summation Factor, $\sqrt{b_i}$	Specific Volume, ft³/lb	Composition Mole Fraction, x_i	Specific Gravity Fraction, x_iG_i	Calorific Value Fraction, x_iH_i	Compressibility Fraction, $x_i\sqrt{b_i}$	x_iMW	Weight Fraction, ξ_iMW / ΣxiMW	CARBON Weight Fraction	HYDROGEN Weight Fraction	OXYGEN Weight Fraction	NITROGEN Weight Fraction	SULFUR Weight Fraction	CHONS SUM	Specific Volume, ft³/lb
Helium‡	4.00	0.1382	0.0	-0.0170		0.0000	0.0000	0.0	0.0000	0.0000	0.0000							
Hydrogen (H_2) ‡	2.02	0.0696	324.9		187.723	0.0000	0.0000	0.0	0.0000	0.0000							0.0000	
Nitrogen	28.01	0.9672	0.0	0.0164	13.443	0.3280	0.3172	0.0	0.0054	9.1873	0.3230				0.3230		0.3230	4.3427
Oxygen	32.00	1.1053	0.0		11.819	0.0710	0.0785	0.0	0.0000	2.2720	0.0799			0.0799			0.0799	0.9442
Carbon Monoxide	28.01	0.9671	321.3	0.0217	13.506	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000	0.0000
Carbon Dioxide‡	44.01	1.5194	0.0	0.0640	8.548	0.2630	0.3996	0.0	0.0168	11.5746	0.4070	0.1111	0.0000	0.2959			0.4070	3.4790
Methane	16.04	0.5539	1012.0	0.0436	23.565	0.3370	0.1867	341.0	0.0147	5.4055	0.1901	0.1423	0.0478				0.1901	4.4790
Ethane	30.01	1.0382	1772.9	0.0917	12.455	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Propane	44.09	1.5224	2523.0	0.1342	8.365	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Isobutane	58.12	2.0067	3260.1	0.1744	6.321	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
n-Butane	58.12	2.0067	3269.6	0.1825	6.321	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Isopentane	72.14	2.4910	4009.4	0.2276	5.252	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
n-Pentane	72.14	2.4910	4018.5	0.2377	5.252	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Hexanes	86.17	2.9753	4758.0	0.2830	4.398	0.0000	0.0000	0.0	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000
Total						0.9990	**0.982** SG	**341.0** Btu/ft³	0.0201 $\sum x_i\sqrt{b_i}$	28.4394 ΣxiMW	1.0000	0.2534 25.34%	0.0478 4.78%	0.3758 37.58%	0.3230 32.30%	0.0000 0.00%	1.0000	**13.24** ft³/lb

‡ Omitted from Compressibility Factor Calculation

Calculated Specific Gravity (SG) *(Air = 1.000 @ 760mm Hg, 60°F)*	**0.982**	
Compressibility Factor (Z)	**0.9996**	
$Z = 1 - [(\sum x_i \sqrt{b_i})^2 + (2x_H - x_H^2)(0.0005)]$		
Specific Gravity (corrected)	**0.982**	
Specific Volume, (SV) ft³/lb	**13.24**	**ft³/lb**
Gross Calorific Value (GCV) @ 60°F	**341.2**	**Btu/ft³ Gross**
Gross Calorific Value (GCV) @ 68°F	**336.0**	**Btu/ft³ Gross**
Gross Calorific Value (GCV)	**4,519**	**Btu/lb**
*Btu/lb = Btu/ft³ * ft³/lb*		
Gas Fd-Factor @ 68°F	**9,602**	**DSCF/MMBtu**
*DSCF/MMBtu = 10⁶ * ((3.64*%H₂)+(1.53*%C)+(0.57*%S)+(0.14*%N₂)-(0.46*%O₂)) / Btu/lb*		
Gas Fd-Factor @ 60°F	**9,457**	**DSCF/MMBtu**

C
Laboratory Reports

Atmospheric Analysis & Consulting, Inc.

