TOTAL AIR ANALYSIS, INC.

COMPLIANCE SOURCE TEST REPORT

FIVE I.C. ENGINES

BRADLEY LANDFILL

Prepared For:

Waste Management, Inc.
9081 Tujunga Avenue
Sun Valley, CA 91352

Site Address:

9227 Tujunga Avenue
Sun Valley, CA 91352

FACILITY PERMIT TO CONSTRUCT I.D. NO.: 50310
APPLICATION NO.: 395061, 395063, 395064, 395065, R-407403

Conducted By:

Total Air Analysis, Inc.
1210 East 223rd Street, Suite 314
Carson, CA 90745

Test Date: February 22, 2005

Report Date: April 14, 2005

Report Identification No: WM-50418

Prepared by: _____
Mr. Juan A. Navarro, Air Quality Engineer

Reviewed by: _____
Mr. Russ P. Logan, Director

Submitted To:

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

1.0 SUMMARY OF RESULTS

Facility: Waste Management
Source: Bradley Landfill-Engine #1 - 5
Load: Full
Start Date: 2/22/05

Parameter	Units	Engine #1	Engine #3	Engine #5	Engine #4	Engine #2	Limits
Methane - Inlet	ppmv	431,958	431,958	431,958	431,958	431,958	--
ROGs	ppmv	9,443	9,443	9,443	9,443	9,443	--
Emission Rate	lb/hr	13.59	13.40	13.28	12.97	13.01	--
Destruction Efficiency	%	**98.92**	**99.37**	**98.77**	**98.78**	**98.57**	**98.00%**
Methane - Exhaust	ppmv	908	873	889	1038	930	--
ROGs	ppmv	15.20	8.69	17.38	17.38	20.09	--
ROGs @ 15% O2	ppmv	6.74	3.91	7.71	7.59	8.91	--
Emission Rate	lb/hr	**0.15**	**0.08**	**0.16**	**0.16**	**0.19**	**1.65**
Emission Rate	gm/bhp-hr	**0.04**	**0.020**	**0.04**	**0.038**	**0.04**	**0.80**
ROGs (as Hexane)	ppmv	2.83	1.62	3.23	3.23	3.74	**Rule 1150.1**
ROGs (@ 3% O2), C6	ppm	**3.81**	**2.21**	**4.35**	**4.29**	**5.03**	**20**
Fuel Flow	scfm	568.04	560.24	555.31	542.27	544.13	--
Heat Input	MMBTU/hr	**14.83**	**14.62**	**14.49**	**14.15**	**14.20**	**17.43**
O_2	%	7.60	7.80	7.60	7.40	7.60	--
Calculated Flowrate	dscfm	3,808	3,813	3,723	3,582	3,648	--

TABLE OF CONTENTS

Page

1.0 Summary of Results 1

2.0 Introduction 2

3.0 Process Description 2

4.0 Rule/Compliance Requirements 3

5.0 Operating Parameters 3

6.0 Test Methods and References 3

6.1 SCAQMD Modified Method 25.1 – Reactive Organic Gases (ROGs) Emissions Determination (High Levels) 3

6.2 SCAQMD Method 25.3 – Reactive Organic Gases (ROGs) Emissions Determination (Low Levels) 3

6.3 EPA Method 19 – Emission Rates Determination using Calculated Stack Gas Flowrate 4

7.0 Test Results and Discussion 4

8.0 Quality Assurance and Quality Control 5

8.1 QA and QC Overview 5

8.2 QA/QC Equipment Calibration Procedures 5

LIST OF APPENDICES

Appendix A - SCAQMD Modified Method 25.1 – ROGs (High Level) Calculations, Lab Analysis, and Field Data Sheets

Appendix B - SCAQMD Method 25.3 – ROGs (Low Level) Calculations, Lab Analysis, and Field Data Sheets

Appendix C - EPA Method 19 and Operating Parameters

Appendix D - Quality Assurance/Quality Control

Appendix E - SCAQMD Permits to Construct

2.0 Introduction

Total Air Analysis, Inc. was contracted by Waste Management, Inc. to perform a compliance test program on five I.C. Engines at the Bradley Landfill operated by Waste Management, Inc. The purpose of the test program was to determine the emissions of Reactive Organic Gases (ROGs) at the inlet and outlet to satisfy SCAQMD Rule 1150.1 and Permit to Operate Condition No. 16. ROG's are determined as Total Non-Methane and Ethane Organic Compounds (TNMEOC). The test program was conducted on February 22, 2005.

Testing was performed by Mr. Russ P. Logan and Mr. Juan A. Navarro of Total Air Analysis, Inc. Arrangements for the source testing were made through Mr. Andrew Washington of EMCON/OWT, Inc. Total Air Analysis performed the test program using standard SCAQMD test methods demonstrated in the approved protocol according to the following table.

TABLE 1
EQUIPMENT AND TEST REQUIREMENTS

Parameter	*Method*	*Sampling Location*	*Number/ Duration of Runs*
Reactive Organic Gases (ROG's)	SCAQMD 25.3	Outlet	Duplicate, 1 hour/ICE
Reactive Organic Gases (ROG's)	SCAQMD 25.1	Inlet	Single, 1 sample/Day
Calculated Exhaust Gas Flow Rate	EPA 19, Fuel usage	Inlet	Single, 1hour/ICE

Contracting Firm:	Mr. Andrew Washington	626/ 304-1508
Testing Firm Contact:	Mr. Russ P. Logan	310/ 518-5133
SCAQMD Representative:	Mr. Ted Kowalczyk	909/ 396-2592

3.0 Process Description

Five I.C. Engines were tested on February 22, 2005 while firing on landfill gas at full load.

The resource recovery system consists of five identical Deutz, Model TBG620V16K landfill gas fired internal combustion engine with sixteen cylinders 1877 BHP, lean burn, turbocharged and intercooled, driving a 1.3 MW electrical generator.

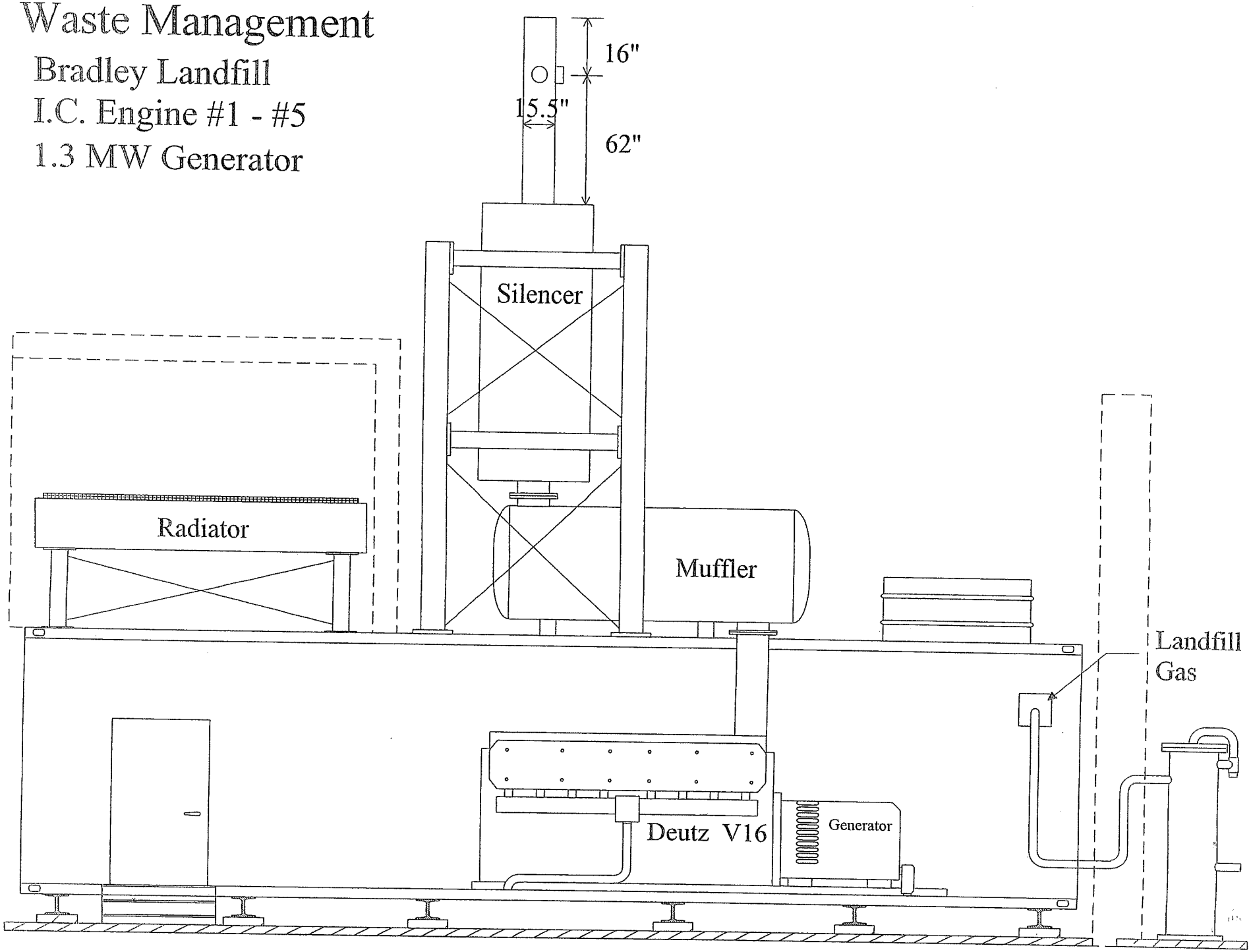
The five I.C. Engines are operated on Landfill gas to generate electrical power.

Waste Management

Bradley Landfill

I.C. Engine #1 - #5

1.3 MW Generator



4.0 Rule/Compliance Requirements

The I.C. engines are being source tested to ascertain whether they meet the requirements of their SCAQMD Permit to Construct Application No.'s 395061, 395063, 395064, 395065, and R-407403. Specifically SCAQMD Rule 1150.1 requires annual testing for Reactive Organic Gases (ROGs).

5.0 Operating Parameters

The engines were operating at a normal full load condition during the test program. Process data showing fuel usages and operating rates (SCFM, RPM, and KW Output) throughout the test program are shown in Appendix C.

6.0 Test Methods and References

6.1 ***SCAQMD Modified Method 25.1 – ROGs Emissions (High Level)***

A gas sample was withdrawn from the inlet fuel source at a constant rate into a new Tedlar bag. Reactive Organic Gases (ROGs) as Total Non-Methane and Ethane Compounds (TNMEOC) were analyzed.

The samples were analyzed using gas chromatograph equipped with oxidizer and methanizer. The results from the analysis are reported as Total Non-Methane and Ethane Organic Compounds measured as Methane in ppmv.

Calculations:

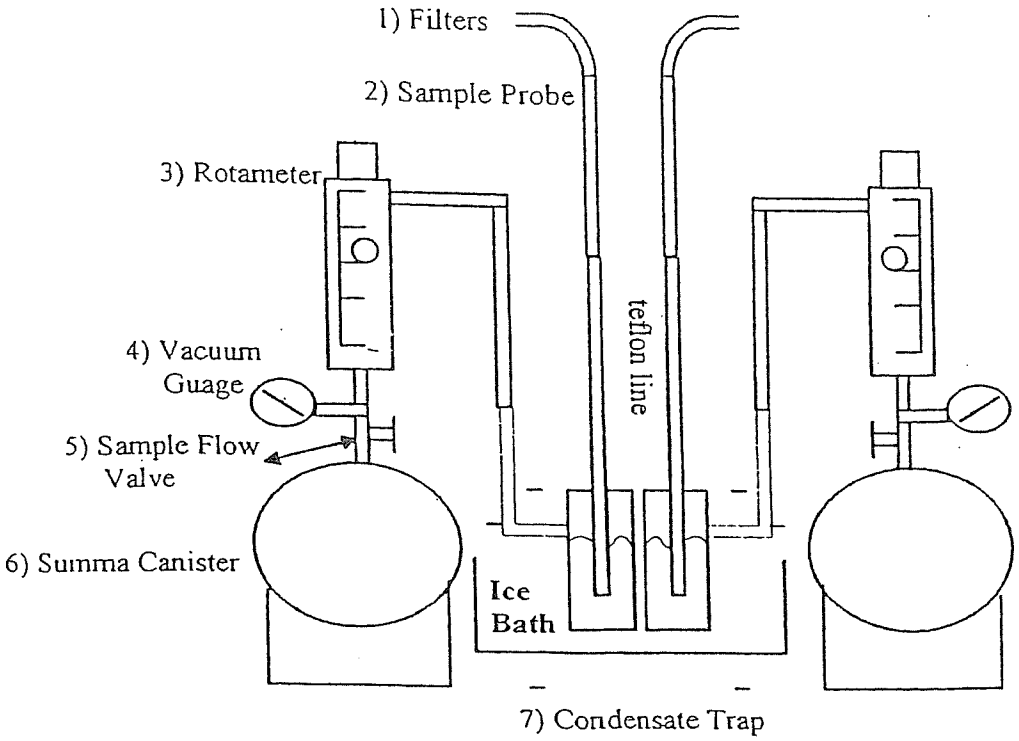
ppm NO_x @ 15% O_2 = Corrected Concentrations x 5.95/(20.95 - %O_2 drift corr.)
LB/hr, Emission Rate = Corrected Concentrations x $1.583 \times 10^{-7} \times DSCFM \times M_d$ (@ 60 °F
1.552×10^{-7} @ 70 °F
1.558×10^{-7} @ 68 °F
M_d = Dry Molecular Weight of NO_x and CO= 46 and 28
g/bhp-hr = lb/hr * (453.6 g/lb)/(bhp-eng.)

6.2 ***SCAQMD Method 25.3 – ROG Emissions (Low Level)***

Sample was extracted from the stack at a constant rate through an ultra pure water trap immersed in ice followed by an evacuated 6-liter tank. Heavy organic components were trapped as liquids in the water trap. Lighter components passed through the water trap into the tank. After sampling was completed, the tanks and the water traps were sent to Quantum Analytical Services, Inc. laboratory for analysis.

In the laboratory, a Total Organic Carbon (TOC) analyzer according to EPA Method 415.1 determined the organic content of the water trap. The organic content of the sample in the tank was measured according to SCAQMD Method 25.3 using Total Combustion Analysis (TCA). The sample was analyzed using gas chromatograph equipped with oxidizer and methanizer. The Total Non-Methane and Ethane Organic Compounds (TNMEOC) were separated from CO, CO_2, and CH_4 via a chromatograph column. The TNMEOC were oxidized to CO_2 via oxidizer then reduced to CH_4 via methanizer and finally detected by Flame Ionization Detector (FID). The results from the independent analyses of the water traps and tanks were combined and reported as Total Non-Methane and Ethane Organic Compounds measured as Methane in ppmv.

TCA Sampling Schematic
SCAQMD Method 25.3
(low concentrations levels)



1) Filter Nozzels with Glass fiber

2) Sample Probe, 1/8" Stainless Steel tubing, with teflon sample line

3) Rotameter, Specifically designed for low flow vacuum applications 100 cc/min. with stainless steel top mounted critical flow valve

4) Vacuum Guage

5) Sample Flow Valve

6) Summa Canister, 6 liters Stainless Steel or Silico can

7) Condensate Traps, 10ml UHP water traps

Calculations:

$$C_{sa}\,(\text{Tank}) = \frac{C_{st} \times A_{sa} \times P_f \times D}{A_{st} \times P_i}$$

$$C_{sa}\,(\text{Trap}) = \frac{C_{st} \times A_{sa} \times P_f \times V_f \times D}{A_{st} \times P_i \times V_I}$$

Where:

C_{sa}	=	CO, CH_4, CO_2 or backflush concentration corresponding to peak being measured, ppmv
C_{st}	=	Concentration of CO, CH_4 or CO_2 in the standard, ppmv
A_{sa}	=	Area of charted response curve for the CO, CH_4, CO_2 or backflush sample in identical units
A_{st}	=	Area of charted response curve for the standard in identical units to A_{sa}
Pi	=	Initial pressure of sample in tank as received after sample collection, Torr
P_f	=	Final pressure to which the sample was pressurized, Torr
Vi	=	Volume of sample to which trap was originally attached, ml
Vf	=	Volume of tank from oxidized trap, ml
D	=	Dilution Factor

6.3 EPA Method 19 – Emission Rates Determination using Calculated Stack Gas Flowrate

The fuel usage of each I.C. Engine monitored and recorded for the duration of the test. The stack gas flowrate was then calculated stochiometrically based on the analyzed gas heating value taken the day of testing and analyzed by Quantum Analytical Services, Inc. (See Appendix C.)

Calculations:

Stack gas flow rate = Fuel Flow rate x Heat Content x F Factor x $(20.9/(20.9-O_2)$

7.0 Test Results and Discussion

The compliance test was conducted at the outlet of five I.C. Engine for emissions of Reactive Organic Gases (ROGs) determined as Total Non-Methane and Ethane Organic Compounds (TNMEOC). Single (1 hour) sample runs were performed at the outlet of each engine.

Exhaust low-level ROGs were analyzed by Quantum Analytical Services, Inc. All Method 25.3 trays were well below the 50 ppm limit designated by the Method and within 1% of the continuous O_2 readings from the facility CEMS system. A single inlet high-level ROG taken from the inlet fuel was analyzed by Quantum Analytical Services, Inc.

Results of the Compliance test and their emission limits are in the Summary of Results section.

8.0 Quality Assurance and Quality Control

Total Air Analysis, Inc. applies stringent quality control and quality assurance procedures to ensure the validity of measurements for all projects. Our QA/QC procedures are documented in detailed Quality Assurance Project Plans similar to those used by the EPA, CARB, SCAQMD, and SDAPCD.

8.1 QA/QC Overview

Our QA/QC procedures follow guidelines in *Quality Assurance Handbook for Air Pollution Measurement Systems*, Volumes I through III. These procedures outline pretest preparation and calibrations of sampling equipment, post-test sample handling, and post-test calibrations. Standardized, written procedures, calculator programs, and spreadsheets are used for test planning, pre-surveys, equipment checklists, preliminary calculations, data and sample collection, sample tracking, data analysis, and reporting. Pre-test preparations and maintenance include organization of the following equipment:

- Calibrated pitots, balances, TCs, control boxes, sampling train specific for moisture, sample probes suitable for type of sampling to be done, and support equipment such as tools, safety gear, radios, and spares.

