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COMPLIANCE AIR EMISSIONS TEST
TAIL GAS TREATING UNIT NO. 1 AND
NO. 2 INCINERATORS
TCEQ FLEXIBLE PERMIT NO. 8404/PSD-TX-1062
EPN STGTU1-1 AND STGTU2-1
TCEQ RN100209451 AND CN600124051

Motiva Enterprises, LLC
Port Arthur, Texas

November, 2008

Stork SwL Project No. 08061098B

This study was conducted by the
Air Emissions Services Division of
Stork Southwestern Laboratories, Inc.
Houston, Texas

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December 15, 2008

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Re: Compliance Air Emissions Test
Tail Gas Treating Unit No. 1 and No. 2 Incinerators
EPN STGTU1-1 and STGTU2-1
Port Arthur, Texas
Stork SwL Project No. 08061098B

Gentlemen:

In accordance with your purchase order number 4550771265, Stork Southwestern Laboratories, Inc. (Stork SwL), hereby submits our test report covering the compliance air emissions test program conducted at your Port Arthur, Texas facility. The test program was conducted on November 6 and 7, 2008.

This report is for the exclusive use of Motiva Enterprises, LLC and except for submission to regulatory agencies, the use of our name relative to the report must receive our prior written approval. Copies of this report should be distributed to the following regulatory agencies (as per Special Condition No. 53.D):

- TCEQ Regional Office, Beaumont, Texas
- TCEQ Compliance Support Division, Austin, Texas

It has been a pleasure working with you and your personnel. Please let us know if you have any questions concerning this report, or if we may be of further service.

Sincerely,

STORK SOUTHWESTERN LABORATORIES, INC.

Vicente Gonzalez/pjm

Vicente Gonzalez
Project Manager
Air Emissions Services Division

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EXECUTIVE SUMMARY

A compliance air emissions test program was conducted on the two (2) Sulfur Recovery Units (SRU) Tail Gas Treating Unit (TGTU) Incinerators located at the Motiva Enterprises, LLC's Port Arthur, Texas facility. Testing was performed to determine compliance with the requirements contained in the Periodic Determination of Compliance section of TCEQ Flexible Permit No. 8404/PSD-TX-1062 (Special Conditions 53 and 54), which require testing when a unit exceeds the listed production rate by more than 15 percent in any 24 hour period. This applied to the two TGTU incinerators (designated as TGTU1 and TGTU2, EPNs STGTU1-1 and STGTU2-1, respectively). Please note that Motiva received a permit alteration which removed particulate matter (PM) testing from the list of required pollutants [Special Condition 53(B)(3)]. Therefore the test program consisted of determining the NOx, CO and VOC emissions from each TGTU incinerator. The test program was conducted by personnel of Stork Southwestern Laboratories, Inc. on November 6 and 7, 2008. The following is a summary of the results of this test program.

TGTU 1 (EPN STGTU1-1): Test Date: November 7, 2008

- The average NOx emissions were 14.85 ppmvd and 2.21 lb/hr, which met the TCEQ permit limit of 6.00 lb/hr.
- The average CO emissions were 5.92 ppmvd and 0.54 lb/hr, which met the TCEQ permit limit of 10.89 lb/hr.
- The average VOC emissions were nondetectable, less than (<) 0.10 ppmvd and <0.014 lb/hr, which met the TCEQ limit of 0.40 lb/hr.
- TGTU 1 has SRU 2 and SRU 3 routed to it. The average acid gas to the Thermal Reactors were 225.68 and 225.06 MSCFH from SRU 2 and SRU 3 respectively; for a total of 450.74 MSCFH. The average sulfur production was 179.62 and 179.14 long tons per day from SRU 2 and SRU 3, respectively, for a total of 358.76 long tons per day. The total fuel gas to the incinerator was 19.43 MSCFH. The average firebox temperature was 1,424.7°F.

TGTU 2 (EPN STGTU2-1): Test Date: November 6, 2008

- The average NOx emissions were 20.87 ppmvd and 2.56 lb/hr, which met the TCEQ permit limit of 7.50 lb/hr.
- The average CO emissions were nondetectable, less than (<) 0.10 ppmvd and <0.01 lb/hr, which met the TCEQ permit limit of 10.89 lb/hr.
- The average VOC emissions were nondetectable, less than (<) 0.16 ppmvd and <0.019 lb/hr, which met the TCEQ limit of 0.40 lb/hr.
- TGTU 2 has SRU 4 routed to it. The average acid gas to the Thermal Reactor were 468.49 MSCFH from SRU4 and 80.32 MSCFH from SRU4 SWS for a total of 548.81 MSCFH. The average sulfur production was 396.48 longs tons per day. The total fuel gas to the incinerator was 13.28 MSCFH. The average firebox temperature was 1,429.6°F.

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INTRODUCTION

A compliance air emissions sampling program was conducted on the two (2) Sulfur Recovery Unit (SRU) Tail Gas Treating Unit (TGTU) Incinerators located at the Port Arthur, Texas facility of Motiva Enterprises, LLC (Motiva). The test program was performed by personnel of Stork Southwestern Laboratories, Inc. (Stork SwL) Air Emissions Services (AES) Division. Present at times during the sample program were: Mr. Philip Nangle and operation staff of Motiva and Messrs. Vicente Gonzalez, Randy Moore and Gus Gonzalez of Stork SwL.

Testing was performed to satisfy the requirements contained in Texas Commission on Environmental Quality (TCEQ) Flexible Permit No. 8404/PSD-TX-1062. TGTU 1 (EPN STGTU1-1), which has SRU 2 and SRU 3 routed to it, was sampled on November 7, 2008. TGTU 2 (EPN STGTU2-1) which has SRU 4 routed to it, was sampled November 6, 2008. Testing was performed in accordance with the requirements contained in the Periodic Determination of Compliance section of the TCEQ permit (Special Condition No. 53 and 54), which specify testing of these units when they exceed the listed charge/production rates by more than 15 percent in any 24 hour period. Motiva received a permit alteration which removed particulate matter (PM) testing from the list of required pollutants in Special Condition 53.B(3). Therefore the test program included determining the emissions rates of nitrogen oxides (NOx), carbon monoxide (CO) and volatile organic hydrocarbons (VOCs) from each TGTU incinerator.

Environmental Protection Agency (EPA) and TCEQ protocols were utilized during the sampling and analytical program.

RESULTS

Results of the individual runs, calculated in accordance with EPA and TCEQ procedures, are contained in the Tables section of this report. A summary of the results follows.

Pollutant	Average Emissions	TCEQ Permit Limit	Percent of Allowable
TGTU 1 (EPN STGTU1-1)			
NOx	14.85 ppmvd	NA	NA
	2.21 lb/hr	6.00 lb/hr	36.8%
CO	5.92 ppmvd	NA	NA
	0.54 lb/hr	10.89 lb/hr	4.9%
VOC	<0.10 ppmvd	NA	NA
	<0.014 lb/hr	0.40 lb/hr	<3.6%
TGTU 2 (EPN STGTU2-1)			
NOx	20.87 ppmvd	NA	NA
	2.56 lb/hr	7.50 lb/hr	34.1%
CO	<0.10 ppmvd	NA	NA
	<0.01 lb/hr	10.89 lb/hr	<0.1%
VOC	<0.16 ppmvd	NA	NA
	<0.019 lb/hr	0.40 lb/hr	<4.8%

Notes: NOx mass emissions computed as NO_2.
VOC is defined as total nonmethane, nonethane VOC as propane.

Therefore, as shown above, each TGTU incinerator met their respective TCEQ permit limits. Motiva monitored and recorded unit operations, which are summarized as follows:

Unit	Total Acid Gas to Thermal Reactor MSCFH	Sulfur Production Rate long tons/day	Fuel Gas to Incinerator MSCFH	Firebox Temperature °F
TGTU 1*	450.74	358.76	19.43	1,424.7
TGTU 2**	548.81	396.48	13.28	1,429.6

* SRU 2 and SRU 3 are routed to TGTU 1. Results include the totals from each unit.
** SRU 4 routed to TGTU 2.

For a closer review of the pollutant emission levels, please see the Tables section of this report. Also, the Field and Laboratory Data section contains results from each individual test run.

PROCEDURES

Sampling equipment and procedures were in conformity with Reference Methods 1, 2, 3, 3A, 4, 7E, 10 and 25A of the Code of Federal Regulations, Title 40 Part 60, (40 CFR 60), "Standards of Performance for New Stationary Sources", Appendix A - Reference Methods.

Sample and Velocity Traverses - EPA Method 1

The following dimensions and the number of sampling points based on these dimensions were as follows.

Source	Diameter, inches	Upstream Distance (Distance A) inches	Downstream Distance (Distance B) inches	No. of Sampling Points
TGTU 1	66"	>2ϕ	~68' = 816" = >8ϕ	12
TGTU 2	86"	>2ϕ	~101' = ~1,212" = >8ϕ	12
Note: ϕ = stack diameters				

TGTU 1 was equipped with four (4), three (3) inch flanged ports, 90° apart. The port extensions were 11 ½ inches. Two (2) ports were used for testing. TGTU 2 was equipped with three (3), three inch ports, 90° apart. The port extensions were 9 ½ inches. Neither stack is equipped with monorail support brackets (TGTU 2 has two (2) eyehooks but no brackets). Each stack has a permanent platform. Due to the presence of structural support members (cross braces), there is not adequate clearance to hang monorails (even if brackets were present).

A check for cyclonic flow within each exhaust stack demonstrated that the flow was parallel to each stack wall, therefore non-cyclonic.

Determination of Stack Gas Velocity and Volumetric Flow Rate - EPA Method 2

Stack gas velocity was measured with an "S" type pitot tube constructed in accordance with "proper pitot tube sampling nozzle configuration", as specified in the Environmental Protection Agency, "Standards of Performance for New Stationary Sources - Revision to Reference Method 1-8 (FR Thursday August 18, 1977, Part II)." A special inconel pitot tube was used for this project (due to the high flue gas temperatures). The pitot tube correction coefficient was determined by meeting the EPA construction guidelines. Temperature measurements were determined by means of a calibrated digital thermometer with

a type "K" thermocouple. Actual flue gas flow rate data were obtained simultaneously with each pollutant sample run.

Gas Analysis and Molecular Weight Determination - EPA Methods 3 and 3A

Triplicate grab stack gas samples taken during each sample run were analyzed for CO_2 content by use of a Bacharach Fyrite combustion gas analyzer. Analysis was performed immediately after sampling. O_2 at the TGTU Outlet stacks were, in each case, determined using a continuous O_2 analyzer. This procedure is described in more detail in the continuous instrumental analyzer section below. The resulting data were utilized in calculating stack gas molecular weight, which was used in the flow rate computations. The balance of the gas was assumed to be nitrogen.

Determination of Moisture Content in Stack Gases - EPA Method 4

Actual moisture content of the stack gas was determined by volumetric and gravimetric analysis of the impinger catch from each sample run. A single point (stack mid-point), constant rate moisture sample was collected simultaneous to each pollutant run. Data was used in flue gas exhaust rate calculations.

Determination of Oxygen, Nitrogen Oxide and Carbon Monoxide Emissions - EPA Methods 3A, 7E and 10

Stork SwL obtained three (3) sixty (60) minute sample runs at stable test conditions on each TGTU incinerator stack using EPA Reference Methods 3A, 7E and 10 for O_2, NOx and CO. The following sampling procedure was used:

Analyzer: The instruments used by Stork SwL were a Servomex Model 1420B for O_2, ThermoEnvironmental (TECO) Model 42C-HL for NOx, and TECO Model 48H for CO.

Analytical Principle: Paramagnetic for O_2, Chemiluminescence for NOx and Nondispersive Infrared (NDIR) Gas Filter Correlation (GFC) for CO.

Measurement System Performance: The criteria specified in Methods 3A/7E/10 was used as follows:

- The determination of sampling system bias which is critical to accurately determine O_2/NOx/CO emissions.
- Calibration gases were injected at the back of the probe, thereby requiring the gas to pass through the entire sampling system, including sample transport lines, sample conditioning system and metering apparatus. This ensured accurate calibration by more precisely simulating the actual test methodology.

Apparatus/Components: The criteria for Reference Methods 3A/7E/10 were used. The sample system consisted of an inconel probe (required due to the high flue gas temperatures), heat traced Teflon transport line, heated stainless steel and Teflon diaphragm pump, chilled conditioning system, metering apparatus, the respective analyzers and a data acquisition system (DAS).

Calibration Gases: The gases specified in Methods 3A/7E/10 were used as follows:

- Used zero grade nitrogen for zero O_2, zero NOx and zero CO gas.
- EPA Protocol mid (40-60% of calibration span) and high level (100% of calibration span) gases for O_2, NOx and CO. The high level gas sets the calibration span of each instrument.

Measurement System Performance Test:

- EPA Protocol gases for the test program were used as stated above.
- Performed the Calibration Error (linearity), Response Time and Sample System Bias measurements as required by Methods 3A, 7E, 10.
- Determined which calibration check (mid or high level) best approximated the actual emissions and used it for the upscale calibration gas.

Initial Performance Test: Methods 3A/7E/10 techniques were used as follows:

- The emissions test consisted of the average of three (3) sixty (60) minute runs conducted at stable test conditions. A three (3) point stratification check traverse (16.7%, 50.0% and 83.3% of stack diameter) was performed on each source. This test demonstrated that each stack was not stratified, and the sample runs were obtained at the point closest to the average of the stratification check (Point 1 for TGTU 1 and TGTU 2, respectively). The initial sample point was purged for at least twice the maximum response time prior to recording actual test data.

- Stork SwL operated on the 250 ppmv NOx, 500 ppmv CO and the 25% O_2 instrument scale. The calibration spans (equivalent to the high level calibration gases) were 230.0 ppm NOx, 486.0 ppm CO and 23.2% O_2. The instrument and calibration spans were chosen to ensure that any emission spikes, if occurring, would be captured.

- The determination of sample bias (versus the calibration span).

- The introduction of calibration gases through the entire sampling system, as discussed above.

Emissions Calculations: Stork SwL used the following calculation techniques:

- The Methods 3A, 7E and 10 requirement to correct the O_2, NOx and CO data for calibration drift and error was applied to each run. Equation 7E-5, as set forth in 40 CFR 60, Appendix A, Method 7E, Section 12 (effective date of August 14, 2006), was used.

- Stork SwL performed flue gas flow measurements using EPA Methods 1-4. This data was used to convert pollutant concentration data to an emission rate basis on the unit. The equations used are shown below.

$$Pollutant\ Cd\ lb/dscf = \frac{ppmvd\ x\ molecular\ weight\ x\ 6.242\ x\ 10^{-8}}{24.04}$$

$$Pollutant\ lb/hr = Cd\ x\ Qsd$$

Where:

Molecular Weight=	46 for NOx (as NO_2) and 28 for CO
Cd =	pollutant concentration in lb/dscf
Qsd =	stack flow rate measured by Stork SwL, dscf/hr

Determination of Total Gaseous Volatile Organic Carbon (VOC) Compound Emissions - EPA Method 25A

Analysis of total nonmethane, nonethane volatile organic carbon compounds (VOCs) from each exhaust stack was performed on-site using the combination of a total hydrocarbon (THC) analyzer equipped with a flame ionization detector (FID) and a gas chromatograph (GC) also equipped with an FID and 10-port gas sampling valve. The THC analyzer, a JUM Model VE-7, produced a total hydrocarbon readout quantitated as propane. The GC data were used to obtain the methane and ethane concentrations within each stack. All data were converted to propane equivalents to obtain a nonmethane, nonethane stack concentration as propane.

The sample system consisted of an inconel probe (heated by the flue gas, inconel necessary due to the high flue gas temperature), heated Teflon transport line, a heated Teflon diaphragm vacuum sampling pump, metering apparatus, the aforementioned analyzers and a data acquisition system (DAS). The sample was extracted from the same point as the NOx, CO and O_2 samples.

The JUM analyzer continuously extracted the stack sample. The GC system was set up to inject fresh stack gas at approximate five (5) to eight (8) minute intervals. To ensure the collection of accurate data, the JUM unit was calibrated with EPA Protocol (propane in nitrogen) gas standards. The GC unit was calibrated with a certified calibration gas mixture containing methane and ethane.

SAMPLE RECOVERY

Carbon Dioxide, Oxygen and Nitrogen

The stack CO_2 analysis was performed on samples taken with each run by use of a standard Fyrite analyzer. The CO_2 Fyrite contains a potassium hydroxide solution that absorbs CO_2 as it is bubbled

Stork SWL is an operating unit of Stork Materials Technology B.V., Amsterdam, The Netherlands, which is a member of the Stork group.

through the Fyrite. The CO_2 content is measured by the displacement of the solution level when compared to a scale integrated onto the analyzer.

The stack O_2 was determined using an instrumental analyzer. To measure O_2 by analyzer, the gas sample is passed through a strong, non-linear magnetic field, which deflects an electromagnetic "dumb-bell" mounted on a torque suspension. This deflection is detected by an optical system and twin photo-cells connected to an amplifier. The "dumb-bell" is wrapped with a coil of wire through which a current is passed to return the "dumb-bell" to its original position. The measured current is proportional to the concentration. Calibration error (linearity), response time and sample bias and drift checks were performed at the field site prior to use. An upscale gas and zero (N_2) gas were injected before and after each sample run to determine calibration drift and system bias. Copies of field and calculation data are included with this report. The O_2 data were corrected for instrument drift and bias in accordance with calculations presented in Method 7E. The calibration span of the instrument was equivalent to the value of the high level calibration gas.

Nitrogen was determined by difference. The $CO_2/O_2/N_2$ data was used in the flue gas molecular weight determination. The O_2 data is summarized in Table No. 2.

Nitrogen Oxides – EPA Method 7E

Analysis to determine the nitrogen oxide content of the Thermal Oxidizer stack gas was performed continuously on site utilizing a chemiluminescent NO/NOx analyzer (Thermo Environmental Model 42C-HL). Prior to sampling, the unit was set and calibrated in accordance with manufacturer and EPA instructions.

The instrument is capable of measuring NO and NOx (NO plus NO_2). To measure NO, the gas sample is blended with ozone (O_3) in a reaction chamber. Chemiluminescence from the NO/O_3 reaction is monitored through an optical filter by a high-sensitivity photomultiplier positioned at one end of the chamber. The filter/photomultiplier combination responds to light in a narrow-wavelength band unique to the NO/O_3 reaction. The output from the photomultiplier is linearly proportional to the NOx concentration. To measure NOx (NO plus NO_2) concentrations, the sample gas flow is diverted through an NO_2 to NO converter. The chemiluminescence response in the reaction chamber to the converter effluent is linearly proportional to the NOx concentration entering the converter. The unit was operated on the NOx mode throughout the emissions test program. Instrument calibration error (linearity), response time and system bias checks were determined prior to sampling. An upscale and zero (N_2) gas were injected before and after each sample run to determine drift and bias. Field data were recorded on Stork SwL's data acquisition system. NOx emissions data is summarized in Table No. 2.

Carbon Monoxide - EPA Method 10

Analysis of the Thermal Oxidizer stack carbon monoxide levels was performed continuously at the field site utilizing a gas filter correlation analyzer (Thermo Environmental Model 48H). The unit was calibrated in accordance with manufacturer instructions utilizing certified EPA Protocol span gases. Prior to introducing each sample, the analyzer was purged with nitrogen. A calibration error (linearity), response time and system bias check was performed on the instrument prior to use. An upscale and zero (N_2) gas were injected before and after each sample run to determine drift and bias. Field data were recorded on Stork SwL's data acquisition system. CO emissions data are summarized in Table No. 2.

Volatile Organic Compounds (VOCs)

VOCs consisted of total nonmethane, nonethane hydrocarbons, quantitated as propane. The VOCs were analyzed on-site using a JUM Model VE-7 total hydrocarbon analyzer equipped with a flame ionization detector (FID). A Shimadzu 14A gas chromatograph, also equipped with an FID and 10-port sampling valve, timed for separation of methane and ethane was also utilized.

Individual run averages were obtained by arithmetic average calculations. The total VOCs, initially quantitated as propane determined by the JUM analyzer, were corrected for the methane and ethane content, determined by the GC, on a carbon equivalent basis in order to provide the results in accordance with TCEQ rules and definitions (i.e. total VOCs excluding methane and ethane). The VOC data were corrected for the moisture content in the stack gas since the VOCs were collected on a "hot-wet" basis. The VOC emission rate (as propane) was calculated using the EPA Method 1-4 flow rate data. The equations used are shown below.

Calculate nonmethane, nonethane VOCs, as carbon:

Equation 1 : VOC ppm (wet) as carbon = [(THC x 3) - (methane x 1 + ethane x 2)]

Where:

THC =	ppmv (wet),total hydrocarbons as propane from the JUM analyzer
Methane =	ppmv (wet) as methane from the GC
Ethane =	ppmv (wet) as ethane from the GC
3 =	number of carbons in propane
2 =	number of carbons in ethane
1 =	number of carbons in methane

Convert nonmethane, nonethane VOCs to propane equivalents:

Equation 2 : VOC ppmv (wet) as propane = VOC ppmv (wet) as carbon/3

Where:

VOC ppmv (wet) as carbon = data from Equation 1
3 = number of carbons in propane

Convert nonmethane, nonethane VOCs as propane to a dry basis:

$$\textit{Equation 3:} \quad VOC\ ppmvd\ as\ propane = VOC\ ppmv\ (wet)\ as\ propane \div \left(1 - \frac{\%\ H_2O}{100}\right)$$

Where:

VOC ppmv (wet) as propane = data from Equation 2
% H_2O = stack moisture content

VOC (nonmethane, nonethane as propane) emission rate:

$$\textit{Equation 4:} \quad VOC\ lb/dscf\ as\ propane = \frac{VOC\ ppmvd\ x\ 44\ x\ 6.242\ x\ 10^{-8}}{24.04}$$

Where:

VOC ppmvd = VOC as propane from Equation 3
44 = molecular weight of propane
6.242 x 10^{-8} = conversion from mg/dscm to lb/dscf
24.04 = standard molar volume at 68°F, 29.92 inches Hg

$$\textit{Equation 5:} \quad VOC\ lb/hr\ as\ propane = VOC\ lb/dscf\ x\ Qsd$$

Where:

VOC lb/dscf = VOC as propane from Equation 4
Qsd = stack volumetric flow rate (dscf/hr) as measured by Stork SwL using EPA Methods 1-4

VOC emissions data are shown in Table No. 2.

Stork SwL Data Acquisition System

Stork SwL utilized a custom developed DAS incorporating an analog to binary converter box to download the analyzer output signals to the data acquisition system (DAS) to record parameters. The DAS programming is based on Visual Basic, version 6.0. The data acquisition system downloads the analyzer output to a PRN file in an ASCII format, with data delineated by spaces. The DAS was setup to sample information from the analyzers every second and to save one (1) minute averages of these samples (sixty [60] one [1] second samples are averaged for a one [1] minute average). Stork SwL data

are presented in a column format with the first column containing the date and the time. Each column is labeled as to which pollutant it is and each file has an initial creation date and time.

CUSTODY OF DATA/SAMPLES

After completion of tests, data/samples were placed in the custody of the technician for analysis. It was his assigned responsibility to ensure that data/sample was recorded and correctly analyzed. Analysis of data/samples was performed at the field site by Air Emissions Services' personnel. It was the duty of the Air Emissions Program Manager and Project Manager to answer any procedural queries from the Laboratory Technician. Final responsibility rested with the Air Emissions Program Manager.

QUALITY ASSURANCE

Stork SwL maintains a strict quality assurance program. A summary of this program follows (where applicable):

- Equipment Calibrations
  - Sampling Console - annual
  - Wet Test Meter - annual
  - Pitot Tubes - either annual wind tunnel calibration or adherence to EPA construction guidelines.
  - Analyzers - calibration with EPA Protocol gases plus calibration error (linearity), bias, converter efficiencies
  - Post test sampling console gamma calibration
  - Post test barometer and thermometer calibration
- Analytical QA
  - Use of reagent grade chemicals
  - Use of ASTM Type III deionized water
  - Use of appropriately completed chain of custody forms
  - Use of appropriate sample storage and shipment procedures

- Calculation QA
  - hand check of computer programs
  - check print procedure for data entry

- Report QA
  - peer review

DISCUSSION

Stork SwL personnel performed an emissions test program at the Motiva Port Arthur, Texas facility. The test program proceeded as follows:

Day/Date	Test Program
Wednesday, November 5, 2008	Stork SwL arrived at the Port Arthur facility at 0700 and proceeded to locate the mobile emissions test trailer at the TGTU 2. Electrical power was provided at 1030 and Stork SwL proceeded to allow the analyzers to warm up while the stack equipment was set up. Stork SwL performed the 3 point stratification check using O_2. No stratification was present and point no. 1 was selected for gaseous pollutant testing as it was the closest to the mean. Stork SwL was ready to test at 1230, however, the unit was not yet at the desired, maximum rates. Testing was aborted for the day while unit operations were adjusted to allow maximum achievable rates on the unit.
Thursday, November 6, 2008	Stork SwL arrived at 0615 and proceeded to calibrate their analyzers (initial calibration error and bias). Testing began at 0740 and was completed at 1125. Three (3) sixty (60) minute sample runs complete with flow traverses were obtained on TGTU 2 without any delays. At test conclusion, the NOx converter efficiency test was completed and Stork SwL relocated to TGTU 1.
Friday, November 7, 2008	Stork SwL mobilized to TGTU 1 and performed their initial analyzer calibrations (calibration error and bias) followed by the 3 point stratification check (using O_2). No stratification was present and point 1 was selected for the gaseous pollutant sampling, as it was closest to the mean. Emissions testing was conducted between 0730 and 1115. Three (3) sixty (60) minute sample runs complete with flow traverses were conducted on TGTU 1 without any delays. At test conclusion, Stork SwL performed the NOx converter efficiency test, removed the test equipment and mobilized back to Houston.

As previously stated, the test program was required due to an increase in operating rates. Stork SwL coordinated closely with Motiva representatives to ensure the test program coincided with maximum achievable operating rates. All Stork SwL pre-test and post-test analyzer calibration error and drift/bias

converter efficiencies (NOx) results met the method criteria. All the pre- and post-test leak checks (moisture train, pitots) also met the method criteria.

SUMMARY

TGTU 1

The average NOx, CO and VOC emission rates were 2.21 lb/hr, 0.54 lb/hr and <0.014 lb/hr which met the TCEQ permit limits of 6.00 lb/hr, 10.89 lb/hr and 0.40 lb/hr, respectively. The unit operated at an average sulfur production of 358.76 long tons/day with a firebox temperature of 1,424.7°F.

TGTU 2

The average NOx, CO and VOC emission rates were 2.56 lb/hr, <0.01 lb/hr and <0.019 lb/hr which met the TCEQ permit limits of 7.50 lb/hr, 10.89 lb/hr and 0.40 lb/hr, respectively. The unit operated at an average sulfur production of 396.48 long tons/day with a firebox temperature of 1,429.6°F.

TABLE NO. 1

SOURCE IDENTIFICATION

Stork SwL Project No. 08061098B

Plant Name: Motiva Enterprises, L.L.C. **Plant Phone:** 409-540-4987

Address: 2555 Savannah Avenue

City: Port Arthur **State:** Texas **Zip:** 77640

Plant Representative: Mr. Phil Nangle

Process or Function: Sulfur Recovery Unit Tail Gas Treating Unit Incinerators

Source Identification: TGTU 1 and TGTU 2

Stack or Duct Description: Round Vertical Stacks

Platform Height: TGTU 1 : ~ 93 feet TGTU 2 : ~ 127 feet

Stack Diameter: TGTU 1 : 66 inches TGTU 2 : 86 inches

Stack Temperature: TGTU 1 : 1,246 °F TGTU 2 : 1,210 °F

Percent Moisture: TGTU 1 : 10% TGTU 2 : 11%

Sampling Facilities: TGTU 1 : Four 3 inch ports (11.5" extensions) - no monorail brackets

TGTU 2 : Three 3 inch ports (9.5" extensions) - monorail brackets not typical

Process (Batch or Continuous): Continuous

Operational Status (Sampling Period):

	Sulfur Production	Firebox Temperature
TGTU 1 :	358.76 ltons/d	1,424.7°F
TGTU 2 :	396.48 ltons/d	1,429.6°F

Sampling Parameters: NOx,CO,VOC emissions

Date Tested: TGTU 1 : November 7, 2008 TGTU 2 : November 6, 2008

TABLE NO. 2

SUMMARY OF SAMPLING RESULTS - O_2, NOx, CO and VOC Data

Motiva Enterprises LLC
Port Arthur, Texas

Stork SwL Project No. 08061098B

			Oxygen	Nitrogen Oxides *		Carbon Monoxide		Volatile Organic Hydrocarbons**	
Run No.	Date	Time Period	% (dry)	ppmvd	lb/hr	ppmvd	lb/hr	ppmvd	lb/hr
TGTU 1									
1	7-Nov-08	0730-0830	3.46	14.54	2.18	7.12	0.65	< 0.10	< 0.014
2	7-Nov-08	0855-0955	3.94	14.69	2.23	5.98	0.55	< 0.10	< 0.015
3	7-Nov-08	1015-1115	3.90	15.32	2.22	4.65	0.41	< 0.10	< 0.014
		Average:	3.77	14.85	2.21	5.92	0.54	< 0.10	< 0.014
TGTU 2									
1	6-Nov-08	0740-0840	5.39	20.80	2.53	< 0.10	< 0.01	0.15	0.017
2	6-Nov-08	0905-1005	5.30	20.39	2.48	< 0.10	< 0.01	0.24	0.028
3	6-Nov-08	1025-1125	5.37	21.41	2.67	< 0.10	< 0.01	< 0.10	< 0.012
		Average:	5.35	20.87	2.56	< 0.10	< 0.01	< 0.16	< 0.019

* as NO_2

** Total nonmethane, nonethane hydrocarbons as propane

TCEQ Permit No. 8404 Limits : TGTU 1 : NOx - 6.00 lb/hr, CO - 10.89 lb/hr, VOC -0.40 lb/hr
TGTU 2 : NOx - 7.50 lb/hr, CO - 10.89 lb/hr, VOC -0.40 lb/hr

TABLE NO. 3

SUMMARY OF SAMPLING RESULTS - Flow Data

Motiva Enterprises LLC
Port Arthur, Texas

Stork SwL Project No. 08061098B

Run No.	Date	Time Period	Net Time (Mins)	Vm (Std) dscf	Ts Stack Temp. °F	Vs Stack Velocity ft/sec	Percent Moisture	ACFM Stack Gas Flow ft^3/min	Qsd Dry Stack Gas Flow dscf/hr	Isokinetics %
TGTU 1										
1	7-Nov-08	0730-0830	60	33.549	1,234	52.53	10.4	74,888.3	1,256,792	N/A
2	7-Nov-08	0855-0955	60	33.427	1,251	52.86	8.9	75,357.8	1,272,508	N/A
3	7-Nov-08	1015-1115	60	33.575	1,252	51.57	11.1	73,511.4	1,210,917	N/A
				Average:	1,246	52.32	10.1	74,585.8	1,246,739	
TGTU 2										
1	6-Nov-08	0740-0840	60	32.971	1,173	24.43	11.1	59,120.2	1,019,093	N/A
2	6-Nov-08	0905-1005	60	32.835	1,221	25.16	11.4	60,884.4	1,016,865	N/A
3	6-Nov-08	1025-1125	60	33.387	1,236	25.98	11.0	62,885.3	1,045,701	N/A
				Average:	1,210	25.19	11.1	60,963.3	1,027,220	

TABLE NO. 4

SUMMARY OF SAMPLING RESULTS - Operating Data

Motiva Enterprises LLC
Port Arthur, Texas

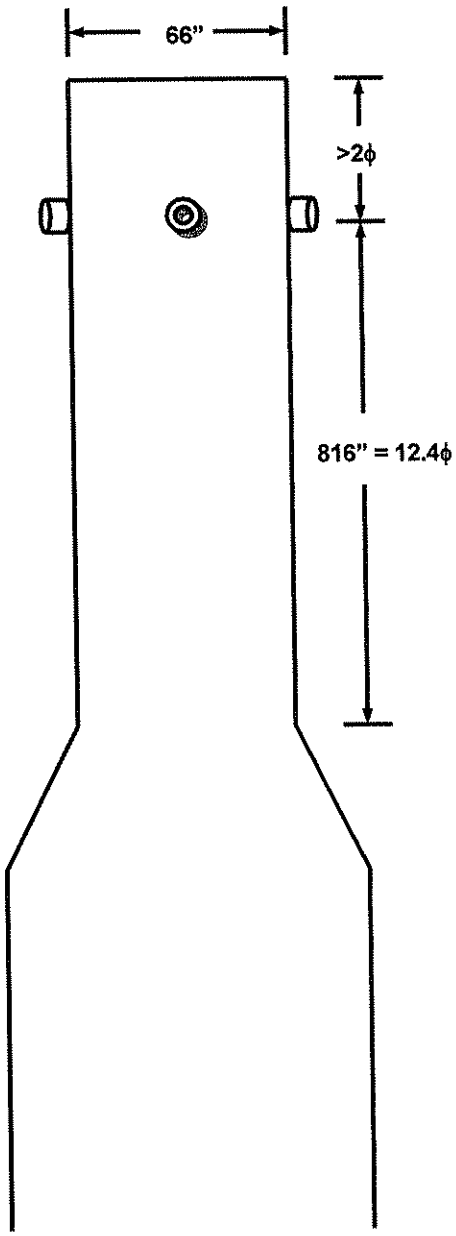
Stork SwL Project No. 08061098B

Run No.	Date	Time Period	SRU 2 Acid Gas to Thermal Reactor MSCFH	SRU 2 Sulfur Production Ton/Day	SRU 3 Acid Gas to Thermal Reactor MSCFH	SRU 3 Sulfur Production Ton/Day	TOTAL Acid Gas to Thermal Reactor MSCFH	TOTAL Sulfur Production Ton/Day	TGTU 1 Incinerator Fuel Gas to Incinerator MSCFH	TGTU 1 Incinerator Firebox Temperature °F
TGTU 1										
1	7-Nov-08	0730-0830	225.68	179.51	225.03	179.11	450.71	358.62	19.33	1,425.3
2	7-Nov-08	0855-0955	225.69	179.68	224.95	179.05	450.64	358.73	19.46	1,424.8
3	7-Nov-08	1015-1115	225.66	179.66	225.20	179.26	450.86	358.92	19.50	1,424.1
		Average:	**225.68**	**179.62**	**225.06**	**179.14**	**450.74**	**358.76**	**19.43**	**1,424.7**

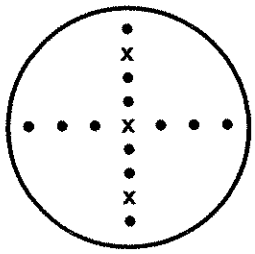
NOTE: SRU 2 and SRU 3 are routed to TGTU 1

Run No.	Date	Time Period	SRU 4 Acid Gas to Thermal Reactor MSCFH	SRU 4 Sulfur Production Ton/Day	SRU 4 SWS Acid Gas to Thermal Reactor MSCFH	SRU 4 SWS Sulfur Production Ton/Day	TOTAL Acid Gas to Thermal Reactor MSCFH	TOTAL Sulfur Production Ton/Day	TGTU 2 Incinerator Fuel Gas to Incinerator MSCFH	TGTU 2 Incinerator Firebox Temperature °F
TGTU 2										
1	6-Nov-08	0740-0840	465.37	394.22	81.22	N/A	546.59	394.22	13.31	1,429.8
2	6-Nov-08	0905-1005	471.82	399.06	80.07	N/A	551.89	399.06	13.35	1,430.3
3	6-Nov-08	1025-1125	468.28	396.15	79.67	N/A	547.95	396.15	13.18	1,428.8
		Average:	**468.49**	**396.48**	**80.32**	**N/A**	**548.81**	**396.48**	**13.28**	**1,429.6**

NOTE: SRU 4 is routed to TGTU 2



Cross-sectional View



- • Velocity/Temperature sample point locations
- X $NOx/CO/O_2/VOCs$ traverse points located at 16.7, 50.0 and 83.3% of stack diameter

4 – 3" ports, PE = 11 ½", no monorail brackets

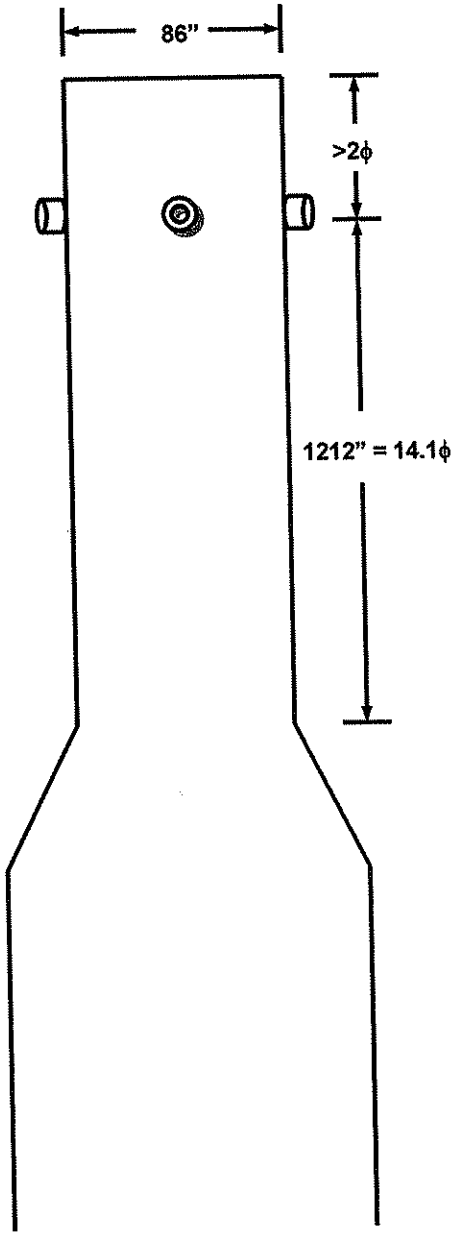
All runs performed at sample point 1 as no stratification was detected.

Velocity Traverse Points

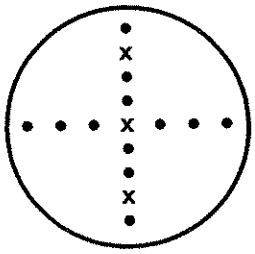
Sample Point No.	Percent of Diameter	Distance from References, inches
1	4.4	2.90
2	14.6	9.64
3	29.6	19.54
4	70.4	46.46
5	85.4	56.36
6	95.6	63.10

Motiva Enterprises, LLC
Port Arthur, Texas

TGTU 1



Cross-sectional View



- • Velocity/Temperature sample point locations
- X NOx/CO/O_2/VOCs traverse points located at 16.7, 50.0 and 83.3% of stack diameter

3 – 3" ports, PE = 9 ½", no monorail brackets

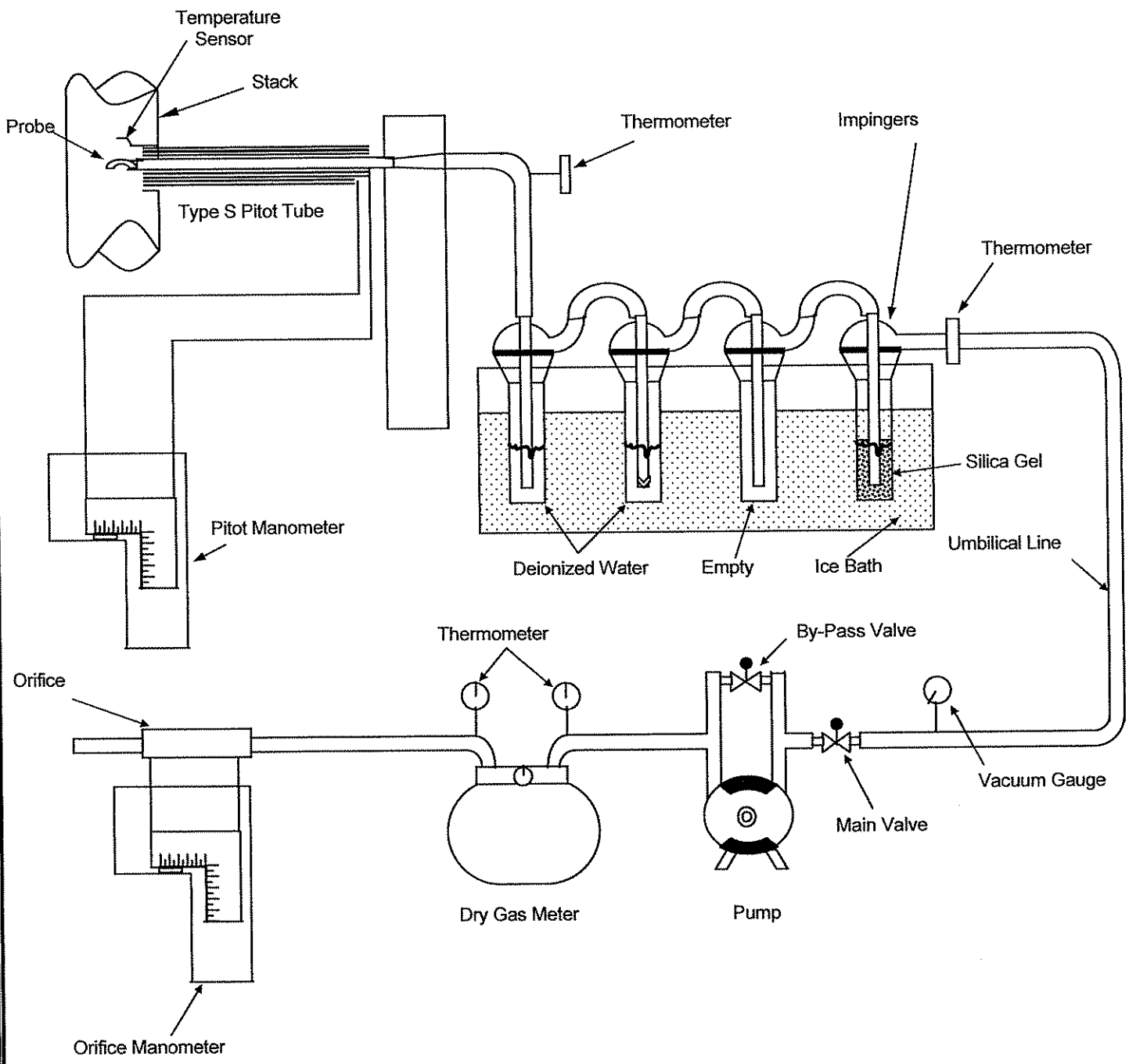
All runs performed at sample point 1 as no stratification was detected.

Velocity Traverse Points

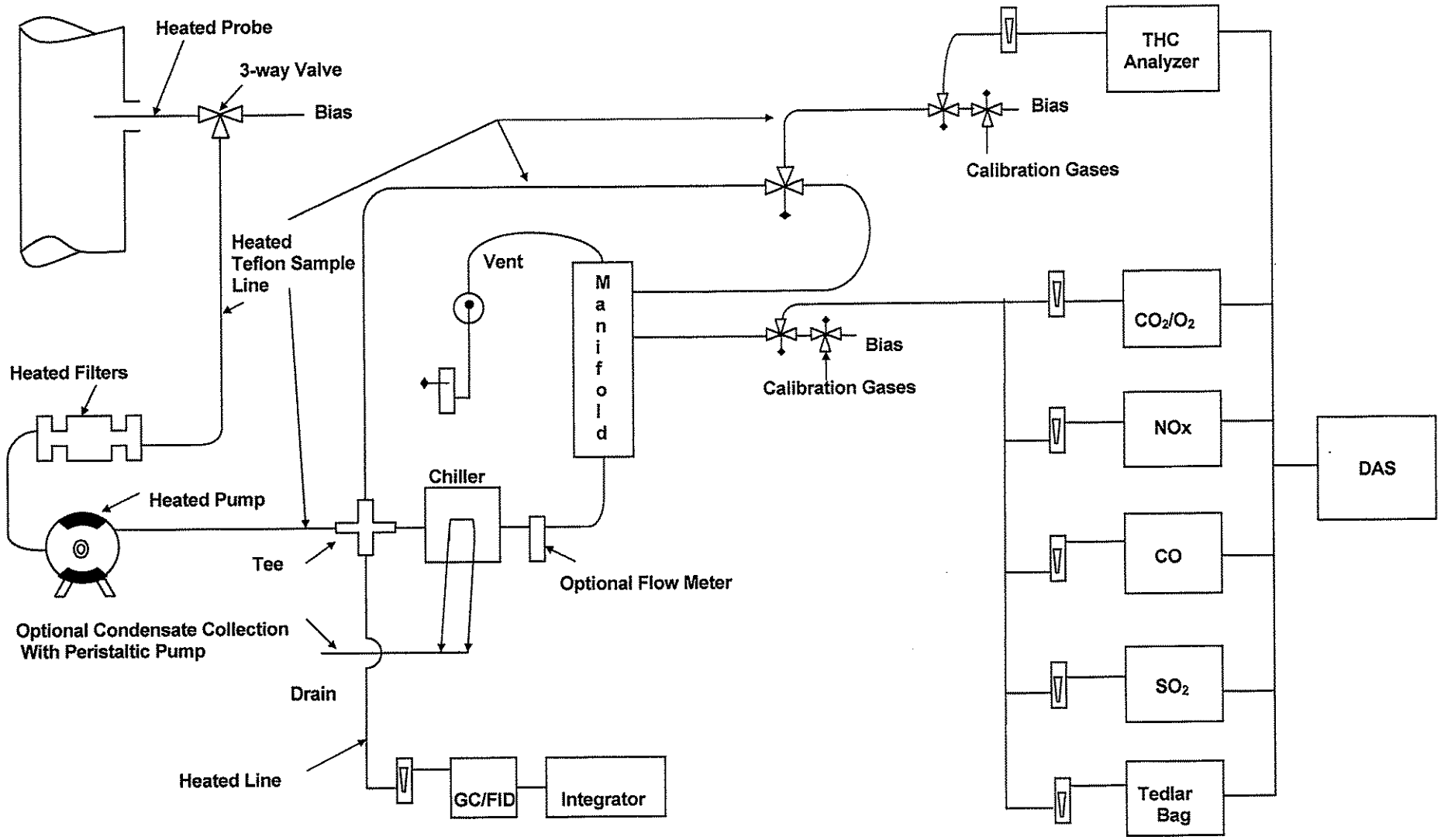
Sample Point No.	Percent of Diameter	Distance from References, inches
1	4.4	3.78
2	14.6	12.56
3	29.6	25.46
4	70.4	60.54
5	85.4	73.44
6	95.6	82.22

Motiva Enterprises, LLC
Port Arthur, Texas

TGTU 2



EPA METHODS 1-4 SOURCE SAMPLING TRAIN



EPA Method 3A, 6C, 7E, 10, 18, 20 and 25A
Instrumental Analyzer Technique

Motiva
TGTU 1
Port Arthur, TX

Stork Southwestern Laboratories, Inc.

Houston, Texas

Diameter of Stack =	66.00	inches

E. P. A. Method 1-4 Analytical Data

Run No.	Sample Time min	Net Volume ft^3	Average $\sqrt{\Delta P}$ in H_2O	Average ΔH in H_2O	Avg Stack Temp. °F	Avg Meter Temp. °F	Meter P P_m in Hg	Stack P P_s in Hg	DGMCF	Pitot Correction C_p	Stack Area A_s ft^2
1	60	33.203	0.5136	1.00	1,234	64	30.12	29.95	0.9961	0.840	23.7583
2	60	33.398	0.5132	1.00	1,251	69	30.12	29.95	0.9961	0.840	23.7583
3	60	33.736	0.4990	1.00	1,252	72	30.12	29.95	0.9961	0.840	23.7583

Run No.	Date	Time
1	11/7/2008	0730-0830
2	11/7/2008	0855-0955
3	11/7/2008	1015-1115

E. P. A. Isokinetic Methods Flow Calculations

1 Vs (ft/sec) = 85.49 x Cp x $\sqrt{\Delta P}$ x $\sqrt{(Ts / MWSG \times P_s)}$

2 ACFM (ft^3/min) = V_s x 60 x A_s

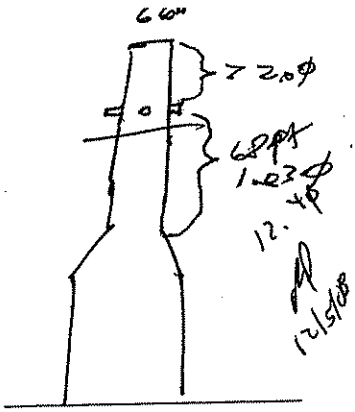
3 Q_{sd} = 60 x [1 - ($\%H_2O$ / 100)] x ACFM x [528 / (T_s + 460)] x (P_s / 29.92)

4 I (%) = 0.0945 x (T_s + 460) x V_m (std) / [P_s x V_s x A_n x Sample Time x (1 - (%H2O / 100))]

Run No.	Total H_2O Collected ml	Flue Gas Data			Flow Calculations			1	2	3
		% CO_2	% O_2	% N_2	V_m (std) dscf	% H_2O	MWSG g/g mole	Vs ft/sec	ACFM ft^3/min	Qsd dscf/hr
1	82.3	5.5	3.46	91.0	33.549	10.35	27.878	52.53	74,888.32	1,256,791.9
2	69.3	3.5	3.94	92.6	33.427	8.89	27.765	52.86	75,357.81	1,272,508.1
3	88.8	4.0	3.90	92.1	33.575	11.07	27.601	51.57	73,511.39	1,210,917.4

JVG/MD

STORK SOUTHWESTERN LABORATORIES, INC.
AIR EMISSIONS SERVICES DIVISION



STACK SCHEMATIC

FACILITY: Motiva
CITY, STATE: Port Arthur, Tx
TECHNICIAN: RM, GG
SOURCE NAME: SRU #1 → TGTU 1
DATE: 11-7-08
RUN(S): 1-3
BAROMETRIC PRESSURE: 30.05 inches Hg.
STACK I.D.: 66"
STATIC PRESSURE: -1.3 inches H2O
I.D by: Field Measurement ___ Engineering Drawing ___ Client Information ___
PORT EXTENSIONS: (1) 11 1/2" (2) 11 1/2" (3) 11 1/2" (4) 11 1/2"
CYCLONIC FLOW CHECK: N/A
Port Description: 4-3" Flanges
Monorail Brackets: Yes / No

TRAVERSE POINT NO.	% OF STACK DIAMETER	DIST. FROM REFERENCE (inches)	RUN NO. 1 TIME: 0735		RUN NO. 2 TIME: 0907		RUN NO. 3 TIME: 1024	
			ΔP	T_s	ΔP	T_s	ΔP	T_s
1	4.4	2.90	0.22	1308	0.19	1288	0.22	1323
2	14.6	9.64	0.33	1309	0.27	1298	0.29	1319
3	29.6	19.54	0.34	1278	0.32	1261	0.32	1291
4	70.4	46.46	0.33	1245	0.33	1235	0.32	1255
5	85.4	56.36	0.30	1237	0.27	1237	0.29	1250
6	95.6	63.10	0.18	1008	0.13	1169	0.15	1086
1			0.19	1287	0.25	1315	0.17	1317
2			0.27	1291	0.35	1305	0.28	1313
3			0.31	1274	0.32	1263	0.32	1287
4			0.32	1246	0.32	1251	0.32	1255
5			0.29	1243	0.30	1250	0.24	1247
6			0.14	1082	0.17	1136	0.13	1086
AVERAGES: SQ.RT. ΔP, T_s			0.5136	1234	0.5132	1251	0.4990	1252

TEMPERATURE ID: M-8
PROBE ID: I-10
PITOT CORRECTION FACTOR: 0.840
UMBILICAL ID: U25-E2

Run No.	PITOT LEAK CHECK Pretest	PITOT LEAK CHECK Post-test	FYRITE ANALYSIS CO_2	FYRITE ANALYSIS O_2
1	✓ 2.7"	✓ 2.4"	5.5	Tracker
2	✓ 2.6"	✓ 2.5"	3.5	Tracker
3	✓ 2.5"	✓ 2.7"	4.0	Tracker

Stork Southwestern Laboratories, Inc.

Facility: Motiva
City, State: Port Arthur Tx
Source: SRU #1 TGTU 1 R
Date: 11-7-08 Oper.: RM Sample No.: 1
Meter No.: M-8 DGMCF: 0.9961 Umb. ID: U25-H2O
ΔH @ Box: 1.8499 Filter No.: N/A Heater ID: N/A
Stack Press.: -1.3 Data: H2O Imp. ID: IC-3
Stack ID (Port): 66" (11½") Platform Ht.: 100' Ass. Moist.: N/A
Silica Gel No.: SG 002 Baro. ID: T-3 Bar. Pres.: 30.05
Probe No.: Flex Liner PTCF: N/A Probe Liner: N/A
Nozzle No.: N/A Nozzle Area: N/A
Store 6: — Store 7:
Leak Rate: Initial <0.01 @ 13" Final <0.01
Pitot Leak Check: Initial ✓ @ 7" Final ✓ @ 4"
Gas Analysis (Fyrite / Orsat / Analyzer): CO_2 5.5 O_2 Trailer
CO_2 5.5 O_2 Trailer CO2 5.5 O2 Trailer
Avg. Gas Analysis: CO_2 5.5 O_2 Trailer

Moisture Data:	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Impinger Solution:	DI	DI	Empty	SG	
Final Vol or Wt (ml or g)	170	102	1	276.1	
Initial Vol or Wt (ml or g)	100	100	0	266.8	
Net Increase (ml or g)	70	2	1	9.3	

Rinse Data:	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Rinse Solution:					
Rinse Volume (ml)					
Final Sample Volume, Including Rinse (ml)					

Total Water Collected (TWW) [Imp. + SG*] = 82.3 ml
* Converted to ml by dividing by the density of H_2O (g/ml)

Meter Pressure (Pm) = 30.05 + 1.0 = 30.12

Stack Pressure (Ps) = 30.05 + (13.6 / 13.6) -1.3 = 29.95

% Moisture = (0.04707 x TWW) x 100 / Vm(std) + (0.04707 x TWW) =

Source Sampling Field Data

Pts	Time Minutes (24 hrs.)	Dry Gas Meter Reading ft³	Inches H2O ΔP	Inches H2O ΔH	Line Vac. " Hg	Temperature °F Stack Ts	Probe	Heater Box	Last Imp.	Meter Inlet	Meter Outlet
1	0730	530.743	N/A	1.0	2	N/A	N/A	N/A	61	61	60
2	0735	533.46			2				59	62	61
3	0740	536.22			2				58	63	62
4	0745	539.02			2				61	64	61
5	0750	541.76			2				62	66	62
6	0755	544.52			2				63	66	62
7	0800	547.28			2				63	67	63
8	0805	550.04			2				63	68	63
9	0810	552.81			2				63	68	63
10	0815	555.58			2				64	68	64
11	0820	558.38			2				63	69	64
12	0825	561.16			2				64	70	65
Stop	0830	563.946									
	60 min Sample Time	33.203 Net Volume	N/A Avg. √ΔP	1.0 Avg. ΔH		N/A Avg. Stack					64 Avg. Meter (AMT)

Vm(std) = _____ (Net Volume) x _____ (DGMCF) x 528 std Temp (R) / AMT (R) x _____ / 29.92 std press. Pm = _____ dscf

Stork Southwestern Laboratories, Inc.

