AIRTECH
Environmental
Services Inc.

5776 Lamar Street • Arvada, CO 80002
Phone: (800) 818-6460 • Fax: (303) 670-4130
www.airtechenv.com

Report on the Comprehensive Performance Test

**Conducted for Focus Environmental, Inc.
at the US Filter Westates Facility
Located in Parker, Arizona**

Report No. 2325
April 19, 2006

Table Of Contents

PROJECT OVERVIEW **2**

General *2*
Methodology *2*
Results *3*

SUMMARY OF RESULTS **4**

Table 1 - Method 5/26A, Summary of Results *4*
Table 2 - Method 25A, Summary of Results *5*
Table 3 - Method 29, Summary of Results *6*
Table 4 - Method 0010-A, Summary of Results *7*
Table 5 - Method 0010-B, Summary of Results *8*
Table 6 - Method 0010-C, Summary of Results *9*
Table 7 - Method 0010-D, Summary of Results *10*
Table 8 - Method 0030, Summary of Results *11*
Table 9 - Method 0040, Summary of Results *12*
Table 10 - Method 0061, Summary of Results *13*

TEST PROCEDURES **14**

Method Listing *14*
Method Descriptions *14*
Method 1 14
Method 2 15
Method 4 15
Methods 5/26A 15
Methods 3A and 25A 17
Method 29 19
Methods 0010/0023A 19
Method 0030 21
Method 0040 22
Method 0061 22

QUALITY ASSURANCE AND QUALITY CONTROL **24**

General 24
Field and Reagent Blanks 24
Chain of Custody 24
Audit Samples 24

APPENDIX

Figures
Sample Calculations
Parameters
Field Data Printouts
Field Data
Analyzer Data
Laboratory Data
Calibration Data

AIRTECH
Environmental
Services Inc.

Project Overview

General

Airtech Environmental Services Inc. (Airtech) was contracted by Focus Environmental, Inc. to perform an air emissions test program at the US Filter Westates (Westates) facility located in Parker, Arizona. The objective of the test program was to perform a Comprehensive Performance Test (CPT) on the carbon reactivation furnace.

Airtech's role during the CPT was to perform all stack sampling. Airtech was responsible for providing the equipment and manpower to collect all stack samples as well as performing the actual stack sampling. Sample collection media (VOST tubes, XAD cartridges, reagents) as well as all sample containers were provided by Severn Trent Laboratories (STL) located in Knoxville, Tennessee. In addition to the stack sampling, Airtech performed the Method 5 and Method 0040 analysis, and operated a temporary continuous emissions monitor for total hydrocarbons.

Testing was performed on March 28 through 30, 2006. Coordinating the field portion of the test program were:

Anthony Eicher – Focus Environmental, Inc.
Drew Bolyard – US Filter Westates
Patrick Clark – Airtech Environmental Services Inc.

Methodology

EPA Methods 5 and 26A were used to determine the particulate, hydrogen chloride, and chlorine concentrations in the carbon reactivation furnace stack in a combined sample train. Each Method 5/26A test run was 120 minutes in duration.

EPA Method 5 was also used to collect filters for particle size distribution analysis. Samples were collected on polycarbonate filters. Sample runs were kept short to allow for optimal resolution of the particles.

The total hydrocarbon (THC) concentration in the carbon reactivation furnace stack was determined using EPA Method 25A. Method 25A was conducted over the entire length of each test run.

EPA Method 29 was used to determine the metals concentration in the carbon reactivation furnace stack. Each Method 29 test run was 120 minutes in duration.

EPA Methods 0010 and 0023A were used to determine the concentration of semi-volatile organic compounds using four separate sample trains. Sample Train "0010-A" was used to determine the emissions of project specific semi-volatiles and organochlorine pesticides (OCP). Sample Train "0010-B" was used to determine the emissions of polynuclear aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs).

Sample Train "0010-C" was used to determine the emissions of Total Organic Emissions (TOE) with a boiling point greater than 100°C in the incinerator stack. Sample Train "0010-D" was used to determine the emissions of polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs). Each Method 0010 test run was 240 minutes in duration.

EPA Method 0030 was used to determine the concentration of hazardous volatile organic compounds (VOCs) in the incinerator stack. Each sample run consisted of four sets of tubes and a condensate sample. Three of the four sets of samples were to be analyzed with the fourth set being saved and archived. Each test run was 40 minutes in duration for each tube set.

EPA Method 0040 was used to determine the concentration of Total Organic Emissions (TOE) with a boiling point less than 100°C in the incinerator stack. Two Tedlar bag samples were collected during each run with each bag being collected over a 40 minute period.

EPA Method 0061 was used to determine the concentration of hexavalent chromium in the incinerator stack. Each Method 0061 test run was 120 minutes in duration.

To convert the concentrations of the various constituents to mass emission rates, the volumetric flow rate was determined in conjunction with the Methods 5/26A, 29, 0010, and 0061 sample trains using EPA Methods 1, 2, 3A and 4.

Results

A summary of test results is presented for each sample train in Tables 1 through 10 on pages 4 through 13.

A cyclonic flow check was conducted on March 28, 2006. The resultant angle was 3.25 degrees which is less than the maximum allowable angle stated in Method 1 of 20 degrees, thus cyclonic flow was not present.

Runs 1 and 2 were completed without interruption. Run 3 was stopped at 12:39 because of a failure with one of the spiking materials pump. The run was resumed at 15:30 and completed without further interruption.

Prepared by:

Patrick J. Clark, P.E.

Reviewed by:

Timothy Wojtach

AIRTECH Environmental Services Inc.

Summary of Results

Table 1 - Method 5/26A, Summary of Results

Test Parameters	**Run 1**	**Run 2**	**Run 3**	**Average**
Date	3/28/06	3/29/06	3/30/06	
Start Time	12:10	11:15	11:50	
Stop Time	14:22	13:23	16:50	
Gas Conditions				
Temperature (°F)	175	174	174	**174**
Volumetric Flow Rate (acfm)	11,320	8,580	8,970	**9,620**
Volumetric Flow Rate (scfm)	9,290	7,020	7,400	**7,900**
Volumetric Flow Rate (dscfm)	5,030	3,850	4,090	**4,320**
Stack Gas Velocity (ft/sec)	60.1	45.5	47.6	**51.1**
Carbon Dioxide (% dry)	6.29	7.04	7.05	**6.79**
Oxygen (% dry)	9.61	8.88	9.34	**9.28**
Moisture (%)	45.9	45.1	44.8	**45.2**
Sample Train Parameters				
Volume Metered Standard (ft^3)	72.66	74.99	79.29	
Particulate Collected (g)	0.0343	0.0194	0.0336	
Isokinetics (%)	93.7	96.0	95.7	
Filterable Particulate Results				
Concentration (grains/dscf)	0.00729	0.00398	0.00654	**0.00594**
Concentration (grains/dscf at 7%O_2)	0.00898	0.00460	0.00786	**0.00715**
Concentration (mg/dscm at 7%O_2)	20.6	10.5	18.0	**16.4**
Emission Rate (lb/hr)	0.315	0.132	0.229	**0.225**

Table 2 - Method 25A, Summary of Results

Test Parameters	**Run 1**	**Run 2**	**Run 3**	**Average**
Date	3/28/06	3/29/06	3/30/06	
Start Time	12:10	11:15	11:50	
Stop Time	16:44	17:00	19:16	
THC Results				
THC Concentration, as propane (ppmwv)	<0.5	<0.5	<0.5	**<0.5**

Table 3 - Method 29, Summary of Results

Test Parameters	**Run 1**	**Run 2**	**Run 3**	**Average**
Date	3/28/06	3/29/06	3/30/06	
Start Time	12:10	11:15	11:50	
Stop Time	14:22	13:23	16:50	
Gas Conditions				
Temperature (^{o}F)	176	175	175	**175**
Volumetric Flow Rate (acfm)	11,260	8,600	8,920	**9,590**
Volumetric Flow Rate (scfm)	9,220	7,020	7,340	**7,860**
Volumetric Flow Rate (dscfm)	4,970	3,860	4,000	**4,280**
Stack Gas Velocity (ft/sec)	59.7	45.6	47.3	**50.9**
Carbon Dioxide (% dry)	6.29	7.04	7.05	**6.79**
Oxygen (% dry)	9.61	8.88	9.34	**9.28**
Moisture (%)	46.2	45.1	45.5	**45.6**
Sample Train Parameters				
Volume Metered Standard (ft^3)	76.79	79.37	82.61	
Isokinetics (%)	98.2	102.9	103.2	

Table 4 - Method 0010-A, Summary of Results

Test Parameters	**Run 1**	**Run 2**	**Run 3**	**Average**
Date	3/28/06	3/29/06	3/30/06	
Start Time	12:10	11:15	11:50	
Stop Time	16:39	15:28	18:57	
Gas Conditions				
Temperature (^{o}F)	174	173	173	**174**
Volumetric Flow Rate (acfm)	10,770	8,580	8,850	**9,400**
Volumetric Flow Rate (scfm)	8,840	7,020	7,300	**7,720**
Volumetric Flow Rate (dscfm)	4,870	3,880	4,080	**4,280**
Stack Gas Velocity (ft/sec)	57.1	45.5	47.0	**49.9**
Carbon Dioxide (% dry)	6.40	7.15	7.07	**6.88**
Oxygen (% dry)	9.79	8.94	9.27	**9.33**
Moisture (%)	44.9	44.7	44.2	**44.6**
Sample Train Parameters				
Volume Metered Standard (ft^3)	122.99	117.54	125.71	
Isokinetics (%)	97.0	96.2	97.9	

Table 5 - Method 0010-B, Summary of Results

Test Parameters	**Run 1**	**Run 2**	**Run 3**	**Average**
Date	3/28/06	3/29/06	3/30/06	
Start Time	12:25	11:15	11:50	
Stop Time	16:44	15:28	18:56	
Gas Conditions				
Temperature (^{o}F)	175	174	175	**175**
Volumetric Flow Rate (acfm)	11,440	8,380	8,670	**9,500**
Volumetric Flow Rate (scfm)	9,370	6,850	7,130	**7,780**
Volumetric Flow Rate (dscfm)	5,090	3,870	3,850	**4,270**
Stack Gas Velocity (ft/sec)	60.7	44.4	46.0	**50.4**
Carbon Dioxide (% dry)	6.40	7.15	7.07	**6.88**
Oxygen (% dry)	9.79	8.94	9.27	**9.33**
Moisture (%)	45.8	43.5	46.0	**45.1**
Sample Train Parameters				
Volume Metered Standard (ft^3)	129.31	124.81	120.52	
Isokinetics (%)	98.4	104.6	101.6	

Table 6 - Method 0010-C, Summary of Results

Test Parameters	**Run 1**	**Run 2**	**Run 3**	**Average**
Date	3/28/06	3/29/06	3/30/06	
Start Time	12:10	12:04	12:15	
Stop Time	16:22	17:00	19:16	
Gas Conditions				
Temperature (°F)	175	174	175	**175**
Volumetric Flow Rate (acfm)	11,370	8,610	8,890	**9,620**
Volumetric Flow Rate (scfm)	9,330	7,030	7,320	**7,890**
Volumetric Flow Rate (dscfm)	5,080	3,860	4,060	**4,330**
Stack Gas Velocity (ft/sec)	60.3	45.7	47.2	**51.1**
Carbon Dioxide (% dry)	6.40	7.15	7.07	**6.88**
Oxygen (% dry)	9.79	8.94	9.27	**9.33**
Moisture (%)	45.5	45.1	44.5	**45.0**
Sample Train Parameters				
Volume Metered Standard (ft^3)	134.44	120.30	125.03	
Isokinetics (%)	97.7	98.9	97.7	

Table 7 - Method 0010-D, Summary of Results

Test Parameters	**Run 1**	**Run 2**	**Run 3**	**Average**
Date	3/28/06	3/29/06	3/30/06	
Start Time	12:10	11:49	12:15	
Stop Time	16:22	17:00	19:16	
Gas Conditions				
Temperature (°F)	176	175	175	**175**
Volumetric Flow Rate (acfm)	11,760	8,320	8,850	**9,640**
Volumetric Flow Rate (scfm)	9,640	6,790	7,280	**7,900**
Volumetric Flow Rate (dscfm)	5,290	3,780	4,040	**4,370**
Stack Gas Velocity (ft/sec)	62.4	44.1	47.0	**51.2**
Carbon Dioxide (% dry)	6.40	7.15	7.07	**6.88**
Oxygen (% dry)	9.79	8.94	9.27	**9.33**
Moisture (%)	45.2	44.4	44.5	**44.7**
Sample Train Parameters				
Volume Metered Standard (ft^3)	139.21	119.22	126.18	
Isokinetics (%)	101.2	100.9	99.9	

Table 8 - Method 0030, Summary of Results

Test Parameters	**Run 1A**	**Run 1B**	**Run 1C**	**Run 1D**
Date	3/28/06	3/28/06	3/28/06	3/28/06
Start Time	12:10	13:04	14:09	15:04
Stop Time	12:50	13:44	14:49	15:44
Sample Volume				
Volume Metered Standard (l)	19.65	19.52	18.94	18.96

Test Parameters	**Run 2A**	**Run 2B**	**Run 2C**	**Run 2D**
Date	3/29/06	3/29/06	3/29/06	3/29/06
Start Time	11:15	12:20	13:56	14:57
Stop Time	11:55	13:00	14:36	15:37
Sample Volume				
Volume Metered Standard (l)	19.45	20.22	19.37	19.37

Test Parameters	**Run 3A**	**Run 3B**	**Run 3C**	**Run 3D**
Date	3/30/06	3/30/06	3/30/06	3/30/06
Start Time	11:50	15:30	16:26	17:24
Stop Time	12:30	16:10	17:06	18:04
Sample Volume				
Volume Metered Standard (l)	20.12	18.45	18.30	18.45

Table 9 - Method 0040, Summary of Results

Test Parameters	**Run 1**	**Run 2**	**Run 3**	**Average**
Date	3/28/06	3/29/06	3/30/06	
Start Time	14:40	12:36	11:51	
Stop Time	16:05	14:37	17:07	
Sample Volume				
Volume Metered Standard (l)	21.48	25.33	30.15	
Results				
C1 (ppmdv)	1.72	1.76	1.68	**1.72**
C2 Compounds (ppmdv)	<0.083	<0.083	<0.083	**<0.083**
C3 Compounds (ppmdv)	<0.11	<0.11	<0.11	**<0.11**
C4 Compounds (ppmdv)	<0.080	<0.080	<0.080	**<0.080**
C5 Compounds (ppmdv)	<0.14	<0.14	<0.14	**<0.14**
C6 Compounds (ppmdv)	<0.13	<0.13	<0.13	**<0.13**
C7 Compounds (ppmdv)	<0.18	<0.18	<0.18	**<0.18**

Table 10 - Method 0061, Summary of Results

Test Parameters	**Run 1**	**Run 2**	**Run 3**	**Average**
Date	3/28/06	3/29/06	3/30/06	
Start Time	12:10	11:15	11:50	
Stop Time	14:25	13:24	16:50	
Gas Conditions				
Temperature (°F)	176	175	176	**176**
Volumetric Flow Rate (acfm)	11,160	8,470	8,770	**9,470**
Volumetric Flow Rate (scfm)	9,140	6,910	7,210	**7,750**
Volumetric Flow Rate (dscfm)	5,120	3,780	3,890	**4,260**
Stack Gas Velocity (ft/sec)	59.2	44.9	46.6	**50.2**
Carbon Dioxide (% dry)	6.29	7.04	7.05	**6.79**
Oxygen (% dry)	9.61	8.88	9.34	**9.28**
Moisture (%)	44.0	45.3	46.1	**45.1**
Sample Train Parameters				
Volume Metered Standard (ft^3)	76.04	75.03	78.62	
Isokinetics (%)	93.6	101.1	103.1	

Test Procedures

Method Listing

The test methods found in 40 CFR Part 60, Appendix A and SW-846 were referenced during the test program. The following individual methods were used:

Method 1	Sample and Velocity Traverse for Stationary Sources
Method 2	Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S pitot tube)
Method 3A	Determination of Oxygen and Carbon Dioxide Concentrations in Emissions from Stationary Sources (Instrument Analysis Procedure)
Method 4	Determination of Moisture Content in Stack Gases
Method 5	Determination of Particulate Emissions from Stationary Sources
Method 25A	Determination of Total Gaseous Organic Concentration Using a Flame Ionization Analyzer
Method 26A	Determination of Hydrogen Halide and Halogen Emissions from Stationary Sources – Isokinetic Method
Method 29	Determination of Metals Emissions from Stationary Sources
Method 0010	Modified Method 5 Sampling Train
Method 0023A	Sampling Method for Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans Emissions from Stationary Sources
Method 0030	Volatile Organic Sampling Train
Method 0040	Sampling of Principal Organic Constituents from Combustion Sources Using Tedlar Bags
Method 0061	Determination of Hexavalent Chromium Emissions from Stationary Sources

Method Descriptions

Method 1

EPA Method 1 was used to determine the suitability of the sampling location and to determine the traverse points used for all testing. The test location conformed to the minimum requirements of being located at least 2.0 diameters downstream and at least 0.5 diameters upstream from the nearest flow disturbances.

The test location was a round, vertical stack with a diameter of 24 inches. Sampling was performed at four different levels, each with a set of test ports. Two ports were sampled

with six traverse points per port for each sample train. A cross section of the sampling location, including the traverse points, is shown in Figure 1 in the Appendix.

Method 2

EPA Method 2 was used to determine the gas velocity through the test location. Velocity readings were determined in conjunction with the EPA Methods 5/26A, 29, 0010, and 0061 testing. An "S" type pitot tube and an incline plane oil manometer were used at the test location. The manometer was leveled and "zeroed" prior to the test run. The sample train was leak checked before and after the run by pressurizing the positive side, or "high" side, of the pitot tube and creating a 3 in.H_2O deflection on the manometer. The leak check was considered valid if the manometer remained stable for 15 seconds. This procedure was repeated on the negative side by generating a vacuum of at least 3 in.H_2O. The velocity head pressure and gas temperature were then determined at each point specified in Method 1. The static pressure of the stack was measured using a water filled U-tube manometer. In addition, the barometric pressure was measured and recorded. A diagram of the Method 2 apparatus with the "S" type pitot tube is shown as a component of the Method 5/26A, 29, 0010, and 0061 sample trains in Figures 2, 4, 5, and 8 in the Appendix.

Method 4

The moisture content at the test location was determined using EPA Method 4. Sampling for moisture content was performed in conjunction with the Methods 5/26A, 29, 0010, and 0061 sampling trains. A known volume of sample gas was withdrawn from the source and the moisture was condensed and measured. The dry standard volume of the sample gas was then compared to the volume of moisture collected to determine the moisture content of the sample gas. The Method 4 apparatus is shown as a component of the Method 5/26A, 29, 0010, and 0061 sample trains in Figures 2, 4, 5, and 8 in the Appendix.

To condense the water vapor the gas sample passed through a series impingers. The impingers were charged as outlined in each individual method. In all trains, the last impinger contained a known weight of silica gel to absorb any residual water vapor.

After the test run the sample train was leak checked at the highest vacuum encountered during the test run. The amount of water collected in the condenser system and the silica gel weight gain was determined gravimetrically. The net weight gain of water was converted to a volume of wet gas and then compared to the amount of dry gas sampled to determine the moisture content. The moisture content was used, along with the oxygen and carbon dioxide content determined by EPA Method 3, for the calculation of the volumetric flow rate.

Methods 5/26A

A combined sample train of EPA Methods 5 and 26A was used to determine the particulate, hydrogen chloride and chlorine concentration at the test location. A sample

of the gas stream was withdrawn isokinetically from the stack and the particulate matter in the sample gas stream was collected in a glass probe and on a glass fiber filter. The hydrogen chloride was collected in impingers containing a dilute sulfuric acid solution and the chlorine was collected in impingers containing a dilute sodium hydroxide solution. A diagram of the Method 5/26A sample train is shown in Figure 2 in the Appendix.

To prevent contamination, all components of the sample train were constructed of glass with no metal connections. Prior to testing the components were washed using detergent and then rinsed with tap water, deionized water and finally with acetone. After drying, all components were sealed with parafilm or Teflon tape.

The sample probe that was used consisted of a heated glass liner and glass nozzle. Sample gas passed through the nozzle and probe assembly and then through a quartz filter heated to 248°F (+/- 25°F). After exiting the filter, the sample gas was passed through a series of six glass impingers. The first impinger remained empty. The second and third impingers each contained 100 ml of 0.1 N H_2SO_4. The fourth impinger remained empty. The fifth and sixth impingers each contained 100 ml of 0.1 N NaOH. The seventh contained a known weight of silica gel to absorb any remaining water vapor. The dry gas exiting the impinger system then passed through a sample pump and a dry gas meter to measure the gas volume. After leaving the dry gas meter, the sample stream passed through an orifice, which was used to meter the flow rate through the sample train. The pressure drop across the orifice was measured with an incline plane oil manometer.

85mm Whatman quartz filters were used as the substrate for the particulate sampling. The filter was loaded into a glass filter holder with a Teflon support screen that was prepared in the same manner as the other components of the sample train. Prior to the test run, the filter was desiccated for at least 24 hours and then weighed to the nearest 0.0001g until a constant weight was achieved. The weight of the filter was considered constant only when two consecutive weights taken at least six hours apart are within 0.0005g of each other.

The probe was thoroughly pre-cleaned with acetone and the probe wash saved prior to the test run as a quality assurance check. The impingers were pre cleaned with distilled water and loaded with the appropriate impinger contents. The sample train was leak checked prior to the test run by capping the probe tip and pulling a vacuum of at least 15 in.Hg. A leak check was considered valid if the leak rate was below 0.02 cfm. When not in operation inside the stack, the nozzle was sealed with Teflon tape.

The probe tip was placed at each of the sample points determined in Method 1. The velocity at the sample point was determined using Method 2 by reading the velocity pressure from the manometer. Sample was withdrawn from the source at a rate such that the velocity at the opening of the nozzle matched the velocity of the stack gas at the sample point (isokinetically). During the test run the train was moved to each of the Method 1 sample points. The sample time at each point was calculated based on the

number of sample points and the overall run time. The gas velocity pressure (ΔP), gas meter reading, gas meter inlet and outlet temperatures, gas meter orifice pressure (ΔH) and pump vacuum was recorded for each sample point. The test was 120 minutes in duration.

After the test run the train was leak checked at the highest vacuum encountered during the test run. The probe liner and nozzle were washed with acetone and the rinse saved. The filter was removed from the filter holder, transferred to a container and sealed. The H_2SO_4 and NaOH impinger contents were recovered separately and stored in glass or HDPE sample jars.

Analysis of the samples for particulate matter was performed at the Airtech laboratory located in Bensenville, Illinois. The probe rinse was transferred to a tared beaker, evaporated to dryness under ambient temperature and pressure conditions, desiccated for 24 hours and weighed to a constant weight. The filter was desiccated for 24 hours and weighed to a constant weight. The weight gain of the probe rinse and filter yielded the total weight of particulate collected. To eliminate interference in establishing a constant weight, both the analytical balance and the desiccators were equipped with an ion generating polonium strip designed to eliminate static electricity that may collect on the samples.

Methods 3A and 25A

The oxygen, carbon dioxide and total hydrocarbon concentrations were determined using EPA Methods 3A and 25A. A sample of the gas stream was withdrawn from the test location and analyzed using a temporary Continuous Emissions Monitoring (CEM) system. A diagram of the sampling system is shown in Figure 3 in the Appendix.

The sample gas was withdrawn from the test location at a constant rate through a stainless steel cintered frit, a stainless steel probe and a Teflon sample line. The probe and sample line were operated at a temperature of 250 °F to prevent the condensation of moisture. The sample gas was delivered to the CEM trailer hot and wet where it was then split into two separate portions. The first portion was directed to a gas cooler and the second portion was directed to the total hydrocarbon analyzer.

The first portion of the sample gas passed through an M & C Type EC gas cooler system. The gas cooler consists of two separate stages designed to lower the dewpoint of the sample gas to 35 °F, thus removing the moisture. The dry gas was then vented to the oxygen and carbon dioxide analyzers. Results from these analyzers were determined on a "dry" basis.

The second portion of the gas stream remained heated and was vented to a JUM VE7 gas analyzer. This analyzer uses a flame ionization detector for the determination of total hydrocarbons. Results from this analyzer are determined on a "wet" basis. The flame ionization analyzer (FIA) was calibrated with zero nitrogen and three known

concentrations of propane in a balance of nitrogen. Each calibration gas was certified according to EPA Protocol 1 procedures. The gas analyzers that were used for this project are listed in the table below.

Parameter	Manufacturer	Model Number	Operating Principle	Units Reported	Range used
Oxygen	Servomex	1440	Paramagnetic	%	0-15
Carbon Dioxide	Servomex	1440	Infrared	%	0-15
Total Hydrocarbons	JUM Engineering	VE 7	Flame Ionization	ppmwv	0-100

Prior to sampling, a calibration error test was performed for the carbon dioxide and oxygen analyzers. The zero and high-range calibration gases for each constituent was introduced directly into each analyzer. Each analyzer was then adjusted to the appropriate values. The remaining gases were then introduced to each analyzer and the measured values were recorded. The measured values for each calibration gas were then compared to the calibration gas values and the differences were less than the method requirement of two percent of the span value.

A sample system bias check was then performed by introducing the zero and mid-range calibration gases into the sampling system at the base of the probe. The gas was drawn through the entire sampling system. The measured responses were then compared to the calibration error test values to determine the bias in response due to the sampling system. The sampling system bias was less than the method requirement of five percent of the span value.

Prior to sampling, a calibration error test was performed on the FIA. The zero and high-range calibration gases were introduced into the sampling system at the base of the probe. The gas was drawn through the entire sampling system and the FIA was adjusted to the appropriate values. The mid and low-range gases were then introduced to the FIA and the measured values were recorded. The measured values for each calibration gas were then compared to the calibration gas values and the differences were less than the method requirement of five percent of the actual calibration gas value.

After each test run the instrument drift for each analyzer was determined by introducing the zero and mid-range calibration gases into the sampling system at the base of the probe. The gas was drawn through the entire sampling system. The measured responses were then compared to the values from the previous test run to determine the analyzer drift. For all test runs, the analyzer drift was less than the method requirement of three percent of the span value.

Method 29

EPA Method 29 was used to determine the concentration of various metals at the test location. A sample of the gas stream was withdrawn isokinetically from the stack and drawn through a glass sample probe, a quartz filter and a series of glass impingers.

To prevent contamination, all components of the sample train were glass or Teflon with no metal connections. Prior to testing, the components were washed using detergent and then rinsed with tap water and rinsed again with deionized water. All glassware was soaked for a minimum of four hours in a 10% nitric acid solution. After soaking, the glassware was rinsed with deionized water and rinsed again with acetone. After drying, all components were sealed with parafilm.

The sample probe consisted of a heated glass liner and glass nozzle. Sample gas passed through the nozzle, the probe assembly, and then through a quartz fiber filter heated to 250°F (+/- 25°F). After exiting the filter, the sample gas passed through a series of seven glass impingers. The first impinger remained empty to collect the majority of the moisture and prevent excessive dilution of the absorbing solutions. The second and third impingers contained 100ml of a 5 percent HNO_3/10 percent H_2O_2 solution to collect all the metals except mercury. The fourth impinger remained empty to prevent cross contamination of the separate solutions. The fifth and sixth impingers contained 100ml of a 4 percent $KMnO_4$/10 percent H_2SO_4 solution to absorb mercury. The seventh impinger contained a known quantity of silica gel. After exiting the impingers, the gas stream passed through the pump and metering system described in Method 5. The Method 29 sampling apparatus is shown in Figure 4 in the Appendix.

Sample train operation followed the same procedures described in Method 5. The total run time was 120 minutes. After sampling, the sample train was transferred to the on-site laboratory for recovery. The filter was removed from the holder and placed in a glass petri dish. The front half of the sample train consisting of the nozzle, probe liner and filter holder, was brushed with a non-metallic brush, rinsed with 0.1 N HNO_3 and the rinse saved in a 250ml trace clean amber glass sample jar. The contents of the first three impingers were recovered and saved in a 950ml sample jar. The impingers were then rinsed with 0.1N HNO_3, and the rinses added to the sample jars. The content of the fourth impinger, which was originally empty, was recovered and saved separately in a 250ml sample jar. The impinger was rinsed with HNO_3 and the rinse added to the sample jar. The contents of the fifth and sixth impingers were recovered and saved in a 950ml sample jar. The impingers were rinsed with fresh $KMnO_4$ solution and the rinse added to the sample jar. If deposits remained on the $KMnO_4$ impinger surface, the impingers were rinsed with 25 ml of 8 N HCl and the rinse saved in a separate 250ml sample jar.

Methods 0010/0023A

EPA Methods 0010 and 0023A were used to determine the concentration of semi-volatile organic compounds sing four separate sample trains. Sample Train "0010-A" was used to determine the emissions of project specific semi-volatiles and organochlorine pesticides

(OCP). Sample Train "0010-B" was used to determine the emissions of polynuclear aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs). Sample Train "0010-C" was used to determine the emissions of Total Organic Emissions (TOE) with a boiling point greater than 100°C in the incinerator stack. Sample Train "0010-D" was used to determine the emissions of polychlorinated dibenzo-p-dioxins (PCDDs) and polychlorinated dibenzofurans (PCDFs). In Methods 0010/0023A, a sample of the gas stream was withdrawn isokinetically from the stack and the semi-volatile organic compounds were collected in a sample probe, on a glass fiber filter, on a packed adsorbent media and in an impinger system containing deionized water.

The sample probe consisted of a heated glass liner and glass nozzle. Sample gas passed through the nozzle, the probe assembly, and then through the glass fiber filter, which was operated at a temperature of 248° F. After exiting the filter, the sample gas passed through a coiled glass condenser and an adsorbent trap. The condenser and trap were cooled with a water recirculation pump that was placed in an ice bath. The sample gas then passed through a five impinger system. The first impinger was empty to collect the majority of the condensed moisture. The second and third impingers each contained 100 ml of water. The fourth impinger was empty and the fifth contained a known weight of silica gel to absorb any remaining water vapor.

After exiting the gas condenser system, the gas stream passed through a sample pump and into a dry gas meter, where the gas volume was measured. After leaving the dry gas meter, the sample stream passed through an orifice that was used to meter the flow rate through the sample train. The pressure drop across the orifice was measured with an incline oil manometer. The Methods 0010/0023A sampling apparatus is shown in Figure 5 in the Appendix.

Prior to the test run all glassware upstream of the adsorbent module was washed per the specifications found in section 3A of the "Manual of Analytical Methods for the Analysis of Pesticides in Human and Environmental Samples." The adsorbent used in the adsorbent module was Amberlite XAD-2 resin, which was cleaned prior to loading in a soxhlet extractor. The adsorbent trap was then loaded with the resin and capped for storage.

The sample train was leak checked prior to the test run by capping the probe tip and pulling a vacuum greater than the highest vacuum expected during the test run. A leak check was considered valid if the leak rate was less than 0.02 cubic feet per minute or four percent of the average sample rate.

The probe tip was placed at the first of the sample points determined in Method 1 and the water recirculation pump was turned on. The velocity at the sample point was determined using Method 2 by reading the velocity pressure from the oil manometer. The sample was withdrawn from the source at a rate such that the velocity of gas through the nozzle matched the velocity of the stack gas at the sample point (isokinetically). During the test run, the train was moved to each of the Method 1 sample points. The sample dwell time

at each point was calculated based on the number of sample points and the run time. The dwell time at each sample point was 20 minutes. Each test was 240 minutes in duration. The gas velocity pressure, gas temperature, dry gas meter reading, gas meter inlet and outlet temperatures, gas meter orifice pressure, probe and filter temperatures, adsorbent trap temperature, condenser system outlet temperature and pump vacuum were recorded for each sample point.

After the test run the train was leak checked at the highest vacuum encountered during the test run. The glass fiber filter was removed from the filter holder, transferred to a 250 ml amber glass sample jar equipped with a Teflon lined lid, and sealed. The adsorbent module was removed from the train, capped, covered with foil, and placed on ice for shipment.

For the Method 0010-A, 0010-B, and 0010-C sample trains, the probe liner, nozzle, and filter holder front-half were rinsed three times with acetone and methylene chloride (1:1 v/v) and the rinses saved. All connections from the back half of the filter to the adsorbent module were rinsed three times with acetone and methylene chloride (1:1 v/v) and then soaked three times for five minutes. These rinses were recovered and placed in the same container as the front-half rinses. The impinger contents were recovered as outlined in Method 4 and saved. The impingers were then rinsed three times with acetone and methylene chloride (1:1 v/v) and the rinses saved. For the Method 0010-D sample train, the rinses were performed as outlined above and then repeated with toluene. The toluene rinses were saved in the same sample jar.

Method 0030

EPA Method 0030 was used to determine the concentration of hazardous volatile organic compounds (VOCs) in the incinerator stack. In Method 0030, a volatile organic sampling train (VOST) is used to withdraw sample gas at a constant rate from the stack. VOCs are collected on a pair of sorbent resin traps. After collection, the traps are transferred to the laboratory for analysis. The collected VOCs are then thermally desorbed from the traps and separated using high resolution gas chromatography and measured by high resolution mass spectrometry. Each sample run consisted of the sampling and analysis of four sets of tubes and a condensate sample. Three of the four sets of samples were analyzed with the fourth set being archived.

The sample probe used consisted of a heated glass liner equipped with a cupped tip. Glass wool was placed in the probe tip to remove particulate. Sample gas then passed through the probe assembly, valve assembly and then through a glass coil condenser cooled with water from an ice bath. After exiting the first condenser the sample gas passed through an adsorbent cartridge containing 1.6 grams of Tenax resin. The sample gas then passed through a glass flask to collect condensate, a second condenser and then into a second adsorbent cartridge containing one gram each of Tenax and coconut charcoal. The sample gas then passed through a silica gel tube, sample pump, and gas meter. All connecting tubing was glass or Teflon with Teflon connections. A schematic of the sample train is shown in Figure 6.

The train was leak checked by closing the isolation valve and pulling a vacuum of 250 mmHg. The train was isolated from the pump and the leak rate noted. The leak rate was less then 2.5 mmHg per minute. The train was returned to ambient pressure through the charcoal filled vacuum release tube. Sampling was conducted by opening the inlet valve and sampling at a rate of 0.5 liter per minute for 40 minutes. The sample train was then leak checked and a new pair of traps loaded into the sample train. After four sets of traps the condensate was collected and placed in a glass vial filled with HPLC grade water to eliminate headspace. All samples were stored and shipped on ice.

Method 0040

The procedures outlined in Method 0040 were used to determine the concentration of Volatile Organic Compounds including the total C_1 through C_7 compounds. A sample of the gas stream was withdrawn from the source and collected in a Tedlar bag. The bag was analyzed using a gas chromatograph (GC) coupled with a flame ionization detector (FID).

The sample probe used consisted of a heated glass liner equipped with a cupped tip. Glass wool was placed in the probe tip to remove particulate matter. Sample gas then passed through the probe assembly, valve assembly and then through a glass coil condenser cooled with water from an ice bath. After exiting the condenser the sample gas passed into a Tedlar sample bag. The sample bag was placed in a rigid, leak free container. The container was evacuated using a sample pump and the volume of dry gas collected determined using a dry gas meter. All connecting tubing was glass or Teflon with Teflon connections. A schematic of the sample train is shown in Figure 7.

The train was leak checked by closing the isolation valve and pulling a vacuum of 5 in. Hg. The train was isolated from the pump and the leak rate noted. The leak rate was less then 0.1 in. Hg per minute. The train was returned to ambient pressure through the charcoal filled vacuum release tube. Sampling was conducted by opening the inlet valve and sampling at a rate of approximately 0.3 liters per minute for 40 minutes. The sample train was then leak checked and the Tedlar was disconnected and sealed. After collecting the bag sample, the condensate was collected and placed in a glass vial. The vial was completely filled with HPLC grade water before being sealed to eliminate headspace.

Sample analysis was conducted within 24 hours using an on-site gas chromatograph. The bags were analyzed for C_1 through C_7 compounds. The condensate samples were transferred to STL for analysis of the C_4 through C_7 compounds using purge and trap GC/FID.

Method 0061

EPA Method 0061 was used to determine the concentration of hexavalent chromium at the stack location. A sample of the gas stream was withdrawn isokinetically from the stack and drawn through a Teflon sample probe and a dilute potassium hydroxide solution. The solution was continuously recirculated to the probe tip and through the

probe liner from the first impinger to eliminate the reduction of Cr^{+6}. The samples were analyzed as chromate CrO^{+6} using an ion chromatograph equipped with a post column reactor and visible wavelength detector. A diagram showing the major components of the sample train is shown in Figure 8.

To prevent contamination, all components of the sample train were Teflon. Preparation of all test-ware followed the procedures outlined in Method 0061. Immediately prior to testing the components were rinsed with 0.5 M KOH. After drying, all components were sealed with parafilm.

The sample probe used consisted of a Teflon liner and glass nozzle. Sample gas passed through the nozzle, the probe assembly, and then into a series of six Teflon impingers and one glass impinger. The first impinger contained 150ml of 0.5 M KOH. Solution from the first impinger was allowed to be recirculated to the probe tip using a peristaltic pump. The second and third impingers each contained 75 ml of 0.5 M KOH. The fourth, fifth and sixth impingers remained empty. The last impinger contained a known quantity of silica gel. After exiting the impingers, the gas stream passed through the pump and metering system described in Method 5.

Sample train operation followed the same procedures described in Method 5. The total run time was 120 minutes. The peristaltic pump was turned on as sampling began to prevent loss of solution out the probe tip. The peristaltic pump was turned of 30 seconds before sampling ended to make sure all of the solution was returned to the first impinger.

The sample train then was transferred to the on-site laboratory for recovery. The pH of the first impinger was checked to ensure it remained above 8.5 during the sampling. The sample train was purged with zero grade nitrogen at 10L/min for 30 minutes to remove any SO_2 from the sample and prevent the conversion of Cr^{+6} to the trivalent oxidation state. The contents of the impingers were then recovered into polyethylene containers and the volume recorded. The sample train components were then rinsed with deionized water which was added to the sample. The remaining sample was then filtered through a 5 micron acetate filter and then again through a 0.45 micron acetate filter before being sealed for transport.

Quality Assurance and Quality Control

General

The guidelines outlined in the Quality Assurance Project Plan (QAPP) were followed during the test program along with all QA required by the individual test methods. All sample train recovery was performed in an on-site laboratory. The laboratory was segregated into separate recovery areas for the different test methods to both eliminate mistakes involving the use of the wrong reagent and to avoid the possibility of cross contamination. A second laboratory, located in Westates main office building was used for storage and handling of the Method 0030 VOST and Method 0040 sample train components and samples.