Test procedures follow applicable CARB/EPA or other approved test methods. For non-continuous sampling systems (moisture train, etc.), these procedures specify the following:

- Pre-test and post-test leak checks on both pitot connections and moisture trains.
- Maintenance of pitot tubes in a horizontal attitude by employment of special rail systems or jigs.
- Proper configuration of moisture train.
- Sample and velocity traverses, number and location of sampling points, check for cyclonic flow; stratification checks.
- Minimum sample time and volume for moisture determination.
- Required temperature limitations.
- Other test method-specific procedures.

8.2 QA/QC Equipment Calibration Procedures

Table 2 contains the specific QA/QC equipment calibration requirements that are strictly followed by Total Air Analysis personnel.

TABLE 2
QUALITY ASSURANCE / QUALITY CONTROL CALIBRATION TABLE

Component	*Frequency of Calibration*	*Requirements of Calibration*	*Limits of Calibration*
Pitots	Prior to each source testing program and semiannually	Visual inspection and measurements of angles and distances	C_p is assumed to be 0.84 if all measurements are within specification
Temperature Sensors	Bimonthly	Ice water, boiling water, and boiling oil	$\pm$ 1.5% deviation from referenced mercury in-glass thermometer
Barometer	Semiannual	Comparison to mercury in-glass barometer	$\pm$0.1 inches from deviation from referenced mercury in-glass thermometer
Reference Wet Test Meter	Semiannual	Calibrated against an NBS traceable orifice or NBS laminar flow element	$Y_{rm} = 1.00 \pm 0.05$
Analyzer Linearity Checks	Daily Per Site	3 points – 0.%, 40% or 60% and 80% of full scale	Analyzer linearity = $\pm$ 2% from actual value
Gas Divider Verification	Daily Per Site	6 point linearity check followed by internal calibration	Gas divider = $\pm$ 2% from verification cylinder value
NO_2 Conversion Efficiency	Daily Per Site	NO_2 calibration gas direct to NO_x analyzer	Greater than 90% conversion efficiency

Appendix A

SCAQMD Modified Method 25.1

ROGs (High Level) Calculations, Lab Analysis and Field Data Sheets

SCAQMD Method 25.1 Data Calculation Sheet

Facility: Waste Management, Inc.
Source: Bradley Landfill-Engines #1-5
Load: Full
Start Date: 2/22/05

Parameter/Run No.	Units	ICE #1	ICE #3	ICE #5	ICE #4	ICE #2
Inlet Gas Flowrate	dscfm	568.0	560.2	555.3	542.3	544.1
Methane	ppmv	431,958	431,958	431,958	431,958	431,958
TNMHC (as CH_4)	ppmv	9,443	9,443	9,443	9,443	9,443
TNMHC	lb/hr	13.59	13.40	13.28	12.97	13.01

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CLIENT:	**Total air Analysis, Inc.**
FACILITY:	**WM / Emcon Shaw / Bradley-Rogs**
LABORATORY NO:	**05-085**
SAMPLING DATE:	February 22, 2005
RECEIVING DATE:	February 23, 2005
ANALYSIS DATE:	February 24-25, 2005
REPORT DATE:	March 7, 2005

Laboratory Analysis Report

Analysis Method	**SCAQMD 25.1**		
Detection Limits	**0.2 ppmv**		
Total Air Sample ID	**Lab Sample ID**	**Methane Tanks**	**TNMOC, PPMV Total**
Fuel Sample#1	05405-11	431,958	9,443

TNMOC: total non-Methane Organic carbon

Dr. Andrew Kitto
President

Appendix B

SCAQMD Method 25.3

ROGs (Low Level), Calculations, Lab Analysis, and Field Data Sheets

SCAQMD Method 25.3 Data Calculation Sheet

Facility: Waste Management
Source: Bradley Landfill-Engine #1
Load: Full
Start Date: 2/22/05

Parameter/Run No.	Units	A	B	Average
Stack Gas Flowrate	dscfm	3,808	3,808	3,808
bhp	hp	1,877	1,877	1,877
Oxygen Concentration	%	7.60	7.60	7.60
Methane	ppmv	904	911	908
TNMEHC (as CH_4)	ppmv	15.0	13.0	14.00
Bias Factor (1.086)	ppmv	16.3	14.1	15.20
TNMEHC (@ 15% O2)	ppm	7.2	6.3	6.74
TNMEHC (as Hexane)	ppmv	3.0	2.6	2.83
TNMEHC (@ 3% O2), C6	ppm	4.1	3.5	3.81
TNMEHC	lb/hr	0.157	0.136	**0.15**
TNMEHC	g/bhp-hr	0.038	0.033	**0.04**

SCAQMD Method 25.3 Data Calculation Sheet

Facility: Waste Management
Source: Bradley Landfill-Engine #3
Load: Full
Start Date: 2/22/05

Parameter/Run No.	Units	A	B	Average
Stack Gas Flowrate	dscfm	3,813	3,813	3,813
bhp	hp	1,877	1,877	1,877
Oxygen Concentration	%	7.80	7.80	7.80
Methane	ppmv	862	883	873
TNMEHC (as CH_4)	ppmv	7.1	8.9	8.00
Bias Factor (1.086)	ppmv	7.7	9.7	8.69
TNMEHC (@ 15% O2)	ppm	3.5	4.4	3.91
TNMEHC (as Hexane)	ppmv	1.4	1.8	1.62
TNMEHC (@ 3% O2), C6	ppm	2.0	2.5	2.21
TNMEHC	lb/hr	0.074	0.093	**0.08**
TNMEHC	g/bhp-hr	0.018	0.023	**0.02**

SCAQMD Method 25.3 Data Calculation Sheet

Facility: Waste Management
Source: Bradley Landfill-Engine #5
Load: Full
Start Date: 2/22/05

Parameter/Run No.	Units	A	B	Average
Stack Gas Flowrate	dscfm	3,723	3,723	3,723
bhp	hp	1,877	1,877	1,877
Oxygen Concentration	%	7.60	7.60	7.60
Methane	ppmv	876	902	889
TNMEHC (as CH_4)	ppmv	18.0	14.0	16.00
Bias Factor (1.086)	ppmv	19.5	15.2	17.38
TNMEHC (@ 15% O2)	ppm	8.7	6.7	7.71
TNMEHC (as Hexane)	ppmv	3.6	2.8	3.23
TNMEHC (@ 3% O2), C6	ppm	4.9	3.8	4.35
TNMEHC	lb/hr	0.184	0.143	**0.16**
TNMEHC	g/bhp-hr	0.045	0.035	**0.04**

SCAQMD Method 25.3 Data Calculation Sheet

Facility: Waste Management
Source: Bradley Landfill-Engine #4
Load: Full
Start Date: 2/22/05

Parameter/Run No.	Units	A	B	Average
Stack Gas Flowrate	dscfm	3,582	3,582	3,582
bhp	hp	1,877	1,877	1,877
Oxygen Concentration	%	7.40	7.40	7.40
Methane	ppmv	978	1,097	1,038
TNMEHC (as CH_4)	ppmv	16.0	16.0	16.00
Bias Factor (1.086)	ppmv	17.4	17.4	17.38
TNMEHC (@ 15% O2)	ppm	7.6	7.6	7.59
TNMEHC (as Hexane)	ppmv	3.2	3.2	3.23
TNMEHC (@ 3% O2), C6	ppm	4.3	4.3	4.29
TNMEHC	lb/hr	0.158	0.158	**0.16**
TNMEHC	g/bhp-hr	0.038	0.038	**0.04**

SCAQMD Method 25.3 Data Calculation Sheet

Facility: Waste Management
Source: Bradley Landfill-Engine #2
Load: Full
Start Date: 2/22/05

Parameter/Run No.	Units	A	B	Average
Stack Gas Flowrate	dscfm	3,648	3,648	3,648
bhp	hp	1,877	1,877	1,877
Oxygen Concentration	%	7.60	7.60	7.60
Methane	ppmv	894	966	930
TNMEHC (as CH_4)	ppmv	16.0	21.0	18.50
Bias Factor (1.086)	ppmv	17.4	22.8	20.09
TNMEHC (@ 15% O2)	ppm	7.7	10.1	8.91
TNMEHC (as Hexane)	ppmv	3.2	4.2	3.74
TNMEHC (@ 3% O2), C6	ppm	4.4	5.7	5.03
TNMEHC	lb/hr	0.161	0.211	**0.19**
TNMEHC	g/bhp-hr	0.039	0.051	**0.04**

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LABORATORY NO: **05-085**
SAMPLING DATE: February 22, 2005
RECEIVING DATE: February 23, 2005
ANALYSIS DATE: February 24-25, 2005
REPORT DATE: March 11, 2005

Laboratory Analysis Report

Analysis Method	SCAQMD 25.3					
Detection Limits	0.2 ppmv					
Total Air Sample ID	Lab Sample ID	Methane Tanks	C2* Tanks	NMNEOC, PPMV Tanks	NMNEOC, PPMV Traps	TNMNEOC, PPMV Total
Eng#1-Rog#1A	05405-1	904	62	10	5.1	15
Eng#1-Rog#1B	05405-2	911	60	3.2	9.4	13
Eng#3-Rog#2A	05405-3	862	58	5.2	1.9	7.1
Eng#3-Rog#2B	05405-4	883	57	5.5	3.4	8.9
Eng#5-Rog#3A	05405-5	876	57	5.3	12	18
Eng#5-Rog#3B	05405-6	902	57	5.9	7.7	14
Eng#4-Rog#4A	05405-7	978	62	7.0	9.2	16
Eng#4-Rog#4B	05405-8	1,097	62	6.5	9.2	16
Eng#2-Rog#5A	05405-9	894	57	7.0	8.9	16
Eng#2-Rog#5B	05405-10	966	53	10	11	21

TNMNEOC: total non-Methane non-Ethane Organic carbon
* C2 is the sum of ethylene and ethane as methane

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Laboratory Analysis Report

I-Tanks (non condensables)

ANALYSIS METHOD				*SCAQMD 25.3*								
LIMIT OF DETECTION				*0.2 ppmv*								
Total Air Sample ID #	*Lab* Sample ID #	Tank Vol (L)	Initial V inch Hg	Initial T K	Final V inch. Hg	Final T K	Sample Vol. (L)	Analysis P in PSI	Analysis Temp, K	Dilution Factor	GC-NMNEOC Tank, PPMV	TNMNEOC Tank, PPMV
Eng#1-Rog#1A	05405-1	12.105	-29.8	293.0	-5.9	293.0	9.708	0.8	293.0	1.315	7.7	10.2
Eng#1-Rog#1B	05405-2	12.103	-29.8	293.0	-6.2	293.0	9.585	1.2	293.0	1.366	2.3	3.2
Eng#3-Rog#2A	05405-3	12.106	-29.8	293.0	-5.6	293.0	9.831	0.7	296.0	1.290	4.0	5.2
Eng#3-Rog#2B	05405-4	11.978	-29.8	293.0	-6.4	293.0	9.406	0.8	296.0	1.343	4.1	5.5
Eng#5-Rog#3A	05405-5	12.106	-29.8	293.0	-5.1	293.0	10.034	0.9	293.0	1.280	4.1	5.3

II-Traps (condensables)

ANALYSIS METHOD				*SCAQMD 25.3*							
LIMIT OF DETECTION				*0.2 ppmv*							
Total Air Sample ID #	*Lab* Sample ID #	Tank Vol (L)	Initial V inch. Hg	Initial T K	Final V inch. Hg	Final T K	Sample Vol. (L)	TOC mg/L	TOC mg/sample	TOC mg/m3	TNMOC TRAP, PPMV
Eng#1-Rog#1A	05405-1	12.105	-29.8	293.0	-5.9	293.0	**9.708**	5.41	0.032	3.3	5.1
Eng#1-Rog#1B	05405-2	12.103	-29.8	293.0	-6.2	293.0	**9.585**	11.7	0.059	6.1	9.4
Eng#3-Rog#2A	05405-3	12.106	-29.8	293.0	-5.6	293.0	**9.831**	1.21	0.012	1.2	1.9
Eng#3-Rog#2B	05405-4	11.978	-29.8	293.0	-6.4	293.0	**9.406**	2.08	0.021	2.2	3.4
Eng#5-Rog#3A	05405-5	12.106	-29.8	293.0	-5.1	293.0	**10.034**	13.4	0.080	8.0	12

T: Temperature
V: Vacuum
P: Pressure

K: Temperature in Kelvin
L: Liter

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Laboratory Analysis Report

I-Tanks (non condensables)

ANALYSIS METHOD				*SCAQMD 25.3*								
LIMIT OF DETECTION				*0.2 ppmv*								
Total Air Sample ID #	*Lab* Sample ID #	Tank Vol (L)	Initial V inch Hg	Initial T K	Final V inch. Hg	Final T K	Sample Vol. (L)	Analysis P in PSI	Analysis Temp, K	Dilution Factor	GC-NMNEOC Tank, PPMV	TNMNEOC Tank, PPMV
Eng#5-Rog#3B	05405-6	12.102	-29.8	293.0	-6.6	293.0	9.422	1.1	293.0	1.381	4.3	5.9
Eng#4-Rog#4A	05405-7	12.109	-29.8	293.0	-6.2	293.0	9.590	1.0	293.0	1.349	5.2	7.0
Eng#4-Rog#4B	05405-8	12.105	-29.8	293.0	-9.8	293.0	8.067	0.9	296.0	1.581	4.1	6.5
Eng#2-Rog#5A	05405-9	12.020	-29.8	293.0	-5.4	293.0	9.850	0.9	296.0	1.296	5.4	7.0
Eng#2-Rog#5B	05405-10	12.030	-29.8	293.0	-7.4	293.0	9.043	0.9	293.0	1.412	7.2	10

II-Traps (condensables)

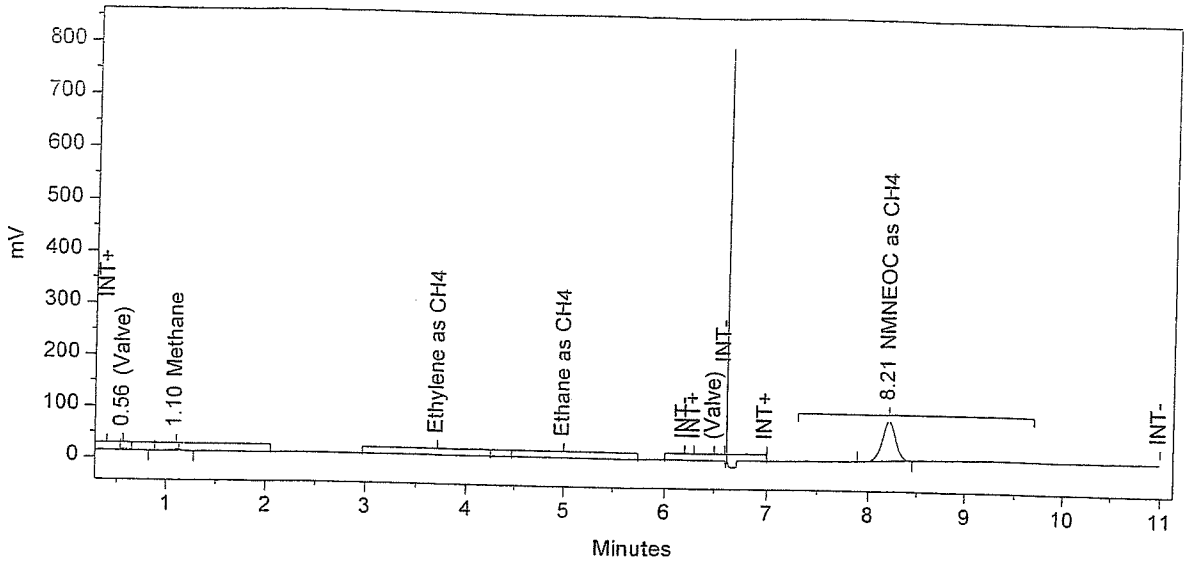
ANALYSIS METHOD				*SCAQMD 25.3*							
LIMIT OF DETECTION				*0.2 ppmv*							
Total Air Sample ID #	*Lab* Sample ID #	Tank Vol (L)	Initial V inch. Hg	Initial T K	Final V inch. Hg	Final T K	Sample Vol. (L)	TOC mg/L	TOC mg/sample	TOC mg/m3	TNMOC TRAP, PPMV
Eng#5-Rog#3B	05405-6	12.102	-29.8	293.0	-6.6	293.0	**9.422**	9.490	0.047	5.0	7.7
Eng#4-Rog#4A	05405-7	12.109	-29.8	293.0	-6.2	293.0	**9.590**	9.590	0.058	6.0	9.2
Eng#4-Rog#4B	05405-8	12.020	-29.8	293.0	-9.8	293.0	**8.067**	9.610	0.048	6.0	9.2
Eng#2-Rog#5A	05405-9	12.030	-29.8	293.0	-5.4	293.0	**9.850**	9.530	0.057	5.8	8.9
Eng#2-Rog#5B	05405-10	12.030	-29.8	293.0	-7.4	293.0	**9.043**	13.000	0.065	7.2	11

T: Temperature
V: Vacuum
P: Pressure

K: Temperature in Kelvin
L: Liter

Dr. Andrew Kitto
President

TNMOC std 50 PPMV



Sample Name: **TNMOC std 50 PPMV**
Acquired from Chrom6--Det6A via port 6 on 2/24/05 03:47:43pm by Kitto

Data File: **C:\CPWIN\DATA6\FEB2405S.01R**
Date Stamp: 2/24/05 03:47:42pm
Sequence File: FEB2405.SEQ #1
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