Facility: Motiva
City, State: Port Arthur, Tx
Source: ~~SRU #1~~ TG TU 1
Date: 11-7-08 Oper. RM Sample No. 2
Meter No. M-8 DGMCF 0.9961 Umb. ID U25-H2O
ΔH @ Box 1.8499 Filter No. N/A Heater ID N/A
Stack Press. -1.3 Data H2O Imp. ID IC-3
Stack ID (Port) 66" (11 1/2") Platform Ht. ~100' Ass. Moist. N/A
Silica Gel No. SG-63 Baro. ID T-3 Bar. Pres. 30.05
Probe No. Flex Line PTCF N/A Probe Liner N/A
Nozzle No. N/A Nozzle Area N/A
Store 6 — Store 7 —
Leak Rate: Initial <0.01 @ 5" Final <0.01 @ 5"
Pitot Leak Check: Initial ✓ @ 6" Final ✓ @ 5"
Gas Analysis (Fyrite / Orsat / Analyzer): CO_2 3.5 O_2 Trailer
CO_2 3.5 O_2 Trailer; CO2 3.5 O2 Trailer
Avg. Gas Analysis: CO_2 3.5 O_2 Trailer

Moisture Data:	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Impinger Solution:	DI	DI	Empty	SG	
Final Vol or Wt (ml or g)	162	102	0	285.8	
Initial Vol or Wt (ml or g)	100	100	0	260.5	
Net Increase (ml or g)	62	2	0	5.3	

Rinse Data:	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Rinse Solution:					
Rinse Volume (ml)					
Final Sample Volume, Including Rinse (ml)					

Total Water Collected (TWW) [Imp. + SG*] = 69.3 ml ✓ rd
* Converted to ml by dividing by the density of H_2O (g/ml)

Meter Pressure (Pm) = 30.05 + 1.0 = 30.12 ✓
Stack Pressure (Ps) = 30.05 + (13.6 / 13.6) -1.3 = 29.95 ✓
% Moisture = (0.04707 x TWW) x 100 / Vm(std) + (0.04707 x TWW) = 8.89% ✓

Source Sampling Field Data

Pts	Time Minutes (24 hrs.)	Dry Gas Meter Reading ft³	Inches H2O ΔP	Inches H2O ΔH	Line Vac. " Hg	Temperature °F Stack Ts	Probe	Heater Box	Last Imp.	Meter Inlet	Meter Outlet
1	0855	564.132	N/A	1.0	2	N/A	N/A	N/A	63	64	64
2	0900	566.88			2				60	66	65
3	0905	569.66			2				56	67	66
4	0910	572.44			2				58	69	66
5	0915	575.21			2				59	70	66
6	0920	578.01			2				59	71	66
7	0925	580.79			2				59	72	67
8	0930	583.57			2				59	72	68
9	0935	586.35			2				59	73	68
10	0940	589.13			2				60	74	69
11	0945	591.93			2				59	74	69
12	0950	594.72			2				59	74	69
Stop	0955	597.530									
	60 min Sample Time	33.398 Net Volume	N/A Avg. √ΔP	1.0 Avg. ΔH		N/A Avg. Stack					69 Avg. Meter (AMT)

Vm(std) = 33.398 (Net Volume) x 0.9961 (DGMCF) x 528 / 529 std Temp (R) / AMT (R) x 30.12 / 29.92 Pm / std press. = 33.429 dscf ✓

ΔP - 0.5132
Ts - 1251

Stork Southwestern Laboratories, Inc.

Facility: Motiva
City, State: Port Arthur, Tx.
Source: SRU #1 TGTU 1
Date: 11-7-08 | Oper.: RM | Sample No.: 3
Meter No.: M-8 | DGMCF: 0.9961 | Umb. ID: U25-H2O
ΔH @ Box: 1.8499 | Filter No.: N/A | Heater ID: N/A
Stack Press.: -1.3 | Data: H2O | Imp. ID: IC-3
Stack ID (Port): 66" (11½") | Platform Ht.: 100' | Ass. Moist.: N/A
Silica Gel No.: 5GA9 | Baro. ID: T-3 | Bar. Pres.: 30.05
Probe No.: Flex Line | PTCF: N/A | Probe Liner: N/A
Nozzle No.: N/A | Nozzle Area: N/A
Store 6: — | Store 7: —
Leak Rate : Initial <0.01 @ 15" | Final <0.01 @ 5"
Pitot Leak Check: Initial ✓ @ 5" | Final ✓ @ 7"
Gas Analysis (Fyrite / Orsat / Analyzer) : CO_2 4.0 O_2 Trailer
CO_2 4.0 O_2 Trailer; CO2 4.0 O2 Trailer
Avg. Gas Analysis : CO_2 4.0 O_2 Trailer

Moisture Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Impinger Solution :	DI	DI	Empty	SG	
Final Vol or Wt (ml or g)	180	102	0	268.1	
Initial Vol or Wt (ml or g)	100	100	0	261.3	
Net Increase (ml or g)	80	2	0	6.8	

Rinse Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Rinse Solution :					
Rinse Volume (ml)					
Final Sample Volume, Including Rinse (ml)					

Total Water Collected (TWW) [Imp. + SG*] = 88.8 ml
* Converted to ml by dividing by the density of H_2O (g/ml)

Meter Pressure (Pm) = 30.05 + 1.0 = 30.12

Stack Pressure (Ps) = 30.05 + 13.6/13.6 (-1.3) = 29.95

% Moisture = (0.04707 x TWW) x 100 / Vm(std) + (0.04707 x TWW) = _____

Source Sampling Field Data

Pts	Time Minutes (24 hrs.)	Dry Gas Meter Reading ft³	Inches H_2O ΔP	Inches H_2O ΔH	Line Vac. " Hg	Temperature °F Stack T_s	Probe	Heater Box	Last Imp.	Meter Inlet	Meter Outlet
1	1015	597.684	N/A	1.0	2	N/A	N/A	N/A	67	70	69
2	1020	600.66			2				52	71	70
3	1025	603.44			2				52	71	69
4	1030	606.24			2				54	73	70
5	1035	609.04			2				54	74	70
6	1040	611.84			2				55	74	70
7	1045	614.64			2				55	75	71
8	1050	617.44			2				55	76	71
9	1055	620.24			2				56	76	71
10	1100	623.04			2				56	75	71
11	1105	625.83			2				56	75	72
12	1110	628.63			2				56	75	72
Stop	1115	631.420	—	—	—	—		—	—	—	—
	60min Sample Time	33.736 Net Volume	N/A Avg. √ΔP	1.0 Avg. ΔH		N/A Avg. Stack				72 Avg. Meter (AMT)	

Vm(std) = _____ (Net Volume) x _____ (DGMCF) x 528 std Temp (R) / AMT (R) x _____ / 29.92 std press. Pm = _____ dscf

Motiva
Port Arthur, Tx
11/7/2008

Source: TGTU 1

Analyst: VG

NO_x, CO, O_2 and SO_2 Calibration - Adjusted for Zero and Span Drift and Bias

Analyzer	Span of Analyzer ppm, % *	Span Gas Concentration ppm, % *	Span Gas Cylinder Number	Expiration Date	Calibration Error Value Zero	Calibration Error Value Mid Level	Fuel F-Factor HHV dscf/mmBtu	Gross Caloric Value HHV Btu/ft³
CO	486.0	246.00	ALM046015	3/25/2010	0.18	246.46	NA	NA
NO_x	230.0	126.00	ALM025220	3/29/2009	0.28	126.11		
O_2	23.2	13.40	CC82281	8/20/2010	-0.14	13.68		

	CO	NOx	O2	SO2
Initial Zero Bias - % of Span	0.03	0.00	-0.86	NA
Initial Span Bias - % of Span	-0.90	-2.05	-1.16	NA

Drift and Bias Limits	
Drift	+/- 3% of Span
Bias	+/- 5% of Span

Run No.	Zero Gas Initial Reading	Zero Gas Final Reading	Zero Gas Difference ppm, % *	Zero Gas % Drift	Zero Gas % Bias	Span Gas Initial Reading	Span Gas Final Reading	Span Gas Difference ppm, % *	Span Gas % Drift	Span Gas % Bias
1 CO	0.33	0.24	-0.09	-0.02	0.01	242.07	244.71	2.64	0.54	-0.36
NO_x	0.29	0.30	0.01	0.00	0.01	121.39	121.89	0.50	0.22	-1.83
O_2	-0.34	-0.38	-0.04	-0.17	-1.03	13.41	13.03	-0.38	-1.64	-2.80
2 CO	0.24	0.12	-0.12	-0.02	-0.01	244.71	242.65	-2.06	-0.42	-0.78
NO_x	0.30	0.29	-0.01	0.00	0.00	121.89	121.39	-0.50	-0.22	-2.05
O_2	-0.38	-0.49	-0.11	-0.47	-1.51	13.03	13.49	0.46	1.98	-0.82
3 CO	0.12	-0.07	-0.19	-0.04	-0.05	242.65	241.70	-0.95	-0.20	-0.98
NO_x	0.29	0.30	0.01	0.00	0.01	121.39	121.41	0.02	0.01	-2.04
O_2	-0.49	-0.35	0.14	0.60	-0.91	13.49	13.71	0.22	0.95	0.13

EQUATIONS:

% Drift =[(Final Reading - Initial Reading)/Instrument Span] x 100
% Bias =[(Final Reading - Calibration Error Value) /Instrument Span] x 100
(NOTE: Initial Bias uses Initial Reading in place of Final Reading)

VG/AP

Run No.	Uncorrected Stack Gas Concentration ppm, % *	Average of Zero.Gas	Average of Span Gas	Corrected Stack Gas Concentration ppm, % *	C Concentration in lb/dscf	C Concentration ppmvd@3%O2	SRU 1 Date Time
1 CO	7.32	0.29	243.39	7.12	5.176E-07	na	11/7/2008
NO_x	14.30	0.30	121.64	14.54	1.737E-06		0730-0830
O_2	3.15	-0.36	13.22	3.46			
2 CO	6.10	0.18	243.68	5.98	4.348E-07	na	11/7/2008
NO_x	14.44	0.30	121.64	14.69	1.754E-06		0855-0955
O_2	3.59	-0.44	13.26	3.94			
3 CO	4.60	0.03	242.18	4.65	3.379E-07	na	11/7/2008
NO_x	15.02	0.30	121.40	15.32	1.830E-06		1015-1115
O_2	3.66	-0.42	13.60	3.90			
Avg. CO				5.92	4.301E-07	na	
NO_x				14.85	1.774E-06		
O_2				3.77			

Run No.	Method 19 Calculations			Methods 1-4 Calculation		Allowable Emission Rate lb/hr	Precent of Allowable Emission Rate
	Emission Rate lb/mmBtu **	Fuel Flow Rate MSCFH	Emission Rate lb/hr	Q_{sd} dscf/hr	Emission Rate lb/hr		
1 CO	NA	NA	NA	1,256,791.9	0.65	10.89	6.0
NO_x	NA	NA	NA	1,256,791.9	2.18	6.00	36.4
2 CO	NA	NA	NA	1,272,508.1	0.55	10.89	5.1
NO_x	NA	NA	NA	1,272,508.1	2.23	6.00	37.2
3 CO	NA	NA	NA	1,210,917.4	0.41	10.89	3.8
NO_x	NA	NA	NA	1,210,917.4	2.22	6.00	36.9
Avg. CO	NA	NA	NA	1,246,739.1	0.54	10.89	4.9
NO_x	NA	NA	NA	1,246,739.1	2.21	6.00	36.8

Note * O_2 is expressed in percent. ** lb/mmBtu is calculated using 0% O_2 and the HHV F-Factor.

EQUATIONS:

lb/mmBtu = C x F x [20.9/(20.9-%O2)]

Method 19 lb/hr = lb/mmBtu x Fuel Flow Rate x Gross Calorific Value 1x10-6

Method 1-4 lb/hr = C x Qsd

JVG 1/19

Stork Southwestern Laboratories, Inc.
Houston, Texas

Motiva
Port Arthur, TX

Source: TGTU 1 **Analyst:** Name Vicente

11/7/2008 VOC Calculation - Adjusted for Zero and Span Drift and Bias **Wet Basis**

Span of THC Analyzer =	100	**Concentration of THC Span Gas =**	46.03
Cylinder Number :	ALM017147	**Expiration Date:**	8/1/2011

Run No.	Zero Gas Initial Reading	Zero Gas Final Reading	Zero Gas Difference ppm, wet	Zero Gas % Drift	Span Gas Initial Reading	Span Gas Final Reading	Span Gas Difference ppm, wet	Span Gas % Drift
1	0.63	0.51	-0.12	-0.12	44.59	45.62	1.03	1.03
2	0.51	0.51	0.00	0.00	45.62	45.08	-0.54	-0.54
3	0.51	-0.55	-1.06	-1.06	45.08	45.81	0.73	0.73

Run No. 1 Injection Time or No.	Run No. 1 Methane ppmv, wet	Run No. 1 Ethane ppmv, wet	Run No. 2 Injection Time or No.	Run No. 2 Methane ppmv, wet	Run No. 2 Ethane ppmv, wet	Run No. 3 Injection Time or No.	Run No. 3 Methane ppmv, wet	Run No. 3 Ethane ppmv, wet
1	0.0000	0.0000	1	0.0000	0.0000	1	4.3700	0.9600
2	0.0000	0.0000	2	0.0000	0.0000	2	3.1200	0.0000
3	0.0000	0.0000	3	0.0000	0.0000	3	3.9300	0.0000
4	0.0000	0.0000	4	0.0000	0.0000	4	4.4000	0.0000
5	0.0000	0.0000	5	0.0000	0.0000	5	2.4300	0.0000

Run No.	Uncorrected Stack Gas Conc. ppmv, wet	Average of Zero Gas ppmv	Average of Span Gas ppmv	Bias Adj. Stack Gas Conc. ppmv, wet	Average Methane Conc. ppmv, wet	Average Ethane Conc. ppmv, wet	Moisture %	Corrected VOC* Conc. ppmv, wet
1	0.00	0.57	45.11	-0.59	0.00	0.00	10.35	-0.59
2	0.04	0.51	45.35	-0.48	0.00	0.00	8.89	-0.48
3	-0.29	-0.02	45.45	-0.27	3.65	0.19	11.07	-1.62

Run No.	Corrected VOC** Conc. ppmv, dry	VOC** C Conc. lb/dscf	Q_{sd} dscf/hr	VOC Emission Rate lb/hr	Allowable Limit lb/hr	Percent of Allowable	Date	Time
1	< 0.10	< 1.142E-08	1,256,791.9	< 0.014	0.40	< 3.6	11/7/2008	0730-830
2	< 0.10	< 1.142E-08	1,272,508.1	< 0.015	0.40	< 3.6	11/7/2008	0855-0955
3	< 0.10	< 1.142E-08	1,210,917.4	< 0.014	0.40	< 3.5	11/7/2008	1015-1115
Average	**< 0.10**	**< 1.142E-08**	**1,246,739.1**	**< 0.014**	**0.40**	**< 3.6**		

Note: % Drift = ((Final Reading - Initial Reading) / Span) x 100

Bias Adj. $_{as\ propane}$ = (Uncorr. Stack Gas - Avg. Zero) x (Span Gas Conc. / (Avg. Span Gas - Avg. Zero))

* Corr. VOC $_{as\ propane}$ = ((Bias Adj. x 3) - (Avg. Methane + (Avg. Ethane x 2))) / 3

** Corr. VOC $_{as\ propane}$ = ppm wet / (1 - ($\%H_2O$ / 100))

C (lb / dscf) = (Corr. VOC x 44 x 6.242 x 10^{-8}) / 24.04

VOC (lb/hr) = C x Q_{sd}

Stork SwL calculates emissions based upon a detectable limit of 0.10 ppmvd if a negative result is produced by drift and bias.

JVG/MD

Motiva
TGTU 1
Port Arthur, Texas
'08061098
File Name: 11-07-08_06-30

Date & Time M/D/Y H:M	CO ppm	NOx ppm	O2 %	THC ppm
11/7/2008 7:31	4.95	14.31	3.14	-0.26
11/7/2008 7:32	7.25	14.31	3.24	-0.24
11/7/2008 7:33	11.45	14.32	3.24	-0.28
11/7/2008 7:34	18.47	14.15	3.33	-0.25
11/7/2008 7:35	15.51	14.32	3.17	-0.23
11/7/2008 7:36	8.82	14.32	3.2	-0.14
11/7/2008 7:37	12.6	14.32	3.28	-0.1
11/7/2008 7:38	15.58	14.31	3.28	-0.18
11/7/2008 7:39	12.61	14.31	3.18	-0.15
11/7/2008 7:40	12.12	14.31	3.19	-0.14
11/7/2008 7:41	9.73	14.31	3.19	-0.08
11/7/2008 7:42	8.47	14.31	3.16	-0.07
11/7/2008 7:43	6.94	14.34	3.11	-0.05
11/7/2008 7:44	4.54	14.36	3.03	-0.02
11/7/2008 7:45	2.41	14.31	2.98	0.08
11/7/2008 7:46	2.69	14.31	3.03	0.13
11/7/2008 7:47	3.8	14.32	3.04	0.16
11/7/2008 7:48	4.48	14.32	3.07	0.14
11/7/2008 7:49	5.63	14.32	3.13	0.05
11/7/2008 7:50	6.8	14.32	3.17	0.06
11/7/2008 7:51	7.41	14.15	3.21	0.06
11/7/2008 7:52	7.58	14.31	3.17	0.07
11/7/2008 7:53	5.71	14.31	3.15	0.04
11/7/2008 7:54	5.57	14.31	3.16	0.09
11/7/2008 7:55	9.44	14.27	3.24	0.12
11/7/2008 7:56	11.3	14.19	3.25	0.11
11/7/2008 7:57	9.85	14.31	3.22	0.11
11/7/2008 7:58	6.77	14.31	3.16	0.11
11/7/2008 7:59	5.71	14.31	3.14	0.16
11/7/2008 8:00	5.82	14.27	3.18	0.15
11/7/2008 8:01	5.12	14.11	3.11	0.07
11/7/2008 8:02	6.21	14.32	3.16	0.1
11/7/2008 8:03	8.32	14.32	3.17	0.15
11/7/2008 8:04	8.76	14.24	3.19	0.17
11/7/2008 8:05	9.78	14.32	3.21	0.14
11/7/2008 8:06	11.9	14.32	3.25	0.14
11/7/2008 8:07	16.21	14.31	3.29	0.15
11/7/2008 8:08	18.93	13.98	3.29	0.1
11/7/2008 8:09	15.17	14.31	3.23	0.1
11/7/2008 8:10	11.76	14.31	3.16	0.06
11/7/2008 8:11	6.59	14.31	3.12	0.05
11/7/2008 8:12	4.05	14.31	3.1	0.03
11/7/2008 8:13	2.74	14.4	3.02	0
11/7/2008 8:14	3.14	14.32	3.06	0.03
11/7/2008 8:15	3.5	14.32	3.07	0.02
11/7/2008 8:16	3.68	14.32	3.11	0.05
11/7/2008 8:17	4.28	14.4	3.1	-0.04
11/7/2008 8:18	3.3	14.32	3.12	-0.14
11/7/2008 8:19	2.91	14.32	3.08	-0.16
11/7/2008 8:20	3.73	14.31	3.14	-0.18
11/7/2008 8:21	3.37	14.31	3.09	-0.14
11/7/2008 8:22	3.82	14.25	3.09	-0.09
11/7/2008 8:23	4.68	14.29	3.12	-0.1
11/7/2008 8:24	3.98	14.31	3.11	-0.11
11/7/2008 8:25	3.85	14.31	3.13	-0.09
11/7/2008 8:26	3.91	14.31	3.06	-0.02
11/7/2008 8:27	4.08	14.31	3.12	-0.01
11/7/2008 8:28	3.49	14.32	3.07	0.01
11/7/2008 8:29	3.47	14.32	3.07	-0.05
11/7/2008 8:30	4.42	14.32	3.14	0.01
Avg =	**7.32**	**14.30**	**3.15**	**0.00**
	60	60	60	60

Motiva
TGTU 1
Port Arthur, Texas
'08061098
File Name: 11-07-08_06-30

Date & Time M/D/Y H:M	CO ppm	NOx ppm	O2 %	THC ppm
11/7/2008 8:56	5.18	14.4	3.59	-0.05
11/7/2008 8:57	6.09	14.31	3.65	-0.06
11/7/2008 8:58	6.29	14.32	3.64	-0.01
11/7/2008 8:59	6.75	14.32	3.59	0.02
11/7/2008 9:00	7.22	14.4	3.66	0.09
11/7/2008 9:01	6.73	14.32	3.64	0.11
11/7/2008 9:02	6.36	14.31	3.55	0.09
11/7/2008 9:03	6.32	14.31	3.59	0.12
11/7/2008 9:04	5.3	14.38	3.56	0.1
11/7/2008 9:05	5.86	14.32	3.63	0.16
11/7/2008 9:06	6.4	14.31	3.59	0.14
11/7/2008 9:07	6.25	14.56	3.57	0.13
11/7/2008 9:08	6.23	14.31	3.65	0.17
11/7/2008 9:09	5.76	14.31	3.69	0.07
11/7/2008 9:10	5.69	14.31	3.65	0.09
11/7/2008 9:11	7.9	14.31	3.57	0.04
11/7/2008 9:12	7.96	14.31	3.55	0.03
11/7/2008 9:13	7.91	14.31	3.62	0.03
11/7/2008 9:14	8.18	14.32	3.61	-0.08
11/7/2008 9:15	8.14	14.32	3.54	-0.09
11/7/2008 9:16	7.58	14.31	3.57	-0.03
11/7/2008 9:17	6.76	14.39	3.53	-0.09
11/7/2008 9:18	6.15	14.31	3.58	-0.13
11/7/2008 9:19	5.67	14.39	3.59	-0.1
11/7/2008 9:20	7.02	14.31	3.66	-0.13
11/7/2008 9:21	8.69	14.31	3.69	-0.15
11/7/2008 9:22	11.88	14.06	3.7	-0.19
11/7/2008 9:23	11.55	14.23	3.61	-0.19
11/7/2008 9:24	11.22	13.97	3.56	-0.17
11/7/2008 9:25	10.28	14.31	3.65	-0.18
11/7/2008 9:26	6.93	14.31	3.69	-0.19
11/7/2008 9:27	5.27	14.39	3.61	-0.21
11/7/2008 9:28	5.9	14.47	3.61	-0.22
11/7/2008 9:29	7.83	14.72	3.68	-0.27
11/7/2008 9:30	10.67	14.39	3.75	-0.24
11/7/2008 9:31	10.29	14.31	3.62	-0.21
11/7/2008 9:32	8.28	14.22	3.52	-0.21
11/7/2008 9:33	5.97	14.31	3.55	-0.2
11/7/2008 9:34	3.21	14.3	3.44	-0.15
11/7/2008 9:35	2.47	14.63	3.52	-0.08
11/7/2008 9:36	2.35	14.8	3.47	-0.02
11/7/2008 9:37	2.99	14.72	3.58	0
11/7/2008 9:38	4.36	14.4	3.54	0.02
11/7/2008 9:39	3.51	14.73	3.47	0.04
11/7/2008 9:40	2.98	14.65	3.54	0.01
11/7/2008 9:41	4.14	14.32	3.58	0.01
11/7/2008 9:42	4.87	14.31	3.64	0.09
11/7/2008 9:43	5.48	14.39	3.61	0.06
11/7/2008 9:44	5.91	14.72	3.63	0.11
11/7/2008 9:45	6.1	14.64	3.58	0.14
11/7/2008 9:46	4.06	14.64	3.52	0.21
11/7/2008 9:47	2.29	14.8	3.45	0.31
11/7/2008 9:48	1.79	14.8	3.4	0.32
11/7/2008 9:49	2.43	14.8	3.62	0.45
11/7/2008 9:50	2.77	14.72	3.67	0.44
11/7/2008 9:51	4.35	14.48	3.69	0.45
11/7/2008 9:52	5.6	14.72	3.6	0.51
11/7/2008 9:53	5.41	14.72	3.55	0.56
11/7/2008 9:54	4.36	14.8	3.52	0.55
11/7/2008 9:55	3.88	14.8	3.53	0.57
Avg =	**6.10**	**14.44**	**3.59**	**0.04**
	60	60	60	60

Motiva
TGTU 1
Port Arthur, Texas
'08061098
File Name: 11-07-08_06-30

Date & Time M/D/Y H:M	CO ppm	NOx ppm	O2 %	THC ppm
11/7/2008 10:16	8.27	14.8	3.54	-0.23
11/7/2008 10:17	7.8	14.8	3.61	-0.24
11/7/2008 10:18	5.84	14.8	3.6	-0.22
11/7/2008 10:19	5.02	14.64	3.49	-0.25
11/7/2008 10:20	5.21	14.37	3.31	-0.27
11/7/2008 10:21	4.49	14.55	3.24	-0.29
11/7/2008 10:22	4.18	14.55	4.01	-0.28
11/7/2008 10:23	5.6	14.57	3.79	-0.29
11/7/2008 10:24	5.13	14.8	3.8	-0.27
11/7/2008 10:25	4.58	14.8	3.79	-0.24
11/7/2008 10:26	4.95	14.8	3.77	-0.21
11/7/2008 10:27	5.4	14.55	3.83	-0.18
11/7/2008 10:28	3.31	14.75	3.76	-0.18
11/7/2008 10:29	3.75	14.81	3.75	-0.17
11/7/2008 10:30	4.12	14.81	3.88	-0.16
11/7/2008 10:31	3.82	15.14	3.73	-0.2
11/7/2008 10:32	3.3	14.81	3.62	-0.21
11/7/2008 10:33	3.09	14.8	3.61	-0.2
11/7/2008 10:34	3.11	14.91	3.71	-0.11
11/7/2008 10:35	3.48	14.94	3.71	-0.15
11/7/2008 10:36	3.4	14.8	3.62	-0.14
11/7/2008 10:37	4.92	15.14	3.76	-0.15
11/7/2008 10:38	5.08	14.8	3.81	-0.02
11/7/2008 10:39	4.99	14.8	3.74	-0.13
11/7/2008 10:40	4.15	14.81	3.74	-0.16
11/7/2008 10:41	5	14.81	3.71	-0.21
11/7/2008 10:42	5.63	14.81	3.81	-0.21
11/7/2008 10:43	4.74	14.81	3.78	-0.19
11/7/2008 10:44	4.32	14.89	3.67	-0.2
11/7/2008 10:45	4.97	14.81	3.6	-0.23
11/7/2008 10:46	5.13	14.8	3.69	-0.23
11/7/2008 10:47	4.39	14.91	3.81	-0.21
11/7/2008 10:48	3.35	15.3	3.66	-0.29
11/7/2008 10:49	3.25	15.14	3.83	-0.27
11/7/2008 10:50	3.6	15.3	3.85	-0.31
11/7/2008 10:51	3.71	15.3	3.74	-0.25
11/7/2008 10:52	5.14	15.3	3.91	-0.22
11/7/2008 10:53	7.34	15.05	3.82	-0.25
11/7/2008 10:54	7.22	15.3	3.85	-0.3
11/7/2008 10:55	6.41	15.22	3.65	-0.3
11/7/2008 10:56	3.84	15.3	3.62	-0.24
11/7/2008 10:57	3.17	15.31	3.69	-0.28
11/7/2008 10:58	3.71	15.31	3.67	-0.28
11/7/2008 10:59	3.51	15.31	3.53	-0.29
11/7/2008 11:00	3.2	15.31	3.52	-0.35
11/7/2008 11:01	4.23	15.31	3.64	-0.37
11/7/2008 11:02	5.65	15.31	3.81	-0.4
11/7/2008 11:03	6.7	15.31	3.68	-0.41
11/7/2008 11:04	6.73	15.31	3.49	-0.43
11/7/2008 11:05	5.29	15.39	3.46	-0.46
11/7/2008 11:06	4.72	15.31	3.5	-0.5
11/7/2008 11:07	4.78	15.3	3.47	-0.51
11/7/2008 11:08	4.3	15.3	3.5	-0.5
11/7/2008 11:09	3.55	15.39	3.45	-0.52
11/7/2008 11:10	3.99	15.3	3.46	-0.56
11/7/2008 11:11	4.09	15.3	3.49	-0.52
11/7/2008 11:12	4.43	15.3	3.5	-0.53
11/7/2008 11:13	3.82	15.3	3.54	-0.49
11/7/2008 11:14	3.05	15.3	3.5	-0.53
11/7/2008 11:15	2.31	15.3	3.53	-0.5
Avg =	**4.60**	**15.02**	**3.66**	**-0.29**
	60	60	60	60

Motiva
SRU 1 - TGTU 1
Port Arthur, Texas
'08061098
File Name: 11-07-08_06-29

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm

Motiva
SRU 1
Port Arthur, Texas
'08061098
File Name: 11-07-08_06-30

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm
11/7/2008 06:30	3.07	0.29	20.58	-1.20			
11/7/2008 06:31	9.55	8.05	1.75	-1.20			
11/7/2008 06:32	-0.52	0.29	-0.81	-1.02			
11/7/2008 06:33	-0.81	0.28	-0.29	3,333,340.20			
11/7/2008 06:34	-0.50	0.28	-0.14	2.06			
11/7/2008 06:35	-0.76	0.28	-0.46	1.61			
11/7/2008 06:36	0.18	108.30	21.08	1.80			
11/7/2008 06:37	0.23	241.75	24.11	1.71			
11/7/2008 06:38	145.46	243.50	[illegible]	0.63			
11/7/2008 06:39	474.03	243.58	[illegible]	1.25			
11/7/2008 06:40	481.00	219.48	17.85	77.68			
11/7/2008 06:41	480.84	138.71	13.85	79.37			
11/7/2008 06:42	480.90	133.58	13.87	79.47			
11/7/2008 06:43	469.48	202.06	13.68	78.98			
11/7/2008 06:44	288.87	243.66	1.58	74.70			
11/7/2008 06:45	246.46	244.00	0.66	30.64			
11/7/2008 06:46	246.31	243.99	0.64	29.41			
11/7/2008 06:47	244.50	243.99	0.57	29.21			
11/7/2008 06:48	69.86	236.74	0.58	27.30			
11/7/2008 06:49	0.64	229.75	0.56	43.18			
11/7/2008 06:50	0.63	229.98	0.46	49.79			
11/7/2008 06:51	0.53	221.24	0.43	44.23			
11/7/2008 06:52	0.31	134.53	3.79	29.72			
11/7/2008 06:53	-2.28	126.11	14.16	1.31			
11/7/2008 06:54	-1.46	125.35	3.94	39.47			
11/7/2008 06:55	0.45	125.38	0.58	44.59			
11/7/2008 06:56	0.45	77.63	0.56	43.33			
11/7/2008 06:57	0.33	1.39	0.67	25.33			
11/7/2008 06:58	0.55	0.79	13.79	6.78			
11/7/2008 06:59	-2.16	0.59	13.41	1.41			
11/7/2008 07:00	-2.47	0.29	13.39	1.35			
11/7/2008 07:01	-2.36	10.33	7.88	0.95			
11/7/2008 07:02	-0.54	112.55	-0.37	0.59			
11/7/2008 07:03	0.19	121.39	-0.89	0.58			
11/7/2008 07:04	0.22	121.57	-0.67	0.57			
11/7/2008 07:05	16.66	120.16	-0.55	0.47			
11/7/2008 07:06	214.08	27.78	-0.68	0.36			
11/7/2008 07:07	242.07	0.94	-0.50	0.33			
11/7/2008 07:08	242.32	0.69	-0.34	0.29			
11/7/2008 07:09	233.81	0.41	-0.28	1.66			
11/7/2008 07:10	110.83	0.77	13.39	2.51			
11/7/2008 07:11	7.13	8.53	7.76	0.50			
11/7/2008 07:12	6.71	12.61	3.26	-0.05			
11/7/2008 07:13	7.41	14.33	3.22	-0.04			
11/7/2008 07:14	6.49	14.53	3.17	-0.02			
11/7/2008 07:15	5.43	14.39	3.18	0.07			
11/7/2008 07:16	5.30	14.31	3.19	0.02			

Response 4x
Response 4x
Cl Error
&
bias
start check
PH

11/7/2008 07:17	7.01	14.31	3.21	-0.20
11/7/2008 07:18	8.80	14.31	3.24	-0.21
11/7/2008 07:19	8.69	14.32	3.22	-0.25
11/7/2008 07:20	7.33	14.32	3.19	-0.28
11/7/2008 07:21	6.81	14.32	3.22	-0.29
11/7/2008 07:22	8.34	14.32	3.23	-0.31
11/7/2008 07:23	9.14	14.32	3.21	-0.34
11/7/2008 07:24	7.06	14.31	3.17	-0.29
11/7/2008 07:25	5.45	14.31	3.18	-0.31
11/7/2008 07:26	6.33	14.31	3.17	-0.38
11/7/2008 07:27	8.10	14.31	3.18	-0.34
11/7/2008 07:28	8.19	14.31	3.22	-0.36
11/7/2008 07:29	9.56	14.31	3.23	-0.40
11/7/2008 07:30	5.68	14.31	3.13	-0.33
11/7/2008 07:31	4.95	14.31	3.14	-0.26
11/7/2008 07:32	7.25	14.31	3.24	-0.24
11/7/2008 07:33	11.45	14.32	3.24	-0.28
11/7/2008 07:34	18.47	14.15	3.33	-0.25
11/7/2008 07:35	15.51	14.32	3.17	-0.23
11/7/2008 07:36	8.82	14.32	3.20	-0.14
11/7/2008 07:37	12.60	14.32	3.28	-0.10
11/7/2008 07:38	15.58	14.31	3.28	-0.18
11/7/2008 07:39	12.61	14.31	3.18	-0.15
11/7/2008 07:40	12.12	14.31	3.19	-0.14
11/7/2008 07:41	9.73	14.31	3.19	-0.08
11/7/2008 07:42	8.47	14.31	3.16	-0.07
11/7/2008 07:43	6.94	14.34	3.11	-0.05
11/7/2008 07:44	4.54	14.36	3.03	-0.02
11/7/2008 07:45	2.41	14.31	2.98	0.08
11/7/2008 07:46	2.69	14.31	3.03	0.13
11/7/2008 07:47	3.80	14.32	3.04	0.16
11/7/2008 07:48	4.48	14.32	3.07	0.14
11/7/2008 07:49	5.63	14.32	3.13	0.05
11/7/2008 07:50	6.80	14.32	3.17	0.06
11/7/2008 07:51	7.41	14.15	3.21	0.06
11/7/2008 07:52	7.58	14.31	3.17	0.07
11/7/2008 07:53	5.71	14.31	3.15	0.04
11/7/2008 07:54	5.57	14.31	3.16	0.09
11/7/2008 07:55	9.44	14.27	3.24	0.12
11/7/2008 07:56	11.30	14.19	3.25	0.11
11/7/2008 07:57	9.85	14.31	3.22	0.11
11/7/2008 07:58	6.77	14.31	3.16	0.11
11/7/2008 07:59	5.71	14.31	3.14	0.16
11/7/2008 08:00	5.82	14.27	3.18	0.15
11/7/2008 08:01	5.12	14.11	3.11	0.07
11/7/2008 08:02	6.21	14.32	3.16	0.10
11/7/2008 08:03	8.32	14.32	3.17	0.15
11/7/2008 08:04	8.76	14.24	3.19	0.17
11/7/2008 08:05	9.78	14.32	3.21	0.14
11/7/2008 08:06	11.90	14.32	3.25	0.14
11/7/2008 08:07	16.21	14.31	3.29	0.15
11/7/2008 08:08	18.93	13.98	3.29	0.10
11/7/2008 08:09	15.17	14.31	3.23	0.10
11/7/2008 08:10	11.76	14.31	3.16	0.06
11/7/2008 08:11	6.59	14.31	3.12	0.05
11/7/2008 08:12	4.05	14.31	3.10	0.03
11/7/2008 08:13	2.74	14.40	3.02	0.00
11/7/2008 08:14	3.14	14.32	3.06	0.03
11/7/2008 08:15	3.50	14.32	3.07	0.02
11/7/2008 08:16	3.68	14.32	3.11	0.05
11/7/2008 08:17	4.28	14.40	3.10	-0.04
11/7/2008 08:18	3.30	14.32	3.12	-0.14
11/7/2008 08:19	2.91	14.32	3.08	-0.16
11/7/2008 08:20	3.73	14.31	3.14	-0.18
11/7/2008 08:21	3.37	14.31	3.09	-0.14
11/7/2008 08:22	3.82	14.25	3.09	-0.09

pt 2

Start check

pt 3

Run

11/7/2008 08:24	3.98	14.31	3.11	-0.11
11/7/2008 08:25	3.85	14.31	3.13	-0.09
11/7/2008 08:26	3.91	14.31	3.06	-0.02
11/7/2008 08:27	4.08	14.31	3.12	-0.01
11/7/2008 08:28	3.49	14.32	3.07	0.01
11/7/2008 08:29	3.47	14.32	3.07	-0.05
11/7/2008 08:30	4.42	14.32	3.14	0.01
11/7/2008 08:31	6.98	14.24	5.60	0.80
11/7/2008 08:32	0.70	3.59	13.00	0.54
11/7/2008 08:33	-2.57	0.30	13.03	0.51
11/7/2008 08:34	-2.44	0.30	[illegible]	19.48
11/7/2008 08:35	-0.32	0.29	-0.38	43.51
11/7/2008 08:36	0.24	0.29	-0.40	45.16
11/7/2008 08:37	0.19	0.30	-0.41	45.62
11/7/2008 08:38	0.13	0.50	-0.39	23.35
11/7/2008 08:39	0.08	97.98	-0.38	-0.14
11/7/2008 08:40	0.04	121.50	-0.50	-0.31
11/7/2008 08:41	0.02	121.89	-0.50	-0.22
11/7/2008 08:42	32.06	112.49	-0.40	-0.05
11/7/2008 08:43	217.39	12.19	-0.34	0.97
11/7/2008 08:44	246.10	1.50	-0.16	0.92
11/7/2008 08:45	244.71	0.80	-0.39	-0.03
11/7/2008 08:46	245.62	0.48	-0.42	-0.04
11/7/2008 08:47	238.56	0.30	-0.60	0.72
11/7/2008 08:48	65.72	7.26	3.04	-0.22
11/7/2008 08:49	7.19	14.31	3.06	-0.31
11/7/2008 08:50	6.23	14.31	3.10	-0.23
11/7/2008 08:51	8.56	14.31	3.21	-0.16
11/7/2008 08:52	6.43	14.31	3.15	-0.15
11/7/2008 08:53	6.57	14.31	3.19	-0.08
11/7/2008 08:54	8.54	14.31	3.25	-0.07
11/7/2008 08:55	7.60	14.31	3.80	-0.07
11/7/2008 08:56	5.18	14.40	3.59	-0.05
11/7/2008 08:57	6.09	14.31	3.65	-0.06
11/7/2008 08:58	6.29	14.32	3.64	-0.01
11/7/2008 08:59	6.75	14.32	3.59	0.02
11/7/2008 09:00	7.22	14.40	3.66	0.09
11/7/2008 09:01	6.73	14.32	3.64	0.11
11/7/2008 09:02	6.36	14.31	3.55	0.09
11/7/2008 09:03	6.32	14.31	3.59	0.12
11/7/2008 09:04	5.30	14.38	3.56	0.10
11/7/2008 09:05	5.86	14.32	3.63	0.16
11/7/2008 09:06	6.40	14.31	3.59	0.14
11/7/2008 09:07	6.25	14.56	3.57	0.13
11/7/2008 09:08	6.23	14.31	3.65	0.17
11/7/2008 09:09	5.76	14.31	3.69	0.07
11/7/2008 09:10	5.69	14.31	3.65	0.09
11/7/2008 09:11	7.90	14.31	3.57	0.04
11/7/2008 09:12	7.96	14.31	3.55	0.03
11/7/2008 09:13	7.91	14.31	3.62	0.03
11/7/2008 09:14	8.18	14.32	3.61	-0.08
11/7/2008 09:15	8.14	14.32	3.54	-0.09
11/7/2008 09:16	7.58	14.31	3.57	-0.03
11/7/2008 09:17	6.76	14.39	3.53	-0.09
11/7/2008 09:18	6.15	14.31	3.58	-0.13
11/7/2008 09:19	5.67	14.39	3.59	-0.10
11/7/2008 09:20	7.02	14.31	3.66	-0.13
11/7/2008 09:21	8.69	14.31	3.69	-0.15
11/7/2008 09:22	11.88	14.06	3.70	-0.19
11/7/2008 09:23	11.55	14.23	3.61	-0.19
11/7/2008 09:24	11.22	13.97	3.56	-0.17
11/7/2008 09:25	10.28	14.31	3.65	-0.18
11/7/2008 09:26	6.93	14.31	3.69	-0.19
11/7/2008 09:27	5.27	14.39	3.61	-0.21
11/7/2008 09:28	5.90	14.47	3.61	-0.22

Cal

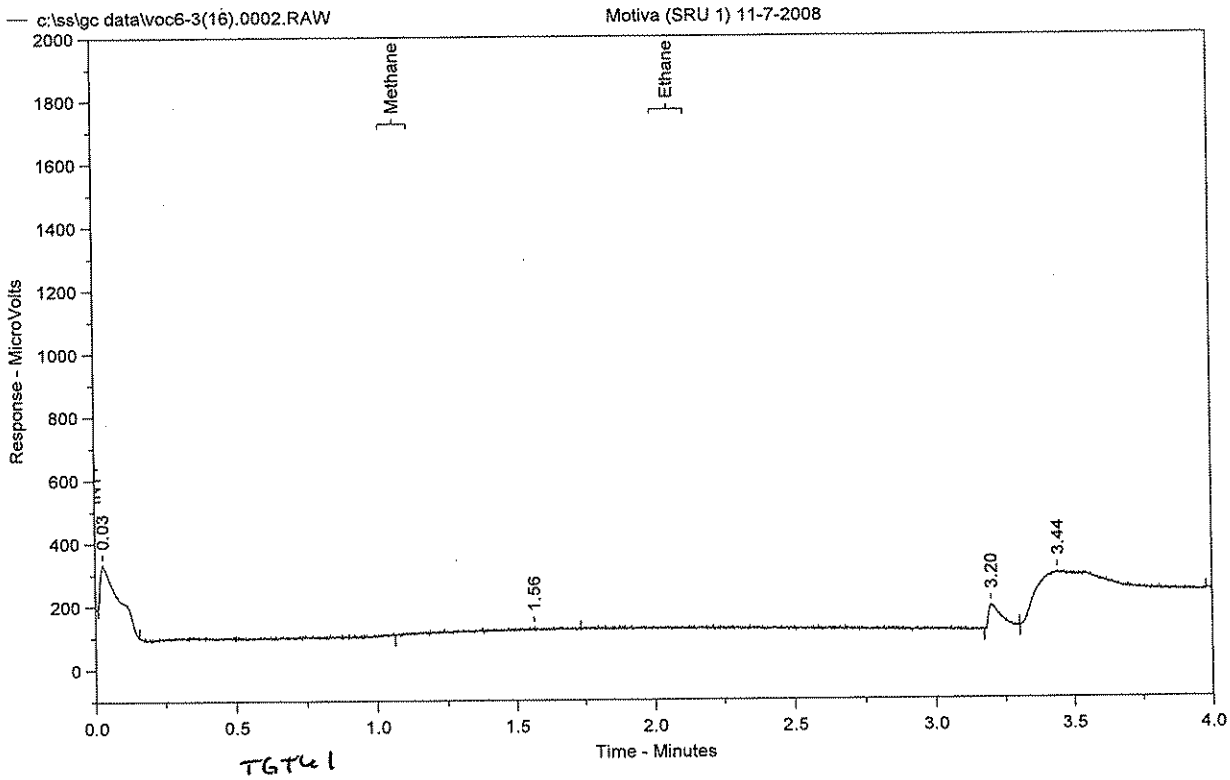
Run 2

11/7/2008 09:30	10.67	14.39	3.75	-0.24
11/7/2008 09:31	10.29	14.31	3.62	-0.21
11/7/2008 09:32	8.28	14.22	3.52	-0.21
11/7/2008 09:33	5.97	14.31	3.55	-0.20
11/7/2008 09:34	3.21	14.30	3.44	-0.15
11/7/2008 09:35	2.47	14.63	3.52	-0.08
11/7/2008 09:36	2.35	14.80	3.47	-0.02
11/7/2008 09:37	2.99	14.72	3.58	0.00
11/7/2008 09:38	4.36	14.40	3.54	0.02
11/7/2008 09:39	3.51	14.73	3.47	0.04
11/7/2008 09:40	2.98	14.65	3.54	0.01
11/7/2008 09:41	4.14	14.32	3.58	0.01
11/7/2008 09:42	4.87	14.31	3.64	0.09
11/7/2008 09:43	5.48	14.39	3.61	0.06
11/7/2008 09:44	5.91	14.72	3.63	0.11
11/7/2008 09:45	6.10	14.64	3.58	0.14
11/7/2008 09:46	4.06	14.64	3.52	0.21
11/7/2008 09:47	2.29	14.80	3.45	0.31
11/7/2008 09:48	1.79	14.80	3.40	0.32
11/7/2008 09:49	2.43	14.80	3.62	0.45
11/7/2008 09:50	2.77	14.72	3.67	0.44
11/7/2008 09:51	4.35	14.48	3.69	0.45
11/7/2008 09:52	5.60	14.72	3.60	0.51
11/7/2008 09:53	5.41	14.72	3.55	0.56
11/7/2008 09:54	4.36	14.80	3.52	0.55
11/7/2008 09:55	3.88	14.80	3.53	0.57
11/7/2008 09:56	8.38	12.64	8.34	1.38
11/7/2008 09:57	-0.62	0.91	13.66	1.34
11/7/2008 09:58	-2.79	0.29	13.49	1.30
11/7/2008 09:59	-2.69	0.29	10.06	13.55
11/7/2008 10:00	-0.80	0.29	-1.12	42.98
11/7/2008 10:01	0.11	0.29	-0.50	45.08
11/7/2008 10:02	0.12	0.30	-0.49	45.15
11/7/2008 10:03	0.04	23.78	-0.37	14.70
11/7/2008 10:04	-0.02	117.84	-0.43	0.04
11/7/2008 10:05	-0.06	121.39	-0.69	0.00
11/7/2008 10:06	0.02	121.71	-0.79	0.00
11/7/2008 10:07	25.65	121.02	-0.73	0.08
11/7/2008 10:08	223.17	20.31	-0.93	0.06
11/7/2008 10:09	242.70	0.94	-0.86	0.51
11/7/2008 10:10	242.65	0.79	-0.75	0.18
11/7/2008 10:11	234.43	0.37	-0.68	0.48
11/7/2008 10:12	223.30	0.79	2.70	3.53
11/7/2008 10:13	177.91	0.80	20.84	3.85
11/7/2008 10:14	35.35	4.43	6.55	0.41
11/7/2008 10:15	10.37	14.65	3.64	-0.17
11/7/2008 10:16	8.27	14.80	3.54	-0.23
11/7/2008 10:17	7.80	14.80	3.61	-0.24
11/7/2008 10:18	5.84	14.80	3.60	-0.22
11/7/2008 10:19	5.02	14.64	3.49	-0.25
11/7/2008 10:20	5.21	14.37	3.31	-0.27
11/7/2008 10:21	4.49	14.55	3.24	-0.29
11/7/2008 10:22	4.18	14.55	4.01	-0.28
11/7/2008 10:23	5.60	14.57	3.79	-0.29
11/7/2008 10:24	5.13	14.80	3.80	-0.27
11/7/2008 10:25	4.58	14.80	3.79	-0.24
11/7/2008 10:26	4.95	14.80	3.77	-0.21
11/7/2008 10:27	5.40	14.55	3.83	-0.18
11/7/2008 10:28	3.31	14.75	3.76	-0.18
11/7/2008 10:29	3.75	14.81	3.75	-0.17
11/7/2008 10:30	4.12	14.81	3.88	-0.16
11/7/2008 10:31	3.82	15.14	3.73	-0.20
11/7/2008 10:32	3.30	14.81	3.62	-0.21
11/7/2008 10:33	3.09	14.80	3.61	-0.20
11/7/2008 10:34	3.11	14.91	3.71	-0.11

val

Run 3

11/7/2008 10:36	3.40	14.80	3.62	-0.14
11/7/2008 10:37	4.92	15.14	3.76	-0.15
11/7/2008 10:38	5.08	14.80	3.81	-0.02
11/7/2008 10:39	4.99	14.80	3.74	-0.13
11/7/2008 10:40	4.15	14.81	3.74	-0.16
11/7/2008 10:41	5.00	14.81	3.71	-0.21
11/7/2008 10:42	5.63	14.81	3.81	-0.21
11/7/2008 10:43	4.74	14.81	3.78	-0.19
11/7/2008 10:44	4.32	14.89	3.67	-0.20
11/7/2008 10:45	4.97	14.81	3.60	-0.23
11/7/2008 10:46	5.13	14.80	3.69	-0.23
11/7/2008 10:47	4.39	14.91	3.81	-0.21
11/7/2008 10:48	3.35	15.30	3.66	-0.29
11/7/2008 10:49	3.25	15.14	3.83	-0.27
11/7/2008 10:50	3.60	15.30	3.85	-0.31
11/7/2008 10:51	3.71	15.30	3.74	-0.25
11/7/2008 10:52	5.14	15.30	3.91	-0.22
11/7/2008 10:53	7.34	15.05	3.82	-0.25
11/7/2008 10:54	7.22	15.30	3.85	-0.30
11/7/2008 10:55	6.41	15.22	3.65	-0.30
11/7/2008 10:56	3.84	15.30	3.62	-0.24
11/7/2008 10:57	3.17	15.31	3.69	-0.28
11/7/2008 10:58	3.71	15.31	3.67	-0.28
11/7/2008 10:59	3.51	15.31	3.53	-0.29
11/7/2008 11:00	3.20	15.31	3.52	-0.35
11/7/2008 11:01	4.23	15.31	3.64	-0.37
11/7/2008 11:02	5.65	15.31	3.81	-0.40
11/7/2008 11:03	6.70	15.31	3.68	-0.41
11/7/2008 11:04	6.73	15.31	3.49	-0.43
11/7/2008 11:05	5.29	15.39	3.46	-0.46
11/7/2008 11:06	4.72	15.31	3.50	-0.50
11/7/2008 11:07	4.78	15.30	3.47	-0.51
11/7/2008 11:08	4.30	15.30	3.50	-0.50
11/7/2008 11:09	3.55	15.39	3.45	-0.52
11/7/2008 11:10	3.99	15.30	3.46	-0.56
11/7/2008 11:11	4.09	15.30	3.49	-0.52
11/7/2008 11:12	4.43	15.30	3.50	-0.53
11/7/2008 11:13	3.82	15.30	3.54	-0.49
11/7/2008 11:14	3.05	15.30	3.50	-0.53
11/7/2008 11:15	2.31	15.30	3.53	-0.50
11/7/2008 11:16	2.70	14.47	7.91	0.36
11/7/2008 11:17	-2.08	1.88	13.71	-0.11
11/7/2008 11:18	-2.97	0.30	13.64	-0.18
11/7/2008 11:19	-2.70	0.30	8.49	19.52
11/7/2008 11:20	-0.73	0.30	-1.21	44.51
11/7/2008 11:21	-0.07	0.30	-0.57	45.81
11/7/2008 11:22	-0.13	0.29	-0.41	41.86
11/7/2008 11:23	-0.28	68.38	-0.35	-0.55
11/7/2008 11:24	-0.36	121.41	-0.41	-0.62
11/7/2008 11:25	-0.33	121.87	-0.41	-0.87
11/7/2008 11:26	23.36	118.41	-0.40	-1.17
11/7/2008 11:27	219.91	16.01	-0.40	-2.43
11/7/2008 11:28	241.70	0.67	-0.40	-2.76
11/7/2008 11:29	241.74	0.29	-0.39	-2.76
11/7/2008 11:30	241.76	0.29	-0.37	-2.76



TGTU 1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Pre Run I zero

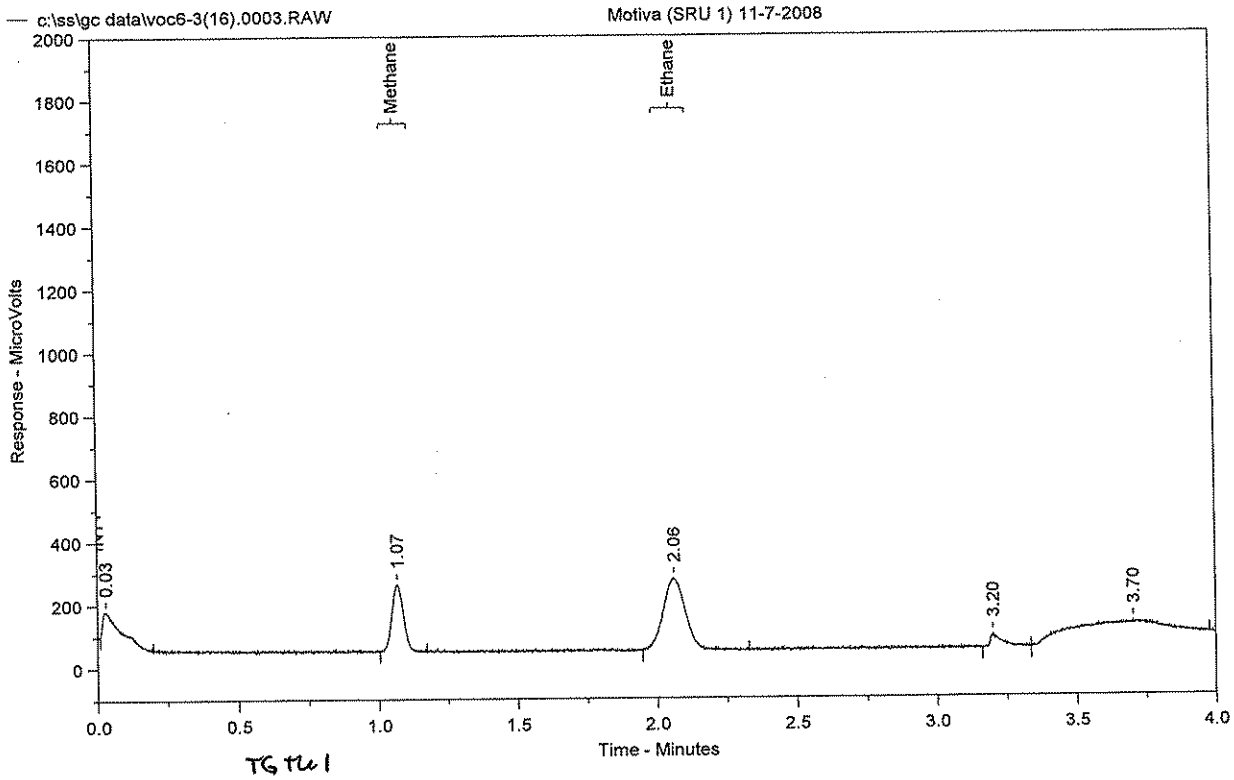
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(16).0002.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 7:01:33 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	669	15.947	147	BB	0.08
2	1.56		0.00	356	8.481	17	BB	0.57
3	3.20		0.00	238	5.678	78	BB	0.05
4	3.44		0.00	2931	69.893	150	BB	0.63