Technicians wore polyethylene gloves whenever handling components of the sample trains. Teflon tape or parafilm was used to seal sample train components when not in use. The sample jars were sealed with Teflon tape prior to shipment. The levels were marked on all liquid samples and the total sample weight was recorded.

Field and Reagent Blanks

Field and reagent blanks were collected as required for the isokinetic sample trains used during the test program. Field blanks were collected by assembling the sample trains, allowing them to come to the appropriate operating temperature, leak checking them, and sealing the nozzles with Teflon tape. The sample trains were then left to idle at the base of the stack for the equivalent duration of a test run. Upon completion of a test run, the trains were recovered and analyzed in the identical manner as an actual sample. Field blanks were collected for each of the four Method 0010 trains. Two Method 29 field blanks were also collected.

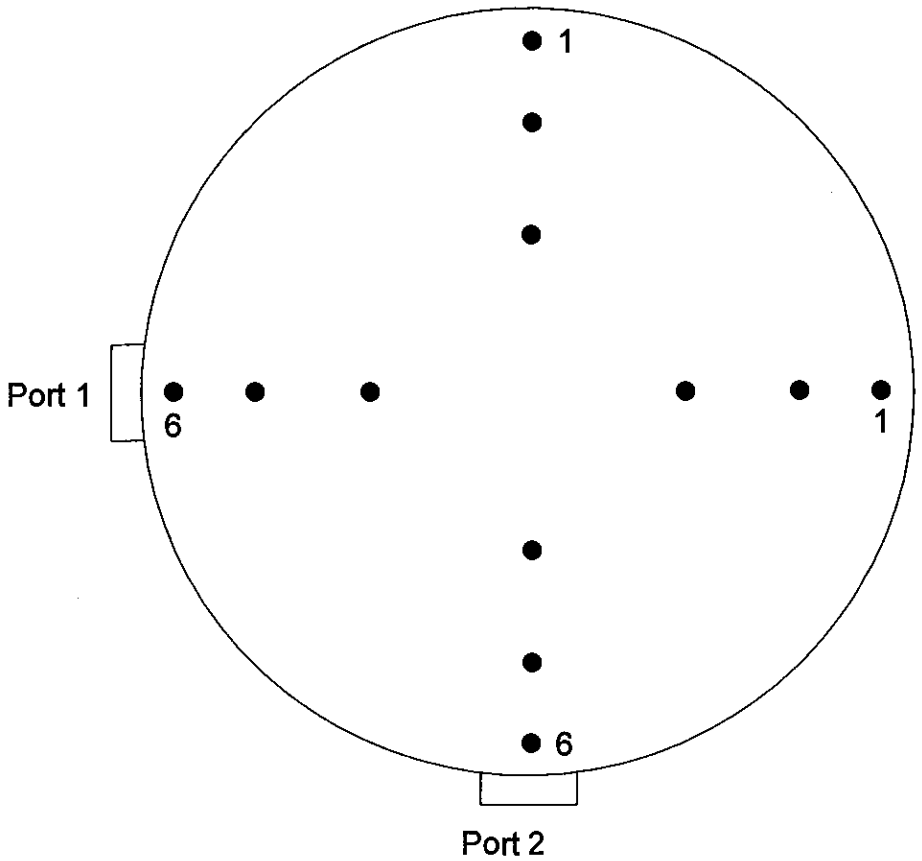
Field blanks and trip blanks were collected for the Method 0030 VOST sampling. The blanks were shipped to the laboratory with the other samples for analysis. A field blank was collected for the Method 0040 by sampling a Tedlar bag that contained zero nitrogen. The bag was analyzed with the other Method 0040 samples.

Chain of Custody

Chain of custody was established immediately upon generation of samples. All samples except the particulate samples were driven by Airtech personnel and then handed to Severn Trent Laboratories personnel in Knoxville, Tennessee. The particulate samples were driven to the Airtech laboratory located in Bensenville, Illinois.

Audit Samples

No audit samples were collected during this test program



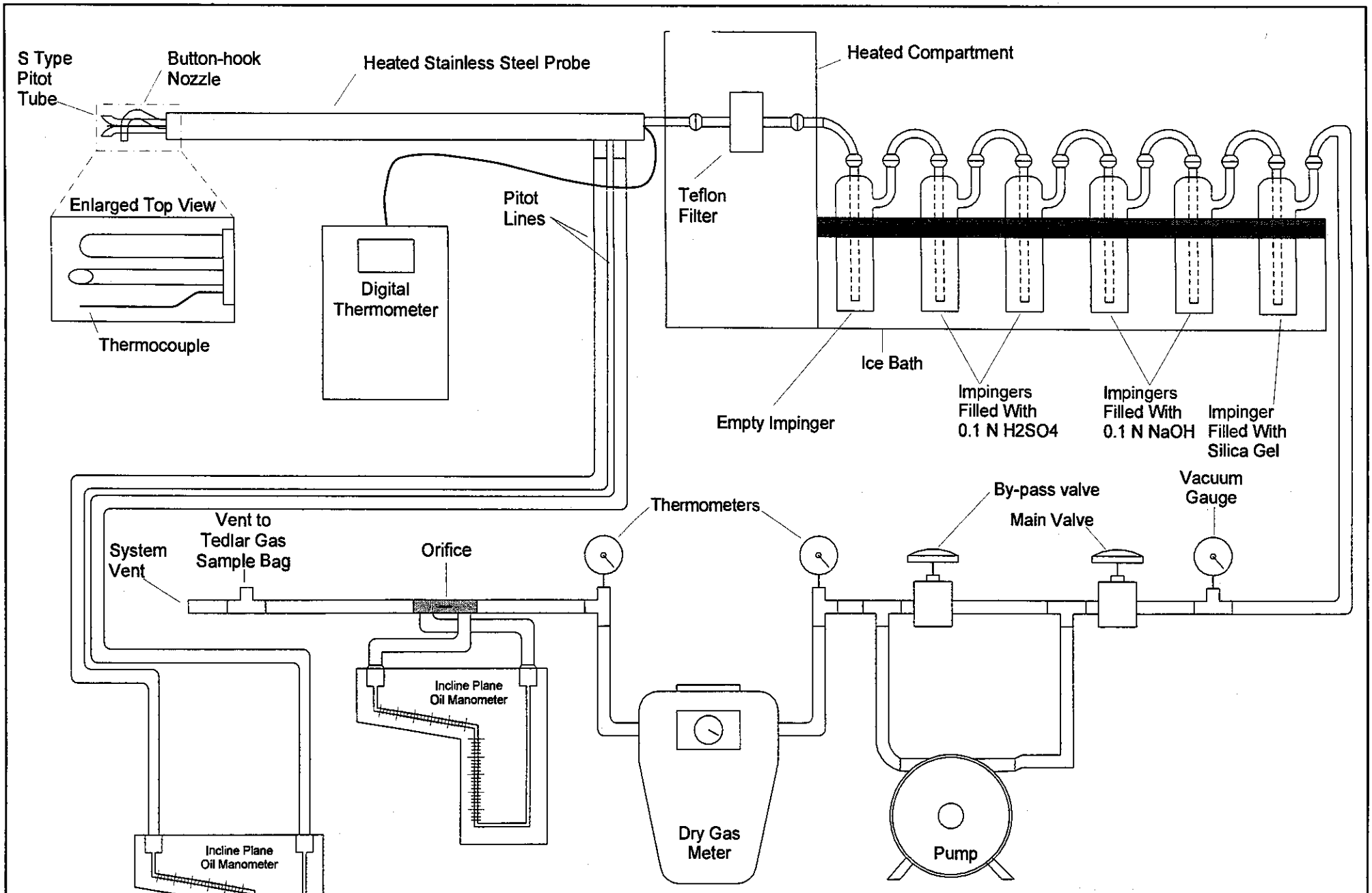
Diameter (in.)	24.0
Port Length (in.)	Varied

Point	Distance from Wall (in.)
1	23.0
2	20.5
3	16.9
4	7.1
5	3.5
6	1.0

Cross Section of the Furnace Stack
US Filter Weststates Carbon

Figure 1

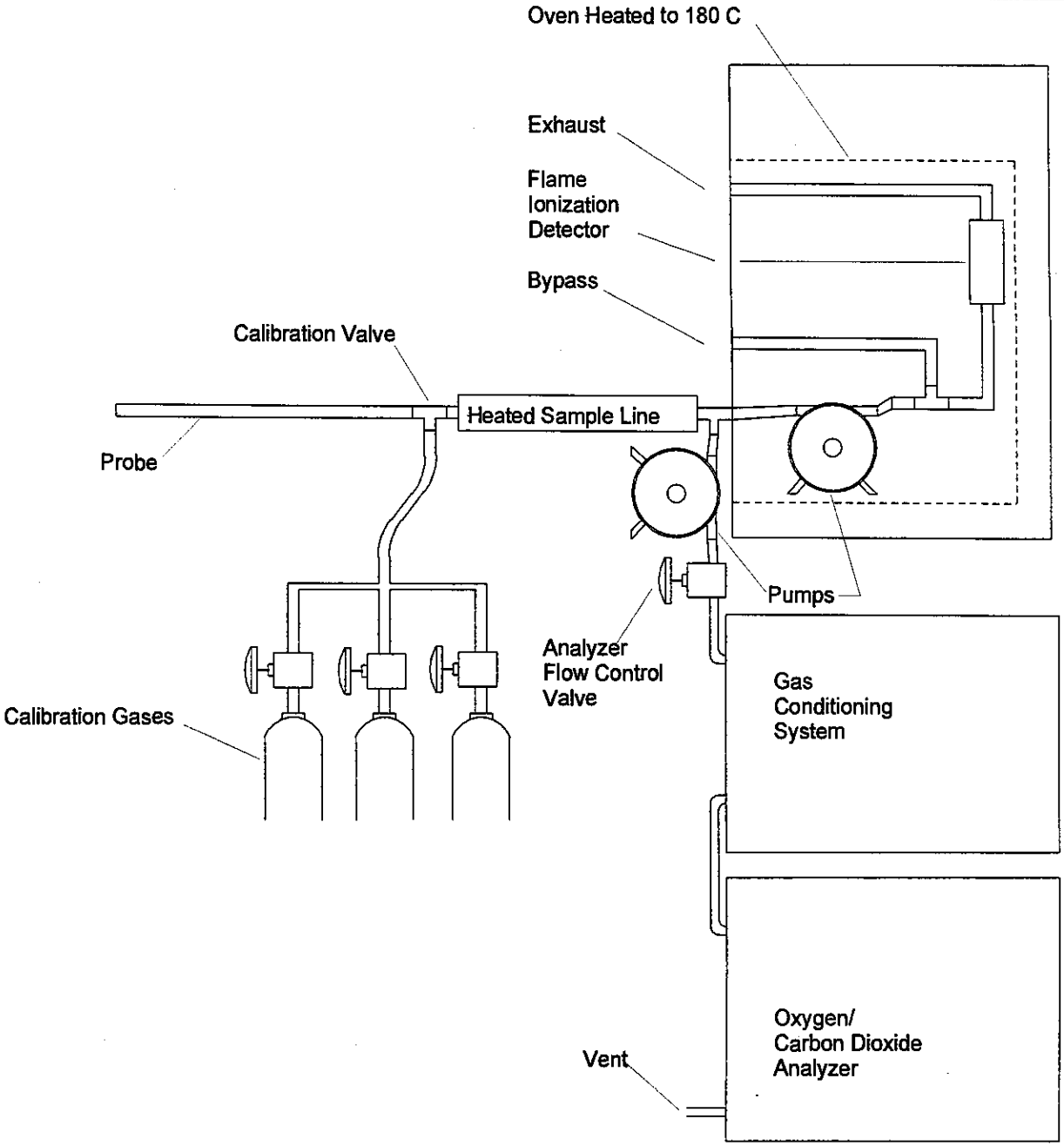
Airtech
Environmental
Services Inc.



EPA Methods 5 and 26A:
Particulate, Hydrogen Chloride and Chlorine Sampling Train

Figure 2

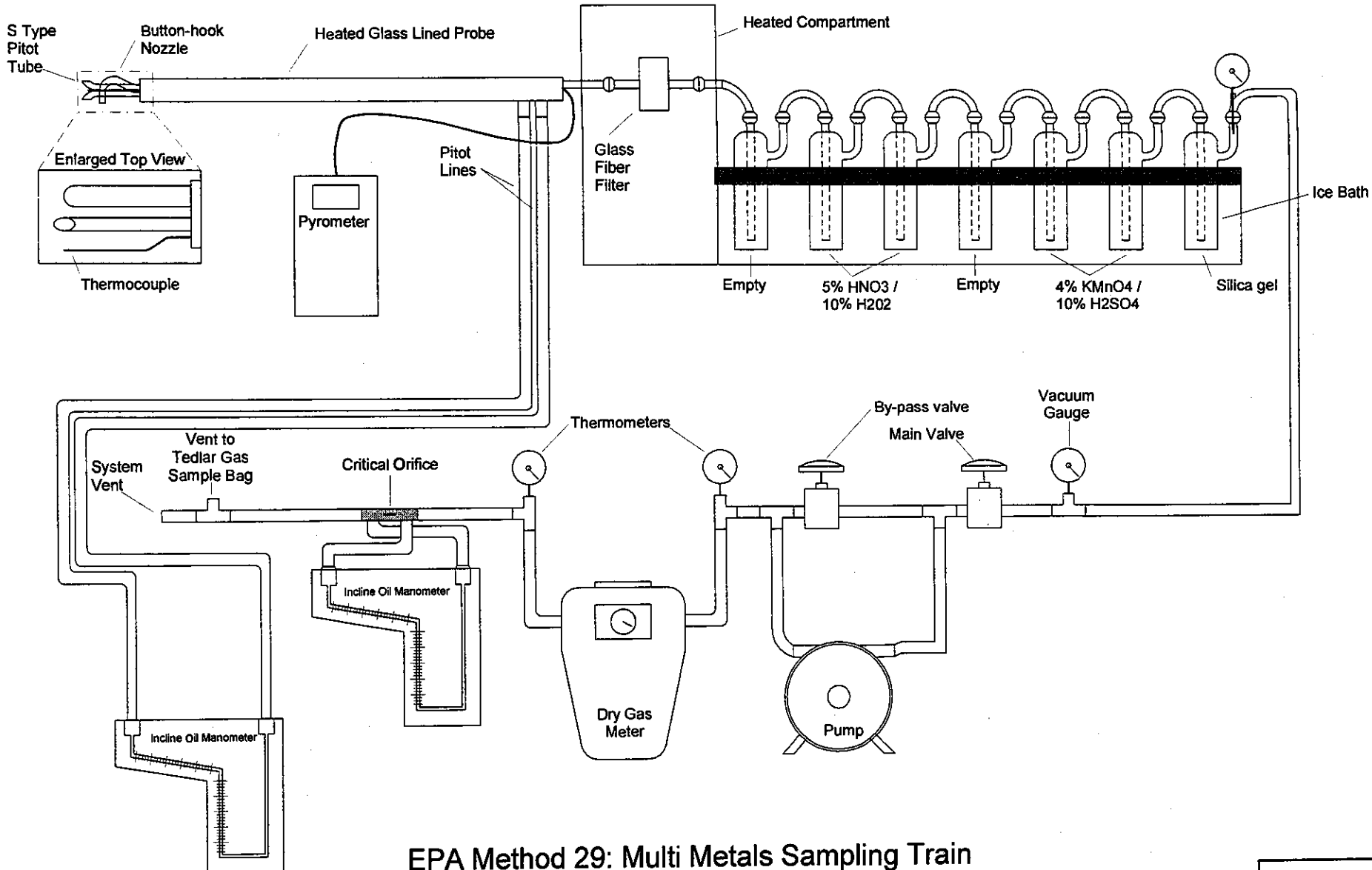
Airtech
Environmental
Services Inc.



Methods 3A and 25A: CO2, O2 and THC Concentration Measurement System

Figure 3

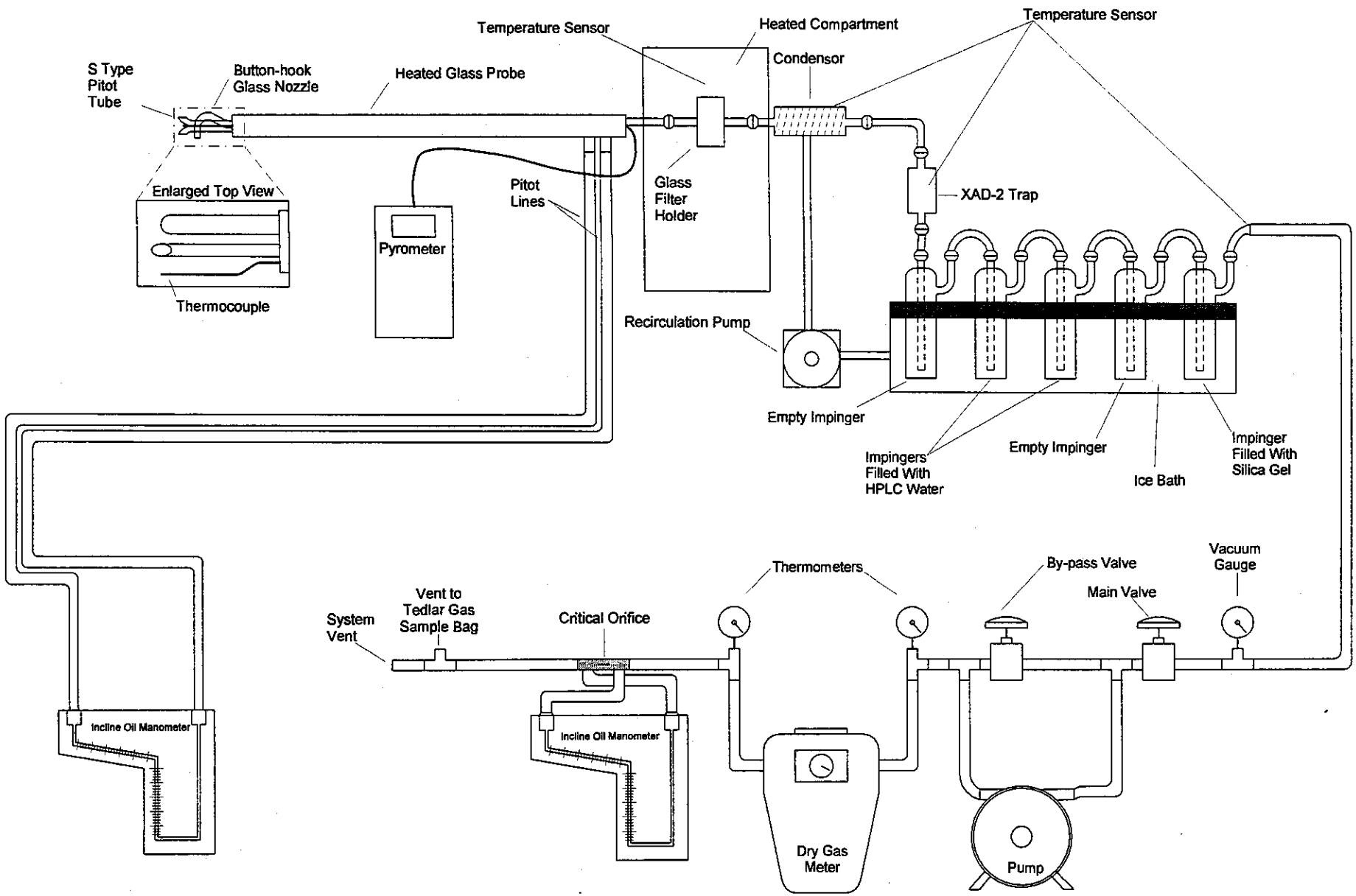
Airtech
Environmental
Services Inc.



EPA Method 29: Multi Metals Sampling Train

Figure 4

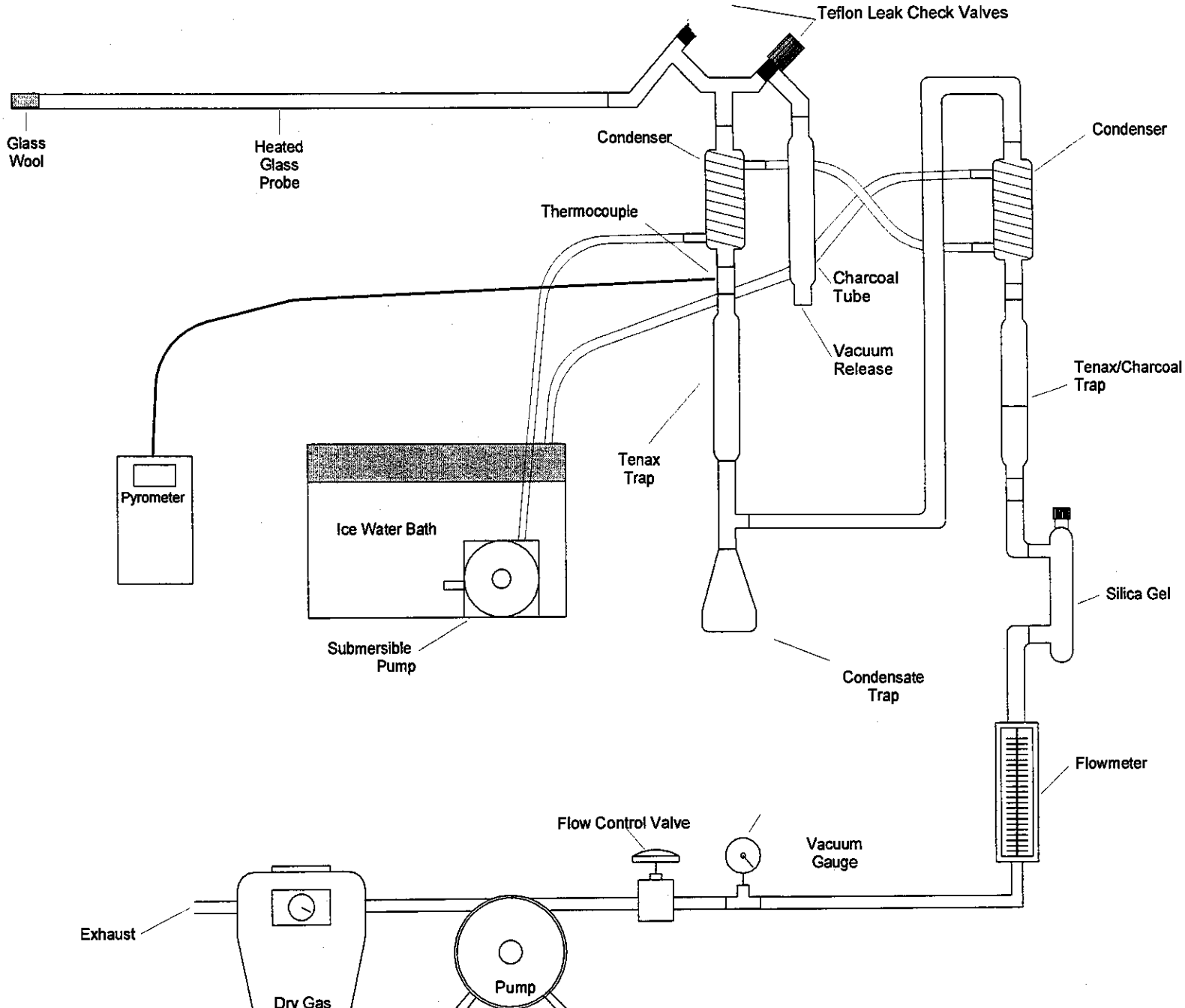
Airtech
Environmental
Services Inc.



EPA Method 0010/0023A: Semi-Volatile Sampling Train

Figure 5

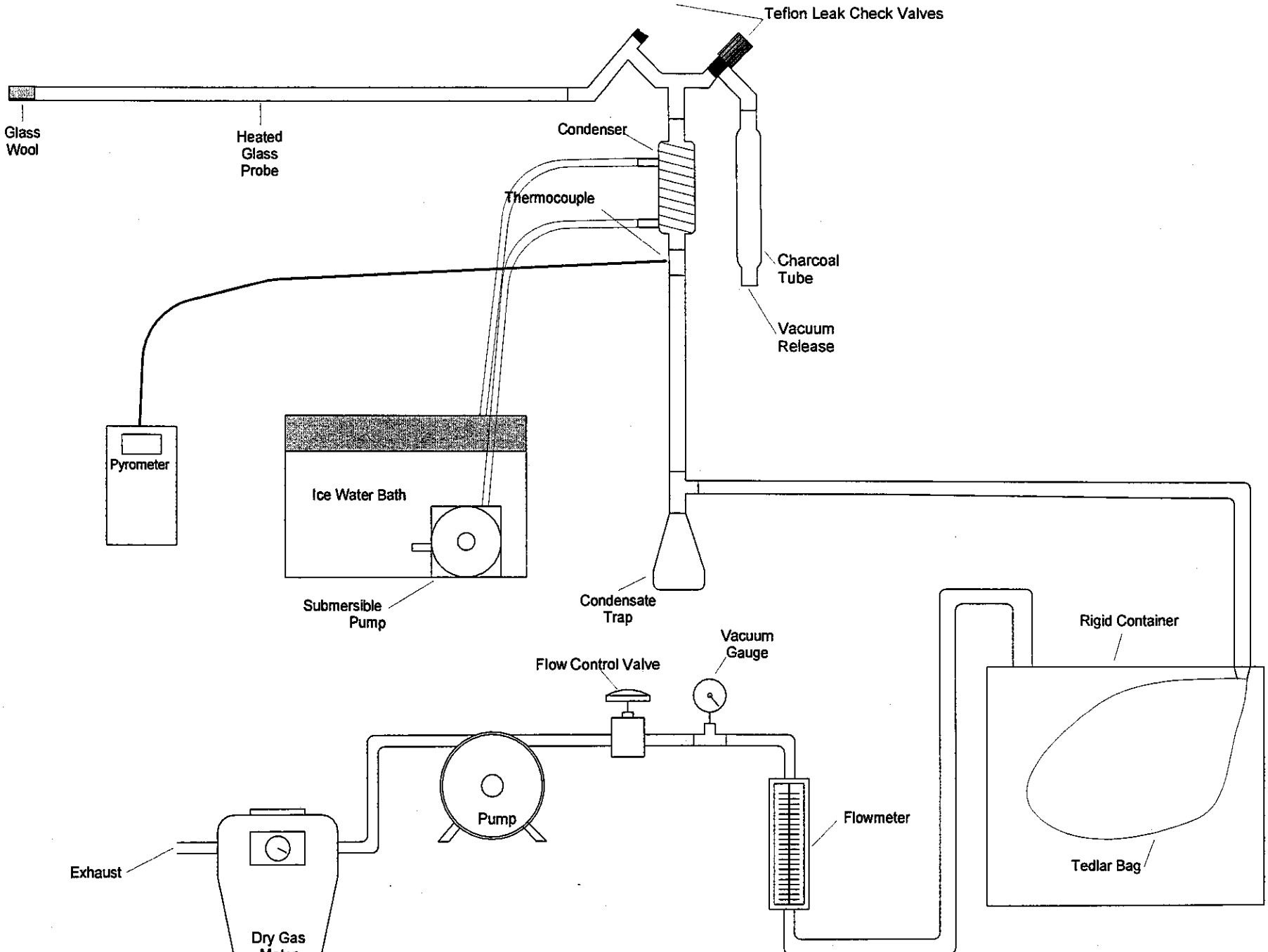
Airtech
Environmental
Services Inc.



EPA Method 0030: Volatile Organic Sampling Train

Figure 6

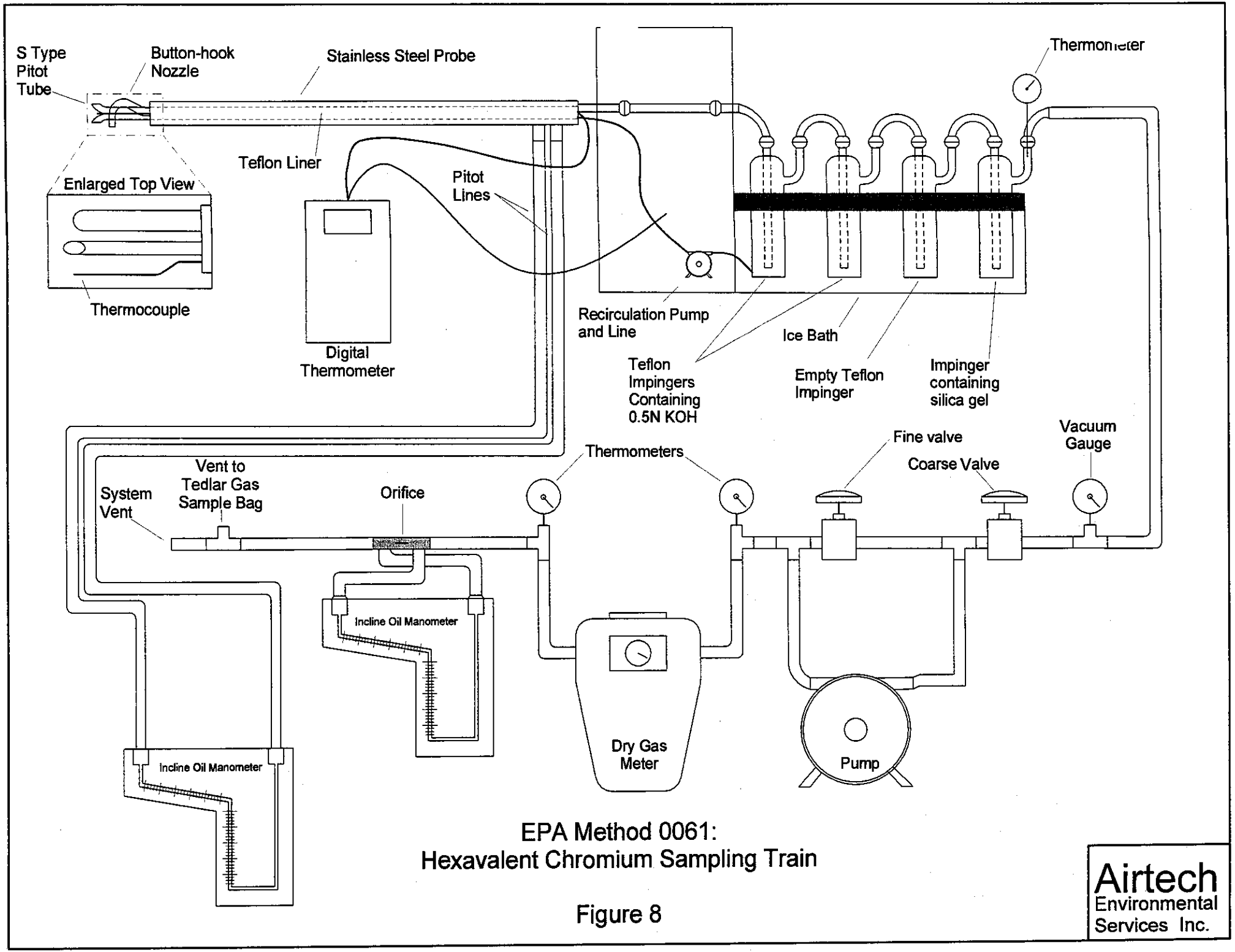
Airtech Environmental Services Inc.



EPA Method 0040: Bag Sampling Train

Figure 7

Airtech Environmental Services Inc.



EPA Method 0061:
Hexavalent Chromium Sampling Train

Figure 8

Sample Calculations, Run 1, EPA Method 5/26A Sample Train

Area of Sample Location

$$A_s = \pi \times \left(\frac{d_s}{2 \times 12}\right)^2$$

$$A_s = \pi \times \left(\frac{24.0}{2 \times 12}\right)^2$$

$$A_s = 3.14 ft^2$$

where:

A_s	= area of sample location (ft^2)
d_s	= diameter of sample location (in)
12	= conversion factor (in/ft)
2	= conversion factor (diameter to radius)

Stack Pressure Absolute

$$P_a = P_b + \frac{P_s}{13.6}$$

$$P_a = 29.50 + \frac{0.3}{13.6}$$

$$P_a = 29.52 in.Hg$$

where:

P_a	= stack pressure absolute (in. Hg)
P_b	= barometric pressure (in. Hg)
P_s	= static pressure (in. H_2O)
13.6	= conversion factor (in. H_2O/in. Hg)

Volume of Dry Gas Collected Corrected to Standard Temperature and Pressure

$$V_{m(std)} = \frac{17.64(V_m)(Y_d)\left(P_b + \frac{\Delta H}{13.6}\right)}{(T_m + 460)}$$

$$V_{m(std)} = \frac{17.64(76.16)(0.9916)\left(29.50 + \frac{1.37}{13.6}\right)}{(82.7 + 460)}$$

$$V_{m(std)} = 72.66 scf$$

where:

$V_{m(std)}$	= volume of gas collected at standard temperature and pressure (scf)
V_m	= volume of gas sampled at meter conditions (ft^3)
Y_d	= gas meter correction factor (dimensionless)
P_b	= barometric pressure (in. Hg)
ΔH	= average sample pressure (in. H_2O)
T_m	= average gas meter temperature (^oF)
13.6	= conversion factor (in. H_2O/in. Hg)
17.64	= ratio of standard temperature over standard pressure (^oR/in. Hg)
460	= conversion (^oF to ^oR)

Volume of Water Vapor Collected Corrected to Standard Temperature and Pressure

$$V_{w(std)} = 0.04715 \times (V_{wc} + V_{wsg})$$

$$V_{w(std)} = 0.04715 \times (1373.0 + 13.8)$$

$$V_{w(std)} = 65.39 scf$$

where:

$V_{w(std)}$	= volume of water vapor at standard conditions (scf)
V_{wc}	= weight of liquid collected (g)
V_{wsg}	= weight gain of silica gel (g)
0.04715	= volume occupied by one gram of water at standard temperature and pressure (ft^3/g)

Percent Moisture[1]

$$B_{ws} = 100 \times \left[\frac{V_{w(std)}}{\left(V_{m(std)} + V_{w(std)}\right)} \right]$$

$$B_{ws} = 100 \times \left[\frac{65.39}{(72.66 + 65.39)} \right]$$

$$B_{ws} = 47.4\%$$

where:

B_{ws}	= moisture content of the gas stream (%)
$V_{m(std)}$	= volume of gas collected at standard temperature and pressure (scf)
$V_{w(std)}$	= volume of water vapor at standard conditions (scf)
100	= conversion factor

Molecular Weight of Dry Gas Stream[2]

$$M_d = \left(44 \times \frac{\%CO_2}{100}\right) + \left(32 \times \frac{\%O_2}{100}\right) + \left(28 \times \frac{(\%CO + \%N_2)}{100}\right)$$

$$M_d = \left(44 \times \frac{6.29}{100}\right) + \left(32 \times \frac{9.61}{100}\right) + \left(28 \times \frac{(84.1)}{100}\right)$$

$$M_d = 29.39 lb / lbmole$$

where:

M_d	= molecular weight of the dry gas stream (lb/lb-mole)
$\%CO_2$	= carbon dioxide content of the dry gas stream (%)
44	= molecular weight of carbon dioxide (lb/lb-mole)
$\%O_2$	= oxygen content of the dry gas stream (%)
32	= molecular weight of oxygen (lb/lb-mole)
%CO	= carbon monoxide content of the dry gas stream (%)
$\%N_2$	= nitrogen content of the dry gas stream (%)
28	= molecular weight of nitrogen and carbon monoxide (lb/lb-mole)
100	= conversion factor

[1] The moisture saturation point is used for all calculations if it is exceeded by the actual moisture content.
[2] The remainder of the gas stream after subtracting carbon dioxide and oxygen is assumed to be nitrogen.