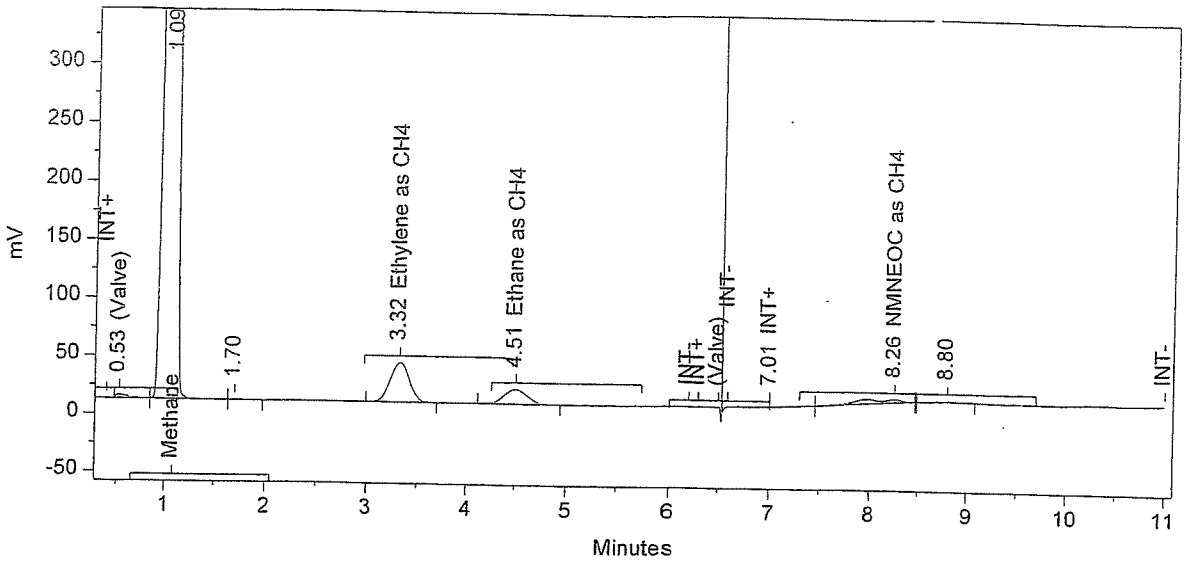
Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.558	(Valve)	0.0023	0.004	22828.0	2.894	BB	0.126	3012.21	3.646
2	1.103	Methane	1.4204	2.630	20145.8	2.554	BB	0.148	2274.28	2.752
3	8.212	NMNEOC as CH4	52.5828	97.366	745769.5	94.552	BB	0.161	77340.98	93.602

Total Area = 788743.3, Total Amount = 54.006, Total Height = 82627.47, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,

Total Air, Bradley, Tank 1



Sample Name: **Total Air, Bradley, Tank 1**
Acquired from Chrom6--Det6A via port 6 on 2/24/05 04:02:09pm by Kitto

Data File: **C:\CPWIN\DATA6\05405-1.02R**
Date Stamp: 2/24/05 04:02:08pm
Sequence File: FEB2405.SEQ #2
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

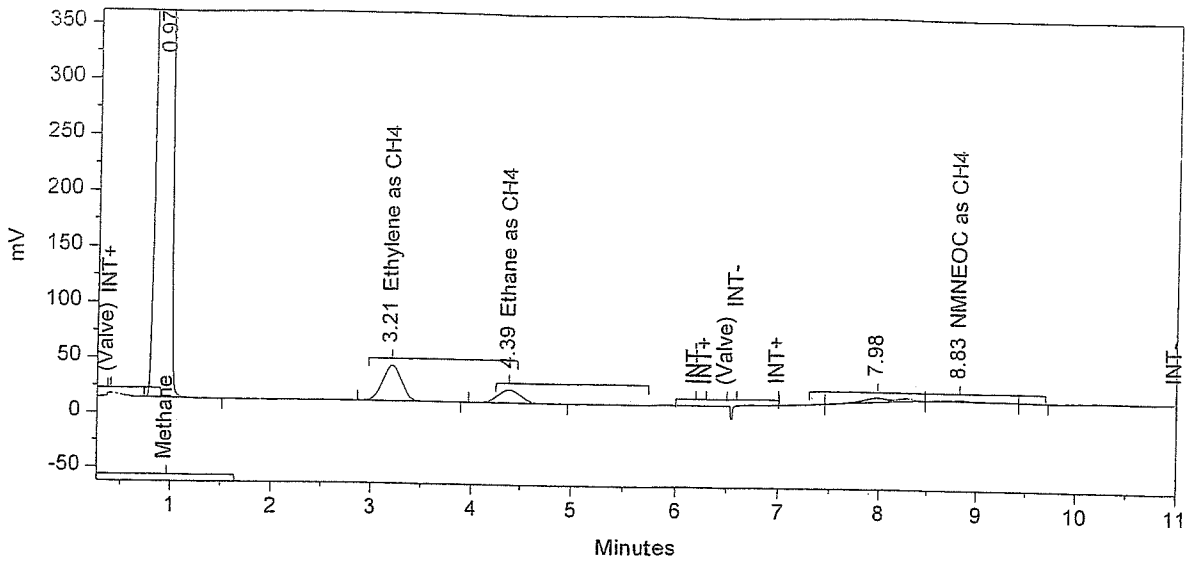
Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.527	(Valve)	0.0030	0.000	29658.3	0.280	BV	0.153	3236.64	0.317
2	1.086	Methane	687.9396	92.656	9756887.0	92.190	VB	0.169	964287.00	94.561
3	1.704		0.0000	0.000	3128.7	0.030	BB	0.151	345.75	0.034
4	3.325	Ethylene as CH4	31.9655	4.305	453358.8	4.284	BV	0.218	34656.24	3.399
5	4.506	Ethane as CH4	14.8169	1.996	210144.3	1.986	VB	0.270	12991.97	1.274
6	7.007		0.0000	0.000	3099.9	0.029	BB	4.012	12.88	0.001
7	8.258	NMNEOC as CH4	7.7427	1.043	109812.3	1.038	BB	0.569	3215.45	0.315
9	8.796		0.0000	0.000	17399.2	0.164	BB	0.290	1000.80	0.098

Total Area = 10583490.0, Total Amount = 742.468, Total Height = 1019747.0, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,

Total Air, Bradley, Tank 2



Sample Name: **Total Air, Bradley, Tank 2**
Acquired from Chrom6--Det6A via port 6 on 2/24/05 04:17:27pm by Kitto

Data File: **C:\CPWIN\DATA6\05405-2.03R**
Date Stamp: 2/24/05 04:17:26pm
Sequence File: FEB2405.SEQ #3
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

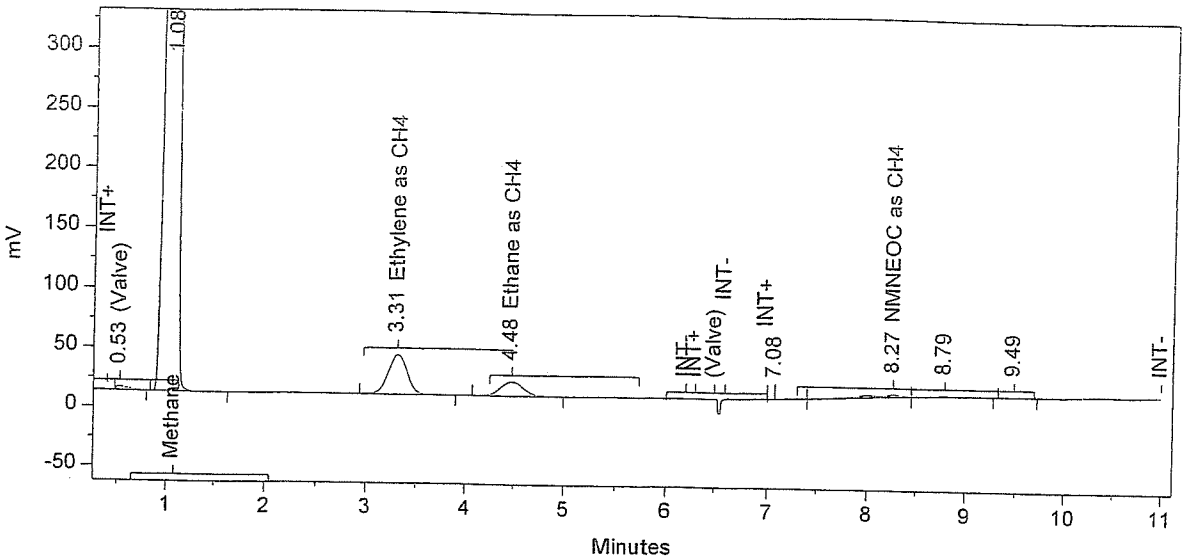
Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.965	Methane	666.7884	93.522	9456905.0	92.516	BB	0.164	963478.80	95.010
2	3.207	Ethylene as CH4	29.9699	4.203	425055.8	4.158	BB	0.217	32720.78	3.227
3	4.389	Ethane as CH4	13.8846	1.947	196921.4	1.926	BB	0.269	12205.77	1.204
5	7.985		0.0000	0.000	109902.5	1.075	BB	0.429	4268.35	0.421
6	8.831	NMNEOC as CH4	2.3325	0.327	33081.5	0.324	BB	0.390	1412.04	0.139

Total Area = 10221870.0, Total Amount = 712.975, Total Height = 1014086.0, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,

Total Air, Bradley, Tank 3



Sample Name: **Total Air, Bradley, Tank 3**
Acquired from Chrom6--Det6A via port 6 on 2/24/05 04:30:57pm by Kitto

Data File: **C:\CPWIN\DATA6\05405-3.04R**
Date Stamp: 2/24/05 04:30:58pm
Sequence File: FEB2405.SEQ #4
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

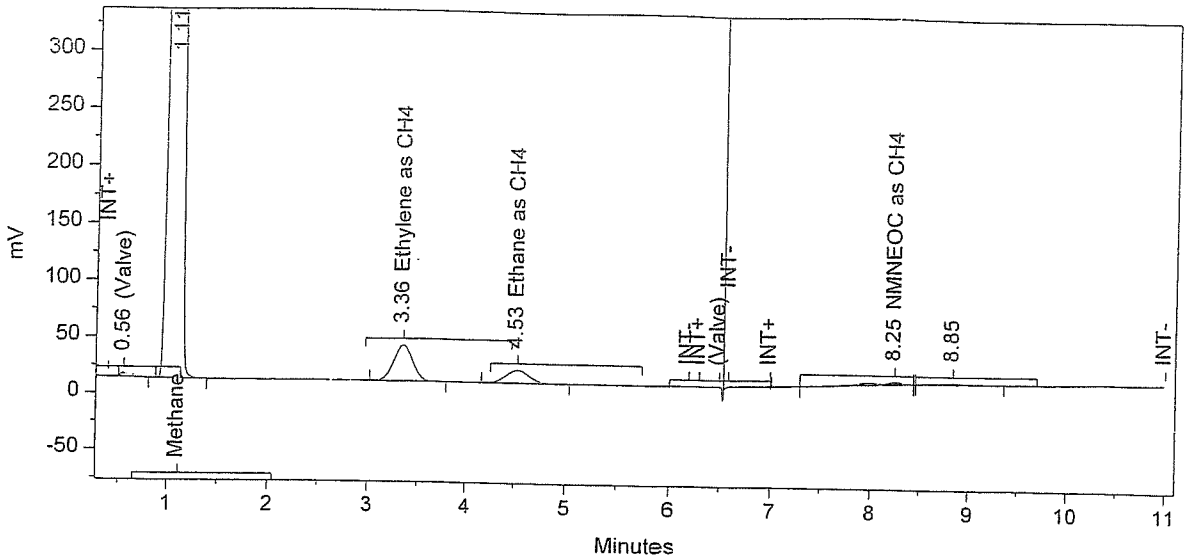
Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.529	(Valve)	0.0030	0.000	29592.0	0.289	BB	0.153	3218.77	0.317
2	1.081	Methane	667.9792	93.147	9473794.0	92.657	BB	0.164	963929.90	94.850
3	3.309	Ethylene as CH4	31.1590	4.345	441920.8	4.322	BV	0.219	33609.52	3.307
4	4.479	Ethane as CH4	13.9486	1.945	197829.3	1.935	VB	0.270	12215.06	1.202
5	7.079		0.0000	0.000	972.7	0.010	BB	3.098	5.23	0.001
6	8.271	NMNEOC as CH4	4.0361	0.563	57243.0	0.560	BB	0.443	2155.70	0.212
7	8.795		0.0000	0.000	21449.4	0.210	BB	0.368	970.73	0.096
8	9.494		0.0000	0.000	1808.9	0.018	BB	0.188	160.12	0.016

Total Area = 10224610.0, Total Amount = 717.126, Total Height = 1016265.0, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,

Total Air, Bradley, Tank 4



Sample Name: **Total Air, Bradley, Tank 4**
Acquired from Chrom6--Det6A via port 6 on 2/24/05 04:45:11pm by Kitto

Data File: **C:\CPWIN\DATA6\05405-4.05R**
Date Stamp: 2/24/05 04:45:10pm
Sequence File: FEB2405.SEQ #5
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

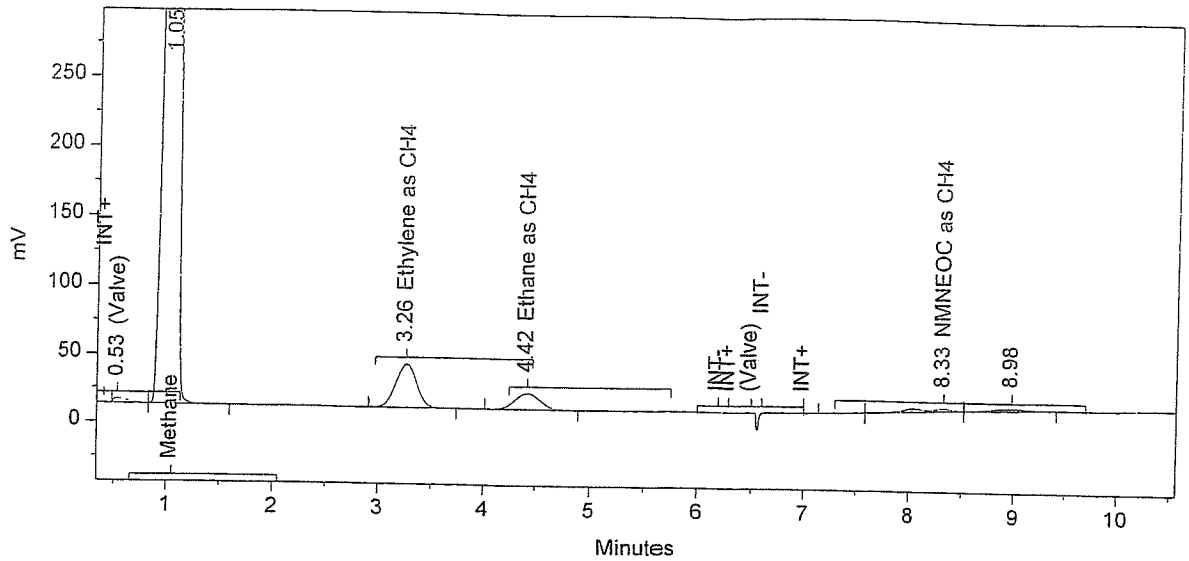
Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.561	(Valve)	0.0030	0.000	30328.2	0.302	BB	0.152	3319.76	0.327
2	1.114	Methane	657.4653	93.408	9324678.0	92.849	BB	0.161	963676.10	95.056
3	3.356	Ethylene as CH4	29.2018	4.149	414162.9	4.124	BB	0.218	31733.12	3.130
4	4.531	Ethane as CH4	13.1074	1.862	185899.2	1.851	BB	0.269	11530.35	1.137
6	8.252	NMNEOC as CH4	4.0888	0.581	57990.5	0.577	BB	0.448	2156.69	0.213
9	8.847		0.0000	0.000	29794.5	0.297	BB	0.360	1378.22	0.136

Total Area = 10042850.0, Total Amount = 703.866, Total Height = 1013794.0, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,

Total Air, Bradley, Tank 5



Sample Name: **Total Air, Bradley, Tank 5**
Acquired from Chrom6--Det6A via port 6 on 2/24/05 04:57:57pm by Kitto

Data File: **C:\CPWIN\DATA6\05405-5.06R**
Date Stamp: 2/24/05 04:57:56pm
Sequence File: FEB2405.SEQ #6
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

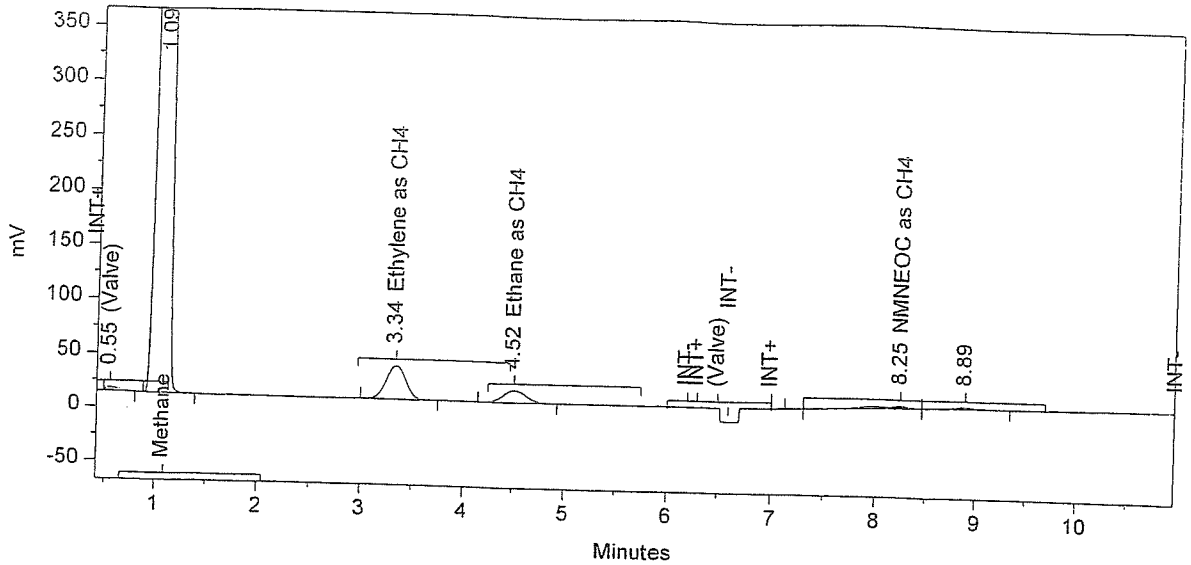
Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.535	(Valve)	0.0032	0.000	31716.5	0.303	BV	0.159	3334.67	0.328
2	1.051	Methane	684.0826	93.400	9702184.0	92.736	VB	0.168	964039.40	94.942
3	3.264	Ethylene as CH4	30.4838	4.162	432344.1	4.132	BB	0.223	32290.18	3.180
4	4.420	Ethane as CH4	13.7501	1.877	195014.1	1.864	BB	0.272	11971.11	1.179
6	8.330	NMNEOC as CH4	4.1054	0.561	58225.4	0.557	BB	0.498	1949.47	0.192
8	8.981		0.0000	0.000	42713.0	0.408	BB	0.392	1816.26	0.179