Total Area = 4193.988 Total Height = 392.2169 Total Amount = 0



TG tu 1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Pre Run 1 cal

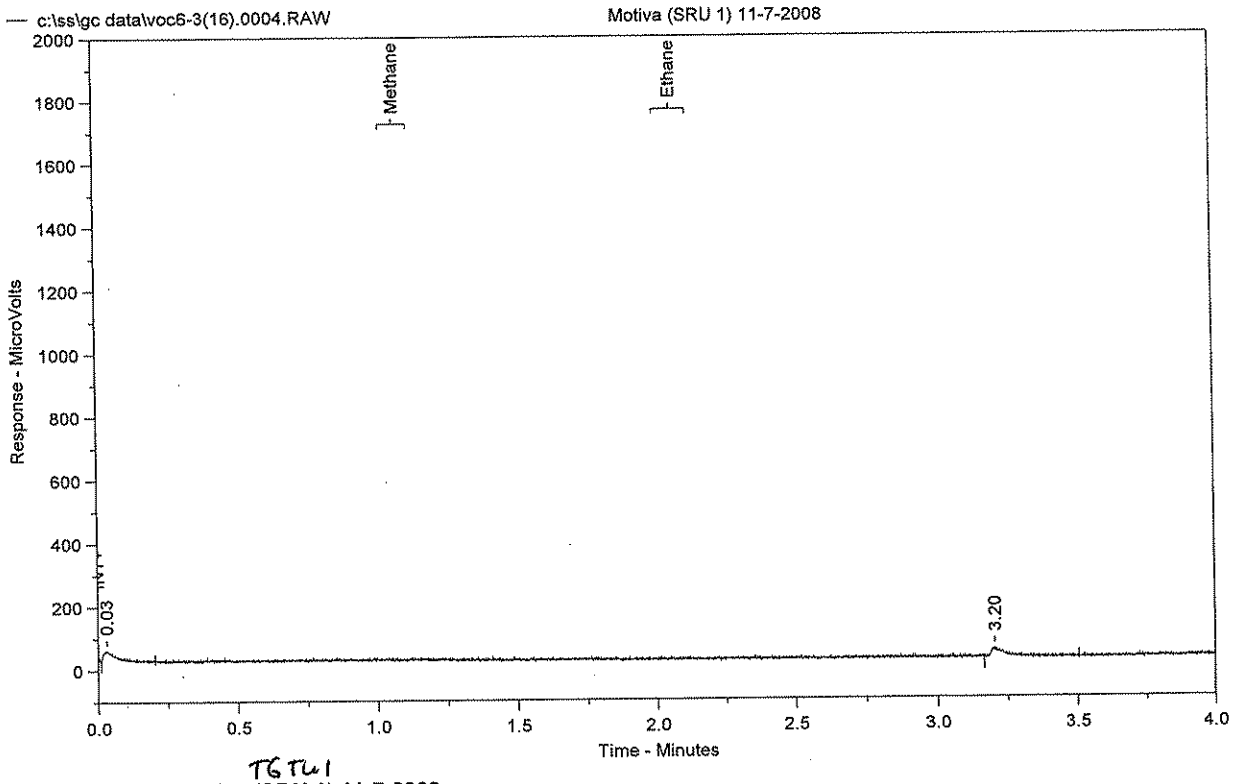
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(16).0003.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 7:09:33 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	380	9.497	87	BB	0.08
2	1.07	Methane	10.42	648	16.181	217	BB	0.05
3	2.06	Ethane	10.64	1364	34.041	234	BB	0.09
4	3.20		0.00	175	4.358	49	BB	0.05
5	3.70		0.00	1439	35.924	62	BB	0.57

Total Area = 4005.709 Total Height = 648.1798 Total Amount = 21.06055



TGTU1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run 1-A

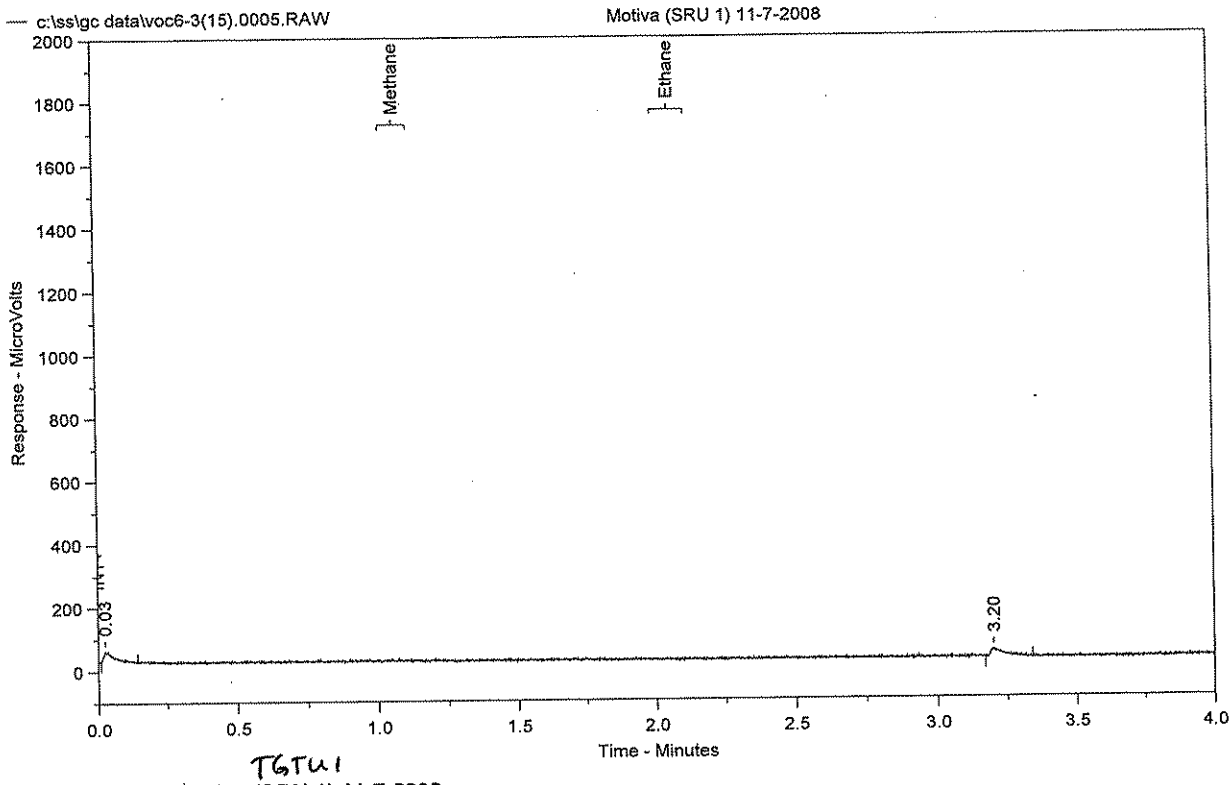
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(16).0004.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 7:36:27 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	178	45.675	38	BB	0.08
2	3.20		0.00	212	54.325	35	BB	0.07

Total Area = 390.673 Total Height = 73.03339 Total Amount = 0



TGTU1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run 1-B

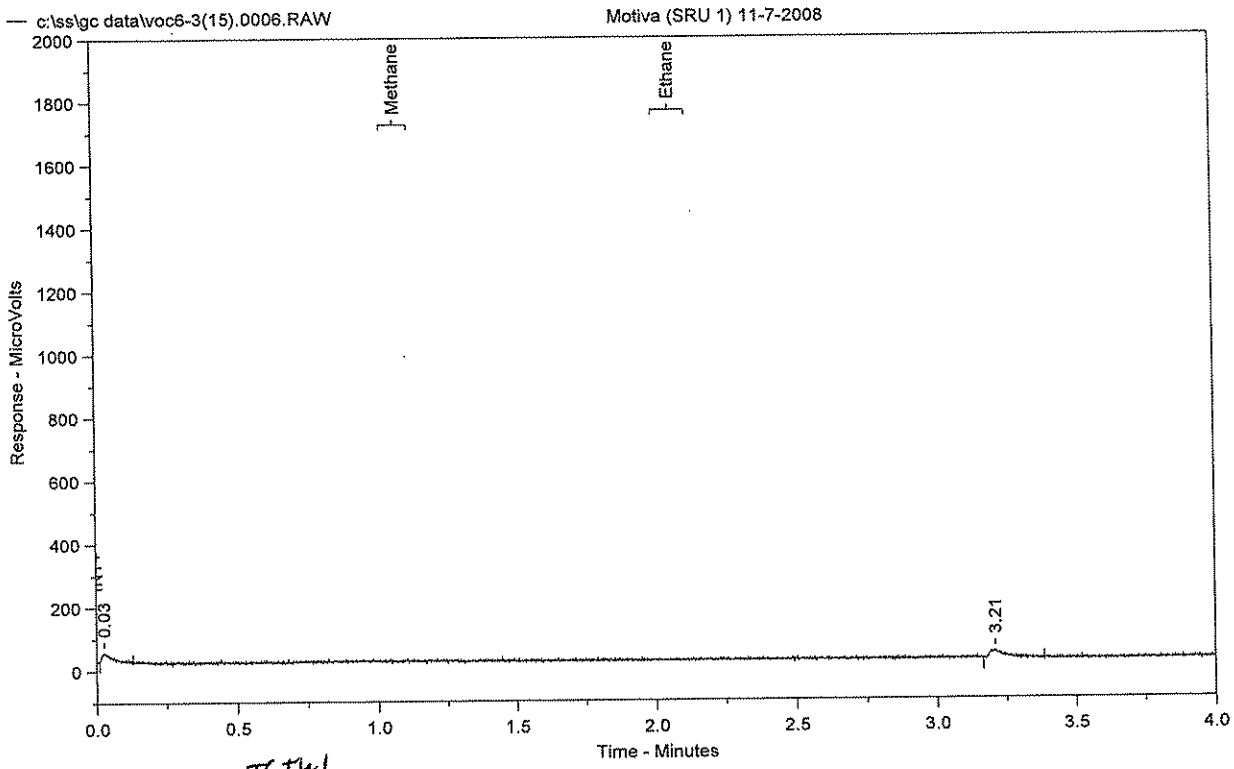
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(15).0005.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 7:44:27 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	103	45.348	34	BB	0.05
2	3.20		0.00	125	54.652	30	BB	0.08

Total Area = 228.2316 Total Height = 64.82484 Total Amount = 0



TGTM1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run 1-C

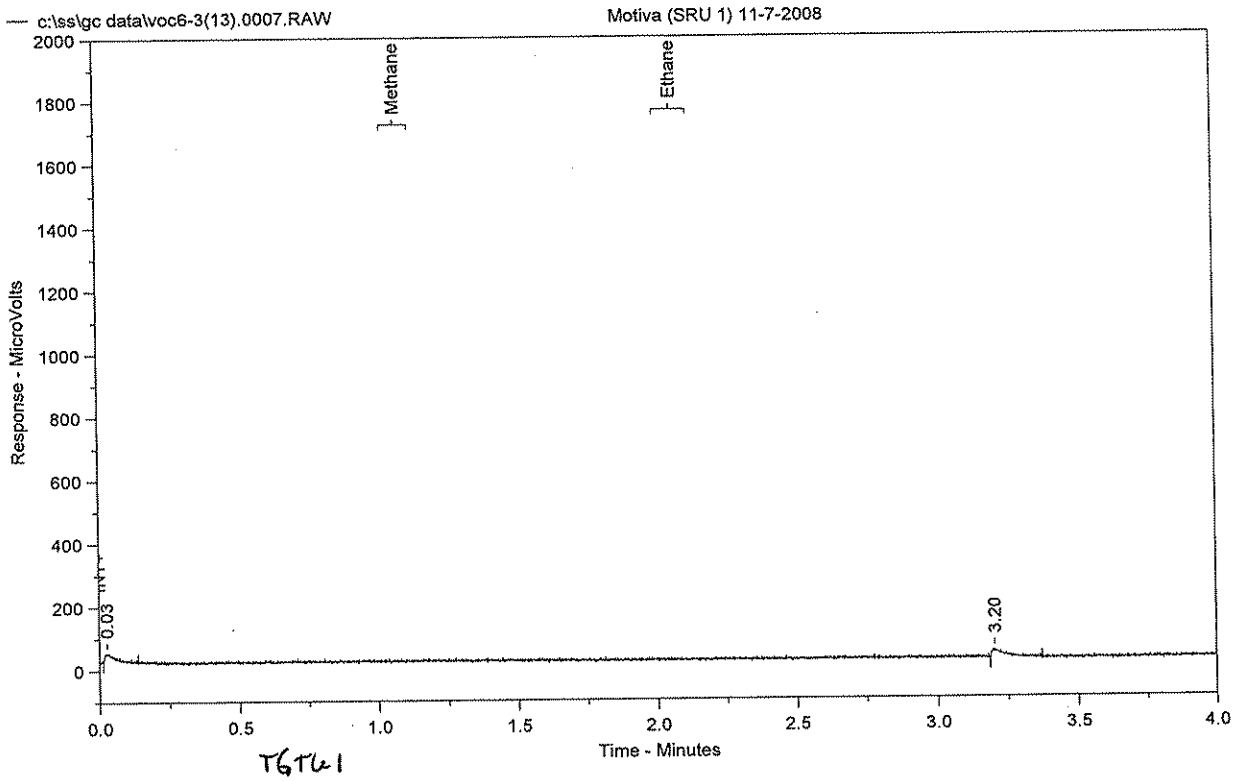
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(15).0006.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 7:52:27 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	98	38.630	31	BB	0.06
2	3.21		0.00	156	61.370	30	BB	0.10

Total Area = 254.2026 Total Height = 61.34698 Total Amount = 0



TGTU 1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run D

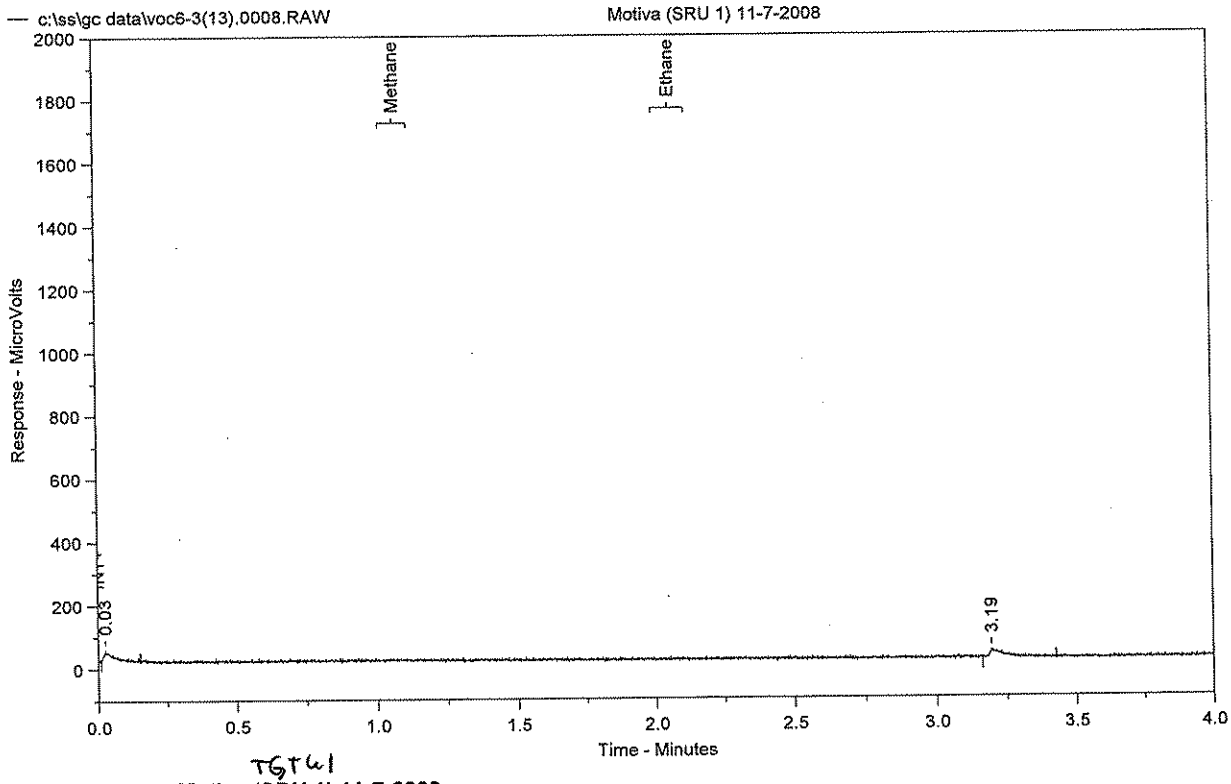
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(13).0007.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 8:00:27 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	90	38.869	28	BB	0.06
2	3.20		0.00	141	61.132	30	BB	0.08

Total Area = 230.61 Total Height = 58.37119 Total Amount = 0



TGTU1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run ID E

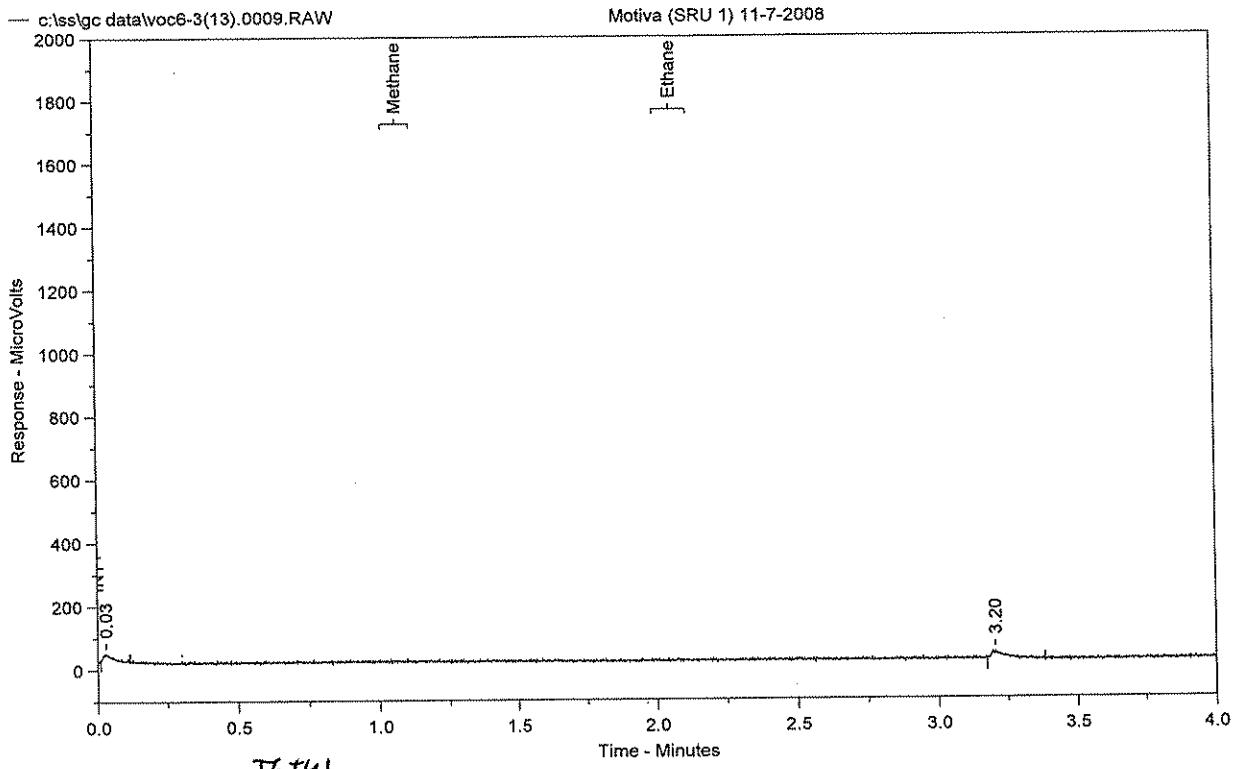
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(13).0008.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 8:08:27 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	101	39.773	34	BB	0.05
2	3.19		0.00	153	60.227	29	BB	0.07

Total Area = 254.4206 Total Height = 63.3594 Total Amount = 0



TGTU1

Sample Name = **Motiva (SRU 1) 11-7-2008**

post Run 1 Pre Run 2 zero

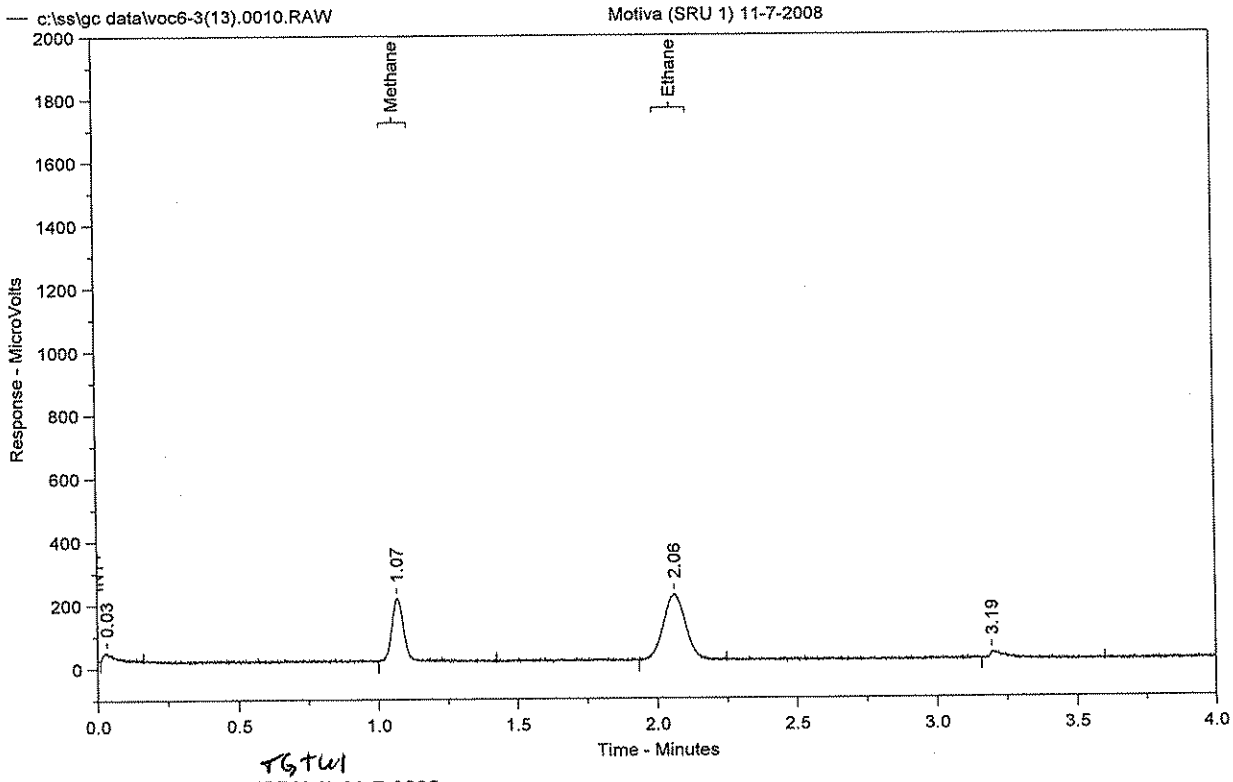
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(13).0009.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 8:16:28 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	78	35.093	27	BB	0.07
2	3.20		0.00	144	64.907	30	BB	0.07

Total Area = 222.3319 Total Height = 57.25763 Total Amount = 0



TGtw

Sample Name = **Motiva (SRU 1) 11-7-2008**

post Run 1 Re Run 2 cal

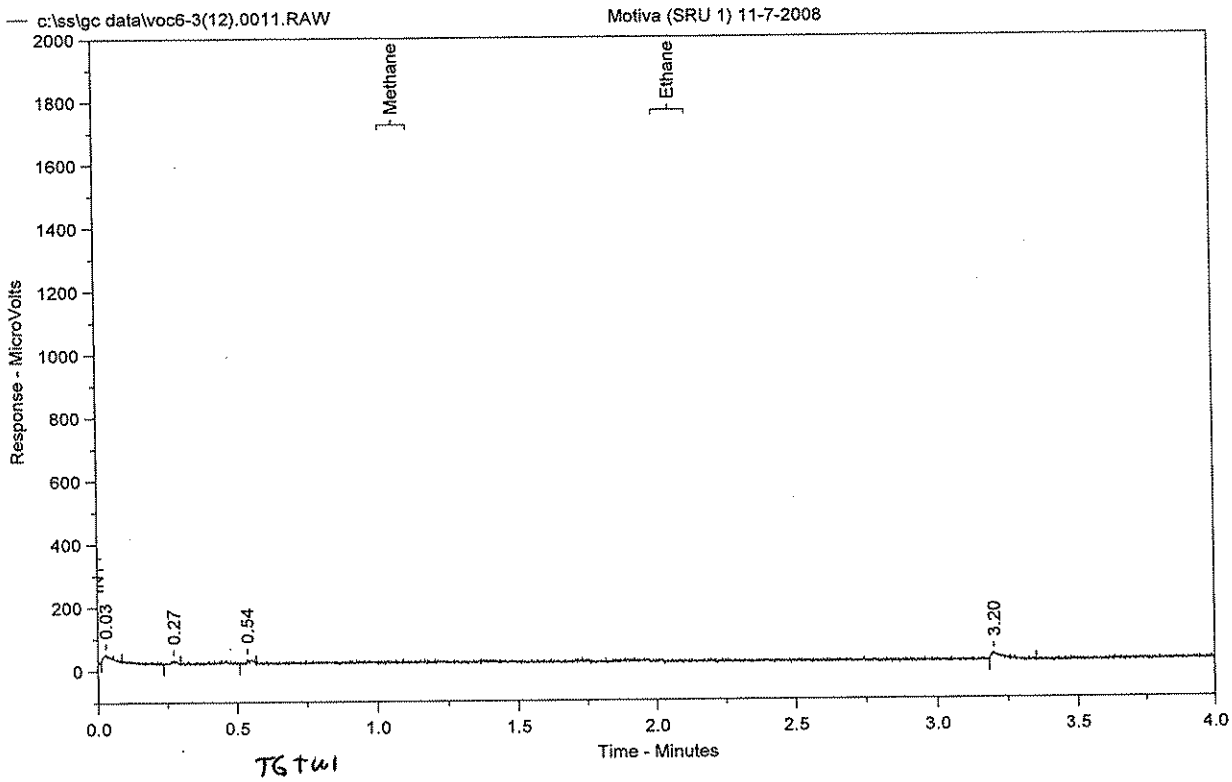
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(13).0010.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 8:24:28 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	103	4.423	29	BB	0.05
2	1.07	Methane	9.90	769	33.137	206	BB	0.05
3	2.06	Ethane	9.70	1248	53.756	213	BB	0.09
4	3.19		0.00	202	8.684	26	BB	0.09

Total Area = 2322.07 Total Height = 474.0392 Total Amount = 19.60403



TG total

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run2-A

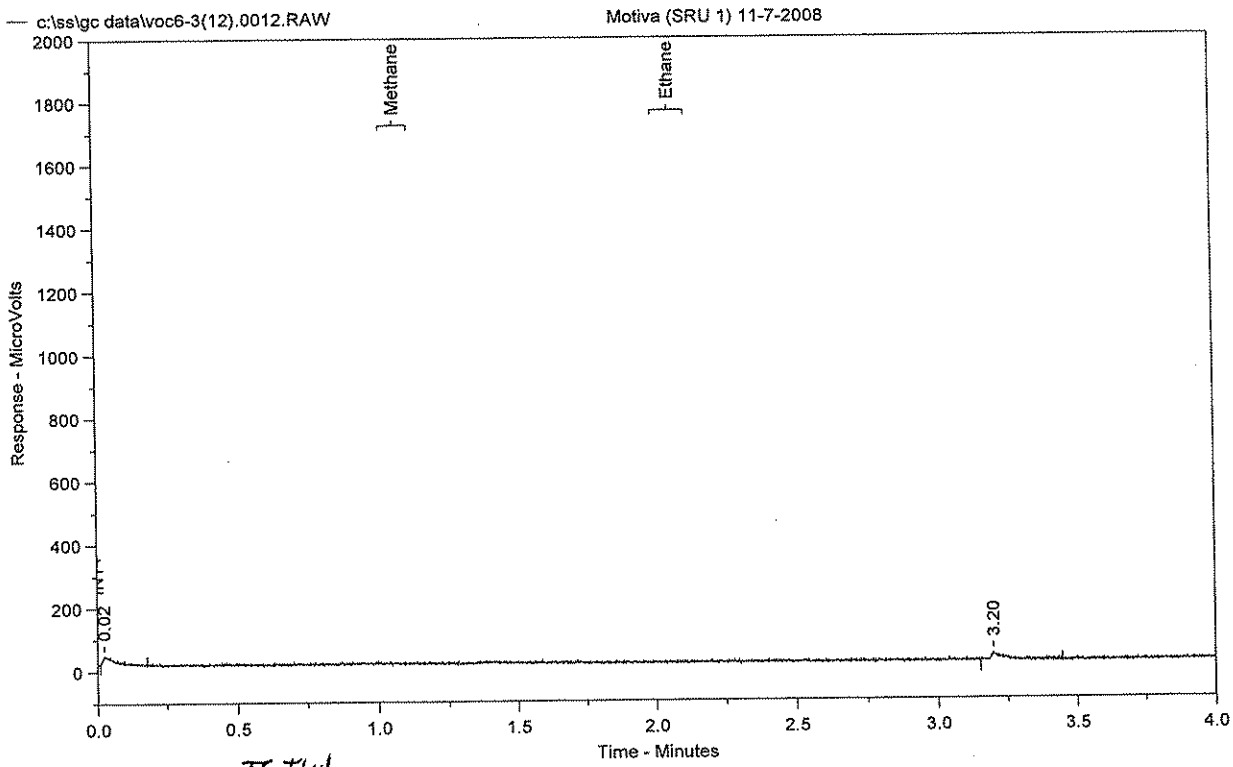
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0011.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 9:04:00 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	50	22.971	24	BB	0.04
2	0.27		0.00	26	11.934	16	BB	0.03
3	0.54		0.00	33	15.200	20	BB	0.05
4	3.20		0.00	109	49.895	26	BB	0.09

Total Area = 219.0054 Total Height = 85.63062 Total Amount = 0



TG TW1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run 2 B

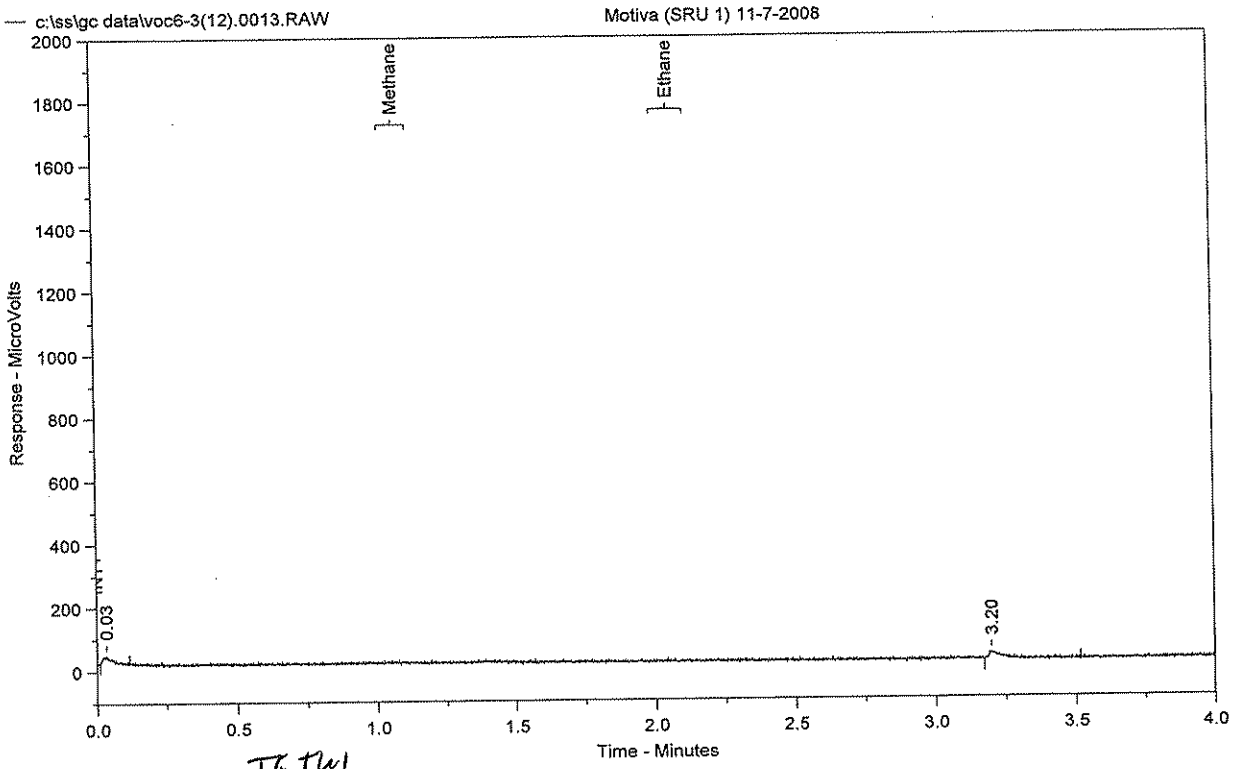
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0012.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 9:12:00 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.02		0.00	90	33.947	25	BB	0.08
2	3.20		0.00	174	66.054	29	BB	0.24

Total Area = 263.9416 Total Height = 53.83572 Total Amount = 0



TG tw1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run 2 C

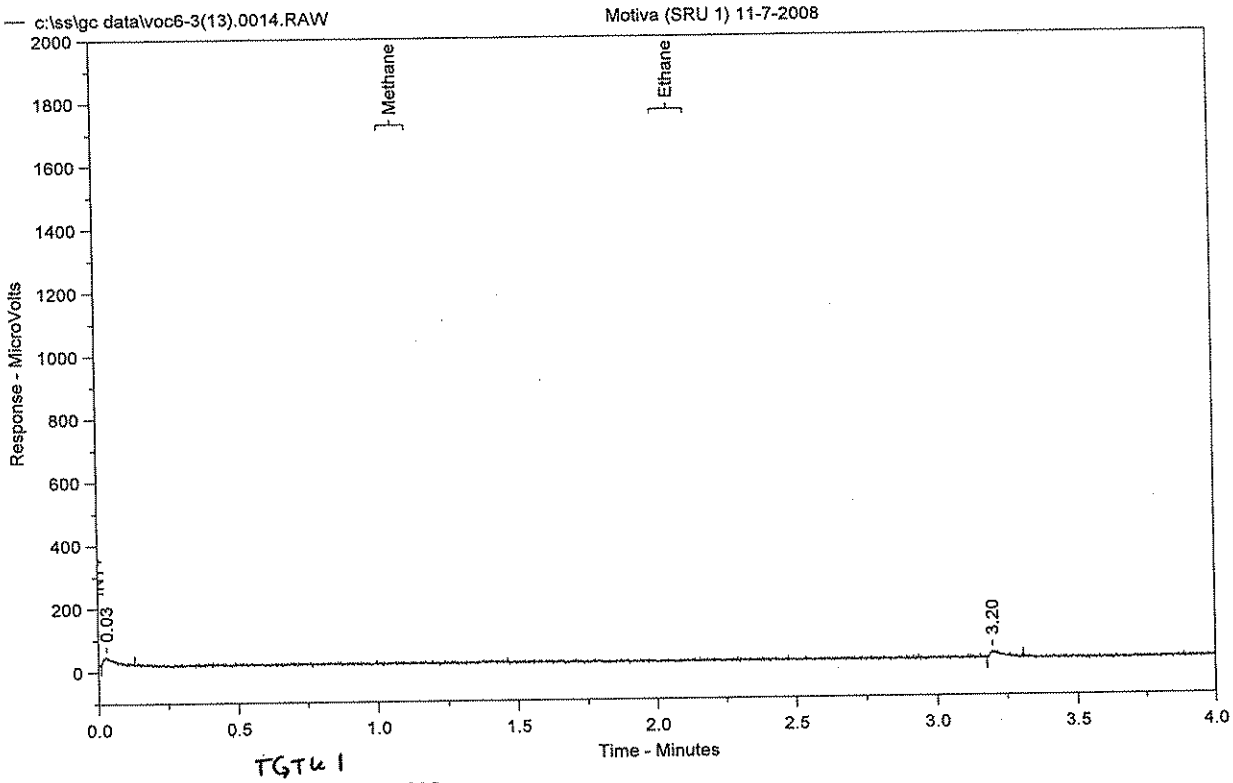
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0013.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 9:20:00 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	70	27.774	28	BB	0.05
2	3.20		0.00	182	72.226	29	BB	0.12

Total Area = 252.2422 Total Height = 56.88235 Total Amount = 0



TGTU 1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run 2-D

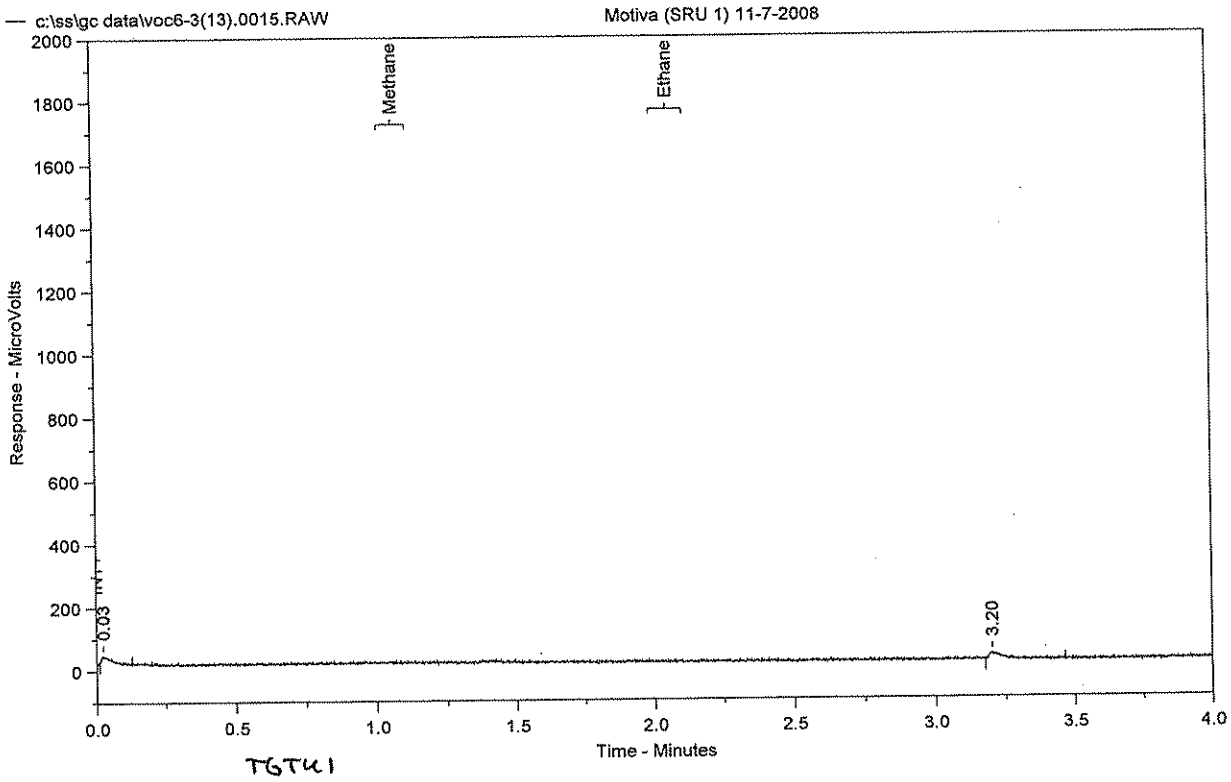
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(13).0014.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 9:28:00 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	81	49.544	25	BB	0.06
2	3.20		0.00	82	50.456	23	BB	0.07

Total Area = 163.3921 Total Height = 48.82067 Total Amount = 0



TGTU1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run 2 E

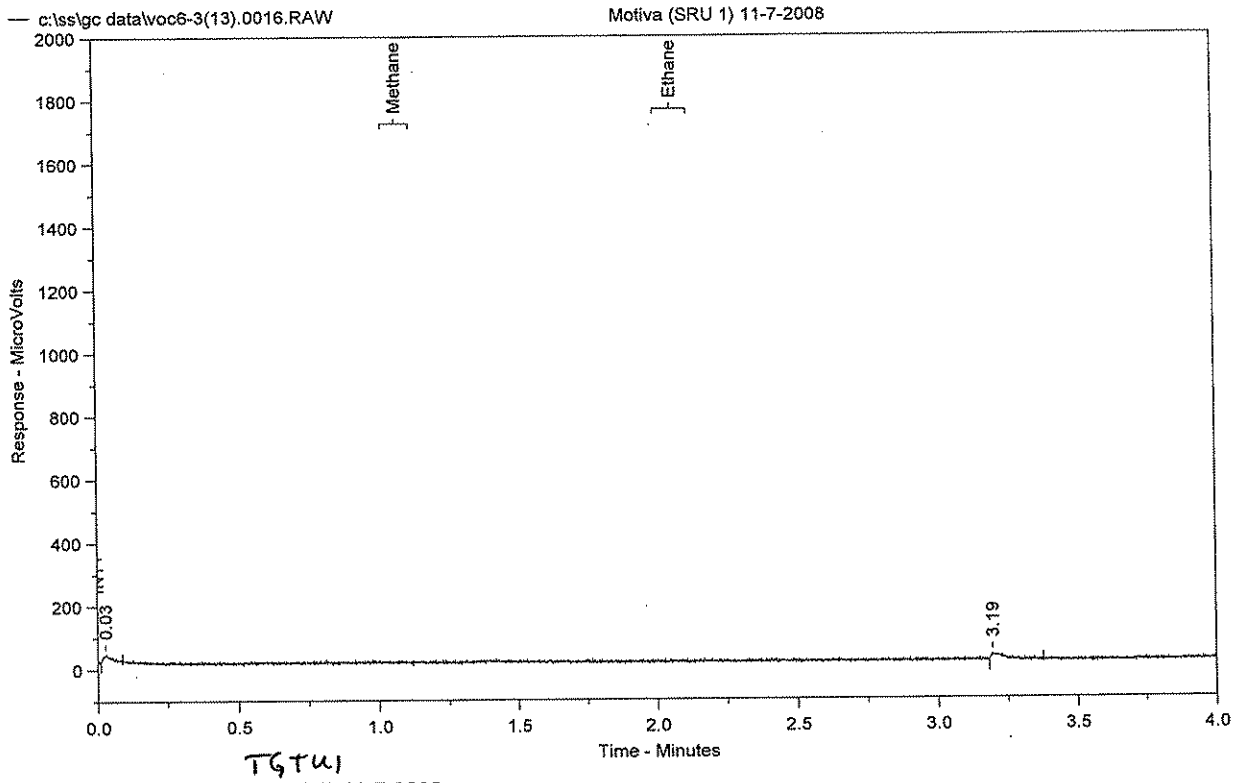
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(13).0015.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 9:36:00 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	78	34.309	26	BB	0.05
2	3.20		0.00	149	65.691	25	BB	0.09

Total Area = 227.0441 Total Height = 50.70168 Total Amount = 0



TGTU1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Post Run 2 Pre Run 3 zero

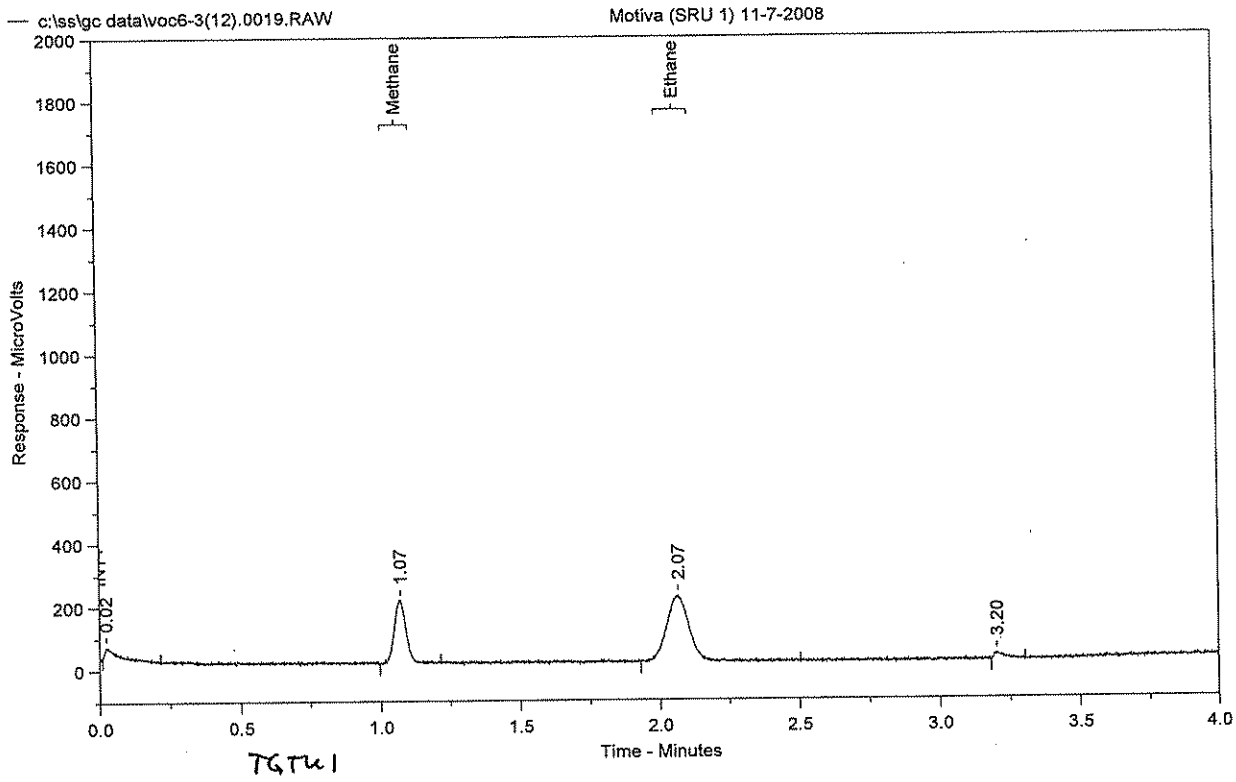
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(13).0016.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 9:44:01 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	61	34.149	25	BB	0.05
2	3.19		0.00	117	65.851	24	BB	0.16

Total Area = 177.8514 Total Height = 48.80299 Total Amount = 0



Sample Name = **Motiva (SRU 1) 11-7-2008**

post Run 2 Pre Run 3 cal

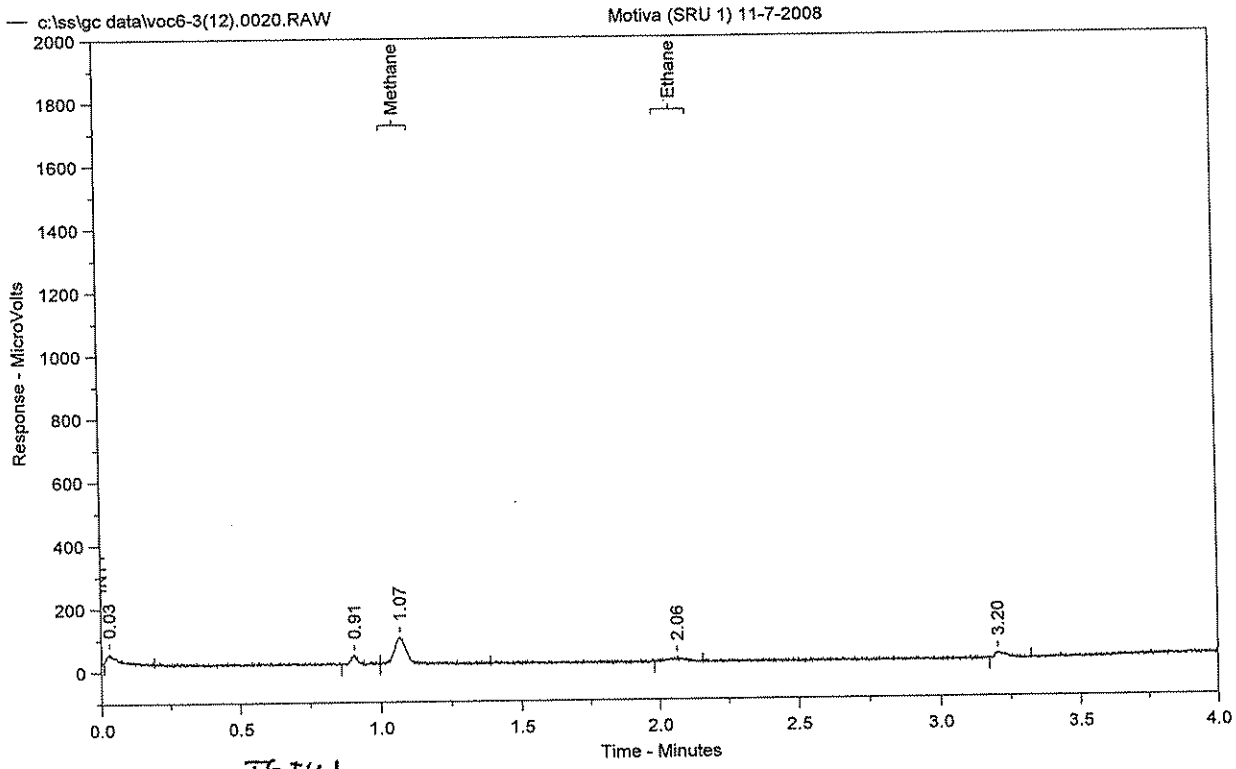
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0019.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 10:08:01 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.02		0.00	166	7.308	40	BB	0.06
2	1.07	Methane	9.81	647	28.439	204	BB	0.04
3	2.07	Ethane	9.75	1370	60.208	214	BB	0.09
4	3.20		0.00	92	4.045	27	BB	0.11

Total Area = 2275.871 Total Height = 485.4329 Total Amount = 19.55924



TGtu1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run 3 A

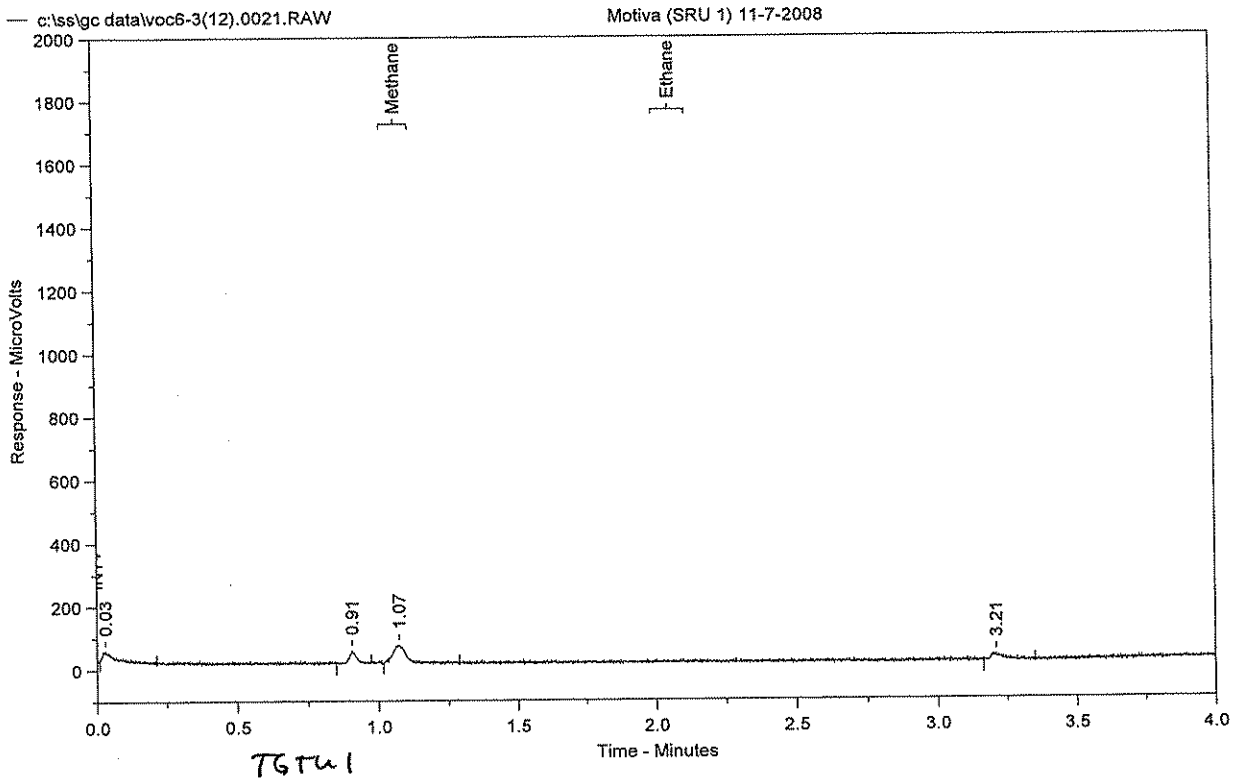
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0020.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 10:20:30 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	135	16.675	34	BB	0.06
2	0.91		0.00	91	11.177	36	BV	0.05
3	1.07	Methane	4.37	407	50.192	91	VB	0.05
4	2.06	Ethane	0.96	96	11.813	21	BB	0.16
5	3.20		0.00	82	10.143	23	BB	0.06

Total Area = 811.4217 Total Height = 204.9805 Total Amount = 5.333498



TGTU 1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run 3-B

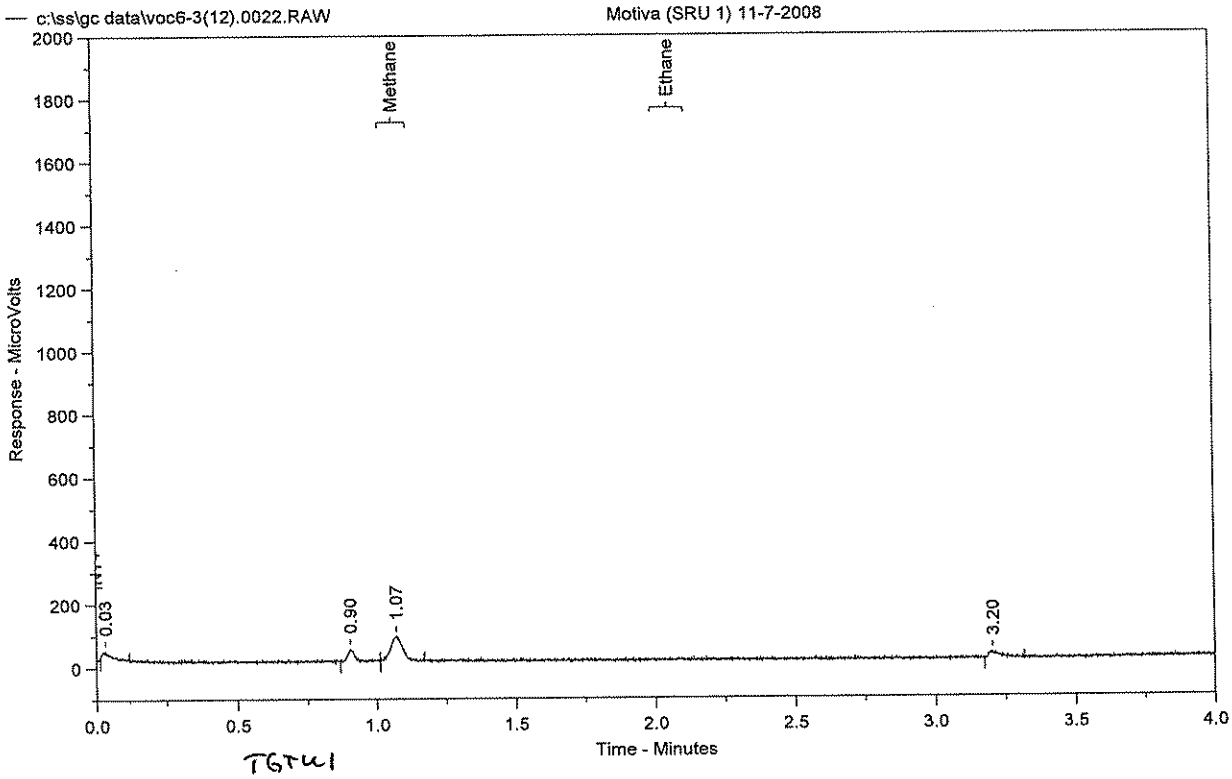
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0021.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 10:28:30 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	139	20.981	33	BB	0.08
2	0.91		0.00	110	16.726	46	BV	0.03
3	1.07	Methane	3.12	289	43.709	65	VB	0.05
4	3.21		0.00	123	18.584	28	BB	0.12