Molecular Weight of Wet Gas Stream

$$M_s = \left(M_d \times \left(1 - \frac{B_{ws}}{100}\right)\right) + \left(18 \times \frac{B_{ws}}{100}\right)$$

$$M_s = \left(29.39 \times \left(1 - \frac{45.9}{100}\right)\right) + \left(18 \times \frac{45.9}{100}\right)$$

$$M_s = 24.17 lb / lbmole$$

where:

M_s	= molecular weight of the wet gas stream (lb/lb-mole)
M_d	= molecular weight of the dry gas stream (lb/lb-mole)
B_{ws}	= moisture content of the gas stream (%)
18	= molecular weight of water (lb/lb-mole)
100	= conversion factor

Velocity of Gas Stream

$$V_s = 85.49(C_p)\left(\sqrt{\Delta P}\right)\sqrt{\frac{(T_s + 460)}{(M_s)\left(P_b + \frac{P_s}{13.6}\right)}}$$

$$V_s = 85.49(0.84)(0.887)\sqrt{\frac{(175 + 460)}{(24.17)\left(29.50 + \frac{0.3}{13.6}\right)}}$$

$$V_s = 60.1 ft / \sec$$

where:

V_s	= average velocity of the gas stream (ft/sec)
C_p	= pitot tube coefficient dimensionless
$\sqrt{\Delta P}$	= average square root of velocity pressures (in. $H_2O)^{1/2}$
T_s	= average stack temperature (^oF)
M_s	= molecular weight of the wet gas stream (lb/lb-mole)
P_b	= barometric pressure (in. Hg)
P_s	= static pressure of gas stream (in. H_2O)
85.49	= pitot tube constant (ft/sec)([(lb/lb-mole)(in. Hg)]/[(^{0}R)(in. H_2O)]) $^{1/2}$
460	= conversion (^oF to ^oR)
13.6	= conversion factor (in. H_2O/in. Hg)

Volumetric Flow of Gas Stream - Actual Conditions

$$Q_a = 60(V_s)(A_s)$$
$$Q_a = 60(60.1)(3.14)$$
$$Q_a = 11{,}319 acfm$$

where:

Q_a	= volumetric flow rate of the gas stream at actual conditions (acfm)
V_s	= average velocity of the gas stream (ft/sec)
A_s	= area of duct or stack (ft^2)
60	= conversion factor (min/hr)

Volumetric Flow of Gas Stream - Standard Conditions

$$Q_{std} = \frac{17.64(Q_a)\left(P_b + \frac{P_s}{13.6}\right)}{(T_s + 460)}$$

$$Q_{std} = \frac{17.64(11{,}319)\left(29.50 + \frac{0.3}{13.6}\right)}{(175 + 460)}$$

$$Q_{std} = 9{,}290 scfm$$

where:

Q_{std}	= volumetric flow rate of the gas stream at standard conditions (scfm)
Q_a	= volumetric flow rate of the gas stream at actual conditions (acfm)
T_s	= average stack temperature (^oF)
P_b	= barometric pressure (in. Hg)
P_s	= static pressure of gas stream (in. H_2O)
13.6	= conversion factor (in. H_2O/in. Hg)
17.64	= ratio of standard temperature over standard pressure (^oR/in. Hg)
460	= conversion (^oF to ^oR)

Volumetric Flow of Gas Stream - Standard Conditions - Dry Basis

$$Q_{dstd} = Q_{std}\left(1 - \frac{B_{ws}}{100}\right)$$

$$Q_{dstd} = 9{,}290\left(1 - \frac{45.9}{100}\right)$$

$$Q_{dstd} = 5{,}032 dscfm$$

where:

Q_{dstd}	= volumetric flow rate of the gas stream at standard conditions, on a dry basis (dscfm)
Q_{std}	= volumetric flow rate of the gas stream at standard conditions (scfm)
B_{ws}	= moisture content of the gas stream (%)
100	= conversion factor

Area of Nozzle

$$A_n = \pi \times \left(\frac{d_n}{2 \times 12}\right)^2$$

$$A_n = \pi \times \left(\frac{0.272}{2 \times 12}\right)^2$$

$$A_n = 0.000404 ft^2$$

where:

A_n	= area of nozzle (ft^2)
d_n	= diameter of nozzle (in)
12	= conversion factor (in/ft)
2	= conversion factor (diameter to radius)

Percent Isokinetic

$$I = \frac{0.0945(T_s + 460)(V_{m(std)})}{\left(P_b + \frac{P_s}{13.6}\right)(v_s)(A_n)(\Theta)\left(1 - \frac{B_{ws}}{100}\right)}$$

$$I = \frac{0.0945(175 + 460)(72.66)}{\left(29.50 + \frac{0.3}{13.6}\right)(60.1)(4.04 \times 10^{-4})(120)\left(1 - \frac{45.9}{100}\right)}$$

$$I = 93.7\%$$

where:

I	= percent isokinetic (%)
T_s	= average stack temperature (^oF)
$V_{m(std)}$	= volume of gas collected at standard temperature and pressure (scf)
P_b	= barometric pressure (in. Hg)
P_s	= static pressure of gas stream (in. H_2O)
V_s	= average velocity of the gas stream (ft/sec)
A_n	= cross sectional area of nozzle (ft^2)
Θ	= sample time (min)
B_{ws}	= moisture content of the gas stream (%)
0.0945	= constant (^0R/in. Hg)
460	= conversion (^oF to ^oR)
13.6	= conversion factor (in. H_2O/in Hg)
100	= conversion factor

Total Particulate Catch

$$M_n = m_f + m_a$$

$$M_n = 0.0322 + 0.0022$$

$$M_n = 0.0343g$$

where:

M_n	= total particulate catch (g)
m_f	= particulate on filter (g)
m_a	= particulate in wash (g)

Total Particulate Concentration, grains/dscf

$$C = \frac{(M_n)(15.43)}{V_{m,std}}$$

$$C = \frac{(0.0343)(15.43)}{72.66}$$

$$C = 0.00729 grains / dscf$$

where:

C	= particulate concentration (grains/dscf)
M_n	= total particulate catch (g)
$V_{m(std)}$	= volume of gas collected at standard temperature and pressure (scf)
15.43	= conversion factor (grains/g)

Total Particulate Concentration @ 7% O_2

$$C_{7\%O_2} = (C)\frac{(20.9 - 7.0)}{(20.9 - \%O_2)}$$

$$C_{7\%O_2} = (0.00729)\frac{(20.9 - 7.0)}{(20.9 - 9.61)}$$

$$C_{7\%O_2} = 0.00898 grains / dscf @ 7\%O_2$$

where:

$C_{7\%\ O2}$	= particulate concentration (grains/dscf @ 7% O_2)
C	= particulate concentration (grains/dscf)
$\%O_2$	= oxygen content of the dry gas stream (%)
20.9	= oxygen content of ambient air (%)
7.0	= oxygen content for correction (%)

Total Particulate Emission Rate

$$E_{lb/hr} = \frac{(M_n)(Q_{dstd})(60)}{(V_{m,std})(453.6)}$$

$$E_{lb/hr} = \frac{(0.0343)(5{,}032)(60)}{(72.66)(453.6)}$$

$$E_{lb/hr} = 0.315 lb/hr$$

where:

$E_{lb/hr}$	= particulate emission rate (lb/hr)
M_n	= total particulate catch (g)
$V_{m(std)}$	= volume of dry gas collected at standard temperature and pressure (scf)
Q_{dstd}	= volumetric flow rate of the gas stream at standard conditions, on a dry basis (dscfm)
60	= conversion factor (min/hr)
453.6	= conversion factor (g/lb)

Total Hydrocarbon Concentration, Corrected for Analyzer Drift, as Propane[3]

$$C_w = \left(C - \left(\frac{c_{0i} + c_{0f}}{2}\right)\right)\left(\frac{c_a}{\left(\frac{c_{si} + c_{sf}}{2}\right) - \left(\frac{c_{0i} + c_{0f}}{2}\right)}\right)$$

$$C_w = \left(0.1 - \left(\frac{0.0 + 0.0}{2}\right)\right)\left(\frac{49.82}{\left(\frac{49.7 + 49.6}{2}\right) - \left(\frac{0.0 + 0.0}{2}\right)}\right)$$

$$C_w =< 0.5 ppmwv$$

where:

C_w	= total hydrocarbon concentration, corrected for analyzer drift (ppmwv)
C	= total hydrocarbon concentration (ppmwv)
C_{0i}	= initial zero calibration value (ppmwv)
C_{0f}	= final zero calibration value (ppmwv)
C_{si}	= initial span calibration value (ppmwv)
C_{sf}	= initial span calibration value (ppmwv)
C_a	= actual span gas value (ppmv)

[3] The calculations for carbon dioxide and oxygen were performed in a similar manner.

EPA Methods 1-4 Parameters	Run 1	Run 2	Run 3
Date	3/28/06	3/29/06	3/30/06
Start Time	12:10	11:15	11:50
Stop Time	14:22	13:23	16:50
Area of Sample Location, A_s (ft^2)	3.14	3.14	3.14
Velocity Pressure, $\Delta P^{1/2}$ avg (in. $H_2O^{1/2}$)	0.887	0.673	0.707
Barometric Pressure, P_b (Inches Hg)	29.50	29.35	29.60
Static Pressure, P_s (Inches H_2O)	0.3	0.2	0.2
Pitot Coefficient, C_p	0.84	0.84	0.84
Sample Location Temperature, T_s (^oF)	175	174	174
Volume Metered, V_m (ft^3)	76.16	78.48	84.21
Meter Temperature, T_m (^oF)	82.7	79.3	92.2
Average Sample Pressure, ΔH_{avg} (in. H_2O)	1.37	1.48	1.66
Gas Meter Correction Factor, Y_d	0.9916	0.9916	0.9916
Carbon Dioxide (% dry)	6.29	7.04	7.05
Oxygen (% dry)	9.61	8.88	9.34
Weight of Water Collected, V_{wc} (g)	1373.0	1371.6	1451.3
Silica Gel Net Weight, V_{wsg} (g)	13.8	13.7	15.2
Area of Nozzle, A_n (ft^2)	0.000404	0.000531	0.000531
Run Time, θ (minutes)	120	120	120

EPA METHODS 1-4 RESULTS			
Stack Pressure Absolute (inches Hg)	29.52	29.36	29.61
Volume Metered Standard, $V_{m(std)}$ (ft^3)	72.66	74.99	79.29
Volume of Water Vapor, $V_{w(std)}$ (ft^3)	65.39	65.32	69.15
Percent Moisture, B_{ws} (%)	47.4	46.6	46.6
Moisture Saturation Point, B_{wsat} (%)	45.9	45.1	44.8
Dry Molecular Weight, M_d (lbs/lb mole)	29.39	29.48	29.50
Wet Molecular Weight, M_s (lbs/lb mole)	24.17	24.30	24.35
Gas Velocity, V_s (ft/sec)	60.1	45.5	47.6
Average Flowrate, Q_a (acfm)	11,319	8,585	8,971
Standard Flowrate, Q_{std} (scfm)	9,290	7,018	7,396
Dry Standard Flowrate, Q_{dstd} (dscfm)	5,032	3,854	4,087
Isokinetics (%)	93.7	96.0	95.7

EPA Method 5 Parameters		Run 1	Run 2	Run 3	Blank
Filter	*Filter ID*	*10370*	*10399*	*10400*	*10401*
Filter tare weight (g)	Trial 1	0.3681	0.4623	0.4603	0.4604
	Trial 2	0.3681	0.4623	0.4602	0.4606
	Average	0.3681	0.4623	0.4603	0.4605
Filter final weight (g)	Trial 1	0.4005	0.4818	0.4830	0.4600
	Trial 2	0.4000	0.4815	0.4835	0.4604
	Average	0.4003	0.4817	0.4833	0.4602
Filter net weight, m_f (g)		**0.0322**	**0.0194**	**0.0230**	**0.0000**
Front-Half Wash	*Beaker ID*	*207*	*131*	*213*	*201*
Beaker tare weight (g)	Trial 1	84.7017	82.2970	83.9763	85.4495
	Trial 2	84.7022	82.2970	83.9760	85.4490
	Average	84.7020	82.2970	83.9762	85.4493
Beaker final weight (g)	Trial 1	84.7044	82.2968	83.9869	85.4483
	Trial 2	84.7039	82.2965	83.9866	85.4480
	Average	84.7042	82.2967	83.9868	85.4482
Volume of Wash, V_{aw} (ml)		195	145	110	180
Beaker net weight, m_a (g)		**0.0022**	**0.0000**	**0.0106**	**0.0000**

EPA METHOD 5 RESULTS	Run 1	Run 2	Run 3
Front-Half Particulate			
Filter (g)	0.0322	0.0194	0.0230
Front-Half Wash (g)	0.0022	0.0000	0.0106
Front-Half Particulate (g)	0.0343	0.0194	0.0336
Concentration (grains/dscf)	0.00729	0.00398	0.00654
Concentration (grains/dscf @ 7% O2)	0.00898	0.00460	0.00786
Emission Rate (lb/hr)	0.315	0.132	0.229

CARBON DIOXIDE

Analyzer Values	Actual	Initial	Bias	Run 1A	Run 1B
Date		3/28/06	3/28/06	3/28/06	3/28/06
Start Time		7:22	7:33	12:10	14:44
Stop Time		7:31	7:44	14:25	16:44
Run Time (Minutes)				136	120
Concentration, C (%)				6.39	6.65
Zero Cal Gas, C_0 (%)	0.0	0.0	0.0	0.0	0.1
Low Cal Gas (%)	6.989	7.02			
High Cal Gas (%)	14.0	14.0			
Span Value (%)	15.0				
Bias/Drift Check Gas, C_s (%)	6.989		7.09	7.11	7.13
RESULTS					
Zero Error (%)	2 % of Span	0.1	0.0	0.3	0.3
Low Error (%)		0.2			
High Error (%)		0.3			
Upscale Error (%)			0.7	0.8	1.0
Zero Bias (%)	5 % of Span		-0.1	0.3	0.3
Upscale Bias (%)			0.5	0.6	0.8
Zero Drift (%)	3 % of Span			0.3	0.0
Upscale Drift (%)				0.1	0.2
Concentration Corrected for Drift, C_d (%)				**6.29**	**6.52**
Run 1A and 1B Average				**6.40**	

OXYGEN

Analyzer Values	Actual	Initial	Bias	Run 1A	Run 1B
Date		3/28/06	3/28/06	3/28/06	3/28/06
Start Time		7:22	7:33	12:10	14:44
Stop Time		7:31	7:44	14:25	16:44
Run Time (Minutes)				136	120
Concentration, C (%)				9.50	9.85
Zero Cal Gas, C_0 (%)	0.0	0.0	0.1	0.1	0.1
Low Cal Gas (%)	7.011	6.96			
High Cal Gas (%)	14.03	13.9			
Span Value (%)	15.0				
Bias/Drift Check Gas, C_s (%)	14.03		13.9	13.8	13.8
RESULTS					
Zero Error (%)	2 % of Span	0.0	0.5	0.4	0.4
Low Error (%)		-0.4			
High Error (%)		-0.7			
Upscale Error (%)			-1.2	-1.3	-1.6
Zero Bias (%)	5 % of Span		0.5	0.4	0.4
Upscale Bias (%)			-0.5	-0.6	-0.8
Zero Drift (%)	3 % of Span			-0.1	0.0
Upscale Drift (%)				-0.1	-0.2
Concentration Corrected for Drift, C_d (%)				**9.61**	**9.99**
Run 1A and 1B Average				**9.79**	

TOTAL HYDROCARBONS, THC-1

Analyzer Values	**Actual**	**Initial**	**Bias**	**Run 1A**	**Run 1B**
Date		3/28/06	NA	3/28/06	3/28/06
Start Time		7:33	NA	12:10	14:44
Stop Time		7:44	NA	14:25	16:44
Run Time (Minutes)				136	120
Concentration, C (ppm)				0.1	-0.1
Zero Cal Gas, C_0 (ppm)	0.0	0.0	NA	0.0	0.0
Low Cal Gas (ppm)	28.86	28.8			
Mid Cal Gas (ppm)	49.82	49.7			
High Cal Gas (ppm)	79.91	79.8			
Span Value (ppm)	100				
Bias/Drift Check Gas, C_s (ppm)	49.82		NA	49.6	47.9
RESULTS					
Zero Error (%)	5 % of Actual	0.0	NA	0.0	0.0
Low Error (%)		0.0			
Mid Error (%)		-0.1			
High Error (%)		-0.1			
Upscale Error (%)			NA	-0.3	-2.0
Zero Drift (%)	3 % of Span			0.0	-0.1
Upscale Drift (%)				-0.2	-1.7
Concentration Corrected for Drift, C_w (ppm)				**0.1**	**-0.1**
Run 1A and 1B Average				**0.0**	

CARBON DIOXIDE

Analyzer Values	**Actual**	**Initial**	**Bias**	**Run 2A**	**Run 2B**
Date		3/29/06	3/29/06	3/29/06	3/29/06
Start Time		10:14	10:25	11:15	13:47
Stop Time		10:25	10:34	13:30	17:00
Run Time (Minutes)				135	193
Concentration, C (%)				7.10	7.29
Zero Cal Gas, C_0 (%)	0.0	0.0	0.0	0.1	0.0
Low Cal Gas (%)	6.989	7.00			
High Cal Gas (%)	14.0	14.0			
Span Value (%)	15.0				
Bias/Drift Check Gas, C_s (%)	6.989		7.03	7.07	7.02
RESULTS					
Zero Error (%)	2 % of Span	0.0	0.0	0.7	0.0
Low Error (%)		0.1			
High Error (%)		0.2			
Upscale Error (%)			0.3	0.6	0.2
Zero Bias (%)	5 % of Span		0.0	0.7	0.0
Upscale Bias (%)			0.2	0.5	0.1
Zero Drift (%)	3 % of Span			0.7	-0.7
Upscale Drift (%)				0.3	-0.4
Concentration Corrected for Drift, C_d (%)				**7.04**	**7.24**
Run 2A and 2B Average				**7.15**	

OXYGEN

Analyzer Values	Actual	Initial	Bias	Run 2A	Run 2B
Date		3/29/06	3/29/06	3/29/06	3/29/06
Start Time		10:14	10:25	11:17	13:47
Stop Time		10:25	10:34	13:30	17:00
Run Time (Minutes)				133	193
Concentration, C (%)				8.80	8.89
Zero Cal Gas, C_0 (%)	0.0	0.0	0.1	0.1	0.1
Low Cal Gas (%)	7.011	7.01			
High Cal Gas (%)	14.03	14.0			
Span Value (%)	15.0				
Bias/Drift Check Gas, C_s (%)	14.03		13.9	13.8	13.9
RESULTS					
Zero Error (%)	2 % of Span	0.0	0.4	0.5	0.6
Low Error (%)		0.0			
High Error (%)		-0.4			
Upscale Error (%)			-0.8	-1.3	-1.1
Zero Bias (%)	5 % of Span		0.4	0.5	0.6
Upscale Bias (%)			-0.5	-0.9	-0.7
Zero Drift (%)	3 % of Span			0.1	0.1
Upscale Drift (%)				-0.4	0.1
Concentration Corrected for Drift, C_d (%)				**8.88**	**8.98**
Run 2A and 2B Average				**8.94**	

TOTAL HYDROCARBONS, THC-1

Analyzer Values	**Actual**	**Initial**	**Bias**	**Run 2A**	**Run 2B**
Date		3/29/06	NA	3/29/06	3/29/06
Start Time		10:25	NA	11:17	13:47
Stop Time		10:34	NA	13:30	17:00
Run Time (Minutes)				133	193
Concentration, C (ppm)				0.0	0.0
Zero Cal Gas, C_0 (ppm)	0.0	0.0	NA	0.0	0.1
Low Cal Gas (ppm)	28.86	28.8			
Mid Cal Gas (ppm)	49.82	49.5			
High Cal Gas (ppm)	79.91	79.7			
Span Value (ppm)	100				
Bias/Drift Check Gas, C_s (ppm)	49.82		NA	48.6	48.3
RESULTS					
Zero Error (%)	5 % of Actual	0.0	NA	0.0	0.1
Low Error (%)		0.0			
Mid Error (%)		-0.3			
High Error (%)		-0.2			
Upscale Error (%)			NA	-1.2	-1.5
Zero Drift (%)	3 % of Span			0.0	0.0
Upscale Drift (%)				-0.9	-0.3
Concentration Corrected for Drift, C_w (ppm)				**0.0**	**0.0**
Run 2A and 2B Average				**0.0**	

CARBON DIOXIDE

Analyzer Values	Actual	Initial	Bias	Run 3A	Run 3B
Date		3/30/06	3/30/06	3/30/06	3/30/06
Start Time		11:28	11:38	11:50	16:51
Stop Time		11:37	11:46	16:50	19:16
Run Time (Minutes)				300	145
Concentration, C (%)				7.01	7.07
Zero Cal Gas, C_0 (%)	0.0	0.0	0.0	NA	0.1
Low Cal Gas (%)	6.989	6.89			
High Cal Gas (%)	14.0	14.0			
Span Value (%)	15.0				
Bias/Drift Check Gas, C_s (%)	6.989		6.98	NA	6.92
RESULTS					
Zero Error (%)	2 % of Span	0.0	0.0	NA	1.0
Low Error (%)		-0.7			
High Error (%)		-0.2			
Upscale Error (%)			-0.1	NA	-0.5
Zero Bias (%)	5 % of Span		0.0	NA	1.0
Upscale Bias (%)			0.6	NA	0.2
Zero Drift (%)	3 % of Span			NA	1.0
Upscale Drift (%)				NA	-0.4
Concentration Corrected for Drift, C_d (%)				**7.05**	**7.12**
Run 3A and 3B Average				**7.07**	

OXYGEN

Analyzer Values	Actual	Initial	Bias	Run 3A	Run 3B
Date		3/30/06	3/30/06	3/30/06	3/30/06
Start Time		11:28	11:38	11:50	16:51
Stop Time		11:37	11:46	16:50	19:16
Run Time (Minutes)				300	145
Concentration, C (%)				9.31	9.10
Zero Cal Gas, C_0 (%)	0.0	0.0	0.1	NA	0.1
Low Cal Gas (%)	7.011	7.03			
High Cal Gas (%)	14.03	14.0			
Span Value (%)	15.0				
Bias/Drift Check Gas, C_s (%)	14.03		14.0	NA	13.9
RESULTS					
Zero Error (%)	2 % of Span	0.2	0.4	NA	0.7
Low Error (%)		0.1			
High Error (%)		-0.1			
Upscale Error (%)			-0.4	NA	-0.8
Zero Bias (%)	5 % of Span		0.2	NA	0.5
Upscale Bias (%)			-0.3	NA	-0.7
Zero Drift (%)	3 % of Span			NA	0.3
Upscale Drift (%)				NA	-0.4
Concentration Corrected for Drift, C_d (%)				**9.34**	**9.13**
Run 3A and 3B Average				**9.27**	

TOTAL HYDROCARBONS, THC-1

Analyzer Values	Actual	Initial	Bias	Run 3A	Run 3B
Date		3/30/06	NA	3/30/06	3/30/06
Start Time		11:38	NA	11:50	16:51
Stop Time		11:46	NA	16:50	19:16
Run Time (Minutes)				300	145
Concentration, C (ppm)				0.0	0.0
Zero Cal Gas, C_0 (ppm)	0.0	0.0	NA	NA	0.1
Low Cal Gas (ppm)	28.86	28.9			
Mid Cal Gas (ppm)	49.82	49.7			
High Cal Gas (ppm)	79.91	79.8			
Span Value (ppm)	100				
Bias/Drift Check Gas, C_s (ppm)	49.82		NA	NA	49.3

RESULTS					
Zero Error (%)	5 % of Actual	0.0	NA	NA	0.1
Low Error (%)		0.0			
Mid Error (%)		-0.2			
High Error (%)		-0.1			
Upscale Error (%)			NA	NA	-0.6
Zero Drift (%)	3 % of Span			NA	0.0
Upscale Drift (%)				NA	-0.4
Concentration Corrected for Drift, C_w (ppm)				**0.0**	**0.0**
Run 3A and 3B Average				**0.0**	

EPA Methods 1-4 Parameters	Run 1	Run 2	Run 3
Date	3/28/06	3/29/06	3/30/06
Start Time	12:10	11:15	11:50
Stop Time	14:22	13:23	16:50
Area of Sample Location, A_s (ft^2)	3.14	3.14	3.14
Velocity Pressure, $\Delta P^{1/2}$ avg (in. $H_2O^{1/2}$)	0.881	0.674	0.701
Barometric Pressure, P_b (Inches Hg)	29.50	29.35	29.60
Static Pressure, P_s (Inches H_2O)	0.3	0.2	0.2
Pitot Coefficient, C_p	0.84	0.84	0.84
Sample Location Temperature, T_s (°F)	176	175	175
Volume Metered, V_m (ft^3)	80.41	82.95	87.31
Meter Temperature, T_m (°F)	86.4	82.7	93.6
Average Sample Pressure, ΔH_{avg} (in. H_2O)	1.27	1.36	1.49
Gas Meter Correction Factor, Y_d	0.9996	0.9996	0.9996
Carbon Dioxide (% dry)	6.29	7.04	7.05
Oxygen (% dry)	9.61	8.88	9.34
Weight of Water Collected, V_{wc} (g)	1386.2	1372.3	1450.1
Silica Gel Net Weight, V_{wsg} (g)	10.1	9.5	13.0
Area of Nozzle, A_n (ft^2)	0.000412	0.000524	0.000524
Run Time, θ (minutes)	120	120	120

EPA METHODS 1-4 RESULTS			
Stack Pressure Absolute (inches Hg)	29.52	29.36	29.61
Volume Metered Standard, $V_{m(std)}$ (ft^3)	76.79	79.37	82.61
Volume of Water Vapor, $V_{w(std)}$ (ft^3)	65.84	65.15	68.99
Percent Moisture, B_{ws} (%)	46.2	45.1	45.5
Moisture Saturation Point, B_{wsat} (%)	47.0	46.2	46.0
Dry Molecular Weight, M_d (lbs/lb mole)	29.39	29.48	29.50
Wet Molecular Weight, M_s (lbs/lb mole)	24.13	24.31	24.27
Gas Velocity, V_s (ft/sec)	59.7	45.6	47.3
Average Flowrate, Q_a (acfm)	11,259	8,598	8,916
Standard Flowrate, Q_{std} (scfm)	9,225	7,018	7,337
Dry Standard Flowrate, Q_{dstd} (dscfm)	4,969	3,855	4,000
Isokinetics (%)	98.2	102.9	103.2

EPA Methods 1-4 Parameters	Run 1	Run 2	Run 3
Date	3/28/2006	3/29/2006	3/30/2006
Start Time	12:10	11:15	11:50
Stop Time	16:39	15:28	18:57
Area of Sample Location, A_s (ft^2)	3.14	3.14	3.14
Velocity Pressure, $\Delta P^{1/2}$ avg (in. $H_2O^{1/2}$)	0.846	0.674	0.699
Barometric Pressure, P_b (Inches Hg)	29.50	29.35	29.60
Static Pressure, P_s (Inches H_2O)	0.3	0.2	0.2
Pitot Coefficient, C_p	0.84	0.84	0.84
Sample Location Temperature, T_s (^oF)	174	173	173
Volume Metered, V_m (ft^3)	129.27	122.66	131.14
Meter Temperature, T_m (^oF)	89.9	83.1	87.7
Average Sample Pressure, ΔH_{avg} (in. H_2O)	0.886	0.824	0.935
Gas Meter Correction Factor, Y_d	1.0032	1.0032	1.0032
Carbon Dioxide (% dry)	6.40	7.15	7.07
Oxygen (% dry)	9.79	8.94	9.27
Weight of Water Collected, V_{wc} (g)	2113.1	1866.0	2112.7
Silica Gel Net Weight, V_{wsg} (g)	16.2	190.2	23.7
Area of Nozzle, A_n (ft^2)	0.000341	0.000412	0.000412
Run Time, θ (minutes)	240	240	240

EPA METHODS 1-4 RESULTS			
Stack Pressure Absolute (inches Hg)	29.52	29.36	29.61
Volume Metered Standard, $V_{m(std)}$ (ft^3)	122.99	117.54	125.71
Volume of Water Vapor, $V_{w(std)}$ (ft^3)	100.40	96.95	100.73
Percent Moisture, B_{ws} (%)	44.9	45.2	44.5
Moisture Saturation Point, B_{wsat} (%)	45.7	44.7	44.2
Dry Molecular Weight, M_d (lbs/lb mole)	29.42	29.50	29.50
Wet Molecular Weight, M_s (lbs/lb mole)	24.29	24.36	24.42
Gas Velocity, V_s (ft/sec)	57.1	45.5	47.0
Average Flowrate, Q_a (acfm)	10,770	8,583	8,852
Standard Flowrate, Q_{std} (scfm)	8,841	7,021	7,305
Dry Standard Flowrate, Q_{dstd} (dscfm)	4,870	3,881	4,078
Isokinetics (%)	97.0	96.2	97.9

EPA Methods 1-4 Parameters	Run 1	Run 2	Run 3
Date	3/28/2006	3/29/2006	3/30/2006
Start Time	12:25	11:15	11:50
Stop Time	16:44	15:28	18:56
Area of Sample Location, A_s (ft^2)	3.14	3.14	3.14
Velocity Pressure, $\Delta P^{1/2}$ avg (in. $H_2O^{1/2}$)	0.896	0.660	0.680
Barometric Pressure, P_b (Inches Hg)	29.50	29.35	29.60
Static Pressure, P_s (Inches H_2O)	0.3	0.2	0.2
Pitot Coefficient, C_p	0.84	0.84	0.84
Sample Location Temperature, T_s (°F)	175	174	175
Volume Metered, V_m (ft^3)	134.10	129.40	125.37
Meter Temperature, T_m (°F)	86.0	82.9	89.4
Average Sample Pressure, ΔH_{avg} (in. H_2O)	0.958	0.785	0.829
Gas Meter Correction Factor, Y_d	1.0094	1.0094	1.0094
Carbon Dioxide (% dry)	6.40	7.15	7.07
Oxygen (% dry)	9.79	8.94	9.27
Weight of Water Collected, V_{wc} (g)	2295.8	2007.1	2156.6
Silica Gel Net Weight, V_{wsg} (g)	17.3	27.6	21.5
Area of Nozzle, A_n (ft^2)	0.000338	0.000404	0.000404
Run Time, θ (minutes)	240	240	240

EPA METHODS 1-4 RESULTS			
Stack Pressure Absolute (inches Hg)	29.52	29.36	29.61
Volume Metered Standard, $V_{m(std)}$ (ft^3)	129.31	124.81	120.52
Volume of Water Vapor, $V_{w(std)}$ (ft^3)	109.06	95.94	102.70
Percent Moisture, B_{ws} (%)	45.8	43.5	46.0
Moisture Saturation Point, B_{wsat} (%)	46.8	45.1	46.3
Dry Molecular Weight, M_d (lbs/lb mole)	29.42	29.50	29.50
Wet Molecular Weight, M_s (lbs/lb mole)	24.19	24.50	24.21
Gas Velocity, V_s (ft/sec)	60.7	44.4	46.0
Average Flowrate, Q_a (acfm)	11,439	8,377	8,667
Standard Flowrate, Q_{std} (scfm)	9,374	6,849	7,129
Dry Standard Flowrate, Q_{dstd} (dscfm)	5,087	3,874	3,851
Isokinetics (%)	98.4	104.6	101.6

EPA Methods 1-4 Parameters	Run 1	Run 2	Run 3
Date	3/28/2006	3/29/2006	3/30/2006
Start Time	12:10	12:04	12:15
Stop Time	16:22	17:00	19:16
Area of Sample Location, A_s (ft^2)	3.14	3.14	3.14
Velocity Pressure, $\Delta P^{1/2}$ avg (in. $H_2O^{1/2}$)	0.892	0.675	0.701
Barometric Pressure, P_b (Inches Hg)	29.50	29.35	29.60
Static Pressure, P_s (Inches H_2O)	0.3	0.2	0.2
Pitot Coefficient, C_p	0.84	0.84	0.84
Sample Location Temperature, T_s (°F)	175	174	175
Volume Metered, V_m (ft^3)	142.30	126.39	132.67
Meter Temperature, T_m (°F)	88.9	81.8	92.0
Average Sample Pressure, ΔH_{avg} (in. H_2O)	1.07	0.868	0.940
Gas Meter Correction Factor, Y_d	0.9939	0.9939	0.9939
Carbon Dioxide (% dry)	6.40	7.15	7.07
Oxygen (% dry)	9.79	8.94	9.27
Weight of Water Collected, V_{wc} (g)	2364.1	2072.0	2118.8
Silica Gel Net Weight, V_{wsg} (g)	20.8	21.9	6.6
Area of Nozzle, A_n (ft^2)	0.000355	0.000412	0.000412
Run Time, θ (minutes)	240	240	240

EPA METHODS 1-4 RESULTS			
Stack Pressure Absolute (inches Hg)	29.52	29.36	29.61
Volume Metered Standard, $V_{m(std)}$ (ft^3)	134.44	120.30	125.03
Volume of Water Vapor, $V_{w(std)}$ (ft^3)	112.45	98.73	100.21
Percent Moisture, B_{ws} (%)	45.5	45.1	44.5
Moisture Saturation Point, B_{wsat} (%)	45.9	45.7	46.0
Dry Molecular Weight, M_d (lbs/lb mole)	29.42	29.50	29.50
Wet Molecular Weight, M_s (lbs/lb mole)	24.22	24.32	24.38
Gas Velocity, V_s (ft/sec)	60.3	45.7	47.2
Average Flowrate, Q_a (acfm)	11,371	8,606	8,894
Standard Flowrate, Q_{std} (scfm)	9,331	7,030	7,319
Dry Standard Flowrate, Q_{dstd} (dscfm)	5,083	3,863	4,064
Isokinetics (%)	97.7	98.9	97.7

Focus | **Method 0010-D Parameters** | **Project No. 2325**

EPA Methods 1-4 Parameters	Run 1	Run 2	Run 3
Date	3/28/2006	3/29/2006	3/30/2006
Start Time	12:10	11:49	12:15
Stop Time	16:22	17:00	19:16
Area of Sample Location, A_s (ft^2)	3.14	3.14	3.14
Velocity Pressure, $\Delta P^{1/2}$ avg (in. $H_2O^{1/2}$)	0.922	0.653	0.697
Barometric Pressure, P_b (Inches Hg)	29.50	29.35	29.60
Static Pressure, P_s (Inches H_2O)	0.3	0.2	0.2
Pitot Coefficient, C_p	0.84	0.84	0.84
Sample Location Temperature, T_s (^oF)	176	175	175
Volume Metered, V_m (ft^3)	146.51	124.52	132.53
Meter Temperature, T_m (^oF)	89.7	82.4	90.2
Average Sample Pressure, ΔH_{avg} (in. H_2O)	1.09	0.770	0.874
Gas Meter Correction Factor, Y_d	1.0011	1.0011	1.0011
Carbon Dioxide (% dry)	6.40	7.15	7.07
Oxygen (% dry)	9.79	8.94	9.27
Weight of Water Collected, V_{wc} (g)	2413.3	1994.5	2124.4
Silica Gel Net Weight, V_{wsg} (g)	18.3	22.1	22.9
Area of Nozzle, A_n (ft^2)	0.000341	0.000409	0.000409
Run Time, θ (minutes)	240	240	240

EPA METHODS 1-4 RESULTS			
Stack Pressure Absolute (inches Hg)	29.52	29.36	29.61
Volume Metered Standard, $V_{m(std)}$ (ft^3)	139.21	119.22	126.18
Volume of Water Vapor, $V_{w(std)}$ (ft^3)	114.65	95.08	101.25
Percent Moisture, B_{ws} (%)	45.2	44.4	44.5
Moisture Saturation Point, B_{wsat} (%)	47.1	46.4	46.2
Dry Molecular Weight, M_d (lbs/lb mole)	29.42	29.50	29.50
Wet Molecular Weight, M_s (lbs/lb mole)	24.26	24.40	24.38
Gas Velocity, V_s (ft/sec)	62.4	44.1	47.0
Average Flowrate, Q_a (acfm)	11,764	8,322	8,852
Standard Flowrate, Q_{std} (scfm)	9,637	6,791	7,282
Dry Standard Flowrate, Q_{dstd} (dscfm)	5,287	3,779	4,042
Isokinetics (%)	101.2	100.9	99.9

Parameters	Run 1A	Run 1B	Run 1C	Run 1D
Date	3/28/06	3/28/06	3/28/06	3/28/06
Start Time	12:10	13:04	14:09	15:04
Stop Time	12:50	13:44	14:49	15:44
Barometric Pressure, P_b (Inches Hg)	29.50	29.50	29.50	29.50
Volume Metered, V_m (l)	20.81	20.70	19.93	19.85
Meter Temperature, T_m (°F)	93.9	94.6	90.3	87.4
Average Sample Pressure, ΔH_{avg} (in. H_2O)	1.18	1.20	1.20	1.20
Gas Meter Correction Factor, Y_d	1.0020	1.0020	1.0020	1.0020
Run Time, θ (minutes)	40	40	40	40
RESULTS				
Volume Metered Standard, $V_{m(std)}$ (l)	19.65	19.52	18.94	18.96

Parameters	Run 2A	Run 2B	Run 2C	Run 2D
Date	3/29/06	3/29/06	3/29/06	3/29/06
Start Time	11:15	12:20	13:56	14:57
Stop Time	11:55	13:00	14:36	15:37
Barometric Pressure, P_b (Inches Hg)	29.35	29.35	29.35	29.35
Volume Metered, V_m (l)	20.13	21.06	20.12	20.22
Meter Temperature, T_m (°F)	78.6	81.9	80.4	83.2
Average Sample Pressure, ΔH_{avg} (in. H_2O)	1.20	1.19	1.18	1.20
Gas Meter Correction Factor, Y_d	1.0020	1.0020	1.0020	1.0020
Run Time, θ (minutes)	40	40	40	40
RESULTS				
Volume Metered Standard, $V_{m(std)}$ (l)	19.45	20.22	19.37	19.37

Parameters	Run 3A	Run 3B	Run 3C	Run 3D
Date	3/30/06	3/30/06	3/30/06	3/30/06
Start Time	11:50	15:30	16:26	17:24
Stop Time	12:30	16:10	17:06	18:04
Barometric Pressure, P_b (Inches Hg)	29.60	29.60	29.60	29.60
Volume Metered, V_m (l)	20.90	19.33	19.17	19.35
Meter Temperature, T_m (°F)	85.1	89.6	89.6	90.4
Average Sample Pressure, ΔH_{avg} (in. H_2O)	1.18	1.18	1.15	1.20
Gas Meter Correction Factor, Y_d	1.0020	1.0020	1.0020	1.0020
Run Time, θ (minutes)	40	40	40	40
RESULTS				
Volume Metered Standard, $V_{m(std)}$ (l)	20.12	18.45	18.30	18.45

Method 0040
Parameters

Parameters	Run 1A	Run 1B
Date	3/28/2006	3/28/2006
Start Time	14:40	15:25
Stop Time	15:20	16:05
Barometric Pressure, P_b (Inches Hg)	29.50	29.50
Volume Metered, V_m (l)	14.01	8.30
Meter Temperature, T_m (°F)	78.3	76.4
Average Sample Pressure, ΔH_{avg} (in. H_2O)	0.00	0.00
Gas Meter Correction Factor, Y_d	0.9947	0.9947
Run Time, θ (minutes)	40	40
RESULTS		
Volume Metered Standard, $V_{m(std)}$ (l)	13.47	8.01

Method 0040
Parameters

Parameters	Run 2A	Run 2B
Date	3/29/2006	3/29/2006
Start Time	12:36	13:57
Stop Time	13:16	14:37
Barometric Pressure, P_b (Inches Hg)	29.35	29.35
Volume Metered, V_m (l)	12.49	13.66
Meter Temperature, T_m (^oF)	71.2	72.1
Average Sample Pressure, ΔH_{avg} (in. H_2O)	0.00	0.00
Gas Meter Correction Factor, Y_d	0.9947	0.9947
Run Time, θ (minutes)	40	40
RESULTS		
Volume Metered Standard, $V_{m(std)}$ (l)	12.11	13.22

Method 0040
Parameters

Parameters	Run 3A	Run 3B
Date	3/30/2006	3/30/2006
Start Time	11:51	16:27
Stop Time	12:31	17:07
Barometric Pressure, P_b (Inches Hg)	29.60	29.60
Volume Metered, V_m (l)	15.41	15.66
Meter Temperature, T_m (°F)	71.8	78.5
Average Sample Pressure, ΔH_{avg} (in. H_2O)	0.00	0.00
Gas Meter Correction Factor, Y_d	0.9947	0.9947
Run Time, θ (minutes)	40	40
RESULTS		
Volume Metered Standard, $V_{m(std)}$ (l)	15.05	15.10

EPA Methods 1-4 Parameters	Run 1	Run 2	Run 3
Date	3/28/06	3/29/06	3/30/06
Start Time	12:10	11:15	11:50
Stop Time	14:25	13:24	16:50
Area of Sample Location, A_s (ft^2)	3.14	3.14	3.14
Velocity Pressure, $\Delta P^{1/2}$ avg (in. $H_2O^{1/2}$)	0.877	0.663	0.688
Barometric Pressure, P_b (Inches Hg)	29.50	29.35	29.60
Static Pressure, P_s (Inches H_2O)	0.3	0.3	0.3
Pitot Coefficient, C_p	0.84	0.84	0.84
Sample Location Temperature, T_s (°F)	176	175	176
Volume Metered, V_m (ft^3)	79.54	78.07	81.50
Meter Temperature, T_m (°F)	91.3	85.5	88.3
Average Sample Pressure, ΔH_{avg} (in. H_2O)	1.41	1.35	1.47
Gas Meter Correction Factor, Y_d	1.0092	1.0092	1.0092
Carbon Dioxide (% dry)	6.29	7.04	7.05
Oxygen (% dry)	9.61	8.88	9.34
Weight of Water Collected, V_{wc} (g)	897.7	1295.8	1201.9
Silica Gel Net Weight, V_{wsg} (g)	368.0	21.2	225.3
Area of Nozzle, A_n (ft^2)	0.000415	0.000514	0.000514
Run Time, θ (minutes)	120	120	120