Total Area = 10462200.0, Total Amount = 732.425, Total Height = 1015401.0, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,

Total Air, Bradley, Tank 6



Sample Name: **Total Air, Bradley, Tank 6**
Acquired from Chrom6--Det6A via port 6 on 2/24/05 05:12:21pm by Kitto

Data File: **C:\CPWIN\DATA6\05405-6.07R**
Date Stamp: 2/24/05 05:12:20pm
Sequence File: FEB2405.SEQ #7
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

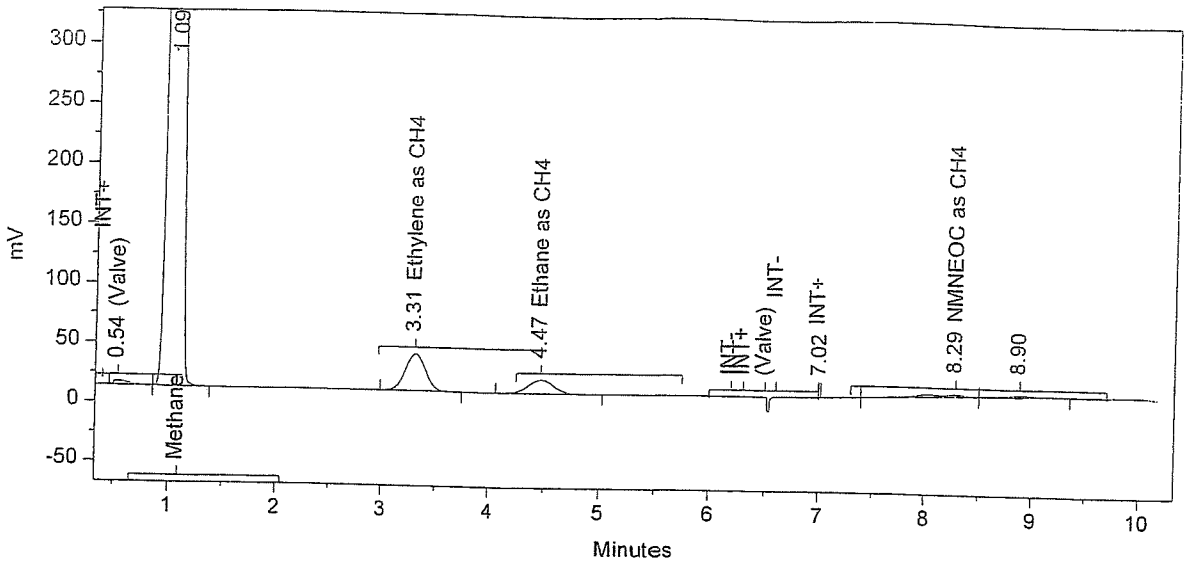
Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.549	(Valve)	0.0031	0.000	30533.7	0.306	BB	0.152	3348.16	0.330
2	1.091	Methane	653.3871	93.448	9266838.0	92.834	BB	0.160	963702.40	95.103
3	3.343	Ethylene as CH4	28.6329	4.095	406093.4	4.068	BB	0.217	31217.21	3.081
4	4.517	Ethane as CH4	12.9097	1.846	183095.8	1.834	BB	0.267	11439.37	1.129
6	8.251	NMNEOC as CH4	4.2686	0.610	60540.2	0.606	BB	0.509	1983.40	0.196
7	8.891		0.0000	0.000	35007.4	0.351	BB	0.356	1638.79	0.162

Total Area = 9982108.0, Total Amount = 699.201, Total Height = 1013329.0, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,

Total Air, Bradley, Tank 6



Sample Name: **Total Air, Bradley, Tank 6**
Acquired from Chrom6--Det6A via port 6 on 2/24/05 05:23:54pm by Kitto

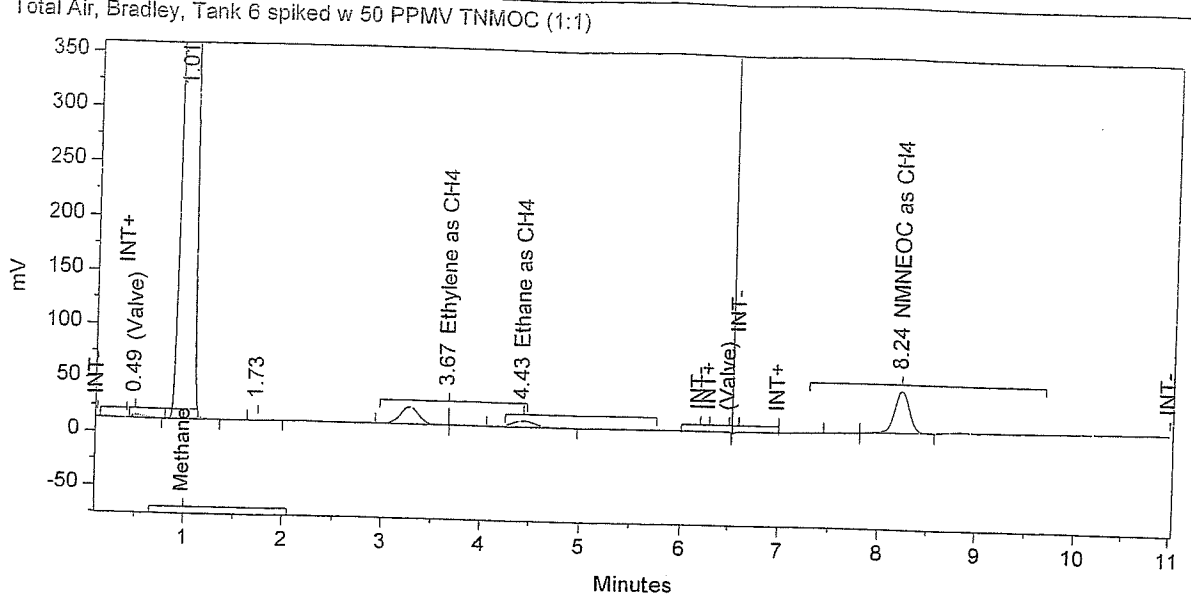
Data File: **C:\CPWIN\DATA6\05405-6D.08R**
Date Stamp: 2/24/05 05:23:54pm
Sequence File: FEB2405.SEQ #8
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

Run Time = 10.18 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.541	(Valve)	0.0031	0.000	30670.9	0.301	BV	0.154	3313.26	0.327
2	1.093	Methane	666.8051	93.547	9457142.0	92.953	VB	0.164	963944.80	95.094
3	3.312	Ethylene as CH4	29.0332	4.073	411770.7	4.047	BB	0.219	31387.20	3.096
4	4.474	Ethane as CH4	13.1637	1.847	186697.6	1.835	BB	0.269	11567.63	1.141
5	7.022		0.0000	0.000	377.8	0.004	BB	0.866	7.27	0.001
6	8.288	NMNEOC as CH4	3.7951	0.532	53825.4	0.529	BB	0.455	1972.22	0.195
7	8.895		0.0000	0.000	33659.6	0.331	BB	0.377	1486.17	0.147

Total Area = 10174150.0, Total Amount = 712.8, Total Height = 1013679.0, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,



Sample Name: **Total Air, Bradley, Tank 6 spiked w 50 PPMV TNMOC (1:1)**
Acquired from Chrom6--Det6A via port 6 on 2/24/05 05:35:37pm by Kitto

Data File: **C:\CPWIN\DATA6\05405-6S.09R**
Date Stamp: 2/24/05 05:35:36pm
Sequence File: FEB2405.SEQ #9
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

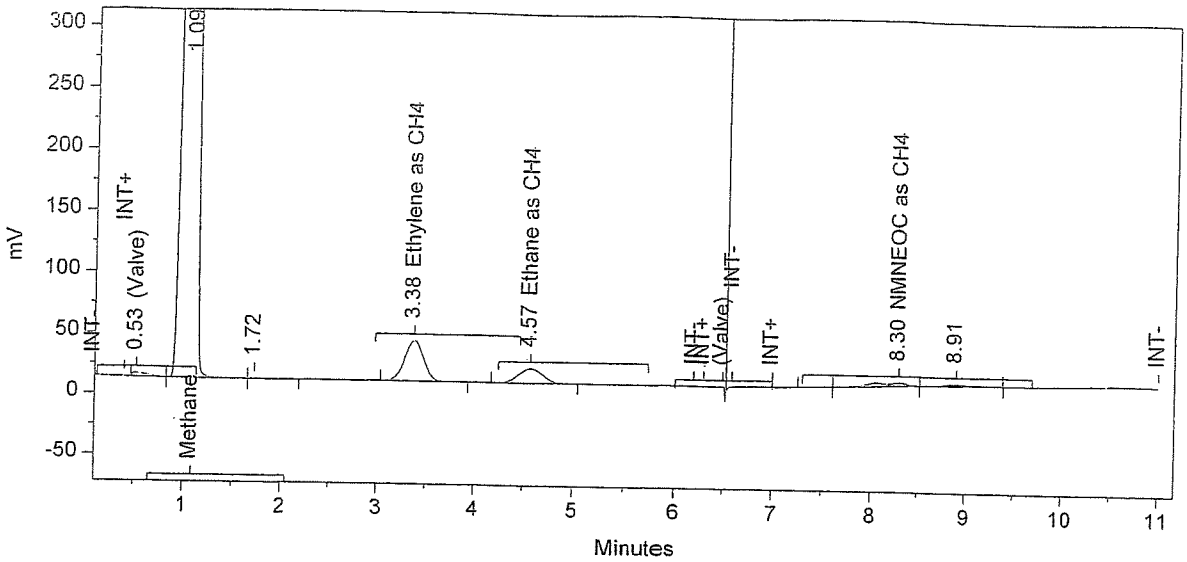
Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.490	(Valve)	0.0029	0.001	28521.9	0.396	BV	0.159	2996.25	0.379
2	1.005	Methane	455.0564	90.075	6453960.0	89.695	VV	0.148	725300.90	91.795
3	1.733		0.0000	0.000	1881.9	0.026	VB	0.166	188.81	0.024
4	3.670	Ethylene as CH4	15.1208	2.993	214454.3	2.980	BB	0.212	16878.15	2.136
5	4.433	Ethane as CH4	6.6609	1.318	94470.1	1.313	BB	0.269	5843.22	0.740
7	8.239	NMNEOC as CH4	28.3537	5.612	402134.3	5.589	BB	0.172	38921.21	4.926

Total Area = 7195423.0, Total Amount = 505.195, Total Height = 790128.6, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,

Total Air Bradley, Tank # 7



Sample Name: **Total Air Bradley, Tank # 7**
Acquired from Chrom6--Det6A via port 6 on 2/24/05 05:47:56pm by Kitto

Data File: **C:\CPWIN\DATA6\03305-2.10R**
Date Stamp: 2/24/05 05:47:56pm
Sequence File: FEB2405.SEQ #10
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

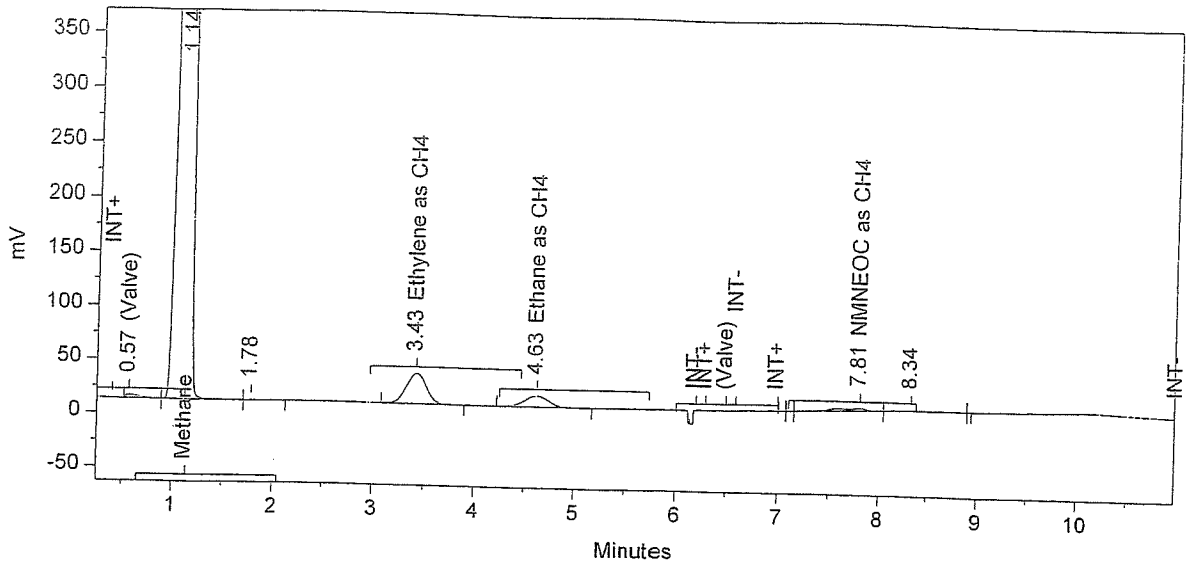
Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.036		0.0000	0.000	992.5	0.009	BB	0.066	252.23	0.025
2	0.526 (Valve)		0.0032	0.000	32078.1	0.289	BV	0.163	3271.47	0.322
3	1.092 Methane		725.0679	93.370	10283470.0	92.774	VB	0.178	964046.50	94.742
4	1.723		0.0000	0.000	4295.1	0.039	BB	0.196	366.05	0.036
5	3.375 Ethylene as CH4		31.9991	4.121	453836.4	4.094	BB	0.228	33246.14	3.267
6	4.573 Ethane as CH4		14.2923	1.840	202704.3	1.829	BB	0.277	12200.42	1.199
8	8.301 NMNEOC as CH4		5.1932	0.669	73653.8	0.664	BB	0.461	2660.04	0.261
9	8.907		0.0000	0.000	33398.0	0.301	BB	0.370	1503.12	0.148

Total Area = 11084430.0, Total Amount = 776.556, Total Height = 1017546.0, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,

Total Air, Bradley, Tank 8



Sample Name: **Total Air, Bradley, Tank 8**
Acquired from Chrom6--Det6A via port 6 on 2/24/05 05:59:58pm by Kitto

Data File: **C:\CPWIN\DATA6\05405-8.11R**
Date Stamp: 2/24/05 05:59:58pm
Sequence File: FEB2405.SEQ #11
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

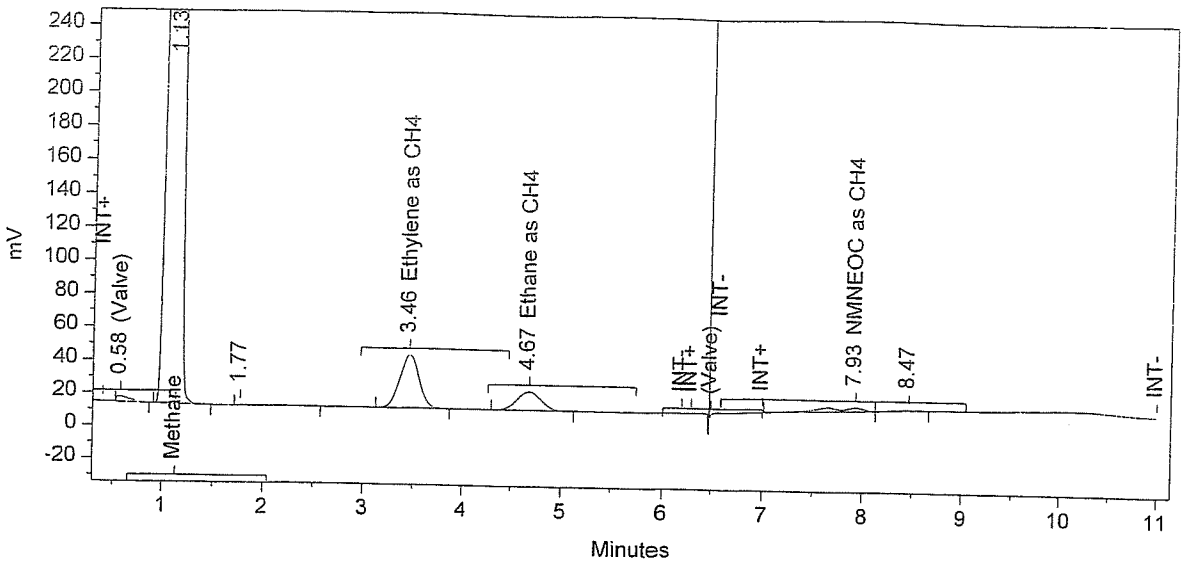
Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.569	(Valve)	0.0030	0.000	30016.2	0.286	BV	0.158	3161.59	0.313
2	1.140	Methane	693.9431	94.124	9842034.0	93.680	VB	0.170	964030.90	95.507
3	1.785		0.0000	0.000	3191.4	0.030	BB	0.176	302.34	0.030
4	3.426	Ethylene as CH4	27.0156	3.664	383156.3	3.647	BB	0.226	28244.40	2.798
5	4.627	Ethane as CH4	12.1887	1.653	172868.9	1.645	BB	0.277	10385.85	1.029
8	7.810	NMNEOC as CH4	4.1120	0.558	58320.2	0.555	BB	0.396	2452.20	0.243
9	8.340		0.0000	0.000	16401.1	0.156	BB	0.342	800.10	0.079

Total Area = 10505990.0, Total Amount = 737.262, Total Height = 1009377.0, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,

Total Air, Bradley, Tank 9



Sample Name: **Total Air, Bradley, Tank 9**
Acquired from Chrom6--Det6A via port 6 on 2/24/05 06:16:01pm by Kitto

Data File: **C:\CPWIN\DATA6\05405-9.12R**
Date Stamp: 2/24/05 06:16:00pm
Sequence File: FEB2405.SEQ #12
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