CLIENT	: Blue Sky Environmental, LLC
PROJECT NAME	: Tri-Cities
AAC PROJECT NO.	: 080348
REPORT DATE	: 06/05/2008

On June 05, 2008, Atmospheric Analysis & Consulting, Inc. received three (3) Tedlar Bags for analysis by ASTM D-1945 which includes: Fixed Gases analysis by EPA 3C and hydrocarbon analysis by EPA 18, as well as non-methane organic compounds analysis by EPA 25C. Total Reduced Sulfur analysis by ASTM D-5504 was additionally requested on "LFG-3". Upon receipt the samples were assigned unique Laboratory ID numbers as follows:

Client ID	Lab No.
LFG-1	080348-33123
LFG-2	080348-33124
LFG-3	080348-33125

EPA 3C - An aliquot of the gaseous sample is injected into the GC/TCD for analysis following EPA 3C as specified in the SOW.

EPA 18 Analysis - Up to a 1 ml aliquot of samples is injected into the GC/FID for analysis following EPA 18 as specified in the SOW.

EPA 25C Analysis - Up to a 1 mL aliquot of samples is injected into the GC/FID/TCA for analysis following EPA 25C as specified in the SOW.

ASTM D-5504 – Up to a 1mL aliquot of sample is injected into the GC/SCD for analysis following ASTM D-5504 as specified in the SOW.

No problems were encountered during receiving, preparation, and/ or analysis of this sample. The test results included in this report meet all requirements of the NELAC Standards and/or AAC SOP# AACI- EPA 3C, 25C, EPA 18 and ASTM D-5504.

I certify that this data is technically accurate, complete, and in compliance with the terms and conditions of the contract. Release of the data contained in this hardcopy data package and its electronic data deliverable submitted on diskette has been authorized by the Laboratory Director or his designee, as verified by the following signature.

If you have any questions or require further explanation of data results, please contact the undersigned.

Sucha S. Parmar, PhD
Technical Director

This report consists of 13 pages.

ACCREDITED IN ACCORDANCE WITH nelac Certificate #E87837

1534 Eastman Avenue • Suite A • Ventura, California 93003 (805) 650-1642 • FAX (805) 650-1644

Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

Client:	**Blue Sky Environmental**	**Sampling Date**	**06/04/2008**
Project No.	**080348**	**Receiving Date**	**06/05/2008**
Matrix	**Air**	**Analysis Date**	**06/05/2008**
Units	**%**	**Report Date**	**06/05/2008**

EPA Method 3C

PQL: 0.1 %			Analyte				
Client ID	AAC ID	Hydrogen	Oxygen	Nitrogen	CO	Methane	CO2
LFG-1	080348-33123	<PQL	1.4	14.2	<PQL	47.4	37.0
LFG-2	080348-33124	<PQL	0.9	12.7	<PQL	48.5	37.9
LFG-3	080348-33125	<PQL	7.1	32.8	<PQL	33.7	26.3

Dr. Sucha Parmar
Technical Director

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Atmospheric Analysis & Consulting, Inc.

LABORATORY ANALYSIS REPORT

CLIENT	Blue Sky Environmental	SAMPLING DATE	06/04/2008
PROJECT NO.	080348	RECEIVING DATE	06/05/2008
UNITS	PPMV	ANALYSIS DATE	06/05/2008
		REPORT DATE	06/05/2008

Total Reduced Sulfur Compounds Analysis by ASTM D-5504

Client ID	LFG-3		PQL (RLxDF's)	Reporting Limit
AAC ID	080348-33125			
Can Dilution Factor	1.0			
Analyte	Result	Dil. Fac.		
H_2S	66.93	1000	10.00	0.01
Carbonyl Sulfide	<PQL	100	1.00	0.01
SO2	<PQL	100	1.00	0.01
Methyl Mercaptan	1.74	100	1.00	0.01
Ethyl Mercaptan	<PQL	100	1.00	0.01
Dimethyl Sulfide	1.28	100	1.00	0.01
n-Butyl mercaptan	<PQL	100	1.00	0.01
Carbon Disulfide	<PQL	100	1.00	0.01
Allyl Sulfide	<PQL	100	1.00	0.01
Propyl Sulfide	<PQL	100	1.00	0.01
Allyl disulfide	<PQL	100	1.00	0.01
Isopropyl Mercaptan	<PQL	100	1.00	0.01
t-Butyl Mercaptan	<PQL	100	1.00	0.01
Propyl Mercaptan	<PQL	100	1.00	0.01
Butyl Sulfide	<PQL	100	1.00	0.01
Ethyl Methyl Sulfide	<PQL	100	1.00	0.01
Thiophene	<PQL	100	1.00	0.01
Isobutyl Mercaptan	<PQL	100	1.00	0.01
Dimethyl Disulfide	<PQL	100	1.00	0.01
Allyl Mercaptan	<PQL	100	1.00	0.01
3-Methylthiophene	<PQL	100	1.00	0.01
Tetrahydrothiophene	<PQL	100	1.00	0.01
Diethyl Sulfide	<PQL	100	1.00	0.01
2-Ethylthiophene	<PQL	100	1.00	0.01
2,5-Dimethylthiophene	<PQL	100	1.00	0.01
Diethyl disulfide	<PQL	100	1.00	0.01
Total Unidentified Sulfurs as H_2S	<PQL			
Total Reduced Sulfurs as H_2S	69.95			