Total Area = 660.582 Total Height = 171.2171 Total Amount = 3.118919



TGTU1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run 3-E

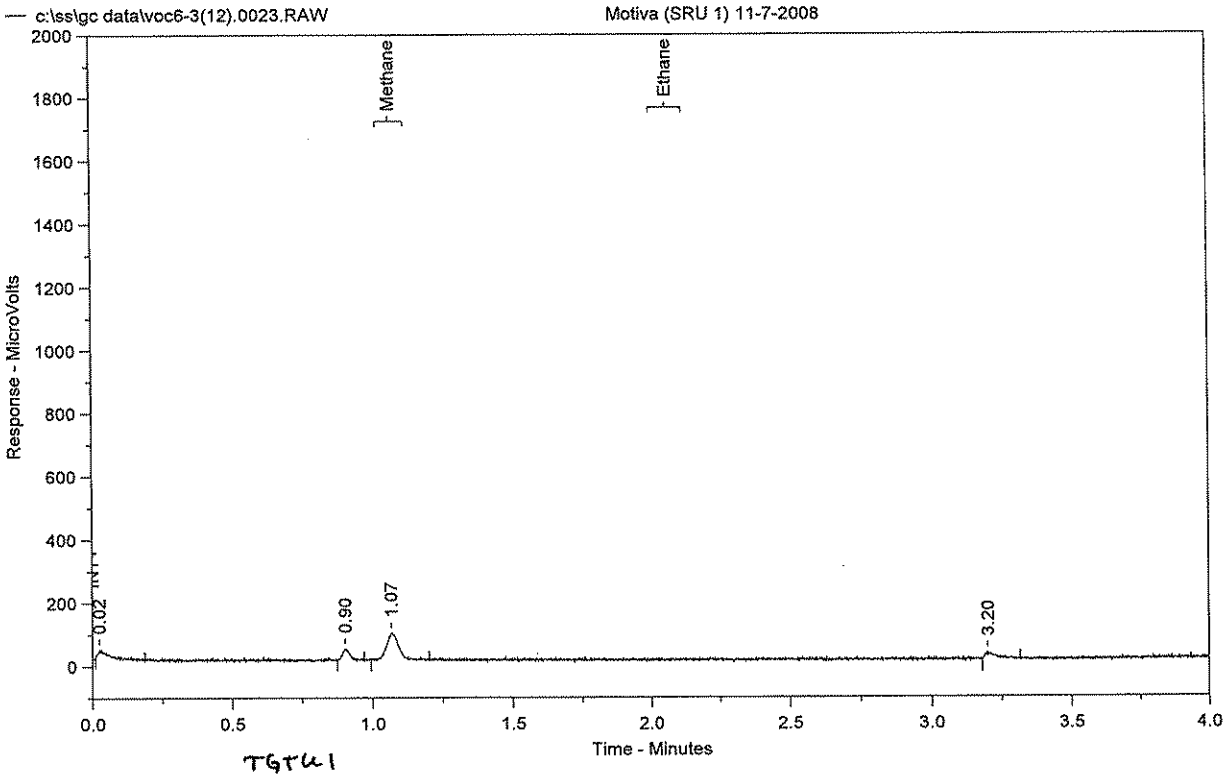
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0022.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 10:36:30 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	88	15.413	31	BB	0.05
2	0.90		0.00	109	19.070	44	BV	0.03
3	1.07	Methane	3.93	269	46.852	82	VB	0.05
4	3.20		0.00	107	18.665	26	BB	0.12

Total Area = 574.0014 Total Height = 181.6144 Total Amount = 3.925385



TGTU1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run 3-D

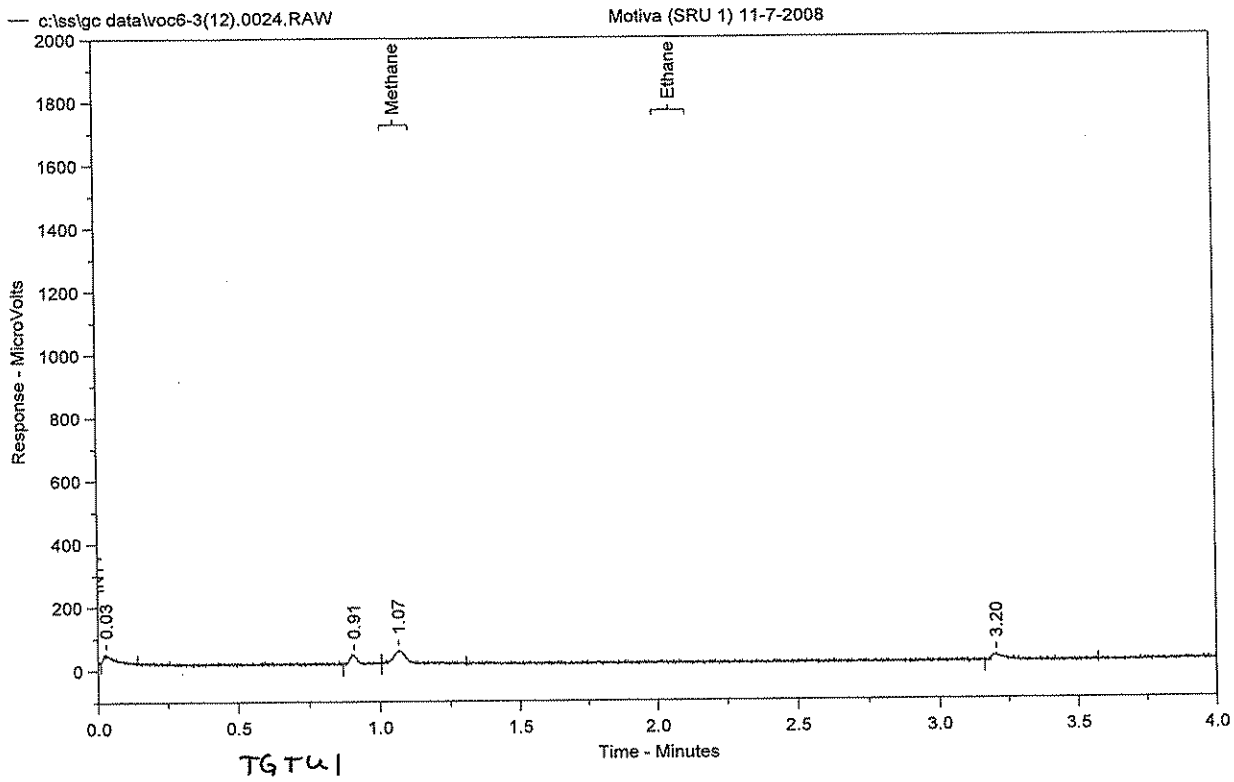
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0023.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 10:44:30 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.02		0.00	111	18.331	30	BB	0.05
2	0.90		0.00	87	14.390	41	BB	0.03
3	1.07	Methane	4.40	319	52.497	91	BB	0.05
4	3.20		0.00	90	14.783	29	BB	0.05

Total Area = 607.6716 Total Height = 190.5871 Total Amount = 4.395041



TGTU1

Sample Name = **Motiva (SRU 1) 11-7-2008**

Run 3-E

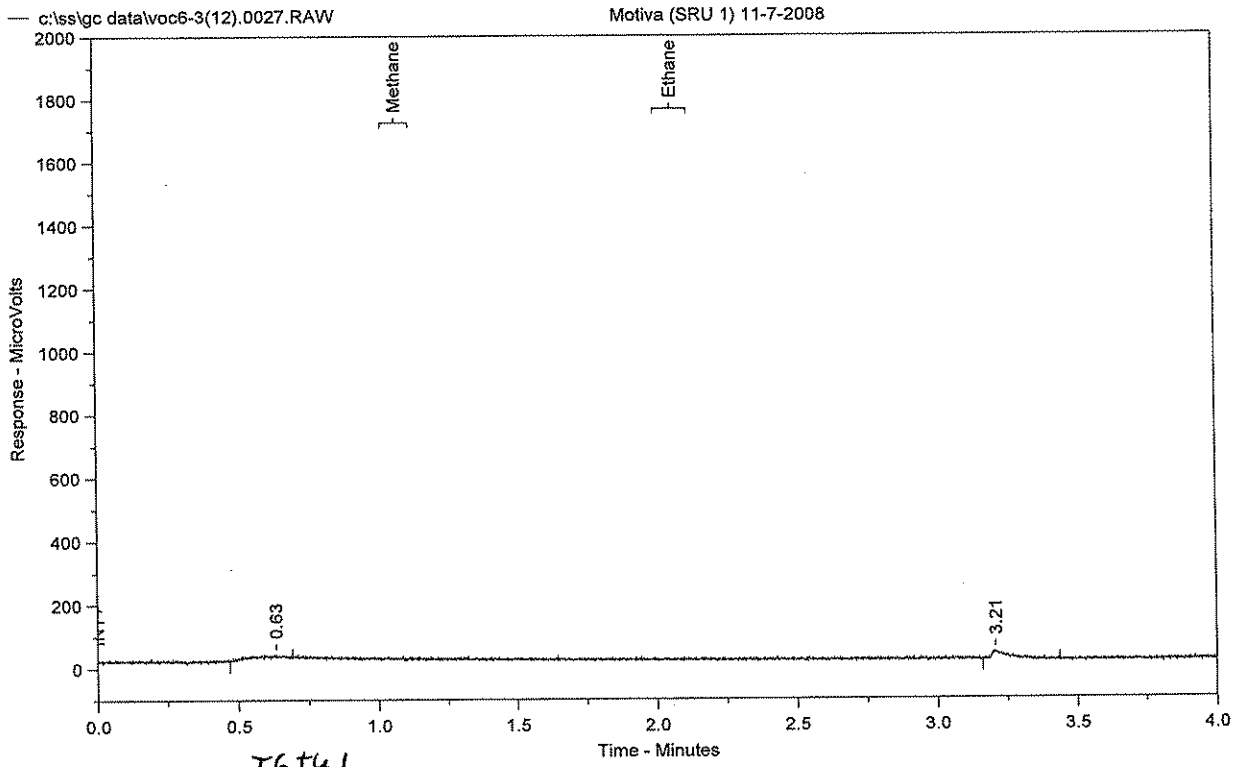
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0024.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 10:52:30 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	88	12.972	29	BB	0.05
2	0.91		0.00	99	14.576	35	BV	0.03
3	1.07	Methane	2.43	277	40.876	50	VB	0.05
4	3.20		0.00	214	31.577	26	BB	0.39

Total Area = 677.1779 Total Height = 140.2139 Total Amount = 2.42536



TGtu 1

Sample Name = **Motiva (SRU 1) 11-7-2008**

post Run 3 zero

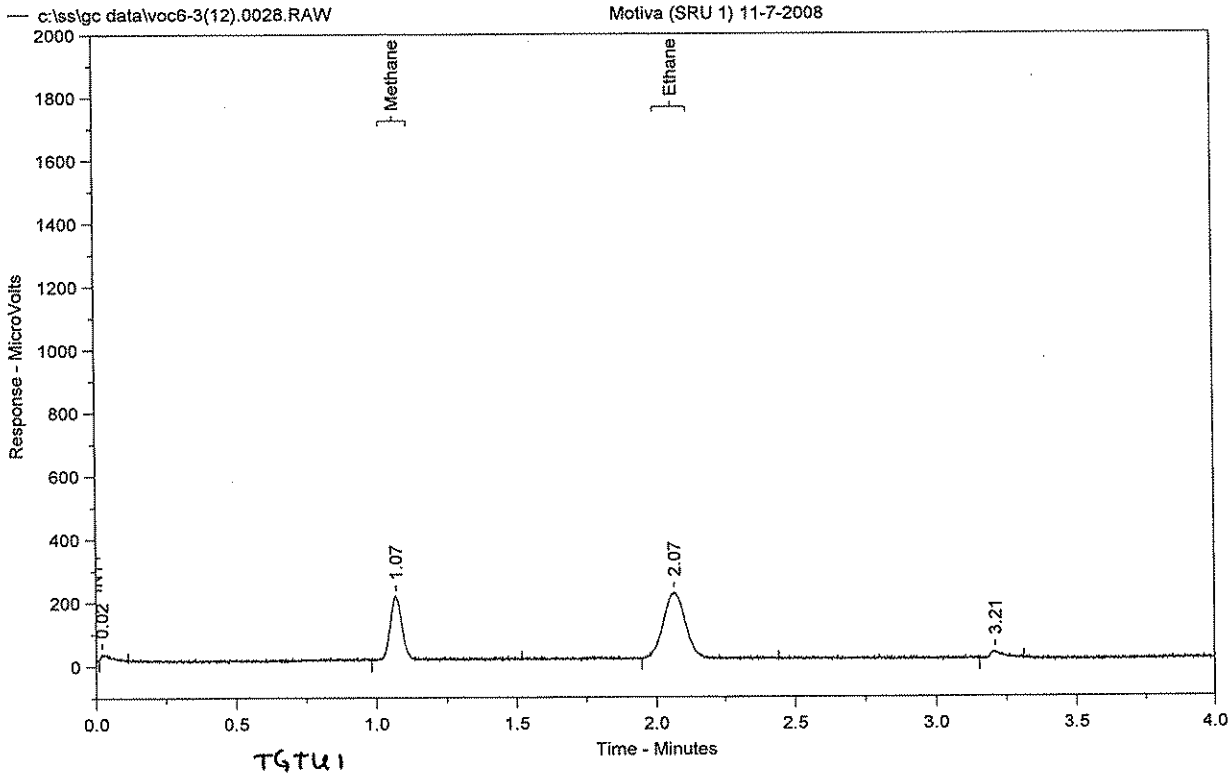
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0027.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 11:09:29 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.63		0.00	143	45.071	18	BB	0.21
2	3.21		0.00	174	54.929	30	BB	0.10

Total Area = 317.1577 Total Height = 48.29803 Total Amount = 0



TGTU1

Sample Name = **Motiva (SRU 1) 11-7-2008**

post Run3 cal

Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0028.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/7/2008 11:13:33 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.02		0.00	74	3.113	24	BB	0.08
2	1.07	Methane	10.01	816	34.469	208	BV	0.05
3	2.07	Ethane	9.84	1376	58.115	217	VB	0.09
4	3.21		0.00	102	4.303	27	BB	0.07

Total Area = 2367.093 Total Height = 476.3501 Total Amount = 19.85194

START TIME: 11/7/08 7:30 AM
END TIME: 11/7/08 8:30 AM
NOTE: Stork Laboratories Regard SRU2 and SRU3 as "SRU1" in their reports

	SRU2		SRU3		INCINERATOR 1	
	SRU2 ACID GAS TO THERMAL REACTOR	SULFUR PRODUCTION FROM SRU2	SRU3 ACID GAS TO THERMAL REACTOR	SULFUR PRODUCTION FROM SRU3	TG1U1 FUEL GAS TO INCINERATOR	FIREBOX TEMPERATURE
#NAME?	2FC7007.PV	S2ESTSR2.PV	2FC7207.PV	S2ESTSR3.PV	2FI8010.PV	2TC8206.PV
	MSCFH	TON/D	MSCFH	TON/D	MSCFH	DEGF
Timestamp	2FC7007.PV - Average	S2ESTSR2.PV - Average	2FC7207.PV - Average	S2ESTSR3.PV - Average	2FI8010.PV - Average	2TC8206.PV - Average
11/7/08 8:30 AM	226.78	180.59	225.82	179.85	19.33	1432.67
11/7/08 8:29 AM	226.70	180.54	226.18	179.95	19.37	1432.30
11/7/08 8:28 AM	227.06	180.45	225.86	179.57	19.37	1432.80
11/7/08 8:27 AM	226.48	180.21	225.14	179.16	19.36	1432.63
11/7/08 8:26 AM	226.57	180.59	225.08	179.23	19.35	1432.11
11/7/08 8:25 AM	227.25	180.77	224.86	178.89	19.34	1432.99
11/7/08 8:24 AM	227.09	180.45	224.33	178.45	19.31	1434.45
11/7/08 8:23 AM	227.23	180.95	224.56	178.90	19.35	1434.23
11/7/08 8:22 AM	226.92	180.64	225.02	179.19	19.36	1435.19
11/7/08 8:21 AM	226.17	180.12	225.33	179.55	19.34	1434.75
11/7/08 8:20 AM	226.38	180.29	225.64	179.80	19.39	1432.72
11/7/08 8:19 AM	226.87	180.56	225.66	179.46	19.51	1432.04
11/7/08 8:18 AM	226.45	180.55	224.58	178.63	19.53	1433.10
11/7/08 8:17 AM	226.64	180.45	224.19	178.39	19.53	1433.31
11/7/08 8:16 AM	227.00	180.65	224.44	178.66	19.55	1432.94
11/7/08 8:15 AM	226.70	180.16	224.63	178.99	19.55	1429.18
11/7/08 8:14 AM	226.78	179.96	225.42	179.62	19.52	1422.73
11/7/08 8:13 AM	226.09	179.74	225.85	179.80	19.47	1415.48
11/7/08 8:12 AM	225.49	179.55	225.72	179.73	19.42	1410.65
11/7/08 8:11 AM	224.96	178.82	225.22	178.98	19.36	1408.83
11/7/08 8:10 AM	225.11	179.08	224.66	178.49	19.32	1410.49
11/7/08 8:09 AM	225.35	179.31	223.86	178.23	19.34	1414.73
11/7/08 8:08 AM	225.18	178.81	223.88	178.25	19.34	1418.45
11/7/08 8:07 AM	225.17	179.27	224.45	178.82	19.32	1420.96
11/7/08 8:06 AM	225.34	179.95	224.82	179.08	19.32	1422.93
11/7/08 8:05 AM	226.26	180.09	224.71	178.83	19.33	1423.78
11/7/08 8:04 AM	226.86	180.55	224.32	178.23	19.33	1428.49
11/7/08 8:03 AM	227.10	181.24	223.69	178.14	19.33	1427.88
11/7/08 8:02 AM	226.98	180.97	224.34	178.81	19.32	1426.56
11/7/08 8:01 AM	226.28	179.91	224.92	179.03	19.33	1424.42
11/7/08 8:00 AM	225.53	179.28	224.97	178.98	19.32	1420.75
11/7/08 7:59 AM	225.60	179.57	224.54	178.42	19.32	1419.37
11/7/08 7:58 AM	225.97	179.68	223.25	177.54	19.30	1421.38
11/7/08 7:57 AM	225.87	179.42	222.77	177.43	19.30	1426.06
11/7/08 7:56 AM	225.07	178.79	223.82	179.00	19.32	1427.63
11/7/08 7:55 AM	224.42	179.01	225.76	180.08	19.31	1426.05
11/7/08 7:54 AM	224.78	179.13	226.29	180.05	19.25	1425.20
11/7/08 7:53 AM	225.16	178.90	225.65	179.27	19.27	1427.16
11/7/08 7:52 AM	225.34	179.59	225.05	179.13	19.19	1429.66
11/7/08 7:51 AM	225.86	179.77	224.89	179.00	19.28	1432.40
11/7/08 7:50 AM	225.81	179.86	224.94	179.14	19.33	1434.85
11/7/08 7:49 AM	225.88	179.81	225.30	179.44	19.33	1437.03
11/7/08 7:48 AM	225.41	179.29	225.83	180.02	19.35	1437.41
11/7/08 7:47 AM	225.12	179.22	226.91	180.96	19.36	1432.42
11/7/08 7:46 AM	225.53	179.69	227.15	180.50	19.36	1425.64
11/7/08 7:45 AM	225.72	179.75	225.88	179.28	19.35	1421.27
11/7/08 7:44 AM	225.97	179.73	224.02	178.09	19.34	1418.39
11/7/08 7:43 AM	225.49	178.87	223.69	178.31	19.34	1415.86
11/7/08 7:42 AM	223.75	177.82	225.59	179.95	19.30	1414.31
11/7/08 7:41 AM	222.58	177.07	227.16	181.19	19.27	1413.12
11/7/08 7:40 AM	221.42	175.86	228.04	181.42	19.22	1414.29
11/7/08 7:39 AM	220.80	175.56	227.43	180.36	19.18	1417.03
11/7/08 7:38 AM	222.44	177.63	225.49	178.58	19.19	1414.95
11/7/08 7:37 AM	228.66	181.92	223.20	177.29	19.21	1412.06
11/7/08 7:36 AM	230.24	178.58	223.17	178.19	19.22	1417.41
11/7/08 7:35 AM	223.01	175.79	224.92	179.67	19.22	1424.74
11/7/08 7:34 AM	220.13	175.43	226.68	180.54	19.22	1429.92
11/7/08 7:33 AM	221.34	177.75	226.24	179.92	19.22	1429.36
11/7/08 7:32 AM	225.65	181.02	224.67	178.49	19.22	1424.91
11/7/08 7:31 AM	228.65	182.13	223.39	177.45	19.24	1423.42
11/7/08 7:30 AM	227.75	178.87	222.97	177.57	19.24	1425.43
Average=	225.68	179.51	225.03	179.11	19.33	1425.33

NOTE: Run averages computed by Stork SwL.

START TIME: 11/7/08 8:55 AM
END TIME: 11/7/08 9:55 AM
NOTE: Stork Laboratories Regard SRU2 and SRU3 as "SRU1" in their reports

	SRU2		SRU3		INCINERATOR 1	
	SRU2 ACID GAS TO THERMAL REACTOR	SULFUR PRODUCTION FROM SRU2	SRU3 ACID GAS TO THERMAL REACTOR	SULFUR PRODUCTION FROM SRU3	TGTU1 FUEL GAS TO INCINERATOR	FIREBOX TEMPERATURE
#NAME?	2FC7007.PV	S2ESTSR2.PV	2FC7207.PV	S2ESTSR3.PV	2FI8010.PV	2TC8206.PV
	MSCFH	TON/D	MSCFH	TON/D	MSCFH	DEGF
Timestamp	2FC7007.PV - Average	S2ESTSR2.PV - Averag	2FC7207.PV - Average	S2ESTSR3.PV - Average	2FI8010.PV - Average	2TC8206.PV - Average
11/7/08 9:55 AM	226.09	180.11	225.03	179.18	19.49	1425.78
11/7/08 9:54 AM	226.29	180.43	225.02	178.98	19.47	1427.63
11/7/08 9:53 AM	226.59	179.96	224.63	178.53	19.46	1431.11
11/7/08 9:52 AM	226.45	180.55	224.30	178.62	19.45	1433.22
11/7/08 9:51 AM	226.75	180.32	224.40	178.79	19.44	1434.05
11/7/08 9:50 AM	226.09	180.01	224.65	179.05	19.46	1432.87
11/7/08 9:49 AM	225.84	179.74	225.45	179.56	19.46	1428.88
11/7/08 9:48 AM	226.24	180.02	225.72	179.58	19.49	1425.01
11/7/08 9:47 AM	226.09	180.29	225.27	179.07	19.54	1423.74
11/7/08 9:46 AM	226.24	180.35	224.11	178.22	19.51	1425.11
11/7/08 9:45 AM	226.11	180.26	223.33	177.95	19.47	1427.35
11/7/08 9:44 AM	226.01	179.84	224.07	178.76	19.42	1429.33
11/7/08 9:43 AM	225.11	179.50	225.22	179.63	19.39	1430.91
11/7/08 9:42 AM	225.12	179.37	225.93	179.95	19.39	1431.04
11/7/08 9:41 AM	225.45	179.49	226.01	179.82	19.51	1429.95
11/7/08 9:40 AM	225.83	179.70	225.27	179.00	19.59	1431.37
11/7/08 9:39 AM	226.21	180.20	224.50	178.58	19.62	1433.20
11/7/08 9:38 AM	226.52	180.44	224.27	178.69	19.64	1432.97
11/7/08 9:37 AM	226.50	180.38	224.75	179.06	19.65	1430.92
11/7/08 9:36 AM	226.41	179.81	225.44	179.50	19.63	1426.98
11/7/08 9:35 AM	225.87	179.72	225.98	180.08	19.62	1422.68
11/7/08 9:34 AM	225.37	179.06	226.29	180.15	19.62	1418.45
11/7/08 9:33 AM	224.86	179.02	226.23	180.06	19.58	1416.89
11/7/08 9:32 AM	224.79	179.19	225.50	179.01	19.55	1419.02
11/7/08 9:31 AM	225.26	179.31	224.47	178.38	19.53	1422.63
11/7/08 9:30 AM	225.38	179.61	224.33	178.69	19.53	1424.55
11/7/08 9:29 AM	225.69	179.32	225.11	179.42	19.54	1422.99
11/7/08 9:28 AM	225.03	179.07	226.42	180.33	19.55	1420.17
11/7/08 9:27 AM	224.86	179.04	226.72	180.30	19.53	1418.76
11/7/08 9:26 AM	224.93	179.17	225.81	179.54	19.52	1418.25
11/7/08 9:25 AM	225.31	179.25	224.73	178.75	19.52	1418.75
11/7/08 9:24 AM	225.18	179.65	224.27	178.57	19.49	1420.61
11/7/08 9:23 AM	225.60	179.58	224.39	178.48	19.49	1422.15
11/7/08 9:22 AM	225.36	179.42	224.61	178.93	19.47	1423.32
11/7/08 9:21 AM	225.17	179.07	225.10	179.23	19.47	1423.02
11/7/08 9:20 AM	225.54	178.94	225.35	179.35	19.48	1422.00
11/7/08 9:19 AM	225.21	179.08	225.52	179.30	19.46	1420.82
11/7/08 9:18 AM	224.85	179.05	225.01	178.94	19.46	1420.11
11/7/08 9:17 AM	224.98	179.35	224.76	178.83	19.44	1419.86
11/7/08 9:16 AM	225.05	179.07	224.61	178.78	19.41	1420.32
11/7/08 9:15 AM	224.81	179.15	224.62	178.87	19.40	1420.96
11/7/08 9:14 AM	225.09	179.19	224.57	178.95	19.39	1422.15
11/7/08 9:13 AM	225.26	179.29	224.66	178.79	19.39	1424.37
11/7/08 9:12 AM	225.37	179.48	224.52	178.56	19.38	1425.19
11/7/08 9:11 AM	225.94	179.90	224.54	178.63	19.37	1424.53
11/7/08 9:10 AM	226.36	180.30	224.52	178.68	19.34	1424.34
11/7/08 9:09 AM	226.20	180.29	224.23	178.51	19.35	1424.65
11/7/08 9:08 AM	225.81	179.95	224.21	178.47	19.34	1425.32
11/7/08 9:07 AM	225.93	179.34	224.44	178.73	19.35	1425.96
11/7/08 9:06 AM	225.39	179.13	225.01	179.08	19.36	1425.05
11/7/08 9:05 AM	225.03	179.45	225.20	179.29	19.36	1424.23
11/7/08 9:04 AM	225.17	179.40	225.09	179.06	19.37	1423.61
11/7/08 9:03 AM	225.65	179.50	224.66	178.74	19.37	1423.44
11/7/08 9:02 AM	226.07	180.07	224.49	178.70	19.37	1423.62
11/7/08 9:01 AM	225.86	180.30	224.51	178.82	19.39	1424.68
11/7/08 9:00 AM	226.12	180.20	224.86	179.03	19.39	1425.44
11/7/08 8:59 AM	226.46	179.91	225.09	179.01	19.38	1425.80
11/7/08 8:58 AM	226.29	179.91	225.07	179.12	19.38	1425.99
11/7/08 8:57 AM	226.24	180.13	225.13	179.23	19.36	1422.38
11/7/08 8:56 AM	226.30	180.07	225.09	179.21	19.38	1423.21
11/7/08 8:55 AM	225.85	179.85	224.76	178.99	19.38	1424.23
Average=	**225.69**	**179.68**	**224.95**	**179.05**	**19.46**	**1424.82**

NOTE: Run averages computed by Stork SwL.

START TIME: 11/7/08 10:15 AM
END TIME: 11/7/08 11:15 AM
NOTE: Stork Laboratories Regard SRU2 and SRU3 as "SRU1" in their reports

	SRU2		SRU3		INCINERATOR-1	
	SRU2 ACID GAS TO THERMAL REACTOR	SULFUR PRODUCTION FROM SRU2	SRU3 ACID GAS TO THERMAL REACTOR	SULFUR PRODUCTION FROM SRU3	TGTU1 FUEL GAS TO INCINERATOR	FIREBOX TEMPERATURE
#NAME?	2FC7007.PV	S2ESTSR2.PV	2FC7207.PV	S2ESTSR3.PV	2FI8010.PV	2TC8206.PV
	MSCFH	TON/D	MSCFH	TON/D	MSCFH	DEGF
Timestamp	2FC7007.PV - Average	S2ESTSR2.PV - Average	2FC7207.PV - Average	S2ESTSR3.PV - Average	2FI8010.PV - Average	2TC8206.PV - Average
11/7/08 11:15 AM	227.47	180.94	225.39	179.57	19.47	1424.38
11/7/08 11:14 AM	226.83	180.47	225.36	179.49	19.45	1424.19
11/7/08 11:13 AM	226.57	180.22	225.39	179.40	19.45	1424.50
11/7/08 11:12 AM	226.26	180.37	225.50	179.45	19.44	1424.63
11/7/08 11:11 AM	226.28	180.39	225.41	179.38	19.44	1423.63
11/7/08 11:10 AM	226.31	180.75	225.28	179.16	19.45	1422.81
11/7/08 11:09 AM	226.61	180.53	225.10	178.97	19.46	1422.13
11/7/08 11:08 AM	226.62	180.49	224.72	178.92	19.47	1421.22
11/7/08 11:07 AM	226.56	180.34	225.04	179.50	19.48	1419.28
11/7/08 11:06 AM	226.72	180.08	226.02	179.87	19.49	1418.95
11/7/08 11:05 AM	226.43	180.03	225.90	179.46	19.49	1420.92
11/7/08 11:04 AM	226.26	180.13	225.22	179.33	19.53	1424.16
11/7/08 11:03 AM	226.43	180.27	225.40	179.46	19.54	1426.03
11/7/08 11:02 AM	226.26	180.14	225.46	179.31	19.56	1426.03
11/7/08 11:01 AM	226.45	180.41	225.14	179.12	19.58	1425.46
11/7/08 11:00 AM	226.32	179.96	225.03	179.08	19.54	1425.37
11/7/08 10:59 AM	225.89	179.71	225.12	179.28	19.43	1424.07
11/7/08 10:58 AM	225.94	179.68	225.44	179.64	19.38	1420.73
11/7/08 10:57 AM	225.92	179.66	225.98	179.94	19.35	1418.34
11/7/08 10:56 AM	225.50	179.36	225.83	179.65	19.27	1418.96
11/7/08 10:55 AM	225.19	179.15	225.41	179.22	19.23	1421.59
11/7/08 10:54 AM	225.10	179.37	225.25	179.19	19.35	1424.92
11/7/08 10:53 AM	225.23	179.62	225.10	179.12	19.42	1426.46
11/7/08 10:52 AM	225.88	179.97	225.07	179.14	19.44	1427.04
11/7/08 10:51 AM	226.11	179.99	225.03	179.15	19.45	1426.87
11/7/08 10:50 AM	226.21	179.62	225.25	179.27	19.48	1425.66
11/7/08 10:49 AM	225.60	179.47	225.17	179.34	19.47	1424.68
11/7/08 10:48 AM	225.32	179.55	225.53	179.68	19.47	1424.58
11/7/08 10:47 AM	225.21	179.32	225.67	179.64	19.46	1425.27
11/7/08 10:46 AM	224.61	179.15	225.54	179.52	19.45	1425.07
11/7/08 10:45 AM	224.42	178.98	225.42	179.46	19.48	1423.84
11/7/08 10:44 AM	225.20	179.32	225.54	179.29	19.50	1425.94
11/7/08 10:43 AM	225.29	178.95	224.93	178.84	19.50	1425.19
11/7/08 10:42 AM	225.29	179.21	224.73	178.81	19.50	1424.97
11/7/08 10:41 AM	225.51	179.72	224.77	179.09	19.50	1424.59
11/7/08 10:40 AM	225.51	179.75	224.82	179.06	19.49	1425.32
11/7/08 10:39 AM	225.24	179.36	224.62	178.82	19.47	1427.52
11/7/08 10:38 AM	225.45	178.94	224.53	178.73	19.48	1429.03
11/7/08 10:37 AM	224.96	179.28	224.96	179.19	19.47	1429.32
11/7/08 10:36 AM	224.99	179.11	225.48	179.48	19.46	1429.37
11/7/08 10:35 AM	224.74	179.02	225.51	179.44	19.47	1429.08
11/7/08 10:34 AM	224.38	178.94	225.28	179.53	19.50	1427.99
11/7/08 10:33 AM	225.32	179.41	225.32	179.12	19.51	1426.92
11/7/08 10:32 AM	225.68	179.85	224.79	178.89	19.51	1427.19
11/7/08 10:31 AM	225.50	179.74	224.51	178.61	19.53	1427.90
11/7/08 10:30 AM	225.70	179.43	224.63	178.83	19.57	1426.18
11/7/08 10:29 AM	225.76	179.89	225.01	179.41	19.58	1425.27
11/7/08 10:28 AM	225.31	179.36	225.19	179.27	19.57	1425.78
11/7/08 10:27 AM	224.82	179.18	225.17	179.38	19.63	1425.36
11/7/08 10:26 AM	224.80	179.31	225.44	179.52	19.64	1424.93
11/7/08 10:25 AM	225.37	179.41	225.49	179.28	19.65	1426.55
11/7/08 10:24 AM	225.22	179.45	224.96	179.09	19.63	1427.12
11/7/08 10:23 AM	225.56	179.67	224.93	178.98	19.67	1425.93
11/7/08 10:22 AM	225.96	179.92	224.88	179.12	19.71	1425.07
11/7/08 10:21 AM	226.04	179.89	224.89	178.93	19.67	1423.59
11/7/08 10:20 AM	225.46	179.77	224.88	179.05	19.63	1420.51
11/7/08 10:19 AM	225.83	179.59	225.22	179.23	19.58	1418.40
11/7/08 10:18 AM	225.71	179.16	224.99	179.04	19.53	1417.10
11/7/08 10:17 AM	224.83	179.08	224.79	179.13	19.55	1415.61
11/7/08 10:16 AM	224.60	179.03	225.15	179.34	19.52	1414.85
11/7/08 10:15 AM	224.45	178.67	225.54	179.53	19.41	1415.13
Average	**225.66**	**179.66**	**225.20**	**179.26**	**19.50**	**1424.06**

NOTE: Run averages computed by Stork SwL.

Motiva
TGTU 2
Port Arthur, TX

Stork Southwestern Laboratories, Inc.

Houston, Texas

Diameter of Stack =	86.00	inches

E. P. A. Method 1-4 Analytical Data

Run No.	Sample Time min	Net Volume ft^3	Average $\sqrt{\Delta P}$ in H_2O	Average ΔH in H_2O	Avg Stack Temp. °F	Avg Meter Temp. °F	Meter P P_m in Hg	Stack P P_s in Hg	DGMCF	Pitot Correction C_p	Stack Area A_s ft^2
1	60	34.046	0.2433	1.00	1,173	86	30.08	29.91	0.9961	0.840	40.3389
2	60	33.844	0.2462	1.00	1,221	85	30.08	29.91	0.9961	0.840	40.3389
3	60	34.097	0.2537	1.00	1,236	80	30.08	29.91	0.9961	0.840	40.3389

Run No.	Date	Time
1	11/6/2008	0740-0840
2	11/6/2008	0905-1005
3	11/6/2008	1025-1125

E. P. A. Isokinetic Methods Flow Calculations

1 Vs (ft/sec) = 85.49 x Cp x $\sqrt{\Delta P}$ x $\sqrt{(Ts / MWSG \times P_s)}$

2 ACFM (ft^3/min) = V_s x 60 x A_s

3 Q_{sd} = 60 x [1 - (%H_2O / 100)] x ACFM x [528 / (T_s + 460)] x (P_s / 29.92)

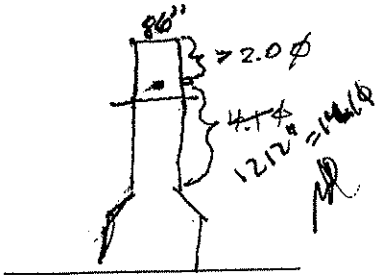
4 I (%) = 0.0945 x (T_s + 460) x V_m (std) / [P_s x V_s x A_n x Sample Time x (1 - (%H2O / 100))]

Run No.	Total H_2O Collected ml	Flue Gas Data % CO_2	% O_2	% N_2	Flow Calculations V_m (std) dscf	% H_2O	MWSG g/g mole	1 Vs ft/sec	2 ACFM ft^3/min	3 Qsd dscf/hr
1	87.6	6.0	5.39	88.6	32.971	11.12	27.933	24.43	59,120.20	1,019,092.6
2	89.3	5.0	5.30	89.7	32.835	11.35	27.762	25.16	60,884.35	1,016,865.4
3	87.2	5.5	5.37	89.1	33.387	10.95	27.880	25.98	62,885.26	1,045,700.5

✓ VG / MP

STORK SOUTHWESTERN LABORATORIES, INC.
AIR EMISSIONS SERVICES DIVISION

FACILITY: Motiva
CITY, STATE: Port Arthur TECHNICIAN: RM, GG
SOURCE NAME: SRU#2 → TGTU2
DATE: 11-6-08 RUN(S): 1-3
BAROMETRIC PRESSURE: 30.01 inches Hg.
STACK I.D.: 86" STATIC PRESSURE: -1.3 inches H2O
I.D by: Field Measurement ___ Engineering Drawing ___ Client Information ___
PORT EXTENSIONS: (1) 9½" (3) 9½"
(2) 9½" (4) ___
CYCLONIC FLOW CHECK: N/A Port Description: 3-3" flanges Monorail Brackets: Yes / NO



STACK SCHEMATIC

TRAVERSE POINT NO.	% OF STACK DIAMETER	DIST. FROM REFERENCE (inches)	RUN NO. 1 TIME: 0748 ΔP	T_s	RUN NO. 2 TIME: 0910 ΔP	T_s	RUN NO. 3 TIME: 1033 ΔP	T_s
1	4.4	3.78	0.03	1173	0.06	1266	0.05	1283
2	14.6	12.56	0.04	1127	0.07	1262	0.07	1279
3	29.6	25.46	0.06	1108	0.07	1250	0.08	1272
4	70.4	60.54	0.06	1109	0.07	1217	0.08	1243
5	85.4	73.44	0.07	1118	0.06	1185	0.08	1210
6	95.6	82.22	0.07	1129	0.06	1167	0.06	1180
1			0.05	1260	0.05	1266	0.05	1267
2			0.07	1259	0.05	1267	0.07	1267
3			0.07	1248	0.06	1258	0.08	1253
4			0.07	1218	0.07	1221	0.06	1217
5			0.07	1177	0.05	1169	0.05	1187
6			0.06	1155	0.06	1129	0.05	1168
			✓	✓	✓	✓	✓	✓
AVERAGES: SQ.RT. ΔP, T_s			0.2433	1173	0.2462	1221	0.2537	1236

TEMPERATURE ID: M-8
PROBE ID: I-10B
PITOT CORRECTION FACTOR: 0.840
UMBILICAL ID: U25-F2

Run No.	PITOT LEAK CHECK Pretest	Post-test	FYRITE ANALYSIS CO_2	O_2
1	✓ @5"	✓ @6"	6.0	Trailer
2	✓ @8"	✓ @6"	5.0	Trailer
3	✓ @4"	✓ @6"	5.5	Trailer

Stork Southwestern Laboratories, Inc.

Facility: Motiva
City, State: Port Arthur, Tx
Source: SRU Train 2
Date: 11-6-08 Oper.: Rm Sample No.: 1
Meter No.: M-8 DGMCF: 0.996 Umb. ID: U25-H2O
ΔH @ Box: 1.8499 Filter No.: N/A Heater ID: N/A
Stack Press.: -1.3 Data: H2O Imp. ID: IC-3
Stack ID (Port): 86" (9 1/2") Platform Ht: 130' Ass. Moist.: N/A
Silica Gel No.: SG 2009 Baro. ID: T-3 Bar. Pres.: 30.01
Probe No.: ~~F-108~~ Flex Line PTCF: ~~0.8440~~ N/A Probe Liner: Flex
Nozzle No.: N/A Nozzle Area: N/A
Store 6: — Store 7: —
Leak Rate: Initial <0.01 @ 15" Final <0.01 @ 5"
Pitot Leak Check: Initial ✓ @ 5" Final ✓ @ 6"
Gas Analysis (Grab / Orsat / Analyzer): CO_2 6.0 O_2 Trailer
CO_2 6.0 O_2 Trailer; CO2 6.0 O2 Trailer
Avg. Gas Analysis: CO_2 6.0 O_2 Trailer

Moisture Data:	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Impinger Solution:	DI	DI	Empty	SG	
Final Vol or Wt (ml or g)	180	100	0	266.3	
Initial Vol or Wt (ml or g)	100	100	0	258.7	
Net Increase (ml or g)	80	0	0	7.6	

Rinse Data:	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Rinse Solution:					
Rinse Volume (ml)					
Final Sample Volume, Including Rinse (ml)					

Total Water Collected (TWW) [Imp. + SG*] = 87.6 ml
* Converted to ml by dividing by the density of H_2O (g/ml)

Meter Pressure (Pm) = 30.01 + 1.0 = 30.08

Stack Pressure (Ps) = 30.01 + (-1.3 / 13.6) = 29.91

% Moisture = (0.04707 x TWW) x 100 / Vm(std) + (0.04707 x TWW) =

Source Sampling Field Data

Pts	Time Minutes (24 hrs.)	Dry Gas Meter Reading ft³	Inches H_2O ΔP	Inches H_2O ΔH	Line Vac. " Hg	Temperature °F Stack T_s	Probe	Heater Box	Last Imp.	Meter Inlet	Meter Outlet
1	0740	428.234	N/A	1.0	2	N/A	N/A	N/A	68	80	80
2	0745	430.83			2				66	82	80
3	0750	433.68			2				65	83	81
4	0755	436.54			2				66	84	82
5	0800	439.37			2				64	86	82
6	0805	442.22			2				64	87	83
7	0810	445.07			2				64	89	85
8	0815	447.93			2				64	91	86
9	0820	450.79			2				64	91	87
10	0825	453.66			2				64	91	87
11	0830	456.52			2				64	91	87
12	0835	459.37			2				65	92	88
Stop	0840	462.228	—	—	—				—	—	—
	60 min Sample Time	34.046 Net Volume	N/A Avg. √ΔP	1.0 Avg. ΔH		N/A Avg. Stack				86 Avg. Meter (AMT)	

Vm(std) = _____ (Net Volume) x _____ (DGMCF) x 528 std Temp (R) / AMT (R) x _____ Pm / 29.92 std press. = _____ dscf

Stork Southwestern Laboratories, Inc.

Facility: Motiva
City, State: Port Arthur, Tx
Source: SRU#2 TGTU 2
Date: 11-6-08 | Oper.: RW | Sample No.: 2
Meter No.: M-8 | DGMCF: 0.9961 | Umb. ID: U25-H2O
ΔH @ Box: 1.8499 | Filter No.: N/A | Heater ID: N/A
Stack Press.: -1.3 | Data: H2O | Imp. ID: IC-3
Stack ID (Port): 86" (9½") | Platform Ht.: -130' | Ass. Moist.: N/A
Silica Gel No.: SG2002 | Baro. ID: T-3 | Bar. Pres.: 30.01
Probe No.: Flexline | PTCF: N/A | Probe Liner: Flex
Nozzle No.: N/A | Nozzle Area: N/A
Store 6: — | Store 7: —
Leak Rate: Initial <0.01 @ 5" | Final <0.01 @ 5"
Pitot Leak Check: Initial ✓ @ 6" | Final ✓ @ 6"
Gas Analysis (Fyrite / Orsat / Analyzer): CO_2 5.0 O_2 Trailer
CO_2 5.0 O_2 Trailer ; CO2 5.0 O2 Trailer
Avg. Gas Analysis: CO_2 5.0 O_2 Trailer

Moisture Data:	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Impinger Solution:	DI	DI	Empty	SG	267.8
Final Vol or Wt (ml or g)	176	106	0		267.3
Initial Vol or Wt (ml or g)	100	100	0	260.5	
Net Increase (ml or g)	76	6	0		7.3

Rinse Data:	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Rinse Solution:					
Rinse Volume (ml)					
Final Sample Volume, Including Rinse (ml)					

Total Water Collected (TWW) [Imp. + SG*] = 89.3 ml
* Converted to ml by dividing by the density of H_2O (g/ml)

Meter Pressure (Pm) = 32.01 + 1.0 = 30.01
Stack Pressure (Ps) = 30.01 + -1.3 (13.6 / 13.6) = 29.91

% Moisture = (0.04707 x TWW) x 100 / Vm(std) + (0.04707 x TWW) = _____

Source Sampling Field Data

Pts	Time Minutes (24 hrs.)	Dry Gas Meter Reading ft³	Inches H2O ΔP	Inches H2O ΔH	Line Vac. " Hg	Temperature °F Stack Ts	Probe	Heater Box	Last Imp.	Meter Inlet	Meter Outlet
	0905	462.414	N/A	1.0	2	N/A	N/A	N/A	68	88	87
1	0910	465.20			2				63	87	87
2	0915	468.04			2				63	88	87
3	0920	470.90			2				65	90	87
4	0925	473.76			2				66	92	88
5	0930	476.60			2				64	91	88
6	0935	479.42			2				63	88	86
7	0940	482.25			2				63	83	83
8	0945	485.05			2				62	82	82
9	0950	487.85			2				63	81	81
10	0955	490.64			2				64	82	80
11	1000	493.42			2				65	83	80
12	1005	496.258									
	60 min. Sample Time	33.844 Net Volume	N/A Avg. √ΔP	1.0 Avg. ΔH		N/A Avg. Stack					85 Avg. Meter (AMT)

Vm(std) = _____ (Net Volume) x _____ (DGMCF) x 528 std Temp (R) / AMT (R) x _____ Pm / 29.92 std press. = _____ dscf

Stork Southwestern Laboratories, Inc.

Facility Motiva
City, State Port Arthur, Tx
Source SRU #2 TGTU2
Date 11-6-08 Oper. RM Sample No. 3
Meter No. M-8 DGMCF 0.9961 Umb. ID N25-H_2O
ΔH @ Box 1.8499 Filter No. N/A Heater ID N/A
Stack Press. -1.3 Data H_2O Imp. ID IC-3
Stack ID (Port) 86" (9½") Platform Ht 130' Ass. Moist. N/A
Silica Gel No. SG2026 Baro. ID F3 Bar. Pres. 30.01
Probe No. Glass Lined PTCF N/A Probe Liner N/A
Nozzle No. N/A Nozzle Area N/A
Store 6 — Store 7 —
Leak Rate : Initial < 0.01 @ 15" Final < 0.01 @ 5"
Pitot Leak Check: Initial ✓ @ 4" Final ✓ @ 6"
Gas Analysis (~~Fyrite~~ Orsat / Analyzer) : CO_2 5.5 O_2 Trailer
CO_2 5.5 O_2 Trailer ; CO2 5.5 O2 Trailer
Avg. Gas Analysis : CO_2 5.5 O_2 Trailer

Moisture Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Impinger Solution :	DI	DI	Empty	SG	
Final Vol or Wt (ml or g)	176	104	0	267.6	
Initial Vol or Wt (ml or g)	100	100	0	260.4	
Net Increase (ml or g)	76	4		7.2	

Rinse Data :	Imp. 1	Imp. 2	Imp. 3	Imp. 4	Imp. 5
Rinse Solution :					
Rinse Volume (ml)					
Final Sample Volume, Including Rinse (ml)					

Total Water Collected (TWW) [Imp. + SG*] = 87.2 ml
* Converted to ml by dividing by the density of H_2O (g/ml)

Meter Pressure (Pm) = 30.01 + 1.0 = 30.08

Stack Pressure (Ps) = 30.01 + $\frac{-1.3}{13.6}$ = 29.91 (13.6)

% Moisture = $\frac{(0.04707 \times TWW) \times 100}{Vm(std) + (0.04707 \times TWW)}$ =

Source Sampling Field Data

Pts	Time Minutes (24 hrs.)	Dry Gas Meter Reading ft³	Inches H_2O ΔP	Inches H_2O ΔH	Line Vac. " Hg	Temperature °F Stack T_s	Probe	Heater Box	Last Imp.	Meter Inlet	Meter Outlet
1	1025	496.420	N/A	1.0	2	N/A	N/A	N/A	68	82	81
2	1030	499.26			2				60	83	82
3	1035	502.11			2				61	85	84
4	1040	504.95			2				63	87	84
5	1045	507.79			2				63	88	85
6	1050	510.64			2				63	87	85
7	1055	513.46			2				63	87	85
8	1100	516.29			2				63	88	85
9	1105	519.14			2				64	89	86
10	1110	521.96			2				64	89	87
11	1115	524.78			2				64	90	87
12	1120	527.67			2				64	91	88
Stop	1125	530.517			—				—	—	—
	60 min Sample Time	34.097 Net Volume	N/A Avg. √ΔP	1.0 Avg. ΔH		N/A Avg. Stack				86 Avg. Meter (AMT)	

Vm(std) = _____ (Net Volume) x _____ (DGMCF) x 528 std Temp (R) x _____ AMT (R) Pm = _____ dscf
29.92 std press.

~~482.35~~

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Motiva
Port Arthur, Tx
11/6/2008

Source: TGTU 2 **Analyst:** VG

NO_x, CO, O_2 and SO_2 Calibration - Adjusted for Zero and Span Drift and Bias

Analyzer	Span of Analyzer ppm, % *	Span Gas Concentration ppm, % *	Span Gas Cylinder Number	Expiration Date	Calibration Error Value Zero	Calibration Error Value Mid Level	Fuel F-Factor HHV dscf/mmBtu	Gross Caloric Value HHV Btu/ft³
CO	486.0	246.00	ALM046015	3/25/2010	0.04	246.33	NA	NA
NO_x	230.0	126.00	ALM025220	3/29/2009	0.27	126.08		
O_2	23.2	13.40	CC82281	8/20/2010	-0.11	13.46		

	CO	NOx	O2	SO2
Initial Zero Bias - % of Span	0.03	0.01	1.25	NA
Initial Span Bias - % of Span	-1.23	-2.49	0.52	NA

Drift and Bias Limits	
Drift	+/- 3% of Span
Bias	+/- 5% of Span

Run No.	Zero Gas Initial Reading	Zero Gas Final Reading	Zero Gas Difference ppm, % *	Zero Gas % Drift	Zero Gas % Bias	Span Gas Initial Reading	Span Gas Final Reading	Span Gas Difference ppm, % *	Span Gas % Drift	Span Gas % Bias
1 CO	0.17	-0.05	-0.22	-0.05	-0.02	240.35	240.44	0.09	0.02	-1.21
NO_x	0.29	0.29	0.00	0.00	0.01	120.35	120.68	0.33	0.14	-2.35
O_2	0.18	0.04	-0.14	-0.60	0.65	13.58	13.69	0.11	0.47	0.99
2 CO	-0.05	-0.19	-0.14	-0.03	-0.05	240.44	242.83	2.39	0.49	-0.72
NO_x	0.29	0.29	0.00	0.00	0.01	120.68	120.40	-0.28	-0.12	-2.47
O_2	0.04	-0.01	-0.05	-0.22	0.43	13.69	13.56	-0.13	-0.56	0.43
3 CO	-0.19	-0.33	-0.14	-0.03	-0.08	242.83	244.65	1.82	0.37	-0.35
NO_x	0.29	0.28	-0.01	0.00	0.00	120.40	120.69	0.29	0.13	-2.34
O_2	-0.01	-0.09	-0.08	-0.34	0.09	13.56	13.46	-0.10	-0.43	0.00

EQUATIONS:

% Drift =[(Final Reading - Initial Reading)/Instrument Span] x 100
% Bias =[(Final Reading - Calibration Error Value) /Instrument Span] x 100
(NOTE: Initial Bias uses Initial Reading in place of Final Reading)

VG / MR

Run No.	Uncorrected Stack Gas Concentration ppm, % *	Average of Zero Gas	Average of Span Gas	Corrected Stack Gas Concentration ppm, % *	C Concentration in lb/dscf	C Concentration ppmvd@3%O2	SRU 2 Date Time
1 CO	-0.53	0.06	240.40	< 0.10	< 7.270E-09	< na	11/6/2008
NO_x	20.14	0.29	120.52	20.80	2.485E-06		0740-0840
O_2	5.55	0.11	13.64	5.39			
2 CO	-0.66	-0.12	241.64	< 0.10	< 7.270E-09	< na	11/6/2008
NO_x	19.75	0.29	120.54	20.39	2.435E-06		0905-1005
O_2	5.40	0.02	13.63	5.30			
3 CO	-0.85	-0.26	243.74	< 0.10	< 7.270E-09	< na	11/6/2008
NO_x	20.72	0.29	120.55	21.41	2.557E-06		1025-1125
O_2	5.38	-0.05	13.51	5.37			
Avg. CO				< 0.10	< 7.270E-09	< na	
NO_x				20.87	2.492E-06		
O_2				5.35			

Run No.	Method 19 Calculations: Emission Rate lb/mmBtu **	Fuel Flow Rate MSCFH	Emission Rate lb/hr	Methods 1-4 Calculation: Q_{sd} dscf/hr	Emission Rate lb/hr	Allowable Emission Rate lb/hr	Precent of Allowable Emission Rate
1 CO	< NA	NA	< NA	1,019,092.6	< 0.01	10.89	< 0.1
NO_x	NA	NA	NA	1,019,092.6	2.53	7.50	33.8
2 CO	< NA	NA	< NA	1,016,865.4	< 0.01	10.89	< 0.1
NO_x	NA	NA	NA	1,016,865.4	2.48	7.50	33.0
3 CO	< NA	NA	< NA	1,045,700.5	< 0.01	10.89	< 0.1
NO_x	NA	NA	NA	1,045,700.5	2.67	7.50	35.7
Avg. CO	< NA	NA	< NA	1,027,219.5	< 0.01	10.89	< 0.1
NO_x	NA	NA	NA	1,027,219.5	2.56	7.50	34.1

Note * O_2 is expressed in percent. ** lb/mmBtu is calculated using 0% O_2 and the HHV F-Factor.