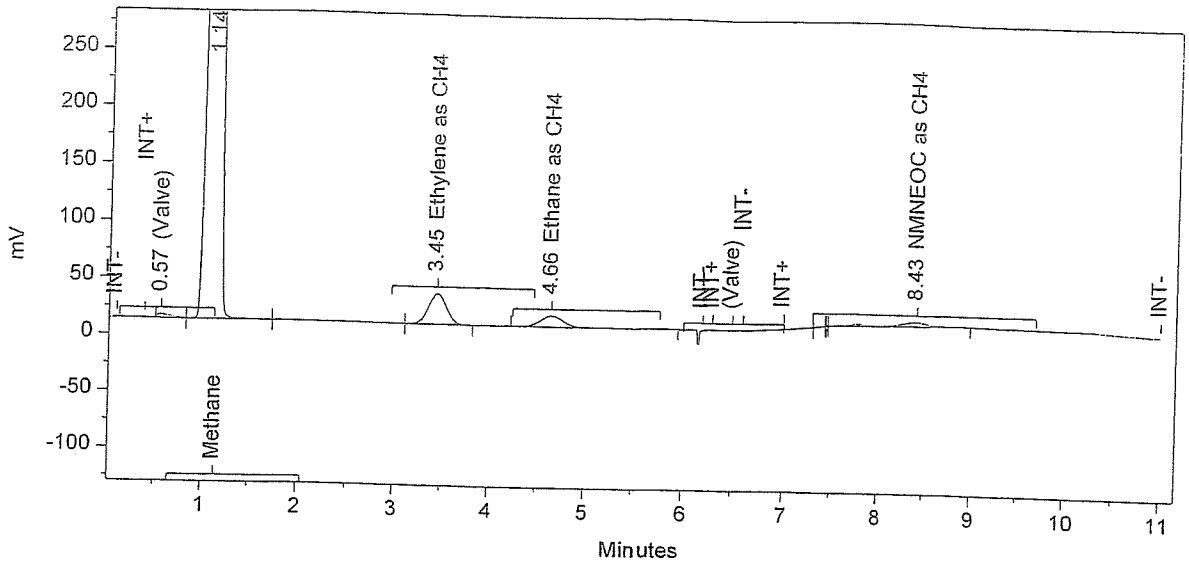
Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.575	(Valve)	0.0030	0.000	30288.7	0.288	BB	0.156	3233.95	0.319
2	1.131	Methane	689.6181	93.369	9780693.0	92.960	BB	0.169	963590.40	95.034
3	1.775		0.0000	0.000	4473.2	0.043	BB	0.217	343.40	0.034
4	3.462	Ethylene as CH4	30.2695	4.098	429305.3	4.080	BB	0.223	32101.67	3.166
5	4.674	Ethane as CH4	13.3312	1.805	189073.6	1.797	BB	0.275	11450.68	1.129
6	7.931	NMNEOC as CH4	5.3713	0.727	76180.5	0.724	BV	0.500	2538.85	0.250
7	8.468		0.0000	0.000	11416.1	0.109	VB	0.280	680.42	0.067

Total Area = 10521430.0, Total Amount = 738.593, Total Height = 1013939.0, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,

Total Air, Bradley, Tank 10



Sample Name: **Total Air, Bradley, Tank 10**
Acquired from Chrom6--Det6A via port 6 on 2/25/05 09:57:24am by Kitto

Data File: **C:\CPWIN\DATA6\05405-10.13R**
Date Stamp: 2/25/05 09:57:24am
Sequence File: FEB2405.SEQ #13
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

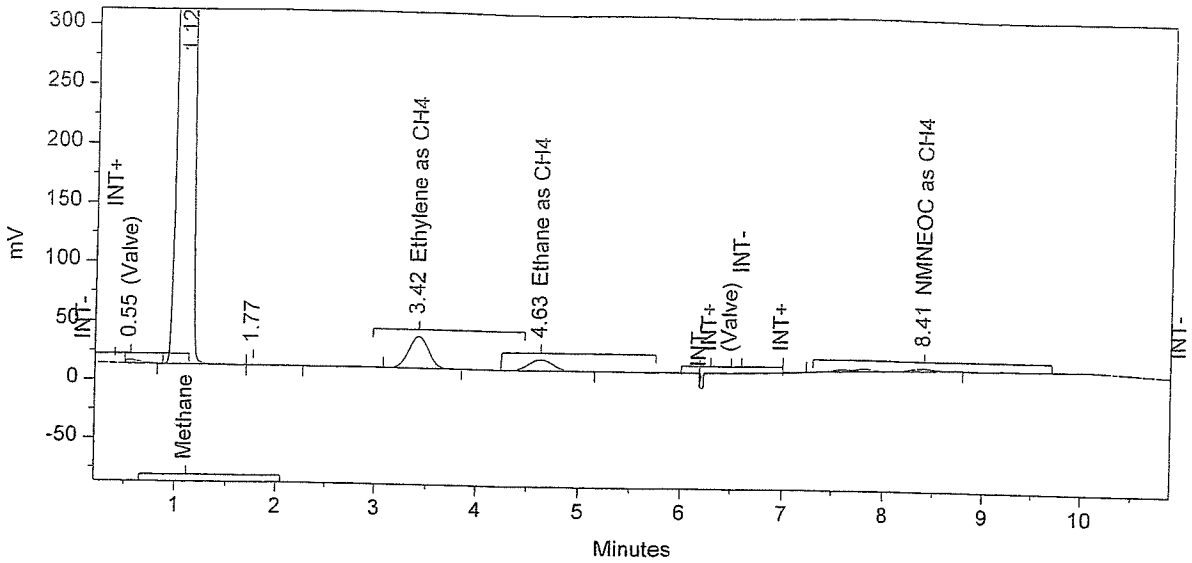
Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.572	(Valve)	0.0030	0.000	29772.9	0.287	BV	0.150	3302.66	0.328
2	1.142	Methane	684.2213	93.853	9704151.0	93.584	SBB	0.168	963074.90	95.578
4	3.448	Ethylene as CH4	25.4740	3.494	361291.9	3.484	BB	0.221	27238.67	2.703
5	4.656	Ethane as CH4	12.1532	1.667	172366.6	1.662	BB	0.287	10024.07	0.995
10	8.425	NMNEOC as CH4	7.1821	0.985	101862.7	0.982	BB	0.425	3994.00	0.396

Total Area = 10369450.0, Total Amount = 729.034, Total Height = 1007634.0, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,

Total Air, Bradley, Tank 10 Dup



Sample Name: **Total Air, Bradley, Tank 10 Dup**
Acquired from Chrom6--Det6A via port 6 on 2/25/05 10:09:53am by Kitto

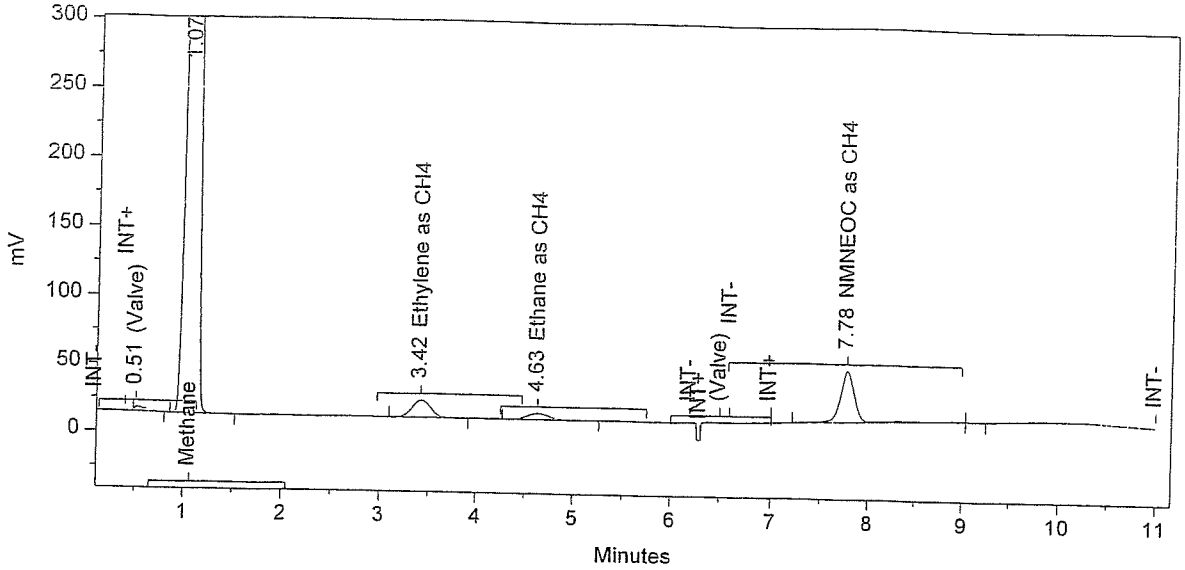
Data File: **C:\CPWIN\DATA6\05405-10.14R**
Date Stamp: 2/25/05 10:09:52am
Sequence File: FEB2405.SEQ #14
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.549	(Valve)	0.0030	0.000	30030.2	0.291	BB	0.154	3249.62	0.323
2	1.117	Methane	680.4915	93.916	9651252.0	93.615	BB	0.167	963879.10	95.758
3	1.766		0.0000	0.000	3149.4	0.031	BB	0.177	296.39	0.029
4	3.422	Ethylene as CH4	25.4215	3.508	360547.3	3.497	BB	0.223	26952.60	2.678
5	4.631	Ethane as CH4	11.1298	1.536	157850.7	1.531	BB	0.275	9581.75	0.952
6	8.413	NMNEOC as CH4	7.5260	1.039	106739.3	1.035	BB	0.679	2620.99	0.260

Total Area = 10309570.0, Total Amount = 724.572, Total Height = 1006581.0, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,



Sample Name: **Total Air, Bradley, Tank 10 Spiked**
Acquired from Chrom6--Det6A via port 6 on 2/25/05 10:25:20am by Kitto

Data File: **C:\CPWIN\DATA6\05405-10.15R**
Date Stamp: 2/25/05 10:25:20am
Sequence File: FEB2405.SEQ #15
Method File: C:\CPWIN\DATA6\M25JAN05.MET
Version 1. Date Stamp: 1/25/05 06:34:14pm
Calibration File: C:\CPWIN\DATA6\M250105.CAL
Version 1. Date Stamp: 1/6/05 03:52:52pm

Run Time = 11.0 min Sample Rate = 15.0 per sec.
Amount Inj. = 1.000 Dilution Factor = 1.000
Sample Weight = 1.000 Int Std Amount = 1.000

Starting Peak Width = 0.05 min. Peak Threshold = .1 Area Reject = 100
* Some peaks have been manually integrated.

PK#	Ret Time	Name	Amount	Amount%	Area	Area%	Type	Width	Height	Height%
1	0.511	(Valve)	0.0028	0.001	27988.6	0.436	BB	0.142	3290.98	0.444
2	1.066	Methane	404.7390	89.891	5740319.0	89.499	BB	0.140	682231.50	92.104
3	3.419	Ethylene as CH4	11.8118	2.623	167524.7	2.612	BB	0.218	12800.52	1.728
4	4.634	Ethane as CH4	5.2662	1.170	74689.8	1.165	BB	0.273	4552.67	0.615
5	7.785	NMNEOC as CH4	28.4360	6.316	403301.0	6.288	BB	0.178	37840.39	5.109

Total Area = 6413823.0, Total Amount = 450.256, Total Height = 740716.1, Sample Units = ppmv @CH4
* Some peaks have been manually integrated,

Quantum Analytical Services Inc.
www.quantumairlab.com
1210 E. 223rd Street, Suite #314 • Carson, California 90745 • 310/830-2226 • Fax 310/830-2227

CLIENT: **Total air Analysis, Inc.**
FACILITY: **WM / Emcon Shaw / Bradley-Rogs**
LABORATORY NO: **05-085**
SAMPLING DATE: February 22, 2005
RECEIVING DATE: February 23, 2005
ANALYSIS DATE: February 24-25, 2005
REPORT DATE: March 11, 2005

Quality Assurance Report

Analysis Method Detection Limit	SCAQMD 25.3 0.2 ppmv	
Sample ID	Quantum Sample ID	TNMOC as Methane PPMV
Pre-Test, canister # 151	05405-0	<0.2

Duplicate Analysis

Total Air Sample ID	Analyte	Analysis # 1 PPMV	Analysis # 2 PPMV	Mean PPMV	% Difference from the Mean
Eng#5-Rog#3B	Methane	902	921	911	1.0%
	C2*	57	58	58	0.8%
	NMNEOC	5.9	5.2	5.6	5.9%
Eng#2-Rog#5B	Methane	966	961	963	0.3%
	C2*	53	52	52	1.5%
	NMNEOC	10	11	10	2.3%

Matrix Spike

Total Air Sample ID	Analyte	Theoretical Value PPMV	Tested Value PPMV	% Recovery
Eng#5-Rog#3B	Methane	429	455	106%
	C2*	21	21	101%
	NMNEOC	26.9	28.4	105%
Eng#2-Rog#5B	Methane	409	405	99%
	C2*	19	17	92%
	NMNEOC	29	28	99%

NMNEOC: non-Methane non-Ethane Organic Carbon

* C2 is the sum of ethylene and ethane as methane

Dr. Andrew Kitto
President

Quantum
Analytical Services Inc.
www.quantumairlab.com
1210 E. 223rd Street, Suite #314 • Carson, California 90745 • 310/830-2226 • Fax 310/830-2227

CLIENT: **Total air Analysis, Inc.**
FACILITY: WM / Emcon Shaw / Bradley-Rogs
LABORATORY NO: **05-085**
SAMPLING DATE: February 22, 2005
RECEIVING DATE: February 23, 2005
ANALYSIS DATE: February 24-25, 2005
REPORT DATE: March 11, 2005

Laboratory Analysis Report

Analysis Method		**ASTM D-1945**	
Detection Limits		**0.10%**	
Total Air Sample ID	**Lab Sample ID**	**O2 mole %**	**CO2 mole %**
Eng#1-Rog#1B	05405-2	7.6	13
Eng#3-Rog#2B	05405-4	7.8	13
Eng#5-Rog#3B	05405-6	7.6	13
Eng#4-Rog#4B	05405-8	7.4	13
Eng#2-Rog#5B	05405-10	7.6	12

Dr. Andrew Kitto
President

05-085

TOTAL AIR ANALYSIS, INC.

1210 East 223 rd Street, # 314 Carson, CA 90745 (310) 518 5133 Fax: (310) 518 5107

CHAIN OF CUSTODY

Page: 1 of: 1

Client: WM / Emcon Shaw

Contact Person: Russ Logan

tel:

fax:

Project No.: EM-50381

Project Name: Bradley-Ross

Project Manager: RPL

P.O. Number:

Analysis: SCAQMD 25.3 + Turnaround; O_2 + CO_2; SCAQMD 25.1 - Modified; Fuel Composition (BTU + Fuel Factor)

Turnaround Time:
- ☐ Same Day
- ☐ 24 Hours
- ☐ 48 Hours
- ☑ Normal

Total Air ID #	Client Sample ID	Summa Canister #	Date	Type of Sample	Lab ID Number	SCAQMD 25.3 + Turnaround	O_2 + CO_2		SCAQMD 25.1 - Modified	Fuel Composition (BTU + Fuel Factor)		Remarks LAB ID#
	Eng #1 - R06-1A	1	2/22/05	Air		✓						05405-1
	" R06-1B	2				✓	✓					5405-2
	Eng #3 - R06-2A	3				✓						5405-3
	" R06-2B	4				✓	✓					-4
	Eng #5 - R06-3A	5				✓						-5
	" R06-3B	6				✓	✓					-6
	Eng #C1 - R06-4A	7				✓						-7
	" R06-4B	8				✓	✓					-8
	Eng #2 - R06-5A	210				✓						-9
	" R06-5B	211				✓	✓					-10
	Fuel Sample #2	-	2/22/05	Air					✓	✓		

Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time
[signature]	2/23/05 @ 10:00	[signature]	2/23/05 10:30
Relinquished by: (signature)	Date/Time	Received by: (signature)	Date/time

TOTAL AIR ANALYSIS, INC.
SCAQMD Method 25.3 Field Data Sheet

Facility: [illegible] Landfill
Source: [illegible]
Test Date:

Run No.:
Pbar:
Operator: JN

	A	B
Trap No.:	1A	2B
Tank No.:	1	2
Initial Vacuum:	30	30
Pre-Test Leak Rate:	0.0	0.0

	Sample Point	Time (hr)	Vacuum ("Hg)	Flow rate (CC/min)
A	1	10:15	30	180
	2		28	180
	3		26	180
	4		24	180
	5		22	180
	6		20	180
	7		18	180
B	8		16	180
	9		14	180
	10		12	180
	11		10	180
	12		8	180
	13	11:15	5	

	Sample Point	Time (hr)	Vacuum ("Hg)	Flow rate (CC/min)
A	1	10:15	30	180
	2		28	180
	3		26	180
	4		24	180
	5		22	180
	6		20	180
	7		18	180
B	8		16	180
	9		14	180
	10		12	180
	11		10	180
	12		8	180
	13	11:15	5	

	A	B
Post-Test Leak Check:	0.0	0.0
Final Vacuum:	5	5

TOTAL AIR ANALYSIS, INC.
SCAQMD Method 2[illegible]3 Field Data Sheet

Facility: Bradley Landfill
Source: [illegible] #3
Test Date:

Run No.: 2
Pbar:
Operator: JAN

A

Trap No.: 3A
Tank No.: 3
Initial Vacuum: 30
Pre-Test Leak Rate: 0.0

	Sample Point	Time (hr)	Vacuum ("Hg)	Flow rate (CC/min)
A	1	12:00	30	180
	2		28	180
	3		26	180
	4		24	180
	5		22	180
	6		20	180
not	7		18	180
[illegible]	8		16	180
	9		14	180
	10		12	180
	11		10	180
	12		8	180
	13	13:00	6	180

Post-Test Leak Check: 0.0
Final Vacuum:

B

Trap No.: 4B
Tank No.: 4
Initial Vacuum: 30
Pre-Test Leak Rate: 0.0

	Sample Point	Time (hr)	Vacuum ("Hg)	Flow rate (CC/min)
A	1	12:00	30	180
	2		28	180
	3		26	180
	4		24	180
	5		22	180
	6		20	180
	7		18	180
B	8		16	180
	9		14	180
	10		12	180
	11		10	180
	12		8	180
	13	13:00	6	180