All compound's concentrations expressed in terms of H_2S.

Dr. Sucha Parmar
Technical Director

Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

Client	**Blue Sky Environmental**	**Sampling Date**	**06/04/2008**
Project No.	**080348**	**Receiving Date**	**06/05/2008**
Matrix	**AIR**	**Analysis Date**	**06/05/2008**
Units	**ppmV**	**Report Date**	**06/05/2008**

EPA Method 25C

PQL:		1.0 ppmv
Client Sample ID	**AAC ID**	**NMHC****
LFG-1	**080348-33123**	1762
LFG-2	**080348-33124**	1955
LFG-3	**080348-33125**	1467

****Non-Methane Hydrocarbons as Methane**

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Atmospheric Analysis & Consulting, Inc.

Laboratory Analysis Report

CLIENT:	**Blue Sky Environmental**	**Sampling Date**	**06/04/2008**
PROJECT NO.	**080348**	**Receiving Date**	**06/05/2008**
MATRIX	**AIR**	**Analysis Date**	**06/05/2008**
UNITS	**ppmV**	**Report Date**	**06/05/2008**

C1 to C6+ Hydrocarbons by EPA Method 18

Client ID	AAC ID	*ANALYSIS METHOD*		*EPA Method 18*				
		PQL		*0.3 ppmv*				
		C1 *	C2 **	C3	C4	C5	C6	C6+
LFG-1	080348-33123	NA	<30	21.1	25.2	37.3	32.6	376.7
LFG-2	080348-33124	NA	<30	21.7	24.7	37.2	30.6	307.0
LFG-3	080348-33125	NA	<30	20.0	19.7	29.4	23.9	263.5

**** C1 reported off of the EPA 3C report***

***** Due to the extremely high C1 concentration, the C2 concentration could not be measured below this PQL due to matrix interference.***

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Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

Date Analyzed: 6/5/2008
Analyst: DN

Instrument ID: TCD#1
Units: %

I - Method Blank-EPA Method 3C

AAC ID	Analyte	MB Concentration
Method Blank	Hydrogen	ND
	Oxygen	ND
	Nitrogen	ND
	CO	ND
	Methane	ND
	CO2	ND

II-Laboratory Control Spike & Duplicate - EPA Method 3C

AAC ID	Analyte	Spike Added	LCS Result	LCSD Result	LCS % Rec *	LCSD % Rec *	% RPD***
Lab Control Standards	Hydrogen	20.0	20.5	20.6	102	103	0.8
	Nitrogen	20.0	19.6	19.7	98	98	0.4
	CO	20.0	19.8	19.9	99	99	0.5
	Methane	20.0	19.8	19.9	99	99	0.6
	CO2	20.0	19.8	20.0	99	100	0.7

III - Duplicate Analysis - EPA Method 3C

AAC ID	Analyte	Sample Concentration	Duplicate Concentration	Mean	% RPD***
080344-33081	Hydrogen	0.00	0.00	0.0	0.0
	Oxygen	0.85	0.83	0.8	2.7
	Nitrogen	3.43	3.35	3.4	2.4
	CO	0.00	0.00	0.0	0.0
	Methane	26.49	26.49	26.5	0.0
	CO2	21.38	21.38	21.4	0.0

IV-Matrix Spike & Duplicate- EPA Method 3C

AAC ID	Analyte	Sample Concentration	Spike Added	MS Result	MSD Result	MS % Rec **	MSD % Rec **	% RPD***
080344-33081	Hydrogen	0.00	10.0	9.55	9.44	95	94	1.2
	Nitrogen	1.70	10.0	11.78	12.06	101	104	2.8
	CO	0.00	10.0	10.09	10.09	101	101	0.0
	Methane	13.25	10.0	22.99	22.96	97	97	0.3
	CO2	10.69	10.0	20.48	20.45	98	98	0.3