EPA METHODS 1-4 RESULTS			
Stack Pressure Absolute (inches Hg)	29.52	29.37	29.62
Volume Metered Standard, $V_{m(std)}$ (ft^3)	76.04	75.03	78.62
Volume of Water Vapor, $V_{w(std)}$ (ft^3)	59.68	62.10	67.29
Percent Moisture, B_{ws} (%)	44.0	45.3	46.1
Moisture Saturation Point, B_{wsat} (%)	47.4	46.8	47.0
Dry Molecular Weight, M_d (lbs/lb mole)	29.39	29.48	29.50
Wet Molecular Weight, M_s (lbs/lb mole)	24.38	24.28	24.20
Gas Velocity, V_s (ft/sec)	59.2	44.9	46.6
Average Flowrate, Q_a (acfm)	11,162	8,466	8,775
Standard Flowrate, Q_{std} (scfm)	9,139	6,906	7,212
Dry Standard Flowrate, Q_{dstd} (dscfm)	5,122	3,780	3,888
Isokinetics (%)	93.6	101.1	103.1

Focus

Method 5/26A
Field Data Entry

Project No. 2325

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/28/06
Meter ID	M18
Y_d	0.9916
Pitot C_p	0.84

Nozzle Diameter (in)	0.272
Filter ID	10370
Train Type	Imp
Train ID	IB9
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.50
P_o (Inches H_2O)	0.3
Start Time	12:10
Stop Time	14:22

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	2010.6	937.1	1073.7
Impinger 2	927.4	666.1	261.3
Impinger 3	667.3	643.0	24.3
Impinger 4	626.8	623.7	5.1
Impinger 5	726.7	723.1	5.6
Impinger 6	680.2	677.2	3.0
Impinger 7			
Silica Gel	649.8	636.0	13.6
Weight of Water Collected, V_{wc} (g)			1,373.0
Silica Gel Net Weight, V_{wsg} (g)			13.8

Drsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	8.29	NA	9.61

Run 1

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure Δ P (in. H_2O)	Orifice Setting Δ H (in. H_2O)	Gas Sample Volume Initial (ft^3) 159.06	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root Δ P	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1B-1	5	0.73	1.3	162.13	160	67	65	0.854	58.1	2.910	96.6
1B-1	10	0.75	1.3	165.21	176	90	86	0.866	58.7	2.910	95.0
1B-2	15	0.67	1.2	166.21	175	93	66	0.819	55.5	2.825	97.5
1B-2	20	0.77	1.3	171.39	175	95	67	0.677	59.4	2.988	96.2
1B-3	25	0.70	1.2	174.39	175	89	87	0.837	56.7	2.833	95.7
1B-3	30	0.89	1.5	177.76	175	87	85	0.943	63.9	3.197	95.7
1B-4	35	0.81	1.4	180.99	175	85	84	0.900	61.0	3.072	96.4
1B-4	40	0.93	1.6	164.47	175	62	81	0.964	65.3	3.329	97.5
1B-5	45	0.80	1.4	187.70	174	82	80	0.884	60.5	3.091	97.6
1B-5	50	0.93	1.6	191.12	174	81	79	0.964	65.3	3.261	96.1
1B-6	55	0.83	1.4	194.41	174	82	78	0.911	61.7	3.155	97.6
1B-6	60	0.86	1.2	197.27	174	84	80	0.825	55.8	2.731	93.5
1A-1	65	0.68	1.2	200.26	174	77	78	0.825	55.8	2.898	99.2
1A-1	70	0.66	1.2	203.26	174	80	78	0.825	55.8	2.861	98.0
1A-2	75	0.85	1.5	206.51	174	80	76	0.922	62.4	3.123	95.6
1A-2	80	0.85	1.5	209.60	175	81	77	0.922	62.5	3.181	96.9
1A-3	85	0.89	1.5	213.12	174	80	77	0.943	63.9	3.193	95.6
1A-3	90	0.93	1.6	216.75	174	82	77	0.964	65.3	3.466	102.0
1A-4	95	0.66	1.5	219.87	175	65	78	0.938	63.6	2.984	89.9
1A-4	100	0.89	1.5	223.22	175	66	79	0.943	63.9	3.199	95.8
1A-5	105	0.91	1.6	226.68	174	86	80	0.954	64.6	3.301	97.7
1A-5	110	0.65	1.5	229.97	172	88	80	0.922	62.3	3.138	95.9
1A-6	115	0.59	1.0	232.74	173	85	80	0.768	52.0	2.841	97.0
1A-6	120	0.49	0.85	235.26	173	66	80	0.700	47.3	2.400	96.7

Less 0.04 for Leak Check

Totals and Averages

120	1.37	76.16	175	62.7	0.867	60.1	72.66	93.7

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/29/06
Meter ID	M18
Y_d	0.9916
Pitot C_p	0.64

Nozzle Diameter (in)	0.312
Filter ID	10399
Train Type	imp
Train ID	IB15
Duct Dimensions (in)	24.0
P_b (inches Hg)	29.35
P_s (inches H_2O)	0.2
Start Time	11:15
Stop Time	13:23

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	2034.9	959.5	1075.4
Impinger 2	856.5	648.9	209.6
Impinger 3	746.7	675.3	73.4
Impinger 4	462.1	473.1	9.0
Impinger 5	681.2	682.1	-0.9
Impinger 6	645.5	640.4	5.1
Impinger 7			
Silica Gel	664.0	650.3	13.7
Weight of Water Collected, V_{wc} (g)			1,371.6
Silica Gel Net Weight, V_{wsg} (g)			13.7

Orsat	$\%CD_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	7.04	NA	8.88

Run 2

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure Δ P (in. H_2O)	Orifice Setting Δ H (in. H_2O)	Gas Sample Volume Initial (ft^3) 243.68	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root Δ P	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1B-1	5	0.45	1.5	247.00	174	67	70	0.671	45.4	3.237	102.5
1B-1	10	0.45	1.5	250.09	174	69	71	0.671	45.4	3.004	95.2
1B-2	15	0.46	1.5	253.31	174	73	72	0.678	45.9	3.116	97.6
1B-2	20	0.46	1.5	256.61	174	77	73	0.676	45.9	3.179	99.6
1B-3	25	0.46	1.5	259.90	174	79	74	0.678	45.9	3.160	99.0
1B-3	30	0.47	1.5	263.21	175	80	75	0.686	46.4	3.173	96.4
1B-4	35	0.46	1.5	266.57	174	80	76	0.678	45.9	3.218	100.8
1B-4	40	0.46	1.5	269.83	176	81	76	0.678	46.0	3.120	97.9
1B-5	45	0.46	1.5	273.15	174	61	77	0.678	45.9	3.174	99.4
1B-5	50	0.46	1.5	276.46	172	81	77	0.678	45.8	3.165	99.0
1B-6	55	0.41	1.3	279.54	171	62	77	0.640	43.2	2.940	97.3
1B-6	60	0.41	1.3	282.64	172	82	78	0.640	43.3	2.957	96.0
1A-1	65	0.49	1.6	286.20	174	80	78	0.700	47.4	3.404	103.3
1A-1	70	0.49	1.6	289.45	174	81	79	0.700	47.4	3.102	94.2
1A-2	75	0.51	1.7	292.97	174	62	78	0.714	48.3	3.361	100.0
1A-2	80	0.51	1.7	296.43	174	86	79	0.714	48.3	3.268	97.8
1A-3	85	0.50	1.6	299.30	174	86	61	0.707	47.9	2.722	81.8
1A-3	90	0.51	1.7	303.47	172	86	82	0.714	48.3	3.952	117.4
1A-4	95	0.43	1.4	306.64	172	86	82	0.656	44.3	3.002	97.1
1A-4	100	0.43	1.4	309.85	173	86	83	0.656	44.4	3.037	98.3
1A-5	105	0.41	1.3	312.96	173	86	82	0.640	43.3	2.945	97.6
1A-5	110	0.43	1.4	316.05	174	85	83	0.656	44.4	2.926	94.8
1A-6	115	0.39	1.3	319.16	174	82	81	0.624	42.3	2.958	100.6
1A-6	120	0.36	1.2	322.21	174	82	81	0.616	41.7	2.900	100.0
			Less	0.05	for Leak Check						
Totals and Averages											
	120		1.48	76.48	174		79.3	0.673	45.5	74.99	96.0

Focus | **Method 5/26A Field Data Entry** | **Project No. 2325**

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/30/06
Meter ID	M18
Y_d	0.9916
Pitot C_p	0.84

Nozzle Diameter (in)	0.312
Filter ID	10400
Train Type	imp
Train ID	iB9
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.60
P_s (inches H_2O)	0.2
Start Time	11:50
Stop Time	16:50

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1975.7	941.2	1034.5
Impinger 2	928.2	679.2	249.0
Impinger 3	784.1	636.0	148.1
Impinger 4	634.6	625.8	8.8
Impinger 5	727.4	722.1	5.3
impinger 6	685.9	680.3	5.6
Impinger 7			
Silica Gel	667.9	652.7	15.2
Weight of Water Collected, V_{wc} (g)			1,451.3
Silica Gel Net Weight, V_{wsg} (g)			15.2

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	7.05	NA	9.34

Run 3

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure Δ P (in. H_2O)	Orifice Setting Δ H (in. H_2O)	Gas Sample Volume Initial (ft^3) 326.75	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root Δ P	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1B-1	5	0.48	1.5	330.09	175	91	94	0.693	46.7	3.141	96.2
1B-1	10	0.48	1.5	333.44	174	93	94	0.693	46.6	3.145	96.2
1B-2	15	0.51	1.7	337.00	174	98	94	0.714	48.1	3.329	98.8
1B-2	20	0.51	1.7	340.57	173	96	94	0.714	48.0	3.344	99.1
1B-3	25	0.57	1.9	344.35	174	96	94	0.755	50.6	3.543	99.4
1B-3	30	0.57	1.9	348.15	173	96	94	0.755	50.8	3.562	99.9
1B-4	35	0.63	2.1	352.17	174	96	93	0.794	53.4	3.773	100.7
1B-4	40	0.63	2.1	356.14	174	94	92	0.794	53.4	3.736	99.7
1B-5	45	0.58	1.9	359.91	174	91	90	0.762	51.3	3.563	99.1
1B-5	50	0.58	1.9	363.67	175	93	69	0.762	51.3	3.550	98.6
1B-6	55	0.45	1.5	366.99	175	84	85	0.671	45.2	3.169	100.2
1B-8	60	0.45	1.5	370.30	173	87	85	0.671	45.1	3.150	99.4
1A-1	65	0.50	1.7	373.88	173	63	66	0.707	47.6	3.416	102.4
1A-1	70	0.51	1.7	377.34	174	86	65	0.714	48.1	3.292	97.7
1A-2	75	0.53	1.8	380.88	174	93	86	0.728	49.0	3.350	97.5
1A-2	80	0.55	1.8	384.54	174	94	66	0.742	49.9	3.461	96.9
1A-3	85	0.55	1.8	388.25	173	98	68	0.742	49.9	3.489	99.6
1A-3	90	0.56	1.9	392.00	172	100	89	0.748	50.3	3.518	99.5
1A-4	95	0.46	1.5	395.40	173	99	90	0.678	45.6	3.187	99.5
1A-4	100	0.46	1.5	398.76	173	101	94	0.678	45.6	3.151	98.4
1A-5	105	0.40	1.3	401.92	173	99	92	0.632	42.5	2.936	98.3
1A-5	110	0.41	1.4	405.12	173	96	91	0.840	43.1	3.004	99.3
1A-6	115	0.35	1.2	408.07	174	96	90	0.592	39.8	2.770	99.2
1A-6	120	0.35	1.2	411.03	173	97	90	0.592	39.8	2.777	99.4

Less 0.07 for Leak Check

Totals and Averages

120	1.66	84.21	174	92.2	0.707	47.6	79.29	95.7

Focus | **Method 29 Field Data Entry** | **Project No. 2325**

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/28/08
Meter ID	M17
Y_d	0.9996
Pitot C_p	0.84

Nozzle Diameter (in)	0.275
Filter ID	R1
Train Type	Imp
Train ID	IB17
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.50
P_s (Inches H_2O)	0.3
Start Time	12:10
Stop Time	14:22

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1916.1	765.0	1153.1
Impinger 2	828.3	640.3	188.0
Impinger 3	713.5	682.5	31.0
Impinger 4	617.8	611.9	5.9
Impinger 5	609.4	602.2	7.2
Impinger 6	721.3	720.3	1.0
Impinger 7			
Silica Gel	716.7	706.6	10.1
Weight of Water Collected, V_{wc} (g)			1,386.2
Silica Gel Net Weight, V_{wsg} (g)			10.1

Orsat	$\%CO_2$	$\%CO_2+\%D_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	8.29	NA	9.61

Run 1

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure Δ P (in. H_2O)	Orifice Setting Δ H (in. H_2O)	Gas Sample Volume Initial (ft^3) 138.14	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root Δ P	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1A-6	5	0.69	1.1	141.30	175	83	82	0.831	56.3	3.038	98.8
1A-6	10	0.73	1.2	144.51	175	86	83	0.854	57.9	3.076	97.2
1A-5	15	0.64	1.0	147.51	176	89	64	0.800	54.3	2.863	96.7
1A-5	20	0.71	1.2	150.76	176	90	85	0.843	57.2	3.097	99.3
1A-4	25	0.75	1.2	154.01	177	92	85	0.866	58.8	3.091	96.5
1A-4	30	0.77	1.3	157.37	177	92	85	0.677	59.6	3.197	98.5
1A-3	35	0.80	1.3	160.64	176	92	86	0.894	60.7	3.298	99.7
1A-3	40	0.97	1.6	164.52	176	91	85	0.965	66.8	3.507	96.2
1A-2	45	0.84	1.4	168.02	176	90	84	0.917	62.2	3.340	98.5
1A-2	50	0.60	1.3	171.40	175	89	84	0.894	60.6	3.228	97.4
1A-1	55	0.65	1.1	174.48	177	89	84	0.806	54.7	2.940	96.6
1A-1	60	0.53	0.67	177.22	175	89	84	0.728	49.4	2.614	96.9
1B-6	65	0.77	1.3	180.71	176	65	83	0.677	59.5	3.346	103.1
1B-6	70	0.60	1.3	184.13	175	86	83	0.894	60.6	3.278	99.0
1B-5	75	0.62	1.3	187.51	175	67	63	0.906	61.4	3.236	96.5
1B-5	80	0.61	1.3	190.89	176	86	82	0.900	61.1	3.242	97.4
1B-4	65	0.83	1.4	194.44	175	88	82	0.911	61.6	3.400	100.6
1B-4	90	0.92	1.5	198.09	176	86	62	0.959	65.1	3.497	96.5
1B-3	95	0.84	1.4	201.63	177	90	83	0.917	62.2	3.361	99.8
1B-3	100	0.67	1.4	205.13	176	91	63	0.933	63.3	3.340	96.6
1B-2	105	0.82	1.3	208.57	175	92	84	0.906	61.4	3.276	97.7
1B-2	110	0.84	1.4	212.05	175	92	85	0.917	62.1	3.312	97.6
1B-1	115	0.72	1.2	215.37	174	91	64	0.849	57.5	3.184	100.6
1B-1	120	0.76	1.2	216.60	174	91	65	0.672	59.1	3.075	95.2

Less 0.05 for Leak Check

Totals and Averages

120	1.27	80.41	176	86.4	0.881	59.7	76.79	98.2

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/29/06
Meter ID	M17
Y_d	0.9998
Pitot C_p	0.84

Nozzle Diameter (in)	0.310
Filter ID	R2
Train Type	Imp
Train ID	IB18
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.35
P_s (Inches H_2O)	0.2
Start Time	11:15
Stop Time	13:23

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1679.0	888.8	790.2
Impinger 2	957.5	723.5	234.0
Impinger 3	829.4	817.4	212.0
Impinger 4	594.7	484.9	109.8
Impinger 5	682.5	681.3	21.2
Impinger 6	695.1	690.0	5.1
Impinger 7			
Silica Gel	717.0	707.5	9.5
Weight of Water Collected, V_{wc} (g)			1,372.3
Silica Gel Net Weight, V_{wsg} (g)			9.5

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	7.04	NA	8.88

Run 2

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure Δ P (in. H_2O)	Orifice Setting Δ H (in. H_2O)	Gas Sample Volume Initial (ft^3) 219.12	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root Δ P	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1A-6	5	0.41	1.2	222.40	175	73	72	0.640	43.4	3.197	104.7
1A-6	10	0.40	1.2	225.42	178	75	72	0.632	42.9	2.938	97.5
1A-5	15	0.37	1.1	228.51	175	80	73	0.608	41.2	2.989	103.0
1A-5	20	0.42	1.3	231.89	176	82	75	0.648	43.9	3.259	105.5
1A-4	25	0.41	1.2	235.16	175	84	76	0.640	43.4	3.143	102.9
1A-4	30	0.42	1.3	238.54	175	85	77	0.648	43.9	3.244	104.9
1A-3	35	0.51	1.5	241.86	175	85	78	0.714	48.4	3.185	93.5
1A-3	40	0.50	1.5	245.73	176	88	78	0.707	47.9	3.709	110.0
1A-2	45	0.52	1.6	249.49	174	86	79	0.721	48.8	3.601	104.6
1A-2	50	0.51	1.5	253.15	173	86	79	0.714	48.3	3.505	102.7
1A-1	55	0.48	1.4	256.72	173	86	80	0.693	46.9	3.414	103.1
1A-1	60	0.48	1.4	260.25	173	86	80	0.693	46.9	3.376	102.0
1B-6	65	0.46	1.4	263.84	175	82	80	0.678	45.9	3.446	108.5
1B-6	70	0.43	1.3	267.24	175	84	80	0.656	44.4	3.257	104.1
1B-5	75	0.48	1.4	270.73	175	64	80	0.678	45.9	3.344	103.4
1B-5	80	0.47	1.4	274.22	175	86	80	0.686	46.4	3.338	102.1
1B-4	85	0.49	1.5	277.85	175	89	82	0.700	47.4	3.457	103.5
1B-4	90	0.51	1.5	281.50	174	90	83	0.714	48.3	3.489	101.6
1B-3	95	0.46	1.4	285.16	173	91	84	0.678	45.9	3.472	107.1
1B-3	100	0.45	1.4	288.61	174	92	84	0.671	45.4	3.270	102.1
1B-2	105	0.44	1.3	291.95	175	92	85	0.663	44.9	3.182	99.9
1B-2	110	0.44	1.3	295.32	175	91	85	0.663	44.9	3.193	100.9
1B-1	115	0.43	1.3	298.72	175	92	85	0.656	44.4	3.218	102.9
1B-1	120	0.44	1.3	302.14	175	92	85	0.663	44.9	3.237	102.3

Less 0.07 for Leak Check

Totals and Averages

120	1.36	82.95	175	82.7	0.674	45.6	79.37	102.9

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/30/06
Meter ID	M17
Y_d	0.9996
Pitot C_p	0.84

Nozzle Diameter (in)	0.310
Filter ID	R3
Train Type	Imp
Train ID	IB18
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.60
P_s (Inches H_2O)	0.2
Start Time	11:50
Stop Time	16:50

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1930.3	899.2	1031.1
Impinger 2	962.1	726.2	235.9
Impinger 3	793.1	832.0	161.1
Impinger 4	502.7	490.7	12.0
Impinger 5	874.9	665.7	9.2
Impinger 6	897.5	696.7	0.8
Impinger 7			
Silica Gel	835.0	822.0	13.0
Weight of Water Collected, V_{wc} (g)			1,450.1
Silica Gel Net Weight, V_{wsg} (g)			13.0

Orsat	$\%CD_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	7.05	NA	9.34

Run 3

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure Δ P (in. H_2O)	Orifice Setting Δ H (in. H_2O)	Gas Sample Volume Initial (ft^3) 302.52	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root Δ P	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1A-6	5	0.42	1.3	305.96	176	97	96	0.648	43.6	3.237	105.1
1A-6	10	0.45	1.4	309.38	175	99	97	0.671	45.3	3.210	100.6
1A-5	15	0.27	0.81	312.30	175	103	98	0.520	35.1	2.725	110.2
1A-5	20	0.24	0.72	314.73	175	104	99	0.490	33.1	2.263	97.1
1A-4	25	0.50	1.5	316.37	174	101	100	0.707	47.7	3.402	101.1
1A-4	30	0.53	1.6	322.01	174	99	99	0.728	49.1	3.412	98.4
1A-3	35	0.64	1.9	326.35	176	98	99	0.800	54.0	4.075	107.1
1A-3	40	0.65	2.0	330.56	176	97	97	0.806	54.5	3.965	103.4
1A-2	45	0.64	1.9	334.76	176	92	95	0.800	54.0	3.979	104.6
1A-2	50	0.65	2.0	336.92	176	92	91	0.806	54.5	3.957	103.2
1A-1	55	0.51	1.5	342.60	175	85	86	0.714	48.2	3.534	104.0
1A-1	60	0.51	1.5	346.19	175	68	67	0.714	46.2	3.435	101.1
1B-6	65	0.46	1.4	349.76	174	82	85	0.693	46.7	3.440	104.3
1B-6	70	0.42	1.3	353.16	174	87	85	0.646	43.7	3.280	106.3
1B-5	75	0.57	1.7	357.08	175	91	86	0.755	51.0	3.727	103.6
1B-5	60	0.59	1.8	361.06	175	94	67	0.768	51.8	3.790	103.7
1B-4	85	0.54	1.6	364.86	174	97	88	0.735	49.6	3.604	103.0
1B-4	90	0.47	1.4	366.45	173	96	89	0.686	46.2	3.397	104.0
1B-3	95	0.48	1.4	372.07	174	98	90	0.693	46.7	3.422	103.7
1B-3	100	0.53	1.6	375.85	174	99	91	0.726	49.1	3.569	103.0
1B-2	105	0.51	1.5	379.51	175	99	93	0.714	48.2	3.449	101.5
1B-2	110	0.46	1.4	383.06	175	96	91	0.678	45.8	3.359	104.1
1B-1	115	0.44	1.3	386.49	175	95	90	0.663	44.8	3.251	103.0
1B-1	120	0.43	1.3	389.91	175	95	90	0.656	44.3	3.241	103.9

Less 0.08 for Leak Check

Totals and Averagas

120	1.49	87.31	175	93.6	0.701	47.3	82.61	103.2

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/28/06
Meter ID	M16
Y_d	1.0032
Pitot C_p	0.84

Nozzle Diameter (in)	0.250
Filter ID	R1
Train Type	Imp
Train ID	I62
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.50
P_s (Inches H_2O)	0.3
Start Time	12:10
Stop Time	16:39

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1177.0	382.4	794.6
Impinger 2	2304.1	1009.1	1295.0
Impinger 3	705.0	891.2	13.8
Impinger 4	569.9	570.2	-0.3
Impinger 5			
Impinger 6			
Trap	284.6	274.6	10.0
Silica Gel	770.0	753.6	16.2
Weight of Water Collected, V_{wc} (g)			2,113.1
Silica Gel Net Weight, V_{wsg} (g)			16.2

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	6.40	NA	9.79

Run 1

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure Δ P (in. H_2O)	Orifice Setting Δ H (in. H_2O)	Gas Sample Volume Initial (ft³) 903.40	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root Δ P	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft³)	Isokinetics (%)
1-1	5	0.78	0.93	906.08	174	84	83	0.883	59.6	2.580	93.6
1-1	10	0.65	0.78	908.58	174	86	84	0.806	54.4	2.399	95.3
1-1	15	0.58	0.70	911.06	175	87	84	0.762	51.5	2.378	100.1
1-1	20	0.54	0.65	913.38	175	89	85	0.735	49.7	2.218	96.7
1-2	25	0.71	0.85	916.00	175	90	85	0.843	56.9	2.503	95.2
1-2	30	0.80	0.96	918.81	175	89	85	0.894	60.4	2.688	96.3
1-2	35	0.74	0.89	921.50	175	88	85	0.860	58.1	2.575	95.9
1-2	40	0.95	1.1	924.45	175	86	84	0.975	65.9	2.833	93.2
1-3	45	1.10	1.3	927.83	175	86	83	1.049	70.9	3.251	99.3
1-3	50	1.10	1.3	931.26	174	86	92	1.049	70.6	3.302	100.6
1-3	55	0.86	1.0	934.06	175	87	82	0.927	62.7	2.691	93.0
1-3	60	0.65	0.78	936.00	174	88	92	0.806	54.4	1.862	74.0
1-4	65	0.71	0.85	939.40	173	88	83	0.843	56.9	3.261	123.6
1-4	70	0.65	0.78	941.75	174	88	82	0.806	54.4	2.255	89.6
1-4	75	0.75	0.90	944.44	174	88	82	0.866	58.5	2.582	95.5
1-4	80	0.78	0.83	947.02	174	87	82	0.872	58.9	2.479	91.1
1-5	85	0.78	0.86	949.61	174	86	82	0.883	59.6	2.491	90.3
1-5	90	0.81	0.89	952.31	174	86	81	0.900	60.8	2.599	92.5
1-5	95	0.74	0.81	954.80	174	86	81	0.860	58.1	2.397	89.2
1-5	100	0.47	0.52	956.93	175	86	81	0.686	46.3	2.049	95.6
1-6	105	0.36	0.41	958.77	175	87	82	0.600	40.5	1.786	94.3
1-6	110	0.39	0.43	960.71	174	88	82	0.624	42.2	1.860	95.4
1-6	115	0.75	0.83	963.33	174	90	83	0.866	58.5	2.508	92.7
1-6	120	0.68	0.75	965.90	174	90	83	0.825	55.7	2.460	95.5
2-1	125	0.83	0.91	968.57	175	87	85	0.911	61.6	2.559	90.0
2-1	130	0.80	1.0	971.57	175	89	85	0.894	60.4	2.670	102.6
2-1	135	0.80	1.0	974.46	174	91	85	0.894	60.4	2.779	99.5
2-1	140	0.73	0.95	977.25	174	94	86	0.854	57.7	2.635	98.6
2-2	145	0.63	0.82	979.62	175	96	97	0.794	53.6	2.438	98.4
2-2	150	0.60	0.76	982.42	175	98	88	0.775	52.3	2.459	101.6
2-2	155	0.80	1.00	985.32	173	89	89	0.894	60.4	2.740	98.0
2-2	160	0.71	0.92	988.32	176	89	90	0.843	56.9	2.831	107.7
2-3	165	0.87	1.1	991.26	174	99	91	0.933	63.0	2.773	95.2
2-3	170	0.75	0.96	994.07	174	100	91	0.866	58.5	2.647	97.9
2-3	175	0.70	0.91	996.92	174	100	92	0.837	58.5	2.682	102.7
2-3	180	0.85	1.1	999.90	175	100	93	0.922	62.3	2.803	97.4
2-4	185	0.82	1.1	1,003.02	175	101	93	0.906	61.2	2.932	103.8
2-4	190	0.94	1.2	1,006.03	174	100	93	0.970	65.5	2.832	93.5
2-4	195	0.95	1.2	1,009.14	174	100	94	0.975	65.8	2.924	96.1
2-4	200	0.67	0.87	1,011.61	175	99	94	0.819	55.3	2.510	98.3
2-5	205	0.79	1.0	1,014.79	175	99	94	0.889	60.1	2.802	101.1
2-5	210	0.86	1.1	1,017.80	174	99	94	0.938	63.3	2.831	96.7
2-5	215	0.97	1.3	1,020.97	173	98	94	0.985	66.5	2.986	97.0
2-5	220	0.71	0.92	1,023.61	174	98	94	0.843	56.9	2.673	101.6
2-6	225	0.50	0.65	1,026.53	174	100	94	0.707	47.6	2.553	115.6
2-6	230	0.40	0.52	1,029.58	175	102	95	0.632	42.7	1.919	97.2
2-6	235	0.48	0.62	1,030.78	175	102	95	0.693	46.8	2.060	95.3
2-6	240	0.37	0.48	1,032.75	175	104	96	0.608	41.1	1.839	96.9

Less 0.08 for Leak Check

Totals and Averages								
240	0.886	129.27	174	89.9	0.846	57.1	122.99	97.0

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/29/06
Meter ID	M16
Y_d	1.0032
Pitot C_p	0.84

Nozzle Diameter (in)	0.275
Filter ID	3017
Train Type	Imp
Train ID	IB2
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.35
P_s (Inches H_2O)	0.2
Start Time	11:15
Stop Time	15:28

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1158.2	384.2	774.0
Impinger 2	946.4	676.0	270.4
Impinger 3	1918.9	1006.0	912.9
Impinger 4	572.5	679.0	-105.5
Impinger 5			
Impinger 6			
Trap	295.3	281.1	14.2
Silica Gel	763.2	573.0	190.2
Weight of Water Collected, V_{wc} (g)			1,866.0
Silica Gel Net Weight, V_{wsg} (g)			190.2

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	7.15	NA	8.94

Run 2

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume Initial (ft^3) 33.08	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root ΔP	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1-1	5	0.45	0.80	35.55	173	73	71	0.671	45.3	2.416	97.0
1-1	10	0.45	0.80	38.07	174	76	71	0.671	45.4	2.458	98.7
1-1	15	0.45	0.80	40.59	173	77	73	0.671	45.3	2.451	98.4
1-1	20	0.45	0.80	43.16	174	79	74	0.671	45.4	2.493	100.1
1-2	25	0.36	0.60	45.31	173	79	75	0.600	40.5	2.083	93.5
1-2	30	0.36	0.60	47.83	174	80	76	0.600	40.6	2.243	100.7
1-2	35	0.42	0.80	50.02	174	81	77	0.648	43.8	2.308	96.0
1-2	40	0.45	0.80	52.85	174	81	77	0.671	45.4	2.539	102.0
1-3	45	0.50	0.90	55.27	174	81	78	0.707	47.8	2.526	96.3
1-3	50	0.50	0.90	57.94	171	80	77	0.707	47.7	2.581	98.1
1-3	55	0.47	0.85	60.50	171	79	77	0.686	46.2	2.477	97.1
1-3	60	0.47	0.85	63.20	172	80	78	0.686	46.3	2.607	102.3
1-4	65	0.43	0.77	65.66	173	79	78	0.656	44.3	2.377	97.6
1-4	70	0.40	0.72	68.10	173	80	77	0.632	42.7	2.358	100.4
1-4	75	0.44	0.78	70.96	173	81	78	0.663	44.8	2.759	112.0
1-4	80	0.40	0.70	73.16	173	80	78	0.632	42.7	2.143	91.2
1-5	85	0.39	0.70	75.48	174	81	77	0.624	42.2	2.220	95.6
1-5	90	0.39	0.70	77.83	174	82	78	0.624	42.2	2.264	97.7
1-5	95	0.36	0.65	80.17	172	85	79	0.600	40.5	2.246	100.7
1-5	100	0.38	0.68	82.47	171	86	81	0.616	41.6	2.202	96.0
1-6	105	0.32	0.58	85.01	172	87	82	0.566	38.2	2.426	115.4
1-6	110	0.34	0.61	87.00	172	88	82	0.583	39.4	1.899	87.6
1-6	115	0.33	0.59	89.16	173	88	83	0.574	38.8	2.060	96.5
1-6	120	0.34	0.61	91.36	173	88	83	0.583	39.4	2.098	96.9
2-1	125	0.45	0.81	94.02	174	86	84	0.671	45.4	2.540	102.0
2-1	130	0.45	0.81	96.65	174	86	85	0.671	45.4	2.505	100.8
2-1	135	0.47	0.85	99.25	174	89	85	0.686	46.4	2.474	97.2
2-1	140	0.49	0.88	101.95	174	89	85	0.700	47.3	2.568	98.9
2-2	145	0.50	0.90	104.66	174	89	85	0.707	47.6	2.579	98.3
2-2	150	0.50	0.90	107.37	174	88	84	0.707	47.8	2.584	98.5
2-2	155	0.51	0.92	110.26	173	86	84	0.714	48.2	2.755	103.8
2-2	160	0.54	0.97	113.14	173	99	84	0.735	49.6	2.744	100.5
2-3	165	0.65	1.2	116.06	173	90	84	0.806	54.5	2.781	92.9
2-3	170	0.60	1.1	119.43	171	90	85	0.775	52.2	3.206	111.3
2-3	175	0.68	1.2	122.01	172	86	85	0.825	55.7	2.459	90.2
2-3	180	0.42	0.76	123.60	172	87	84	0.648	43.7	1.708	70.9
2-4	185	0.65	1.2	128.80	173	89	85	0.806	54.5	2.857	95.4
2-4	190	0.72	1.3	130.09	173	69	85	0.849	57.3	3.134	99.5
2-4	195	0.60	1.1	133.26	174	90	84	0.775	52.4	3.018	185.0
2-4	200	0.54	0.97	136.11	174	92	85	0.735	49.7	2.705	99.2
2-5	205	0.45	0.81	138.65	175	93	86	0.671	45.4	2.406	98.7
2-5	210	0.45	0.81	141.39	174	92	86	0.671	45.4	2.597	104.3
2-5	215	0.45	0.81	143.77	174	91	86	0.671	45.4	2.258	90.7
2-5	220	0.45	0.81	146.41	174	90	86	0.671	45.4	2.507	100.7
2-6	225	0.45	0.81	148.85	174	89	86	0.671	45.4	2.319	96.2
2-6	230	0.35	0.63	151.09	174	87	85	0.592	40.0	2.134	97.2
2-6	235	0.35	0.63	153.41	174	86	84	0.592	40.0	2.214	100.9
2-6	240	0.43	0.77	155.69	174	86	84	0.656	44.3	2.368	97.3

Less 0.15 for Leak Check

Totals and Averages

240	0.824	122.86	173	83.1	0.674	45.5	117.54	96.2

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/30/06
Meter ID	M16
Y_d	1.0032
Pitot C_p	0.84

Nozzle Diameter (in)	0.275
Filter ID	3103
Train Type	Imp
Train ID	IB2
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.60
P_s (Inches H_2O)	0.2
Start Time	11:50
Stop Time	18:57

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1141.8	384.3	757.5
Impinger 2	2083.6	1019.6	1064.2
Impinger 3	952.3	680.3	272.0
Impinger 4	573.7	572.7	1.0
Impinger 5			
Impinger 6			
Trap	304.2	288.2	16.0
Silica Gel	616.5	794.6	23.7
Weight of Water Collected, V_{wc} (g)			2,112.7
Silica Gel Net Weight, V_{wsg} (g)			23.7

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	7.07	NA	9.27

Run 3

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure Δ P (in. H_2O)	Orifice Setting Δ H (in. H_2O)	Gas Sample Volume Initial (ft^3) 156.35	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root Δ P	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1-1	5	0.50	0.90	156.66	175	96	97	0.707	47.6	2.382	88.6
1-1	10	0.51	0.92	161.55	175	96	97	0.714	48.1	2.514	92.6
1-1	15	0.55	0.99	164.37	174	101	96	0.742	49.9	2.647	93.6
1-1	20	0.56	1.1	167.33	174	102	98	0.748	50.3	2.776	97.5
1-2	25	0.60	1.1	170.32	174	97	96	0.775	52.1	2.817	95.6
1-2	30	0.63	1.2	173.41	173	96	97	0.794	53.3	2.917	96.5
1-2	35	0.65	1.2	176.69	173	94	95	0.806	54.2	3.108	101.2
1-2	40	0.66	1.3	180.00	173	92	94	0.812	54.6	3.145	101.7
1-3	45	0.67	1.3	183.18	174	87	91	0.819	55.0	3.044	97.7
1-3	50	0.69	1.3	186.48	174	87	89	0.831	55.9	3.165	100.1
1-3	55	0.70	1.3	189.78	174	88	88	0.837	56.3	3.165	99.4
1-3	60	0.53	1.0	192.80	174	85	87	0.726	49.0	2.712	97.9
1-4	65	0.45	0.86	195.24	174	84	83	0.671	45.1	2.550	99.9
1-4	70	0.47	0.89	197.92	174	85	85	0.686	46.1	2.562	99.0
1-4	75	0.46	0.87	200.61	173	82	85	0.676	45.6	2.598	100.6
1-4	80	0.47	0.89	203.26	173	85	84	0.686	46.1	2.574	98.6
1-5	85	0.48	0.91	205.96	173	89	85	0.693	46.5	2.572	97.5
1-5	90	0.48	0.91	208.66	173	90	86	0.693	46.5	2.606	98.6
1-5	95	0.47	0.89	211.31	171	90	86	0.686	46.0	2.519	96.3
1-5	100	0.40	0.76	213.79	172	83	87	0.632	42.5	2.386	98.2
1-6	105	0.40	0.76	216.21	172	92	87	0.632	42.5	2.311	95.9
1-6	110	0.29	0.55	218.31	172	92	86	0.539	36.2	2.003	97.8
1-6	115	0.35	0.67	220.64	173	92	89	0.592	39.7	2.221	98.6
1-6	120	0.34	0.65	222.86	172	89	88	0.583	39.1	2.143	96.4
2-1	125	0.50	0.95	225.78	172	82	84	0.707	47.5	2.804	104.0
2-1	130	0.50	0.95	228.60	171	80	82	0.707	47.4	2.737	101.5
2-1	135	0.51	0.97	231.15	171	81	81	0.714	47.9	2.475	90.9
2-1	140	0.50	0.95	233.95	171	85	81	0.707	47.4	2.707	100.4
2-2	145	0.50	0.95	236.88	171	88	82	0.707	47.4	2.828	104.9
2-2	150	0.50	0.95	239.60	173	88	83	0.707	47.5	2.618	97.2
2-2	155	0.50	0.95	242.40	173	92	82	0.707	47.5	2.688	99.6
2-2	160	0.50	0.95	245.25	174	93	85	0.707	47.5	2.726	101.3
2-3	165	0.53	1.0	248.10	174	93	86	0.729	49.0	2.724	98.3
2-3	170	0.52	1.0	251.02	173	94	87	0.721	46.4	2.785	101.4
2-3	175	0.50	0.95	253.89	173	90	86	0.707	47.5	2.750	102.1
2-3	180	0.51	0.97	256.61	173	90	86	0.714	48.0	2.606	95.8
2-4	185	0.41	0.78	259.15	173	90	85	0.640	43.0	2.435	99.8
2-4	190	0.49	0.93	261.80	173	90	86	0.700	47.0	2.539	95.2
2-4	195	0.55	1.1	264.85	172	90	85	0.742	49.8	2.734	96.7
2-4	200	0.45	0.86	267.31	171	89	84	0.671	45.0	2.555	99.9
2-5	205	0.50	0.95	270.08	189	84	83	0.707	47.4	2.678	99.1
2-5	210	0.43	0.82	272.60	170	85	82	0.656	44.0	2.434	97.2
2-5	215	0.48	0.91	275.24	172	86	82	0.693	46.5	2.548	96.5
2-5	220	0.40	0.76	277.76	174	85	81	0.632	42.5	2.436	101.2
2-6	225	0.30	0.57	279.81	176	83	81	0.548	36.9	1.984	95.3
2-6	230	0.35	0.87	282.13	176	81	80	0.592	39.8	2.252	100.2
2-6	235	0.40	0.76	284.89	177	81	80	0.632	42.6	2.486	103.5
2-6	240	0.52	0.99	287.57	176	81	78	0.721	48.6	2.803	102.3