Post-Test Leak Check: 0.0
Final Vacuum: [illegible]

TOTAL AIR ANALYSIS, INC.
SCAQMD Method 25.3 Field Data Sheet

Facility: [illegible]
Source: [illegible]
Test Date:

Run No.: 7
Pbar:
Operator: [illegible]

	A	B
Trap No.:	5 A	6 B
Tank No.:	5	6
Initial Vacuum:	30	30
Pre-Test Leak Rate:	0.0	0.0

Sample Point	Time (hr)	Vacuum ("Hg)	Flow rate (CC/min)
1	13:30	30	180
2		28	180
3		26	180
4		24	180
5		22	180
6		20	180
7		18	180
8		16	180
9		14	180
10		12	180
11		10	180
12		8	180
13	14:30	5	

Sample Point	Time (hr)	Vacuum ("Hg)	Flow rate (CC/min)
1	13:30	30	180
2		28	180
3		26	180
4		24	180
5		22	180
6		20	180
7		18	[illegible]
8		16	180
9		14	180
10		12	180
11		10	180
12		8	180
13	14:30	5	

Post-Test Leak Check: 0.0
Final Vacuum: 5

Post-Test Leak Check: 0.0
Final Vacuum: [illegible]

TOTAL AIR ANALYSIS, INC.
SCAQMD Method 25.3 Field Data Sheet

Facility: Bradley Landfill
Source: EC Enc #4
Test Date:

Run No.: 4
Pbar:
Operator: JIN

A		B	
Trap No.:	7A	Trap No.:	8B
Tank No.:	7	Tank No.:	8
Initial Vacuum:	30	Initial Vacuum:	30
Pre-Test Leak Rate:	0.0	Pre-Test Leak Rate:	0.0

Sample Point	Time (hr)	Vacuum ("Hg)	Flow rate (CC/min)
1	14:45	30	180
2		28	180
3		26	180
4		24	180
5		22	180
6		20	180
7		18	180
8		16	180
9		14	180
10		12	180
11		10	180
12		6	180
13	15:45	0	

Sample Point	Time (hr)	Vacuum ("Hg)	Flow rate (CC/min)
1	14:45	30	180
2		28	180
3		26	180
4		24	180
5		22	180
6		20	180
7		18	180
8		16	180
9		14	180
10		12	180
11		10	180
12		6	180
13	15:45	0	

Post-Test Leak Check:
Final Vacuum:

Post-Test Leak Check:
Final Vacuum:

TOTAL AIR ANALYSIS, INC.
SCAQMD Method 25.3 Field Data Sheet

Facility: [illegible]
Source: [illegible]
Test Date:

Run No.: 5
Pbar:
Operator: [illegible]

A

Trap No.: [illegible]
Tank No.: [illegible]
Initial Vacuum: [illegible]
Pre-Test Leak Rate: [illegible]

Sample Point	Time (hr)	Vacuum ("Hg)	Flow rate (CC/min)
1	17:30	[illegible]	[illegible]
2		[illegible]	[illegible]
3		[illegible]	[illegible]
4		[illegible]	[illegible]
5		[illegible]	[illegible]
6		[illegible]	[illegible]
7		[illegible]	[illegible]
8		[illegible]	[illegible]
9		[illegible]	[illegible]
10		[illegible]	[illegible]
11		[illegible]	[illegible]
12		[illegible]	[illegible]
13	18:30	[illegible]	

Post-Test Leak Check: [illegible]
Final Vacuum: [illegible]

B

Trap No.: [illegible]
Tank No.: [illegible]
Initial Vacuum: [illegible]
Pre-Test Leak Rate: [illegible]

Sample Point	Time (hr)	Vacuum ("Hg)	Flow rate (CC/min)
1	17:30	[illegible]	[illegible]
2		[illegible]	[illegible]
3		[illegible]	[illegible]
4		[illegible]	[illegible]
5		[illegible]	[illegible]
6		[illegible]	[illegible]
7		[illegible]	[illegible]
8		[illegible]	[illegible]
9		[illegible]	[illegible]
10		[illegible]	[illegible]
11		[illegible]	[illegible]
12		[illegible]	[illegible]
13	18:30	[illegible]	

Post-Test Leak Check: [illegible]
Final Vacuum: [illegible]

Appendix C

EPA Method 19 and Operating Parameters

EPA Method 19, Stack Gas Flowrate Calculation

Facility: Waste Management
Source: Bradley Landfill-Engine #1 - 5
Load: Full
Start Date: 2/22/05

Run No.	Time Start	Time End	O_2 (%)	Fuel Flow (scfm)	HHV (btu/scf)	F Factor (sdcf/Mmbtu)	System Flow (scfm)	Heat Input (Mmbtu/hr)
Engine #1	10:15	11:15	7.60	568.04	435.0	9,808	3,808	14.83
Engine #3	12:00	13:00	7.80	560.24	435.0	9,808	3,813	14.62
Engine #5	13:30	14:30	7.60	555.31	435.0	9,808	3,723	14.49
Engine #4	14:45	15:45	7.40	542.27	435.0	9,808	3,582	14.15
Engine #2	17:30	18:30	7.60	544.13	435.0	9,808	3,648	14.20

Flow Rate = Fuel Flow Rate x F Factor x HHV/1000000 x 20.9/(20.9 - O2 conc)

Quantum Analytical Services Inc.
www.quantumairlab.com
1210 E. 223rd Street, Suite #314 • Carson, California 90745 • 310/830-2226 • Fax 310/830-2227

CLIENT:	**Total air Analysis, Inc.**
FACILITY:	**WM / Emcon Shaw / Bradley-Rogs**
LABORATORY NO:	05-085
SAMPLING DATE:	February 22, 2005
RECEIVING DATE:	February 23, 2005
ANALYSIS DATE:	February 24-25, 2005
REPORT DATE:	March 11, 2005

Laboratory Analysis Report

Analysis Method: ASTM3588

Analyte, Units	Sample ID	Fuel Sample#1
	Sample Date	02/22/05
	Lab ID	05405-11
	Units	Mole %
Methane, %		43.1
Ethane, %		<0.1
Ethylene, %		<0.1
Propane, %		<0.1
Propylene, %		<0.1
i-Butane, %		<0.1
n-Butane, %		<0.1
1-Butene, %		<0.1
i-Butylene, %		<0.1
trans-2-Butene,%		<0.1
cis-2-Butene,%		<0.1
i-Pentane, %		<0.1
n-Pentane, %		<0.1
2,2-Dimethyl Butane, %		<0.1
2,3-Dimethyl Butane, %		<0.1
2-Methyl Pentane, %		<0.1
3-Methyl Pentane, %		<0.1
n-Hexane, %		<0.1
C6+, %		<0.1
CO2, %		42
CO, %		<0.1
O2, %		0.5
N2, %		14
H2, %		<0.1
H2S, %		<0.1
Average Molecular Weight		**29.646**
Total Wt.% Adjusted Sp. Gravity		**1.0235**
Compressibility Factor (14.696 Psi, 60 F)		**0.9976**
NET BTU/Cub. Ft		**392**
GROSS BTU/Cub. Ft		**435**

CHONS	%
Carbon	34.6
Hydrogen	5.9
Oxygen	46.2
Nitrogen	13.4
Sulfur	<0.1

Dry F Factor (60 F, 1 Atm); SDCF/MMBTU, ASTM 3588	9808

Dr. Andrew Kitto
President

Brawley Landfill
Eng #1

Date and Time	Gen1.GenkW	Gen1.SCFM	Gas.CH4	Gas.GrossBTU	Gen1.EngineRPM
2/22/2005 10:15	1302.34	567.11	47.26	479.75	1799.10
2/22/2005 10:16	1371.39	582.49	47.40	481.15	1801.80
2/22/2005 10:17	1371.39	582.49	47.40	481.15	1801.80
2/22/2005 10:18	1305.17	566.03	47.40	481.15	1799.80
2/22/2005 10:19	1361.89	571.52	47.40	481.15	1800.30
2/22/2005 10:20	1367.63	573.69	47.40	481.15	1800.00
2/22/2005 10:21	1278.04	581.19	47.40	481.15	1799.60
2/22/2005 10:22	1439.11	564.97	47.40	481.15	1799.80
2/22/2005 10:23	1255.97	562.79	47.40	481.04	1800.00
2/22/2005 10:24	1310.48	568.26	47.40	481.04	1800.00
2/22/2005 10:25	1300.53	568.26	47.39	481.04	1800.40
2/22/2005 10:26	1393.88	571.45	47.39	481.04	1799.60
2/22/2005 10:27	1333.60	566.01	47.39	481.04	1799.10
2/22/2005 10:28	1330.60	574.71	47.39	481.04	1800.60
2/22/2005 10:29	1335.46	572.48	47.39	481.04	1799.80
2/22/2005 10:30	1303.95	563.65	47.33	480.51	1800.20
2/22/2005 10:31	1281.75	564.67	47.33	480.51	1799.50
2/22/2005 10:32	1355.27	561.29	47.33	480.51	1800.60
2/22/2005 10:33	1354.32	571.19	47.33	480.51	1800.30
2/22/2005 10:34	1323.05	575.57	47.33	480.51	1800.10
2/22/2005 10:35	1341.58	574.51	47.33	480.51	1800.20
2/22/2005 10:36	1334.47	575.57	47.33	480.51	1800.50
2/22/2005 10:37	1328.79	579.96	47.33	480.51	1799.10
2/22/2005 10:38	1290.24	568.95	47.33	480.44	1799.70
2/22/2005 10:39	1322.74	564.52	47.33	480.44	1800.40
2/22/2005 10:40	1354.98	561.24	47.33	480.44	1800.40
2/22/2005 10:41	1351.71	570.02	47.33	480.44	1800.10
2/22/2005 10:42	1344.63	564.53	47.33	480.44	1799.30
2/22/2005 10:43	1342.00	571.12	47.33	480.44	1800.60
2/22/2005 10:44	1342.40	571.01	47.33	480.44	1799.80
2/22/2005 10:45	1333.88	568.82	47.20	479.15	1800.50
2/22/2005 10:46	1367.33	566.63	47.20	479.15	1800.60
2/22/2005 10:47	1321.34	560.05	47.20	479.15	1799.90
2/22/2005 10:48	1302.02	559.05	47.20	479.15	1800.70
2/22/2005 10:49	1311.49	567.80	47.20	479.15	1800.60
2/22/2005 10:50	1351.65	572.22	47.20	479.15	1800.30
2/22/2005 10:51	1350.05	563.51	47.20	479.15	1799.90
2/22/2005 10:52	1363.49	563.50	47.20	479.15	1800.20
2/22/2005 10:53	1250.23	572.35	47.20	479.15	1799.00
2/22/2005 10:54	1395.51	572.36	47.20	480.13	1799.70
2/22/2005 10:55	1297.96	568.04	47.20	480.13	1799.40
2/22/2005 10:56	1330.21	568.05	47.30	480.13	1800.40
2/22/2005 10:57	1337.41	561.57	47.30	480.13	1800.50
2/22/2005 10:58	1332.24	571.42	47.30	480.13	1801.10
2/22/2005 10:59	1320.69	567.02	47.30	480.13	1799.70
2/22/2005 11:00	1352.70	563.75	47.30	480.13	1799.80
2/22/2005 11:01	1335.46	559.47	47.41	481.24	1799.90
2/22/2005 11:02	1326.76	569.27	47.41	481.24	1799.30
2/22/2005 11:03	1292.80	567.10	47.41	481.24	1800.20
2/22/2005 11:04	1348.49	560.55	47.41	481.24	1798.90
2/22/2005 11:05	1309.77	574.72	47.41	481.24	1800.30

BRADLEY Landfill
Eng. #1

	KW	SCFM	CH4	BTU	RPM
2/22/2005 11:06	1352.60	543.30	47.41	481.24	1799.60
2/22/2005 11:07	1328.14	567.10	47.41	481.24	1800.80
2/22/2005 11:08	1307.27	572.54	47.41	481.24	1799.40
2/22/2005 11:09	1354.24	567.05	47.36	480.82	1800.10
2/22/2005 11:10	1321.05	567.05	47.36	480.82	1799.50
2/22/2005 11:11	1334.72	564.88	47.36	480.82	1800.00
2/22/2005 11:12	1373.07	569.27	47.36	480.82	1800.50
2/22/2005 11:13	1338.51	566.01	47.36	480.82	1799.80
2/22/2005 11:14	1353.81	554.06	47.36	480.82	1799.90
2/22/2005 11:15	1323.17	567.10	47.36	480.82	1799.50
2/22/2005 11:16	1361.90	570.36	47.29	480.05	1801.30
2/22/2005 11:17	1356.35	554.06	47.29	480.05	1801.00
2/22/2005 11:18	1312.58	583.47	47.29	480.05	1800.20
2/22/2005 11:19	1315.02	574.84	47.29	480.05	1800.00
2/22/2005 11:20	1346.60	562.83	47.29	480.05	1799.50
2/22/2005 11:21	1343.23	560.65	47.29	480.05	1800.60
2/22/2005 11:22	1337.14	572.60	47.29	480.05	1799.40
2/22/2005 11:23	1291.05	569.34	47.29	480.05	1800.20
2/22/2005 11:24	1358.08	569.34	47.32	480.33	1800.60
2/22/2005 11:25	1363.10	570.36	47.32	480.33	1800.90
2/22/2005 11:26	1328.17	571.45	47.32	480.33	1801.00
2/22/2005 11:27	1340.86	557.30	47.32	480.33	1800.50
2/22/2005 11:28	1362.76	571.38	47.32	480.33	1800.00
2/22/2005 11:29	1347.79	568.06	47.32	480.33	1799.90
	1334.83	568.04	47.33	480.45	1800.10

Bradley Landfill

Eng. #3

Date and Time	Gas.CH4	Gas.GrossBTU	Gen3.GenkW	Gen3.SCFM	Gen3.EngineRPM
2/22/2005 12:00	47.37	480.92	1356.95	566.00	1798.20
2/22/2005 12:01	47.37	480.38	1362.02	554.88	1799.30
2/22/2005 12:02	47.37	480.38	1392.16	570.36	1801.00
2/22/2005 12:03	47.32	480.38	1343.47	572.60	1798.60
2/22/2005 12:04	47.32	480.38	1394.24	557.94	1800.00
2/22/2005 12:05	47.32	480.38	1321.74	555.72	1800.20
2/22/2005 12:06	47.32	480.38	1309.96	561.22	1801.00
2/22/2005 12:07	47.32	480.38	1365.55	552.12	1799.30
2/22/2005 12:08	47.42	481.39	1334.70	554.51	1799.30
2/22/2005 12:09	47.42	481.39	1350.06	557.66	1800.10
2/22/2005 12:10	47.42	481.39	1325.36	556.66	1799.90
2/22/2005 12:11	47.42	481.39	1336.64	565.56	1799.10
2/22/2005 12:12	47.42	481.39	1345.34	552.02	1798.80
2/22/2005 12:13	47.42	481.39	1338.29	553.20	1799.30
2/22/2005 12:14	47.42	481.39	1328.56	557.57	1800.10
2/22/2005 12:15	47.42	481.39	1383.44	549.83	1798.90
2/22/2005 12:16	47.21	479.21	1344.12	557.70	1800.70
2/22/2005 12:17	47.21	479.21	1344.90	557.57	1799.80
2/22/2005 12:18	47.21	479.21	1364.56	559.83	1798.70
2/22/2005 12:19	47.21	479.21	1372.97	564.35	1799.70
2/22/2005 12:20	47.21	479.21	1346.26	554.32	1800.20
2/22/2005 12:21	47.21	479.21	1346.22	552.07	1799.50
2/22/2005 12:22	47.21	479.21	1346.22	552.07	1799.50
2/22/2005 12:23	47.13	478.43	1374.40	560.03	1799.30
2/22/2005 12:24	47.13	478.43	1341.38	556.53	1801.40
2/22/2005 12:25	47.13	478.43	1349.82	552.17	1799.40
2/22/2005 12:26	47.13	478.43	1357.27	555.54	1800.50
2/22/2005 12:27	47.13	478.43	1355.97	558.79	1801.00
2/22/2005 12:28	47.13	478.43	1342.32	555.63	1801.00
2/22/2005 12:29	47.13	478.43	1355.63	562.26	1800.10
2/22/2005 12:30	47.19	479.03	1321.18	553.35	1800.50
2/22/2005 12:31	47.19	479.03	1345.56	550.13	1800.50
2/22/2005 12:32	47.19	479.03	1333.73	556.84	1800.00
2/22/2005 12:33	47.19	479.03	1329.49	558.97	1799.30
2/22/2005 12:34	47.19	479.03	1333.68	552.46	1798.70
2/22/2005 12:35	47.19	479.03	1331.73	566.92	1799.30
2/22/2005 12:36	47.19	479.03	1300.54	572.55	1799.10
2/22/2005 12:37	47.19	479.03	1378.56	562.59	1799.30
2/22/2005 12:38	47.24	479.56	1360.86	555.79	1800.20
2/22/2005 12:39	47.24	479.56	1329.22	561.55	1799.90
2/22/2005 12:40	47.24	479.56	1348.63	570.43	1800.70
2/22/2005 12:41	47.24	479.56	1333.17	564.84	1801.80
2/22/2005 12:42	47.24	479.56	1365.69	559.41	1799.20
2/22/2005 12:43	47.24	479.56	1390.42	563.85	1799.30
2/22/2005 12:44	47.24	479.56	1343.37	571.62	1801.60
2/22/2005 12:45	47.26	479.77	1355.45	573.85	1798.80
2/22/2005 12:46	47.26	479.77	1330.48	570.50	1799.20
2/22/2005 12:47	47.26	479.77	1391.02	558.31	1799.80
2/22/2005 12:48	47.26	479.77	1334.26	563.93	1798.90
2/22/2005 12:49	47.26	479.77	1354.42	572.80	1797.90
2/22/2005 12:50	47.26	479.77	1372.24	568.36	1799.60