** Must be 85-115%*
*** Must be 75-125%*
**** Must be < 25%*

Sucha Parmar, Ph.D.
Technical Director

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Quality Control/Quality Assurance Report

Date Analyzed: 6/5/2008 **Instrument ID: TCD#1**
Analyst: DN **Calb Date: 04/03/08**

Opening Calibration Verification Standard

Analyte	xLR**	LR	%RPD*
Hydrogen	1869	1975	**5.5**
Oxygen* **	49346	50261	**1.8**
Nitrogen	59197	59635	**0.7**
Carbon Monoxide	57917	59391	**2.5**
Methane	48425	49740	**2.7**
Carbon Dioxide	77691	80034	**3.0**

Closing Calibration Verification Standard

Analyte	xLR**	LR	%RPD*
Hydrogen	1869	1948	**4.1**
Nitrogen	59197	57568	**2.8**
Carbon Monoxide	57917	57928	**0.0**
Methane	48425	48534	**0.2**
Carbon Dioxide	77691	78144	**0.6**

* Must be <15%
** Linear Response Factor from Initial Calibration Curve
*** Oxygen from Lab Air

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Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

Date Analyzed: 06/05/2008
Analyst: DN

Instrument ID: SCD#2
Units: PPMV

I - Method Blank - ASTM D-5504

AAC ID	Analyte	MB Conc.
Method Blank	H2S	ND

II-Laboratory Control Spike & Duplicate - ASTM D-5504

Analyte	Spike Added	LCS Result	LCSD Result	LCS % Rec *	LCSD % Rec *	% RPD***
H2S	0.050	0.050	0.050	100.0	100.0	0.0

III-Matrix Spike & Duplicate - ASTM D-5504 **Sample ID 080348-33215 (2000x)**

Analyte	Sample Concentration	Spike Added	MS Result	MSD Result	MS % Rec **	MSD % Rec **	% RPD***
H2S	0.033	0.025	0.055	0.057	86	94	3.6

IV - Duplicate Analysis - ASTM D-5504 **Sample ID 080348-33215**

Analyte	Sample Concentration	Duplicate Concentration	Mean	% RPD***
H2S	66.4	67.5	66.9	0.0

** Must be 90-110%*

*** Must be 85-115%*

**** Must be < 10%*

Dr. Sucha Parmar
Technical Director

Quality Control/Quality Assurance Report

Date Analyzed: 6/5/2008
Analyst: DN
Calibration Date: 5/14/2008

Instrument ID: SCD#2
Units: PPMV

Opening Calibration Verification Standards

Analyte	Std. Conc.	Result	%Recovery*
H2S	0.050	0.051	**102**

Closing Calibration Verification Standard

Analyte	Std. Conc.	Result	%Recovery*
H2S	0.050	0.048	**96**

* Must be 90-110%

Dr. Sucha Parmar
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Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

Analysis Date: 6/5/2008
Analyst: DN
Units: ppmv

Instrument ID: FID#4
Calibration Date: 8/25/2007

I - Opening Calibration Verification Standard - Method 25C

Analyte	xCF	dCF	%RPD*
CO	3177	2983	6.3
CH4	3171	3236	2.0
CO2	3123	3125	0.1
Propane	9157	8825	3.7

II - Method Blank - Method 25C

AAC ID	Analyte	Sample Result
MB	NMEHC	ND

III - Laboratory Control Spike & Duplicate - Method 25C

AAC ID	Analyte	Spike Added	LCS Result	LCSD Result	LCS % Rec **	LCSD % Rec **	% RPD***
LCS/LCSD	NMEHC	50.0	51.0	50.9	102.0	101.9	0.1

IV - Closing Calibration Verification Standard - Method 25C

Analyte	xCF	dCF	%RPD*
CO	3177	3028	4.8
CH4	3171	3364	5.9
CO2	3123	3180	1.8
Propane	9157	9263	1.2

xCF - Average Calibration Factor from Initial Calibration Curve
dCF - Daily Calibration Factor
* Must be <15%
** Must be 90-110 %
*** Must be <20%

Sucha Parmar, Ph.D.
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Atmospheric Analysis & Consulting, Inc.