Less 0.08 for Leak Check

Totals and Averages

240	0.935	131.14	173	87.7	0.699	47.0	125.71	97.9

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/28/06
Meter ID	M10
Y_d	1.0094
Pitot C_p	0.84

Nozzle Diameter (in)	0.249
Filter ID	R1
Train Type	Imp
Train ID	IB4
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.50
P_s (Inches H_2O)	0.3
Start Time	12:25
Stop Time	16:44

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	2074.2	390.3	1683.9
Impinger 2	1432.6	1021.8	410.8
Impinger 3	676.6	698.5	178.1
Impinger 4	597.7	592.8	4.9
Impinger 5			
Impinger 6			
Trap	299.4	281.3	18.1
Silica Gel	727.9	710.6	17.3
Weight of Water Collected, V_{wc} (g)			2,295.6
Silica Gel Net Weight, V_{wsg} (g)			17.3

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	6.40	NA	9.79

Run 1

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume Initial (ft^3) 765.91	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root ΔP	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
2-6	5	0.35	0.36	766.01	175	83	63	0.592	40.1	2.033	112.5
2-6	10	0.65	0.71	770.45	175	82	83	0.806	54.6	2.367	96.1
2-6	15	0.68	0.74	772.92	177	82	83	0.825	55.9	2.396	95.2
2-6	20	0.77	0.84	775.52	175	81	82	0.877	59.4	2.527	94.3
2-5	25	0.86	0.94	778.21	175	81	82	0.927	62.8	2.615	92.3
2-5	30	0.81	0.89	780.91	176	82	82	0.900	61.0	2.622	95.4
2-5	35	0.84	0.92	763.64	175	82	82	0.917	62.1	2.852	94.7
2-5	40	0.72	0.79	786.24	175	84	83	0.849	57.5	2.518	97.1
2-4	45	0.86	0.94	789.20	176	84	85	0.927	62.6	2.862	101.1
2-4	50	0.87	0.95	791.71	175	84	82	0.933	63.2	2.434	85.4
2-4	55	0.82	0.90	794.51	176	84	85	0.906	61.4	2.707	97.9
2-4	60	0.96	1.0	797.34	176	84	85	0.980	66.4	2.737	91.5
2-3	65	0.89	0.97	800.19	176	85	84	0.943	63.9	2.756	95.7
2-3	70	0.96	1.0	603.05	176	84	83	0.980	66.4	2.771	92.6
2-3	75	0.81	0.89	805.60	177	84	84	0.900	61.0	2.661	96.9
2-3	80	0.91	1.0	806.61	176	83	84	0.954	64.6	2.723	93.5
2-2	85	0.75	0.82	811.26	176	83	84	0.866	58.7	2.586	97.6
2-2	90	0.65	0.71	613.62	176	83	84	0.806	54.6	2.459	99.9
2-2	95	0.85	0.71	816.23	176	83	85	0.806	54.6	2.331	94.7
2-2	100	0.60	0.88	819.88	176	83	84	0.894	60.6	2.567	94.0
2-1	105	0.73	0.80	821.48	177	84	85	0.854	57.9	2.513	96.4
2-1	110	0.69	0.76	624.00	176	84	85	0.831	56.3	2.436	96.0
2-1	115	0.55	0.61	826.33	176	86	85	0.742	50.3	2.247	99.2
2-1	120	0.65	0.71	628.75	176	85	85	0.806	54.6	2.337	84.9
1-6	125	0.91	1.1	831.73	179	87	86	0.954	64.6	2.872	98.6
1-6	130	0.75	0.97	834.57	174	85	88	0.866	58.6	2.741	103.5
1-6	135	0.72	0.93	837.30	172	88	85	0.849	57.3	2.635	101.4
1-6	140	0.73	0.94	840.11	174	86	85	0.854	57.8	2.712	103.8
1-5	145	0.82	1.0	843.00	174	87	95	0.906	61.3	2.787	100.7
1-5	150	0.89	1.1	845.80	174	87	86	0.943	63.8	2.699	93.5
1-5	155	0.81	1.0	848.63	174	87	85	0.900	60.9	2.922	106.2
1-5	160	0.80	1.0	651.79	174	87	85	0.894	60.5	2.655	104.4
1-4	165	0.96	1.2	654.61	174	87	84	0.980	66.3	2.724	90.9
1-4	170	0.82	1.0	657.58	174	86	84	0.906	61.3	2.870	103.6
1-4	175	0.80	1.0	860.03	174	87	84	0.894	60.5	2.365	86.5
1-4	180	0.76	1.0	863.35	174	87	85	0.883	59.8	3.202	118.8
1-3	185	0.95	1.2	866.49	175	87	86	0.975	66.0	3.027	101.6
1-3	190	0.90	1.1	869.28	176	87	66	0.949	64.3	2.689	92.8
1-3	195	0.97	1.3	972.49	176	92	88	0.985	66.7	3.076	102.3
1-3	200	0.92	1.2	875.81	176	92	89	0.959	65.0	2.986	102.0
1-2	205	0.92	1.2	878.61	176	92	91	0.959	65.0	3.057	104.4
1-2	210	0.97	1.3	681.99	176	92	91	0.985	66.7	3.039	101.1
1-2	215	0.92	1.2	665.01	176	93	91	0.959	65.0	2.882	98.4
1-2	220	0.65	1.1	698.22	176	94	91	0.922	62.5	3.060	108.7
1-1	225	0.84	1.1	691.22	175	93	91	0.917	62.1	2.863	102.2
1-1	230	0.94	1.1	694.21	176	92	90	0.917	62.1	2.858	102.1
1-1	235	0.82	1.0	697.15	176	101	90	0.906	61.4	2.787	100.8
1-1	240	0.85	1.1	900.08	176	100	91	0.922	62.5	2.778	98.7

Less 0.07 for Leak Check

Totals and Averages

240	0.958	134.10	175	86.0	0.896	60.7	129.31	98.4

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/29/06
Meter ID	M10
Y_d	1.0094
Pitot C_p	0.84

Nozzle Diameter (in)	0.272
Filter ID	R2
Train Type	Imp
Train ID	IB4
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.35
P_s (Inches H_2O)	0.2
Start Time	11:15
Stop Time	15:26

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	2186.9	391.9	1795.0
Impinger 2	693.7	698.4	-4.7
Impinger 3	1223.6	1024.6	199.0
Impinger 4	597.3	595.8	1.5
Impinger 5			
Impinger 8			
Trap	302.6	286.3	16.3
Silica Gel	811.2	783.6	27.6
Weight of Water Collected, V_{wc} (g)			2,007.1
Silica Gel Net Weight, V_{wsg} (g)			27.6

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	7.15	NA	9.94

Run 2

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume Initial (ft^3) 900.87	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root ΔP	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
2-6	5	0.32	0.57	903.02	174	73	72	0.566	38.1	2.310	108.3
2-6	10	0.32	0.57	905.21	174	74	72	0.566	38.1	2.150	100.9
2-6	15	0.30	0.54	907.33	174	76	74	0.548	36.9	2.074	100.5
2-6	20	0.31	0.55	909.45	174	76	76	0.557	37.5	2.066	98.5
2-5	25	0.42	0.75	911.70	175	80	76	0.846	43.7	2.186	69.6
2-5	30	0.45	0.61	914.21	174	60	76	0.671	45.2	2.439	96.5
2-5	35	0.42	0.75	916.67	175	79	79	0.648	43.7	2.390	97.9
2-5	40	0.44	0.79	919.19	174	80	76	0.663	44.7	2.448	97.9
2-4	45	0.43	0.77	921.66	174	80	76	0.656	44.2	2.399	97.1
2-4	50	0.43	0.77	923.98	174	80	79	0.656	44.2	2.252	91.1
2-4	55	0.31	0.55	926.29	173	80	60	0.557	37.5	2.239	106.8
2-4	60	0.51	0.91	926.60	173	80	80	0.714	48.1	2.435	90.4
2-3	65	0.52	0.93	931.51	172	82	80	0.721	48.5	2.624	96.4
2-3	70	0.51	0.91	934.23	172	61	76	0.714	48.1	2.641	98.0
2-3	75	0.51	0.91	936.95	170	81	76	0.714	48.0	2.841	97.9
2-3	80	0.51	0.91	939.67	172	81	79	0.714	48.1	2.638	97.9
2-2	85	0.45	0.81	942.54	174	81	80	0.671	45.2	2.781	110.0
2-2	90	0.44	0.79	944.96	171	82	80	0.663	44.6	2.362	94.2
2-2	95	0.44	0.79	947.46	173	84	82	0.663	44.7	2.392	95.6
2-2	100	0.44	0.79	950.00	173	83	78	0.663	44.7	2.461	98.4
2-1	105	0.47	0.84	952.57	173	87	81	0.686	46.2	2.474	95.7
2-1	110	0.45	0.81	955.18	173	87	85	0.671	45.2	2.503	98.9
2-1	115	0.45	0.91	957.78	173	87	84	0.671	45.2	2.496	98.6
2-1	120	0.45	0.81	960.38	175	87	85	0.671	45.3	2.494	98.7
1-6	125	0.37	0.66	963.05	174	87	85	0.608	41.0	2.560	111.7
1-6	130	0.36	0.65	965.42	174	86	85	0.600	40.4	2.274	100.6
1-6	135	0.36	0.65	967.77	174	87	85	0.600	40.4	2.253	99.6
1-6	140	0.36	0.66	970.19	172	86	86	0.616	41.5	2.320	99.7
1-5	145	0.40	0.72	972.83	173	85	84	0.632	42.8	2.346	98.3
1-5	150	0.42	0.75	975.14	174	85	85	0.648	43.7	2.411	98.7
1-5	155	0.51	0.91	977.65	173	87	84	0.714	48.1	2.410	89.5
1-5	160	0.44	0.79	980.21	174	85	84	0.663	44.7	2.482	86.5
1-4	165	0.53	0.95	982.29	174	86	83	0.728	48.1	2.001	72.9
1-4	170	0.56	1.0	985.89	174	87	85	0.748	50.4	3.454	122.5
1-4	175	0.50	0.90	988.71	174	88	85	0.707	47.7	2.703	101.4
1-4	180	0.46	0.86	991.45	174	87	85	0.693	46.7	2.626	100.7
1-3	185	0.56	1.0	994.23	174	85	84	0.748	50.4	2.675	94.6
1-3	190	0.55	0.99	997.10	174	86	84	0.742	50.0	2.759	98.7
1-3	195	0.39	0.70	999.87	174	86	85	0.624	42.1	2.486	104.8
1-3	200	0.41	0.73	1,002.31	174	87	85	0.640	43.2	2.531	104.9
1-2	205	0.35	0.63	1,004.55	174	88	86	0.592	39.8	2.143	96.1
1-2	210	0.35	0.63	1,007.01	174	88	66	0.592	39.9	2.354	105.6
1-2	215	0.50	0.90	1,009.57	174	87	85	0.707	47.7	2.456	92.2
1-2	220	0.47	0.85	1,012.25	174	88	86	0.686	46.2	2.566	99.3
1-1	225	0.49	0.86	1,014.90	174	87	86	0.700	47.2	2.540	96.3
1-1	230	0.44	0.79	1,017.56	174	87	84	0.663	44.7	2.573	102.9
1-1	235	0.45	0.61	1,030.21	174	66	86	0.671	45.2	12.091	478.2
1-1	240	0.44	0.79	1,022.62	174	88	67	0.663	44.7	-7.066	-262.7

Less 0.14 for Leak Check

Totals and Averages

240	0.765	129.40	174	62.9	0.660	44.4	124.81	104.6

Project Number	2325
Clisnt	Focus
Plant	Westates
Location	Stack
Date	3/30/06
Meter ID	M10
Y_d	1.0094
Pitot C_p	0.84

Nozzle Dismster (in)	0.272
Filter ID	3109
Trein Type	Imp
Train ID	IB4
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.60
P_g (Inches H_2O)	0.2
Start Time	11:50
Stop Time	16:56

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1203.4	392.4	811.0
Impinger 2	1376.6	701.2	675.4
Impinger 3	1675.9	1029.8	646.1
Impinger 4	605.9	597.6	8.3
Impinger 5			
Impinger 6			
Trap	299.4	283.6	15.8
Silica Gel	795.4	773.9	21.5
Weight of Water Collected, V_{wc} (g)			2,156.8
Silica Gel Net Weight, V_{wsg} (g)			21.5

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trisl 2			
Trial 3			
Average	7.07	NA	9.27

Run 3

Treverse Point	Min/Pt 5 Elepsed Time	Velocity Pressure Δ P (in. H_2O)	Orifice Sstting Δ H (in. H_2O)	Gas Ssmple Volume Initial (ft^3) 23.57	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Squere Root Δ P	Stack Ges Velocity Vs (ft/sec)	Volume Mstered Vmstd (ft^3)	Isokinetics (%)
2-6	5	0.40	0.72	26.12	174	95	94	0.632	42.7	2.428	105.6
2-6	10	0.44	0.79	28.70	176	94	93	0.663	44.9	2.462	102.2
2-6	15	0.44	0.79	31.26	175	95	96	0.663	44.8	2.453	101.6
2-6	20	0.47	0.84	33.92	175	96	96	0.686	46.3	2.508	100.7
2-5	25	0.46	0.82	36.56	175	95	96	0.678	45.8	2.510	101.9
2-5	30	0.49	0.88	39.27	176	94	95	0.700	47.3	2.561	101.6
2-5	35	0.51	0.91	42.02	175	94	95	0.714	48.3	2.620	101.0
2-5	40	0.51	0.91	44.80	174	95	94	0.714	48.2	2.646	102.0
2-4	45	0.53	0.95	47.57	176	95	94	0.728	49.2	2.639	99.9
2-4	50	0.57	1.0	50.52	178	94	94	0.755	51.1	2.813	102.6
2-4	55	0.50	0.90	53.32	177	96	95	0.707	47.9	2.663	103.8
2-4	60	0.47	0.84	56.00	175	97	96	0.686	46.3	2.543	102.1
2-3	65	0.41	0.73	58.47	176	93	94	0.640	43.3	2.356	101.4
2-3	70	0.39	0.68	60.87	175	93	94	0.618	41.7	2.289	102.2
2-3	75	0.47	0.84	63.51	176	93	93	0.686	46.4	2.521	101.3
2-3	80	0.44	0.79	66.12	175	91	92	0.663	44.8	2.499	103.7
2-2	85	0.45	0.81	68.77	175	93	92	0.671	45.3	2.533	103.9
2-2	90	0.45	0.81	71.41	175	94	94	0.671	45.3	2.517	103.3
2-2	95	0.45	0.81	74.03	175	95	93	0.671	45.3	2.498	102.5
2-2	100	0.44	0.79	76.88	175	95	93	0.663	44.8	2.526	104.8
2-1	105	0.42	0.75	79.15	174	96	94	0.648	43.8	2.350	99.7
2-1	110	0.43	0.77	81.78	174	97	96	0.656	44.3	2.496	104.7
2-1	115	0.44	0.79	84.38	174	96	94	0.663	44.8	2.474	102.6
2-1	120	0.42	0.75	86.94	174	93	93	0.646	43.6	2.444	103.7
1-6	125	0.40	0.72	89.87	174	88	87	0.632	42.7	2.633	114.5
1-6	130	0.36	0.66	92.05	175	88	87	0.616	41.7	2.299	102.7
1-6	135	0.40	0.72	94.31	175	85	86	0.632	42.7	2.187	95.2
1-6	140	0.36	0.66	96.76	175	85	85	0.616	41.7	2.373	106.0
1-5	145	0.41	0.73	99.18	175	85	84	0.640	43.3	2.347	100.9
1-5	150	0.42	0.75	101.81	175	85	85	0.648	43.8	2.354	100.0
1-5	155	0.41	0.73	104.05	175	85	86	0.640	43.3	2.362	101.5
1-5	160	0.41	0.73	106.47	176	84	85	0.640	43.3	2.347	101.0
1-4	165	0.49	0.88	109.09	178	88	86	0.700	47.3	2.535	99.7
1-4	170	0.55	0.99	111.91	174	87	85	0.742	50.1	2.729	101.2
1-4	175	0.52	0.93	114.61	174	87	85	0.721	48.7	2.612	99.6
1-4	180	0.49	0.88	117.27	175	87	85	0.700	47.3	2.573	101.2
1-3	185	0.40	0.78	119.75	175	85	84	0.632	42.7	2.405	104.7
1-3	190	0.49	0.88	122.38	174	84	83	0.700	47.3	2.556	100.4
1-3	195	0.48	0.86	124.95	174	84	83	0.693	46.8	2.496	99.1
1-3	200	0.49	0.88	127.80	174	84	83	0.700	47.3	2.575	101.2
1-2	205	0.48	0.86	130.24	175	84	83	0.693	46.8	2.566	101.9
1-2	210	0.47	0.84	132.85	172	84	86	0.686	46.2	2.529	101.3
1-2	215	0.45	0.81	135.41	174	83	84	0.671	45.3	2.488	102.0
1-2	220	0.45	0.81	137.95	178	84	82	0.671	45.4	2.470	101.4
1-1	225	0.45	0.81	140.45	178	84	83	0.671	45.4	2.429	99.9
1-1	230	0.60	1.0	143.25	175	82	82	0.775	52.3	2.730	97.0
1-1	235	0.60	1.0	145.97	178	82	81	0.775	52.5	2.657	94.8
1-1	240	0.70	1.2	149.31	178	81	80	0.837	56.7	3.264	107.6

Lesa 0.37 for Leak Check

Totals and Averages

240	0.629	125.37	175	89.4	0.660	46.0	120.52	101.6

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/28/06
Meter ID	M9
Y_d	0.8939
Pitot C_p	0.84

Nozzle Diameter (in)	0.255
Filter ID	R1
Train Type	Imp
Train ID	IB5
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.50
P_s (Inches H_2O)	0.3
Start Time	12:10
Stop Time	16:22

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1219.0	474.7	744.3
Impinger 2	2258.1	992.8	1265.3
Impinger 3	876.9	604.8	272.1
Impinger 4	689.6	623.3	66.3
Impinger 5			
Impinger 6			
Trap	282.2	266.1	16.1
Silica Gel	789.2	768.4	20.6
Weight of Water Collected, V_{wc} (g)			2,364.1
Silica Gel Net Weight, V_{wsg} (g)			20.6

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	6.40	NA	9.78

Run 1

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume Initial (ft^3) 393.01	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root ΔP	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1-1	5	0.72	0.94	396.58	174	84	84	0.849	57.4	3.402	124.6
1-1	10	0.75	0.98	399.37	175	84	85	0.866	58.6	2.657	95.4
1-1	15	0.75	0.98	402.53	174	84	87	0.866	58.6	3.003	107.8
1-1	20	0.68	0.99	404.96	176	85	89	0.825	55.9	2.303	86.9
1-2	25	0.70	0.81	407.53	175	85	90	0.837	56.6	2.433	90.5
1-2	30	0.55	0.72	409.93	175	86	91	0.742	50.2	2.267	95.1
1-2	35	0.81	0.95	412.52	177	86	81	0.900	61.0	2.447	84.7
1-2	40	0.97	1.2	415.60	176	85	90	0.985	66.7	2.918	92.2
1-3	45	0.85	1.1	418.67	176	85	89	0.922	62.4	2.811	98.3
1-3	50	0.90	1.2	421.81	176	84	89	0.948	84.3	2.981	97.8
1-3	55	0.60	1.0	424.70	175	85	89	0.894	60.5	2.739	95.3
1-3	60	0.52	0.68	427.40	174	85	89	0.721	48.8	2.557	110.2
1-4	85	0.52	0.68	428.66	175	85	89	0.721	48.8	2.141	92.3
1-4	70	0.60	0.78	431.83	175	85	89	0.775	52.4	2.056	82.5
1-4	75	0.56	0.73	434.29	175	85	89	0.748	50.6	2.330	96.9
1-4	80	0.60	0.78	436.75	176	85	88	0.775	52.5	2.333	93.7
1-5	85	0.68	0.99	439.40	176	84	88	0.825	55.9	2.516	95.0
1-5	90	0.56	0.73	441.82	178	83	89	0.748	50.7	2.297	95.5
1-5	95	0.85	1.1	444.60	178	84	88	0.922	62.4	2.831	85.6
1-5	100	0.87	1.1	447.77	174	84	89	0.933	63.1	2.819	93.9
1-6	105	0.85	1.1	450.73	176	84	89	0.922	62.4	2.809	94.8
1-6	110	0.75	0.98	453.70	175	85	90	0.866	58.8	2.813	101.0
1-6	115	0.75	0.98	456.52	175	85	90	0.866	58.6	2.870	95.9
1-6	120	0.82	1.1	459.48	173	85	91	0.906	61.2	2.801	96.1
2-1	125	0.90	1.2	463.19	174	86	90	0.948	64.2	3.512	115.0
2-1	130	0.90	1.2	466.33	174	87	92	0.949	84.2	2.964	97.1
2-1	135	0.60	1.0	468.23	174	87	93	0.894	60.5	2.734	85.0
2-1	140	0.85	1.1	472.19	172	69	94	0.922	62.2	2.784	93.7
2-2	145	0.88	1.2	475.32	174	89	94	0.938	83.4	2.944	97.5
2-2	150	0.95	1.3	478.59	171	89	95	0.975	65.8	3.074	97.6
2-2	155	0.95	1.3	481.96	171	89	85	0.975	85.8	3.168	100.8
2-2	160	0.90	1.2	485.20	171	90	85	0.948	64.0	3.042	99.4
2-3	165	1.0	1.4	488.63	171	90	95	1.000	67.5	3.504	108.8
2-3	170	1.1	1.4	492.16	178	90	94	1.049	71.0	3.037	90.1
2-3	175	1.1	1.4	495.47	174	90	94	1.049	70.9	3.112	92.2
2-3	160	1.1	1.4	498.90	174	89	93	1.048	70.9	3.231	95.7
2-4	185	0.82	1.2	502.06	174	90	93	0.906	61.2	2.972	102.0
2-4	190	0.80	1.1	505.21	175	90	93	0.894	60.5	2.962	103.0
2-4	185	0.90	1.3	508.49	175	90	92	0.949	64.2	3.089	101.3
2-4	200	0.90	1.3	511.89	175	89	93	0.948	84.2	3.013	98.8
2-5	205	0.83	1.2	515.11	176	89	93	0.911	61.7	3.220	110.0
2-5	210	0.72	1.1	517.90	176	89	93	0.849	57.5	2.626	96.3
2-5	215	0.82	1.2	520.85	175	89	93	0.906	61.3	2.777	85.4
2-5	220	0.90	1.3	524.02	176	89	93	0.949	64.3	2.985	97.8
2-6	225	0.77	1.1	528.90	175	88	93	0.877	59.4	2.713	96.2
2-6	230	0.74	1.0	529.76	173	88	92	0.860	58.1	2.696	87.3
2-6	235	0.74	1.0	532.60	174	88	92	0.860	58.2	2.677	96.7
2-6	240	0.69	0.97	535.40	175	89	93	0.831	56.2	2.635	98.6

Less 0.09 for Leak Check

Totals and Averages

240	1.07	142.30	175	88.9	0.892	60.3	134.44	97.7

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/29/06
Meter ID	M9
Y_d	0.9939
Pitot C_p	0.84

Nozzle Diameter (in)	0.275
Filter ID	3043
Train Type	Imp
Train ID	IB5
Duct Dimensions (in)	24.0
P_b (inches Hg)	29.35
P_s (Inches H_2O)	0.2
Start Time	12:04
Stop Time	17:00

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1221.0	476.6	744.4
Impinger 2	698.2	610.4	267.6
Impinger 3	2004.1	980.2	1023.9
Impinger 4	628.3	627.6	0.7
Impinger 5			
Impinger 6			
Trap	267.7	272.5	15.2
Silica Gel	836.9	615.0	21.9
Weight of Water Collected, V_{wc} (g)			2,072.0
Silica Gel Net Weight, V_{wsg} (g)			21.9

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	7.15	NA	8.94

Run 2

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Preeeure ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume Initial (ft^3) 540.72	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root ΔP	Stack Ges Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1-1	5	0.36	0.68	543.00	171	79	79	0.600	40.5	2.180	96.5
1-1	10	0.34	0.65	545.31	172	79	80	0.583	39.4	2.207	100.8
1-1	15	0.35	0.67	547.59	173	79	61	0.592	40.0	2.176	97.8
1-1	20	0.34	0.65	549.62	174	78	82	0.583	39.5	2.126	97.1
1-2	25	0.49	0.93	552.50	174	80	84	0.700	47.4	2.550	97.0
1-2	30	0.47	0.69	555.20	175	80	84	0.686	46.4	2.569	99.8
1-2	35	0.47	0.89	557.86	175	80	84	0.686	46.4	2.531	98.4
1-2	40	0.45	0.86	560.51	174	80	84	0.671	45.4	2.521	100.1
1-3	45	0.45	0.86	563.15	174	62	87	0.671	45.4	2.500	99.2
1-3	50	0.46	0.67	565.81	172	84	66	0.678	45.8	2.512	98.5
1-3	55	0.40	0.76	568.30	174	85	89	0.632	42.8	2.347	98.8
1-3	60	0.40	0.76	570.78	174	85	90	0.632	42.8	2.335	98.3
1-4	85	0.47	0.69	573.90	174	86	90	0.686	46.4	2.936	114.0
1-4	70	0.47	0.68	576.21	174	85	90	0.686	46.4	2.176	84.5
1-4	75	0.44	0.84	576.80	174	65	90	0.686	44.9	2.439	97.9
1-4	60	0.46	0.87	581.45	174	86	90	0.678	45.9	2.494	97.9
1-5	65	0.46	0.87	584.06	175	86	90	0.678	45.9	2.475	97.2
1-5	90	0.49	0.93	587.01	174	86	89	0.700	47.4	2.760	105.0
1-5	95	0.49	0.93	589.59	175	85	89	0.700	47.4	2.433	92.6
1-5	100	0.49	0.93	592.34	175	65	89	0.700	47.4	2.593	98.7
1-6	105	0.45	0.86	594.99	175	85	88	0.671	45.4	2.501	99.3
1-6	110	0.45	0.86	598.01	174	84	88	0.871	45.4	2.852	113.2
1-6	115	0.45	0.86	600.30	174	83	87	0.873	45.5	2.167	85.7
1-6	120	0.45	0.86	602.91	174	83	86	0.671	45.4	2.472	98.1
2-1	125	0.47	0.89	605.68	175	80	60	0.686	46.4	2.645	102.B
2-1	130	0.44	0.84	608.17	175	80	80	0.663	44.9	2.376	95.5
2-1	135	0.46	0.87	610.90	175	80	81	0.678	45.9	2.605	102.3
2-1	140	0.46	0.87	613.55	175	79	82	0.878	45.9	2.528	99.3
2-2	145	0.46	0.87	616.09	175	79	82	0.678	45.9	2.423	95.2
2-2	150	0.47	0.89	618.78	175	78	82	0.686	46.4	2.569	99.8
2-2	155	0.47	0.89	621.45	175	78	82	0.686	46.4	2.550	99.1
2-2	160	0.44	0.87	624.10	175	78	82	0.663	44.8	2.531	101.6
2-3	165	0.48	0.81	626.87	175	77	82	0.693	46.8	2.648	101.8
2-3	170	0.46	0.91	629.45	175	78	82	0.693	46.9	2.464	94.8
2-3	175	0.50	0.95	632.29	175	77	81	0.707	47.9	2.718	102.4
2-3	180	0.50	0.95	635.07	175	77	81	0.707	47.9	2.660	100.2
2-4	165	0.51	0.97	638.22	175	77	81	0.714	48.4	3.015	112.5
2-4	190	0.51	0.97	640.57	174	77	81	0.714	48.3	2.249	83.8
2-4	195	0.51	0.97	843.42	173	78	80	0.714	48.3	2.733	101.8
2-4	200	0.51	0.97	646.18	173	78	60	0.714	48.3	2.827	97.8
2-5	205	0.51	0.97	648.94	174	76	80	0.714	46.3	2.665	99.4
2-5	210	0.48	0.91	651.61	174	76	80	0.893	46.9	2.560	98.3
2-5	215	0.48	0.91	654.32	174	75	80	0.693	46.9	2.600	99.9
2-5	220	0.50	0.95	657.07	174	75	80	0.707	47.9	2.639	99.3
2-6	225	0.48	0.91	659.73	173	75	60	0.693	46.9	2.552	98.0
2-6	230	0.41	0.78	662.23	173	75	79	0.640	43.3	2.400	99.7
2-6	235	0.41	0.78	664.71	173	75	79	0.640	43.3	2.381	98.9
2-6	240	0.41	0.76	667.20	174	75	79	0.640	43.3	2.391	99.4

Lese 0.09 for Leak Check

Totals and Averages

240	0.868	126.39	174	81.8	0.875	45.7	120.30	98.9

Project Number	2325
Client	Focus
Plant	Westatas
Location	Stack
Date	3/30/06
Meter ID	M9
Y_d	0.9939
Pitot C_p	0.84

Nozzle Diameter (in)	0.275
Filter ID	3115
Train Type	Imp
Train ID	IB5
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.60
P_s (Inches H_2O)	0.2
Start Time	12:15
Stop Time	19:16

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1195.5	476.8	718.7
Impinger 2	880.5	604.3	276.2
Impinger 3	2132.1	1023.0	1109.1
Impinger 4	627.2	629.3	-2.1
Impinger 5			
Impinger 8			
Trap	304.3	287.4	16.9
Silica Gel	843.3	836.7	6.6
Weight of Water Collected, V_{wc} (g)			2,118.8
Silica Gel Net Weight, V_{wsg} (g)			6.6

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	7.07	NA	9.27

Run 3

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume Initial (ft^3) 668.50	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root ΔP	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1-1	5	0.53	1.0	671.11	175	93	92	0.726	49.0	2.458	88.7
1-1	10	0.66	1.3	674.32	175	93	95	0.812	54.7	3.017	97.8
1-1	15	0.55	1.1	677.42	175	92	95	0.742	49.9	2.914	103.3
1-1	20	0.55	1.1	680.50	175	92	96	0.742	48.9	2.893	102.5
1-2	25	0.64	1.2	683.69	175	82	96	0.800	53.9	2.997	98.5
1-2	30	0.50	0.95	686.10	175	83	84	0.707	47.6	2.307	85.7
1-2	35	0.50	0.95	689.40	174	84	85	0.707	47.8	3.153	117.1
1-2	40	0.45	0.66	691.85	175	84	86	0.671	45.2	2.334	91.4
1-3	45	0.52	0.99	694.70	175	85	90	0.721	48.6	2.708	98.7
1-3	50	0.52	0.99	697.56	175	86	92	0.721	48.6	2.710	98.6
1-3	55	0.49	0.93	700.33	175	88	93	0.700	47.1	2.617	98.3
1-3	60	0.49	0.93	702.88	175	89	95	0.700	47.1	2.403	90.2
1-4	65	0.35	0.67	705.66	175	91	98	0.592	39.6	2.606	115.6
1-4	70	0.38	0.72	708.10	173	92	96	0.616	41.4	2.286	97.3
1-4	75	0.38	0.72	710.56	174	93	99	0.616	41.5	2.300	98.0
1-4	80	0.42	0.80	713.15	174	95	101	0.648	43.6	2.414	97.8
1-5	85	0.45	0.86	715.74	174	95	102	0.671	45.1	2.412	94.4
1-5	90	0.49	0.93	716.46	174	96	102	0.700	47.1	2.531	95.0
1-5	95	0.51	0.97	721.27	174	96	102	0.714	48.1	2.615	96.2
1-5	100	0.51	0.97	724.07	175	97	102	0.714	48.1	2.603	95.6
1-6	105	0.51	0.97	726.87	175	97	103	0.714	48.1	2.601	95.7
1-6	110	0.51	0.97	729.81	174	97	101	0.714	48.1	2.736	100.6
1-6	115	0.51	0.97	732.49	174	96	99	0.714	48.1	2.491	91.6
1-6	120	0.51	0.97	735.22	174	95	97	0.714	49.1	2.564	94.3
2-1	125	0.33	0.63	737.70	174	93	94	0.574	38.7	2.328	106.5
2-1	130	0.33	0.63	740.11	175	93	96	0.574	38.7	2.259	103.4
2-1	135	0.33	0.63	741.96	175	94	96	0.574	38.7	1.733	79.3
2-1	140	0.34	0.65	744.35	178	93	96	0.583	39.3	2.240	101.1
2-2	145	0.51	0.97	747.00	175	93	96	0.714	48.1	2.486	91.5
2-2	150	0.51	0.87	749.80	174	93	97	0.714	48.1	2.624	96.5
2-2	155	0.48	0.91	752.58	174	92	96	0.693	46.6	2.810	98.9
2-2	160	0.48	0.91	755.38	175	91	95	0.693	46.7	2.634	99.9
2-3	165	0.48	0.91	758.08	175	91	95	0.693	46.7	2.540	96.3
2-3	170	0.51	0.97	760.82	174	91	94	0.714	46.1	2.580	94.9
2-3	175	0.51	0.97	763.71	174	91	94	0.714	49.1	2.721	100.1
2-3	180	0.48	0.91	766.43	173	90	94	0.693	46.6	2.563	97.1
2-4	185	0.48	0.91	769.17	171	90	93	0.693	46.5	2.584	97.7
2-4	190	0.48	0.91	771.36	171	89	93	0.693	48.5	2.067	76.2
2-4	195	0.46	0.87	774.57	173	88	91	0.678	45.6	3.038	117.6
2-4	200	0.46	0.87	777.22	176	88	91	0.678	45.7	2.608	97.3
2-5	205	0.46	0.87	779.90	178	86	90	0.678	45.6	2.543	98.8
2-5	210	0.58	1.1	782.85	178	86	89	0.762	51.4	2.604	97.0
2-5	215	0.58	1.1	785.83	179	85	88	0.762	51.4	2.838	98.2
2-5	220	0.69	1.3	789.25	178	83	86	0.831	56.1	3.270	106.7
2-6	225	0.60	1.1	792.25	177	82	85	0.775	62.2	2.672	97.6
2-6	230	0.60	1.1	795.32	177	81	84	0.775	52.2	2.945	100.1
2-6	235	0.60	1.1	798.39	175	81	83	0.775	52.2	2.948	100.0
2-6	240	0.53	1.0	801.27	175	90	83	0.728	49.0	2.767	99.9

Less 0.10 for Leak Check

Totals and Averages

240	0.940	132.67	175	92.0	0.701	47.2	125.03	97.7

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/28/06
Meter ID	M7
Y_d	1.0011
Pitot C_p	0.84

Nozzle Diameter (in)	0.250
Filter ID	R1
Train Type	Imp
Train ID	IB3
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.50
P_s (Inches H_2O)	0.3
Start Time	12:10
Stop Time	16:22

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1195.5	474.4	721.1
Impinger 2	2317.1	1036.3	1280.8
Impinger 3	1005.7	719.2	286.5
Impinger 4	611.9	503.0	108.9
Impinger 5			
Impinger 6			
Trap	292.0	276.0	16.0
Silica Gel	749.8	731.5	18.3
Weight of Water Collected, V_{wc} (g)			2,413.3
Silica Gel Net Weight, V_{wsg} (g)			18.3

Orsat	$\%CO_2$	$\%CD_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	6.40	NA	9.79