Bradley Landfill
Eng. #5

Date and Time	Gas.CH4	Gas.GrossBTU	Gen5.GenkW	Gen5.SCFM	Gen5.EngineRPM
2/22/2005 13:30	47.09	478.07	1386.14	551.58	1800.00
2/22/2005 13:31	47.13	478.43	1336.02	555.95	1799.60
2/22/2005 13:32	47.13	478.43	1395.47	554.81	1800.60
2/22/2005 13:33	47.13	478.43	1401.78	551.58	1799.90
2/22/2005 13:34	47.13	478.43	1372.26	553.85	1799.30
2/22/2005 13:35	47.13	478.43	1358.49	558.23	1800.30
2/22/2005 13:36	47.13	478.43	1356.86	554.98	1800.70
2/22/2005 13:37	47.13	478.43	1331.02	553.85	1799.10
2/22/2005 13:38	47.25	479.70	1331.02	553.85	1799.10
2/22/2005 13:39	47.25	479.70	1346.81	557.18	1801.50
2/22/2005 13:40	47.25	479.70	1375.88	556.05	1800.50
2/22/2005 13:41	47.25	479.70	1429.11	556.05	1800.50
2/22/2005 13:42	47.25	479.70	1383.92	550.55	1799.40
2/22/2005 13:43	47.25	479.70	1353.51	555.17	1800.50
2/22/2005 13:44	47.25	479.70	1376.01	554.04	1799.50
2/22/2005 13:45	47.25	479.70	1315.08	552.91	1799.40
2/22/2005 13:46	47.19	479.05	1355.76	555.26	1800.60
2/22/2005 13:47	47.19	479.05	1368.00	558.51	1799.60
2/22/2005 13:48	47.19	479.05	1384.30	551.88	1799.70
2/22/2005 13:49	47.19	479.05	1375.40	554.23	1801.30
2/22/2005 13:50	47.19	479.05	1357.27	559.74	1800.50
2/22/2005 13:51	47.19	479.05	1328.24	556.34	1800.10
2/22/2005 13:52	47.19	479.05	1328.80	552.07	1799.10
2/22/2005 13:53	47.25	479.63	1344.57	557.57	1799.30
2/22/2005 13:54	47.25	479.63	1346.35	556.44	1800.30
2/22/2005 13:55	47.25	479.63	1395.64	552.07	1800.60
2/22/2005 13:56	47.25	479.63	1360.24	555.40	1799.90
2/22/2005 13:57	47.25	479.63	1371.30	555.40	1800.30
2/22/2005 13:58	47.25	479.63	1346.34	549.93	1800.80
2/22/2005 13:59	47.25	479.63	1342.05	554.42	1800.30
2/22/2005 14:00	47.25	479.63	1399.65	556.66	1800.50
2/22/2005 14:01	47.17	478.84	1366.34	552.02	1800.10
2/22/2005 14:02	47.17	478.84	1363.20	553.30	1800.20
2/22/2005 14:03	47.17	478.84	1363.94	556.66	1801.30
2/22/2005 14:04	47.17	478.84	1376.06	553.30	1799.50
2/22/2005 14:05	47.17	478.84	1376.47	548.81	1800.30
2/22/2005 14:06	47.17	478.84	1319.18	551.05	1799.20
2/22/2005 14:07	47.17	478.84	1345.73	555.45	1800.00
2/22/2005 14:08	47.19	479.01	1363.48	555.30	1800.20
2/22/2005 14:09	47.19	479.01	1382.86	554.17	1800.50
2/22/2005 14:10	47.19	479.01	1348.55	557.47	1800.60
2/22/2005 14:11	47.19	479.01	1375.56	551.98	1800.20
2/22/2005 14:12	47.19	479.01	1319.61	550.85	1800.70
2/22/2005 14:13	47.19	479.01	1347.75	554.13	1800.10
2/22/2005 14:14	47.19	479.01	1377.65	558.51	1800.30
2/22/2005 14:15	47.19	479.01	1358.91	549.62	1800.70
2/22/2005 14:16	47.16	478.70	1369.97	551.88	1799.90
2/22/2005 14:17	47.16	478.70	1338.42	559.65	1799.80
2/22/2005 14:18	47.16	478.70	1361.08	557.52	1800.90
2/22/2005 14:19	47.16	478.70	1371.53	558.56	1799.90
2/22/2005 14:20	47.16	478.70	1362.71	558.56	1801.20

Bradley Landfill
Eng #4

Date and Time	Gas.CH4	Gas.GrossBTU	Gen4.GenkW	Gen4.SCFM	Gen4.EngineRPM
2/22/2005 14:45	47.04	477.55	1332.92	541.60	1799.70
2/22/2005 14:46	47.04	477.55	1318.59	540.47	1800.20
2/22/2005 14:47	47.04	477.55	1363.18	540.47	1800.20
2/22/2005 14:48	47.04	477.55	1353.42	544.89	1800.90
2/22/2005 14:49	47.04	477.55	1356.38	538.33	1799.00
2/22/2005 14:50	47.04	477.55	1349.36	535.08	1800.00
2/22/2005 14:51	47.04	477.55	1310.70	541.61	1799.60
2/22/2005 14:52	47.04	477.55	1342.48	543.87	1801.20
2/22/2005 14:53	47.26	479.72	1363.35	538.46	1799.80
2/22/2005 14:54	47.26	479.72	1351.75	539.59	1800.40
2/22/2005 14:55	47.26	479.72	1357.58	539.59	1799.80
2/22/2005 14:56	47.26	479.72	1349.57	546.14	1799.50
2/22/2005 14:57	47.26	479.72	1321.50	545.01	1799.40
2/22/2005 14:58	47.26	479.72	1330.10	542.74	1800.80
2/22/2005 14:59	47.26	479.72	1352.46	542.74	1799.40
2/22/2005 15:00	47.26	479.72	1359.60	542.62	1799.40
2/22/2005 15:01	47.28	480.00	1338.08	547.16	1800.40
2/22/2005 15:02	47.28	480.00	1367.48	542.85	1799.80
2/22/2005 15:03	47.28	480.00	1303.12	546.23	1799.90
2/22/2005 15:04	47.28	480.00	1367.32	542.85	1800.00
2/22/2005 15:05	47.28	480.00	1329.45	539.46	1800.30
2/22/2005 15:06	47.28	480.00	1312.21	537.21	1799.60
2/22/2005 15:07	47.28	480.00	1363.71	544.89	1799.60
2/22/2005 15:08	47.28	480.00	1325.57	538.33	1799.70
2/22/2005 15:09	47.20	479.14	1358.67	542.85	1801.10
2/22/2005 15:10	47.20	479.14	1326.46	545.11	1799.90
2/22/2005 15:11	47.20	479.14	1357.66	547.27	1800.20
2/22/2005 15:12	47.20	479.14	1358.12	544.09	1800.40
2/22/2005 15:13	47.20	479.14	1368.82	547.39	1800.60
2/22/2005 15:14	47.20	479.14	1340.05	541.96	1800.00
2/22/2005 15:15	47.20	479.14	1363.94	547.39	1799.50
2/22/2005 15:16	47.14	478.55	1341.91	551.82	1800.00
2/22/2005 15:17	47.14	478.55	1330.43	547.68	1800.20
2/22/2005 15:18	47.14	478.55	1350.31	543.19	1800.30
2/22/2005 15:19	47.14	478.55	1348.07	548.63	1799.80
2/22/2005 15:20	47.14	478.55	1369.22	554.20	1800.80
2/22/2005 15:21	47.14	478.55	1311.00	545.55	1799.50
2/22/2005 15:22	47.14	478.55	1361.56	548.91	1800.40
2/22/2005 15:23	47.14	478.55	1348.31	547.61	1800.00
2/22/2005 15:24	47.11	478.19	1313.45	542.19	1800.90
2/22/2005 15:25	47.11	478.19	1320.37	545.55	1800.10
2/22/2005 15:26	47.11	478.19	1348.62	545.36	1799.20
2/22/2005 15:27	47.11	478.19	1354.19	542.19	1800.00
2/22/2005 15:28	47.11	478.19	1349.91	537.58	1799.90
2/22/2005 15:29	47.11	478.19	1337.87	535.34	1799.50
2/22/2005 15:30	47.11	478.19	1353.76	547.28	1799.90
2/22/2005 15:31	47.11	476.37	1320.19	541.86	1799.20
2/22/2005 15:32	47.11	476.37	1388.59	537.34	1799.90
2/22/2005 15:33	47.11	476.37	1387.10	537.58	1801.00
2/22/2005 15:34	47.11	476.37	1361.65	540.73	1799.90
2/22/2005 15:35	46.93	476.37	1336.30	536.46	1800.60

DRADLEY Eng. #4

	CH4	BTU	KW	SCFM	RPM
2/22/2005 15:36	46.93	476.37	1344.09	539.71	1800.30
2/22/2005 15:37	46.93	476.37	1355.68	538.58	1798.90
2/22/2005 15:38	46.85	475.56	1345.49	539.71	1799.90
2/22/2005 15:39	46.85	475.56	1306.87	539.71	1800.90
2/22/2005 15:40	46.85	475.56	1343.46	535.21	1799.80
2/22/2005 15:41	46.85	475.56	1336.24	536.33	1800.10
2/22/2005 15:42	46.85	475.56	1401.39	539.83	1799.20
2/22/2005 15:43	46.85	475.56	1359.95	534.22	1799.80
2/22/2005 15:44	46.85	475.56	1384.95	537.58	1800.40
	47.12	478.19	1346.74	542.27	1800.01

Brandley Landfill - Eng. #2

Date and Time	Gas.CH4	Gas.GrossBTU	Gen2.GenkW	Gen2.SCFM	Gen2.EngineRPM
2/22/2005 17:20	46.84	475.47	1384.33	552.56	1799.70
2/22/2005 17:21	46.84	475.47	1351.68	549.32	1799.70
2/22/2005 17:22	46.84	475.47	1363.06	563.72	1801.30
2/22/2005 17:23	46.88	475.85	1355.71	552.64	1800.30
2/22/2005 17:24	46.88	475.85	1316.24	550.40	1799.60
2/22/2005 17:25	46.88	475.85	1349.43	540.66	1800.00
2/22/2005 17:26	46.88	475.85	1330.00	540.66	1800.00
2/22/2005 17:27	46.88	475.85	1341.76	542.71	1800.80
2/22/2005 17:28	46.88	475.85	1315.31	536.16	1801.00
2/22/2005 17:29	46.88	475.85	1349.22	539.49	1800.00
2/22/2005 17:30	46.88	475.85	1351.80	535.04	1800.00
2/22/2005 17:31	47.20	479.14	1367.26	535.38	1799.60
2/22/2005 17:32	47.20	479.14	1300.55	536.48	1799.40
2/22/2005 17:33	47.20	479.14	1339.09	540.73	1800.00
2/22/2005 17:34	47.20	479.14	1326.69	540.73	1800.00
2/22/2005 17:35	47.20	479.14	1366.63	540.90	1799.20
2/22/2005 17:36	47.20	479.14	1326.44	542.95	1799.20
2/22/2005 17:37	47.20	479.14	1341.52	542.95	1799.00
2/22/2005 17:38	47.15	478.69	1344.41	542.95	1800.20
2/22/2005 17:39	47.15	478.69	1345.41	541.84	1799.90
2/22/2005 17:40	47.15	478.69	1338.03	533.48	1799.20
2/22/2005 17:41	47.15	478.69	1311.81	540.90	1799.70
2/22/2005 17:42	47.15	478.69	1326.71	540.78	1799.40
2/22/2005 17:43	47.15	478.69	1306.00	548.39	1799.80
2/22/2005 17:44	47.15	478.69	1316.42	542.99	1800.10
2/22/2005 17:45	47.15	478.69	1332.84	542.99	1799.70
2/22/2005 17:46	47.14	478.58	1326.82	537.62	1798.80
2/22/2005 17:47	47.14	478.58	1329.16	550.62	1800.70
2/22/2005 17:48	47.14	478.58	1353.31	542.88	1800.00
2/22/2005 17:49	47.14	478.58	1326.84	541.77	1799.40
2/22/2005 17:50	47.14	478.58	1379.39	547.17	1799.60
2/22/2005 17:51	47.14	478.58	1346.39	550.51	1800.30
2/22/2005 17:52	47.14	478.58	1356.81	547.31	1799.80
2/22/2005 17:53	47.01	477.21	1374.01	546.20	1800.40
2/22/2005 17:54	47.01	477.21	1339.74	550.51	1801.50
2/22/2005 17:55	47.01	477.21	1339.74	550.51	1801.50
2/22/2005 17:56	47.01	477.21	1292.93	546.20	1800.50
2/22/2005 17:57	47.01	477.21	1328.66	547.17	1800.20
2/22/2005 17:58	47.01	477.21	1355.87	542.88	1799.70
2/22/2005 17:59	47.01	477.21	1325.92	547.17	1799.50
2/22/2005 18:00	47.01	477.21	1352.59	540.80	1799.60
2/22/2005 18:01	46.92	476.30	1349.60	548.28	1799.40
2/22/2005 18:02	46.92	476.30	1368.18	549.40	1800.20
2/22/2005 18:03	46.92	476.30	1369.51	545.09	1800.00
2/22/2005 18:04	46.92	476.30	1379.06	545.06	1800.20
2/22/2005 18:05	46.92	476.30	1339.15	544.10	1799.50
2/22/2005 18:06	46.92	476.30	1310.67	549.50	1799.90
2/22/2005 18:07	46.92	476.30	1366.72	554.05	1799.20
2/22/2005 18:08	46.89	475.95	1312.56	544.21	1800.40
2/22/2005 18:09	46.89	475.95	1320.44	546.61	1799.60
2/22/2005 18:10	46.89	475.95	1340.73	542.12	1800.30

DRADLEY Landfill Eng.

	CH4	BTU	KW	Eng #2 SCFM	RPM
2/22/2005 18:11	46.89	475.95	1380.58	547.71	1800.60
2/22/2005 18:12	46.89	475.95	1309.30	556.26	1799.30
2/22/2005 18:13	46.89	475.95	1341.97	550.83	1801.30
2/22/2005 18:14	46.89	475.95	1341.20	542.12	1799.70
2/22/2005 18:15	46.89	475.95	1296.72	553.14	1801.30
2/22/2005 18:16	47.18	478.96	1328.50	547.61	1799.90
2/22/2005 18:17	47.18	478.96	1340.95	539.87	1799.90
2/22/2005 18:18	47.18	478.96	1329.68	531.54	1800.10
2/22/2005 18:19	47.18	478.96	1364.32	543.19	1801.30
2/22/2005 18:20	47.18	478.96	1336.69	542.08	1800.40
2/22/2005 18:21	47.18	478.96	1357.28	538.76	1800.30
2/22/2005 18:22	47.18	478.96	1354.73	539.87	1799.80
2/22/2005 18:23	47.10	478.13	1283.00	538.93	1799.20
2/22/2005 18:24	47.10	478.13	1318.35	539.87	1799.10
2/22/2005 18:25	47.10	478.13	1366.85	542.08	1799.20
2/22/2005 18:26	47.10	478.13	1329.29	536.73	1799.50
2/22/2005 18:27	47.10	478.13	1350.18	543.19	1799.30
2/22/2005 18:28	47.10	478.13	1353.20	529.36	1799.40
2/22/2005 18:29	47.10	478.13	1351.56	550.69	1800.00
	47.04	477.51	1340.25	544.13	1799.95

Appendix D

Quality Assurance/Quality Control

TOTAL AIR ANALYSIS, INC.

total air

CERTIFICATE OF NO CONFLICT OF INTEREST

I certify that I am responsible for the testing operations of *Total Air Analysis, Inc.* and am authorized to sign this certificate on the company's behalf.

Total Air Analysis, Inc. may conduct tests as an independent tester in accordance with SCAQMD Rule 304 (k). I further certify that *Total Air Analysis, Inc.* has no conflict of interests, and is not related or owned in any way to the company being tested.

Facility To Be Tested: Waste Management / Bradley Landfill

Permit to Operate/Construct Application No.: 395061, 395063, 395064, 395065, R-407403

Signature:

Printed Name: *Russ P. Logan*

Title: *Director*

Date: 3/30/05

1210 East 223rd Street, Suite 314 ▪ Carson, CA 90745 ▪ 310.518.5133 ▪ Fax: 310.518.5107

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
TECHNICAL SERVICES DIVISION

CHECK LIST (ST-1) FOR REQUEST TO REVIEW SOURCE TEST PROTOCOL/REPORT

This checklist is to be submitted with the Engineering Division's standardized Review Request Memorandum when an evaluation of a source test protocol or report is requested.

To begin the evaluation of the Source Test Protocol/Report, the reviewing engineer requires certain basic information. The processing engineer is to use the check list below to assure that this basic information is provided either in or along with the report to be reviewed. An incomplete submittal may delay the evaluation of the report.

LIST I Please check off all the following items to verify that the information is provided in the Source Test Report, and then send it along with the Source Test Report.

[ ] Information Form ST-2 with those applicable parts filled out completely.

[✓] **Complete** Permit to Construct, Permit to Operate, and/or Application Number including company ID number.

[✓] Brief description of the equipment (to be) tested.

[✓] Brief process description, including maximum and normal operating temperatures, pressures, through-put, etc.

[✓] Operating conditions under which test (will be) was performed.

[✓] Process schematic diagram showing the ports and sampling locations, including the dimensions of the ducts/stacks at the sampling locations, along with upstream and downstream locations, and distances of flow disturbances, (e.g. elbows, tees, fans) from the sampling locations (upstream & downstream).

[✓] Field and laboratory data forms.

[✓] Brief description of sampling and analytical methods for each gaseous and particulate constituent to be measured. If a standard District, EPA, or ARB method without "any deviation" will be used, reference it by number.

[✓] Calculations for volumetric flow rates and emission rates.

[✓] Calibration and quality assurance procedures identified.

[✓] For Reg 11 VOC Testing, an acceptable method is provided for determining usage rate of organic materials.

[✓] Testing laboratory qualifies as an "independent testing laboratory" under Rule 304 (no coenflict of interest).