EQUATIONS:

lb/mmBtu = C x F x [20.9/(20.9-%O2)]

Method 19 lb/hr = lb/mmBtu x Fuel Flow Rate x Gross Calorific Value 1x10-6

Method 1-4 lb/hr = C x Qsd

Stork Southwestern Laboratories, Inc.
Houston, Texas

Motiva
Port Arthur, TX

Source: **TGTU 2** **Analyst:** VG

11/6/2008 VOC Calculation - Adjusted for Zero and Span Drift and Bias **Wet Basis**

Span of THC Analyzer =	100	**Concentration of THC Span Gas =**	50.50
Cylinder Number :	ALM053164	**Expiration Date:**	12/25/2010

Run No.	Zero Gas Initial Reading	Zero Gas Final Reading	Zero Gas Difference ppm, wet	Zero Gas % Drift	Span Gas Initial Reading	Span Gas Final Reading	Span Gas Difference ppm, wet	Span Gas % Drift
1	0.14	0.18	0.04	0.04	50.45	49.48	-0.97	-0.97
2	0.18	0.18	0.00	0.00	49.48	49.52	0.04	0.04
3	0.18	0.55	0.37	0.37	49.52	49.82	0.30	0.30

Run No. 1			Run No. 2			Run No. 3		
Injection Time or No.	Methane ppmv, wet	Ethane ppmv, wet	Injection Time or No.	Methane ppmv, wet	Ethane ppmv, wet	Injection Time or No.	Methane ppmv, wet	Ethane ppmv, wet
1	0.0000	0.0000	1	0.0000	0.0000	1	0.0000	0.0000
2	0.0000	0.0000	2	0.0000	0.0000	2	0.0000	0.0000
3	0.0000	0.0000	3	0.0000	0.0000	3	0.0000	0.0000
4	0.0000	0.0000	4	0.0000	0.0000	4	0.0000	0.0000
5	0.0000	0.0000	5	0.0000	0.0000	5	0.0000	0.0000

Run No.	Uncorrected Stack Gas Conc. ppmv, wet	Average of Zero Gas ppmv	Average of Span Gas ppmv	Bias Adj. Stack Gas Conc. ppmv, wet	Average Methane Conc. ppmv, wet	Average Ethane Conc. ppmv, wet	Moisture %	Corrected VOC* Conc. ppmv, wet
1	0.29	0.16	49.97	0.13	0.00	0.00	11.12	0.13
2	0.39	0.18	49.50	0.22	0.00	0.00	11.35	0.22
3	0.20	0.37	49.67	-0.17	0.00	0.00	10.95	-0.17

Run No.	Corrected VOC** Conc. ppmv, dry	VOC** C Conc. lb/dscf	Q_{sd} dscf/hr	VOC Emission Rate lb/hr	Allowable Limit lb/hr	Percent of Allowable	Date	Time
1	0.15	1.694E-08	1,019,092.6	0.017	0.40	4.3	11/6/2008	0740-0840
2	0.24	2.771E-08	1,016,865.4	0.028	0.40	7.0	11/6/2008	0905-1005
3	< 0.10	< 1.142E-08	1,045,700.5	< 0.012	0.40	< 3.0	11/6/2008	1025-1125
Average	**< 0.16**	**< 1.869E-08**	**1,027,219.5**	**< 0.019**	**0.400**	**< 4.8**		

Note:
% Drift = ((Final Reading - Initial Reading) / Span) x 100
Bias Adj. $_{\text{as propane}}$ = (Uncorr. Stack Gas - Avg. Zero) x (Span Gas Conc. / (Avg. Span Gas - Avg. Zero))
* Corr. VOC $_{\text{as propane}}$ = ((Bias Adj. x 3) - (Avg. Methane + (Avg. Ethane x 2))) / 3
** Corr. VOC $_{\text{as propane}}$ = ppm wet / (1 - (%H_2O / 100))
C (lb / dscf) = (Corr. VOC x 44 x 6.242 x 10^{-8}) / 24.04
VOC (lb/hr) = C x Q_{sd}
Stork SwL calculates emissions based upon a detectable limit of 0.10 ppmvd if a negative result is produced by drift and bias.

✓ RD

Motiva
TGTU 2
Port Arthur, Texas
'08061098
File Name: 11-06-08_06-21

Date & Time M/D/Y H:M	CO ppm	NOx ppm	O2 %	THC ppm
11/6/2008 7:41	-0.4	20.23	5.54	0.17
11/6/2008 7:42	-0.61	20.06	5.51	0.18
11/6/2008 7:43	-0.46	19.92	5.47	0.18
11/6/2008 7:44	-0.54	20.02	5.44	0.18
11/6/2008 7:45	-0.39	20.17	5.52	0.18
11/6/2008 7:46	-0.44	19.97	5.45	0.18
11/6/2008 7:47	-0.77	20.31	5.43	0.18
11/6/2008 7:48	-0.52	20.03	5.46	0.2
11/6/2008 7:49	-0.5	20.18	5.41	0.19
11/6/2008 7:50	-0.64	20.16	5.49	0.19
11/6/2008 7:51	-0.73	20.03	5.55	0.19
11/6/2008 7:52	-0.59	20.07	5.47	0.19
11/6/2008 7:53	-0.48	19.9	5.52	0.18
11/6/2008 7:54	-0.78	19.93	5.49	0.17
11/6/2008 7:55	-0.39	20.02	5.43	0.17
11/6/2008 7:56	-0.39	19.85	5.51	0.16
11/6/2008 7:57	-0.45	19.93	5.5	0.17
11/6/2008 7:58	-0.81	20.1	5.43	0.16
11/6/2008 7:59	-1.04	20.31	5.48	0.17
11/6/2008 8:00	-0.72	20.01	5.39	0.18
11/6/2008 8:01	-0.5	20.01	5.5	0.22
11/6/2008 8:02	-0.34	19.93	5.52	0.24
11/6/2008 8:03	-0.32	20.1	5.46	0.27
11/6/2008 8:04	-0.71	20.02	5.45	0.26
11/6/2008 8:05	-0.74	19.65	5.53	0.26
11/6/2008 8:06	-0.46	19.81	5.4	0.27
11/6/2008 8:07	-0.38	19.9	5.52	0.29
11/6/2008 8:08	0.24	19.81	5.68	0.3
11/6/2008 8:09	0.14	19.73	5.76	0.3
11/6/2008 8:10	0.19	19.81	5.67	0.29
11/6/2008 8:11	0.16	19.81	5.68	0.29
11/6/2008 8:12	-0.09	20.18	5.68	0.29
11/6/2008 8:13	0.08	20.26	5.65	0.31
11/6/2008 8:14	-0.49	19.81	5.58	0.31
11/6/2008 8:15	-0.64	20.1	5.61	0.32
11/6/2008 8:16	-0.94	20.22	5.67	0.31
11/6/2008 8:17	-0.7	20.22	5.7	0.32
11/6/2008 8:18	-0.23	20.17	5.74	0.34
11/6/2008 8:19	0.02	19.72	5.69	0.35
11/6/2008 8:20	-0.35	20.02	5.63	0.34
11/6/2008 8:21	-0.39	20.3	5.7	0.36
11/6/2008 8:22	-0.48	20.3	5.65	0.37
11/6/2008 8:23	-0.68	20.56	5.59	0.36
11/6/2008 8:24	-0.85	20.31	5.61	0.37
11/6/2008 8:25	-0.4	20.22	5.64	0.37
11/6/2008 8:26	-0.58	20.31	5.51	0.37
11/6/2008 8:27	-0.87	20.31	5.53	0.38
11/6/2008 8:28	-0.7	20.26	5.57	0.39
11/6/2008 8:29	-0.19	20.1	5.69	0.4
11/6/2008 8:30	0.02	19.97	5.59	0.43
11/6/2008 8:31	-0.32	20.31	5.57	0.4
11/6/2008 8:32	-0.7	20.46	5.5	0.4
11/6/2008 8:33	-0.91	20.82	5.6	0.4
11/6/2008 8:34	-0.86	20.82	5.55	0.39
11/6/2008 8:35	-1.14	20.82	5.49	0.39
11/6/2008 8:36	-1.04	20.42	5.47	0.38
11/6/2008 8:37	-1.04	20.4	5.46	0.41
11/6/2008 8:38	-1.04	20.57	5.41	0.39
11/6/2008 8:39	-0.88	20.31	5.48	0.42
11/6/2008 8:40	-0.85	20.17	5.48	0.39
Avg =	**-0.53**	**20.14**	**5.55**	**0.29**

Motiva
TGTU 2
Port Arthur, Texas
'08061098
File Name: 11-06-08_06-21

Date & Time M/D/Y H:M	CO ppm	NOx ppm	O2 %	THC ppm
11/6/2008 9:06	-0.9	20.16	5.28	0.32
11/6/2008 9:07	-0.84	20.13	5.45	0.32
11/6/2008 9:08	-0.52	19.8	5.32	0.34
11/6/2008 9:09	-0.47	20.06	5.37	0.33
11/6/2008 9:10	-0.3	19.97	5.44	0.37
11/6/2008 9:11	-0.5	20.22	5.41	0.35
11/6/2008 9:12	-0.85	20.4	5.32	0.39
11/6/2008 9:13	-1.02	20.32	5.33	0.38
11/6/2008 9:14	-0.92	20.32	5.41	0.37
11/6/2008 9:15	-0.7	20.32	5.44	0.37
11/6/2008 9:16	-0.41	20.07	5.38	0.38
11/6/2008 9:17	-0.29	19.9	5.35	0.37
11/6/2008 9:18	-0.56	19.97	5.32	0.37
11/6/2008 9:19	-0.9	20.31	5.39	0.37
11/6/2008 9:20	-0.85	20.56	5.39	0.37
11/6/2008 9:21	-0.31	20.33	5.4	0.38
11/6/2008 9:22	-0.2	20.22	5.45	0.38
11/6/2008 9:23	-0.36	20.4	5.33	0.4
11/6/2008 9:24	-0.3	20.4	5.36	0.4
11/6/2008 9:25	-0.88	20.56	5.35	0.4
11/6/2008 9:26	-0.81	20.31	5.35	0.41
11/6/2008 9:27	-0.96	20.48	5.34	0.44
11/6/2008 9:28	-1.14	20.56	5.28	0.41
11/6/2008 9:29	-0.78	20.06	5.39	0.4
11/6/2008 9:30	-0.53	19.56	5.38	0.39
11/6/2008 9:31	-0.86	19.64	5.42	0.4
11/6/2008 9:32	-0.46	19.39	5.46	0.43
11/6/2008 9:33	-0.07	19.31	5.4	0.43
11/6/2008 9:34	0.35	19.13	5.43	0.44
11/6/2008 9:35	0.52	18.8	5.48	0.45
11/6/2008 9:36	-0.39	19.22	5.36	0.45
11/6/2008 9:37	-0.47	19.55	5.49	0.45
11/6/2008 9:38	-0.39	19.47	5.49	0.46
11/6/2008 9:39	0.71	19.47	5.64	0.47
11/6/2008 9:40	1.54	18.72	5.47	0.48
11/6/2008 9:41	0.52	19.39	5.49	0.47
11/6/2008 9:42	-0.47	20.06	5.42	0.46
11/6/2008 9:43	-0.74	20.32	5.48	0.47
11/6/2008 9:44	-0.19	19.98	5.5	0.48
11/6/2008 9:45	-0.81	19.91	5.35	0.45
11/6/2008 9:46	-1.31	20.49	5.41	0.46
11/6/2008 9:47	-1.09	19.81	5.38	0.43
11/6/2008 9:48	-1.23	19.91	5.4	0.4
11/6/2008 9:49	-1.56	20.14	5.39	0.39
11/6/2008 9:50	-1.85	19.81	5.32	0.33
11/6/2008 9:51	-1.74	19.63	5.33	0.28
11/6/2008 9:52	-1.33	19.39	5.45	0.29
11/6/2008 9:53	-1.06	19.3	5.44	0.29
11/6/2008 9:54	-1.24	19.31	5.41	0.28
11/6/2008 9:55	-1.59	19.23	5.36	0.32
11/6/2008 9:56	-1.5	19.38	5.35	0.3
11/6/2008 9:57	-0.85	19.13	5.53	0.33
11/6/2008 9:58	-0.42	18.56	5.43	0.33
11/6/2008 9:59	-0.91	18.81	5.34	0.34
11/6/2008 10:00	-1.4	19.23	5.33	0.35
11/6/2008 10:01	-1.46	19.32	5.41	0.36
11/6/2008 10:02	-0.4	19.06	5.46	0.37
11/6/2008 10:03	0.02	18.82	5.41	0.37
11/6/2008 10:04	-0.64	18.91	5.44	0.38
11/6/2008 10:05	-0.71	19.23	5.5	0.39
Avg =	**-0.66**	**19.75**	**5.40**	**0.39**

Motiva
TGTU 2
Port Arthur, Texas
'08061098
File Name: 11-06-08_06-21

Date & Time M/D/Y H:M	CO ppm	NOx ppm	O2 %	THC ppm
11/6/2008 10:26	-0.69	19.56	5.4	0.11
11/6/2008 10:27	-0.69	19.54	5.39	0.12
11/6/2008 10:28	-1.06	19.59	5.32	0.12
11/6/2008 10:29	-0.86	19.81	5.46	0.12
11/6/2008 10:30	-0.83	19.81	5.48	0.13
11/6/2008 10:31	-0.42	19.78	5.46	0.14
11/6/2008 10:32	-0.75	19.58	5.35	0.13
11/6/2008 10:33	-1	19.81	5.39	0.13
11/6/2008 10:34	-0.75	19.89	5.45	0.14
11/6/2008 10:35	-0.34	19.8	5.47	0.15
11/6/2008 10:36	-0.16	19.72	5.44	0.17
11/6/2008 10:37	-0.65	19.8	5.38	0.17
11/6/2008 10:38	-0.81	19.97	5.37	0.18
11/6/2008 10:39	-0.79	19.97	5.28	0.18
11/6/2008 10:40	-0.99	20.08	5.29	0.18
11/6/2008 10:41	-0.75	20.3	5.4	0.18
11/6/2008 10:42	-0.75	20.3	5.34	0.18
11/6/2008 10:43	-0.71	20.42	5.39	0.18
11/6/2008 10:44	-0.84	20.43	5.36	0.18
11/6/2008 10:45	-0.65	20.3	5.38	0.18
11/6/2008 10:46	-0.79	20.39	5.34	0.18
11/6/2008 10:47	-0.91	20.34	5.34	0.18
11/6/2008 10:48	-0.99	20.73	5.35	0.19
11/6/2008 10:49	-0.73	20.61	5.43	0.19
11/6/2008 10:50	-0.69	20.64	5.32	0.2
11/6/2008 10:51	-0.43	20.59	5.53	0.19
11/6/2008 10:52	-0.34	20.36	5.44	0.19
11/6/2008 10:53	-0.52	20.35	5.39	0.19
11/6/2008 10:54	-0.71	20.85	5.35	0.2
11/6/2008 10:55	-0.92	20.9	5.39	0.2
11/6/2008 10:56	-0.8	20.84	5.44	0.21
11/6/2008 10:57	-0.59	20.49	5.36	0.21
11/6/2008 10:58	-0.55	20.97	5.43	0.22
11/6/2008 10:59	-0.94	21.33	5.33	0.2
11/6/2008 11:00	-0.86	21.32	5.35	0.22
11/6/2008 11:01	-0.98	20.9	5.37	0.19
11/6/2008 11:02	-1.34	21.32	5.31	0.2
11/6/2008 11:03	-1.1	21.32	5.28	0.21
11/6/2008 11:04	-0.99	21.32	5.31	0.21
11/6/2008 11:05	-0.96	21.23	5.38	0.2
11/6/2008 11:06	-0.9	21.32	5.32	0.21
11/6/2008 11:07	-0.98	21.28	5.38	0.22
11/6/2008 11:08	-1.13	21.73	5.38	0.23
11/6/2008 11:09	-0.95	21.49	5.35	0.24
11/6/2008 11:10	-0.88	21.07	5.37	0.24
11/6/2008 11:11	-0.88	21.19	5.4	0.23
11/6/2008 11:12	-1	21.49	5.38	0.23
11/6/2008 11:13	-1.16	21.24	5.41	0.24
11/6/2008 11:14	-1.34	21.77	5.38	0.24
11/6/2008 11:15	-1.09	21.36	5.32	0.27
11/6/2008 11:16	-0.98	21.15	5.42	0.27
11/6/2008 11:17	-1.01	21.31	5.39	0.27
11/6/2008 11:18	-0.95	21.4	5.41	0.27
11/6/2008 11:19	-1.13	21.45	5.34	0.28
11/6/2008 11:20	-0.99	21.54	5.39	0.27
11/6/2008 11:21	-0.88	21.19	5.48	0.29
11/6/2008 11:22	-1	21.61	5.41	0.27
11/6/2008 11:23	-1.1	21.73	5.45	0.24
11/6/2008 11:24	-1.01	21.35	5.43	0.24
11/6/2008 11:25	-0.98	21.07	5.38	0.24
Avg =	**-0.85**	**20.72**	**5.38**	**0.20**

✓ R

Motiva
SRU 2 TGTU 2
Port Arthur, Texas
'08061098
File Name: 11-06-08_06-21

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm
11/6/2008 06:22	-3.41	0.27	-0.11	1.74			
11/6/2008 06:23	-3.83	0.28	-0.12	1.81			
11/6/2008 06:24	-3.87	0.28	-0.13	1.81			
11/6/2008 06:25	-1.17	0.27	-0.14	1.83			
11/6/2008 06:26	0.08	0.28	4.71	0.61			
11/6/2008 06:27	0.06	192.55	23.11	0.14			
11/6/2008 06:28	0.04	235.87	23.53	0.12			
11/6/2008 06:29	220.03	236.46	23.52	0.14			
11/6/2008 06:30	487.61	236.33	18.20	0.22			
11/6/2008 06:31	488.19	234.20	13.48	0.13			
11/6/2008 06:32	486.14	55.10	13.47	0.12			
11/6/2008 06:33	486.09	122.34	13.46	0.12			
11/6/2008 06:34	380.16	234.88	17.31	0.14			
11/6/2008 06:35	247.01	235.71	21.14	0.10			
11/6/2008 06:36	246.33	236.04	18.35	29.98			
11/6/2008 06:37	241.58	232.46	0.44	89.49			
11/6/2008 06:38	48.20	229.72	0.25	84.54			
11/6/2008 06:39	0.17	229.88	0.21	82.75			
11/6/2008 06:40	0.20	225.64	0.19	81.84			
11/6/2008 06:41	0.26	150.74	0.18	81.70			
11/6/2008 06:42	0.33	128.01	0.19	77.82			
11/6/2008 06:43	0.18	126.08	0.28	27.55			
11/6/2008 06:44	0.17	125.43	0.26	29.38			
11/6/2008 06:45	0.11	125.11	0.24	29.76			
11/6/2008 06:46	0.09	40.26	0.25	27.69			
11/6/2008 06:47	0.14	0.95	0.22	41.31			
11/6/2008 06:48	0.23	0.70	0.19	50.45			
11/6/2008 06:49	0.25	0.29	0.18	50.69			
11/6/2008 06:50	0.19	0.97	0.25	33.91			
11/6/2008 06:51	0.16	98.32	0.35	-0.62			
11/6/2008 06:52	0.16	119.68	0.32	-0.81			
11/6/2008 06:53	0.12	120.35	0.30	0.14			
11/6/2008 06:54	0.14	120.85	0.30	0.13			
11/6/2008 06:55	7.91	119.67	0.29	0.14			
11/6/2008 06:56	206.08	28.01	0.22	0.11			
11/6/2008 06:57	240.35	1.03	0.28	0.14			
11/6/2008 06:58	240.71	0.79	0.28	0.14			
11/6/2008 06:59	239.19	0.45	0.41	0.23			
11/6/2008 07:00	93.70	0.29	13.00	0.80			
11/6/2008 07:01	-0.95	0.29	13.58	0.80			
11/6/2008 07:02	-2.34	0.28	13.60	0.81			
11/6/2008 07:03	-2.02	0.54	17.37	1.72			
11/6/2008 07:04	-0.33	0.36	21.02	1.75			
11/6/2008 07:05	-0.18	0.28	21.05	1.58			
11/6/2008 07:06	-0.21	0.28	21.06	1.54			
11/6/2008 07:07	-0.18	0.29	21.06	1.51			
11/6/2008 07:08	-0.19	0.29	21.06	1.48			
11/6/2008 07:09	-0.16	0.29	21.06	1.47			
11/6/2008 07:10	-0.15	0.29	21.06	1.46			
11/6/2008 07:11	-0.22	0.29	21.06	1.45			
11/6/2008 07:12	-0.19	0.29	21.06	1.44			
11/6/2008 07:13	-0.15	0.29	21.06	1.44			
11/6/2008 07:14	-0.21	0.29	21.06	1.44			
11/6/2008 07:15	-0.18	0.29	21.06	1.42			
11/6/2008 07:16	-0.18	0.28	21.06	1.42			

Response 43

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Cal Error & Bias

11/6/2008 07:17	-0.22	0.28	20.70	1.41
11/6/2008 07:18	-0.19	0.29	21.05	1.42
11/6/2008 07:19	-0.24	0.28	21.07	1.31
11/6/2008 07:20	-0.23	0.29	21.08	1.32
11/6/2008 07:21	-0.22	0.29	21.09	1.33
11/6/2008 07:22	-0.24	0.29	21.08	1.31
11/6/2008 07:23	-0.23	0.29	21.08	1.33
11/6/2008 07:24	-0.23	0.29	21.08	1.33
11/6/2008 07:25	-0.23	0.28	21.08	1.32
11/6/2008 07:26	-0.23	0.28	21.08	1.35
11/6/2008 07:27	-0.24	0.28	21.08	1.36
11/6/2008 07:28	-0.34	0.61	17.54	1.18
11/6/2008 07:29	0.00	14.58	7.42	0.39
11/6/2008 07:30	0.44	17.33	6.74	0.20
11/6/2008 07:31	0.78	18.80	5.63	0.16
11/6/2008 07:32	0.90	19.33	5.66	0.16
11/6/2008 07:33	0.02	19.81	5.62	0.14
11/6/2008 07:34	-0.44	19.92	5.56	0.13
11/6/2008 07:35	-0.17	20.13	5.61	0.14
11/6/2008 07:36	0.26	19.82	5.55	0.16
11/6/2008 07:37	-0.22	19.74	5.54	0.16
11/6/2008 07:38	0.09	19.73	5.57	0.16
11/6/2008 07:39	-0.19	19.93	5.61	0.15
11/6/2008 07:40	-0.12	19.95	5.55	0.15
11/6/2008 07:41	-0.40	20.23	5.54	0.17
11/6/2008 07:42	-0.61	20.06	5.51	0.18
11/6/2008 07:43	-0.46	19.92	5.47	0.18
11/6/2008 07:44	-0.54	20.02	5.44	0.18
11/6/2008 07:45	-0.39	20.17	5.52	0.18
11/6/2008 07:46	-0.44	19.97	5.45	0.18
11/6/2008 07:47	-0.77	20.31	5.43	0.18
11/6/2008 07:48	-0.52	20.03	5.46	0.20
11/6/2008 07:49	-0.50	20.18	5.41	0.19
11/6/2008 07:50	-0.64	20.16	5.49	0.19
11/6/2008 07:51	-0.73	20.03	5.55	0.19
11/6/2008 07:52	-0.59	20.07	5.47	0.19
11/6/2008 07:53	-0.48	19.99	5.52	0.18
11/6/2008 07:54	-0.78	19.93	5.49	0.17
11/6/2008 07:55	-0.39	20.02	5.43	0.17
11/6/2008 07:56	-0.39	19.85	5.51	0.16
11/6/2008 07:57	-0.45	19.93	5.50	0.17
11/6/2008 07:58	-0.81	20.10	5.43	0.16
11/6/2008 07:59	-1.04	20.31	5.48	0.17
11/6/2008 08:00	-0.72	20.01	5.39	0.18
11/6/2008 08:01	-0.50	20.01	5.50	0.22
11/6/2008 08:02	-0.34	19.93	5.52	0.24
11/6/2008 08:03	-0.32	20.10	5.46	0.27
11/6/2008 08:04	-0.71	20.02	5.45	0.26
11/6/2008 08:05	-0.74	19.65	5.53	0.26
11/6/2008 08:06	-0.46	19.81	5.40	0.27
11/6/2008 08:07	-0.38	19.90	5.52	0.29
11/6/2008 08:08	0.24	19.81	5.68	0.30
11/6/2008 08:09	0.14	19.73	5.76	0.30
11/6/2008 08:10	0.19	19.81	5.67	0.29
11/6/2008 08:11	0.16	19.81	5.68	0.29
11/6/2008 08:12	-0.09	20.18	5.68	0.29
11/6/2008 08:13	0.08	20.26	5.65	0.31
11/6/2008 08:14	-0.49	19.81	5.58	0.31
11/6/2008 08:15	-0.64	20.10	5.61	0.32
11/6/2008 08:16	-0.94	20.22	5.67	0.31
11/6/2008 08:17	-0.70	20.22	5.70	0.32
11/6/2008 08:18	-0.23	20.17	5.74	0.34
11/6/2008 08:19	0.02	19.72	5.69	0.35
11/6/2008 08:20	-0.35	20.02	5.63	0.34
11/6/2008 08:21	-0.39	20.30	5.70	0.36
11/6/2008 08:22	-0.69	20.30	5.65	0.37

Run 7

11/6/2008 08:23	-0.68	20.96	5.59	0.36	
11/6/2008 08:24	-0.85	20.31	5.61	0.37	
11/6/2008 08:25	-0.40	20.22	5.64	0.37	
11/6/2008 08:26	-0.58	20.31	5.51	0.37	
11/6/2008 08:27	-0.87	20.31	5.53	0.38	
11/6/2008 08:28	-0.70	20.26	5.57	0.39	
11/6/2008 08:29	-0.19	20.10	5.69	0.40	
11/6/2008 08:30	0.02	19.97	5.59	0.43	
11/6/2008 08:31	-0.32	20.31	5.57	0.40	
11/6/2008 08:32	-0.70	20.46	5.50	0.40	
11/6/2008 08:33	-0.91	20.82	5.60	0.40	
11/6/2008 08:34	-0.86	20.82	5.55	0.39	
11/6/2008 08:35	-1.14	20.82	5.49	0.39	
11/6/2008 08:36	-1.04	20.42	5.47	0.38	
11/6/2008 08:37	-1.04	20.40	5.46	0.41	
11/6/2008 08:38	-1.04	20.57	5.41	0.39	
11/6/2008 08:39	-0.88	20.31	5.48	0.42	
11/6/2008 08:40	-0.85	20.17	5.48	0.39	
11/6/2008 08:41	-0.13	19.22	5.37	15.20	
11/6/2008 08:42	0.36	2.83	0.04	47.17	
11/6/2008 08:43	-0.15	0.40	0.01	49.48	
11/6/2008 08:44	-0.05	0.29	0.00	49.26	
11/6/2008 08:45	-0.40	0.29	3.70	26.48	Cal
11/6/2008 08:46	-2.83	0.29	13.74	0.90	
11/6/2008 08:47	-2.86	0.29	13.69	0.71	
11/6/2008 08:48	-2.73	5.76	1.49	0.59	
11/6/2008 08:49	-0.88	106.86	0.11	0.05	
11/6/2008 08:50	-0.18	120.46	0.08	0.18	
11/6/2008 08:51	-0.11	120.68	0.11	0.25	
11/6/2008 08:52	40.45	115.09	0.08	0.24	
11/6/2008 08:53	233.07	12.59	0.06	0.20	
11/6/2008 08:54	238.00	1.23	0.15	0.31	
11/6/2008 08:55	240.44	0.79	0.17	0.35	
11/6/2008 08:56	239.84	0.64	0.17	0.35	
11/6/2008 08:57	230.98	0.48	1.27	0.30	
11/6/2008 08:58	33.10	14.13	5.37	0.27	
11/6/2008 08:59	-0.05	19.79	5.40	0.24	
11/6/2008 09:00	-0.25	19.81	5.39	0.32	
11/6/2008 09:01	-0.38	20.12	5.41	0.29	
11/6/2008 09:02	-0.22	19.91	5.31	0.30	
11/6/2008 09:03	-0.54	19.89	5.21	0.30	
11/6/2008 09:04	-0.84	20.12	5.32	0.31	
11/6/2008 09:05	-0.85	20.39	5.30	0.33	
11/6/2008 09:06	-0.90	20.16	5.28	0.32	Run 2
11/6/2008 09:07	-0.84	20.13	5.45	0.32	
11/6/2008 09:08	-0.52	19.80	5.32	0.34	
11/6/2008 09:09	-0.47	20.06	5.37	0.33	
11/6/2008 09:10	-0.30	19.97	5.44	0.37	
11/6/2008 09:11	-0.50	20.22	5.41	0.35	
11/6/2008 09:12	-0.85	20.40	5.32	0.39	
11/6/2008 09:13	-1.02	20.32	5.33	0.38	
11/6/2008 09:14	-0.92	20.32	5.41	0.37	
11/6/2008 09:15	-0.70	20.32	5.44	0.37	
11/6/2008 09:16	-0.41	20.07	5.38	0.38	
11/6/2008 09:17	-0.29	19.90	5.35	0.37	
11/6/2008 09:18	-0.56	19.97	5.32	0.37	
11/6/2008 09:19	-0.90	20.31	5.39	0.37	
11/6/2008 09:20	-0.85	20.56	5.39	0.37	
11/6/2008 09:21	-0.31	20.33	5.40	0.38	
11/6/2008 09:22	-0.20	20.22	5.45	0.38	
11/6/2008 09:23	-0.36	20.40	5.33	0.40	
11/6/2008 09:24	-0.30	20.40	5.36	0.40	
11/6/2008 09:25	-0.88	20.56	5.35	0.40	
11/6/2008 09:26	-0.81	20.31	5.35	0.41	
11/6/2008 09:27	-0.96	20.48	5.34	0.44	
11/6/2008 09:28	-1.14	20.56	5.28	0.41	

11/6/2008 09:29	-0.76	20.06	5.33	0.40
11/6/2008 09:30	-0.53	19.56	5.38	0.39
11/6/2008 09:31	-0.86	19.64	5.42	0.40
11/6/2008 09:32	-0.46	19.39	5.46	0.43
11/6/2008 09:33	-0.07	19.31	5.40	0.43
11/6/2008 09:34	0.35	19.13	5.43	0.44
11/6/2008 09:35	0.52	18.80	5.48	0.45
11/6/2008 09:36	-0.39	19.22	5.36	0.45
11/6/2008 09:37	-0.47	19.55	5.49	0.45
11/6/2008 09:38	-0.39	19.47	5.49	0.46
11/6/2008 09:39	0.71	19.47	5.64	0.47
11/6/2008 09:40	1.54	18.72	5.47	0.48
11/6/2008 09:41	0.52	19.39	5.49	0.47
11/6/2008 09:42	-0.47	20.06	5.42	0.46
11/6/2008 09:43	-0.76	20.32	5.48	0.47
11/6/2008 09:44	-0.19	19.98	5.50	0.48
11/6/2008 09:45	-0.81	19.91	5.55	0.45
11/6/2008 09:46	-1.31	20.49	5.41	0.46
11/6/2008 09:47	-1.09	19.87	5.38	0.43
11/6/2008 09:48	-1.23	19.91	5.40	0.40
11/6/2008 09:49	-1.55	20.14	5.39	0.39
11/6/2008 09:50	-1.85	19.81	5.32	0.33
11/6/2008 09:51	-1.74	19.63	5.33	0.28
11/6/2008 09:52	-1.33	19.39	5.45	0.29
11/6/2008 09:53	-1.06	19.30	5.44	0.29
11/6/2008 09:54	-1.24	19.31	5.41	0.28
11/6/2008 09:55	-1.59	19.23	5.36	0.32
11/6/2008 09:56	-1.50	19.18	5.35	0.30
11/6/2008 09:57	-0.85	19.13	5.53	0.37
11/6/2008 09:58	-0.42	18.56	5.43	0.35
11/6/2008 09:59	-0.21	18.81	5.34	0.34
11/6/2008 10:00	-1.48	19.25	5.37	0.35
11/6/2008 10:01	-1.46	19.32	5.41	0.36
11/6/2008 10:02	-0.40	19.06	5.46	0.37
11/6/2008 10:03	0.02	18.52	5.41	0.37
11/6/2008 10:04	-0.64	18.91	5.44	0.38
11/6/2008 10:05	-0.71	19.23	5.50	0.39
11/6/2008 10:06	18.41	17.10	2.59	20.59
11/6/2008 10:07	3.67	1.06	-0.01	42.99
11/6/2008 10:08	-0.19	0.29	-0.02	49.52
11/6/2008 10:09	-0.28	0.29	-0.03	49.13
11/6/2008 10:10	-0.91	0.29	5.44	19.27
11/6/2008 10:11	-3.11	0.29	13.53	0.95
11/6/2008 10:12	-3.12	0.29	13.56	0.82
11/6/2008 10:13	-3.11	5.44	9.11	0.56
11/6/2008 10:14	-1.32	100.71	0.15	0.23
11/6/2008 10:15	-0.46	119.75	0.08	0.18
11/6/2008 10:16	-0.40	120.34	0.05	0.16
11/6/2008 10:17	10.67	120.40	0.12	0.27
11/6/2008 10:18	211.28	35.38	-0.01	0.07
11/6/2008 10:19	242.71	0.95	-0.02	0.07
11/6/2008 10:20	242.83	0.80	-0.02	0.08
11/6/2008 10:21	108.04	3.03	3.32	0.10
11/6/2008 10:22	4.17	18.89	5.46	0.13
11/6/2008 10:23	0.09	18.96	5.42	0.12
11/6/2008 10:24	-0.13	19.26	5.50	0.12
11/6/2008 10:25	-0.35	19.34	5.54	0.12
11/6/2008 10:26	-0.69	19.56	5.40	0.11
11/6/2008 10:27	-0.69	19.54	5.39	0.12
11/6/2008 10:28	-1.06	19.59	5.32	0.12
11/6/2008 10:29	-0.86	19.81	5.46	0.12
11/6/2008 10:30	-0.83	19.81	5.48	0.13
11/6/2008 10:31	-0.42	19.78	5.46	0.14
11/6/2008 10:32	-0.75	19.58	5.35	0.13
11/6/2008 10:33	-1.00	19.81	5.39	0.13
11/6/2008 10:34	-0.75	19.30	5.45	0.14

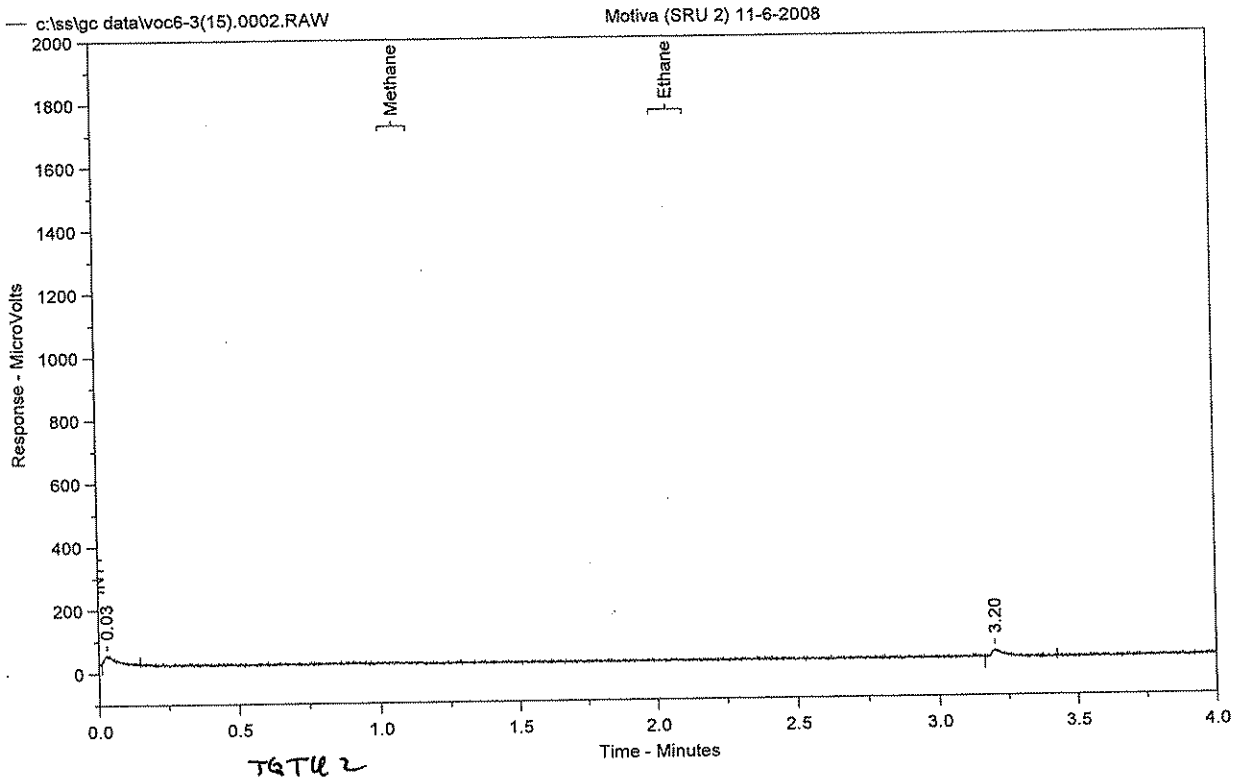
Cal

Run 3

11/6/2008 10:35	-0.34	19.80	5.47	0.15
11/6/2008 10:36	-0.16	19.72	5.44	0.17
11/6/2008 10:37	-0.65	19.80	5.38	0.17
11/6/2008 10:38	-0.81	19.97	5.37	0.18
11/6/2008 10:39	-0.79	19.97	5.28	0.18
11/6/2008 10:40	-0.99	20.08	5.29	0.18
11/6/2008 10:41	-0.75	20.30	5.40	0.18
11/6/2008 10:42	-0.75	20.30	5.34	0.18
11/6/2008 10:43	-0.71	20.42	5.39	0.18
11/6/2008 10:44	-0.84	20.43	5.36	0.18
11/6/2008 10:45	-0.65	20.30	5.38	0.18
11/6/2008 10:46	-0.79	20.39	5.34	0.18
11/6/2008 10:47	-0.91	20.34	5.34	0.18
11/6/2008 10:48	-0.99	20.73	5.35	0.19
11/6/2008 10:49	-0.73	20.61	5.43	0.19
11/6/2008 10:50	-0.69	20.64	5.32	0.20
11/6/2008 10:51	-0.43	20.59	5.53	0.19
11/6/2008 10:52	-0.34	20.36	5.44	0.19
11/6/2008 10:53	-0.52	20.35	5.38	0.19
11/6/2008 10:54	-0.71	20.85	5.35	0.20
11/6/2008 10:55	-0.92	20.90	5.39	0.20
11/6/2008 10:56	-0.80	20.84	5.44	0.21
11/6/2008 10:57	-0.59	20.49	5.36	0.21
11/6/2008 10:58	-0.55	20.97	5.43	0.22
11/6/2008 10:59	-0.94	21.33	5.33	0.20
11/6/2008 11:00	-0.86	21.32	5.35	0.22
11/6/2008 11:01	-0.98	20.90	5.37	0.19
11/6/2008 11:02	-1.34	21.32	5.31	0.20
11/6/2008 11:03	-1.10	21.32	5.28	0.21
11/6/2008 11:04	-0.99	21.32	5.31	0.21
11/6/2008 11:05	-0.96	21.23	5.38	0.20
11/6/2008 11:06	-0.90	21.32	5.32	0.21
11/6/2008 11:07	-0.98	21.28	5.38	0.22
11/6/2008 11:08	-1.13	21.73	5.38	0.23
11/6/2008 11:09	-0.95	21.49	5.35	0.24
11/6/2008 11:10	-0.88	21.07	5.37	0.24
11/6/2008 11:11	-0.88	21.19	5.40	0.23
11/6/2008 11:12	-1.00	21.49	5.38	0.23
11/6/2008 11:13	-1.16	21.24	5.41	0.24
11/6/2008 11:14	-1.34	21.77	5.38	0.24
11/6/2008 11:15	-1.09	21.36	5.32	0.27
11/6/2008 11:16	-0.98	21.15	5.42	0.27
11/6/2008 11:17	-1.01	21.31	5.39	0.27
11/6/2008 11:18	-0.95	21.40	5.41	0.27
11/6/2008 11:19	-1.13	21.45	5.34	0.28
11/6/2008 11:20	-0.99	21.54	5.39	0.27
11/6/2008 11:21	-0.88	21.19	5.48	0.29
11/6/2008 11:22	-1.00	21.61	5.41	0.27
11/6/2008 11:23	-1.10	21.73	5.45	0.24
11/6/2008 11:24	-1.01	21.35	5.43	0.24
11/6/2008 11:25	-0.98	21.07	5.38	0.24
11/6/2008 11:26	-1.38	21.37	5.38	0.27
11/6/2008 11:27	-1.53	21.95	5.38	0.28
11/6/2008 11:28	-1.54	21.94	5.30	0.25
11/6/2008 11:29	-1.33	21.60	5.51	0.39
11/6/2008 11:30	2.70	23.20	5.90	0.61
11/6/2008 11:31	0.51	22.62	5.91	0.45
11/6/2008 11:32	0.32	21.72	5.94	0.23
11/6/2008 11:33	1.22	21.40	6.04	0.13
11/6/2008 11:34	1.28	21.32	5.91	0.12
11/6/2008 11:35	0.90	21.18	5.92	0.12
11/6/2008 11:36	0.51	20.66	5.84	0.08
11/6/2008 11:37	0.12	21.10	6.00	0.04
11/6/2008 11:38	0.10	21.39	5.90	0.03
11/6/2008 11:39	0.03	21.45	8.02	0.34
11/6/2008 11:40	1.35	5.98	4.28	26.93

GW'

11/6/2008 11:41	0.33	1.19	[illegible]	[illegible]
11/6/2008 11:42	-0.33	0.31	-0.09	48.34
11/6/2008 11:43	-0.33	0.28	-0.09	49.82
11/6/2008 11:44	-0.81	0.28	4.48	26.94
11/6/2008 11:45	-3.25	0.29	13.46	1.19
11/6/2008 11:46	-3.22	0.29	13.50	1.15
11/6/2008 11:47	-3.00	0.29	13.29	1.46
11/6/2008 11:48	1.77	0.51	13.15	1.57
11/6/2008 11:49	1.62	0.39	12.94	1.63
11/6/2008 11:50	46.37	0.43	7.62	1.34
11/6/2008 11:51	236.95	0.39	-0.09	0.55
11/6/2008 11:52	244.65	0.28	-0.10	0.78
11/6/2008 11:53	244.73	0.28	-0.11	1.02
11/6/2008 11:54	147.40	32.38	-0.10	1.21
11/6/2008 11:55	1.09	120.69	-0.10	1.17
11/6/2008 11:56	-0.37	122.41	-0.10	0.69



TGTU 2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Pre. Run 1 zero

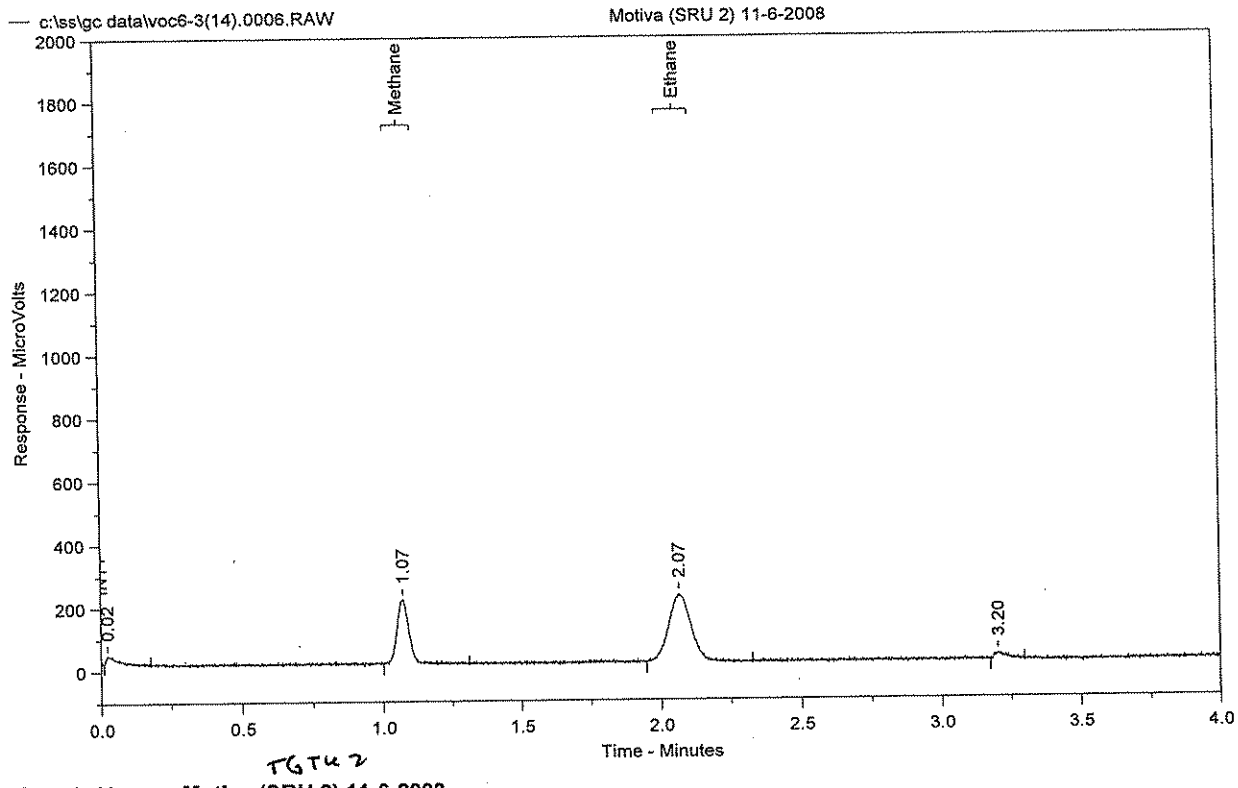
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(15).0002.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 6:40:40 AM
Method Version = 6
Calibration Version = 48

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	104	37.964	30	BB	0.06
2	3.20		0.00	170	62.036	28	BB	0.19

Total Area = 274.5062 Total Height = 57.75716 Total Amount = 0



TGTU 2

Sample Name = **Motiva (SRU 2) 11-6-2008**

pre Run I cal

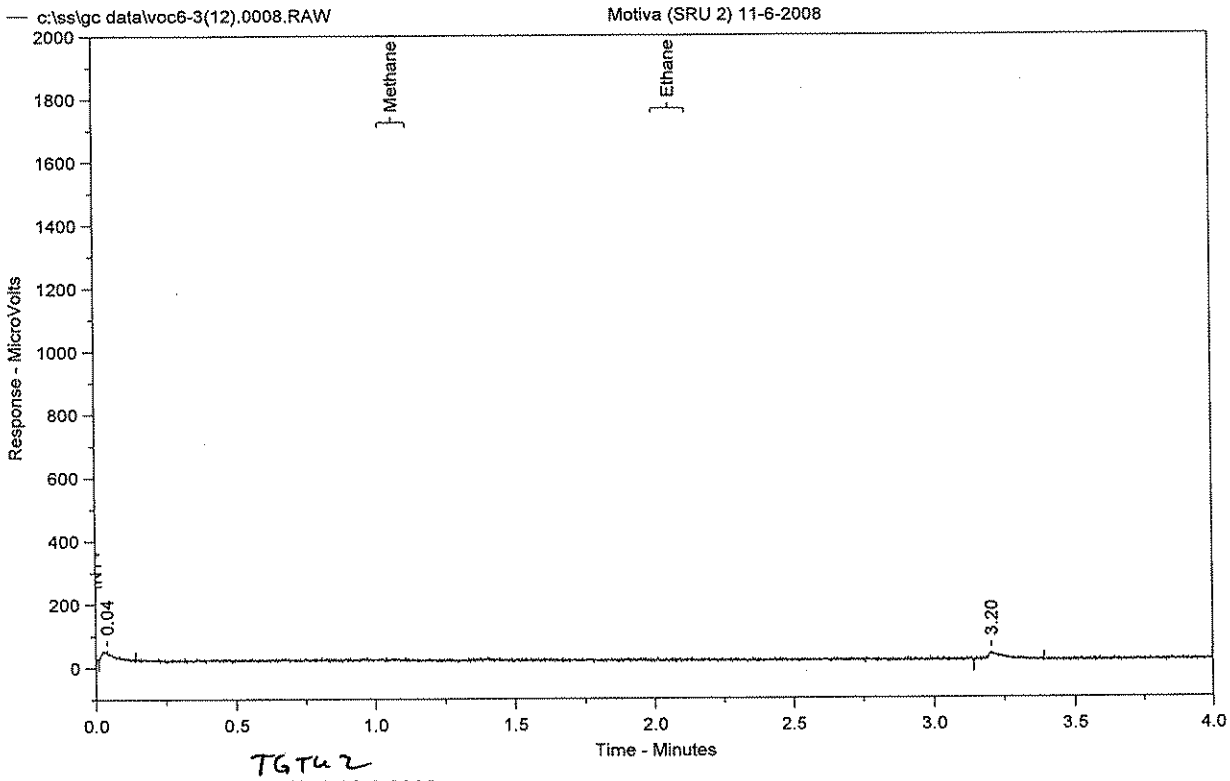
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(14).0006.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 7:12:40 AM
Method Version = 6
Calibration Version = 50

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.02		0.00	99	4.543	27	BB	0.05
2	1.07	Methane	9.85	699	32.133	208	BB	0.05
3	2.07	Ethane	9.84	1287	59.166	219	BB	0.09
4	3.20		0.00	90	4.157	25	BB	0.09

Total Area = 2174.647 Total Height = 479.7229 Total Amount = 19.69226



TGTU 2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 1-A

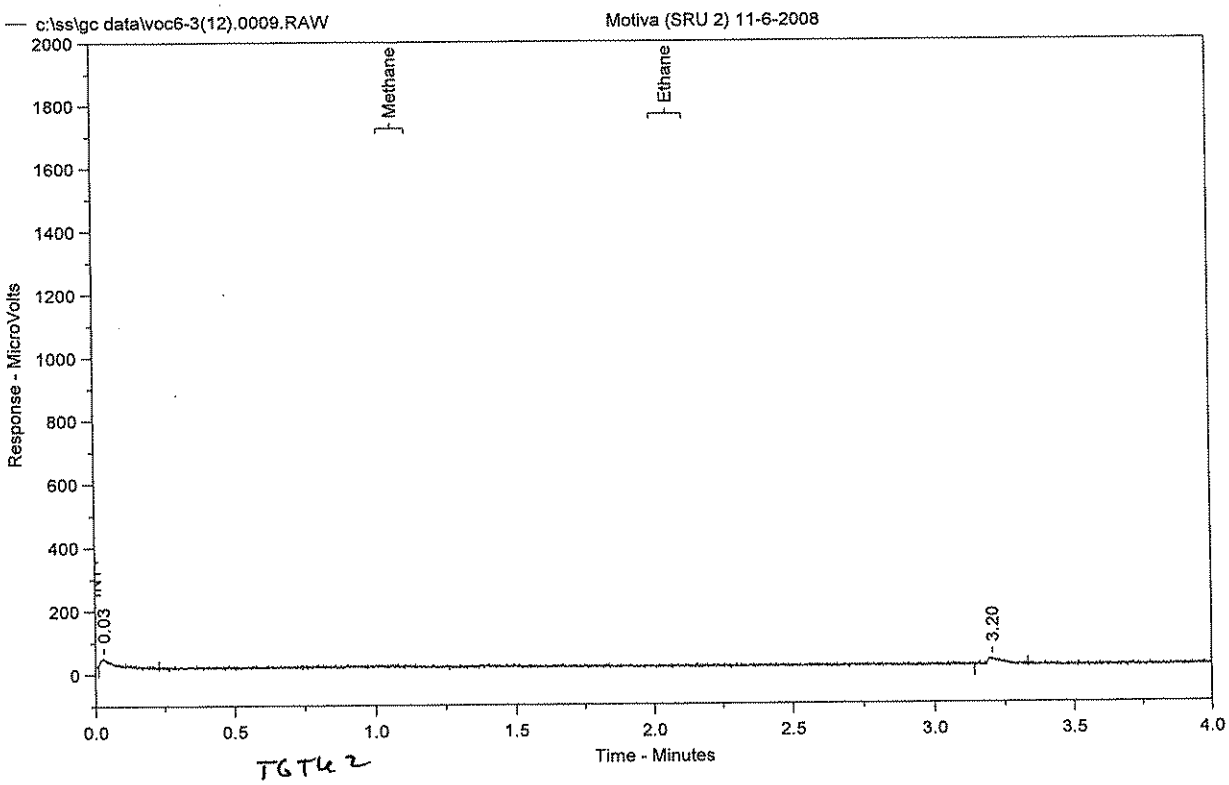
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0008.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 8:16:28 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.04		0.00	115	42.762	34	BB	0.07
2	3.20		0.00	154	57.238	29	BB	0.07

Total Area = 269.5688 Total Height = 63.20465 Total Amount = 0



TGTU 2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 1 - B

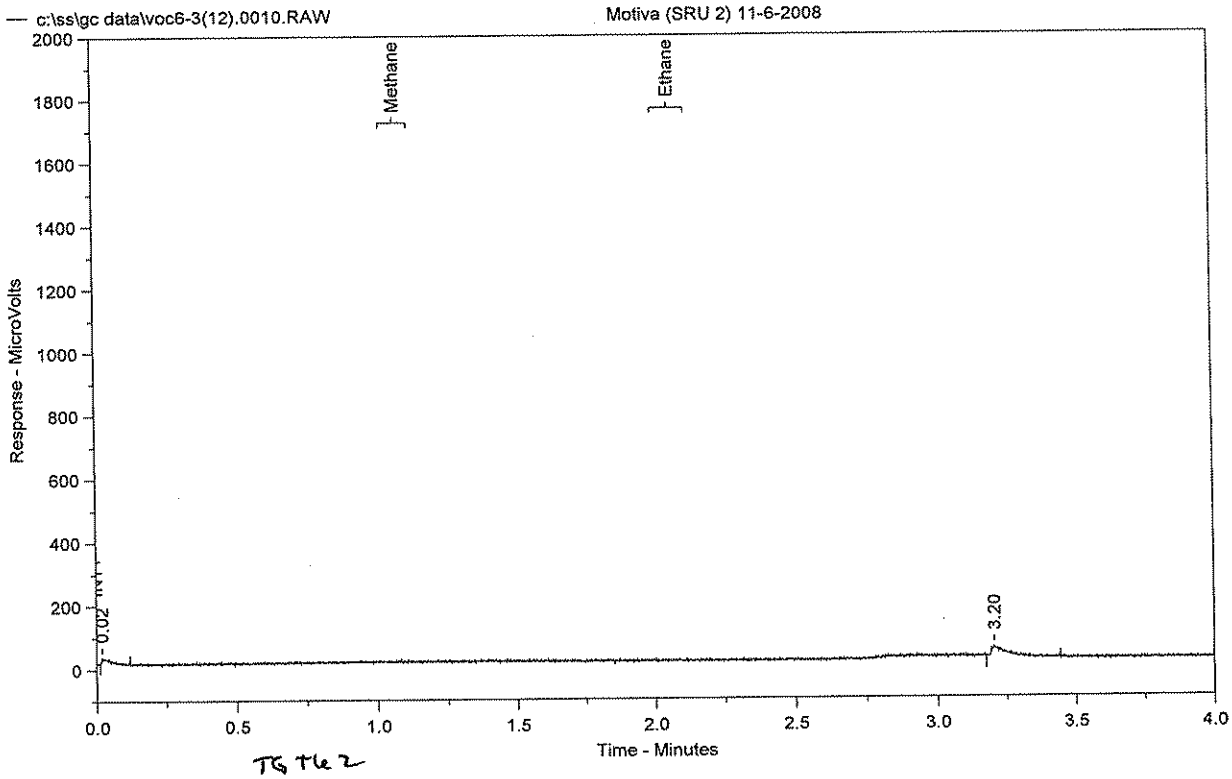
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0009.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 8:24:28 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	134	50.492	27	BB	0.09
2	3.20		0.00	132	49.508	27	BB	0.11