Run 1

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume Initial (ft^3) 78.40	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root ΔP	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1-1	5	0.62	0.98	81.30	175	86	88	0.906	61.2	2.769	98.3
1-1	10	0.62	0.88	84.16	177	86	89	0.906	61.3	2.728	97.0
1-1	15	0.61	0.97	87.05	177	87	89	0.900	61.0	2.754	98.6
1-1	20	0.63	1.0	90.00	177	87	90	0.911	61.7	2.809	99.3
1-2	25	0.77	0.92	92.85	177	87	91	0.877	69.4	2.711	99.5
1-2	30	0.66	0.79	95.57	177	88	92	0.812	55.0	2.581	102.4
1-2	35	0.84	1.0	98.44	177	88	93	0.917	62.1	2.723	95.7
1-2	40	0.92	1.1	101.44	177	88	91	0.959	65.0	2.852	95.6
1-3	45	0.96	1.2	104.62	176	86	90	0.980	66.3	3.032	99.6
1-3	50	1.0	1.2	107.70	175	86	89	1.000	87.6	2.939	94.5
1-3	55	0.75	0.90	110.53	176	85	89	0.866	58.6	2.701	100.4
1-3	60	0.70	0.84	113.20	175	85	89	0.837	56.6	2.548	98.0
1-4	65	0.70	0.84	115.62	175	85	90	0.837	56.6	2.496	96.0
1-4	70	0.78	0.94	118.70	176	88	90	0.883	59.8	2.744	100.0
1-4	75	0.84	1.0	121.60	176	85	90	0.917	62.0	2.766	97.1
1-4	80	0.96	1.2	125.00	175	85	89	0.990	66.9	3.248	105.5
1-5	85	1.00	1.2	127.93	175	85	89	1.000	67.6	2.799	90.0
1-5	90	1.00	1.2	131.06	176	85	69	1.000	67.7	2.990	96.2
1-5	95	0.95	1.1	134.10	175	85	89	0.975	65.9	2.903	95.8
1-5	100	0.82	1.1	137.15	177	85	69	0.959	65.0	2.913	97.8
1-6	105	0.86	1.0	140.14	176	85	90	0.927	62.6	2.852	99.0
1-6	110	0.68	0.82	142.80	176	86	91	0.825	55.8	2.532	98.8
1-6	115	0.60	0.72	145.27	175	86	91	0.775	52.4	2.350	97.6
1-6	120	0.62	0.74	147.80	175	86	91	0.787	53.2	2.407	98.3
2-1	125	0.84	1.0	150.90	175	87	91	0.917	62.0	2.948	103.5
2-1	130	0.84	1.0	153.80	176	87	92	0.917	62.0	2.756	96.8
2-1	135	0.84	1.0	156.75	176	86	94	0.917	62.0	2.796	98.2
2-1	140	0.82	0.98	159.65	176	89	96	0.906	61.3	2.741	97.4
2-2	145	0.96	1.2	162.70	176	90	96	0.980	66.3	2.882	94.7
2-2	150	0.96	1.2	165.96	176	90	96	0.980	66.3	3.080	101.2
2-2	155	0.85	1.3	168.32	176	90	96	0.975	66.0	3.176	104.9
2-2	160	0.83	1.3	172.66	176	91	96	0.964	65.3	3.173	105.9
2-3	165	0.67	1.2	176.00	175	91	96	0.933	63.1	3.134	108.1
2-3	170	0.92	1.3	179.33	174	91	94	0.959	64.6	3.150	105.5
2-3	175	0.87	1.2	182.65	175	91	94	0.933	63.1	3.140	108.3
2-3	180	0.82	1.1	165.82	176	91	94	0.906	61.3	2.997	106.5
2-4	185	0.85	1.2	188.05	175	90	94	0.922	62.3	3.057	106.7
2-4	190	0.87	1.2	191.67	178	90	95	0.933	68.1	2.478	85.5
2-4	195	0.93	1.3	195.40	175	90	94	0.964	65.2	3.532	117.8
2-4	200	1.0	1.4	199.10	176	90	93	1.000	67.7	3.507	112.9
2-5	205	1.0	1.4	202.51	176	90	93	1.000	67.7	3.232	104.0
2-5	210	0.98	1.3	205.61	176	90	92	0.990	67.0	3.130	101.8
2-5	215	0.96	1.3	209.16	176	89	93	0.980	66.3	3.176	104.4
2-5	220	1.0	1.4	212.63	176	89	82	1.000	67.7	3.295	108.1
2-6	225	0.76	1.1	215.94	175	89	81	0.863	59.7	3.144	114.5
2-6	230	0.60	1.1	218.99	174	89	91	0.894	60.4	2.897	104.1
2-6	235	0.72	1.0	222.02	174	88	91	0.849	57.3	2.860	109.1
2-6	240	0.70	0.96	225.01	175	88	82	0.837	56.6	2.839	109.1

Less 0.10 for Leak Check

Totals and Averages

240	1.09	146.51	176	69.7	0.922	62.4	139.21	101.2

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/29/06
Meter ID	M7
Y_d	1.0011
Pitot C_p	0.84

Nozzle Diameter (in)	0.274
Filter ID	R2
Train Type	Imp
Train ID	IB3
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.35
P_s (Inches H_2O)	0.2
Start Time	11:49
Stop Time	17:00

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1219.6	477.9	741.7
Impinger 2	1034.3	724.4	309.9
Impinger 3	1960.3	1039.8	920.5
Impinger 4	509.8	505.8	2.9
Impinger 5			
Impinger 6			
Trap	301.9	282.4	19.5
Silica Gel	749.5	727.4	22.1
Weight of Water Collected, V_{wc} (g)			1,994.5
Silica Gel Net Weight, V_{wsg} (g)			22.1

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	7.15	NA	8.94

Run 2

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Preasure ΔP (in. H_2O)	Orifice Setting ΔH (in. H_2O)	Gas Sample Volume Initial (ft^3) 225.61	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root ΔP	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1-1	5	0.42	0.76	226.03	176	79	62	0.648	43.8	2.325	95.3
1-1	10	0.40	0.72	230.37	176	80	82	0.632	42.6	2.246	94.3
1-1	15	0.41	0.73	232.90	174	80	62	0.640	43.3	2.426	100.8
1-1	20	0.41	0.74	235.45	173	80	62	0.640	43.2	2.448	101.3
1-2	25	0.47	0.85	236.18	174	60	84	0.686	46.3	2.816	101.2
1-2	30	0.47	0.85	240.83	175	81	84	0.686	46.3	2.633	101.9
1-2	35	0.40	0.72	243.56	175	80	84	0.632	42.8	2.520	105.7
1-2	40	0.38	0.68	246.05	175	80	85	0.616	41.7	2.383	102.8
1-3	45	0.36	0.68	246.53	176	81	85	0.616	41.7	2.371	102.2
1-3	50	0.36	0.68	250.87	175	81	84	0.618	41.7	2.335	100.6
1-3	55	0.46	0.83	253.60	175	81	85	0.678	45.9	2.516	98.4
1-3	60	0.46	0.83	256.27	175	83	67	0.676	45.9	2.544	99.6
1-4	65	0.46	0.83	259.00	174	84	69	0.678	45.6	2.595	101.4
1-4	70	0.46	0.83	261.72	174	85	89	0.678	45.6	2.583	101.0
1-4	75	0.46	0.83	264.50	175	85	89	0.678	45.9	2.640	103.3
1-4	80	0.43	0.77	267.16	175	65	89	0.656	44.3	2.544	103.0
1-5	85	0.46	0.83	271.33	175	85	88	0.678	45.9	3.944	154.3
1-5	90	0.47	0.85	274.06	174	80	82	0.686	46.3	2.621	101.4
1-5	95	0.42	0.76	276.68	174	80	83	0.648	43.6	2.513	102.8
1-5	100	0.42	0.76	279.36	174	80	84	0.648	43.8	2.568	105.1
1-6	105	0.40	0.72	281.75	174	80	83	0.632	42.7	2.292	96.1
1-6	110	0.39	0.70	284.20	175	80	84	0.624	42.2	2.347	99.7
1-6	115	0.39	0.70	286.68	175	80	65	0.624	42.2	2.374	100.9
1-6	120	0.36	0.68	289.13	175	61	68	0.618	41.7	2.340	100.8
2-1	125	0.39	0.70	291.74	175	64	67	0.624	42.2	2.484	105.6
2-1	130	0.39	0.70	294.22	176	64	68	0.624	42.3	2.358	100.3
2-1	135	0.39	0.70	296.70	177	85	89	0.624	42.3	2.354	100.2
2-1	140	0.39	0.70	299.12	176	84	89	0.624	42.3	2.299	97.8
2-2	145	0.36	0.65	301.52	176	85	89	0.600	40.6	2.276	100.8
2-2	150	0.37	0.67	303.96	176	85	88	0.608	41.2	2.318	101.2
2-2	155	0.37	0.87	306.38	176	84	86	0.608	41.2	2.305	100.7
2-2	160	0.47	0.85	309.14	176	83	85	0.686	46.4	2.635	102.1
2-3	165	0.48	0.68	311.84	176	82	84	0.693	46.9	2.583	99.0
2-3	170	0.49	0.68	314.86	176	81	63	0.700	47.4	2.703	102.5
2-3	175	0.48	0.86	317.48	176	81	84	0.693	46.9	2.700	103.5
2-3	180	0.48	0.86	320.17	176	80	83	0.693	46.9	2.580	98.9
2-4	185	0.48	0.86	323.00	175	79	62	0.693	46.6	2.720	104.2
2-4	190	0.50	0.90	325.98	174	76	61	0.707	47.8	2.869	107.8
2-4	195	0.50	0.90	328.47	174	76	61	0.707	47.6	2.398	69.9
2-4	200	0.48	0.86	331.20	174	78	61	0.693	46.8	2.828	100.6
2-5	205	0.47	0.85	334.01	174	77	60	0.686	46.3	2.710	104.8
2-5	210	0.42	0.76	336.50	174	77	81	0.648	43.8	2.399	98.2
2-5	215	0.47	0.65	339.20	174	77	80	0.686	46.3	2.604	100.7
2-5	220	0.47	0.85	341.93	174	77	80	0.686	46.3	2.633	101.9
2-6	225	0.38	0.69	344.50	173	76	80	0.616	41.6	2.480	106.6
2-6	230	0.38	0.69	346.96	173	78	79	0.616	41.8	2.376	102.1
2-6	235	0.38	0.69	349.39	172	76	79	0.616	41.8	2.347	100.8
2-6	240	0.36	0.65	351.76	174	76	79	0.600	40.5	2.308	102.0

Less 1.65 for Leak Check

Totals and Avarages

240	0.770	124.52	175	82.4	0.653	44.1	119.22	100.8

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/30/06
Meter ID	M7
Y_d	1.0011
Pitot C_p	0.84

Nozzle Diameter (in)	0.274
Filter ID	R3
Train Type	Imp
Train ID	IB3
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.60
P_s (Inches H_2O)	0.2
Start Time	12:15
Stop Time	19:16

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	1248.1	402.9	845.2
Impinger 2	995.1	722.6	272.5
Impinger 3	1988.5	1002.2	986.3
Impinger 4	616.1	615.7	0.4
Impinger 5			
Impinger 6			
Trap	296.3	276.3	20.0
Silica Gel	805.2	762.3	22.9
Weight of Water Collected, V_{wc} (g)			2,124.4
Silica Gel Net Weight, V_{wsg} (g)			22.9

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	7.07	NA	9.27

Run 3

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure Δ P (in. H_2O)	Orifice Setting Δ H (in. H_2O)	Gas Sample Volume Initial (ft^3) 354.20	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root Δ P	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1-1	5	0.51	0.92	357.06	176	86	89	0.714	48.1	2.751	102.1
1-1	10	0.51	0.92	359.83	175	86	91	0.714	48.1	2.622	97.3
1-1	15	0.57	1.0	362.88	176	89	93	0.755	50.9	2.901	101.8
1-1	20	0.57	1.0	365.69	177	89	93	0.755	50.9	2.672	93.9
1-2	25	0.55	0.99	366.68	177	89	94	0.742	50.0	2.841	101.6
1-2	30	0.50	0.90	371.30	176	89	94	0.707	47.7	2.489	93.3
1-2	35	0.46	0.83	374.00	176	87	89	0.678	45.7	2.581	100.8
1-2	40	0.36	0.65	376.44	175	87	91	0.600	40.4	2.327	102.7
1-3	45	0.38	0.68	378.95	176	88	93	0.616	41.5	2.387	102.7
1-3	50	0.36	0.68	381.32	175	89	95	0.616	41.5	2.248	96.6
1-3	55	0.38	0.68	383.80	176	89	94	0.616	41.5	2.355	101.3
1-3	60	0.37	0.67	386.28	175	89	96	0.608	41.0	2.350	102.3
1-4	65	0.53	0.95	389.04	175	90	87	0.728	49.0	2.613	95.1
1-4	70	0.56	1.0	392.06	174	91	98	0.748	50.4	2.854	100.9
1-4	75	0.58	1.0	395.06	174	91	96	0.762	51.2	2.854	99.2
1-4	80	0.53	0.95	398.02	174	91	97	0.728	49.0	2.781	101.1
1-5	85	0.48	0.88	400.82	174	91	96	0.693	48.6	2.650	101.2
1-5	90	0.53	0.95	403.73	175	91	96	0.728	49.0	2.755	100.2
1-5	95	0.53	0.95	406.65	175	91	96	0.728	49.0	2.764	100.6
1-5	100	0.56	1.0	409.68	175	90	96	0.748	50.4	2.871	101.8
1-6	105	0.44	0.79	412.30	175	80	96	0.663	44.7	2.481	99.1
1-6	110	0.49	0.88	415.46	174	90	94	0.700	47.1	2.999	113.4
1-6	115	0.49	0.88	417.90	174	89	93	0.700	47.1	2.320	87.7
1-6	120	0.57	1.0	420.71	174	89	92	0.755	50.8	2.675	93.8
2-1	125	0.50	0.90	423.60	174	89	90	0.707	47.6	2.755	103.1
2-1	130	0.45	0.81	426.36	174	87	91	0.671	45.1	2.633	103.9
2-1	135	0.45	0.81	429.00	175	87	92	0.671	45.2	2.518	99.4
2-1	140	0.43	0.77	431.66	176	88	93	0.656	44.2	2.531	102.3
2-2	145	0.48	0.93	434.41	176	88	96	0.678	45.7	2.817	102.3
2-2	150	0.49	0.88	437.22	175	88	93	0.700	47.1	2.874	101.2
2-2	155	0.45	0.81	439.90	174	88	93	0.671	45.1	2.550	100.8
2-2	160	0.49	0.86	442.86	175	88	93	0.700	47.1	2.817	106.6
2-3	165	0.40	0.73	445.20	175	87	94	0.632	42.8	2.226	93.2
2-3	170	0.40	0.73	447.80	174	86	94	0.632	42.8	2.471	103.4
2-3	175	0.40	0.73	450.37	174	88	94	0.632	42.6	2.443	102.2
2-3	180	0.38	0.68	452.85	173	88	94	0.616	41.4	2.357	101.1
2-4	185	0.50	0.90	455.79	171	88	95	0.707	47.5	2.793	104.3
2-4	190	0.53	0.95	458.80	171	88	94	0.728	48.9	2.672	96.9
2-4	195	0.53	0.95	461.51	172	88	94	0.728	48.9	2.767	100.4
2-4	200	0.56	1.0	464.36	175	88	94	0.762	51.3	2.710	84.3
2-5	205	0.48	0.83	467.30	176	87	90	0.678	45.6	2.808	109.9
2-5	210	0.58	1.0	470.06	178	87	89	0.762	51.4	2.639	92.0
2-5	215	0.57	1.0	472.92	178	86	86	0.755	51.0	2.740	96.4
2-5	220	0.56	1.0	475.62	177	84	88	0.748	50.5	2.788	98.9
2-6	225	0.56	1.0	478.70	177	83	85	0.748	50.5	2.774	98.4
2-6	230	0.53	0.95	481.50	178	83	84	0.728	49.1	2.899	98.3
2-6	235	0.48	0.83	484.29	175	81	82	0.676	45.7	2.699	105.4
2-6	240	0.48	0.83	486.62	175	61	81	0.678	45.7	2.450	95.7

Less 0.09 for Leak Check

Totals and Averages

240	0.674	132.53	175	90.2	0.697	47.0	126.16	99.9

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/28/06
Meter ID	M11
Y_d	1.0020
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Tubes
Train ID	VOST
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.50
P_s (Inches H_2O)	NA
Start Time	12:10
Stop Time	12:50

Run 1A

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 558.95	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5	1.2	561.16	95	94	2.08
	10	1.0	563.63	95	94	2.33
	15	1.2	566.72	94	94	2.92
	20	1.2	569.62	94	93	2.74
	25	1.2	572.25	94	93	2.48
	30	1.2	574.70	95	93	2.31
	35	1.2	577.58	94	93	2.72
	40	1.2	579.76	95	93	2.06

Totals and Averages

40	1.18	20.81	93.9	19.65

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/28/06
Meter ID	M11
Y_d	1.0020
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Tubes
Train ID	VOST
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.50
P_s (Inches H_2O)	NA
Start Time	13:04
Stop Time	13:44

Run 1B

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 580.20	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5	1.2	582.85	95	93	2.50
	10	1.2	585.50	95	93	2.50
	15	1.2	587.75	95	93	2.12
	20	1.2	590.31	96	94	2.41
	25	1.2	592.55	96	94	2.11
	30	1.2	595.13	96	94	2.43
	35	1.2	597.36	96	94	2.10
	40	1.2	600.90	95	94	3.34

Totals and Averages

	40	1.20	20.70	94.6	19.52

Focus

Method 0030
Field Data Entry

Project No. 2325

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/28/06
Meter ID	M11
Y_d	1.0020
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Tubes
Train ID	VOST
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.50
P_s (Inches H_2O)	NA
Start Time	14:09
Stop Time	14:49

Run 1C

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure ΔH (in. H_2O)	Gas Sample Volume Initial (l) 601.96	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5	1.2	604.51	90	89	2.43
	10	1.2	606.68	90	89	2.07
	15	1.2	609.33	91	89	2.52
	20	1.2	611.56	91	89	2.12
	25	1.2	614.31	92	89	2.61
	30	1.2	616.70	92	90	2.27
	35	1.2	619.30	92	90	2.47
	40	1.2	621.89	92	90	2.46

Totals and Averages

40	1.20	19.93	90.3	18.94

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/28/06
Meter ID	M11
Y_d	1.0020
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Tubes
Train ID	VOST
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.50
P_s (Inches H_2O)	NA
Start Time	15:04
Stop Time	15:44

Run 1D

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 621.80	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5	1.2	624.27	90	90	2.35
	10	1.2	626.56	89	89	2.18
	15	1.2	628.92	88	89	2.25
	20	1.2	631.41	87	88	2.38
	25	1.2	633.78	87	86	2.27
	30	1.2	636.36	86	86	2.47
	35	1.2	638.80	86	86	2.34
	40	1.2	641.65	86	86	2.73

Totals and Averages

	40	1.20	19.85	87.4	18.96

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/29/06
Meter ID	M11
Y_d	1.0020
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Tubes
Train ID	VOST
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.35
P_s (Inches H_2O)	NA
Start Time	11:15
Stop Time	11:55

Run 2A

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 641.77	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5	1.2	643.76	78	77	1.93
	10	1.2	646.21	78	77	2.37
	15	1.2	648.60	79	78	2.31
	20	1.2	651.30	79	78	2.61
	25	1.2	653.90	79	78	2.51
	30	1.2	656.69	80	79	2.69
	35	1.2	659.40	80	79	2.61
	40	1.2	661.90	80	79	2.41

Totals and Averages

40	1.20	20.13	78.6	19.45

Focus

Method 0030
Field Data Entry

Project No. 2325

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/29/06
Meter ID	M11
Y_d	1.0020
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Tubes
Train ID	VOST
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.35
P_s (Inches H_2O)	NA
Start Time	12:20
Stop Time	13:00

Run 2B

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 662.72	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5	1.2	665.61	81	81	2.78
	10	1.2	667.64	82	81	1.95
	15	1.2	670.70	82	81	2.94
	20	1.2	673.46	83	81	2.65
	25	1.2	675.94	83	82	2.38
	30	1.2	678.64	83	81	2.59
	35	1.2	681.38	83	82	2.63
	40	1.1	683.78	83	81	2.30

Totals and Averages

	40	1.19	21.06	81.9	20.22

Focus

Method 0030
Field Data Entry

Project No. 2325

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/29/06
Meter ID	M11
Y_d	1.0020
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Tubes
Train ID	VOST
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.35
P_s (Inches H_2O)	NA
Start Time	13:56
Stop Time	14:36

Run 2C

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 684.44	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5	1.2	686.81	80	80	2.28
	10	1.0	689.46	80	80	2.55
	15	1.2	691.72	81	80	2.18
	20	1.2	694.41	81	80	2.59
	25	1.2	696.90	81	80	2.40
	30	1.2	699.46	81	80	2.46
	35	1.2	702.15	81	80	2.59
	40	1.2	704.56	81	80	2.32

Totals and Averages

40	1.18	20.12	80.4	19.37

Focus

Method 0030
Field Data Entry

Project No. 2325

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/29/06
Meter ID	M11
Y_d	1.0020
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Tubes
Train ID	VOST
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.35
P_s (Inches H_2O)	NA
Start Time	14:57
Stop Time	15:37

Run 2D

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 705.55	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5	1.2	708.21	82	82	2.55
	10	1.2	710.35	82	82	2.05
	15	1.2	712.52	83	83	2.08
	20	1.2	715.16	84	83	2.53
	25	1.2	717.68	84	83	2.41
	30	1.2	720.35	84	83	2.56
	35	1.2	722.96	84	84	2.50
	40	1.2	725.77	84	84	2.69

Totals and Averages

40	1.20	20.22	83.2	19.37

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/30/06
Meter ID	M11
Y_d	1.0020
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Tubes
Train ID	VOST
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.60
P_s (Inches H_2O)	NA
Start Time	11:50
Stop Time	12:30

Run 3A

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 767.59	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5	1.2	770.14	87	85	2.45
	10	1.2	772.59	87	85	2.35
	15	1.0	775.35	87	85	2.65
	20	1.2	778.10	86	84	2.65
	25	1.2	780.72	86	84	2.52
	30	1.2	783.27	85	84	2.46
	35	1.2	785.80	85	83	2.44
	40	1.2	788.49	85	84	2.59

Totals and Averages

40	1.18	20.90	85.1	20.12

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/30/06
Meter ID	M11
Y_d	1.0020
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Tubes
Train ID	VOST
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.60
P_s (Inches H_2O)	NA
Start Time	15:30
Stop Time	16:10

Run 3B

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 789.12	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5	1.2	791.70	90	88	2.47
	10	1.2	794.01	90	88	2.21
	15	1.0	796.48	90	88	2.36
	20	1.2	798.49	91	89	1.92
	25	1.2	800.70	91	89	2.11
	30	1.2	803.19	91	89	2.38
	35	1.2	805.85	91	89	2.54
	40	1.2	808.45	91	89	2.48

Totals and Averages

40	1.18	19.33	89.6	18.45

Focus

Method 0030
Field Data Entry

Project No. 2325

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/30/06
Meter ID	M11
Y_d	1.0020
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Tubes
Train ID	VOST
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.60
P_s (Inches H_2O)	NA
Start Time	16:26
Stop Time	17:06

Run 3C

Traverse Point	Min/Pt 5 Elapsed Time	Mater Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 810.48	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5	1.0	812.88	90	89	2.29
	10	1.2	815.33	90	89	2.34
	15	1.2	817.64	90	89	2.21
	20	1.2	819.97	91	89	2.22
	25	1.2	822.41	91	90	2.33
	30	1.0	824.85	91	89	2.33
	35	1.2	827.26	90	89	2.30
	40	1.2	829.65	89	88	2.29

Totals and Averages

40	1.15	19.17	89.6	18.30

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/30/06
Meter ID	M11
Y_d	1.0020
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Tubes
Train ID	VOST
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.60
P_s (Inches H_2O)	NA
Start Time	17:24
Stop Time	18:04

Run 3D

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 830.51	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5	1.2	832.82	90	89	2.21
	10	1.2	835.22	91	90	2.29
	15	1.2	837.70	91	90	2.36
	20	1.2	840.39	91	90	2.56
	25	1.2	842.40	91	90	1.92
	30	1.2	844.45	91	90	1.95
	35	1.2	847.09	92	90	2.51
	40	1.2	849.86	91	90	2.64

Totals and Averages

	40	1.20	19.35	90.4	18.45

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/28/2006
Meter ID	M13
Y_d	0.9947
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Bags
Train ID	Lung
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.50
P_s (Inches H_2O)	NA
Start Time	14:40
Stop Time	15:20

Run 1A

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 1610.12	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5		1611.86	77	78	1.68
	10		1613.63	78	78	1.70
	15		1615.48	78	78	1.78
	20		1617.20	78	79	1.65
	25		1619.09	79	79	1.82
	30		1620.74	78	79	1.59
	35		1622.42	78	79	1.61
	40		1624.13	78	79	1.64

Totals and Averages

40	14.01	78.3	13.47

Focus

Method 0040
Field Data Entry

Project No. 2325

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/29/2006
Meter ID	M13
Y_d	0.9947
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Bags
Train ID	Lung
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.35
P_s (Inches H_2O)	NA
Start Time	12:36
Stop Time	13:16

Run 2A

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 1674.92	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5		1676.41	71	72	1.44
	10		1677.71	71	71	1.26
	15		1679.30	71	71	1.54
	20		1680.40	71	71	1.07
	25		1682.25	71	71	1.79
	30		1683.59	71	71	1.30
	35		1685.50	72	71	1.85
	40		1687.41	72	71	1.85

Totals and Averages

40	12.49	71.2	12.11

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/29/2006
Meter ID	M13
Y_d	0.9947
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Bags
Train ID	Lung
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.35
P_s (Inches H_2O)	NA
Start Time	13:57
Stop Time	14:37

Run 2B

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 1704.53	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5		1705.81	72	72	1.24
	10		1707.40	72	72	1.54
	15		1709.42	73	72	1.95
	20		1710.78	72	72	1.32
	25		1712.55	72	72	1.71
	30		1714.48	72	72	1.87
	35		1716.33	72	72	1.79
	40		1718.19	72	72	1.80

Totals and Averages

40	13.66	72.1	13.22

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/30/2006
Meter ID	M13
Y_d	0.9947
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Bags
Train ID	Lung
Duct Dimensions (in)	24.0
P_b (inches Hg)	29.60
P_s (Inches H_2O)	NA
Start Time	11:51
Stop Time	12:31

Run 3A

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure Δ H (in. H_2O)	Gas Sample Volume Initial (l) 1752.16	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5		1753.31	72	73	1.12
	10		1755.04	72	72	1.69
	15		1756.82	72	73	1.74
	20		1758.45	72	72	1.59
	25		1760.71	72	72	2.21
	30		1763.05	71	71	2.29
	35		1765.19	71	71	2.10
	40		1767.57	72	71	2.32

Totals and Averages

40	15.41	71.8	15.05

Focus

Method 0040
Field Data Entry

Project No. 2325

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/30/2006
Meter ID	M13
Y_d	0.9947
Pitot C_p	NA

Nozzle Diameter (in)	NA
Filter ID	NA
Train Type	Bags
Train ID	Lung
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.60
P_s (Inches H_2O)	NA
Start Time	16:27
Stop Time	17:07

Run 3B

Traverse Point	Min/Pt 5 Elapsed Time	Meter Pressure ΔH (in. H_2O)	Gas Sample Volume Initial (l) 1767.79	DGM Inlet (°F)	DGM Outlet (°F)	Volume Metered Vmstd (l)
Middle	5		1768.80	78	78	0.97
	10		1769.75	78	78	0.92
	15		1772.21	79	79	2.37
	20		1774.05	80	79	1.77
	25		1775.77	80	79	1.66
	30		1778.00	79	79	2.15
	35		1780.53	78	78	2.44
	40		1783.45	77	77	2.82

Totals and Averages

40	15.66	78.5	15.10

Focus

Method 0061
Field Data Entry

Project No. 2325

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/28/06
Meter ID	M3
Y_d	1.0092
Pitot C_p	0.84

Nozzle Diameter (in)	0.276
Filter ID	NA
Train Type	Imp
Train ID	IB14
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.50
P_s (Inches H_2O)	0.3
Start Time	12:10
Stop Time	14:25

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	585.2	649.0	-63.8
Impinger 2	626.5	562.0	64.5
Impinger 3	657.5	612.8	44.7
Impinger 4	644.8	488.4	156.4
Impinger 5	989.5	673.7	315.8
Impinger 6	1023.1	643.0	360.1
Impinger 7			
Silica Gel	987.0	819.0	368.0
Weight of Water Collected, V_{wc} (g)			897.7
Silica Gel Net Weight, V_{wsg} (g)			368.0

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	6.29	NA	9.61

Run 1

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure Δ P (in. H_2O)	Orifice Setting Δ H (in. H_2O)	Gas Sample Volume Initial (ft^3) 604.10	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root Δ P	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1A-1	5	0.77	1.4	607.39	176	82	82	0.877	59.2	3.199	94.5
1A-1	10	0.70	1.3	610.58	176	84	82	0.837	56.5	3.095	95.9
1A-2	15	0.82	1.5	613.97	176	87	82	0.906	61.1	3.282	93.9
1A-2	20	0.74	1.4	617.26	176	88	82	0.860	58.1	3.181	95.8
1A-3	25	0.85	1.6	620.81	177	90	83	0.922	62.3	3.425	96.3
1A-3	30	0.64	1.2	623.90	177	93	84	0.800	54.0	2.967	96.2
1A-4	35	0.66	1.2	626.90	177	94	86	0.812	54.9	2.873	91.7
1A-4	40	0.84	1.5	630.42	177	94	90	0.917	61.9	3.361	95.1
1A-5	45	0.70	1.3	633.74	178	94	90	0.837	56.5	3.169	98.1
1A-5	50	0.70	1.3	837.41	178	94	90	0.837	56.5	3.503	108.5
1A-6	55	0.80	1.5	641.28	176	95	90	0.894	60.4	3.892	107.0
1A-6	60	0.65	1.2	643.35	175	96	90	0.806	54.4	1.972	63.3
2A-1	65	0.88	1.6	647.00	176	93	90	0.938	63.3	3.490	96.4
2A-1	70	0.88	1.6	650.62	176	94	88	0.938	63.3	3.464	95.7
2A-2	75	0.92	1.7	654.50	176	95	85	0.959	64.7	3.721	100.5
2A-2	80	0.84	1.5	657.62	177	96	66	0.917	61.9	2.985	84.5
2A-3	85	0.84	1.5	661.03	176	97	88	0.917	61.9	3.253	92.0
2A-3	90	0.90	1.6	664.80	175	98	89	0.949	64.0	3.401	92.8
2A-4	95	0.77	1.4	667.83	176	98	90	0.877	59.2	3.073	90.7
2A-4	100	0.72	1.3	671.04	176	99	91	0.849	57.3	3.047	93.1
2A-5	105	0.72	1.3	674.22	175	100	93	0.849	57.2	3.011	91.9
2A-5	110	0.68	1.2	677.35	175	101	94	0.825	55.8	2.957	92.9
2A-6	115	0.75	1.4	680.44	176	102	94	0.866	58.5	2.918	87.3
2A-6	120	0.75	1.4	683.74	176	102	95	0.866	58.5	3.114	93.2

Less 0.10 for Leak Check

Totals and Averages

120	1.41	79.54	176	91.3	0.877	59.2	76.04	93.6

Focus | **Method 0061** | **Project No. 2325**

Field Data Entry

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/29/06
Meter ID	M3
Y_d	1.0092
Pitot C_p	0.64

Nozzle Diameter (in)	0.307
Filter ID	NA
Train Type	Imp
Train ID	IB17
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.35
P_s (Inches H_2O)	0.3
Start Time	11:15
Stop Time	13:24

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	608.2	668.3	-60.1
Impinger 2	612.1	564.1	48.0
Impinger 3	667.5	569.3	98.2
Impinger 4	665.9	489.7	176.2
Impinger 5	985.0	666.1	318.9
Impinger 6	1004.1	644.1	360.0
Impinger 7	994.6	640.0	354.6
Silica Gel	647.8	626.6	21.2
Weight of Water Collected, V_{wc} (g)			1,295.8
Silica Gel Net Weight, V_{wsg} (g)			21.2

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	7.04	NA	6.88

Run 2

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure Δ P (in. H_2O)	Orifice Setting Δ H (in. H_2O)	Gas Sample Volume Initial (ft^3) 692.00	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root Δ P	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1A-1	5	0.48	1.5	695.24	175	76	76	0.693	46.9	3.170	98.1
1A-1	10	0.50	1.5	698.55	176	78	76	0.707	48.0	3.233	98.1
1A-2	15	0.50	1.5	701.95	175	82	77	0.707	47.9	3.305	100.2
1A-2	20	0.49	1.5	705.35	176	83	77	0.700	47.5	3.302	101.2
1A-3	25	0.50	1.5	708.72	175	85	78	0.707	47.9	3.264	99.0
1A-3	30	0.47	1.4	712.10	176	86	79	0.686	46.5	3.267	102.2
1A-4	35	0.42	1.3	715.26	176	88	79	0.648	43.9	3.053	101.1
1A-4	40	0.42	1.3	718.49	176	86	79	0.648	43.9	3.121	103.3
1A-5	45	0.38	1.2	721.60	175	67	80	0.616	41.8	2.999	104.3
1A-5	50	0.38	1.2	724.71	175	87	80	0.616	41.8	2.999	104.3
1A-6	55	0.38	1.2	727.73	174	88	81	0.616	41.7	2.907	101.0
1A-6	60	0.28	0.80	730.54	173	89	81	0.510	34.5	2.699	113.3
2A-1	65	0.47	1.4	733.74	175	85	84	0.666	46.5	3.081	96.4
2A-1	70	0.47	1.4	737.80	175	90	83	0.686	46.5	3.895	121.8
2A-2	75	0.50	1.5	740.74	176	91	84	0.707	46.0	2.816	85.5
2A-2	80	0.50	1.5	743.89	176	93	85	0.707	48.0	3.009	91.3
2A-3	85	0.49	1.5	747.33	175	94	86	0.700	47.4	3.280	100.5
2A-3	90	0.44	1.4	750.67	176	95	87	0.663	45.0	3.178	102.8
2A-4	95	0.42	1.3	754.00	174	95	87	0.648	43.9	3.188	104.7
2A-4	100	0.40	1.2	757.25	175	95	87	0.632	42.9	3.091	104.8
2A-5	105	0.41	1.3	760.51	176	95	88	0.640	43.4	3.099	103.6
2A-5	110	0.45	1.4	763.80	175	95	88	0.671	45.5	3.128	100.0
2A-6	115	0.46	1.4	767.17	175	92	88	0.678	46.0	3.213	101.6
2A-6	120	0.40	1.2	770.25	175	95	88	0.632	42.9	2.927	99.2

Less 0.16 for Leak Check

Totals and Averages

120	1.35	78.07	175	85.5	0.663	44.9	75.03	101.1

Focus

Method 0061
Field Data Entry

Project No. 2325

Project Number	2325
Client	Focus
Plant	Westates
Location	Stack
Date	3/30/06
Meter ID	M3
Y_d	1.0092
Pitot C_p	0.84

Nozzle Diameter (in)	0.307
Filter ID	NA
Train Type	Imp
Train ID	IB17
Duct Dimensions (in)	24.0
P_b (Inches Hg)	29.60
P_s (Inches H_2O)	0.3
Start Time	11:50
Stop Time	16:50

Moisture	Final Wt (g)	Tare Wt (g)	Net Wt (g)
Impinger 1	656.4	683.8	-27.4
Impinger 2	659.4	566.0	93.4
Impinger 3	652.4	573.2	79.2
Impinger 4	598.6	490.8	108.0
Impinger 5	944.5	666.4	278.1
Impinger 6	947.5	644.6	302.9
Impinger 7	1009.0	641.3	367.7
Silica Gel	840.7	615.4	225.3
Weight of Water Collected, V_{wc} (g)			1,201.9
Silica Gel Net Weight, V_{wsg} (g)			225.3

Orsat	$\%CO_2$	$\%CO_2+\%O_2$	$\%O_2$
Trial 1			
Trial 2			
Trial 3			
Average	7.05	NA	9.34

Run 3

Traverse Point	Min/Pt 5 Elapsed Time	Velocity Pressure Δ P (in. H_2O)	Orifice Setting Δ H (in. H_2O)	Gas Sample Volume Initial (ft^3) 773.00	Stack Temp. (°F)	DGM Inlet (°F)	DGM Outlet (°F)	Square Root Δ P	Stack Gas Velocity Vs (ft/sec)	Volume Metered Vmstd (ft^3)	Isokinetics (%)
1A-1	5	0.47	1.4	776.37	177	76	76	0.686	46.4	3.325	105.1
1A-1	10	0.56	1.7	779.99	178	79	77	0.748	50.6	3.561	103.1
1A-2	15	0.52	1.6	783.60	176	81	78	0.721	48.6	3.540	106.3
1A-2	20	0.55	1.7	787.23	176	84	77	0.742	50.2	3.554	103.8
1A-3	25	0.57	1.8	791.01	175	85	79	0.755	51.0	3.691	105.8
1A-3	30	0.59	1.8	794.60	176	86	79	0.768	52.0	3.698	104.3
1A-4	35	0.56	1.7	796.49	176	88	81	0.748	50.8	3.588	103.6
1A-4	40	0.55	1.7	802.15	176	90	82	0.742	50.2	3.547	103.8
1A-5	45	0.49	1.5	805.63	177	90	82	0.700	47.4	3.371	104.4
1A-5	50	0.50	1.6	809.18	177	91	83	0.707	47.9	3.433	105.2
1A-6	55	0.36	1.1	812.10	177	82	82	0.600	40.6	2.847	102.6
1A-6	60	0.36	1.1	815.03	176	83	62	0.800	40.6	2.854	103.0
2A-1	65	0.52	1.6	818.63	176	90	85	0.721	48.8	3.479	104.5
2A-1	70	0.52	1.6	822.19	176	91	85	0.721	48.8	3.437	103.2
2A-2	75	0.54	1.7	825.87	176	95	80	0.735	49.7	3.557	104.8
2A-2	80	0.53	1.6	829.41	176	99	88	0.728	49.2	3.384	100.7
2A-3	85	0.50	1.6	833.00	175	101	90	0.707	47.8	3.419	104.6
2A-3	90	0.48	1.5	836.45	174	101	90	0.693	46.8	3.285	102.5
2A-4	95	0.40	1.2	839.50	175	102	91	0.632	42.7	2.897	99.1
2A-4	100	0.38	1.2	842.50	175	102	91	0.616	41.7	2.849	100.0
2A-5	105	0.39	1.2	845.60	175	102	92	0.624	42.2	2.941	101.9
2A-5	110	0.39	1.2	848.67	175	103	92	0.624	42.2	2.910	100.9
2A-6	115	0.36	1.1	851.65	175	103	93	0.600	40.6	2.822	101.8
2A-6	120	0.36	1.1	854.69	175	104	93	0.600	40.8	2.876	103.7

Less 0.19 for Leak Check

Totals and Averages

120	1.47	81.50	176	88.3	0.688	46.6	78.62	103.1

Method 25A Data
Initial

Date
3/28/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Zero	0.0	0.0	NA
High	14.0	13.9	NA
Mid	NA	NA	NA
Low	7.02	6.96	NA
7:22:41	0	0	1.51
7:22:56	0.02	0	1.5
7:23:11	0.03	0	1.49
7:23:26	0	0	1.49
7:23:41	0	0	1.48
7:23:56	0	-0.02	1.48
7:24:11	9.39	3.49	1.46
7:24:26	14.02	6.85	1.47
7:24:41	14.03	6.89	1.45
7:24:56	13.99	6.95	1.45
7:25:11	14.04	6.96	1.45
7:25:26	14.05	6.96	1.44
7:25:41	14.03	6.95	1.44
7:25:56	14.04	6.96	1.43
7:26:11	14.04	6.95	1.43
7:26:26	13.92	6.95	1.42
7:26:41	12.04	6.79	1.42
7:26:56	12.03	6.78	1.41
7:27:11	12.15	6.81	1.42
7:27:26	8.54	11.37	1.43
7:27:41	7.03	13.88	1.42
7:27:56	7.03	13.91	1.42
7:28:11	7.03	13.92	1.42
7:28:26	7.02	13.92	1.41
7:28:41	7.02	13.92	1.41
7:28:58	7.01	13.92	1.41
7:29:11	6.99	13.92	1.4
7:29:26	6.98	13.92	1.4
7:29:41	6.85	13.44	1.4
7:29:56	0.03	0.55	1.41
7:30:11	0.02	-0.06	1.43
7:30:26	0.01	-0.06	1.46
7:30:41	0.01	-0.06	1.44
7:30:56	0.1	-0.12	1.43
7:31:11	0.07	-0.11	c