Appendix E

SCAQMD Permits to Construct

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

PERMIT TO CONSTRUCT

Application No.
395063

Granted as of 7/26/2002

ID 050310

LEGAL OWNER
OR OPERATOR: WASTE MGMT DISPOSAL&RECYCLING SERVS INC
9081 TUJUNGA AVE
SUN VALLEY, CA 91352

RECEIVED
AUG - 9 2002

Equipment Location: 9227 TUJUNGA AVE, SUN VALLEY, CA 91352-1542

Equipment Description:

LANDFILL GAS TO ENERGY SYSTEM NO. 2 CONSISTING OF:

1. INTERNAL COMBUSTION ENGINE NO. 2, DEUTZ, MODEL TBG620V16K, SIXTEEN CYLINDER, 1877 BHP, LEAN BURN, LANDFILL GAS FIRED, TURBOCHARGED AND INTERCOOLED, DRIVING A 1.3 MW ELECTRICAL GENERATOR.
2. COMPRESSOR, 3000 CFM, 50 HP (COMMON TO A/N 395061, 395063, 395064 AND 395065)
3. RADIATOR WITH FANS
4. ANCILLARY SKID WITH A MUFFLER, HEAT EXCHANGER, FILTER, INTERCOOLER AND EXHAUST STACK.

Conditions:

1) OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.

2) THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.

3) OPERATION OF THIS EQUIPMENT SHALL NOT RESULT IN THE EMISSION OF RAW LANDFILL GAS TO THE ATMOSPHERE.

4) A SAMPLING PORT SHALL BE INSTALLED IN THE LANDFILL GAS LINE TO THE ENGINE TO ALLOW THE COLLECTION OF A GAS SAMPLE.

5) A FLOW INDICATING AND RECORDING DEVICE SHALL BE INSTALLED IN THE LANDFILL GAS SUPPLY LINE TO THE ENGINE.

6) THE COMBINED TOTAL LANDFILL GAS FLOW RATE TO THE FLARES AND INTERNAL COMBUSTION ENGINES SHALL NOT EXCEED 9722 SCFM.

ORIGINAL

7) THE HEATING VALUE OF LANDFILL GAS TO THE ENGINE SHALL NOT EXCEED 14.2 MM BTU PER HOUR. A WEEKLY LOG OF THE LANDFILL GAS HEATING VALUE, BASED ON THE RECORDED FLOW RATE (SCFM), SHALL BE KEPT FOR AT LEAST TWO YEARS AND MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.

8) READINGS OF THE HEATING VALUE (BTU/HR) OF THE LANDFILL GAS AT THE INLET TO THE ENGINE SHALL BE TAKEN WEEKLY WITH AN AQMD APPROVED INSTRUMENT AND THE RESULTS RECORDED.

9) THE ENGINE SHALL ONLY USE LANDFILL GAS AS A FUEL.

10) TWO SAMPLING PORTS SHALL BE PROVIDED IN THE ENGINE EXHAUST DUCT, 8-10 DUCT DIAMETERS DOWNSTREAM AND TWO DUCT DIAMETERS UPSTREAM OF ANY FLOW DISTURBANCE, AND SHALL CONSIST OF TWO 4 INCH WELD NIPPLES WITH PLUGS, 90 DEGREES APART. AN EQUIVALENT METHOD FOR EMISSION SAMPLING MAY BE USED UPON APPROVAL OF THE AQMD. ADEQUATE AND SAFE ACCESS TO THE TEST PORTS SHALL BE SUPPLIED BY THE APPLICANT.

11) WITHIN 120 DAYS AFTER INITIAL START UP, APPLICANT SHALL CONDUCT PERFORMANCE TEST OF THE ENGINE IN ACCORDANCE WITH AQMD TEST PROCEDURES AND FURNISH THE AQMD A WRITTEN RESULT OF SUCH PERFORMANCE TEST. WRITTEN NOTICE OF THE PERFORMANCE TEST SHALL BE PROVIDED TO THE AQMD 10 DAYS PRIOR TO THE TEST SO THAT AN OBSERVER MAY BE PRESENT. A TEST PROTOCOL SHALL BE SUBMITED FOR APPROVAL AT LEAST 60 DAYS PRIOR TO TESTING.

THE PERFORMANCE TEST SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO A TEST OF THE INLET AND EXHAUST GASES, FOR THE FOLLOWING:

A. METHANE
B. TOTAL NON-METHANE HYDROCARBONS
C. OXIDES OF NITROGEN (EXHAUST ONLY)
D. CARBON MONOXIDE (EXHAUST ONLY)
E. PARTICULATES (EXHAUST ONLY)
F. TOTAL SULFUR COMPOUNDS AS H_2S (INLET ONLY)
G. FLOW RATE
H. OXYGEN
I. NITROGEN
J. CARBON DIOXIDE
K. MOISTURE
L. TEMPERATURE
M. TOXIC AIR CONTAMINANTS INCLUDING BENZENE, CHLOROBENZENE, 1,2-DICHLOROETHANE, 1,1-DICHLOROETHANE, DICHLOROMETHANE, TETRACHLOROETHYLENE, TETRACHLOROMETHANE, TOLUENE, 1,1,1-TRICHLOROETHANE, TRICHLOROETHYLENE, TRICHLOROMETHANE, VINYL CHLORIDE AND XYLENES (EXHAUST ONLY).

ORIGINAL

12) THE EMISSIONS FROM THE ENGINE SHALL NOT EXCEED THE FOLLOWING:

AIR CONTAMINANT	LBS/HR
NON-METHANE HYDROCARBONS	1.65
NITROGEN OXIDE	2.48
SULFUR DIOXIDE	0.82
CARBON MONOXIDE	9.92
PARTICULATES	0.21

13) NON-METHANE HYDROCARBON EMISSIONS FROM THE ENGINE SHALL NOT EXCEED 0.80 GR/BHP-HR.

14) OXIDES OF NITROGEN EMISSIONS FROM THE ENGINE SHALL NOT EXCEED 0.60 GR/BHP-HR.

15) CARBON MONOXIDE EMISSIONS FROM THE ENGINE SHALL NOT EXCEED 2.5 GR/BHP-HR.

16) NON-METHANE HYDROCARBON EMISSIONS FROM THE ENGINE SHALL NOT EXCEED 20 PPMV AT 3% OXYGEN, UNLESS THE EMISSIONS HAVE BEEN REDUCED BY AT LEAST 98% BY WEIGHT ACROSS THE ENGINE.

17) A CONTINUOUS EMISSIONS MONITORING SYSTEM (CEMS) SHALL BE INSTALLED AND OPERATED TO MEASURE THE ENGINE EXHAUST CONCENTRATION FOR NOX AND O2 ON A DRY BASIS. IN ADDITION, THE SYSTEM SHALL CONVERT THE ACTUAL NOX CONCENTRATION TO A CORRECTED NOX CONCENTRATION AT 15% O2. THIS MONITORING SYSTEM SHALL COMPLY WITH THE REQUIREMENTS OF AQMD RULE 218. PRIOR TO INSTALLATION, THIS MONITORING SYSTEM SHALL BE APPROVED IN WRITING BY THE AQMD. AN ALTERNATIVE OR PREDICTIVE MONITORING SYSTEM (PEMS), IF USED, SHALL BE SUBMITTED CONCURRENTLY WITH THE AFOREMENTIONED CEMS.

18) ALL RECORDS, SUCH AS FUEL USAGE, MAINTENANCE RECORDS AND PERFORMANCE TEST RESULTS, SHALL BE MAINTAINED FOR FIVE YEARS AND MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.

19) THIS ENGINE SHALL NOT BE OPERATED IN SUCH A MANNER AS TO UNREASONABLY INTERFERE WITH THE OWNER'S/OPERATOR'S ABILITY TO COMPLY WITH AQMD RULE 1150.1 OR ANY OTHER AQMD RULE LIMITING LANDFILL GAS MIGRATION OR SURFACE EMISSIONS.

ORIGINAL

PERMIT TO CONSTRUCT

Approval or denial of this application for permit to operate the above equipment will be made after an inspection to determine if the equipment has been constructed in accordance with the approved plans and specifications and if the equipment can be operated in compliance with all Rules of the South Coast Air Quality Management District.

Please notify TED KOWALCZYK at (909) 396-2592 when construction of equipment is complete.

This Permit to Construct is based on the plans, specifications, and data submitted as it pertains to the release of air contaminants and control measures to reduce air contaminants. No approval or opinion concerning safety and other factors in design, construction or operation of the equipment is expressed or implied.

This Permit to Construct shall serve as a temporary Permit to Operate provided the Executive Officer is given prior notice of such intent to operate.

This Permit to Construct will become invalid if the Permit to Operate is denied or if the application is cancelled. THIS PERMIT TO CONSTRUCT SHALL EXPIRE ONE YEAR FROM THE DATE OF ISSUANCE unless an extension is granted by the Executive Officer.

Dorris M. Bailey

By _____
DORRIS M. BAILEY
Principal Office Assistant

DMB/tk01

ORIGINAL

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

PERMIT TO CONSTRUCT

page 1
Application No.
R-407403

Granted as of 6/24/2003

LEGAL OWNER OR OPERATOR: WASTE MGMT DISPOSAL & RECYCLING SERVS INC
9081 TUJUNGA AVE
SUN VALLEY, CA 91352

ID 050310

Equipment Location: 9227 TUJUNGA AVE, SUN VALLEY, CA 91352-1542

Equipment Description:

LANDFILL GAS TO ENERGY SYSTEM NO. 5 CONSISTING OF:

1. INTERNAL COMBUSTION ENGINE NO. 5, DEUTZ, MODEL TBG620V16K, SIXTEEN CYLINDER, 1877 BHP, LEAN BURN, LANDFILL GAS FIRED, TURBOCHARGED AND INTERCOOLED, DRIVING A 1.3 MW ELECTRICAL GENERATOR.
2. COMPRESSOR, 3000 CFM, 50 HP (COMMON TO A/N 395061, 395063, 395064, 395065 AND 407403)
3. RADIATOR WITH FANS
4. ANCILLARY SKID WITH A MUFFLER, HEAT EXCHANGER, FILTER, INTERCOOLER AND EXHAUST STACK.

Conditions:

1) OPERATION OF THIS EQUIPMENT SHALL BE CONDUCTED IN ACCORDANCE WITH ALL DATA AND SPECIFICATIONS SUBMITTED WITH THE APPLICATION UNDER WHICH THIS PERMIT IS ISSUED UNLESS OTHERWISE NOTED BELOW.

2) THIS EQUIPMENT SHALL BE PROPERLY MAINTAINED AND KEPT IN GOOD OPERATING CONDITION AT ALL TIMES.

3) OPERATION OF THIS EQUIPMENT SHALL NOT RESULT IN THE EMISSION OF RAW LANDFILL GAS TO THE ATMOSPHERE.

4) A SAMPLING PORT SHALL BE INSTALLED IN THE LANDFILL GAS LINE TO THE ENGINE TO ALLOW THE COLLECTION OF A GAS SAMPLE.

5) A FLOW INDICATING AND RECORDING DEVICE SHALL BE INSTALLED IN THE LANDFILL GAS SUPPLY LINE TO THE ENGINE.

6) THE COMBINED TOTAL LANDFILL GAS FLOW RATE TO THE FLARES AND INTERNAL COMBUSTION ENGINES SHALL NOT EXCEED 9722 SCFM.

ORIGINAL

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

PERMIT TO CONSTRUCT

page 2
Application No.
P-407403

7) THE HEATING VALUE OF LANDFILL GAS TO THE ENGINE SHALL NOT EXCEED 17.43 MM BTU PER HOUR. A WEEKLY LOG OF THE LANDFILL GAS HEATING VALUE, BASED ON THE RECORDED FLOW RATE (SCFM), SHALL BE KEPT FOR AT LEAST TWO YEARS AND MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.

8) READINGS OF THE HEATING VALUE (BTU/HR) OF THE LANDFILL GAS AT THE INLET TO THE ENGINE SHALL BE TAKEN WEEKLY WITH AN AQMD APPROVED INSTRUMENT AND THE RESULTS RECORDED.

9) THE ENGINE SHALL ONLY USE LANDFILL GAS AS A FUEL.

10) TWO SAMPLING PORTS SHALL BE PROVIDED IN THE ENGINE EXHAUST DUCT, 8-10 DUCT DIAMETERS DOWNSTREAM AND TWO DUCT DIAMETERS UPSTREAM OF ANY FLOW DISTURBANCE, AND SHALL CONSIST OF TWO 4 INCH WELD NIPPLES WITH PLUGS, 90 DEGREES APART. AN EQUIVALENT METHOD FOR EMISSION SAMPLING MAY BE USED UPON APPROVAL OF THE AQMD. ADEQUATE AND SAFE ACCESS TO THE TEST PORTS SHALL BE SUPPLIED BY THE APPLICANT.

11) WITHIN 120 DAYS AFTER INITIAL START UP, APPLICANT SHALL CONDUCT PERFORMANCE TEST OF THE ENGINE IN ACCORDANCE WITH AQMD TEST PROCEDURES AND FURNISH THE AQMD A WRITTEN RESULT OF SUCH PERFORMANCE TEST. WRITTEN NOTICE OF THE PERFORMANCE TEST SHALL BE PROVIDED TO THE AQMD 10 DAYS PRIOR TO THE TEST SO THAT AN OBSERVER MAY BE PRESENT. A TEST PROTOCOL SHALL BE SUBMITED FOR APPROVAL AT LEAST 60 DAYS PRIOR TO TESTING.

THE PERFORMANCE TEST SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO A TEST OF THE INLET AND EXHAUST GASES, FOR THE FOLLOWING:

A. METHANE
B. TOTAL NON-METHANE HYDROCARBONS
C. OXIDES OF NITROGEN (EXHAUST ONLY)
D. CARBON MONOXIDE (EXHAUST ONLY)
E. PARTICULATES (EXHAUST ONLY)
F. TOTAL SULFUR COMPOUNDS AS H2S (INLET ONLY)
G. FLOW RATE
H. OXYGEN
I. NITROGEN
J. CARBON DIOXIDE
K. MOISTURE
L. TEMPERATURE
M. TOXIC AIR CONTAMINANTS INCLUDING BENZENE, CHLOROBENZENE, 1,2-DICHLOROETHANE, 1,1-DICHLOROETHANE, DICHLOROMETHANE, TETRACHLOROETHYLENE, TETRACHLOROMETHANE, TOLUENE, 1,1,1-TRICHLOROETHANE, TRICHLOROETHYLENE, TRICHLOROMETHANE, VINYL CHLORIDE AND XYLENES (EXHAUST ONLY).

ORIGINAL

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

page 3
Application No.
P-607403

PERMIT TO CONSTRUCT

12) THE EMISSIONS FROM THE ENGINE SHALL NOT EXCEED THE FOLLOWING:

AIR CONTAMINANT	LBS/HR
NON-METHANE HYDROCARBONS	1.65
NITROGEN OXIDE	2.48
SULFUR DIOXIDE	0.82
CARBON MONOXIDE	9.92
PARTICULATES	0.21

13) NON-METHANE HYDROCARBON EMISSIONS FROM THE ENGINE SHALL NOT EXCEED 0.80 GR/BHP-HR.

14) OXIDES OF NITROGEN EMISSIONS FROM THE ENGINE SHALL NOT EXCEED 0.60 GR/BHP-HR.

15) CARBON MONOXIDE EMISSIONS FROM THE ENGINE SHALL NOT EXCEED 2.5 GR/BHP-HR.

16) NON-METHANE HYDROCARBON EMISSIONS FROM THE ENGINE SHALL NOT EXCEED 20 PPMV AT 3% OXYGEN, UNLESS THE EMISSIONS HAVE BEEN REDUCED BY AT LEAST 98% BY WEIGHT ACROSS THE ENGINE.

17) A CONTINUOUS EMISSIONS MONITORING SYSTEM (CEMS) SHALL BE INSTALLED AND OPERATED TO MEASURE THE ENGINE EXHAUST CONCENTRATION FOR NOX AND O2 ON A DRY BASIS. IN ADDITION, THE SYSTEM SHALL CONVERT THE ACTUAL NOX CONCENTRATION TO A CORRECTED NOX CONCENTRATION AT 15% O2. THIS MONITORING SYSTEM SHALL COMPLY WITH THE REQUIREMENTS OF AQMD RULE 218. PRIOR TO INSTALLATION, THIS MONITORING SYSTEM SHALL BE APPROVED IN WRITING BY THE AQMD. AN ALTERNATIVE OR PREDICTIVE MONITORING SYSTEM (PEMS), IF USED, SHALL BE SUBMITTED CONCURRENTLY WITH THE AFOREMENTIONED CEMS.

18) ALL RECORDS, SUCH AS FUEL USAGE, MAINTENANCE RECORDS AND PERFORMANCE TEST RESULTS, SHALL BE MAINTAINED FOR FIVE YEARS AND MADE AVAILABLE TO AQMD PERSONNEL UPON REQUEST.

19) THIS ENGINE SHALL NOT BE OPERATED IN SUCH A MANNER AS TO UNREASONABLY INTERFERE WITH THE OWNER'S/OPERATOR'S ABILITY TO COMPLY WITH AQMD RULE 1150.1 OR ANY OTHER AQMD RULE LIMITING LANDFILL GAS MIGRATION OR SURFACE EMISSIONS.

ORIGINAL

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
21865 East Copley Drive, Diamond Bar, CA 91765

PERMIT TO CONSTRUCT

page 4
Application No.
R-407403

THIS PERMIT TO CONSTRUCT R-407403 SUPERSEDES PERMIT TO CONSTRUCT 407403 ISSUED 5/15/2003

Approval or denial of this application for permit to operate the above equipment will be made after an inspection to determine if the equipment has been constructed in accordance with the approved plans and specifications and if the equipment can be operated in compliance with all Rules of the South Coast Air Quality Management District.

Please notify TED KOWALCZYK at (909) 396-2592 when construction of equipment is complete.

This Permit to Construct is based on the plans, specifications, and data submitted as it pertains to the release of air contaminants and control measures to reduce air contaminants. No approval or opinion concerning safety and other factors in design, construction or operation of the equipment is expressed or implied.

This Permit to Construct shall serve as a temporary Permit to Operate provided the Executive Officer is given prior notice of such intent to operate.

This Permit to Construct will become invalid if the Permit to Operate is denied or if the application is cancelled. THIS PERMIT TO CONSTRUCT SHALL EXPIRE ONE YEAR FROM THE DATE OF ISSUANCE unless an extension is granted by the Executive Officer.

By Dorris M. Bailey
DORRIS M. BAILEY
Principal Office Assistant

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