Total Area = 266.1333 Total Height = 53.8098 Total Amount = 0



TG Tle 2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 1 - C

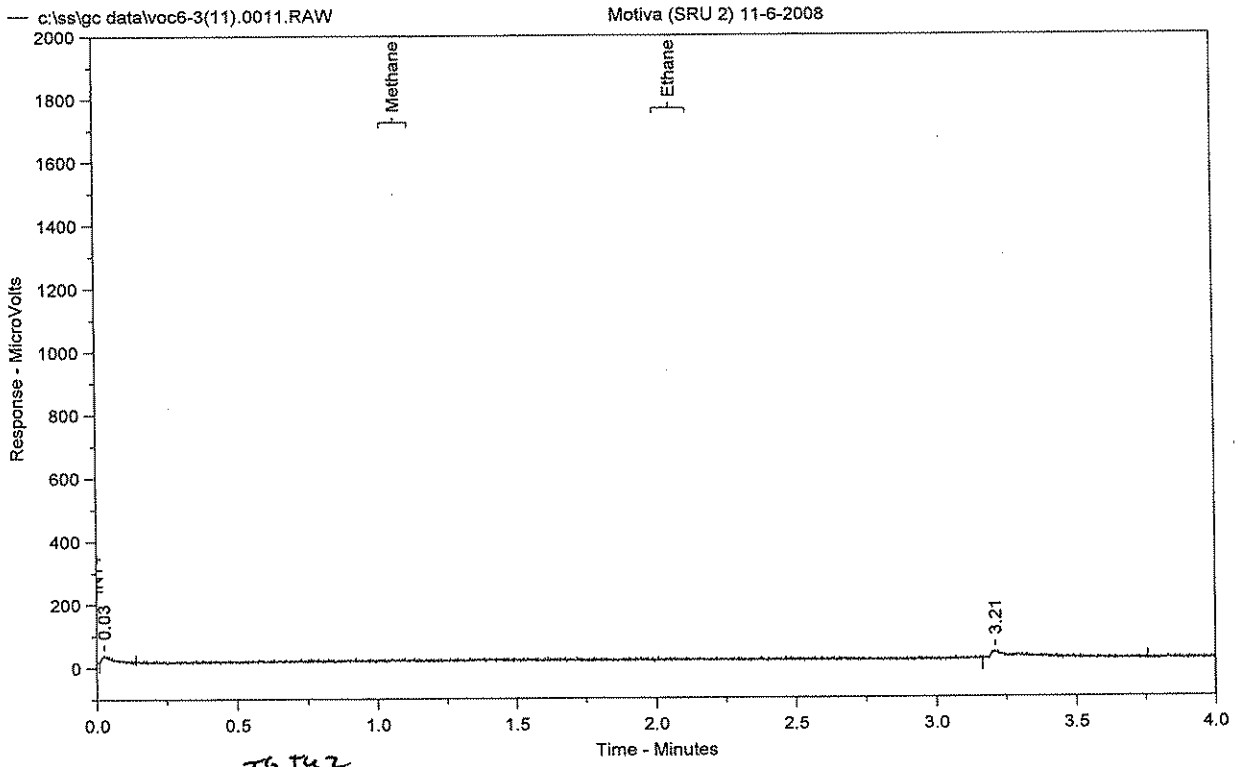
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0010.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 8:28:41 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.02		0.00	56	22.024	19	BB	0.05
2	3.20		0.00	197	77.976	38	BB	0.07

Total Area = 252.2887 Total Height = 56.89718 Total Amount = 0



TG TU 2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 1-D

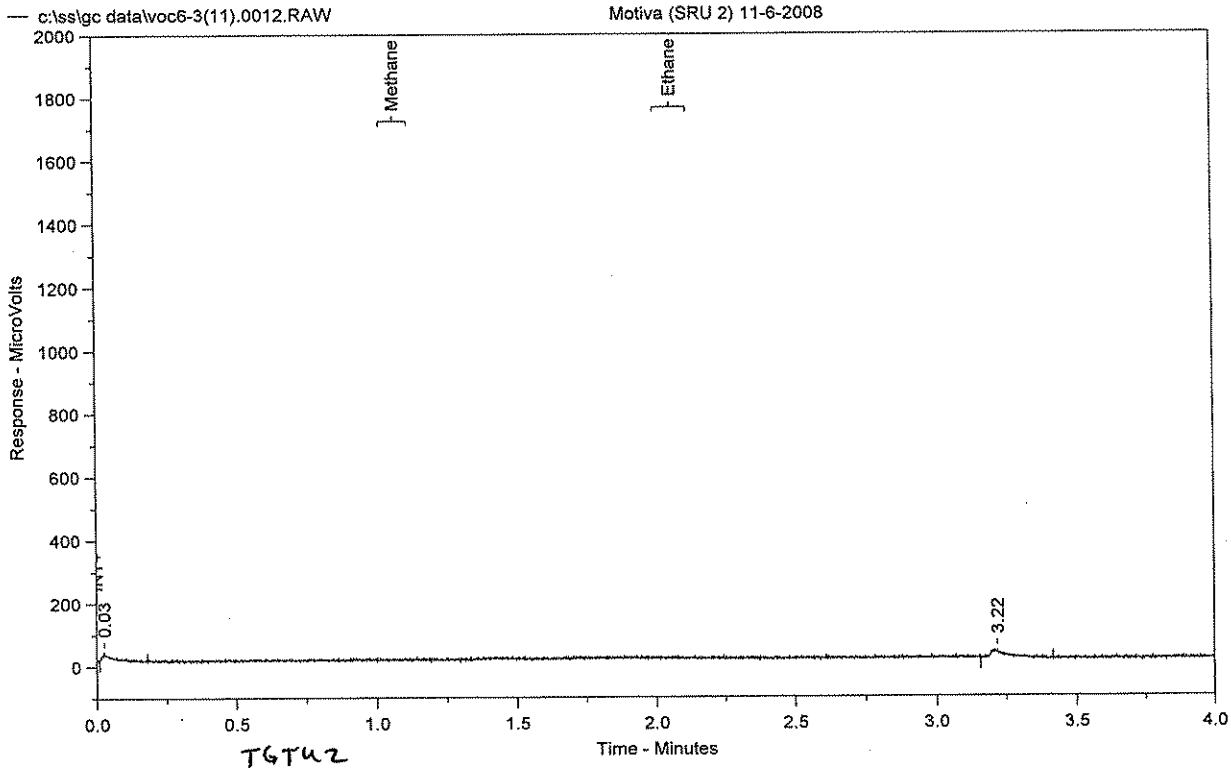
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(11).0011.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 8:33:24 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	83	18.753	23	BB	0.07
2	3.21		0.00	361	81.247	29	BB	0.32

Total Area = 444.2509 Total Height = 52.39021 Total Amount = 0



TGTU2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 1-E

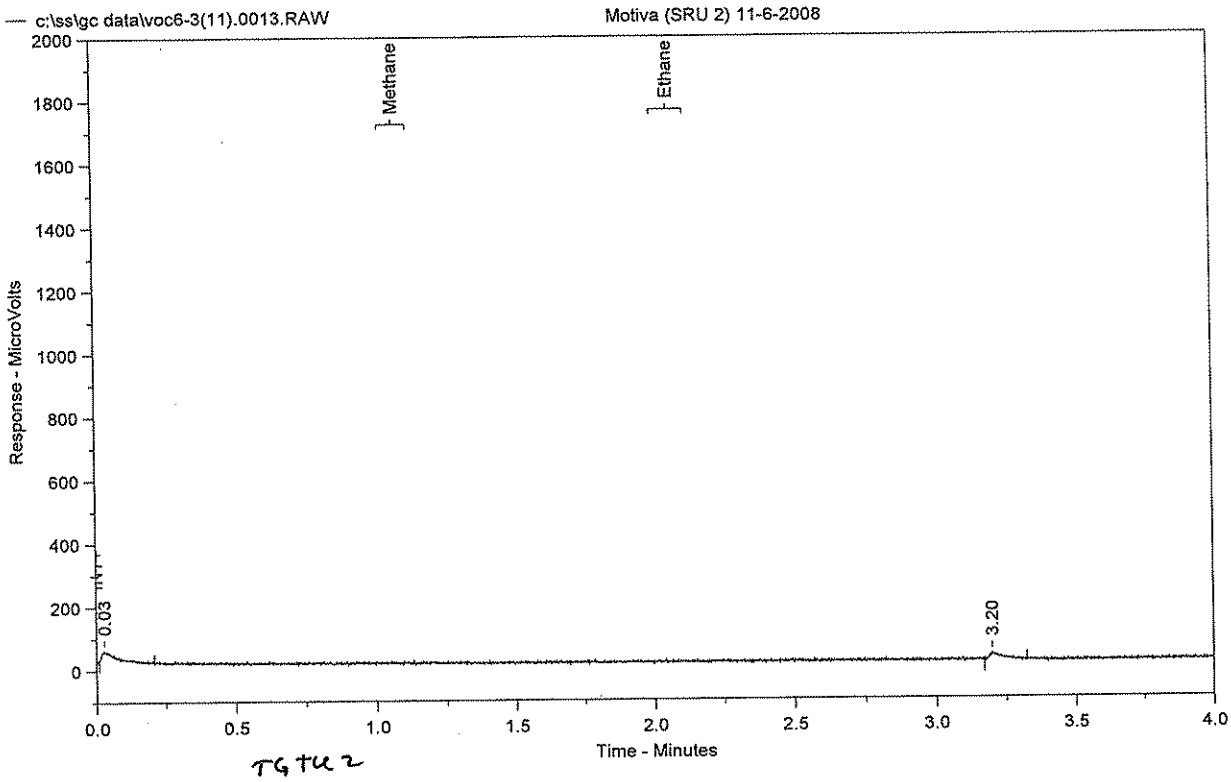
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(11).0012.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 8:38:21 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	99	38.875	29	BB	0.05
2	3.22		0.00	155	61.125	30	BB	0.07

Total Area = 253.9113 Total Height = 59.8007 Total Amount = 0



TG tu 2

Sample Name = **Motiva (SRU 2) 11-6-2008**

post Run 1 Pre Run 2 zero

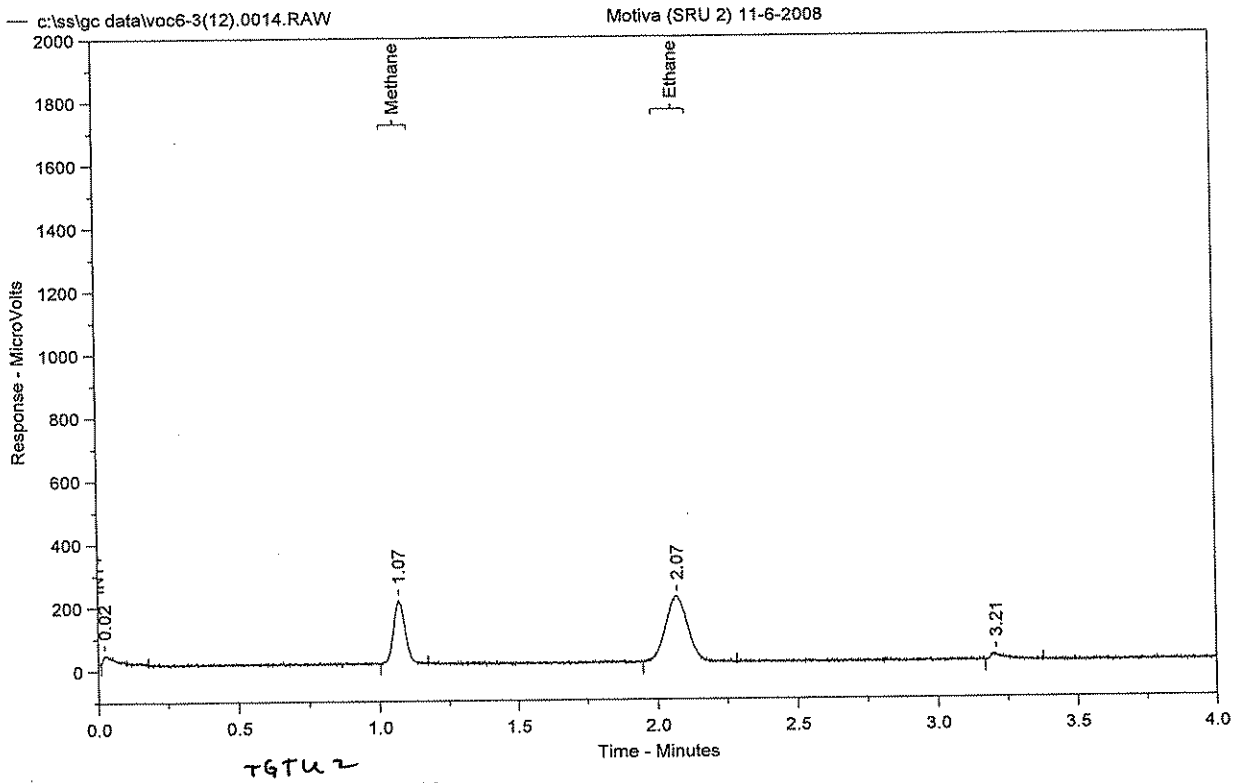
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(11).0013.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 8:46:22 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	149	57.970	35	BB	0.06
2	3.20		0.00	108	42.030	29	BB	0.05

Total Area = 257.0028 Total Height = 64.61443 Total Amount = 0



TGTU 2

Sample Name = **Motiva (SRU 2) 11-6-2008**

post Run 1 pre Run 2 cal

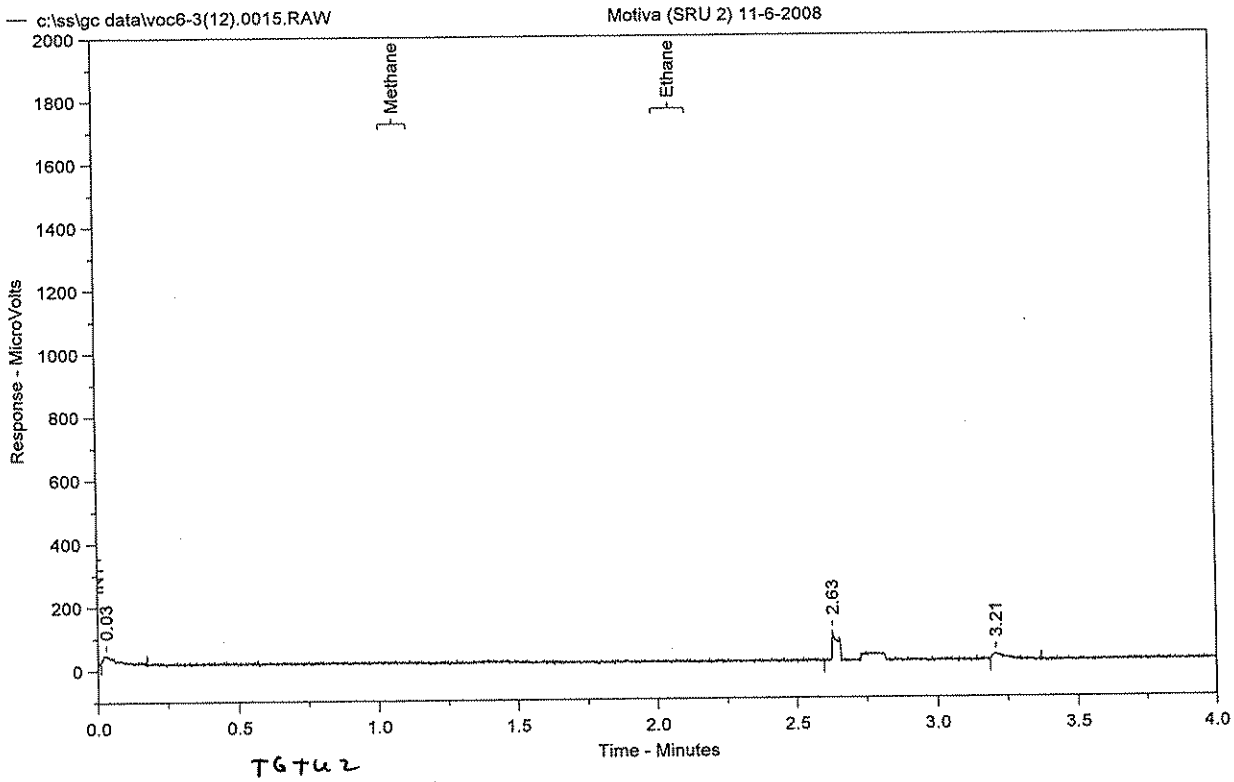
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0014.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 8:54:22 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.02		0.00	147	6.817	31	BB	0.09
2	1.07	Methane	9.91	625	29.082	206	BB	0.04
3	2.07	Ethane	9.73	1252	58.236	214	BB	0.09
4	3.21		0.00	126	5.864	27	BB	0.07

Total Area = 2149.551 Total Height = 477.3074 Total Amount = 19.63391



TGtu2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 2-A

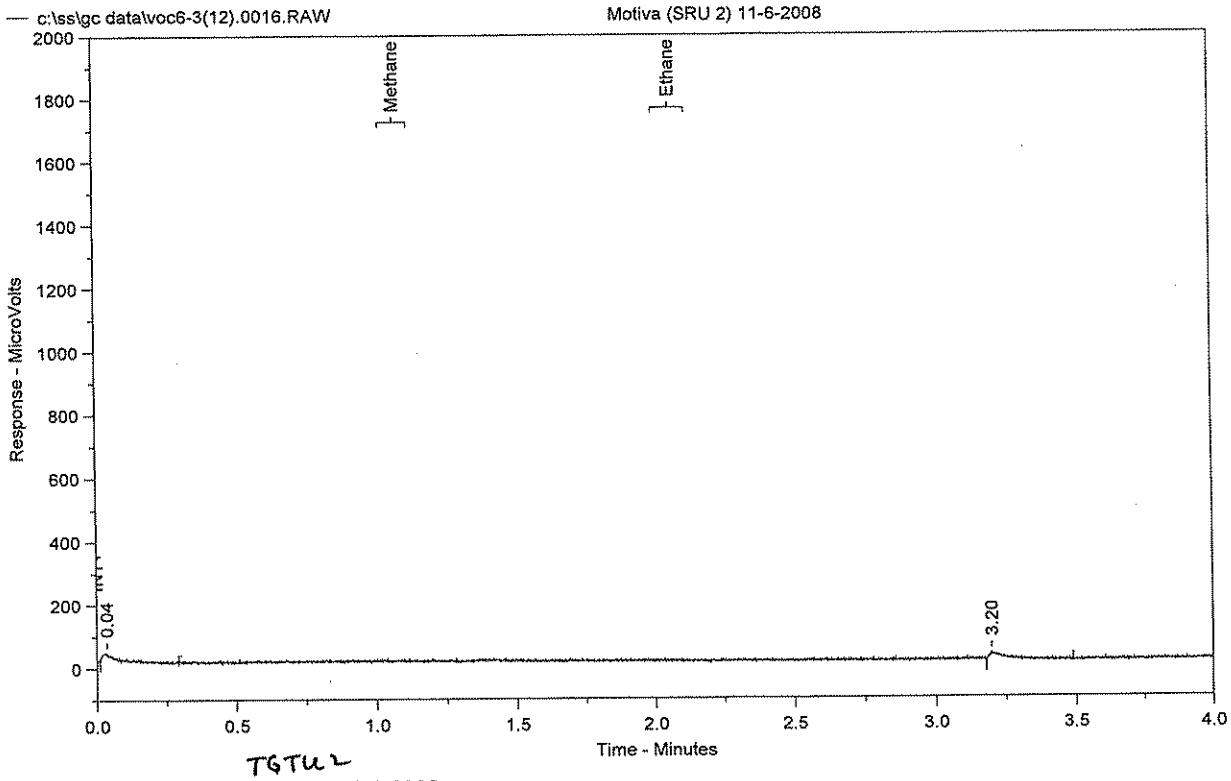
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0015.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 9:07:02 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	113	30.247	29	BB	0.07
2	2.63		0.00	147	39.178	103	BB	0.03
3	3.21		0.00	115	30.575	24	BB	0.10

Total Area = 374.6742 Total Height = 155.6965 Total Amount = 0



TGTU2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 2-13

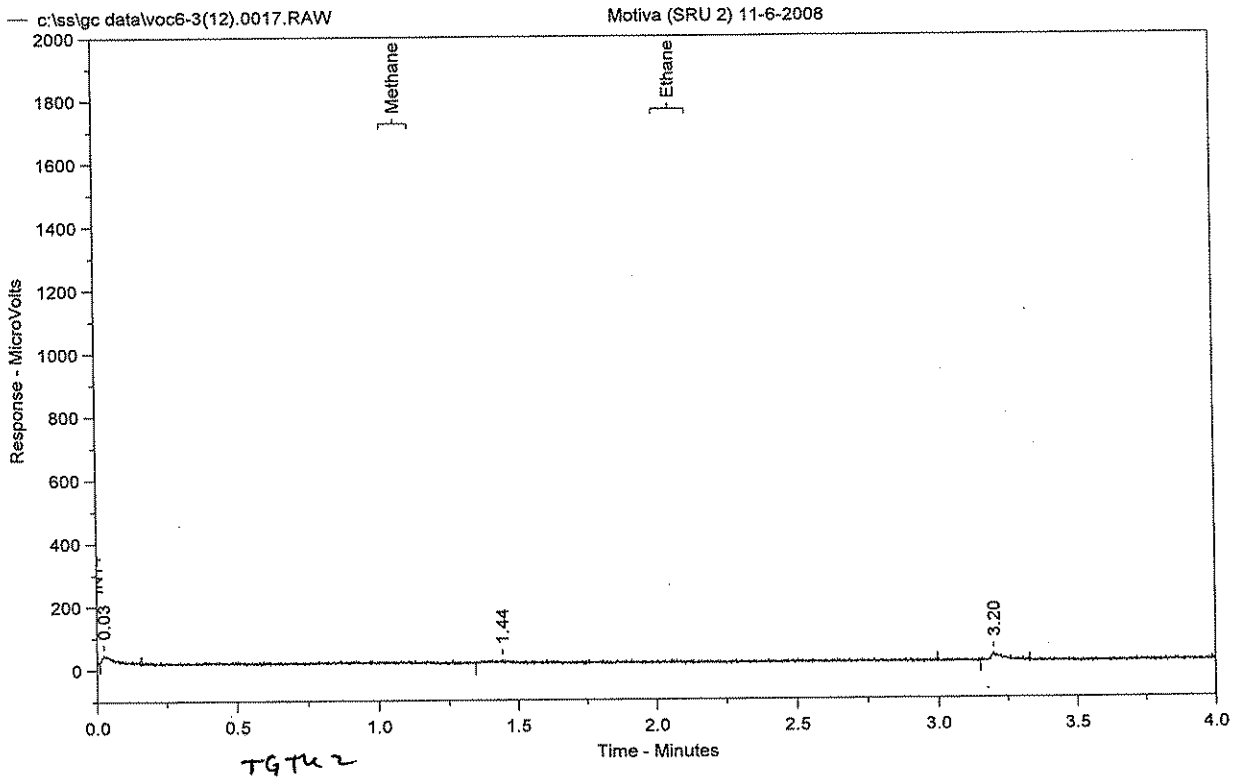
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0016.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 9:15:02 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.04		0.00	170	50.888	29	BB	0.12
2	3.20		0.00	164	49.112	28	BB	0.08

Total Area = 334.9373 Total Height = 57.55981 Total Amount = 0



TGTU 2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 2-C

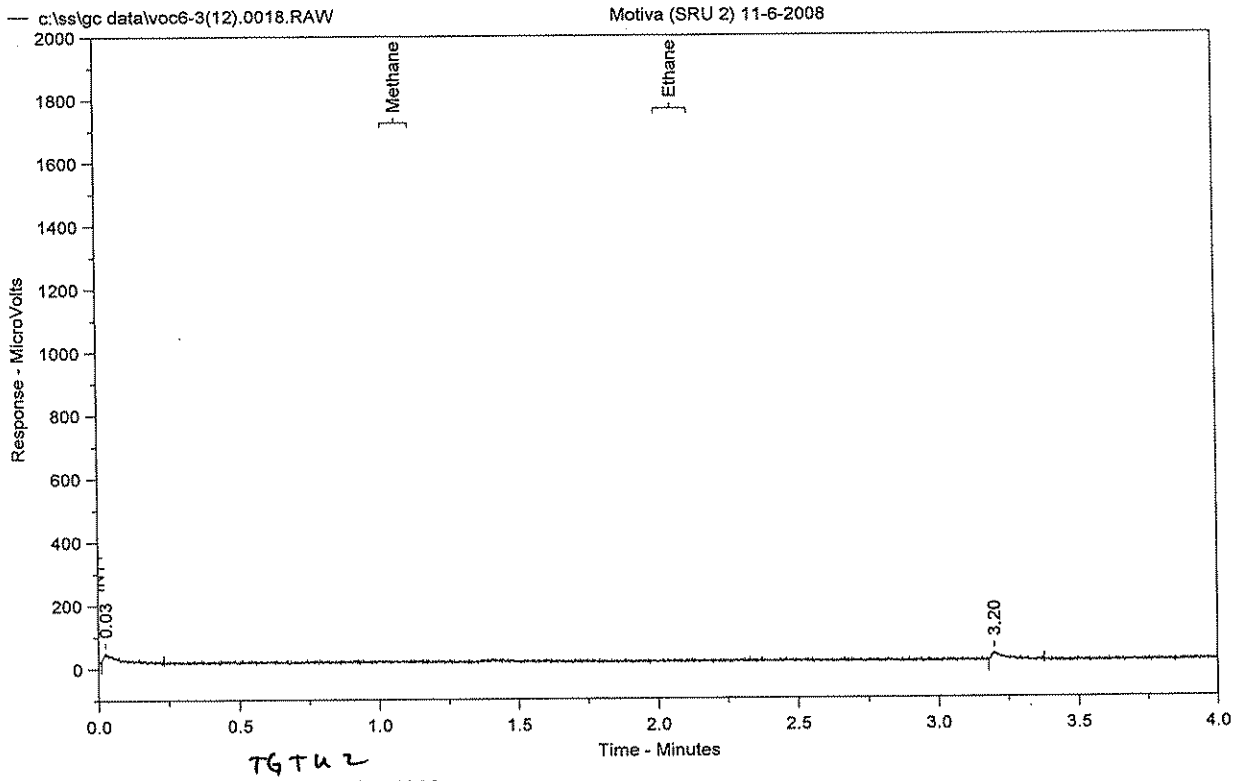
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0017.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 9:23:02 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	107	11.412	27	BB	0.08
2	1.44		0.00	685	73.207	16	BV	1.64
3	3.20		0.00	144	15.382	33	VB	0.12

Total Area = 935.4497 Total Height = 75.9209 Total Amount = 0



TGTU 2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 2-D

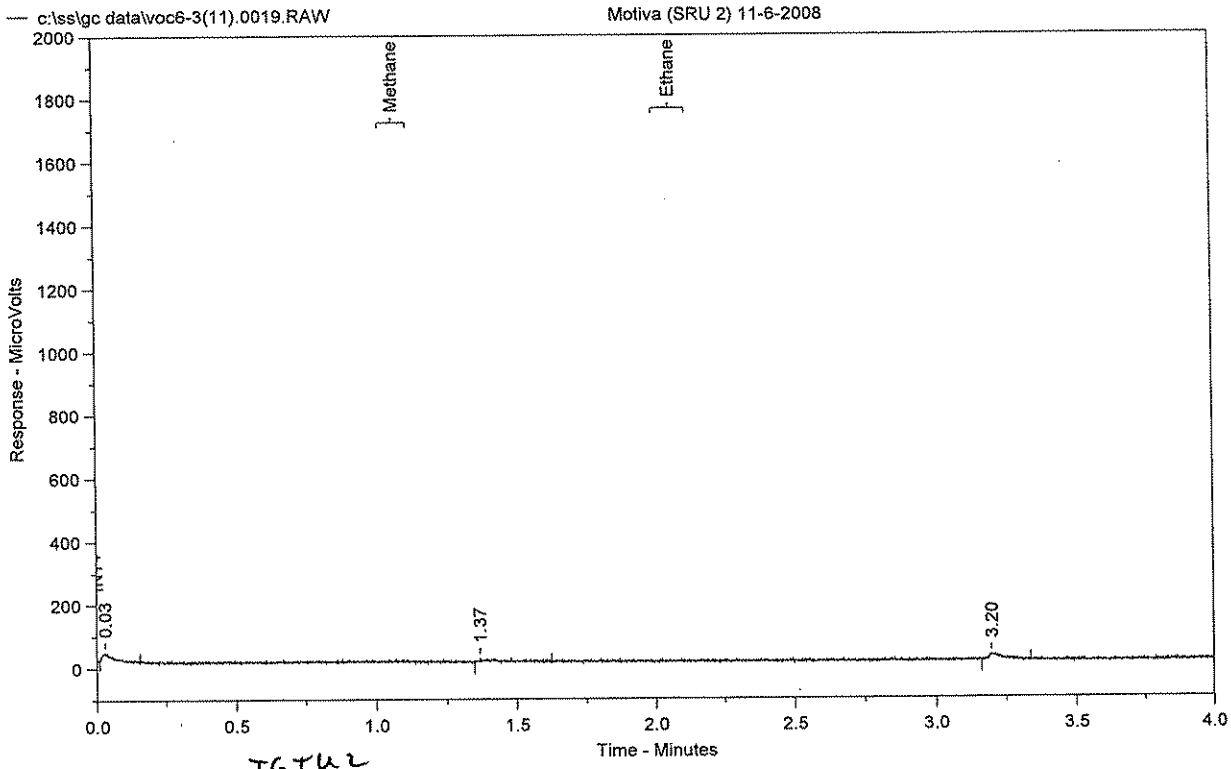
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(12).0018.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 9:31:02 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	169	54.646	33	BB	0.06
2	3.20		0.00	140	45.354	29	BB	0.11

Total Area = 309.4827 Total Height = 62.61661 Total Amount = 0



TGTU2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 2 - E

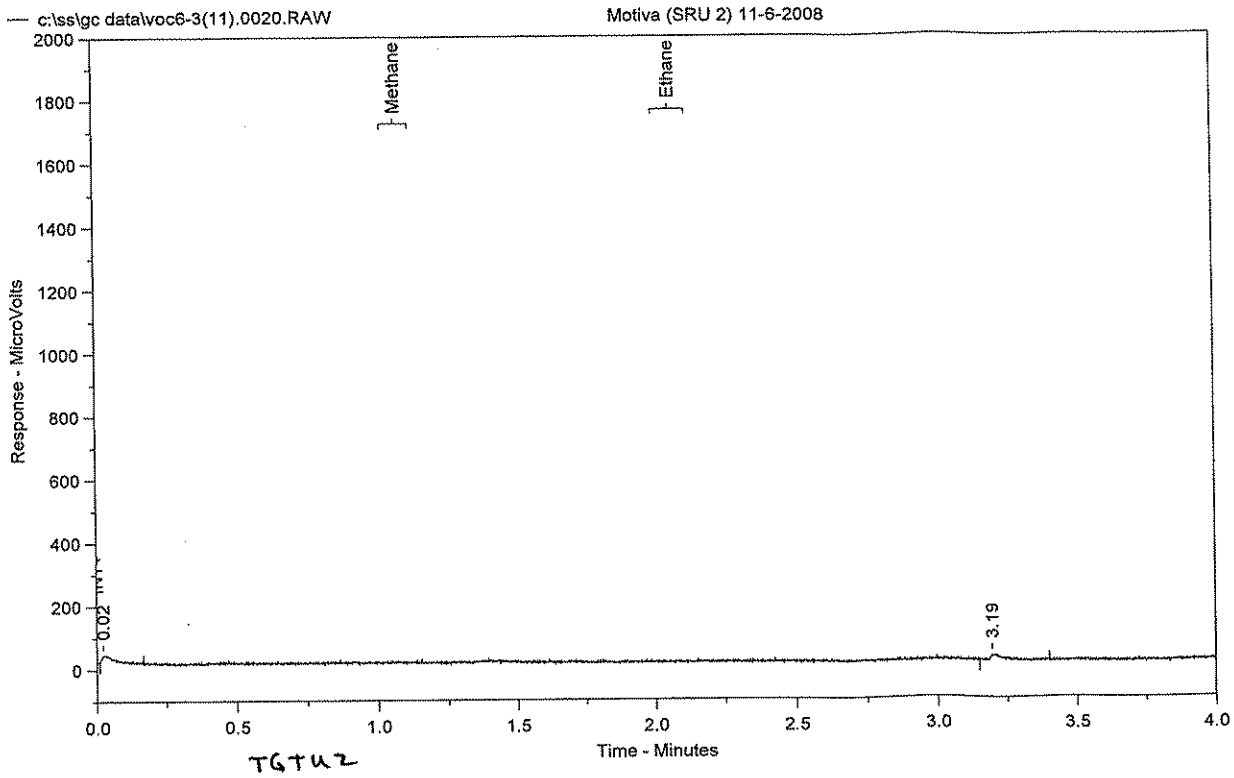
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(11).0019.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 9:39:02 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	94	28.161	27	BB	0.07
2	1.37		0.00	139	41.678	17	BB	0.27
3	3.20		0.00	101	30.161	23	BB	0.11

Total Area = 334.0813 Total Height = 66.89014 Total Amount = 0



TGTU2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Post Run 2 Pre Run 3 zero

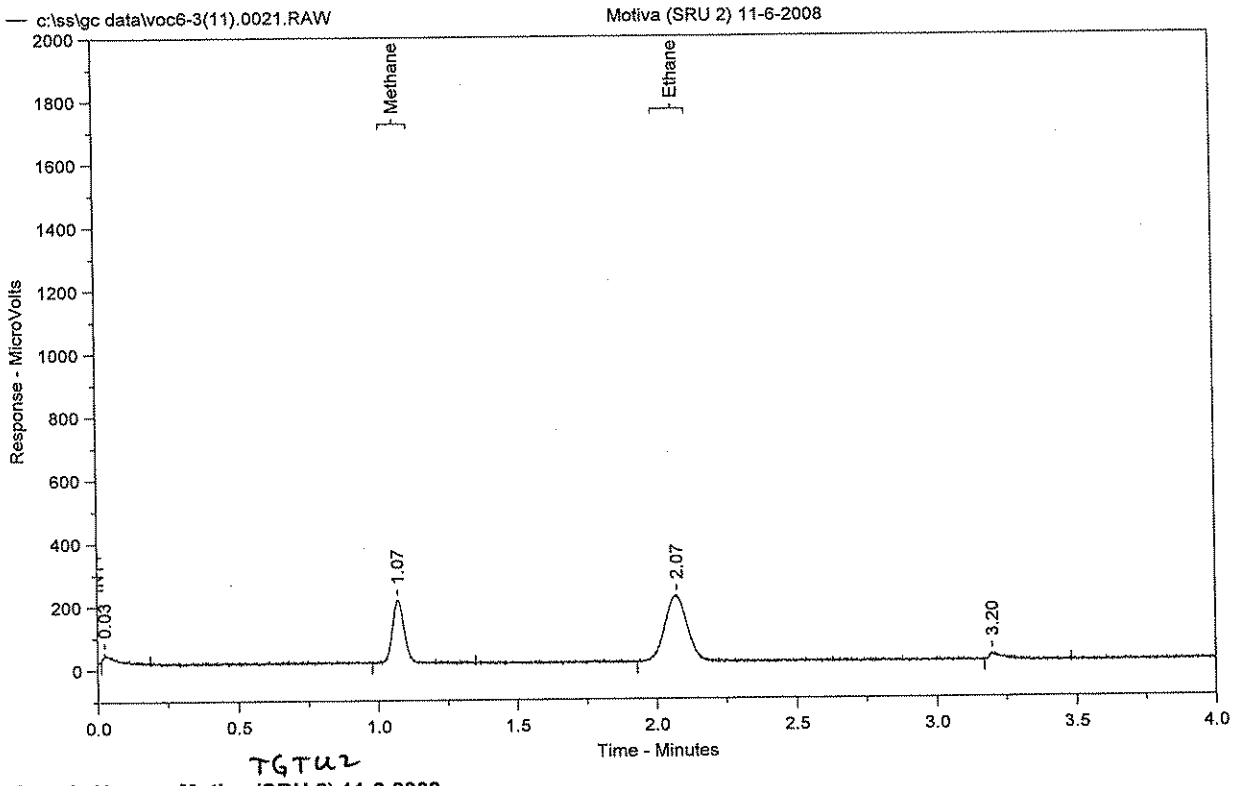
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(11).0020.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 9:47:02 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.02		0.00	104	45.450	26	BB	0.06
2	3.19		0.00	125	54.550	23	BB	0.11

Total Area = 228.8802 Total Height = 48.90334 Total Amount = 0



TGTU2

Sample Name = **Motiva (SRU 2) 11-6-2008**

post Run 2 Pre Run 3 cal

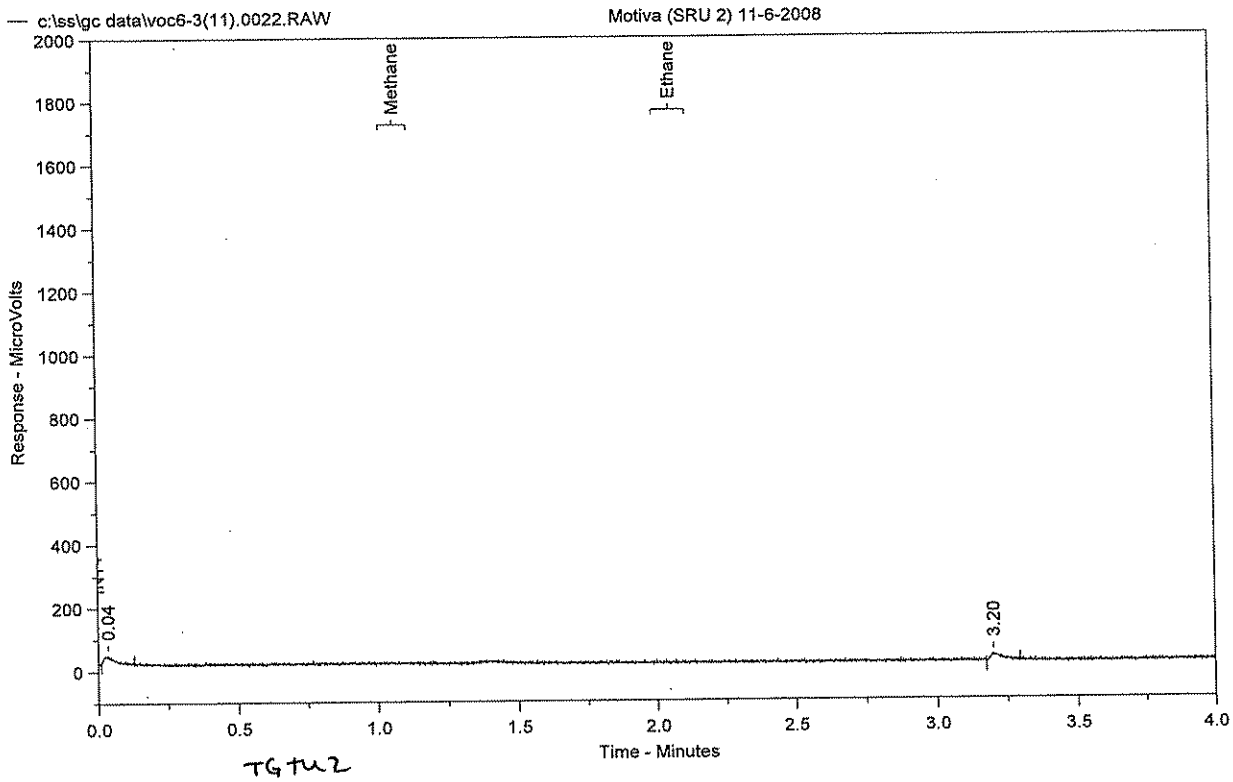
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(11).0021.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 9:55:03 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	116	4.571	32	BB	0.05
2	1.07	Methane	9.81	732	28.973	204	BB	0.05
3	2.07	Ethane	9.86	1523	60.271	217	SBB	0.09
4	3.20		0.00	156	6.185	26	TBB	0.09

Total Area = 2527.129 Total Height = 479.5346 Total Amount = 19.66613



TGtu2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 3-A

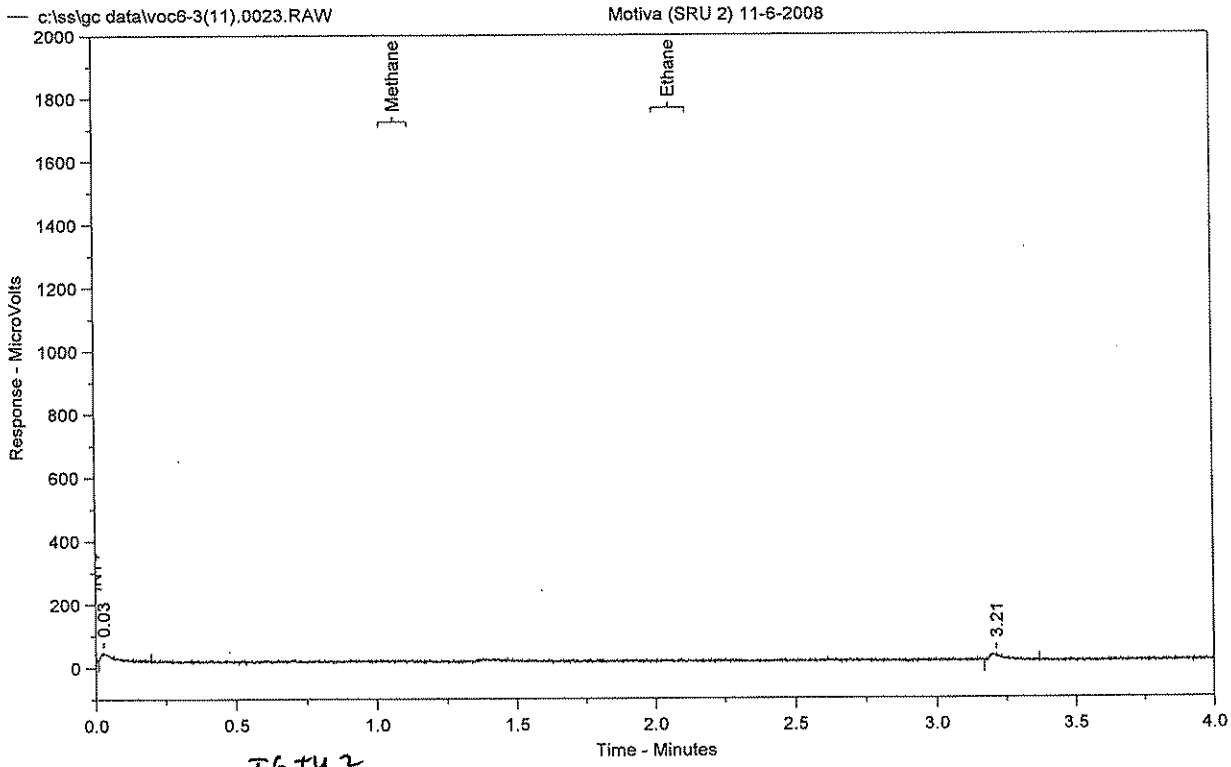
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(11).0022.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 10:30:56 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.04		0.00	71	45.752	26	BB	0.05
2	3.20		0.00	84	54.248	27	BB	0.07

Total Area = 155.1434 Total Height = 52.76574 Total Amount = 0



TG TU 2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 3-B

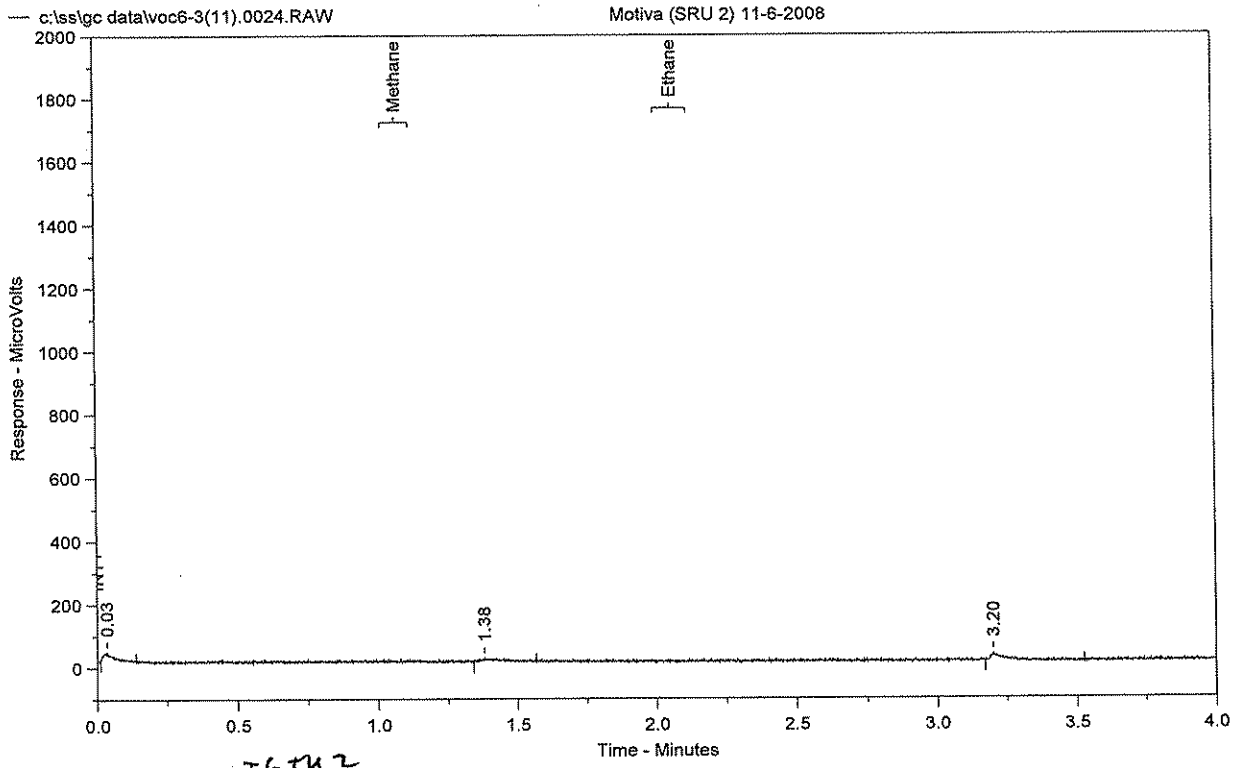
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(11).0023.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 10:38:57 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	119	50.042	29	BB	0.08
2	3.21		0.00	119	49.958	26	BB	0.11

Total Area = 237.909 Total Height = 55.01694 Total Amount = 0



TGTU2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 3-c

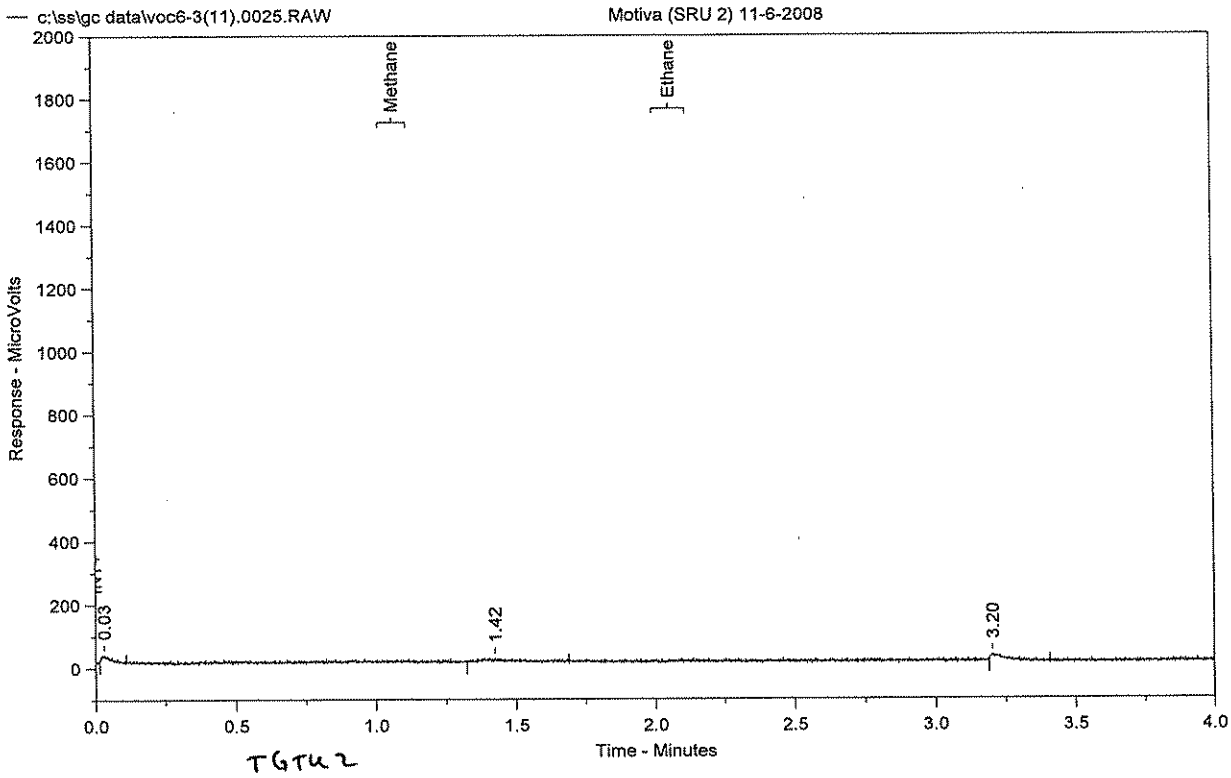
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(11).0024.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 10:46:57 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	99	25.941	31	BB	0.06
2	1.38		0.00	111	29.198	18	BB	0.22
3	3.20		0.00	171	44.862	26	BB	0.09

Total Area = 380.1209 Total Height = 74.64316 Total Amount = 0



TGTU2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 3 D

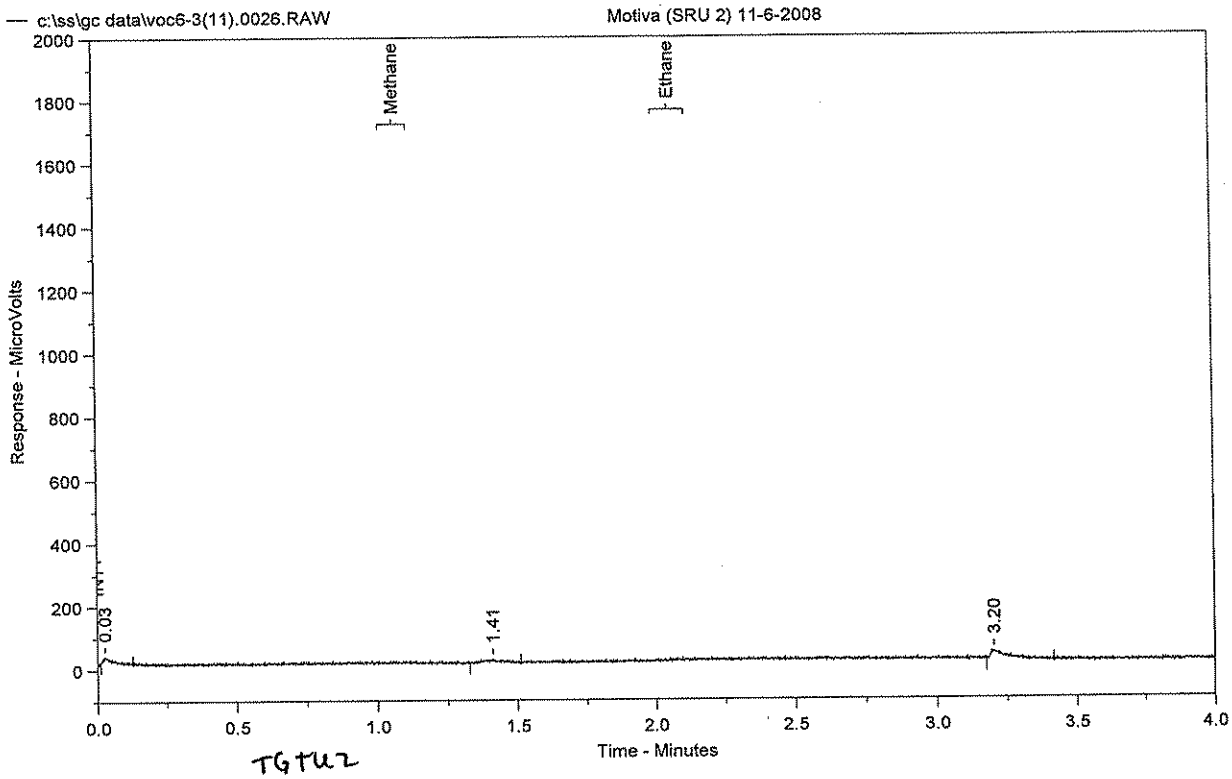
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(11).0025.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 10:51:52 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	76	18.268	27	BB	0.06
2	1.42		0.00	215	51.636	19	BB	0.36
3	3.20		0.00	126	30.096	22	BB	0.12