Date
3/28/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Zero	0.0	0.1	0.0
High	NA	13.9	79.8
Mid	NA	NA	49.7
Low	7.09	NA	28.8
7:33:56	6.99	14	0.02
7:34:11	7.11	13.92	0.01
7:34:26	7.17	13.9	0
7:34:41	7.18	13.9	-0.01
7:34:56	7.18	13.9	-0.01
7:35:11	7.15	13.87	-0.01
7:35:26	7.1	13.88	-0.01
7:35:41	7.11	13.86	-0.02
7:35:56	7.09	13.85	-0.02
7:36:11	7.1	13.85	-0.03
7:36:26	7.1	13.85	-0.03
7:36:41	7.07	13.85	69.73
7:36:56	4	8.69	79.97
7:37:11	1.33	2.85	80.14
7:37:28	0.37	0.88	80.24
7:37:41	0.11	0.28	80.23
7:37:56	0.05	0.13	80.22
7:38:11	0.04	0.08	74.67
7:36:26	0.04	0.06	80.01
7:38:41	0.04	0.06	79.84
7:38:56	0.01	0.06	79.74
7:39:11	0	0.07	79.71
7:39:26	0.01	0.07	44.59
7:39:41	0	0.08	28.97
7:39:56	0	0.07	28.88
7:40:11	0	0.06	28.82
7:40:28	0	0.06	28.82
7:40:41	0	0.04	28.81
7:40:56	0	0.02	23.77
7:41:11	0	0.86	45.89
7:41:26	0	2.19	49.66
7:41:41	0	0.68	49.69
7:41:56	0	0.19	49.75
7:42:11	0	0.08	49.76
7:42:26	0	0.06	49.77
7:42:41	0	0.06	49.56
7:42:56	0	0.07	8.25
7:43:11	0.01	6.95	1.21
7:43:26	0.05	17.3	1.09
7:43:41	0.05	19.87	1.04
7:43:56	0.05	20.42	1.01
7:44:11	0.05	20.6	1.02
7:44:26	0.05	20.83	1.3
7:44:41	0.05	20.63	1.65
7:44:56	0.05	20.63	1.2

Date
3/28/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Average	6.39	9.50	0.1
12:10:04	6.68	9.65	0.11
12:11:04	6.93	9.2	0.06
12:12:04	7.06	8.96	0.06
12:13:04	7.15	8.89	0.05
12:14:04	6.87	9.34	0.1
12:15:04	6.72	9.64	0.09
12:16:04	6.69	9.62	0.07
12:17:04	6.89	9.27	0.1
12:18:04	7	9.09	0.13
12:19:04	7.24	8.7	0.14
12:20:04	7.02	8.97	0.13
12:21:04	6.82	9.34	0.1
12:22:04	6.71	9.45	0.17
12:23:04	6.83	9.34	0.07
12:24:04	6.86	9.27	0.13
12:25:04	6.89	9.13	0.21
12:26:04	6.94	9.03	0.19
12:27:04	7.01	8.81	0.12
12:28:04	6.97	8.91	0.17
12:29:04	6.8	9.13	0.13
12:30:04	6.73	9.29	0.1
12:31:04	6.79	9.33	0.14
12:32:04	6.81	9.34	0.07
12:33:04	6.88	9.24	0.23
12:34:04	6.86	9.2	0.23
12:35:04	6.93	8.97	0.12
12:36:04	6.97	8.92	0.05
12:37:04	6.96	8.97	0.06
12:38:04	6.78	9.23	0.07
12:39:04	6.65	9.43	0.05
12:40:04	6.67	9.35	0.07
12:41:04	8.68	9.28	0.07
12:42:04	8.76	9.05	0.07
12:43:04	6.91	8.84	0.08
12:44:04	6.82	9.05	0.08
12:45:04	6.83	8.98	0.05
12:46:04	6.65	9.22	0.07
12:47:04	6.59	9.4	0.05
12:47:41	6.54	9.46	0
12:48:41	6.51	9.44	0.05
12:49:41	6.52	9.42	0.1
12:50:41	6.6	9.31	0.25
12:51:41	6.64	9.22	0.11
12:52:41	6.63	9.26	0.07
12:53:41	8.43	9.5	0.03
12:54:41	8.31	9.71	0.02
12:55:41	6.21	9.88	0.06
12:56:41	6.36	9.62	0.05
12:57:41	8.54	9.3	0.05
12:58:41	6.69	9.05	0.06
12:59:41	6.77	8.89	0.07
13:00:41	6.79	8.88	0.07
13:01:41	8.34	9.63	0.07
13:02:41	6.05	10.18	0.15
13:03:41	6.07	10.14	0.08
13:04:41	6.21	9.74	0.03
13:05:41	6.32	9.48	0.05
13:06:41	6.45	9.27	0.03
13:07:41	8.39	9.33	0.02
13:08:41	6.19	9.68	0.07
13:09:41	5.9	10.32	0.13
13:10:41	5.47	10.89	0.11
13:11:41	4.76	12.77	0.08
13:12:41	6.01	10.09	0.04
13:13:41	6.33	9.41	0.01

13:14:41	6.49	9.1	0.01
13:15:41	6.3	9.4	0.05
13:16:41	6.07	9.78	0.07
13:17:41	5.88	10.21	0.05
13:18:41	5.85	10.27	0.04
13:19:41	6.03	9.87	0.03
13:20:41	6.31	9.31	0.1
13:21:41	6.51	8.92	0.07
13:22:41	6.46	9	0.06
13:23:41	6.23	9.42	0.01
13:24:41	5.98	9.93	0.01
13:25:41	5.87	10.2	0.01
13:26:41	8	9.92	0.15
13:27:41	6.22	9.43	0.14
13:28:41	6.52	8.88	0.07
13:29:41	6.63	8.65	0.1
13:30:41	6.45	8.95	0.09
13:31:41	6.16	9.48	0.07
13:32:41	5.98	9.89	0.13
13:33:41	5.96	9.96	0.07
13:34:41	6.13	9.58	0.05
13:35:41	6.35	9.1	0.05
13:36:41	6.57	8.67	0.01
13:37:41	6.64	8.53	0.05
13:38:41	6.45	8.84	0.06
13:39:41	6.13	9.45	0.05
13:40:41	6	9.78	0.01
13:41:41	6	9.76	0.02
13:42:41	6.15	9.43	0.01
13:43:41	6.34	9.03	-0.01
13:44:41	6.51	8.72	0
13:45:41	6.58	8.64	0.03
13:46:41	6.38	8.95	0.01
13:47:41	6.09	9.53	0.1
13:48:41	5.9	9.94	0.02
13:49:41	5.91	9.92	0.03
13:50:41	8.07	9.58	0.03
13:51:41	8.19	9.27	0.04
13:52:41	6.31	9.01	0.06
13:53:41	6.36	8.89	-0.01
13:54:41	6.19	9.23	0
13:55:41	5.96	9.75	0
13:56:41	5.78	10.17	-0.01
13:57:41	6.12	9.47	0.01
13:58:41	6.15	9.29	0.02
13:59:41	5.98	9.76	0.03
14:00:41	6.75	10	-0.06
14:01:41	6.73	10	-0.06
14:02:41	6.46	10.01	-0.04
14:03:41	8.46	9.7	-0.05
14:04:41	6.51	9.42	0.01
14:05:41	6.63	9.13	0.03
14:06:41	6.26	9.62	0.04
14:07:41	6	10.15	0.07
14:08:41	5.83	10.52	0.09
14:09:41	5.81	10.71	0.06
14:10:41	5.81	10.7	0.02
14:11:41	5.93	10.15	0.04
14:12:41	6.18	9.57	0
14:13:41	6.22	9.49	0.03
14:14:41	6.13	9.68	0.01
14:15:41	5.92	10.15	0.02
14:16:41	5.81	10.47	0.02
14:17:41	5.81	10.47	0.03
14:18:41	5.81	10.41	0.01
14:19:41	5.94	10.15	0.02
14:20:41	6.19	9.61	0.09
14:21:41	6.45	9.12	0.07
14:22:41	6.47	9.12	0.06
14:23:41	6.21	9.56	0.05
14:24:41	5.98	10.09	0.07
14:25:41	5.93	10.15	0.27

Method 25A Data
Cal 1A

Date
3/28/2006

Time	CD_2 (%)	O_2 (%)	THC (ppm)
Zero	0.0	0.1	0.0
Upscale	7.11	13.6	49.6
14:31:14	7.13	13.85	0.15
14:31:29	7.77	13.85	0.1
14:31:44	7.04	13.81	0.12
14:31:59	6.92	13.9	0.07
14:32:14	7.02	13.65	0.02
14:32:29	7.09	13.85	0.02
14:32:44	7.1	13.85	0.02
14:32:59	7.12	13.83	0.01
14:33:14	7.12	13.82	0.01
14:33:29	7.09	13.81	0.01
14:33:44	7.04	13.86	11.55
14:33:59	4.57	14.71	49.09
14:34:14	1.62	6.53	49.49
14:34:29	0.5	1.75	49.52
14:34:44	0.19	0.46	49.61
14:34:59	0.1	0.16	49.59
14:35:14	0.06	0.06	49.56
14:35:29	0.05	0.06	49.57
14:35:44	0.05	0.04	49.52
14:35:59	0.03	0.06	31.4

Date
3/28/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Average	6.65	9.85	-0.1
14:44:20	6.53	9.8	0.28
14:45:20	6.35	9.63	0.14
14:46:20	6.26	9.83	0.08
14:47:20	6.18	9.87	0.04
14:48:20	6.12	9.91	0.02
14:49:20	6.44	9.98	0
14:50:20	6.54	9.78	-0.01
14:51:20	6.26	9.74	0.01
14:52:20	6.08	9.89	0.04
14:53:20	6.33	10.31	-0.03
14:54:20	6.39	10.15	-0.02
14:55:20	6.31	9.82	-0.02
14:56:20	7.21	9.68	-0.12
14:57:20	7.03	9.8	-0.09
14:58:20	6.86	9.6	-0.05
14:59:20	6.39	10.06	-0.01
15:00:20	6.25	10.08	0
15:01:20	6.13	10.12	-0.01
15:02:20	5.98	10.21	0.01
15:03:20	6	10.05	-0.05
15:04:20	6.02	9.87	-0.07
15:05:20	6.63	10.08	-0.14
15:06:20	6.47	10.3	-0.16
15:07:20	6.2	10.52	-0.13
15:08:20	6.07	10.56	-0.06
15:09:20	6.02	10.5	-0.09
15:10:20	6.09	10.25	-0.09
15:11:20	6.88	10.05	-0.11
15:12:20	6.57	10.18	-0.11
15:13:20	6.58	10.52	-0.14
15:14:20	6.78	10.76	-0.15
15:15:20	6.61	10.81	-0.14
15:16:20	7.29	9.8	-0.12
15:17:20	7.04	9.82	-0.13
15:18:20	6.55	10.61	-0.12
15:19:20	6.52	10.63	-0.12
15:20:20	6.81	10.07	-0.11
15:21:20	6.99	9.74	-0.17
15:22:20	6.98	9.73	-0.17
15:23:20	6.83	9.93	-0.13
15:24:20	6.81	9.93	-0.11
15:25:20	6.79	9.99	-0.14
15:26:20	6.76	9.95	-0.1
15:27:20	6.83	9.82	-0.17
15:28:20	6.82	9.79	-0.17
15:29:20	6.84	9.75	-0.19
15:30:20	6.79	9.72	-0.2
15:31:20	6.69	9.8	-0.16
15:32:20	6.66	9.81	-0.14
15:33:20	6.69	9.6	-0.17
15:34:20	6.8	9.67	-0.2
15:35:20	6.82	9.56	-0.18
15:36:20	6.96	9.63	-0.18
15:37:20	7.3	9.72	-0.21
15:38:20	7.18	9.7	-0.21
15:39:20	6.98	9.72	-0.17
15:40:20	6.88	9.69	-0.18
15:41:20	6.85	9.69	-0.18
15:42:20	6.88	9.64	-0.14
15:43:20	6.85	9.6	-0.18
15:44:20	6.84	9.62	-0.2
15:45:20	8.86	9.61	-0.18
15:46:20	6.93	9.47	-0.2
15:47:20	6.82	9.61	-0.21
15:48:20	6.85	9.59	-0.2
15:49:20	6.84	9.5	-0.16

15:50:20	6.86	9.35	-0.15
15:51:20	6.89	9.4	-0.16
15:52:20	6.88	9.49	-0.18
15:53:20	6.83	9.49	-0.2
15:54:20	6.84	9.52	-0.2
15:55:20	6.86	9.48	-0.18
15:56:20	6.86	9.42	-0.17
15:57:20	6.94	9.33	-0.19
15:58:20	6.91	9.46	-0.21
15:59:20	7.1	9.67	-0.22
16:00:20	7.07	9.65	-0.22
16:01:20	6.76	9.76	-0.21
16:02:20	6.55	9.84	-0.21
16:03:20	6.54	9.83	-0.21
16:04:20	6.47	9.89	-0.2
16:05:20	6.89	10.13	-0.22
16:06:20	6.47	10.3	-0.25
16:07:20	6.29	10.4	-0.23
16:08:20	6.26	10.45	-0.21
16:09:20	6.24	10.37	-0.16
16:10:20	6.22	10.4	-0.17
16:11:20	6.2	10.5	-0.2
16:12:20	6.13	10.54	-0.15
16:13:20	6.11	10.42	-0.12
16:14:20	6.15	10.3	-0.12
16:15:20	6.23	10.18	-0.09
16:16:20	6.29	10.23	-0.06
16:17:20	6.33	10.21	-0.11
16:18:20	6.4	10.04	-0.19
16:19:20	6.47	9.84	-0.16
16:20:20	6.67	9.79	-0.15
16:21:20	6.67	9.87	-0.13
16:22:20	6.55	10.05	-0.14
16:23:20	6.77	9.57	-0.17
16:24:20	6.8	9.47	-0.19
16:25:20	7.12	9.55	-0.21
16:26:20	6.97	9.56	-0.2
16:27:20	6.79	9.68	-0.18
16:28:20	6.74	9.64	-0.17
16:29:20	6.84	9.53	-0.21
16:30:20	6.89	9.41	-0.16
16:31:20	6.78	9.41	-0.16
16:32:20	6.67	9.52	-0.17
16:33:20	6.65	9.61	-0.2
16:34:20	6.67	9.62	-0.18
16:35:20	6.81	9.52	-0.19
16:36:20	6.89	9.37	-0.2
16:37:20	6.67	9.36	-0.21
16:38:20	6.77	9.53	-0.19
16:39:20	6.72	9.56	-0.14
16:40:20	6.67	9.84	-0.17
16:41:20	6.68	9.6	-0.16
16:42:20	6.78	9.46	-0.2
16:43:20	7.06	9.53	-0.21
16:44:20	6.84	9.36	-0.2

Date
3/28/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Zero	0.1	0.1	0.0
Upscale	7.13	13.8	47.9
16:51:42	6.98	13.85	0.07
16:51:57	6.98	13.65	0.06
16:52:12	7.03	13.65	0.03
16:52:27	7.04	13.61	0
16:52:42	7.08	13.8	0
16:52:57	7.09	13.8	-0.01
16:53:12	7.12	13.8	-0.02
16:53:27	7.13	13.79	-0.03
16:53:42	7.13	13.8	-0.04
16:53:57	7.15	13.79	-0.08
16:54:12	7.17	13.79	-0.09
16:54:27	7.1	13.79	-0.1
16:54:42	7.04	13.75	36.75
16:54:57	2.48	5.81	46.32
16:55:12	0.08	-0.83	46.26
16:55:27	0.22	0.1	47.03
16:55:42	0.19	0.07	47.04
16:55:57	0.15	0.06	47.16
16:56:12	0.13	0.06	47.31
16:56:27	0.1	0.06	47.55
16:56:42	0.09	0.06	47.59
16:56:57	0.06	0.06	47.6
16:57:12	0.05	0.06	47.84
16:57:27	0.05	0.06	47.86
16:57:42	0.05	0.04	47.87
18:57:57	0.05	0.06	47.88
18:58:12	0.05	0.04	47.9
16:56:27	0.04	0.03	47.91
16:56:42	0.04	0.04	47.85
16:58:57	0.05	0	33.34
16:59:12	0.05	4.2	1.89
16:59:27	0.09	18.26	1.19
16:59:42	0.09	20.26	1.54
16:59:57	0.06	20.41	1.45
17:00:12	0.07	20.44	0.67
17:00:27	0.07	20.45	0.85

Date
3/29/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Zero	0.0	0.0	NA
High	14.0	14.0	NA
Mid	NA	NA	NA
Low	7.00	7.01	NA
10:14:16	0	0.06	0
10:14:33	0	0.06	0.95
10:14:48	0	0.08	0.91
10:15:03	0	0.04	0.9
10:15:18	0	0.05	0.63
10:15:33	0	0.04	0.83
10:15:48	0	0.02	0.63
10:16:03	0	0	0.83
10:16:18	0.29	0.24	0.83
10:16:33	13.96	7.22	0.8
10:16:48	14.1	7.02	0.79
10:17:03	14.02	7.03	0.8
10:17:18	14	7.02	0.81
10:17:33	14.02	7.02	0.81
10:17:46	14.02	7	0.78
10:18:03	14.02	7.01	0.78
10:18:18	14.03	7	0.78
10:18:33	14.04	7.01	0.77
10:16:48	14.05	6.99	0.79
10:19:03	14.06	6.99	0.78
10:19:18	4.27	2.52	0.77
10:19:33	0	0.01	0.79
10:19:48	0	0	0.78
10:20:03	0	0	0.76
10:20:18	0	0	0.79
10:20:33	3.6	2.41	0.76
10:20:48	7.04	13.55	0.75
10:21:03	6.98	13.9	0.76
10:21:18	7	13.92	0.76
10:21:33	6.99	13.96	0.76
10:21:46	7	13.96	0.75
10:22:03	7	13.96	0.74
10:22:18	7	13.97	0.78
10:22:33	8.99	13.98	0.75
10:22:48	6.99	13.98	0.76
10:23:03	6.33	13.8	0.76
10:23:18	5.94	13.73	0.76
10:23:33	5.95	13.73	0.65
10:23:48	2.5	17.2	0.57
10:24:03	0.05	20.69	0.57
10:24:16	0.05	20.71	0.56
10:24:33	0.05	20.7	0.57
10:24:48	0.05	20.7	0.56
10:25:03	0.04	20.69	0.56
10:25:18	0.02	20.7	0.62

Method 25A Data
Bias

Date
3/29/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Zero	0.0	0.1	0.0
High	NA	13.9	79.7
Mid	NA	NA	49.5
Low	7.03	NA	28.8
10:25:03	0.04	20.69	0.56
10:25:18	0.02	20.7	0.62
10:25:33	1.15	20	-0.3
10:25:48	5.58	15.83	-0.3
10:26:03	6.69	14.34	-0.3
10:26:16	6.95	14.02	-0.3
10:26:33	7.03	13.93	-0.3
10:26:48	7.06	13.92	-0.07
10:27:03	7.08	13.92	-0.01
10:27:16	7.03	13.91	-0.01
10:27:33	7.03	13.9	-0.01
10:27:48	7.03	13.9	-0.02
10:28:03	7.03	13.9	7.52
10:28:18	6.78	13.66	79.38
10:28:33	3.29	7.19	79.98
10:28:48	1.12	2.46	80.05
10:29:03	0.34	0.83	79.88
10:29:18	0.12	0.33	79.69
10:29:33	0.06	0.16	79.69
10:29:48	0.02	0.12	79.74
10:30:03	0	0.07	79.74
10:30:16	0	0.09	40.37
10:30:33	0	0.09	26.96
10:30:48	0	0.07	26.84
10:31:03	0	0.06	28.81
10:31:16	0	0.06	28.8
10:31:33	0	0.06	28.79
10:31:48	0	0.06	29.84
10:32:03	0	0.07	49.36
10:32:18	0	0.11	49.51
10:32:33	0	0.07	49.52
10:32:48	0	0.06	49.51
10:33:03	0	0.06	49.48
10:33:18	0	0.08	49.47
10:33:33	0	0.06	49.47
10:33:48	0	0.06	49.3
10:34:03	0	0.05	12.44
10:34:18	0	4.39	1.25

Date
3/29/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Average	7.10	8.80	0.0
11:14:51	7.62	8.47	0.15
11:15:51	7.23	8.45	0.11
11:16:51	7.3	8.34	0.1
11:17:51	7.3	8.34	0.1
11:18:51	7.33	8.29	0.1
11:19:51	7.42	8.55	0.18
11:20:51	7.81	8.57	0.18
11:21:51	7.56	8.53	0.14
11:22:51	7.45	8.55	0.11
11:23:51	7.33	8.57	0.15
11:24:51	7.33	8.53	0.18
11:25:51	7.83	8.55	0.18
11:26:51	7.79	8.57	0.14
11:27:51	7.72	8.53	0.15
11:28:51	7.83	8.54	0.14
11:29:51	7.59	8.47	0.15
11:30:51	7.52	8.46	0.14
11:31:51	7.37	8.59	0.18
11:32:51	7.31	8.63	0.18
11:33:51	7.24	8.63	0.14
11:34:51	7.62	8.63	0.11
11:35:51	7.21	8.53	0.12
11:36:51	7.23	8.45	0.11
11:37:51	7.3	8.34	0.1
11:38:51	7.3	8.34	0.1
11:39:51	7.33	8.29	0.1
11:40:51	7.33	8.33	0.09
11:41:51	7.33	8.35	0.08
11:42:51	7.36	8.27	0.08
11:43:51	7.37	8.25	0.08
11:44:51	7.31	8.32	0.08
11:45:51	7.2	8.47	0.08
11:46:51	7.13	8.52	0.07
11:47:51	7.13	8.46	0.07
11:48:51	7.16	8.39	0.08
11:49:51	7.27	8.19	0.08
11:50:51	7.15	8.34	0.07
11:51:51	6.95	8.63	0.08
11:52:51	6.93	6.64	0.06
11:53:51	6.9	6.67	0.06
11:54:51	6.79	8.79	0.07
11:55:51	6.76	8.84	0.07
11:56:51	6.72	8.93	0.07
11:57:51	6.63	9.03	0.06
11:58:51	6.58	9.15	0.05
11:59:51	6.45	9.32	0.05
12:00:51	6.39	9.39	0.06
12:01:51	6.29	9.54	0.05
12:02:51	6.46	9.68	0.05
12:03:51	7.07	9.82	0
12:04:51	7.07	9.75	0
12:05:51	7.01	9.72	0
12:06:51	7.08	9.54	0
12:07:51	7.19	9.34	0.01
12:08:51	7.14	9.39	0.01
12:09:51	7.08	9.45	0
12:10:51	7.11	9.4	-0.01
12:11:51	7.11	9.41	0
12:12:51	7.16	9.3	0
12:13:51	7.16	9.29	0
12:14:51	7.11	9.28	0.01
12:15:51	7.19	9.12	0
12:16:51	7.18	9.1	0.01
12:17:51	7.27	9.11	0
12:18:51	7.31	9.02	0
12:19:51	7.42	8.75	0

12:20:51	7.61	8.4	0
12:21:51	7.58	8.48	0
12:22:51	7.45	6.64	0
12:23:51	7.46	8.67	0
12:24:51	7.36	8.67	0.01
12:25:51	7.38	6.62	0.01
12:26:51	7.37	8.67	0.01
12:27:51	7.28	8.61	0.01
12:28:51	7.49	8.33	0
12:29:51	7.41	8.36	0.01
12:30:51	7.4	6.32	0.01
12:31:51	7.36	8.48	0.01
12:32:51	7.36	8.49	0.01
12:33:51	7.36	8.53	0
12:34:51	7.26	8.6	0.02
12:35:51	7.19	8.67	0.02
12:36:51	7.28	8.58	0.02
12:37:51	7.27	8.56	0.02
12:38:51	7.24	6.59	0.01
12:39:51	6.99	8.94	0
12:40:51	7.06	8.8	0.01
12:41:51	7.16	6.65	0.01
12:42:51	7.2	8.58	0
12:43:51	7.13	8.72	0
12:44:51	7.07	8.6	0.01
12:45:51	6.97	9.03	0
12:46:51	8.83	9.22	0
12:47:51	8.73	9.38	0
12:48:51	6.6	9.47	0.01
12:49:51	8.55	9.54	0
12:50:51	8.56	9.43	0.01
12:51:51	6.49	9.55	0.02
12:52:51	6.49	9.6	0
12:53:51	6.52	9.51	0
12:54:51	6.6	9.43	0.01
12:55:51	8.85	9.38	0.01
12:56:51	6.75	9.22	0.01
12:57:51	6.75	9.2	0.01
12:58:51	6.69	9.26	0
12:59:51	6.77	9.11	0
13:00:51	6.63	9.01	0.02
13:01:51	6.82	9	0.02
13:02:51	6.74	9.11	0.02
13:03:51	8.75	9.07	0.01
13:04:51	6.66	8.89	0.01
13:05:51	6.96	6.7	0.02
13:06:51	6.96	8.71	0.02
13:07:51	6.92	6.75	0.01
13:08:51	8.92	8.74	0
13:09:51	6.93	8.7	0
13:10:51	6.93	8.74	-0.01
13:11:51	6.93	8.74	-0.01
13:12:51	6.97	8.66	-0.01
13:13:51	6.98	8.64	-0.01
13:14:51	7	8.61	-0.01
13:15:51	7	8.59	-0.01
13:18:51	7.13	6.44	-0.02
13:17:51	7.04	6.54	-0.02
13:18:51	7	8.56	-0.01
13:19:51	6.98	8.66	-0.01
13:20:51	6.98	8.61	-0.01
13:21:51	6.99	8.6	-0.01
13:22:51	6.98	8.6	-0.02
13:23:51	6.97	6.63	-0.02
13:24:51	6.89	8.76	-0.01
13:25:51	8.87	6.8	-0.01
13:26:51	6.9	8.73	-0.01
13:27:51	6.94	8.66	-0.01
13:28:51	6.69	6.75	-0.01
13:29:51	6.96	6.63	-0.01
13:30:51	6.95	8.63	0.06

Date
3/29/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Zero	0.1	0.1	0.0
Upscale	7.07	13.8	46.6
13:34:23	0.1	20.51	45.78
13:34:36	0.1	20.44	8.5
13:34:53	1.31	16.94	0.39
13:35:06	4.31	14.51	0.25
13:35:23	5.56	14.08	0.2
13:35:38	5.9	13.97	0.17
13:35:53	6.04	13.92	0.13
13:36:06	5.93	13.87	0.03
13:36:23	6.04	13.51	-0.06
13:36:36	6.27	13.79	0.01
13:36:53	6.3	13.76	0.07
13:37:08	6.33	13.74	0.07
13:37:23	6.94	13.87	0.05
13:37:38	7.03	13.87	0.04
13:37:53	7.04	13.85	0.03
13:38:08	7.07	13.86	0.02
13:38:23	7.08	13.85	0.03
13:38:38	7.08	13.86	0.02
13:38:53	7.07	13.83	0.02
13:39:08	7.06	13.83	0.02
13:39:23	7.08	13.85	0.03
13:39:38	7.08	13.85	5.03
13:39:53	6.45	13.22	47.62
13:40:08	2.14	4.76	48.28
13:40:23	0.47	0.85	48.45
13:40:38	0.2	0.23	48.54
13:40:53	0.12	0.11	48.59
13:41:08	0.1	0.08	48.59
13:41:23	0.1	0.06	48.61

Method 25A Data
Run 2B

Date
3/29/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Average	7.29	8.89	0.0
13:47:45	7.85	8.78	0.08
13:48:45	7.8	8.82	0.02
13:49:45	7.74	8.81	0
13:50:45	7.63	8.86	-0.01
13:51:45	7.53	8.88	-0.01
13:52:45	7.47	8.89	-0.02
13:53:45	7.44	8.87	-0.02
13:54:45	7.38	8.93	-0.02
13:55:45	7.25	9.08	-0.02
13:56:45	7.16	9.14	-0.01
13:57:45	7.2	9.07	-0.01
13:58:45	7.22	9.03	-0.01
13:59:45	7.25	9.02	-0.01
14:00:45	6.95	9.41	0.01
14:01:45	6.83	9.56	-0.01
14:02:45	6.94	9.33	-0.02
14:03:45	6.84	9.44	-0.02
14:04:45	6.9	9.34	-0.03
14:05:45	6.84	9.4	-0.03
14:06:45	6.63	9.73	-0.03
14:07:45	6.85	9.76	-0.02
14:08:45	7	9.76	-0.02
14:09:45	6.75	9.96	-0.03
14:10:45	6.83	9.6	-0.03
14:11:45	6.78	9.43	-0.03
14:12:45	6.32	10.45	-0.04
14:13:45	6.52	10.06	-0.02
14:14:45	6.41	10.22	-0.02
14:15:45	6.34	10.25	-0.01
14:16:45	6.31	10.28	-0.01
14:17:45	6.39	10.16	-0.03
14:18:45	6.48	10.04	-0.03
14:19:45	6.47	10.04	-0.04
14:20:45	6.46	10.08	-0.04
14:21:45	6.46	10.04	-0.03
14:22:45	6.45	10.04	-0.03
14:23:45	6.47	10.03	-0.02
14:24:45	6.51	9.97	-0.04
14:25:45	6.55	9.9	-0.04
14:26:45	6.63	9.75	-0.04
14:27:45	6.7	9.65	-0.04
14:28:45	6.72	9.85	-0.03
14:29:45	6.81	9.48	-0.04
14:30:45	6.83	9.39	-0.04
14:31:45	6.81	9.47	-0.04
14:32:45	6.79	9.54	-0.04
14:33:45	6.88	9.43	-0.05
14:34:45	6.95	9.28	-0.04
14:35:45	8.97	9.26	-0.04
14:36:45	7.08	9.16	-0.04
14:37:45	7.04	9.12	-0.03
14:38:45	7.39	9.19	-0.05
14:39:45	7.24	9.28	-0.05
14:40:45	7.21	9.14	-0.04
14:41:45	7.38	6.84	-0.04
14:42:45	7.34	8.84	-0.03
14:43:45	7.62	8.79	-0.05
14:44:45	7.49	6.69	-0.06
14:45:45	7.37	8.74	-0.05
14:46:45	7.35	6.78	-0.04
14:47:45	7.37	8.71	-0.03
14:46:45	7.36	8.7	-0.03
14:49:45	7.36	8.85	-0.03
14:50:45	7.33	8.84	-0.03
14:51:45	7.43	8.59	-0.05
14:52:45	7.42	6.58	-0.05

14:53:45	7.47	8.45	-0.04
14:54:45	7.54	8.35	-0.03
14:55:45	7.41	8.46	-0.02
14:56:45	7.37	8.52	-0.02
14:57:45	7.5	8.4	-0.04
14:58:45	7.55	8.46	-0.05
14:59:45	7.63	8.54	-0.04
15:00:45	7.59	8.61	-0.04
15:01:45	7.57	8.61	-0.02
15:02:45	7.53	8.56	-0.03
15:03:45	7.49	6.62	-0.04
15:04:45	7.5	8.56	-0.01
15:05:45	7.37	8.63	-0.02
15:06:45	7.42	8.46	-0.02
15:07:45	7.39	8.51	-0.01
15:08:45	7.43	8.48	-0.01
15:09:45	7.5	8.41	0
15:10:45	7.53	8.39	-0.01
15:11:45	7.51	8.36	-0.02
15:12:45	7.49	8.36	-0.02
15:13:45	7.58	8.21	-0.02
15:14:45	7.6	8.18	-0.03
15:15:45	7.5	6.29	-0.03
15:16:45	7.53	8.17	-0.01
15:17:45	7.54	8.12	-0.01
15:18:45	7.69	6.22	-0.03
15:19:45	8.02	8.3	-0.05
15:20:45	7.93	8.33	-0.07
15:21:45	7.66	6.3	-0.06
15:22:45	7.97	8.41	0
15:23:45	7.82	8.35	0.01
15:24:45	7.79	8.4	0.01
15:25:45	7.74	8.44	0.01
15:26:45	7.71	8.42	0.01
15:27:45	7.65	8.45	0.01
15:28:45	7.63	8.51	0.03
15:29:45	7.59	8.57	0.02
15:30:45	7.63	8.45	0.01
15:31:45	7.66	8.42	0.02
15:32:45	7.66	8.44	0.02
15:33:45	7.59	8.51	0.03
15:34:45	7.63	8.46	0.03
15:35:45	7.63	8.42	0.02
15:36:45	7.61	8.43	0.01
15:37:45	7.77	8.46	0.01
15:38:45	7.65	8.53	0.03
15:39:45	7.7	8.46	0.03
15:40:45	7.99	8.35	0.02
15:41:45	7.85	8.23	0.03
15:42:45	7.8	8.33	0.03
15:43:45	7.69	8.46	0.02
15:44:45	7.7	6.41	0.01
15:45:45	7.66	8.39	0.01
15:46:45	7.68	8.39	0.04
15:47:45	7.71	8.35	0.04
15:48:45	7.71	8.31	0.02
15:49:45	7.64	8.32	0.02
15:50:45	7.55	8.32	0.01
15:51:45	7.46	6.3	0.03
15:52:45	7.67	8.35	0.02
15:53:45	7.68	8.31	0.03
15:54:45	7.66	8.25	0.03
15:55:45	7.64	8.23	0.04
15:56:45	7.55	8.36	0.04
15:57:45	7.49	8.46	0.03
15:58:45	7.54	8.39	0.03
15:59:45	7.48	8.68	0.03
16:00:45	7.44	8.62	0.03
16:01:45	7.54	8.36	0.03
16:02:45	7.44	8.56	0.03
16:03:45	7.29	8.77	0.03
16:04:45	7.36	8.71	0.02
16:05:45	7.21	6.87	0.03
16:06:45	7.2	6.95	0.03
16:07:45	7.09	9.09	0.04
16:08:45	7.01	9.18	0.04
16:09:45	6.85	9.34	0.04
16:10:45	6.81	9.33	0.03

16:11:45	6.64	9.32	0.04
16:12:45	6.66	9.3	0.04
16:13:45	6.62	9.32	0.03
16:14:45	6.81	9.33	0.03
16:15:45	6.9	9.19	0.02
16:16:45	6.9	9.22	0.03
16:17:45	6.65	9.22	0.02
16:16:45	6.91	9.13	0.02
16:19:45	7.3	9.06	0.02
16:20:45	7.38	9.11	0.02
16:21:45	7.27	9.04	0.02
16:22:45	7.16	8.94	0.03
16:23:45	7.19	8.8	0.03
16:24:45	7.28	8.58	0.02
16:25:45	7.2	8.63	0.03
16:26:45	7.19	8.62	0.04
16:27:45	7.18	8.62	0.04
16:28:45	7.2	8.65	0.03
16:29:45	7.19	8.72	0.04
16:30:45	7	8.89	0.03
16:31:45	7.2	8.94	0.02
16:32:45	7.04	9.11	0.04
18:33:45	7.02	9.05	0.03
16:34:45	7.03	8.97	0.03
16:35:45	6.99	9.04	0.04
16:38:45	6.99	9.11	0.03
16:37:45	6.98	9.13	0.02
16:38:45	7.12	9.14	0.01
16:39:45	7.34	9.17	0.02
16:40:45	7.13	9.16	0.02
16:41:45	7.16	9.14	0.02
16:42:45	7.31	9.2	0.01
16:43:45	7.66	9.15	0
16:44:45	7.55	9.08	0.01
16:45:45	7.46	9.05	0
16:46:45	7.45	8.95	0
18:47:45	7.45	8.94	0.02
16:48:45	7.47	8.87	0.02
16:49:45	7.43	6.85	0.03
16:50:45	7.41	8.78	0.01
16:51:45	7.43	8.65	0.02
16:52:45	7.43	8.64	0.02
18:53:45	7.55	8.55	0.01
16:54:45	7.57	8.47	0.01
16:55:45	7.54	8.55	0.01
16:56:45	7.88	8.34	0.01
18:57:45	7.65	8.38	0.01
18:58:45	7.47	8.86	0.02
16:59:45	7.84	8.64	0.02
17:00:45	7.68	8.8	0.02

Focus

Method 25A Data
Cal 2B

Project No. 2325

Date
3/29/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Zero	0.0	0.1	0.1
Upscale	7.02	13.9	48.3
17:15:04	0.1	4.27	48.05
17:15:19	0.02	1.18	48.1
17:15:34	0	0.2	48.15
17:15:49	0	0.13	48.18
17:18:04	0	0.12	48.25
17:16:19	0	0.1	46.31
17:16:34	0	0.09	46.31
17:16:49	0	0.1	48.32
17:17:04	0	0.08	46.32
17:17:19	-0.02	-0.02	48.39
17:17:34	-0.03	0.02	19.5
17:17:49	3.55	6.2	0.29
17:18:04	6.32	13.46	0.19
17:18:19	6.53	13.63	0.15
17:16:34	6.82	13.66	0.12
17:18:49	7.01	13.86	0.1
17:19:04	7.05	13.86	0.09
17:19:19	7.09	13.85	0.08
17:19:34	7.14	13.65	0.08
17:19:49	7.1	13.85	0.07
17:20:04	6.95	13.85	0.07
17:20:19	6.98	13.86	0.06
17:20:34	6.98	13.86	0.06
17:20:49	6.99	13.86	0.06
17:21:04	7.01	13.87	0.06
17:21:19	7.03	13.87	0.06
17:21:34	7.03	13.86	0.07

Method 25A Data
Initial

Date
3/30/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Zero	0.0	0.0	NA
High	14.0	14.0	NA
Mid	NA	NA	NA
Low	6.89	7.03	NA
11:26:34	0	0.06	3.66
11:28:49	0	0.04	3.72
11:29:04	0	0.05	3.62
11:29:19	0	0.04	3.44
11:29:34	0	0.01	3.46
11:29:49	0	0.02	3.41
11:30:04	0	-0.02	3.41
11:30:19	9.45	5.53	3.52
11:30:34	14.13	7.13	3.39
11:30:49	14.11	7.12	3.33
11:31:04	14.11	7.09	3.29
11:31:19	14.11	7.08	3.41
11:31:34	14.11	7.08	3.24
11:31:49	14.1	7.05	3.09
11:32:04	14.08	7.04	3.03
11:32:19	14.03	7.03	2.6
11:32:34	13.96	7.04	2.91
11:32:49	13.96	7.03	3.03
11:33:04	13.96	7.01	3.04
11:33:19	13.98	7.03	3.16
11:33:34	14.01	7.03	3.07
11:33:49	10.97	5.33	3.11
11:34:04	0.01	-0.04	3.13
11:34:19	0	-0.06	3.14
11:34:34	0	-0.06	3.26
11:34:49	0.1	-0.01	3.43
11:35:04	4.14	4.62	3.46
11:35:19	6.98	13.67	3.59
11:35:34	6.93	14.01	3.65
11:35:49	6.87	13.67	3.9
11:36:04	6.88	14.01	4.2
11:36:19	6.86	14.01	4.41
11:36:34	6.94	14.03	4.82
11:36:49	6.88	14	4.53
11:37:04	6.05	13.85	4.42
11:37:19	5.98	13.81	4.22
11:37:34	5.91	13.79	4.53