Quality Control/Quality Assurance Report

Date Analyzed: 6/5/2008
Analyst: DN

Instrument ID: FID#3
Units: PPMV

I - Method Blank-EPA Method 18

AAC ID	Analyte	MB Concentration
Method Blank	Methane	ND
	Ethane	ND
	Propane	ND
	Butane	ND
	Pentane	ND
	Hexane	ND

II-Laboratory Control Spike & Duplicate - EPA Method 18

AAC ID	Analyte	Spike Added	LCS Result	LCSD Result	LCS % Rec *	LCSD % Rec *	% RPD***
Lab Control Standards	Methane	100.4	97.6	100.5	97.2	100.1	3.0
	Ethane	100.2	99.3	102.1	99.1	101.9	2.8
	Propane	100.2	98.6	100.8	98.4	100.6	2.2
	Butane	100.4	100.1	101.6	99.7	101.2	1.5
	Pentane	100.0	100.7	103.6	100.7	103.6	2.8
	Hexane	99.4	99.7	101.9	100.3	102.5	2.2

III - Duplicate Analysis - EPA Method 18

AAC ID	Analyte	Sample Concentration	Duplicate Concentration	Mean	% RPD***
080348-33123	Methane	NA	NA	NA	NA
	Ethane	NA	NA	NA	NA
	Propane	21.25	21.39	21.3	0.7
	Butane	10.36	10.34	10.4	0.2
	Pentane	5.21	5.86	5.5	11.7
	Hexane	1.84	1.78	1.8	3.2

IV-Matrix Spike & Duplicate- EPA Method 18

AAC ID	Analyte	Sample Concentration	Spike Added	MS Result	MSD Result	MS % Rec **	MSD % Rec **	% RPD***
080348-33123	Methane	NA	NA	NA	NA	NA	NA	NA
	Ethane	NA	NA	NA	NA	NA	NA	NA
	Propane	10.7	50.0	60.3	60.9	99	101	1.2
	Butane	5.2	50.0	58.6	58.5	107	107	0.0
	Pentane	2.8	50.0	58.1	57.9	111	110	0.5
	Hexane	0.9	50.0	57.6	58.0	113	114	0.7

** Must be 85-115%*
*** Must be 75-125%*
**** Must be < 25%*

Dr. Sucha Parmar
Technical Director

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Quality Control/Quality Assurance Report

Date Analyzed: 6/5/2008 **Instrument ID: FID#3**
Analyst: DN **Calibration Date: 04/18/2008**

Opening Calibration Verification Standard

Analyte	xCF**	CF	%RPD*
C1	671	683	**1.7**
C2	1308	1345	**2.9**
C3	2018	2017	**0.0**
C4	2610	2704	**3.5**
C5	3155	3336	**5.6**
C6	3632	3836	**5.5**

Closing Calibration Verification Standard

Analyte	xCF**	CF	%RPD*
C1	671	676	**0.7**
C2	1308	1333	**1.9**
C3	2018	1995	**1.1**
C4	2610	2636	**1.0**
C5	3155	3233	**2.5**
C6	3632	3788	**4.2**

* Must be <15%
** Average Calibration Factor from Initial Calibration Curve

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080348

CHAIN OF CUSTODY RECORD

Project Name: TRI-CITIES

Project #:

SAMPLE Date	SAMPLE Time	Sample ID (Method-Run-Fraction)	Type/Size of container	Analysis Requested: 25C	1945	5504				
6/4/08	0800	LFG-1	Tedlar	/	/				33123	
6/4/08	0845	LFG-2	5L	/	/				33124	
6/4/08		LFG-3		/	/	/			33125	

All samples submitted to laboratories for analysis are accepted on a custodial basis only. Ownership of the material remains with the client submitting the sample. Samples should be held for 90+ days. The laboratory reserves the right to return unused sample portions.

COMMENTS:

Relinquished by:	Date:	Time:	Received by:	Date:	Time:
Worthington	6-4-08	5:00	GSO	6-4-08	5:00
Relinquished by:	Date:	Time:	Received by:	Date:	Time:
				6/5/08	0840
Relinquished by:	Date:	Time:	Received by:	Date:	Time:

D
Field Data Sheets