Total Area = 417.0317 Total Height = 67.96756 Total Amount = 0



TGTU2

Sample Name = **Motiva (SRU 2) 11-6-2008**

Run 3-E

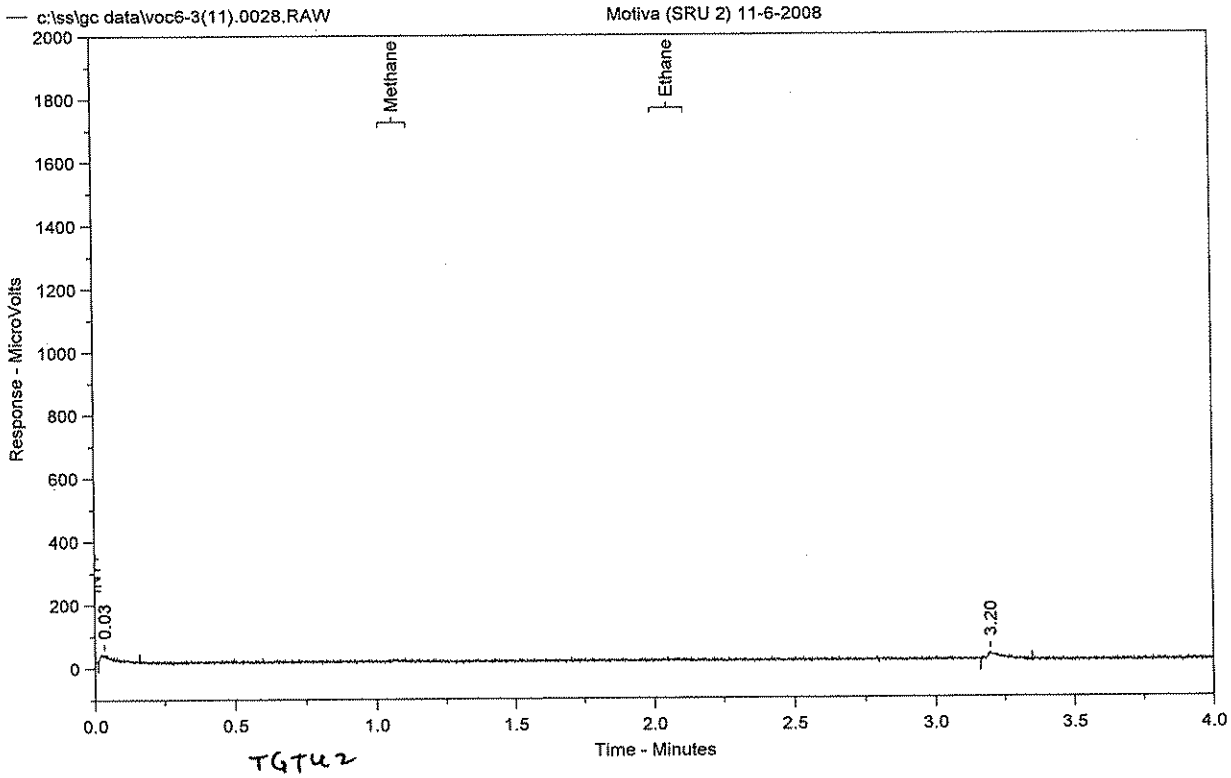
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(11).0026.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 10:57:15 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	68	20.558	23	BB	0.07
2	1.41		0.00	92	27.781	17	BB	0.17
3	3.20		0.00	171	51.661	32	BB	0.07

Total Area = 331.0827 Total Height = 71.73437 Total Amount = 0



TGTU2

Sample Name = **Motiva (SRU 2) 11-6-2008**

post Run 3 zero

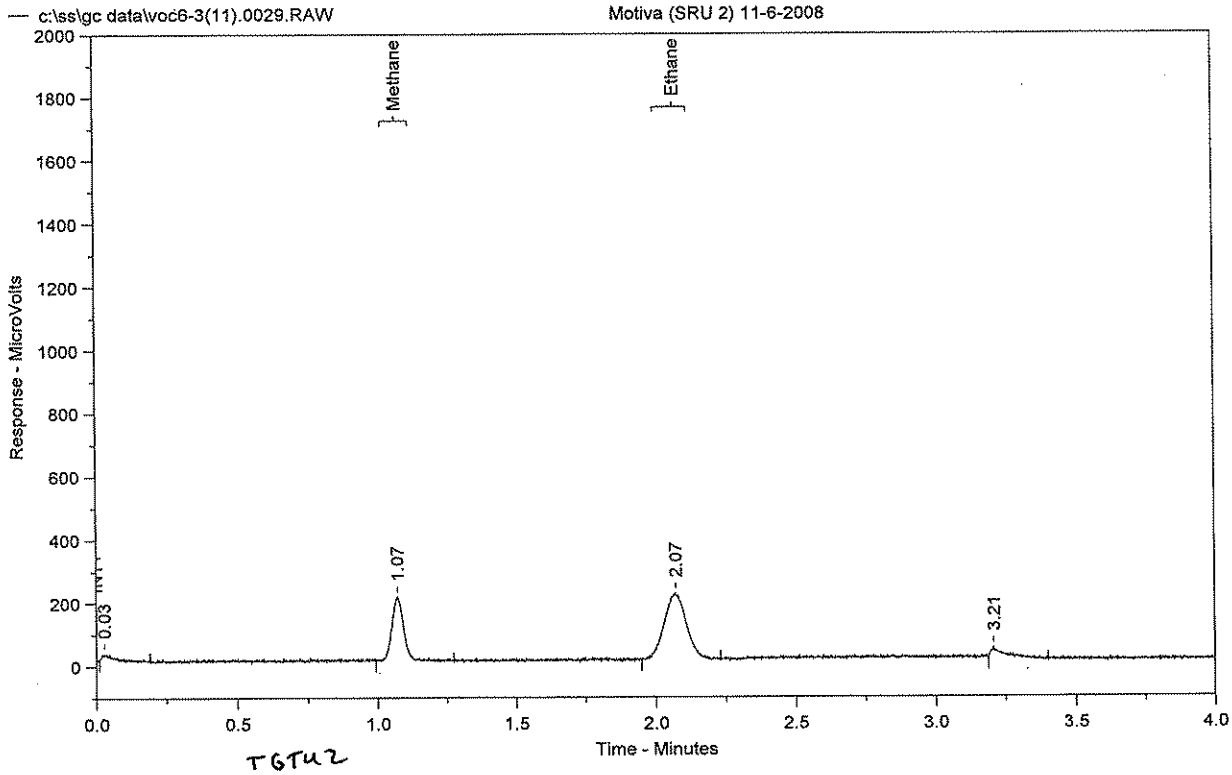
Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(11).0028.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 11:10:32 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	96	43.381	26	BB	0.07
2	3.20		0.00	125	56.619	27	BB	0.10

Total Area = 221.0667 Total Height = 52.49996 Total Amount = 0



Sample Name = **Motiva (SRU 2) 11-6-2008** post Run 3 cal

Instrument = Instrument 1
Heading 1 = Air = 52, H2 = 55, N2 = 300; 120 Isothermal
Heading 2 = Port Arthur, Texas

Raw File Name = **c:\ss\gc data\voc6-3(11).0029.RAW**
Method File Name = C:\CPData\SampleData\VOC.MET
Calibration File Name = C:\CPData\SampleData\VOC.CAL

Date Taken (end) = 11/6/2008 11:15:32 AM
Method Version = 6
Calibration Version = 51

Peak #	Ret. Time	Name	ppm	Area	Area %	Height	Type	Width
1	0.03		0.00	106	4.899	24	BB	0.08
2	1.07	Methane	9.95	673	31.054	207	BB	0.04
3	2.07	Ethane	9.78	1215	56.008	215	BB	0.08
4	3.21		0.00	174	8.039	39	BB	0.08

Total Area = 2168.462 Total Height = 484.7366 Total Amount = 19.72438

START TIME: 11/6/08 7:40 AM
END TIME: 11/6/08 8:40 AM
NOTE: Stork Laboratories Regard SRU4 as "SRU2" in their reports
NOTE: To get total MSCFH acid gas to "SRU2", add the minute average of Column B with Column C

	SRU4			INCINERATOR 2	
	SRU4 ACID GAS TO THERMAL REACTOR	SRU4 SWS ACID GAS TO THERMAL REACTOR	SULFUR PRODUCTION FROM SRU4	TGTU2 FUEL GAS TO INCINERATOR	FIREBOX TEMPERATURE
#NAME?	2FC7438.PV	2FC7422.PV	S2ESTSR4.PV	2FI8613.PV	2TC8610.PV
	MSCFH	MSCFH	TON/D	MSCFH	DEGF
Timestamp	2FC7438.PV - Average	2FC7422.PV - Average	S2ESTSR4.PV - Average	2FI8613.PV - Average	2TC8610.PV - Average
11/6/08 8:40 AM	466.48	79.21	394.60	13.15	1435.29
11/6/08 8:39 AM	465.90	79.03	394.17	13.23	1434.71
11/6/08 8:38 AM	465.69	78.89	393.82	13.32	1433.95
11/6/08 8:37 AM	465.90	79.06	393.95	13.41	1432.40
11/6/08 8:36 AM	465.60	79.04	394.24	13.46	1431.06
11/6/08 8:35 AM	466.14	78.91	393.86	13.50	1429.80
11/6/08 8:34 AM	465.80	78.73	393.76	13.52	1428.52
11/6/08 8:33 AM	465.51	78.90	393.67	13.48	1428.08
11/6/08 8:32 AM	465.88	78.92	393.88	13.35	1428.75
11/6/08 8:31 AM	465.87	78.91	393.92	13.26	1430.52
11/6/08 8:30 AM	466.10	79.06	394.26	13.26	1432.11
11/6/08 8:29 AM	466.60	78.99	394.63	13.31	1431.89
11/6/08 8:28 AM	467.33	78.91	395.69	13.33	1431.07
11/6/08 8:27 AM	467.73	79.28	395.53	13.39	1430.83
11/6/08 8:26 AM	467.68	79.38	395.64	13.39	1430.78
11/6/08 8:25 AM	467.12	79.47	395.62	13.45	1429.77
11/6/08 8:24 AM	467.53	79.65	396.18	13.51	1428.87
11/6/08 8:23 AM	467.65	79.65	395.88	13.53	1428.30
11/6/08 8:22 AM	467.23	79.71	395.43	13.51	1428.00
11/6/08 8:21 AM	467.11	79.82	395.28	13.45	1428.67
11/6/08 8:20 AM	467.31	79.95	395.44	13.41	1430.13
11/6/08 8:19 AM	466.91	80.21	395.52	13.44	1430.78
11/6/08 8:18 AM	467.13	80.18	395.37	13.50	1429.47
11/6/08 8:17 AM	467.13	80.08	394.87	13.55	1427.51
11/6/08 8:16 AM	467.43	80.62	395.25	13.54	1425.57
11/6/08 8:15 AM	465.99	80.98	394.74	13.49	1424.95
11/6/08 8:14 AM	466.17	81.29	394.68	13.46	1425.12
11/6/08 8:13 AM	465.19	81.25	393.96	13.40	1425.29
11/6/08 8:12 AM	464.54	81.36	394.16	13.30	1426.17
11/6/08 8:11 AM	464.63	81.72	393.92	13.18	1427.11
11/6/08 8:10 AM	464.87	81.90	394.23	13.10	1428.50
11/6/08 8:09 AM	465.55	82.03	394.81	13.09	1430.13
11/6/08 8:08 AM	465.27	81.94	394.26	13.10	1430.69
11/6/08 8:07 AM	464.95	82.08	394.17	13.13	1430.67
11/6/08 8:06 AM	464.74	82.50	394.04	13.18	1430.16
11/6/08 8:05 AM	464.77	82.72	394.10	13.16	1430.10
11/6/08 8:04 AM	465.16	82.70	394.24	13.13	1430.95
11/6/08 8:03 AM	464.94	82.46	393.91	13.15	1432.04
11/6/08 8:02 AM	464.81	82.49	393.90	13.17	1432.72
11/6/08 8:01 AM	465.18	82.38	394.02	13.21	1432.39
11/6/08 8:00 AM	465.00	82.31	394.24	13.24	1430.68
11/6/08 7:59 AM	464.87	82.31	394.23	13.24	1430.16
11/6/08 7:58 AM	465.26	82.63	393.88	13.24	1430.17
11/6/08 7:57 AM	464.05	82.59	393.74	13.23	1431.01
11/6/08 7:56 AM	464.02	82.73	393.69	13.23	1431.41
11/6/08 7:55 AM	463.74	82.93	393.55	13.23	1431.42
11/6/08 7:54 AM	464.07	82.97	393.86	13.23	1431.74
11/6/08 7:53 AM	464.04	83.00	393.61	13.26	1431.50
11/6/08 7:52 AM	463.65	83.10	393.69	13.27	1431.35
11/6/08 7:51 AM	464.14	83.41	393.76	13.25	1430.65
11/6/08 7:50 AM	463.43	83.15	393.39	13.22	1430.48
11/6/08 7:49 AM	463.31	83.10	393.01	13.22	1430.15
11/6/08 7:48 AM	463.09	83.15	392.92	13.25	1429.23
11/6/08 7:47 AM	463.56	83.09	393.59	13.25	1429.17
11/6/08 7:46 AM	464.61	83.02	393.47	13.24	1429.52
11/6/08 7:45 AM	464.33	83.09	393.36	13.26	1429.14
11/6/08 7:44 AM	463.45	83.01	393.15	13.28	1428.59
11/6/08 7:43 AM	463.52	82.84	392.92	13.29	1427.36
11/6/08 7:42 AM	463.69	82.30	393.14	13.29	1427.03
11/6/08 7:41 AM	464.30	82.55	393.49	13.27	1426.83
11/6/08 7:40 AM	463.73	82.65	393.32	13.21	1426.89
Average=	**465.37**	**81.22**	**394.22**	**13.31**	**1429.80**

NOTE: Run averages computed by Stork SwL.

START TIME: 11/6/08 9:05 AM
END TIME: 11/6/08 10:05 AM
NOTE: Stork Laboratories Regard SRU4 as "SRU2" in their reports
NOTE: To get total MSCFH acid gas to "SRU2", add the minute average of Column B with Column C

	SRU4			INCINERATOR 2	
	SRU4 ACID GAS TO THERMAL REACTOR	SRU4 SWS ACID GAS TO THERMAL REACTOR	SULFUR PRODUCTION FROM SRU4	TGTU2 FUEL GAS TO INCINERATOR	FIREBOX TEMPERATURE
#NAME?	2FC7438.PV	2FC7422.PV	S2ESTSR4.PV	2FI8613.PV	2TC8610.PV
	MSCFH	MSCFH	TON/D	MSCFH	DEGF
Timestamp	2FC7438.PV - Average	2FC7422.PV - Average	S2ESTSR4.PV - Average	2FI8613.PV - Average	2TC8610.PV - Average
11/6/08 10:05 AM	467.96	83.37	397.83	12.67	1433.93
11/6/08 10:04 AM	469.71	83.21	398.20	12.68	1437.20
11/6/08 10:03 AM	469.99	82.82	398.52	12.78	1438.30
11/6/08 10:02 AM	470.10	82.63	399.07	12.88	1436.77
11/6/08 10:01 AM	472.57	82.45	400.82	12.87	1435.59
11/6/08 10:00 AM	473.82	82.15	401.48	12.81	1437.13
11/6/08 9:59 AM	473.33	82.08	400.45	12.83	1440.32
11/6/08 9:58 AM	472.58	81.98	399.89	12.93	1441.31
11/6/08 9:57 AM	472.35	81.80	400.56	13.01	1440.41
11/6/08 9:56 AM	473.75	81.78	401.24	13.06	1440.00
11/6/08 9:55 AM	473.88	81.68	401.41	13.14	1441.34
11/6/08 9:54 AM	473.17	81.59	400.41	13.17	1442.61
11/6/08 9:53 AM	472.68	81.26	399.94	13.29	1442.43
11/6/08 9:52 AM	472.82	81.01	400.11	13.49	1439.63
11/6/08 9:51 AM	473.48	80.60	400.48	13.65	1435.64
11/6/08 9:50 AM	473.11	79.98	399.82	13.74	1433.05
11/6/08 9:49 AM	472.24	79.31	398.71	13.79	1431.10
11/6/08 9:48 AM	470.94	78.48	397.71	13.89	1429.02
11/6/08 9:47 AM	470.82	77.67	396.98	14.01	1425.38
11/6/08 9:46 AM	470.67	77.52	397.80	14.03	1423.87
11/6/08 9:45 AM	471.15	78.28	397.43	14.06	1423.03
11/6/08 9:44 AM	469.73	78.41	397.22	14.06	1420.95
11/6/08 9:43 AM	469.58	78.16	397.17	13.98	1419.54
11/6/08 9:42 AM	470.80	77.82	397.11	13.86	1420.42
11/6/08 9:41 AM	470.11	77.69	396.85	13.76	1423.25
11/6/08 9:40 AM	469.63	78.46	396.77	13.73	1425.02
11/6/08 9:39 AM	469.76	79.36	397.13	13.73	1425.21
11/6/08 9:38 AM	470.89	79.93	398.60	13.70	1424.47
11/6/08 9:37 AM	470.81	80.15	398.67	13.61	1424.43
11/6/08 9:36 AM	471.57	80.29	398.84	13.51	1426.33
11/6/08 9:35 AM	471.75	80.14	398.92	13.44	1428.26
11/6/08 9:34 AM	472.18	80.02	399.26	13.43	1429.64
11/6/08 9:33 AM	472.08	79.98	399.13	13.41	1429.91
11/6/08 9:32 AM	471.83	80.10	399.14	13.38	1429.79
11/6/08 9:31 AM	472.26	80.38	399.90	13.37	1430.24
11/6/08 9:30 AM	472.34	80.46	399.65	13.40	1429.77
11/6/08 9:29 AM	472.44	80.16	399.62	13.45	1428.58
11/6/08 9:28 AM	473.05	79.91	399.82	13.49	1427.60
11/6/08 9:27 AM	473.29	79.83	399.66	13.50	1426.44
11/6/08 9:26 AM	472.18	79.69	399.25	13.48	1425.56
11/6/08 9:25 AM	472.43	79.83	399.30	13.46	1426.03
11/6/08 9:24 AM	471.83	79.91	398.72	13.42	1427.04
11/6/08 9:23 AM	471.57	79.63	398.87	13.33	1428.52
11/6/08 9:22 AM	471.91	79.54	399.14	13.31	1429.13
11/6/08 9:21 AM	471.76	79.54	398.92	13.33	1428.43
11/6/08 9:20 AM	472.04	79.51	399.20	13.27	1427.82
11/6/08 9:19 AM	472.20	79.97	399.36	13.18	1428.48
11/6/08 9:18 AM	471.73	79.99	398.94	13.09	1429.76
11/6/08 9:17 AM	471.74	79.59	399.09	13.07	1430.85
11/6/08 9:16 AM	472.05	79.49	399.10	13.10	1431.05
11/6/08 9:15 AM	472.20	79.70	399.21	13.16	1429.90
11/6/08 9:14 AM	472.53	79.77	399.59	13.18	1428.44
11/6/08 9:13 AM	472.42	79.71	399.95	13.18	1427.85
11/6/08 9:12 AM	472.24	79.67	399.34	13.16	1428.11
11/6/08 9:11 AM	472.24	79.50	398.95	13.10	1429.48
11/6/08 9:10 AM	472.30	79.61	398.89	13.09	1430.39
11/6/08 9:09 AM	471.96	79.71	398.99	13.12	1430.78
11/6/08 9:08 AM	472.10	79.60	398.96	13.15	1430.36
11/6/08 9:07 AM	472.26	79.38	399.03	13.20	1429.44
11/6/08 9:06 AM	472.14	79.11	398.79	13.22	1428.29
11/6/08 9:05 AM	471.70	79.14	398.82	13.17	1427.29
Average=	**471.82**	**80.07**	**399.06**	**13.35**	**1430.34**

NOTE: Run averages computed by Stork SwL.

START TIME: 11/6/08 10:25 AM
END TIME: 11/6/08 11:25 AM
NOTE: Stork Laboratories Regard SRU4 as "SRU2" in their reports
NOTE: To get total MSCFH acid gas to "SRU2", add the minute average of Column B with Column C

	SRU4			INCINERATOR 2	
	SRU4 ACID GAS TO THERMAL REACTOR	SRU4 SWS ACID GAS TO THERMAL REACTOR	SULFUR PRODUCTION FROM SRU2	TGTU2 FUEL GAS TO INCINERATOR	FIREBOX TEMPERATURE
#NAME?	2FC7438.PV	2FC7422.PV	S2ESTSR4.PV	2FI8613.PV	2TC8610.PV
	MSCFH	MSCFH	TON/D	MSCFH	DEGF
Timestamp	2FC7438.PV - Average	2FC7422.PV - Average	S2ESTSR4.PV - Average	2FI8613.PV - Average	2TC8610.PV - Average
11/6/08 11:25 AM	463.34	79.10	391.89	13.28	1430.48
11/6/08 11:24 AM	463.42	78.98	391.68	13.31	1430.40
11/6/08 11:23 AM	463.40	79.00	392.24	13.29	1430.84
11/6/08 11:22 AM	464.03	79.04	392.81	13.27	1431.62
11/6/08 11:21 AM	464.20	79.07	392.77	13.35	1431.63
11/6/08 11:20 AM	464.29	78.96	392.93	13.43	1431.30
11/6/08 11:19 AM	465.00	78.85	393.19	13.46	1431.03
11/6/08 11:18 AM	465.32	78.98	393.76	13.43	1430.83
11/6/08 11:17 AM	465.62	79.14	394.12	13.43	1430.81
11/6/08 11:16 AM	465.95	79.27	394.52	13.46	1430.65
11/6/08 11:15 AM	466.78	79.40	394.67	13.49	1429.99
11/6/08 11:14 AM	467.31	79.34	395.32	13.52	1429.73
11/6/08 11:13 AM	467.60	79.13	395.43	13.46	1429.65
11/6/08 11:12 AM	467.56	79.08	395.36	13.41	1429.65
11/6/08 11:11 AM	467.73	79.26	395.51	13.40	1430.11
11/6/08 11:10 AM	468.39	79.31	396.28	13.39	1430.44
11/6/08 11:09 AM	468.72	79.18	396.27	13.42	1430.10
11/6/08 11:08 AM	469.07	78.75	396.48	13.43	1429.81
11/6/08 11:07 AM	469.30	78.85	396.89	13.33	1430.03
11/6/08 11:06 AM	469.21	79.14	396.92	13.29	1430.14
11/6/08 11:05 AM	469.93	79.11	397.46	13.31	1430.29
11/6/08 11:04 AM	470.65	78.84	397.48	13.34	1429.27
11/6/08 11:03 AM	470.83	78.75	397.63	13.36	1427.83
11/6/08 11:02 AM	470.88	78.91	398.37	13.33	1427.15
11/6/08 11:01 AM	470.48	79.06	397.80	13.39	1426.30
11/6/08 11:00 AM	470.16	79.24	397.66	13.44	1425.86
11/6/08 10:59 AM	470.63	79.06	397.77	13.42	1425.95
11/6/08 10:58 AM	470.83	78.50	397.83	13.40	1426.17
11/6/08 10:57 AM	470.49	78.62	397.81	13.41	1425.72
11/6/08 10:56 AM	470.45	78.97	397.82	13.40	1424.96
11/6/08 10:55 AM	470.81	78.94	397.91	13.36	1424.75
11/6/08 10:54 AM	470.59	78.77	397.90	13.31	1425.52
11/6/08 10:53 AM	470.51	78.96	397.83	13.24	1426.69
11/6/08 10:52 AM	470.21	79.24	397.57	13.18	1427.38
11/6/08 10:51 AM	470.34	79.37	397.64	13.16	1427.96
11/6/08 10:50 AM	470.08	79.38	397.42	13.16	1428.08
11/6/08 10:49 AM	469.48	79.33	397.03	13.17	1427.63
11/6/08 10:48 AM	469.36	79.36	396.79	13.18	1427.39
11/6/08 10:47 AM	469.30	79.51	396.75	13.08	1427.78
11/6/08 10:46 AM	468.97	79.55	396.67	13.04	1428.21
11/6/08 10:45 AM	468.72	79.86	396.54	13.05	1428.42
11/6/08 10:44 AM	469.41	79.96	396.64	12.95	1428.81
11/6/08 10:43 AM	469.05	79.85	396.96	12.92	1429.20
11/6/08 10:42 AM	469.03	79.93	396.79	12.94	1428.89
11/6/08 10:41 AM	468.17	80.00	396.31	12.95	1428.09
11/6/08 10:40 AM	467.84	80.13	395.99	12.96	1427.50
11/6/08 10:39 AM	468.15	80.11	395.60	12.94	1427.13
11/6/08 10:38 AM	467.66	80.10	395.80	12.89	1427.54
11/6/08 10:37 AM	467.63	80.29	395.99	12.85	1428.98
11/6/08 10:36 AM	467.46	80.37	395.49	12.81	1430.11
11/6/08 10:35 AM	467.57	80.36	395.70	12.81	1430.49
11/6/08 10:34 AM	467.83	80.47	395.98	12.85	1429.73
11/6/08 10:33 AM	467.74	80.79	396.31	12.87	1429.53
11/6/08 10:32 AM	468.56	81.11	396.63	12.87	1430.02
11/6/08 10:31 AM	467.76	81.21	396.09	12.88	1430.38
11/6/08 10:30 AM	468.36	81.56	396.51	12.90	1429.74
11/6/08 10:29 AM	468.25	81.97	396.56	12.90	1428.62
11/6/08 10:28 AM	468.47	82.17	397.15	12.90	1428.05
11/6/08 10:27 AM	468.62	82.12	397.20	12.91	1427.66
11/6/08 10:26 AM	468.75	82.06	397.47	12.81	1428.17
11/6/08 10:25 AM	469.05	82.18	397.28	12.73	1429.34
Average=	**468.28**	**79.67**	**396.15**	**13.18**	**1428.79**

NOTE: Run averages computed by Stork SwL.

DEFINITIONS

Standard Conditions: 68° and 29.92 inches of mercury

Stack Conditions: Stack temperature, pressure and moisture

NOMENCLATURE

ACFM	Volumetric stack gas flow in cubic feet per minute at stack conditions
AMT	Average temperature at meter in degrees Rankin
An	Area of nozzle in square feet
As	Area of stack in square feet
C	Total pollutant concentration in grains per dry standard cubic feet
CEMS	Continuous emission monitoring system
CFM	Cubic feet per minute
CGA	Cylinder gas audit
CO_2	Carbon dioxide
CO	Carbon monoxide
Cp	Pitot tube correction factor (PTCF)
Cs	Partial pollutant concentration in grains or grams per dry standard cubic foot (total less impinger catch)
De	Equivalent stack diameter of rectangular stack

$$De = \left[\frac{2LW}{L+W} \right]$$

DGMCF	Dry gas meter correction factor
DI	Deionized water
dscf	dry standard cubic feet

Stork SWL is an operating unit of Stork Materials Technology B.V., Amsterdam, The Netherlands, which is a member of the Stork group.

NOMENCLATURE (Continued)

EA	Excess Air (expressed as percent)
FPD	Flame photometric detector
FID	Flame ionization detector
°F	Temperature in degrees Fahrenheit
GC	Gas chromatograph
GPC	Grams of particulate caught (total)
g	Grams
gr	Grains
Hg	Mercury
H_2O	Water
H_2SO_4	Sulfuric Acid
I	Isokinetics as percent
IMPI	Grams of particulate caught in impinger
IMPP	Grams of particulate caught before impinger (total less impinger catch)
MWSG	Molecular weight of stack gas in grams/gram-mole (g/g-mole) or pounds/pound-mole (lb/lb-mole)
N_2	Nitrogen
NOx	Total oxides of nitrogen
O_2	Oxygen
Pb	Barometric pressure in inches of mercury
PM	Particulate Matter
PM_{10}	Particulate Matter less than 10 microns

Stork SWL is an operating unit of Stork Materials Technology B.V., Amsterdam, The Netherlands, which is a member of the Stork group.

NOMENCLATURE (Continued)

Pm	Meter pressure in inches of mercury
ppm	Parts per million (Volume/Volume or mass/mass)
P_r	Barometric pressure of reference barometer
Ps	Absolute pressure in stack in inches of mercury
PMR	True pollutant mass rate in pounds per hour
PMRs	Pollutant mass rate for the "front half" in pounds per hour (total less impinger catch)
Qsd	Dry volumetric stack gas flow rate corrected to standard conditions in dscf/hr
°R	Temperature in degrees Rankin (equivalent to °F + 460°)
RA	Relative accuracy
RATA	Relative accuracy test audit
Std.P	Pressure at standard conditions (29.92 inches of mercury)
SO_2	Sulfur dioxide
SO_3	Sulfur trioxide
Std.T	Temperature at standard conditions (528°R)
THC	Total Hydrocarbons
TG	Total weight of water collected in silica gel, in grams
TRS	Total Reduced Sulfur Compounds
T_r	Temperature of reference thermometer
Ts	Stack gas temperature in degrees Rankin
T_t	Temperature of test thermometer

Stork SWL is an operating unit of Stork Materials Technology B.V., Amsterdam, The Netherlands, which is a member of the Stork group.

Page 4

NOMENCLATURE (Continued)

TWW	Total water wash volume collected in impingers and silica gel, in milliliters (ml) NOTE: Density of H_2O equals 1 g/ml
VOC	Total Volatile Organic Compounds
Vm(Std)	Total gas sampled converted to standard conditions, dry basis, in cubic feet
Vs	Stack gas velocity in feet per second
ΔH	Pressure differential across the orifice meter in inches of water
ΔP	Stack gas velocity head in inches of water
Θ	Sample time in minutes

Stork SWL is an operating unit of Stork Materials Technology B.V., Amsterdam, The Netherlands, which is a member of the Stork group.

SOURCE SAMPLING CALCULATIONS

FLOW CALCULATIONS

Pitot Tube Constant

Stack Temperature

$$Vs\ ft/sec = 85.49 \times Cp \times \sqrt{\Delta P}\ avg.(in\ H_2O) \times \sqrt{\frac{Ts\ avg.(°R)}{MWSG\ (lb/lb\text{-}mole) \times Ps\ (in\ Hg)}}$$

Pitot Tube Correction Factor

Molecular Weight of the Stack Gas

Stack Pressure

Pitot Tube Constant

$$85.49 \frac{ft}{sec} \left[\frac{(lb/lb\text{-}mole)(in\ Hg)}{(R)(in\ H_2O)} \right]^{1/2}$$

$$ACFM\ ft^3/min = Vs\ (ft/sec) \times 60\ sec/min \times As\ (ft^2)$$

Area of the Stack

68°F = 528°R
Standard Temperature

Stack Pressure

Percent Moisture

$$Qsd\ dscf/hr = 60\ min/hr \times \left(1.00 - \frac{\%H_2O}{100}\right) \times ACFM\ (ft^3/min) \times \frac{528}{Ts\ avg.(°R)} \times \frac{Ps\ (in\ Hg)}{29.92}$$

Stack Temperature

Standard Pressure

DERIVATIONS OF EQUATIONS

Fuel and Operations Data

$$\text{Fuel F Factor (dscf/MMBtu)} = \frac{10^6[3.64(\%H) + 1.53(\%C) + 0.57(\%S) + 0.14(\%N) - 0.46(\%O_2)]}{\text{Gross Calorific Value (BTU/lb)}}$$

Density (lb/ft^3) = Gas Mixture Molecular Weight/385

Gross Calorific Value - GCV (BTU/lb) = High Heat of Combustion (BTU/ft^3) x (1/mixture density (lb/ft^3))

Fuel Flow Rate (FFR) = Fuel Flow Rate in ft^3/hr, lb/hr or gal/hr

FFR (lb/hr) = FFR (ft^3/hr) x Gas Mixture Density (lb/ft^3)

FFR (lb/hr) = FFR (gal/hr) x Liquid Density (lb/gal)

Operating Rate (MMBtu/hr) = FFR (ft^3/hr) x Gross Calorific Value (BTU/ft^3) x 1×10^{-6}

Operating Rate (MMBtu/hr) = FFR (lb/hr) x Gross Calorific Value (Btu/lb) x 1×10^{-6}

Pollutant Emissions Equations

lb/dscf = (ppm x MW x 6.242×10^{-8})/24.04 (Note: MW for NOx = 46, MW for CO = 28)

lb/MMBtu @ 0% O_2 = lb/dscf x Fuel F Factor (dscf/MMBtu) x [20.9/20.9 - %O_2 (dry)]

Emission Rate (lb/hr) = lb/MMBtu x GCV x FFR x 1×10^{-6}
Note: if FFR is ft^3/hr, GCV is Btu/ft^3
if FFR is lb/hr, GCV is Btu/lb

CO, ppm (dry) @ 3% O_2 = CO ppm (dry) x [17.9/20.9-%O_2(dry)]

CO, ppm (dry) @ 0% O_2 = CO ppm (dry) x [20.9/20.9-%O_2(dry)]

Grams/Horsepower - Hour (g/hp-hr) = (Emission Rate lb/hr x 454)/Horsepower

Stork Southwestern Laboratories, Inc.
Air Emissions Services Division
Houston, Texas

ANNUAL METER BOX CALIBRATION

Box No. M-8

Wet Test Meter No. 11547

Vacuum 5 in Hg.

Date 10/2/2008

Barometric Pressure, Pb 29.99 in. Hg

Inputs										Results	
Orifice Manometer setting Delta H in H2O	Gas Volume of wet test meter Vw ft³	Gas Volume of dry gas meter Vd ft³	Temperature: Wet test meter Tw °F	Temperature: Dry Gas Meter: Inlet Tdi °F	Temperature: Dry Gas Meter: Outlet Tdo °F	Temperature: Dry Gas Meter: Average Td °F	Time Min	Time Sec	Time ø Min	Y	Delta H@
0.25	3.000	3.024	72 / 72	71 / 74	70 / 72	71.75	10	45	10.750	0.9910	1.8060
0.50	5.000	5.035	72 / 72	75 / 77	73 / 74	74.75	13	0	13.000	0.9970	1.8909
1.00	5.000	5.055	72 / 72	77 / 79	75 / 76	76.75	9	9	9.150	0.9955	1.8665
2.00	10.000	10.055	72 / 72	78 / 81	76 / 77	78.00	12	51	12.850	1.0008	1.8364
									Average:	0.9961	1.8499

Equations			
Delta H	Delta H / 13.6	Y: $\frac{Vw * Pb * (Td + 460)}{Vd * (Pb + Delta\ H/13.6) * (Tw + 460)}$	Delta H@: $\frac{0.0317 * Delta\ H}{Pb * (Td + 460)} \left[\frac{(Tw + 460)ø}{Vw}\right]^2$

Is the Delta H@ within ±0.15 of $\overline{\text{Delta H @}}$

[x] yes, then $\overline{\text{Delta H@}}$ is valid.

[ ] no, then repair and recalibrate.

Is the Ý within ±0.02 of $\overline{Y}$

[x] yes, then $\overline{Y}$ is valid.

[ ] no, then repair and recalibrate.

Southwestern Laboratories

Randy Moore

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Stork Southwestern Laboratories, Inc.
Air Emission Services

GAMMA CALIBRATION FORM

PROJECT Motiva PROJECT NO. 08061098 DATE 12-8-08

UNIT TGTU 1&2

METER BOX NO. M-8

CURRENT GAMMA 0.9961

AVERAGE ΔH RM ~~1.8499~~ 1.0

ACCEPTABLE LIMITS 0.9463 TO 1.0459

MAXIMUM VACUUM 2

BAROMETRIC PRESSURE 29.98 in. Hg

WET TEST METER ID 11547

DRY GAS METER VOLUME Vd	TEMPERATURES				GAMMAS
	WET TEST METER Tw °F	DRY GAS METER INLET Tdi °F	DRY GAS METER OUTLET Tdo °F	DRY GAS METER AVERAGE Td °F	
739.952 − 738.945 = 1.007	71 / 71	71 / 72	71 / 71	71.25	0.9903 ✓
740.958 − 739.952 = 1.006	71 / 71	72 / 73	71 / 71	71.75	0.9903 ✓
741.965 − 740.958 = 1.007	71 / 71	72 / 73	71 / 71	71.25	0.9893 ✓
			AVERAGE GAMMA		0.9900 ✓

$$\frac{Vw\ Pb\ (Td + 460)}{Vd\ (Pb + \Delta H/13.6)\ (Tw + 460)} = \text{GAMMA}$$

$$\frac{(1)(29.98)(531)}{(1.007)(30.05)(531.25)} = \frac{15,919.3800}{16,075.8109}$$

$$\frac{(1)(29.98)(531)}{(1.006)(30.05)(531.75)} = \frac{15,919.3800}{16,074.9620}$$

$$\frac{(1)(29.98)(531)}{(1.007)(30.05)(531.75)} = \frac{15,919.3800}{16,090.9411}$$

Randy Moore

Stork Southwestern Laboratories, Inc.

CERTIFICATE OF CALIBRATION

This certifies that your American AL-20 Wet Test Meter
Serial No. 11547
Has been calibrated with a American Bell Prover
Serial No. 1768
It is traceable to the N.I.S.T., Reference No. 12169734

Rate of Flow	% of Proof
60 CFH	**100.0 %**

Calibrated by Carl Poe Co., Inc.
4600 Allen Street Houston, Texas 77007
(713) 861-3816 * Fax: (713) 861-8299

January 30, 2008
Date

Charles Cook
Signature

Stork Southwestern Laboratories, Inc.

THERMOMETER AND BAROMETER POST TEST QA

Project: Motiva	Unit: TGTU 242	By: Randy Moore
Project No.: 08061098	Location: Port Arthur, Tx.	Date: 12-8-08

Thermometer Calibration

Thermocouple Temperatures	Thermocouple ID No.	Thermometer ID No.	Thermometer Temperature °R (Tt)	Reference Temperature °R (Tr)*	** Percent Difference
Stack @ Temp. 1 (Amb.):	M-8		531	531	0.0
Stack @ Temp. 2 (Mid):	I-10B		665	675	1.48
Stack @ Temp. 3 (Stack):	V-25-62		705	715	1.40
Last Imp. @ Ambient:	IC-4		531	531	0.0
Filter Box @ 250°F:	N/A	N/A	—	—	—
Probe Heater @ 250°F:	N/A	N/A	—	—	—
DGM @ Ambient:	M-8		—	—	—
Inlet:	↓		534	531	0.6
Outlet:	↓		533	531	0.4
Aux. @ <5°C (41°F):	N/A	N/A	—	—	—

*Mercury-in-Glass Thermometer ID Number: 5417

** Percent Difference = $\frac{Tt - Tr}{Tr}$ x 100 = < or = 1.5%

Are Values Within Specification? Yes Initials RM

Barometer Calibration

Aneroid "Hg (Pb) Reference "Hg (Pr)*

Lab

Field Barometer ID Number: T-3

*Mercurial Barometer

Difference = Pb - Pr

29.95 - 29.98 = -0.03 < or = 0.1 "Hg

Is The Value Within Specification? Yes Initials RM

Southwestern Laboratories, Inc.
Houston, Texas

ANNUAL PITOT TUBE CALIBRATION

Pitot Tube Identification Number: I-10B Date: 6/13/2008

Calibrated By: By Construction Guidelines

	"A" Side Calibration			
Run No.	ΔP_{std} In. H_2O	ΔP_s In. H_2O	$C_{p\,(s)}$	Absolute Deviation $C_{p\,(s)} - C_{p\,(A)}$
1	N/A	N/A	0.840	N/A
2	N/A	N/A	0.840	N/A
3	N/A	N/A	0.840	N/A
		$C_{p\,(A)}$	**0.840**	

Average Deviation $C_{p\,(A)}$ = N/A

	"B" Side Calibration			
Run No.	ΔP_{std} In. H_2O	ΔP_s In. H_2O	$C_{p\,(s)}$	Absolute Deviation Cp (s) - Cp (B)
1	N/A	N/A	0.840	N/A
2	N/A	N/A	0.840	N/A
3	N/A	N/A	0.840	N/A
		Cp (B)	**0.840**	

Average Deviation $C_{p\,(B)}$ = N/A

NOTE: 0.84 assigned by adherence to construction guidelines

Deviation between $C_{p\,(A)}$ and $C_{p\,(B)}$ = 0.000
The Deviation between $C_{p\,(A)}$ and $C_{p\,(B)}$ is <= 0.01 and therefore is valid.

Southwestern Laboratories, Inc.

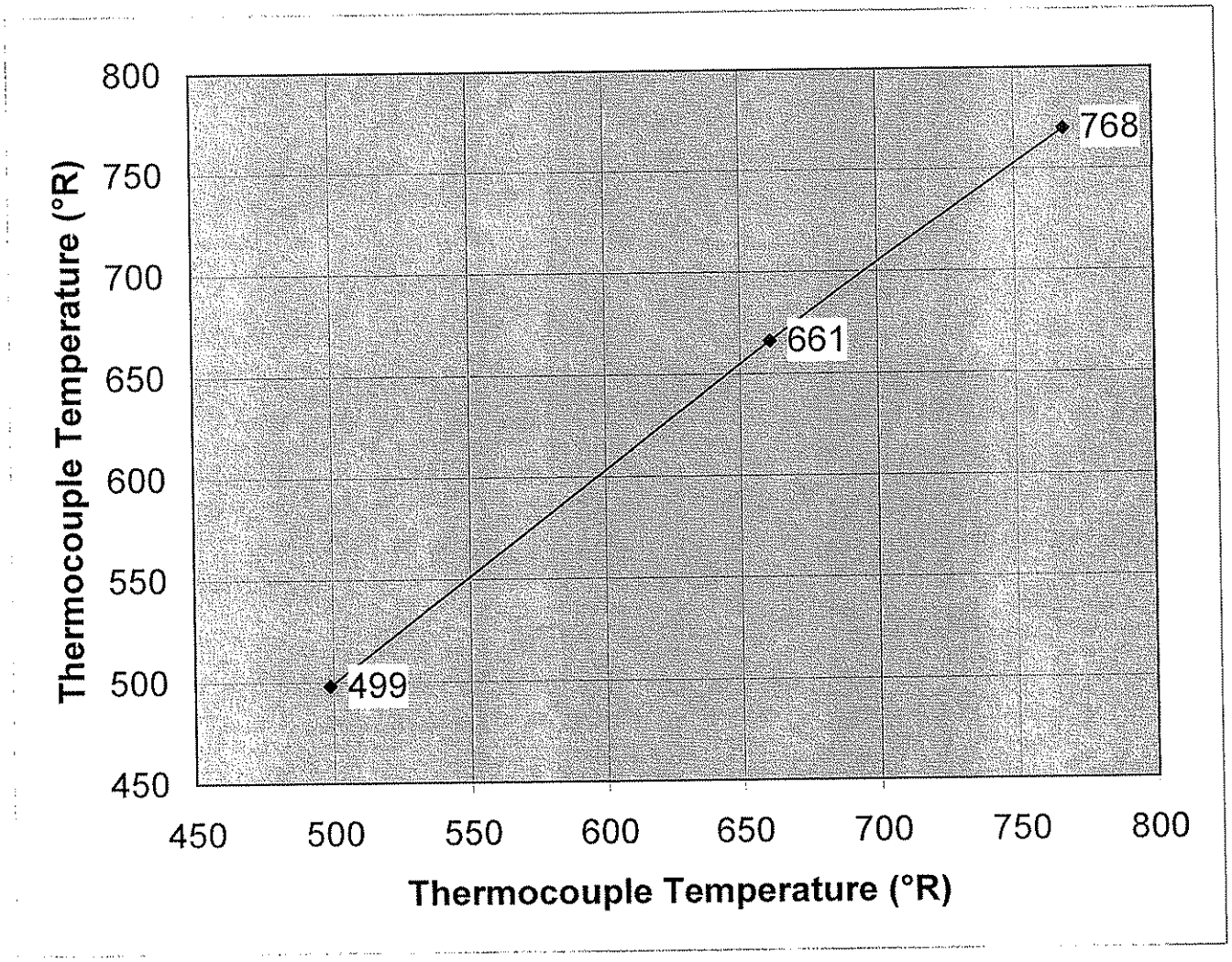
Temperature Sensor Calibration Data

Date: 6/27/2008 Thermocouple No. : I-10B

Ambient Temperature: 70 °F Barometric Pressure: 29.95 Inches Hg

Calibrator: AP Reference (mercury-in-glass) : 5378

Reference Point Source	Reference Thermometer Temperature			Thermocouple Temperature		Temperature Difference *
	°C	°F	°R	°F	°R	%
Ice Water	3.3	38	498	39	499	-0.2
Boiling Water	96.7	206	666	201	661	0.8
Boiling Oil	154.4	310	770	308	768	0.3



* [(Ref. Temp. (°R) - Thermocouple Temp. (°R)) / Ref. Temp. (°R)] x 100 ≤ 1.5% Absolute Value

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Stork SwL Analyzer QA

Project Name:	Motiva	Date	11/6/2008
Project No.:	08061098B	Initials	VG
Source:	TGTU 2		

EPA Protocol No. 1 Gases			
Cylinder Pollutant	Cylinder Value	Cylinder Number	Expiration Date
NOx - Low			
NOx - Mid	126.0	ALM025220	3/29/2009
NOx - High	230.0	AILM040296	12/25/2008
CO - Low			
CO - Mid	246.0	ALM046015	3/25/2010
CO - High	486.0	ALM063750	7/30/2009
O2 - Low			
O2 - Mid	13.4	CC82281	8/20/2010
O2 - High	23.2	AAL4823	8/4/2009

Parameter:	NOx	CALIBRATION ERROR			
Analyzer:	Thermo Environmental Instruments, Inc.			Scale:	230
Model:	42C-HL Chemiluminescent			Serial:	42CHL727773372
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is Linearity Within +or- 2%
Zero	0.00	0.27	0.3	0.12%	Yes
EPA Protocol No. 1					
Low-Level	0.00	N/A	0.00	0.00%	Yes
Mid-Level	126.00	126.08	0.08	0.03%	Yes
High-Level	230.00	229.72	-0.28	-0.12%	Yes

Parameter:	CO	CALIBRATION ERROR			
Analyzer:	Thermo Environmental Instruments, Inc.			Scale:	486
Model:	48H Gas Filter Correlation			Serial:	411405897
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is Linearity Within +or- 2%
Zero	0.00	0.04	0.0	0.01%	Yes
EPA Protocol No. 1					
Low-Level			0.00	0.00%	Yes
Mid-Level	246.00	246.33	0.33	0.07%	Yes
High-Level	486.00	486.14	0.14	0.03%	Yes

Parameter:	O2	CALIBRATION ERROR			
Analyzer:	Servomex			Scale:	23.2
Model:	1420B Paramagnetic			Serial:	01420B01
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is Linearity Within +or- 2%
Zero	0.00	-0.11	-0.1	-0.47%	Yes
EPA Protocol No. 1					
Low-Level	0.00	N/A	0.00	0.00%	Yes
Mid-Level	13.40	13.46	0.06	0.26%	Yes
High-Level	23.20	23.52	0.32	1.38%	Yes

* % Difference = Difference/Span Value x 100

✓ RD/VG

NOx - SYSTEM BIAS

Bias = (System Response - Analyzer Response) / Span

Span Value	230	
	Zero	Span
Analyzer Cal. Response	0.27	126.08
System Cal. Response	0.29	120.35

The Zero Bias (0.01%) is within +/- 5%
The Span Bias (-2.49%) is within +/- 5%

Manifold Pressure		
Sampling	5	psi
Calibration	5	psi
Temperatures		
Sample Line	265	F
Knockout	39	F

NOx CONVERSION EFFICIENCY

Span Value	230	Highest Peak Value	44.85	% Difference
Analyzer Mode	NOx	Ending Value	44.32	1.18%
				must be <= 2%

CO - SYSTEM BIAS

Bias = (System Response - Analyzer Response) / Span

Span Value	486	
	Zero	Span
Analyzer Cal. Response	0.04	246.33
System Cal. Response	0.17	240.35

The Zero Bias (0.03%) is within +/- 5%
The Span Bias (-1.23%) is within +/- 5%

O2 - SYSTEM BIAS

Bias = (System Response - Analyzer Response) / Span

Span Value	23.2	
	Zero	Span
Analyzer Cal. Response	-0.11	13.46
System Cal. Response	0.18	13.58

The Zero Bias (1.25%) is within +/- 5%
The Span Bias (0.52%) is within +/- 5%

✓ VG/AP

Stork SwL Analyzer QA - EPA Method 25A

Parameter: Total Hydrocarbons (VOCs)

Analyzer:	JUM	Source:	TGTU 2
Model:	VE-7 FID	Project No.:	08061098B
Serial #:	102101192	Crew:	VG,RM &GG

EPA Protocol Gases	Cylinder Number	Cylinder Value	Expiration Date
Low-Level	ALM047040	30.2	5/5/2011
Mid-Level	ALM053164	50.5	12/25/2010
High-Level	ALM004719	83.2	11/1/2010

CALIBRATION ERROR - Pretest Date: 11/6/2008

Span Value 100

GASES	Cylinder Value	Analyzer Response	Difference	Predicted Response	Calibration Error	Is Linearity Within +or- 5%
Zero	0	0.14	0.1			
EPA Protocol						
Low-Level	30.2	29.98	-0.22	30.13	0.48%	Yes
Mid-Level	50.5	50.45	-0.05	50.28	-0.33%	Yes
High-Level	83.2	82.75	-0.45			

VG / RM

Motiva
SRU 2 TG TU 2
Port Arthur, Texas
'08061098
File Name: 11-06-08_06-21

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm
11/6/2008 06:22	-3.41	0.27	-0.11	1.74			
11/6/2008 06:23	-3.83	0.28	-0.12	1.81			
11/6/2008 06:24	-3.87	0.28	-0.13	1.81			
11/6/2008 06:25	-1.17	0.27	-0.14	1.83			
11/6/2008 06:26	0.08	0.28	4.71	0.61			
11/6/2008 06:27	0.06	192.55	23.11	0.14			
11/6/2008 06:28	0.04	235.87	23.53	0.12			
11/6/2008 06:29	220.03	236.46	23.52	0.14			
11/6/2008 06:30	487.61	236.38	18.20	0.22			
11/6/2008 06:31	488.19	234.20	13.48	0.13			
11/6/2008 06:32	486.14	55.10	13.47	0.12			
11/6/2008 06:33	486.09	122.34	13.46	0.12			
11/6/2008 06:34	380.16	234.88	17.31	0.14			
11/6/2008 06:35	247.01	235.71	21.14	0.10			
11/6/2008 06:36	246.33	236.04	18.35	29.98			
11/6/2008 06:37	241.58	232.46	0.44 Response	89.49			
11/6/2008 06:38	48.20	229.72	0.25 ↓43	84.54			
11/6/2008 06:39	0.17	229.88	0.21	82.75			
11/6/2008 06:40	0.20	225.64	0.19	81.84			
11/6/2008 06:41	0.26	150.74	0.18 ↑44	81.70			
11/6/2008 06:42	0.33	128.01	0.19	77.82			
11/6/2008 06:43	0.18	126.08	0.28	27.55			
11/6/2008 06:44	0.17	125.43	0.26	29.98			
11/6/2008 06:45	0.11	125.11	0.24	29.76			
11/6/2008 06:46	0.09	40.26	0.25	27.69			
11/6/2008 06:47	0.14	0.95	0.22	141.31			
11/6/2008 06:48	0.23	0.70	0.19	50.45			
11/6/2008 06:49	0.25	0.29	0.18	50.69			
11/6/2008 06:50	0.19	0.97	0.25	33.91			
11/6/2008 06:51	0.16	98.32	0.35	-0.62			
11/6/2008 06:52	0.16	119.68	0.32	-0.81			
11/6/2008 06:53	0.12	120.35	~~0.30~~	0.14			
11/6/2008 06:54	0.14	120.85	0.30	0.13			
11/6/2008 06:55	7.91	119.67	0.29	0.14			
11/6/2008 06:56	206.08	28.01	0.22	0.11			
11/6/2008 06:57	240.35	1.03	0.28	0.14			
11/6/2008 06:58	240.71	0.79	0.28	0.14			
11/6/2008 06:59	239.19	0.45	0.41	0.23			
11/6/2008 07:00	93.70	0.29	13.00 ↑	0.80			
11/6/2008 07:01	-0.95	0.29	13.58	0.80			
11/6/2008 07:02	-2.34	0.28	13.60	0.81			
11/6/2008 07:03	-2.02	0.54	17.37	1.72			
11/6/2008 07:04	-0.33	0.36	21.02	1.75			
11/6/2008 07:05	-0.18	0.28	21.05	1.58			
11/6/2008 07:06	-0.21	0.28	21.06	1.54			
11/6/2008 07:07	-0.18	0.29	21.06	1.51			
11/6/2008 07:08	-0.19	0.29	21.06	1.48			
11/6/2008 07:09	-0.16	0.29	21.06	1.47			
11/6/2008 07:10	-0.15	0.29	21.06	1.46			
11/6/2008 07:11	-0.22	0.29	21.06	1.45			
11/6/2008 07:12	-0.19	0.29	21.06	1.44			
11/6/2008 07:13	-0.15	0.29	21.06	1.44			
11/6/2008 07:14	-0.21	0.29	21.06	1.44			
11/6/2008 07:15	-0.18	0.29	21.06	1.42			
11/6/2008 07:16	-0.18	0.28	21.06	1.42			

Cal Error & Bias

Motiva
NOX CONV
Port Arthur, Texas
'08061098
File Name: 11-06-08_11-58

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm
11/6/2008 11:59		27.62					
11/6/2008 12:00		44.71					
11/6/2008 12:01		44.84					
11/6/2008 12:02		44.85					
11/6/2008 12:03		44.85					
11/6/2008 12:04		44.85					
11/6/2008 12:05		44.85					
11/6/2008 12:06		44.85					
11/6/2008 12:07		44.85					
11/6/2008 12:08		44.85					
11/6/2008 12:09		44.85					
11/6/2008 12:10		44.85					
11/6/2008 12:11		44.85					
11/6/2008 12:12		44.85					
11/6/2008 12:13		44.85					
11/6/2008 12:14		44.85					
11/6/2008 12:15		44.85					
11/6/2008 12:16		44.85					
11/6/2008 12:17		44.85					
11/6/2008 12:18		44.85					
11/6/2008 12:19		44.85					
11/6/2008 12:20		44.85					
11/6/2008 12:21		44.85					
11/6/2008 12:22		44.56					
11/6/2008 12:23		44.35					
11/6/2008 12:24		44.56					
11/6/2008 12:25		44.56					
11/6/2008 12:26		44.35					
11/6/2008 12:27		44.35					
11/6/2008 12:28		44.34					
11/6/2008 12:29		44.33					
11/6/2008 12:30		44.32					
11/6/2008 12:31		44.02					

3 Point Stratification Test

Plant: Motiva - Pt. Arthur, Tx
Source: TGTU 2
Stork SwL Project No.: 08061098B

Pollutant: Point No.	O2 Emissions	Difference from Average
1	6.17	
1	6.15	
1	6.19	
Pt. 1 Avg.	**6.17**	**0.03**
2	6.12	
2	6.11	
2	6.03	
Pt. 2 Avg.	**6.09**	**-0.05**
3	6.10	
3	6.20	
3	6.20	
Pt. 3 Avg.	**6.17**	**0.03**

Test Point

3 Point Average:		**6.14**
	5% =	**0.31**
	10% =	**0.61**

Criteria 1:
1) Each traverse point less than 5% of Average? [Yes]
Alternate: Each traverse point is within +/- 0.5 ppm pollutant or +/- 0.3% O_2 from the 3 point average
(If Yes to either - Select point closest to the 3 point Average)

Criteria 2 :
2) Each traverse point less than 10% of Average? [Yes]
Alternate: Each traverse point is within +/- 1.0 ppm pollutant or +/- 0.5% O_2 from the 3 point average
(If criteria 1 is No and criteria 2 is Yes, do 3 point traverse)

Criteria 3:
3.) If 1 and 2 are both No, do Method 1 Traverse

✓ pl

Motiva
~~SRU 4~~ TGTU 2
Port Arthur, Texas
'08061098
File Name: 11-05-08_11-14

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm
11/5/2008 11:15							
11/5/2008 11:16	3.02	0.22	-0.37	-1.05			
11/5/2008 11:17	3.04	0.22	-0.21	-1.07			
11/5/2008 11:18	3.06	0.23	-0.14	-1.07			
11/5/2008 11:19	3.01	0.23	-0.07	0.61			
11/5/2008 11:20	2.21	0.23	-0.05	2.23			
11/5/2008 11:21	0.12	0.23	-0.05	2.35			
11/5/2008 11:22	0.07	83.36	17.09	2.29			
11/5/2008 11:23	71.34	212.14	23.40	2.28			
11/5/2008 11:24	454.66	224.22	23.41	2.24			
11/5/2008 11:25	482.71	224.54	23.41	2.21			
11/5/2008 11:26	483.21	224.87	23.41	2.13			
11/5/2008 11:27	483.02	224.69	15.50	2.08			
11/5/2008 11:28	332.07	224.67	13.47	1.99			
11/5/2008 11:29	247.43	208.77	13.47	1.94			
11/5/2008 11:30	247.37	214.28	13.47	1.88			
11/5/2008 11:31	247.34	216.35	13.47	1.83			
11/5/2008 11:32	247.30	216.46	13.48	1.79			
11/5/2008 11:33	247.30	216.48	13.49	3.61			
11/5/2008 11:34	247.27	218.45	13.51	3.15			
11/5/2008 11:35	235.53	229.56	13.52	6.48			
11/5/2008 11:36	173.90	229.92	7.82	18.27			
11/5/2008 11:37	4.49	229.99	0.62	0.65			
11/5/2008 11:38	-0.20	222.33	0.58	0.53			
11/5/2008 11:39	-0.20	140.43	0.55	0.49			
11/5/2008 11:40	-0.19	127.69	0.53	0.46			
11/5/2008 11:41	-0.16	127.05	0.60	18.05			
11/5/2008 11:42	-0.03	126.75	0.55	21.07			
11/5/2008 11:43	-0.18	111.86	0.53	22.68			
11/5/2008 11:44	-0.19	5.32	0.52	30.19			
11/5/2008 11:45	-0.32	0.85	0.67	27.41			
11/5/2008 11:46	0.00	0.78	1.17	62.45			
11/5/2008 11:47	-0.15	0.43	0.52	82.80			
11/5/2008 11:48	-0.19	0.29	0.51	83.98			
11/5/2008 11:49	-0.27	0.29	0.51	83.12			
11/5/2008 11:50	-0.32	0.28	0.47	33.48			
11/5/2008 11:51	-0.38	0.28	0.47	30.03			
11/5/2008 11:52	-0.40	0.28	0.48	29.93			
11/5/2008 11:53	-0.43	0.28	0.48	30.12			
11/5/2008 11:54	-0.44	0.28	0.48	30.03			
11/5/2008 11:55	-0.41	0.28	0.44	47.45			
11/5/2008 11:56	-0.36	0.28	0.43	50.77			
11/5/2008 11:57	-0.41	0.28	0.42	50.63			
11/5/2008 11:58	-0.36	0.28	0.44	36.25			
11/5/2008 11:59	-0.51	82.83	0.51	0.66			
11/5/2008 12:00	-0.49	118.37	0.50	0.36			
11/5/2008 12:01	-0.47	118.89	0.51	0.28			
11/5/2008 12:02	-0.47	119.08	0.47	0.23			
11/5/2008 12:03	75.65	100.69	0.39	0.16			
11/5/2008 12:04	236.96	3.66	0.37	0.13			
11/5/2008 12:05	240.09	0.79	0.37	0.11			
11/5/2008 12:06	240.19	0.59	0.38	0.11			
11/5/2008 12:07	234.37	0.29	1.76	0.46			

Response ↓ 43
Response ↑ 0.6

11/5/2008 12:08	[illegible]	[illegible]	[illegible]	[illegible]
11/5/2008 12:09	-2.16	0.29	13.61	0.70
11/5/2008 12:10	-2.89	0.29	13.55	1.03
11/5/2008 12:11	5.23	14.39	6.28	0.91
11/5/2008 12:12	0.52	21.81	6.13	0.48
11/5/2008 12:13	0.18	21.80	6.17	0.42
11/5/2008 12:14	0.06	21.80	6.15 pt1	0.37
11/5/2008 12:15	0.15	21.72	6.19	0.37
11/5/2008 12:16	0.32	21.43	6.39	0.35
11/5/2008 12:17	0.49	21.14	6.23 K	0.39
11/5/2008 12:18	-0.20	21.39	6.12	0.28
11/5/2008 12:19	-0.55	21.76	6.11 pt2	0.25
11/5/2008 12:20	-0.71	21.80	6.03	0.23
11/5/2008 12:21	-0.77	21.76	6.12	0.24
11/5/2008 12:22	-0.67	21.59	6.13 K	0.22
11/5/2008 12:23	-0.79	21.43	6.10	0.24
11/5/2008 12:24	-1.34	21.31	6.20 pt3	0.19
11/5/2008 12:25	-1.40	21.32	6.20	0.18
11/5/2008 12:26	-1.53	21.40	6.22	0.16
11/5/2008 12:27	-1.54	21.41	6.31	0.15
11/5/2008 12:28	-1.39	21.02	6.26	0.14
11/5/2008 12:29	-1.45	21.21	6.28	0.14
11/5/2008 12:30	-1.50	21.07	6.36	0.13
11/5/2008 12:31	-1.23	21.02	6.34	0.12
11/5/2008 12:32	-1.05	20.68	6.39	0.12
11/5/2008 12:33	-0.97	20.61	6.33	0.11
11/5/2008 12:34	-0.79	20.98	6.32	0.12
11/5/2008 12:35	-0.88	20.81	6.35	0.17
11/5/2008 12:36	-1.13	20.89	6.37	0.19
11/5/2008 12:37	-1.00	20.86	6.41	0.19
11/5/2008 12:38	-1.37	21.06	6.30	0.20
11/5/2008 12:39	-1.43	21.39	6.37	0.20
11/5/2008 12:40	-1.55	20.92	6.24	0.19
11/5/2008 12:41	-1.79	21.02	6.31	0.20
11/5/2008 12:42	-1.79	21.26	6.26	0.20
11/5/2008 12:43	-1.75	20.81	6.23	0.21
11/5/2008 12:44	-1.66	20.81	6.21	0.20
11/5/2008 12:45	-1.49	20.42	6.26	0.20
11/5/2008 12:46	-1.82	20.45	6.28	0.20
11/5/2008 12:47	-1.94	20.81	6.15	0.20
11/5/2008 12:48	-1.96	20.27	6.28	0.18
11/5/2008 12:49	-1.73	20.22	6.38	0.18
11/5/2008 12:50	-1.55	19.80	6.38	0.18
11/5/2008 12:51	-1.18	19.63	6.35	0.18
11/5/2008 12:52	-1.31	19.80	6.29	0.18
11/5/2008 12:53	-1.02	19.80	6.40	0.19
11/5/2008 12:54	-0.76	19.58	6.42	0.20
11/5/2008 12:55	-0.49	19.78	6.34	0.19
11/5/2008 12:56	-0.88	19.90	6.33	0.19
11/5/2008 12:57	-1.23	20.21	6.29	0.19
11/5/2008 12:58	-1.60	20.32	6.28	0.18
11/5/2008 12:59	-1.39	20.24	6.28	0.18
11/5/2008 13:00	-1.43	20.09	6.28	0.18
11/5/2008 13:01	-1.43	20.13	6.34	0.17
11/5/2008 13:02	-1.56	20.16	6.28	0.15
11/5/2008 13:03	-1.21	19.87	6.28	0.15
11/5/2008 13:04	-1.33	19.91	6.25	0.15
11/5/2008 13:05	-1.65	20.29	6.26	0.15
11/5/2008 13:06	-1.75	20.23	6.14	0.15
11/5/2008 13:07	-1.71	20.24	6.32	0.16
11/5/2008 13:08	-1.24	20.14	6.36	0.16
11/5/2008 13:09	-0.51	19.66	6.36	0.17
11/5/2008 13:10	-0.84	19.72	6.36	0.17
11/5/2008 13:11	-1.40	20.11	6.29	0.16
11/5/2008 13:12	-1.87	20.54	6.24	0.15
11/5/2008 13:13	-1.88	20.58	6.21	0.16

Start. Test

Note: Further Testing delayed until 11/6/08 while unit rates adjusted to higher level.

Stork SwL Analyzer QA

Project Name:	Motiva	Date	11/7/2008
Project No.:	08061098B	Initials	VG
Source:	TGTU 1		

EPA Protocol No. 1 Gases			
Cylinder Pollutant	Cylinder Value	Cylinder Number	Expiration Date
NOx - Low			
NOx - Mid	126.0	ALM025220	3/29/2009
NOx - High	230.0	ALM040296	12/25/2008
CO - Low			
CO - Mid	246.0	ALM046015	3/25/2010
CO - High	486.0	ALM063750	7/30/2009
O2 - Low			
O2 - Mid	13.4	CC82281	8/20/2010
O2 - High	23.2	AAL4823	8/4/2009

Parameter:	NOx	CALIBRATION ERROR			
Analyzer:	Thermo Environmental Instruments, Inc.			Scale:	230
Model:	42C-HL Chemiluminescent			Serial:	42CHL727773372
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is Linearity Within +or- 2%
Zero	0.00	0.28	0.3	0.12%	Yes
EPA Protocol No. 1					
Low-Level	0.00	N/A	0.00	0.00%	Yes
Mid-Level	126.00	126.11	0.11	0.05%	Yes
High-Level	230.00	229.75	-0.25	-0.11%	Yes

Parameter:	CO	CALIBRATION ERROR			
Analyzer:	Thermo Environmental Instruments, Inc.			Scale:	486
Model:	48H Gas Filter Correlation			Serial:	411405897
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is Linearity Within +or- 2%
Zero	0.00	0.18	0.2	0.04%	Yes
EPA Protocol No. 1					
Low-Level			0.00	0.00%	Yes
Mid-Level	246.00	246.46	0.46	0.09%	Yes
High-Level	486.00	481.00	-5.00	-1.03%	Yes

Parameter:	O2	CALIBRATION ERROR			
Analyzer:	Servomex			Scale:	23.2
Model:	1420B Paramagnetic			Serial:	01420B01
GASES	Cylinder Value	Analyzer Response	Difference	% Difference	Is Linearity Within +or- 2%
Zero	0.00	-0.14	-0.1	-0.60%	Yes
EPA Protocol No. 1					
Low-Level	0.00	N/A	0.00	0.00%	Yes
Mid-Level	13.40	13.68	0.28	1.21%	Yes
High-Level	23.20	23.65	0.45	1.94%	Yes

* % Difference = Difference/Span Value x 100

✓VG / MO

NOx - SYSTEM BIAS

Bias = (System Response - Analyzer Response) / Span

Span Value	230	
	Zero	Span
Analyzer Cal. Response	0.28	126.11
System Cal. Response	0.29	121.39

The Zero Bias (0.00%) is within +/- 5%
The Span Bias (-2.05%) is within +/- 5%

Manifold Pressure		
Sampling	5	psi
Calibration	5	psi
Temperatures		
Sample Line	265	F
Knockout	39	F

NOx CONVERSION EFFICIENCY

Span Value		Highest Peak Value	% Difference
Analyzer Mode	NOx	Ending Value	#DIV/0!
			must be <= 2%

CO - SYSTEM BIAS

Bias = (System Response - Analyzer Response) / Span

Span Value	486	
	Zero	Span
Analyzer Cal. Response	0.18	246.46
System Cal. Response	0.33	242.07

The Zero Bias (0.03%) is within +/- 5%
The Span Bias (-0.90%) is within +/- 5%

O2 - SYSTEM BIAS

Bias = (System Response - Analyzer Response) / Span

Span Value	23.2	
	Zero	Span
Analyzer Cal. Response	-0.14	13.68
System Cal. Response	-0.34	13.41

The Zero Bias (-0.86%) is within +/- 5%
The Span Bias (-1.16%) is within +/- 5%

✓VG /

Stork SwL Analyzer QA - EPA Method 25A

Parameter: Total Hydrocarbons (VOCs)

Analyzer:	JUM	Source:	TGTU 1
Model:	VE-7 FID	Project No.:	08061098B
Serial #:	102101192	Crew:	VG,RM &GG

EPA Protocol Gases	Cylinder Number	Cylinder Value	Expiration Date
Low-Level	ALM047040	30.2	5/5/2011
Mid-Level	ALM017147	46.03	8/1/2011
High-Level	ALM004719	83.2	11/1/2010

CALIBRATION ERROR - Pretest Date: 11/7/2008

Span Value 100

GASES	Cylinder Value	Analyzer Response	Difference	Predicted Response	Calibration Error	Is Linearity Within +or- 5%
Zero	0	0.63	0.6			
EPA Protocol						
Low-Level	30.2	29.98	-0.22	30.44	1.52%	Yes
Mid-Level	46.03	44.59	-1.44	46.06	3.20%	Yes
High-Level	83.2	82.75	-0.45			

vs (AP)

File: EAS\air\analqa\vocjum

3 Point Stratification Test

Plant: Motiva - Pt. Arthur, Tx
Source: TGTU 1
Stork SwL Project No.: 08061098B

Pollutant: Point No.	O2 Emissions	Difference from Average	
1	3.18		
1	3.17		
1	3.19		
Pt. 1 Avg.	**3.18**	**-0.01**	Test Point
2	3.22		
2	3.23		
2	3.21		
Pt. 2 Avg.	**3.22**	**0.03**	
3	3.18		
3	3.17		
3	3.18		
Pt. 3 Avg.	**3.18**	**-0.02**	
3 Point Average:	**3.19**		
5% =	**0.16**		
10% =	**0.32**		

Criteria 1:
1) Each traverse point less than 5% of Average? [Yes]
Alternate: Each traverse point is within +/- 0.5 ppm pollutant or +/- 0.3% O_2 from the 3 point average
(If Yes to either - Select point closest to the 3 point Average)

Criteria 2 :
2) Each traverse point less than 10% of Average? [Yes]
Alternate: Each traverse point is within +/- 1.0 ppm pollutant or +/- 0.5% O_2 from the 3 point average
(If criteria 1 is No and criteria 2 is Yes, do 3 point traverse)

Criteria 3:
3.) If 1 and 2 are both No, do Method 1 Traverse

✓ hd

Motiva
SRU 1 - TGTU 4
Port Arthur, Texas
'08061098
File Name: 11-07-08_06-29

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm

Motiva
SRU 1
Port Arthur, Texas
'08061098
File Name: 11-07-08_06-30

Date and Time MM/DD/YY HH:MM	CO ppm	NOx ppm	O2 %	THC ppm	CO2 %	SO2 ppm	Flow lpm
11/7/2008 06:30	3.07	0.29	20.58	-1.20			
11/7/2008 06:31	9.55	8.05	1.75	-1.20			
11/7/2008 06:32	-0.52	0.29	-0.81	-1.02			
11/7/2008 06:33	-0.81	0.28	-0.29	3,333,340.20			
11/7/2008 06:34	-0.50	0.28	-0.14	2.06			
11/7/2008 06:35	-0.76	0.28	-0.46	1.61			
11/7/2008 06:36	0.18	108.30	21.08	1.80			
11/7/2008 06:37	0.23	241.75	24.11	1.71			
11/7/2008 06:38	145.46	243.50	23.93	0.63			
11/7/2008 06:39	474.03	243.58	0.38	1.25			
11/7/2008 06:40	481.00	219.48	17.85	77.68			
11/7/2008 06:41	480.84	138.71	13.85	79.37			
11/7/2008 06:42	480.90	133.58	13.87	79.47			
11/7/2008 06:43	469.48	202.06	13.68	78.98			
11/7/2008 06:44	288.87	243.66	1.58	74.70			
11/7/2008 06:45	246.46	244.00	0.66	30.64			
11/7/2008 06:46	246.31	243.99	0.64	29.41			
11/7/2008 06:47	244.50	243.99	0.57	29.21			
11/7/2008 06:48	69.86	236.74	0.58	27.30			
11/7/2008 06:49	0.64	229.75	0.56	43.18			
11/7/2008 06:50	0.63	229.98	0.46	49.79			
11/7/2008 06:51	0.33	221.24	0.43	49.28			
11/7/2008 06:52	0.31	134.53	3.79	29.72			
11/7/2008 06:53	-2.28	126.11	14.16	1.31			
11/7/2008 06:54	-1.46	125.55	3.94	39.47			
11/7/2008 06:55	0.45	125.38	0.58	44.59			
11/7/2008 06:56	0.45	77.63	0.56	43.33			
11/7/2008 06:57	0.33	1.39	0.67	25.33			
11/7/2008 06:58	0.55	0.79	13.79	6.78			
11/7/2008 06:59	-2.16	0.52	13.41	1.41			
11/7/2008 07:00	-2.47	0.29	13.39	1.35			
11/7/2008 07:01	-2.36	10.33	7.88	0.95			
11/7/2008 07:02	-0.54	112.55	-0.37	0.59			
11/7/2008 07:03	0.19	121.39	-0.89	0.58			
11/7/2008 07:04	0.22	121.57	-0.67	0.57			
11/7/2008 07:05	16.66	120.16	-0.55	0.47			
11/7/2008 07:06	214.08	27.78	-0.68	0.36			
11/7/2008 07:07	242.07	0.94	-0.50	0.33			
11/7/2008 07:08	242.32	0.69	-0.34	0.29			
11/7/2008 07:09	233.81	0.41	-0.28	1.66			
11/7/2008 07:10	110.83	0.77	13.39	2.51			
11/7/2008 07:11	7.13	8.53	7.76	0.50			
11/7/2008 07:12	6.71	12.61	3.26	-0.05			
11/7/2008 07:13	7.41	14.33	3.22	-0.04			
11/7/2008 07:14	6.49	14.53	3.17	-0.02			
11/7/2008 07:15	5.43	14.39	3.18	0.07			
11/7/2008 07:16	5.30	14.31	3.19	0.02			

Response 4λ sec
Response 4 sec
Cl Error
&
Bias
start check

11/7/2008 07:17	7.01	14.31	3.21	-0.20	
11/7/2008 07:18	8.80	14.31	3.24	-0.21	
11/7/2008 07:19	8.69	14.32	3.22	-0.25	
11/7/2008 07:20	7.33	14.32	3.19	-0.28	
11/7/2008 07:21	6.81	14.32	3.22	-0.29	
11/7/2008 07:22	8.34	14.32	3.23	-0.31	pt 2
11/7/2008 07:23	9.14	14.32	3.21	-0.34	Start check
11/7/2008 07:24	7.06	14.31	3.17	-0.29	
11/7/2008 07:25	5.45	14.31	3.18	-0.31	
11/7/2008 07:26	6.33	14.31	3.17	-0.38	pt 3
11/7/2008 07:27	8.10	14.31	3.18	-0.34	
11/7/2008 07:28	8.19	14.31	3.22	-0.36	
11/7/2008 07:29	9.56	14.31	3.23	-0.40	
11/7/2008 07:30	5.68	14.31	3.13	-0.33	Rudy
11/7/2008 07:31	4.95	14.31	3.14	-0.26	
11/7/2008 07:32	7.25	14.31	3.24	-0.24	
11/7/2008 07:33	11.45	14.32	3.24	-0.28	
11/7/2008 07:34	18.47	14.15	3.33	-0.25	
11/7/2008 07:35	15.51	14.32	3.17	-0.23	
11/7/2008 07:36	8.82	14.32	3.20	-0.14	
11/7/2008 07:37	12.60	14.32	3.28	-0.10	
11/7/2008 07:38	15.58	14.31	3.28	-0.18	
11/7/2008 07:39	12.61	14.31	3.18	-0.15	
11/7/2008 07:40	12.12	14.31	3.19	-0.14	
11/7/2008 07:41	9.73	14.31	3.19	-0.08	
11/7/2008 07:42	8.47	14.31	3.16	-0.07	
11/7/2008 07:43	6.94	14.34	3.11	-0.05	
11/7/2008 07:44	4.54	14.36	3.03	-0.02	
11/7/2008 07:45	2.41	14.31	2.98	0.08	
11/7/2008 07:46	2.69	14.31	3.03	0.13	
11/7/2008 07:47	3.80	14.32	3.04	0.16	
11/7/2008 07:48	4.48	14.32	3.07	0.14	
11/7/2008 07:49	5.63	14.32	3.13	0.05	
11/7/2008 07:50	6.80	14.32	3.17	0.06	
11/7/2008 07:51	7.41	14.15	3.21	0.06	
11/7/2008 07:52	7.58	14.31	3.17	0.07	
11/7/2008 07:53	5.71	14.31	3.15	0.04	
11/7/2008 07:54	5.57	14.31	3.16	0.09	
11/7/2008 07:55	9.44	14.27	3.24	0.12	
11/7/2008 07:56	11.30	14.19	3.25	0.11	
11/7/2008 07:57	9.85	14.31	3.22	0.11	
11/7/2008 07:58	6.77	14.31	3.16	0.11	
11/7/2008 07:59	5.71	14.31	3.14	0.16	
11/7/2008 08:00	5.82	14.27	3.18	0.15	
11/7/2008 08:01	5.12	14.11	3.11	0.07	
11/7/2008 08:02	6.21	14.32	3.16	0.10	
11/7/2008 08:03	8.32	14.32	3.17	0.15	
11/7/2008 08:04	8.76	14.24	3.19	0.17	
11/7/2008 08:05	9.78	14.32	3.21	0.14	
11/7/2008 08:06	11.90	14.32	3.25	0.14	
11/7/2008 08:07	16.21	14.31	3.29	0.15	
11/7/2008 08:08	18.93	13.98	3.29	0.10	
11/7/2008 08:09	15.17	14.31	3.23	0.10	
11/7/2008 08:10	11.76	14.31	3.16	0.06	
11/7/2008 08:11	6.59	14.31	3.12	0.05	
11/7/2008 08:12	4.05	14.31	3.10	0.03	
11/7/2008 08:13	2.74	14.40	3.02	0.00	
11/7/2008 08:14	3.14	14.32	3.06	0.03	
11/7/2008 08:15	3.50	14.32	3.07	0.02	
11/7/2008 08:16	3.68	14.32	3.11	0.05	
11/7/2008 08:17	4.28	14.40	3.10	-0.04	
11/7/2008 08:18	3.30	14.32	3.12	-0.14	
11/7/2008 08:19	2.91	14.32	3.08	-0.16	
11/7/2008 08:20	3.73	14.31	3.14	-0.18	
11/7/2008 08:21	3.37	14.31	3.09	-0.14	
11/7/2008 08:22	3.82	14.25	3.09	-0.09	

AIR LIQUIDE

Scott Specialty Gases
Air Liquide America Specialty Gases LLC

RATA CLASS

Dual-Analyzed Calibration Standard

9810 BAY AREA BLVD, PASADENA, TX 77507 Phone: 281-474-5800 Fax: 281-474-5857

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
9810 BAY AREA BLVD
PASADENA, TX 77507

P.O. No.: 14112463
Project No.: 04-63838-002

Customer

STORK SOUTHWESTERN LABORATORIES
PHIL YOKLEY
CO BIN
222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM047040 **Certification Date:** 05May2008 **Exp. Date:** 05May2011
Cylinder Pressure*:** 1900 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
PROPANE	30.2	PPM	+/- 1%	
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NIRM 1668	04Jul2008	ALM013540	98 80 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HP-Y/HP 6890/US00000974	05May2008	GAS CHROMATOGRAPHY

ANALYZER READINGS

(Z = Zero Gas R = Reference Gas T = Test Gas r = Correlation Coefficient)

First Triad Analysis

PROPANE

Date: 05May2008	Response Unit:PPM	
Z1 = 0.00000	R1 = 1644624.	T1 = 504316.0
R2 = 1647001.	Z2 = 0.00000	T2 = 505027.0
Z3 = 0.00000	T3 = 504312.0	R3 = 1653776
Avg. Concentration:	0.000	

Second Triad Analysis

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 0.999994	
Constants:	A = -0.04681388
B = 5.99E-05	C =
D =	E =

Special Notes: REPORT MOL% AND EXP DATE

APPROVED BY: L. JONES

AIR LIQUIDE

Scott Specialty Gases
Air Liquide America Specialty Gases LLC

RATA CLASS

Dual-Analyzed Calibration Standard

1290 COMBERMERE STREET, TROY, MI 48083

Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 56759-71-65000
Project No.: 05-67349-003

Customer

CLEAN AIR ENGINEERING
DON ALLEN
500 W. WOOD STREET
PALATINE IL 60067

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM017147 **Certification Date:** 01Aug2008 **Exp. Date:** 01Aug2011

Cylinder Pressure*:** 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
PROPANE	46.03	PPM	+/- 1%	Direct NIST and NMI
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1668	02Oct2012	ALM022966	98.80 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3400/7506	22Jul2008	TCD/FID

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

PROPANE

Date: 01Aug2008 Response Unit:AREA

Z1=0.00000	R1=2547090.	T1=1184474.
R2=2547232.	Z2=0.00000	T2=1184624.
Z3=0.00000	T3=1187122.	R3=2545916.

Avg. Concentration: 46.03 PPM

Second Triad Analysis

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4

r=0.99999

Constants:	A=0.018711
B=0.000039	C=0
D=0	E=0

APPROVED BY: _____
HILARY THATCHER

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

AIR LIQUIDE AMERICA SPECIALTY GASES LLC
9810 BAY AREA BLVD, PASADENA, TX 77507
Phone: 281-474-5800 Fax: 281-474-5857

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
9810 BAY AREA BLVD
PASADENA, TX 77507

P.O. No.: 14112398
Project No.: 04-60147-002

Customer

STORK SOUTHWESTERN LABORATORIES
PHIL YOKLEY
PROPANE BIN
222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM053164 **Certification Date:** 26Dec2007 **Exp. Date:** 25Dec2010

Cylinder Pressure*:** 1920 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
PROPANE	50.5	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1668	04Jul2008	ALM043134	98.80 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HP-Y/HP 6890/US00000974	26Dec2007	GAS CHROMATOGRAPHY

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

PROPANE

Date: 26Dec2007 Response Unit:PPM

Z1=0.00000	R1=1589034.	T1=813593.0
R2=1588117.	Z2=0.00000	T2=810217.0
Z3=0.00000	T3=812024.0	R3=1586311.

Avg. Concentration: 50.50 PPM

Second Triad Analysis

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4

r=0.999993

Constants: A=0.04212561

B=6.20E-05 C=

D= E=

APPROVED BY: L. JONES

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

9810 BAY AREA BLVD,PASADENA,TX 77507 Phone: 281-474-5800 Fax: 281-474-5857

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
9810 BAY AREA BLVD
PASADENA,TX 77507

P.O. No.: 14112367
Project No.: 04-58565-004

Customer

STORK SOUTHWESTERN LABORATORIES
PHIL YOKLEY
222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM004719 **Certification Date:** 02Nov2007 **Exp. Date:** 01Nov2010

Cylinder Pressure*:** 1980 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
PROPANE	83.2	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1668	04Jul2008	ALM043134	98.80 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
HP-G/HP 6890/US00001515	01Nov2007	GC/FID/TCD

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

PROPANE

Date: 01Nov2007

Z1=0.00000	R1=194497.0	T1=164139.0
R2=193921.0	Z2=0.00000	T2=163571.0
Z3=0.00000	T3=163624.0	R3=193045.0

Avg. Concentration: 83.18 PPM

Second Triad Analysis

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4

r=0.999986	1668
Constants:	A=-0.18159383
B=5.07E-04	C=
D=	E=

APPROVED BY: CRISSA MARTIN

SUPERVISOR: SUSAN BRANDON

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

9810 BAY AREA BLVD,PASADENA,TX 77507 Phone: 281-474-5800 Fax: 281-474-585

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
9810 BAY AREA BLVD
PASADENA,TX 77507

P.O. No.: 14112231
Project No.: 04-52756-006

Customer

STORK SOUTHWESTERN LABORATORIES
Phil Yokley
CO BIN
222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM025220 **Certification Date:** 30Mar2007 **Exp. Date:** 29Mar2009
Cylinder Pressure*:** 1925 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	126	PPM	+/- 1%	Direct NIST and NMi
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	126.	PPM		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.
** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1684	01Jun2009	AAL070668	98.40 PPM	NITRIC OXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//1602651	30Mar2007	FTIR

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

NITRIC OXIDE

First Triad Analysis

Date: 23Mar2007	Response Unit:PPM	
Z1=-0.03707	R1=98.80351	T1=126.0861
R2=98.80805	Z2=0.00431	T2=126.2002
Z3=0.27175	T3=126.3840	R3=98.97794
Avg. Concentration:	125.7	PPM

Second Triad Analysis

Date: 30Mar2007	Response Unit: PPM	
Z1=0.15257	R1=98.78556	T1=126.2496
R2=98.98270	Z2=0.16432	T2=126.2820
Z3=0.18373	T3=126.5446	R3=99.12902
Avg. Concentration:	125.7	PPM

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4	
r=9.99975E-1	
Constants:	A=0.00000E+0
B=9.03244E-1	C=1.89000E-4
D=0.00000E+0	E=0.00000E+0

APPROVED BY: _____
Tom Nguyen

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

9810 BAY AREA BLVD,PASADENA,TX 77507 Phone: 281-474-5800 Fax: 281-474-585

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
9810 BAY AREA BLVD
PASADENA,TX 77507

P.O. No.: 14112180
Project No.: 04-50142-001

Customer

STORK SOUTHWESTERN LABORATORIES
PHIL YOKLEY
222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM040296 **Certification Date:** 26Dec2006 **Exp. Date:** 25Dec2008

Cylinder Pressure*:** 2015 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
NITRIC OXIDE	230	PPM	+/- 1%	Direct NIST and NMi
NITROGEN - OXYGEN FREE		BALANCE		
TOTAL OXIDES OF NITROGEN	230.	PPM		Reference Value Only

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1685	01Jan2010	AAL071076	246.1 PPM	NITRIC OXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//1602651	07Dec2006	FTIR

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

NITRIC OXIDE

Date: 18Dec2006	Response Unit:PPM	
Z1=-0.02624	R1=247.8005	T1=233.8931
R2=247.8425	Z2=0.20619	T2=234.1542
Z3=0.26945	T3=234.2173	R3=247.8684
Avg. Concentration:	231.4	PPM

Second Triad Analysis

Date: 26Dec2006	Response Unit: PPM	
Z1=-1.30388	R1=245.3120	T1=227.6805
R2=247.4461	Z2=-0.17109	T2=229.6579
Z3=0.29102	T3=230.2558	R3=248.6338
Avg. Concentration:	229.3	PPM

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4	
r=1.00000E+0	
Constants:	A=0.00000E+0
B=9.82467E-1	C=2.08000E-4
D=0.00000E+0	E=0.00000E+0

Special Notes: 233.75 M NO

APPROVED BY: _____
Lara Nash

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

9810 BAY AREA BLVD,PASADENA,TX 77507 Phone: 281-474-5800 Fax: 281-474-5857

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
9810 BAY AREA BLVD
PASADENA,TX 77507

P.O. No.: 14112231
Project No.: 04-52756-009

Customer

STORK SOUTHWESTERN LABORATORIES
Phil Yokley
CO BIN
222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM046015 **Certification Date:** 26Mar2007 **Exp. Date:** 25Mar2010

Cylinder Pressure*:** 1995 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	246	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2636	02Oct2008	ALM032447	248.5 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//1602651	28Feb2007	FTIR

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

CARBON MONOXIDE

Date: 19Mar2007 Response Unit:PPM

Z1=-0.03895	R1=251.8262	T1=249.6428
R2=251.8963	Z2=0.13151	T2=249.7033
Z3=0.23297	T3=249.7722	R3=252.2468

Avg. Concentration: 246.2 PPM

Second Triad Analysis

Date: 26Mar2007 Response Unit: PPM

Z1=-0.02067	R1=252.3365	T1=249.7769
R2=252.4675	Z2=0.18312	T2=250.0264
Z3=0.19220	T3=250.1506	R3=252.5889

Avg. Concentration: 246.1 PPM

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4

r= 1.00000E+0

Constants:	A=0.00000E+0
B=8.51259E-1	C=2.84000E-4
D=0.00000E+0	E=0.00000E+0

APPROVED BY: LaVail Washington

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

9810 BAY AREA BLVD,PASADENA,TX 77507 Phone: 281-474-5800 Fax: 281-474-5857

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
9810 BAY AREA BLVD
PASADENA,TX 77507

P.O. No.: 14112111
Project No.: 04-46291-010

Customer

STORK SOUTHWESTERN LABORATORIES

222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: ALM063750 **Certification Date:** 31Jul2006 **Exp. Date:** 30Jul2009

Cylinder Pressure*:** 2008 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	486	PPM	+/- 1%	Direct NIST and NMi
NITROGEN		BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1680	01Nov2008	ALM048351	498.0 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
FTIR//1602651	31Jul2006	FTIR

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

First Triad Analysis

CARBON MONOXIDE

Date: 24Jul2006	Response Unit:PPM	
Z1=-0.15878	R1=487.7429	T1=487.3191
R2=488.1445	Z2=0.13380	T2=487.3626
Z3=0.26199	T3=487.7132	R3=488.9814
Avg. Concentration:	485.5	PPM

Second Triad Analysis

Date: 31Jul2006	Response Unit: PPM	
Z1=-0.08966	R1=500.7722	T1=488.7325
R2=500.9060	Z2=0.23759	T2=489.1023
Z3=0.27924	T3=489.1204	R3=501.1232
Avg. Concentration:	486.1	PPM

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4	
r=9.99994E-1	
Constants:	A=0.00000E+0
B=5.05393E-1	C=2.32000E-4
D=0.00000E+0	E=0.00000E+0

APPROVED BY: _____
Lara Nash

AIR LIQUIDE™

CERTIFICATE of ANALYSIS

Interference-Free Multi-Component EPA Protocol Gases

NOTE: Analytical uncertainty and NIST traceability are in compliance with EPA-600/R-97/121

Section 2.2 Procedure: G-1

Cylinder Number: CC82281

Customer:	STORK SOUTHWESTERN LABS INC.	**Shipping Order #:**	26278292
P.O. Number:	1411-2308	**Transfer #:**	26278292
Item Number:	PT-CO2/O2	**LOT #:**	LPX225563
Notes:	AI# 30692	**Valve:**	CGA590
		Cyl. Pressure:*	1900psig

*Cylinder should not be used when gas pressure is below 150 psig

Assay Date: 21-Aug-07 **Expiration Date: 20-Aug-10**

Component	Requested Concentration	Assay Concentration
Oxygen	**13.4 %**	**13.4 ±0.1 %**
Carbon Dioxide	**11.1 %**	**10.9 ±0.1 %**
Nitrogen	**Balance**	**Balance**

Reference Standard(s) Employed For Analysis:

Std name	Std #	Conc.	Units	Std. Error	Comp.	Balance	Cyl. No.	Exp. Date	Sample No.
GMIS355	GMIS355	10 0	%	0 1	O2	N2	CC180358	4/14/2009	N A
GMIS328	GMIS328	14.01	%	0.06	CO2	N2	CC203023	7/24/2008	N.A.

Analysis Information:

Component 1:	Oxygen
Analyzer Information	
Manufacturer:	Servomex
Model Number:	4605C
Serial Number:	1101
Analytical Principle:	Paramag
MPC Calibrated:	07/27/07

	First Triad Analysis On: 8/21/2007			
	Trial 1	Trial 2	Trial 3	Units
Zero	0.03	0.03	0.03	
Reference	9.88	9.88	9.88	
Candidate	13.18	13.18	13.18	
Result	13.35	13.36	13.35	%
		Mean Result:	13.35	%

	Second Triad Analysis On:			
	Trial 1	Trial 2	Trial 3	Units
Zero				
Reference				
Candidate				
Result				
		Mean Result:		

Component 2:	Carbon Dioxide
Analyzer Information	
Manufacturer:	KVB/Analect
Model Number:	EN3024
Serial Number:	3024
Analytical Principle:	FTIR
MPC Calibrated:	08/16/07

	First Triad Analysis On: 8/20/2007			
	Trial 1	Trial 2	Trial 3	Units
Zero	0.25	0.24	0.33	
Reference	14.99	15.16	15.13	
Candidate	11.86	11.84	11.76	
Result	10.95	10.93	10.86	%
		Mean Result:	10.91	%

	Second Triad Analysis On:			
	Trial 1	Trial 2	Trial 3	Units
Zero				
Reference				
Candidate				
Result				
		Mean Result:		

Analyst Signature: Warren Pereira **Calculated by:** Warren Pereira

Mix Assayed At: Air Liquide America 11426 Fairmont Pkwy, La Porte, TX, 77571 Phone:(281)474-8400 Fax:(281)474-8419

RATA CLASS

Scott Specialty Gases

Dual-Analyzed Calibration Standard

9810 BAY AREA BLVD,PASADENA,TX 77507 Phone: 281-474-5800 Fax: 281-474-5857

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

SCOTT SPECIALTY GASES
9810 BAY AREA BLVD
PASADENA,TX 77507

P.O. No.: 14112111
Project No.: 04-46291-023

Customer

STORK SOUTHWESTERN LABORATORIES

222 CAVALCADE ST
HOUSTON TX 77009

ANALYTICAL INFORMATION

This certification was performed according to EPA Traceability Protocol For Assay & Certification of Gaseous Calibration Standards; Procedure G-1; September, 1997.

Cylinder Number: AAL4823 **Certification Date:** 04Aug2006 **Exp. Date:** 04Aug2009

Cylinder Pressure*:** 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ANALYTICAL ACCURACY**	TRACEABILITY
OXYGEN	23.2 %	+/- 1%	Direct NIST and NMi
NITROGEN	BALANCE		

*** Do not use when cylinder pressure is below 150 psig.

** Analytical accuracy is based on the requirements of EPA Protocol Procedure G1, September 1997.

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 2350	01May2009	K003567	23.48 %	OXYGEN

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SERVOMEX/MODEL 244A/701/716	10Jul2006	PARAMAGNETIC

ANALYZER READINGS

(Z=Zero Gas R=Reference Gas T=Test Gas r=Correlation Coefficient)

OXYGEN

First Triad Analysis	Second Triad Analysis	Calibration Curve
Date: 04Aug2006 Response Unit:VOLTS		Concentration=A+Bx+Cx2+Dx3+Ex4
Z1=0.00000 R1=0.98450 T1=0.97560		r=0.9999999
R2=0.98510 Z2=0.00080 T2=0.97560		Constants: A=0.005284678
Z3=0.00130 T3=0.97600 R3=0.98590		B=23.83836339 C=
Avg. Concentration: 23.25 %		D= E=

APPROVED BY: RAMIEN ROUHANI

SUPERVISOR: SUSAN BRANDON

AIR LIQUIDE Air Liquide America Specialty Gases LLC SCOTT™

CUSTOM CLASS

9810 BAY AREA BLVD, PASADENA, TX 77507

Phone: 281-474-5800 Fax: 281-474-5857

CERTIFICATE OF ACCURACY: Custom Class Calibration Standard

Product Information
Project No.: 04-68424-001
Item No.: 10 M METHANE&ETHANE
P.O. No.: 14112555
Folio #: 10 M METHANE&ET
Cylinder Number: AAL14548
Cylinder Size: AL
Certification Date: 09Oct2008
Expiration Date: 09Oct2010

Customer

STORK SOUTHWESTERN LABORATORIES
PHIL YOKLEY
MSC BIN
222 CAVALCADE ST
HOUSTON, TX 77009

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
ETHANE	10.0	PPM	5
METHANE	10.1	PPM	5
NITROGEN		BALANCE	

TRACEABILITY

Description	Traceability Type	Traceable To
ANALYTICAL TRACEABILITY	GAS STANDARDS	

APPROVED BY: ROGER NGUYEN

SUPERVISOR: SUSAN BRANDON

DATE: 10/13/2008

STORK SOUTHWESTERN LABORATORIES, INC.

EMISSION RATE CALCULATIONS

FACILITY : Motiva

CITY, STATE : Pt. Arthur, Tx

SOURCE NAME : TGTU 1

DATE : 11/7/08 RUN NO. : 2

% MOISTURE = 8.89 % (See Moisture Sample Data)

GAS ANALYSIS : % CO2 3.5 % O2 3.94 % N2 92.56

MOLECULAR WEIGHT (MWSG) g/g mole :

H_2O - 0.0889 X 18 = 1.6002

CO_2 - 0.9111 X 0.035 X 44 = 1.4031

O_2 - X 0.0394 X 32 = 1.1487

N_2 - X 0.9256 X 28 = 23.6128

MWSG = 27.765

VELOCITY TRAVERSE DATA :

Cp = 0.840 $\sqrt{\text{AVE. DELTA P}}$ = 0.5132 Ts AVG. = 1250 °F 1711 °R Ps = 29.95

STACK DIAMETER = 66" As = 23.7583 ft^2

CALCULATIONS :

Vs = 85.49 X Cp X $\sqrt{\text{avg Delta P}}$ X $\sqrt{(\text{Ts avg.} / (\text{MWSG X Ps}))}$ =

= 85.49 x 0.840 x 0.5132 x $\sqrt{(1711)/(27.765)\times(29.95)}$ = 52.86 ft/sec

ACFM = Vs X 60 X As = 52.86 x 60 x 23.7583 = 75,357.6 acfm

Qsd = 60 X (1.00 - (%H2O / 100)) X ACFM X (528 / Ts avg.) X (Ps / 29.92) =

= 60 x 0.9111 x 75,357.6 x 528/1711 x 29.95/29.92 = 1,272,517 dscf/hr

ISOKINETIC DATA : (if applicable)

Vm (std) = 33.427 dscf NOZZLE DIA. = N/A An = N/A Θ = 60 min

PERCENT ISOKINETIC = $\frac{0.09450 \text{ X Ts X Vm(std)}}{\text{Ps X Vs X An X}\Theta \text{ X (1-\%H2O/100)}}$ = N/A

CHECK PRINTS: 12/9/08

Revised April, 2002

Stork SwL Analyzer Drift and Calculations QA

Hand Check Calculations

FACILITY:	Motiva	DATE:	11/7/08
SOURCE NAME:	TGTU 1	CITY, STATE:	Pt. Arthur, Tx

	CO	NOx	O_2	CO_2	THC	SO_2
Span gas - C_{ma}	246.0	126.0	13.40	—		—
Scale (ppm,%) *	486.0	230.0	23.2	—		—

Difference = Final Reading - Initial Reading %Zero = (Zero difference / Scale)*100 %Span = (Span difference / Scale)*100

Run No. and Pollutant	ZERO				SPAN			
	Initial Reading	Final Reading	Difference (ppm, %) *	% Zero Drift	Initial Reading	Final Reading	Difference (ppm, %) *	% Span Drift
2 CO	0.24	0.12	-0.12	-0.02%	244.71	242.65	-2.06	-0.428
2 NOx	0.30	0.29	-0.01	-0.0048	121.89	121.39	-0.50	-0.228
2 O_2	-0.38	-0.49	-0.11	-0.478	13.03	13.49	0.46	1.982
CO_2								
THC								
SO_2								

F-Factor dscf/mmBtu	**GCV**	**Fuel Flow Rate**	**Conversion Factor**	**Qsd** dscf/hr
—	—	—	—	1,272,508.1

C_o = (Initial Zero Reading + Final Zero Reading)/2

C_m = (Initial Span Reading + Final Span Reading)/2

C_{gas} = ($C_{avg.}$ - C_o) * (C_{ma} / (C_m-C_o))

C = (C_{gas} * M.W. * 6.242e-8) / 24.04

lb/mmBtu = C * F-Factor * (20.9 / (20.9 - %O2 dry))

lb/hr = lb/mmBtu * GCV * Fuel Flow Rate * Conversion Factor

lb/hr = lb/dscf x Qsd in dscf/hr

Run No. and Pollutant	$C_{avg.}$ Uncorrected Stack Gas Concentration (ppm, %) *	C_o Average of Zero Air	C_m Average of Span Gas	C_{gas} Corrected Stack Gas Concentration (ppm, %) *	M.W. Molecular Weight	C Concentration in lb/dscf	lb/mmBtu Emission Rate lb/mmBtu	lb/hr Emission Rate lb/hr
2 CO	6.10	0.180	243.680	5.981	28	4.348×10^{-7}	—	0.553
2 NOx	14.44	0.295	121.640	14.688	46	1.754×10^{-6}	—	2.232
2 O_2	3.59	-0.435	13.260	3.938	NA	NA	NA	NA
CO_2					NA	NA	NA	NA
THC					44.092 (as C_3H_8)			
SO_2					64			

Note * O_2 and CO_2 are expressed in percent.

CHECK PRINTS: 12/9/08

Stork Southwestern Laboratories, Inc.
EPA Method 25A
Hand Check Calculations

Facility:	Motiva	**Date:**	11/7/08
Source:	TGTU 1	**City, State:**	Pt. Arthur, Tx

Span of Analyzer = 100 ppmv	**Concentration of THC Span Gas =** 46.03

Run No.	Zero Gas				SpanZero Gas			
	Initial Reading	Final Reading	Difference ppm	% Drift	Initial Reading	Final Reading	Difference ppm	% Drift
2	0.51	0.51	0.00	0.00%	45.62	45.08	-0.54	-0.54%

Difference = Final Reading - Initial Reading

% Drift = ((Final Reading - Initial Reading) / Span) x 100

Run No.	Uncorrected Stack Gas Conc. ppm	Average of Zero Gas ppm	Average of Span Gas ppm	Bias Adj. Stack Gas Conc. ppm	Average Methane Conc. ppm	Average Ethane Conc. ppm	Corrected VOC * Conc. ppm
2	0.04	0.51	45.35	-0.48	0.000	0.000	-0.48

As Carbon :

Bias Adj. $_{\text{as carbon}}$ = (Uncorr. Stack Gas - Avg. Zero) x (Span Gas Conc. / (Avg. Span Gas - Avg. Zero))

* Corr. VOC $_{\text{as carbon}}$ = ((Bias Adj. x 3) - (Avg. Methane + (Avg. Ethane x 2)))

As Propane :

Bias Adj. $_{\text{as propane}}$ = (Uncorr. Stack Gas - Avg. Zero) x (Span Gas Conc. / (Avg. Span Gas - Avg. Zero))

* Corr. VOC $_{\text{as propane}}$ = ((Bias Adj. x 3) - (Avg. Methane + (Avg. Ethane x 2))) / 3

F-Factor	GCV	Fuel Flow Rate	Conversion Factor	Qsd	Oxygen %	Moisture %
—	—	—	—	1,277,508.1	3.94	8.89

Run No.	Corrected VOC ** Conc. ppm	C Conc. lb/dscf	VOC Emission Rate lb/MMBtu	VOC Emission Rate lb/hr
2	<0.10	$<1.142 \times 10^{-8}$	—	<0.0145

As Carbon :

** Corr. VOC $_{\text{as carbon}}$ = ppm wet / (1 - ($\%H_2O$ / 100))

C (lb / dscf) = (Corr. VOC x 12 x 6.242 x 10^{-8}) / 24.04

VOC (lb/hr) = C x Q_{sd}

\+ calculated as Carbon

CHECK PRINTS: 12/9/08

As Propane :

** Corr. VOC $_{\text{as propane}}$ = ppm wet / (1 - ($\%H_2O$ / 100))

C (lb / dscf) = (Corr. VOC x 44 x 6.242 x 10^{-8}) / 24.04

VOC (lb/hr) = C x Q_{sd}

VOC (lb/mmBtu) = C x F x (20.9/(20.9-%O2))

VOC (lb/hr) = VOC lb/mmBtu x GCV x Fuel Flow Rate x 1e-6

RUSSELL J. DIRAIMO, P.E.

Vice President
Air Emissions Division
Southwestern Laboratories, Inc.

EDUCATION

B.S. Civil and Environmental Engineering - University of Rhode Island, 1977

CONTINUING EDUCATION

- Cause and Prevention of Grain Elevator Fires and Explosions, Texas A&M University, 1978.
- International Symposium on Grain Dust, Kansas State University, 1979
- "Controlling Exposure to Asbestos in the Office Environment", Houston Building Owners and Managers Association, Inc., 1985
- "Practices and Procedures for Asbestos Control", The National Asbestos Training Center, 1986
- "Hazardous Waste Site Operations and Emergency Response", 29 CFR 1910.120 40-hour training course, Industrial Hygiene & Safety Technology, Inc., 1987
- "Asbestos Hazardous Emergency Response Act", 40 CFR 763 Subpart D, Certified Inspector, Certified Management Planner, Texas A&M Extension Course, 1988
- OSHA 1910.119(h) Process Safety Management Training

AWARDS AND HONORS:

Graduated High Distinction
Tau Beta Pi Honor Society
Phi Kappa Phi Honor Society

PROFESSIONAL ENGINEERING REGISTRATION

Texas No. 53580

PROFESSIONAL AFFILIATIONS

National Society of Professional Engineers (NSPE)
Texas Society of Professional Engineers (TSPE)
Air and Waste Management Association (AWMA)
Source Evaluation Society

Stork SWL is an operating unit of Stork Materials Technology B.V., Amsterdam, The Netherlands, which is a member of the Stork group.

RUSSELL J. DIRAIMO, P.E.

QUALIFICATIONS SUMMARY

Throughout his career with SwL. (formerly Huntingdon Engineering and Environmental and Maxim Technologies, Inc.), Mr. DiRaimo has been involved with stationary source air pollution emissions testing first as a project engineer performing field work, followed by project management, and currently as Vice President in charge of the Air Emissions Services Division.

Mr. DiRaimo's experience includes projects located in Texas, Louisiana, New Mexico, Oklahoma, Alabama, Georgia, Mississippi, Arkansas and Puerto Rico, with the great majority of the projects centered in Texas.

Mr. DiRaimo has participated in over a thousand air pollution projects, including several hundred involving the determination of compliance with Texas Natural Resource Conservation Commission (TNRCC) and EPA permits and regulations.

Mr. DiRaimo's experience includes field experience performing air emissions tests of stationary sources including particulate matter, NOx, CO, VOCs, speciated VOCs, NH_3, HCl, Cl_2, SOx and H_2SO_4. In addition, he has project and department management experience involving source testing projects for the above listed pollutants plus speciated volatile organics, semivolatile organics, aldehydes, ketones, metals, dioxins and furans. Also included are several projects involving Continuous Emission Monitor System (CEMS) certifications and BIF related testing.

As VP of the Air Emissions Division, Mr. DiRaimo prepares Compliance Sampling Plans, performs Quality Assurance review of field, laboratory and calculation data, prepares compliance emissions test reports, and performs peer review of test reports prepared by others. In addition, he managed SwL's Analytical Chemistry laboratories which provided him with experience in the review of analytical data and the associated QA/QC requirements.

Mr. DiRaimo served as SwL's Project Manager of the BIF Trial Burn performed at the Solutia (formerly Monsanto) Chocolate Bayou, Texas facility. His responsibilities included assisting in the planning and scheduling, coordination of SwL's field crews and review and compilation of the field and QA/QC equipment data.

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PHILLIP W. YOKLEY

Air Emissions Program Manager - Air Emissions Services Division
Southwestern Laboratories, Inc.

EDUCATION

B.S. - Environmental Health, East Tennessee State University - 1981

CONTINUING EDUCATION

- Asbestos Abatement Training Program, the University of Texas, Arlington, Texas - May, 1987.
- Asbestos Technique Workshop, American Industrial Hygiene Association, Houston, Texas - April, 1987.
- Identification of Asbestos Utilizing Polarized Light Microscopy, McCrone Research Institute, Chicago, Illinois - 1986.
- In-Stack Opacity Monitor Audit Procedures, Environmental Protection Agency Regional Office, Annapolis, Maryland.
- Texas A & M Extension Course - "Asbestos Hazardous Emergency Response Act", 40 CFR 763 Subpart D, April, 1988. Certified Inspector; Certified Management Planner.
- Workshop on Sampling and Analysis Methods for Compliance with the "BIF" Regulation, USEPA, Durham, N.C., April, 1991.
- Attended 40 hour Occupational and Environmental Training Program on Hazardous Materials (CFR 1910.120) Houston, Texas, September, 1992 (including annual refresher courses).

PROFESSIONAL AFFILIATIONS

Air and Waste Management Association (AWMA)
Source Evaluation Society

QUALIFICATIONS SUMMARY

Mr. Yokley has performed stationary source air emissions testing services with SwL since 1985, initially as a field technician, then as a field supervisor, and currently as a project manager and Air Emissions Program Manager. He has performed testing in numerous states, with the great majority of sources being in Texas.

Mr. Yokley's direct field experience includes routine procedures such as particulates, NOx, CO, VOCs, as well as the specialized Trial Burn procedures including VOST, Modified Method 5, HCl/Cl_2, multiple metals, aldehydes/ketones, dioxins and furans. In addition, Mr. Yokley has performed particle size distribution sampling and analysis on numerous sources.

Mr. Yokley has performed project management, field supervision and on site testing for numerous types of sources including boilers, furnaces, incinerators, dryers, baghouse outlets, turbines, compressor engines and fluid catalytic cracking units. His experience includes involvement on several BIF interim status and recertification emissions test projects.

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PHILLIP W. YOKLEY

Overall, Mr. Yokley has several years in stationary source sampling and analysis for air emissions. His experience includes direct field experience, plus compliance sampling plan preparations and presentations, scheduling, field work, laboratory analysis, data reduction/emission calculations, QA/QC of field instrument and laboratory data, report preparation, and peer review of air emissions reports prepared by others.

VICENTE GONZALEZ

Environmental Technician - Air Emissions Services Division
Southwestern Laboratories, Inc.

QUALIFICATIONS SUMMARY

Mr. Gonzalez has been involved in source sampling and analysis with SwL since 2004, and currently holds the position of Environmental Technician. He has participated in source emission test projects involving measurements for flow, particulate, sulfur oxides, fluorides and various other pollutants.

Mr. Gonzalez's other responsibilities include particulate analysis, equipment calibration and maintenance and related QA/QC procedures.

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GUSTAVO GONZALEZ

Environmental Technician - Air Emissions Services Division
Southwestern Laboratories, Inc.

QUALIFICATIONS SUMMARY

Mr. Gonzalez has been involved in source sampling and analysis with SwL since 2008, and currently holds the position of Environmental Technician. He has participated in source emission test projects involving measurements for flow, particulate, sulfur oxides, fluorides and various other pollutants.

Mr. Gonzalez's other responsibilities include particulate analysis, equipment calibration and maintenance and related QA/QC procedures.

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RANDY W. MOORE

Environmental Technician - Air Emissions Services Division
Southwestern Laboratories, Inc.

EDUCATION

B.A. – Northwestern State University

QUALIFICATIONS SUMMARY

Mr. Moore has been involved in source sampling and analysis with SwL since 2003, and currently holds the position of Environmental Technician. He has participated in source emission test projects involving measurements for flow, particulate, sulfur oxides, fluorides and various other pollutants.

Mr. Moore's other responsibilities include particulate analysis, equipment calibration and maintenance and related QA/QC procedures.

Stork SWL is an operating unit of Stork Materials Technology B.V., Amsterdam, The Netherlands, which is a member of the Stork group.

This Is The Last Page

Of Stork SwL's Report

Stork SWL is an operating unit of Stork Materials Technology B.V., Amsterdam, The Netherlands, which is a member of the Stork group.