Date
3/30/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Zero	0.0	0.1	0.0
High	NA	14.0	79.8
Mid	NA	NA	49.7
Low	6.98	NA	28.9
11:38:19	0.05	20.76	2.84
11:38:34	0.35	20.6	0.19
11:38:49	4.15	17.36	0.14
11:39:04	6.07	14.89	0.13
11:39:19	6.61	14.22	0.12
11:39:34	6.79	14.01	0.12
11:39:49	6.89	13.98	0.12
11:40:04	6.98	13.98	0.11
11:40:19	6.98	13.98	0.07
11:40:34	6.98	13.96	0
11:40:49	6.98	13.97	0.01
11:41:04	6.99	13.97	26.89
11:41:19	6.21	12.94	79.55
11:41:34	2.81	5.89	79.77
11:41:49	0.9	2.03	79.77
11:42:04	0.25	0.83	79.77
11:42:19	0.09	0.24	79.79
11:42:34	0.04	0.13	46.29
11:42:49	0.01	0.15	29.04
11:43:04	0	0.13	28.95
11:43:19	0	0.1	28.89
11:43:34	0	0.07	28.87
11:43:49	0	0.06	28.86
11:44:04	0	0.06	28.82
11:44:19	0	-0.16	32.71
11:44:34	0	0.09	49.54
11:44:49	0	0.16	49.6
11:45:04	0	0.09	49.65
11:45:19	0	0.06	49.65
11:45:34	0	0.06	49.66
11:45:49	0	0.06	49.68
11:46:04	0	0.06	49.69

Date
3/30/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Average	7.01	9.31	0.0
11:50:16	7.12	8.93	0.03
11:51:16	7.23	8.62	0.02
11:52:16	7.3	6.78	0.03
11:53:16	7.26	8.66	0.02
11:54:16	7.5	8.82	0.02
11:55:16	7.31	9.06	0.01
11:56:16	7.21	9.09	0.04
11:57:16	7.27	8.76	0.06
11:58:16	7.26	8.66	0.05
11:59:18	7.18	8.7	0.03
12:00:16	7.09	8.76	0.02
12:01:16	6.94	8.95	0.01
12:02:16	6.88	8.98	0.03
12:03:16	6.86	9.03	0.02
12:04:16	6.86	8.95	0.01
12:05:16	6.79	9.04	0
12:06:16	8.73	9.14	-0.01
12:07:16	6.59	9.3	-0.02
12:08:16	6.68	9.2	-0.01
12:09:16	6.69	9.1	0
12:10:16	6.57	9.29	-0.02
12:11:16	6.68	9.15	-0.02
12:12:16	6.81	8.8	-0.02
12:13:16	6.51	9.48	-0.02
12:14:16	6.51	9.52	-0.03
12:15:16	8.68	9.3	-0.03
12:16:16	6.61	9.39	0.01
12:17:16	6.97	9.43	0.03
12:18:16	7.22	9.35	0.01
12:19:16	7.18	9.38	-0.02
12:20:16	7.51	9.46	0.05
12:21:16	7.51	9.34	0.01
12:22:16	7.46	9.33	0.02
12:23:16	7.31	9.47	-0.03
12:24:16	7.42	9.33	-0.05
12:25:16	7.49	9.14	-0.06
12:26:16	7.48	9.13	-0.07
12:27:16	7.38	9.24	-0.05
12:28:16	7.35	9.16	0.02
12:29:16	7.39	6.98	0.03
12:30:16	7.38	9.03	-0.02
12:31:16	7.35	9.05	-0.05
12:32:16	7.37	9.04	-0.06
12:33:16	7.35	8.92	-0.07
12:34:16	7.46	8.81	-0.06
12:35:16	7.42	8.92	-0.05
12:36:16	7.39	8.92	-0.08
12:37:16	7.42	8.65	-0.09
12:38:18	7.49	8.52	-0.08
12:39:16	7.34	8.4	-0.13
15:30:16	5.57	11.71	-0.05
15:31:16	5.62	11.59	0
15:32:16	5.67	11.49	-0.07
15:33:16	5.62	11.5	-0.07
15:34:16	5.61	11.46	-0.03
15:35:18	5.55	11.55	-0.05
15:36:16	5.71	11.57	-0.06
15:37:16	7.22	9.43	-0.07
15:38:16	7.43	8.91	0.07
15:39:16	7.31	8.98	0.05
15:40:16	7.32	8.91	0.02
15:41:16	7.36	8.82	0.03
15:42:16	7.88	8.82	0.02
15:43:16	7.65	8.86	0.03
15:44:16	7.62	6.8	0.08

15:45:16	7.59	8.78	0.04
15:48:16	7.49	8.84	0.07
15:47:16	7.43	8.92	0.12
15:48:16	7.3	9.01	0.07
15:49:16	7.34	8.93	0.04
15:50:16	7.42	6.83	0.05
15:51:16	7.34	8.93	0.09
15:52:16	7.37	8.96	0.04
15:53:16	7.27	9.03	0.02
15:54:16	7.19	9.03	0.06
15:55:16	7.2	9.13	0.04
15:56:16	7.15	9.1	0.05
15:57:16	7.18	8.94	0.04
15:58:16	7.18	8.89	0
15:59:16	7.19	8.93	0.02
16:00:16	7.28	8.91	0
16:01:16	7.22	8.95	0.08
16:02:16	7.02	9.14	0.11
16:03:16	7.11	8.98	0.11
16:04:16	7.33	9.03	0.08
16:05:16	7.54	9.28	0.04
16:06:16	7.27	9.41	0.04
16:07:16	7.17	9.38	0.06
16:08:16	7.15	9.36	0.02
16:09:16	6.98	9.46	0.05
16:10:16	6.9	9.65	0.08
16:11:16	6.63	9.71	0.03
16:12:16	6.98	9.61	0.06
16:13:16	6.88	9.63	0.05
16:14:16	6.84	9.69	0.04
16:15:16	6.8	9.76	0.07
16:16:16	8.76	9.77	0.12
16:17:16	6.83	9.63	0.06
16:18:16	6.93	9.52	0.01
16:19:16	6.85	9.63	-0.01
16:20:16	8.8	9.73	0.12
16:21:16	8.68	9.71	0.06
16:22:16	6.65	9.69	0.02
16:23:16	6.77	9.53	0.01
16:24:16	6.72	9.6	0.03
16:25:16	8.76	9.62	0.05
16:26:16	6.8	9.56	0.04
16:27:16	6.88	9.46	0.02
16:28:16	6.93	9.39	0.08
16:29:16	6.86	9.36	0.05
16:30:16	6.84	9.37	0.02
16:31:16	6.85	9.34	0.02
16:32:16	6.78	9.33	0.08
16:33:16	6.78	9.34	0.1
16:34:16	6.93	9.29	0.04
16:35:16	6.91	9.32	0.05
16:36:16	6.86	9.28	0.07
16:37:16	8.63	9.32	0.04
16:38:16	6.8	9.2	0.01
16:39:16	6.77	9.15	0.02
16:40:16	6.83	9.21	0.08
16:41:16	6.76	9.32	0.06
16:42:16	6.81	9.25	0.06
16:43:16	6.69	9.04	0.01
16:44:16	6.82	9.15	0
16:45:16	7.05	9.41	0
16:46:16	7.36	9.45	-0.01
16:47:16	7.08	9.53	0
16:46:16	6.85	9.48	-0.01
16:49:16	6.77	9.5	-0.01
16:50:16	6.68	9.58	0

Method 25A Data
Cal 3A

Date
3/30/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Zero	NA	NA	NA
Upscale	NA	NA	NA

No mid run calibration was performed

Date
3/30/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Average	7.07	9.10	0.0
16:51:16	6.8	9.59	-0.01
16:52:16	6.92	9.56	0
16:53:16	6.85	9.69	0
16:54:16	6.81	9.7	0.01
16:55:16	6.84	9.61	-0.01
16:56:16	6.8	9.56	-0.01
16:57:16	6.7	9.76	0.02
16:58:16	6.72	9.67	0.05
16:59:16	6.76	9.62	0.07
17:00:16	6.75	9.71	0.02
17:01:16	6.71	9.71	0.01
17:02:16	6.67	9.72	0
17:03:16	6.66	9.72	0.01
17:04:16	6.66	9.66	0.05
17:05:16	6.53	9.68	0.06
17:06:16	6.46	9.76	0.09
17:07:16	6.6	9.77	0.03
17:08:18	6.67	9.64	0.04
17:09:16	6.58	9.73	0.03
17:10:16	6.51	9.84	0.04
17:11:16	6.55	9.76	0.06
17:12:16	7.19	9.63	0.02
17:13:16	7.23	9.65	-0.02
17:14:16	6.9	9.72	-0.02
17:15:16	6.84	9.62	-0.01
17:16:16	7.06	9.32	-0.02
17:17:16	7.08	9.29	0.01
17:18:16	7.03	9.42	0.05
17:19:16	7.09	9.33	0
17:20:16	7.19	9.09	0
17:21:16	7.15	9.16	0
17:22:16	8.97	9.24	0
17:23:16	6.94	9.23	-0.01
17:24:16	7.11	8.98	-0.01
17:25:16	7.14	9.01	0
17:26:16	7.31	6.9	0
17:27:16	7.19	8.98	0
17:28:16	7.37	8.91	-0.02
17:29:16	7.43	6.7	-0.03
17:30:16	7.25	6.65	0
17:31:16	7.18	6.67	0.01
17:32:16	7.2	8.74	-0.02
17:33:16	7.86	8.74	-0.03
17:34:16	7.44	8.74	-0.02
17:35:16	7.26	8.85	-0.03
17:36:16	7.25	8.92	-0.01
17:37:16	7.27	8.88	-0.01
17:38:16	7.2	8.97	-0.02
17:39:16	7.05	9.2	0
17:40:16	7.12	9.07	-0.03
17:41:16	7.07	9.1	-0.03
17:42:16	7.01	9.23	-0.03
17:43:16	6.84	9.39	0
17:44:16	6.92	9.29	0
17:45:16	6.99	9.22	-0.02
17:46:16	7.09	9.33	0.01
17:47:16	7.35	9.5	-0.01
17:48:16	7.2	9.38	-0.02
17:49:16	7.05	9.36	0.01
17:50:16	7.02	9.24	-0.01
17:51:16	7.15	9.13	0
17:52:16	7.62	9.03	-0.01
17:53:16	7.37	8.91	-0.02
17:54:16	7.14	8.94	-0.02
17:55:16	6.94	9.1	-0.02
17:56:16	6.88	9.11	0

17:57:16	6.84	9.13	0.01
17:58:16	6.88	9.04	0.01
17:59:16	6.88	9	0
18:00:16	6.76	9.09	-0.01
18:01:16	6.7	9.26	-0.01
18:02:16	6.62	9.36	0.06
18:03:16	6.52	9.41	0.05
18:04:16	6.57	9.4	0.02
18:05:16	6.51	9.41	-0.01
18:06:16	6.45	9.57	0
18:07:16	6.43	9.63	0
18:08:16	6.45	9.56	0.04
18:09:16	6.34	9.75	0.04
18:10:16	6.16	9.89	0.09
16:11:16	6.2	9.89	0.17
18:12:16	6.13	9.89	0.23
18:13:16	6	10.15	0.1
18:14:16	5.92	10.31	0.15
18:15:16	6.26	10.44	0.17
18:18:16	6.36	10.6	0.19
18:17:16	6.01	10.64	0.11
18:18:16	5.86	10.66	0.1
18:19:16	6.27	10.6	0.01
18:20:16	6.24	10.66	-0.01
18:21:16	5.94	10.58	0
18:22:16	5.89	10.45	0.03
18:23:16	5.92	10.48	0.03
18:24:16	6.02	10.4	0.02
18:25:16	6.25	10.11	-0.01
18:28:16	6.31	10.01	0
18:27:16	8.37	9.83	0
18:28:16	7.39	9.42	0
18:29:16	7.74	9.18	0
18:30:16	7.67	8.91	0
18:31:16	7.65	8.72	-0.01
18:32:16	7.95	8.44	-0.04
18:33:16	7.99	8.17	-0.04
18:34:16	8.33	7.8	-0.03
18:35:16	8.1	7.68	-0.03
18:36:16	8.23	7.37	-0.02
18:37:16	8.31	7.21	-0.04
18:38:16	8.28	7.35	-0.04
18:39:16	8.08	7.61	-0.04
18:40:16	7.93	7.63	-0.04
18:41:16	7.98	7.62	-0.04
18:42:16	8.08	7.56	-0.04
18:43:16	8.13	7.5	-0.04
18:44:16	8.09	7.49	-0.05
18:45:16	8.08	7.49	-0.04
18:46:16	8.04	7.39	-0.04
18:47:16	7.94	7.47	-0.03
18:48:16	8	7.56	-0.03
18:49:16	8.11	7.63	-0.04
18:50:16	7.79	7.67	-0.04
16:51:16	7.52	7.81	-0.03
18:52:16	7.31	8.06	-0.02
18:53:16	7.28	8.07	-0.02
18:54:16	7.3	8.07	-0.02
18:55:16	7.28	8.12	-0.02
16:56:16	7.29	8.28	-0.02
18:57:16	7.13	8.37	-0.01
16:58:16	7.11	8.41	-0.01
18:59:16	7.03	8.42	0
19:00:16	7.1	8.41	0.09
19:01:16	7.91	8.56	0.03
19:02:16	7.7	8.64	0.03
19:03:16	7.64	8.69	0.02
19:04:16	7.59	8.85	-0.02
19:05:16	7.43	9.09	0.01
19:06:16	7.49	9	-0.03
19:07:16	7.47	9.09	-0.03
19:08:16	7.46	9.19	-0.04
19:09:16	7.39	9.18	-0.02
19:10:16	7.36	9.09	0.02
19:11:16	7.29	9.13	0.01
19:12:16	7.15	9.2	0.02
19:13:16	7.06	9.24	0.01
19:14:16	7.17	9.15	0.03

19:15:16	7.08	9.19	0.04
19:16:16	7.07	9.2	0.06

Method 25A Data
Cal 3B

Date
3/30/2006

Time	CO_2 (%)	O_2 (%)	THC (ppm)
Zero	0.1	0.1	0.1
Upscale	6.92	13.9	49.3
19:22:16	11.13	13.92	0.07
19:22:31	6.88	13.92	0.07
19:22:46	6.88	13.92	0.07
19:23:01	6.89	13.91	0.07
19:23:16	6.92	13.91	0.06
19:23:31	6.93	13.92	0.06
19:23:46	8.92	13.91	0.17
19:24:01	6.19	14.41	19.21
19:24:16	2.93	13.23	46.98
19:24:31	0.52	1.6	49.1
19:24:46	0.24	0.21	49.15
19:25:01	0.19	0.12	49.21
19:25:16	0.14	0.11	49.24
19:25:31	0.12	0.09	49.29
19:25:46	0.14	0.07	49.29

AIRTECH
Environmental
Services Inc.

Focus Environmental
(2325)

Gravimetric Report

Airtech Environmental Services, Inc.

Samples were collected for Focus Environmental at the Westates facility located in Parker, AZ. Samples were received at the Airtech Environmental Laboratory on April 3rd, 2006. Gravimetric analysis was performed according to EPA Method 5.4.

Received were:

Carbon Reactivation Furnace Stack

• Runs 1, 2 & 3	Filter	
• Runs 1, 2 & 3	F1/2 Acetone	120 ml amber jar
• Blank	Filter	
• Blank	Acetone	120 ml amber jar

All samples were received in good condition.

The following report has been checked for accuracy and completeness.

Submitted by:

James Christ
Laboratory Manager

Reviewed by:

Focus- Westates
Project No. 2325

AIRTECH ENVIRONMENTAL SERVICES INC.

Gravimetric Lab Report

Scale ID:
Mettler AE200

EPA Method 5 Parameters		Run 1	Date/Time	Run 2	Date/Time	Run 3	Date/Time	Blank	Date/Time
Filter	*Filter ID*	10370		10399		10400		10401	
	Appearance	Lt. Brown Dots		Brown Dots		Brown Dots		White	
Filter tare weight (g)	Trial 1	0.3681	9/23/06 14:16	0.4623	12/16/05 12:01	0.4603	12/16/05 12:01	0.4604	12/16/05 12:01
	Trial 2	0.3681	9/26/06 7:03	0.4623	1/3/06 12:47	0.4602	1/3/06 12:49	0.4606	1/3/06 12:49
	Average	0.3681		0.4623		0.4603		0.4605	
Filter final weight (g)	Trial 1	0.4005	4/6/06 9:28	0.4818	4/6/06 9:27	0.4830	4/6/06 9:25	0.4600	4/6/06 9:30
	Trial 2	0.4000	4/6/06 17:31	0.4815	4/6/06 17:32	0.4835	4/6/06 17:33	0.4604	4/6/06 17:30
	Average	0.4003		0.4817		0.4833		0.4602	
Filter net weight, mf (g)		0.0322		0.0194		0.0230		0.0000	
Front Half Wash	*Beaker ID*	207		131		213		201	
Beaker tare weight (g)	Trial 1	84.7017	4/3/06 10:18	82.2970	4/3/06 10:18	83.9763	4/3/06 10:18	85.4495	4/3/06 10:19
	Trial 2	84.7022	4/4/06 7:52	82.2970	4/4/06 7:51	83.9760	4/4/06 7:51	85.4490	4/4/06 7:51
	Average	84.7020		82.2970		83.9762		85.4493	
Beaker final weight (g)	Trial 1	84.7044	4/6/06 9:31	82.2968	4/6/06 9:31	83.9869	4/6/06 9:32	85.4483	4/6/06 9:33
	Trial 2	84.7039	4/6/06 17:35	82.2965	4/6/06 17:34	83.9866	4/6/06 17:35	85.4480	4/6/06 17:34
	Average	84.7042		82.2967		83.9868		85.4482	
Volume of Wash, Vaw (ml)	Volume	195		145		110		180	
Beaker net weight, ma (g)		0.0022		0.0000		0.0106		0.0000	

METTLER TOLEDO
Service Business Unit Laboratory
1900 Polaris Parkway
Columbus, Ohio 43240
Tel.: 1-800-METTLER

ISO 9001 registered

METTLER TOLEDO

Balance Calibration Certificate

Customer

Company	AIRTECH	City	BENSENVILLE
Address	601A COUNTRY CLUB DR	State/Province	IL
		Zip/Postal	60106

Balance

Manufacturer	Mettler Toledo	Model	AE200
Serial No.	N17876	Dept./Room	LAB
Max Capacity	205 g	Readability	0.0001 g

Reference Weights

Weight Set 1

Weight Set No.	319	Date of Issue	3/1/2005
NIST Traceability No.	822/260205-98	Calibration Due Date	3/31/2006
Class OIML.	E2	Calibrated by	MTNA

Weight Set 2

Weight Set No.	161	Date of Issue	5/4/2005
NIST Traceability No.	822/260205-98	Calibration Due Date	5/31/2007
Class OIML.	F1	Calibrated by	MTNA

Traceability of Weights: All weights used for metrological testing are traceable to NIST. Calibration due date for OIML class E2 is 1 year, for OIML class F1 is 2 years from date of issue.

Procedure Statement

The balance referenced in this document has been metrologically tested in accordance with METTLER TOLEDO Work Instruction VW0107 and according to the manufacturer's tolerances where available.

[X] YES [ ] NO

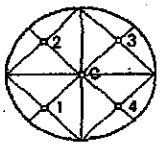
Adjustment of balance has been necessary
(In case of "NO", "AS FOUND" results correspond to "AS LEFT"

[X] YES [ ] NO

Calibration Date	5/23/2005	Next. Cal. Due	5/31/2006
Service Technician	Joe Krieb	Signature	Joe Krieb

Measuring Results

Eccentricity



	Reference Weight	Position	Displayed Value	Displayed Value
C	100 g	Center	[redacted]	[redacted]
1		Left Front	[redacted]	[redacted]
2		Left Rear	[redacted]	[redacted]
3		Right Rear	[redacted]	[redacted]
4		Right Front	[redacted]	[redacted]
C		Center	[redacted]	[redacted]
		Maximum Error	[redacted]	[redacted]
		Max. Perm. Error	[redacted]	[redacted]
		Within manufacturer's specifications:	[redacted]	[redacted]

Linearity

Substitution Method		Preload Weight	Preload Wt. Tared	Ref. Weight	Preload Wt. Tared	Ref. Weight
	1	0 g	[redacted]	[redacted]	[redacted]	[redacted]
	2	50 g	[redacted]	[redacted]	[redacted]	[redacted]
	3	100 g	[redacted]	[redacted]	[redacted]	[redacted]
	4	150 g	[redacted]	[redacted]	[redacted]	[redacted]
			[redacted]	[redacted]	[redacted]	[redacted]
			[redacted]	[redacted]	[redacted]	[redacted]
			[redacted]	[redacted]	[redacted]	[redacted]
			[redacted]	[redacted]	[redacted]	[redacted]
			Maximum Error	[redacted]	Maximum Error	[redacted]
			Max. Perm. Error	[redacted]	Max. Perm. Error	[redacted]
			Within manufacturer's specifications:	[redacted]	Within manufacturer's specifications:	[redacted]

Span

Ref. Weight	Displayed Value	Deviation	Displayed Value	Deviation
200.0000 g	[redacted]	[redacted]	[redacted]	[redacted]
	Max. Perm. Deviation	[redacted]	Max. Perm. Deviation	[redacted]
	Within manufacturer's specifications:	[redacted]	Within manufacturer's specifications:	[redacted]

Remarks None

METTLER TOLEDO
Service Business Unit Laboratory
1900 Polaris Parkway
Columbus, Ohio 43240
Tel.: 1-800-METTLER

ISO 9001 registered

METTLER TOLEDO

Balance Calibration Certificate

Customer

Company	AIRTECH	City	BENSENVILLE
Address	601A COUNTRY CLUB DR	State/Province	IL
		Zip/Postal	60106

Balance

Manufacturer	Mettler Toledo	Model	AE200
Serial No.	N17876	Dept./Room	LAB
Max Capacity	205 g	Readability	0.0001 g

Reference Weights

Weight Set 1

Weight Set No.	349	Date of Issue	3/1/2005
NIST Traceability No.	822/260205-98	Calibration Due Date	3/31/2006
Class OIML	E2	Calibrated by	MTNA

Weight Set 2

Weight Set No.	160	Date of Issue	5/4/2005
NIST Traceability No.	822/260205-98	Calibration Due Date	5/31/2007
Class OIML	F1	Calibrated by	MTNA

Traceability of Weights: All weights used for metrological testing are traceable to NIST. Calibration due date for OIML class E2 is 1 year, for OIML class F1 is 2 years from date of issue.

Procedure Statement

The balance referenced in this document has been metrologically tested in accordance with METTLER TOLEDO Work Instruction WI0102 and according to the manufacturer's tolerances where available.

[X] YES [ ] NO

Adjustment of balance has been necessary

In case of "NO", "AS FOUND" results correspond to "AS LEFT"

[X] YES [ ] NO

Calibration Date	5/23/2005	Next. Cal. Due	5/31/2006
Service Technician	Joe Kneb	Signature	Joe Kneb

VF0010
© METTLER TOLEDO 01/01

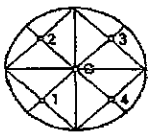
This is an original document, an electronic copy is retained by METTLER TOLEDO.

030310-8303-05232005124820 Software Version: 1.9.0

16280500A

Measuring Results

Eccentricity



	Reference Weight	Position	Displayed Value	Displayed Value
C	100 g	Center	[redacted]	[redacted]
1		Left Front	[redacted]	[redacted]
2		Left Rear	[redacted]	[redacted]
3		Right Rear	[redacted]	[redacted]
4		Right Front	[redacted]	[redacted]
C		Center	[redacted]	[redacted]
		Maximum Error	[redacted]	[redacted]
		Max. Perm. Error	[redacted]	[redacted]
		Within manufacturer's specifications:	[redacted]	[redacted]

Linearity

Substitution Method	Preload Weight	Preload Wt. Tared	Ref. Weight	Preload Wt. Tared	Ref. Weight
1	0 g	[redacted]	[redacted]	[redacted]	[redacted]
2	50 g	[redacted]	[redacted]	[redacted]	[redacted]
3	100 g	[redacted]	[redacted]	[redacted]	[redacted]
4	150 g	[redacted]	[redacted]	[redacted]	[redacted]
		Maximum Error	[redacted]	Maximum Error	[redacted]
		Max. Perm. Error	[redacted]	Max. Perm. Error	[redacted]
		Within manufacturer's specifications:	[redacted]	Within manufacturer's specifications:	[redacted]

Span

Ref. Weight	Displayed Value	Deviation	Displayed Value	Deviation
200.0000 g	[redacted]	[redacted]	[redacted]	[redacted]
	Max. Perm. Deviation	[redacted]	Max. Perm. Deviation	[redacted]
	Within manufacturer's specifications:	[redacted]	Within manufacturer's specifications:	[redacted]

Remarks None

©METTLER TOLEDO 01/01

METTLER TOLEDO
Service Business Unit Laboratory
1900 Polaris Parkway
Columbus, OH 43240
Tel.: 1-800-METTLER

registered

METTLER TOLEDO

Balance Calibration Certificate

Customer

Company	AirTech	Address	601A Country Club Dr.
City	Bensenville	State	IL
		ZIP Code	60106

Balance

Manufacturer	METTLER TOLEDO	Model	AE200
Serial No.	N17876	Dept./Room	LAB
Max. Capacity	200g	Readability	.1mg

Reference Weights

Weight Set No.	1	348	2	160	Class OIML	1	E2	2	F1
NIST Traceability No.	1	822/260205	2	822/260205				
Calibration Date	1	3-31-06	2	5-31-05	Calibrated by	1	MTNA	2	MTNA

Traceability of Weights: All weights used for metrological testing are traceable to NIST. Calibration due date for OIML class E2 is 1 year, for OIML class F1 is 2 years from date of issue.

Procedure and Pass/Fail Statement

The above mentioned balance is metrologically tested in accordance with METTLER TOLEDO Work Instruction VW0107 and the test results reported correspond with the manufacturer's specifications.

☑ YES ☐ NO

Adjustment of balance has been necessary
(In case of "NO", "AS FOUND" results correspond to "AS LEFT")

☑ YES ☐ NO

METTLER TOLEDO Calibration Service

Calibration Date	5-10-06	Next Cal. Due	5-2007
Service Technician	J. Krieg	Signature	

© by METTLER TOLEDO 01/01

This is an original document, copies are not retained by METTLER TOLEDO

Measuring Results

Eccentricity

☑ ☐

	Ref. Weight	Position	Displayed Value	Displayed Value
C	100 g	Center	[redacted]	[redacted]
1		Left Front	[redacted]	[redacted]
2		Left Rear	[redacted]	[redacted]
3		Right Rear	[redacted]	[redacted]
4		Right Front	[redacted]	[redacted]
C		Center	[redacted]	[redacted]
		Maximum Error	[redacted]	[redacted]
		Max. Perm. Error	[redacted]	[redacted]
		Within manufacturer's specification:	AS FOUND ☐ Yes ☐ No	AS LEFT ☑ Yes ☐ No

Linearity

Accumulative Method ☐	Nominal Value	Displayed Value	Deviation	Displayed Value	Deviation
Substitution Method ☑	Preload Weight	Preload Wt. tared	Ref. Weight	Preload Wt. tared	Ref. Weight
1	0	[redacted]	[redacted]	[redacted]	[redacted]
2	50 g	[redacted]	[redacted]	[redacted]	[redacted]
3	100 g	[redacted]	[redacted]	[redacted]	[redacted]
4	150 g	[redacted]	[redacted]	[redacted]	[redacted]
5		[redacted]	[redacted]	[redacted]	[redacted]
6		[redacted]	[redacted]	[redacted]	[redacted]
7		[redacted]	[redacted]	[redacted]	[redacted]
8		[redacted]	[redacted]	[redacted]	[redacted]
		Maximum Error	[redacted]	Maximum Error	[redacted]
		Max. Perm. Error	[redacted]	Max. Perm. Error	[redacted]
	Within manufacturer's specification:	AS FOUND ☑ Yes ☐ No		AS LEFT ☑ Yes ☐ No	

Span

Ref. Weight	Displayed Value	Deviation	Displayed Value	Deviation
200 g	[redacted]	[redacted]	[redacted]	[redacted]
	Max. Perm. Deviation	[redacted]	Max. Perm. Deviation	[redacted]
Within manufacturer's specification:	AS FOUND ☑ Yes ☐ No		AS LEFT ☑ Yes ☐ No	

Remarks

AIRTECH ENVIRONMENTAL SERVICES INC.
Analytical Balance Daily Calibration

Calibration Date 9/23/05

Scale ID	METTLER AE200
Units of Measure	grams

Relative Humidity (%)	31
Barometric (inHg)	29.46
Ambient Temp (°F)	71

Reference Weight (g)		Weight	Time	Weight	Time
100	Tare	99.9996	8:45	100.0000	8:47
	Tech		CB		
	Notes	re-span			
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.1	Tare	0.1000	8:49		
	Tech		CB		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.01	Tare	0.0100	8:50		
	Tech		CB		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.005	Tare	0.0050	8:52		
	Tech		CB		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				

AIRTECH ENVIRONMENTAL SERVICES INC.
Analytical Balance Daily Calibration

Calibration Date 9/26/05

Scale ID	METTLER AE 200
Units of Measure	GRAM

Relative Humidity (%)	29
Barometric (inHg)	29.50
Ambient Temp (°F)	71

Reference Weight (g)		Weight	Time	Weight	Time
100	Tare	99.9999	6:58		
	Tech		JC		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.1	Tare	0.1000	6:59		
	Tech		JC		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.01	Tare	0.0100	7:00		
	Tech		JC		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.005	Tare	0.0050	7:01		
	Tech		JC		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				

AIRTECH ENVIRONMENTAL SERVICES INC.
Analytical Balance Daily Calibration

Calibration Date 12/16/05

Scale ID	METTLER AE 200
Units of Measure	GRAMS

Relative Humidity (%)	22
Barometric (in Hg)	29.55
Ambient Temp (F)	69

Reference Weight (g)		Weight	Time	Weight	Time
100	Tare	100.0004	8:15	100.0000	8:17
	Tech		JK		JK
	Notes	Re-SPAN			
Reference Weight (g)		Weight	Time	Weight	Time
0.1	Tare	0.1001	8:18		
	Tech		JK		
	Notes				
Reference Weight (g)		Weight	Time	Weight	Time
0.005	Tare	0.0051	8:20		
	Tech		JK		
	Notes				
Reference Weight (g)		Weight	Time	Weight	Time
	Tare				
	Tech				
	Notes				
Reference Weight (g)		Weight	Time	Weight	Time
	Tare				
	Tech				
	Notes				
Reference Weight (g)		Weight	Time	Weight	Time
	Tare				
	Tech				
	Notes				
Reference Weight (g)		Weight	Time	Weight	Time
	Tare				
	Tech				
	Notes				

AIRTECH ENVIRONMENTAL SERVICES INC.
Analytical Balance Daily Calibration

Calibration Date 1/3/06

Scale ID	Mettler AE 200
Units of Measure	GRAMS

Relative Humidity (%)	21
Barometric (inHg)	29.65
Ambient Temp (F)	66

Reference Weight (g)		Weight	Time	Weight	Time
100	Tare	99.9996	10:30	99.9999	10:31
	Tech		KW		KW
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.1	Tare	0.0999	10:32		
	Tech		KW		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.01	Tare	0.0099	10:33		
	Tech		KW		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				

AIRTECH ENVIRONMENTAL SERVICES INC.
Analytical Balance Daily Calibration

Calibration Date 4/3/06

Scale ID	Met AE200
Units of Measure	g

Relative Humidity (%)	27
Barometric (mHg)	29.41
Ambient Temp (°F)	72

Reference Weight (g)		Weight	Time	Weight	Time
100	Tare	100.0001	8:11		
	Tech		MH		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.1	Tare	0.1000	8:12		
	Tech		MH		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.01	Tare	0.0100	8:13		
	Tech		MH		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.005	Tare	0.0005	8:14		
	Tech		MH		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				

AIRTECH ENVIRONMENTAL SERVICES INC.
Analytical Balance Daily Calibration

Calibration Date 4/4/06

Scale ID	METTLER AE200
Units of Measure	grams

Relative Humidity (%)	29
Barometric (mHg)	29.65
Ambient Temp (°F)	72

Reference Weight (g)		Weight	Time	Weight	Time
100	Tare	100.0001	7:45		
	Tech		CB		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.1	Tare	0.1000	7:46		
	Tech		CB		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.01	Tare	0.0101	7:47		
	Tech		CB		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				

AIRTECH ENVIRONMENTAL SERVICES INC.
Analytical Balance Daily Calibration

Calibration Date 4/6/06

Scale ID	Mettler AE200
Units of Measure	GRAMS

Relative Humidity (%)	27
Barometric (inHg)	29.29
Ambient Temp (°F)	73

Reference Weight (g)		Weight	Time	Weight	Time
100	Tare	100.0002	8:15	100.0001	8:16
	Tech		JOK		JOK
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.10	Tare	0.1001	8:18		
	Tech		JOK		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
0.010	Tare	0.0100	8:20		
	Tech		JOK		
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				
Reference Weight (g)		**Weight**	**Time**	**Weight**	**Time**
	Tare				
	Tech				
	Notes				

GC Conditions

Gas Chomatograph	Hewlett Packard 5890 II
Data Acquisition	Hewlett Packard Chemstation
Carrier Gas	Zero Nitrogen
Carrier Flowrate (cc/min)	9.6
Injection Type	Gas Sample Valve
Injection Volume (ml)	0.5 ml
Injection Temperature (°C)	120
Detector Type	FID
Detector Temperature (°C)	180
Column Type	AT-1
Column Length (m)	60
Column ID (mm)	0.53
Film Thickness (um)	3
Initial Column Temperature (°C)	40.0
Initial Hold Time (min)	4.0
Temperature Ramp (°C/min)	15.0
Final Column Temperature (°C)	120.0
Final Hold Time (min)	2.0
Overall Run Time (min)	11.3

Parameters				
Gas ID	WS1	WS2	WS3	WS4
Date Generated	3/23/06	3/28/06	3/28/06	3/30/06
Cylinder Number	Mix 243	NA	NA	NA
Percent of Cylinder Value	100.00	66.7%	37.5%	22.5%

RESULTS				
Methane	15.6	10.4	5.85	3.51
Ethane	15.9	10.6	5.96	3.58
Propane	15.6	10.4	5.85	3.51
Butane	15.7	10.5	5.89	3.53
Pentane	15.7	10.5	5.89	3.53
Hexane	15.6	10.4	5.85	3.51
Heptane	14.7	9.80	5.51	3.31

WS1

	Actual (ppm)	WS-1 Inject 1 Area Count	Percent of Mean (%)	WS-1 Inject 2 Area Count	Percent of Mean (%)	WS-1 Inject 3 Area Count	Percent of Mean (%)	Average	RF
Methane	15.6	3,624	0.4	3,620	0.3	3,583	-0.7	3,609	4.32E-03
Ethane	15.9	7,174	0.0	7,213	0.5	7,140	-0.5	7,176	2.22E-03
Propane	15.6	10,619	-0.4	10,728	0.6	10,631	-0.3	10,659	1.46E-03
Butane	15.7	14,119	-0.1	14,188	0.3	14,110	-0.2	14,139	1.11E-03
Pentane	15.7	17,051	-0.2	17,162	0.4	17,053	-0.2	17,089	9.19E-04
Hexane	15.6	19,963	-0.1	20,036	0.3	19,921	-0.3	19,973	7.81E-04
Heptane	14.7	22,600	0.3	22,574	0.2	22,426	-0.5	22,533	6.52E-04

WS2

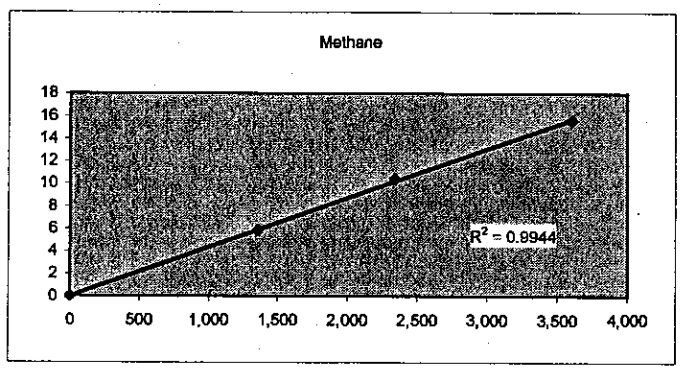
	Actual (ppm)	WS-2 Inject 1 Area Count	Percent of Mean (%)	WS-2 Inject 2 Area Count	Percent of Mean (%)	WS-2 Inject 3 Area Count	Percent of Mean (%)	Average	RF
Methane	10.4	2,361	0.6	2,355	0.4	2,323	-1.0	2,346	4.43E-03
Ethane	10.6	4,626	0.6	4,604	0.1	4,571	-0.6	4,600	2.30E-03
Propane	10.4	6,883	1.1	6,777	-0.5	6,773	-0.6	6,811	1.53E-03
Butane	10.5	9,126	0.4	9,114	0.2	9,034	-0.6	9,091	1.15E-03
Pentane	10.5	11,013	-0.2	11,191	1.4	10,897	-1.2	11,034	9.49E-04
Hexane	10.4	12,742	-0.1	12,878	1.0	12,638	-0.9	12,753	8.16E-04
Heptane	9.80	14,311	0.9	14,141	-0.3	14,103	-0.6	14,185	6.91E-04

WS3

	Actual (ppm)	WS-3 Inject 1 Area Count	Percent of Mean (%)	WS-3 Inject 2 Area Count	Percent of Mean (%)	WS-3 Inject 3 Area Count	Percent of Mean (%)	Average	RF
Methane	5.85	1,354	-0.2	1,365	0.6	1,352	-0.4	1,357	4.31E-03
Ethane	5.96	2,631	-0.8	2,690	1.5	2,632	-0.7	2,651	2.25E-03
Propane	5.85	3,919	-0.6	3,995	1.3	3,916	-0.7	3,943	1.48E-03
Butane	5.89	5,189	-0.7	5,245	0.4	5,242	0.3	5,225	1.13E-03
Pentane	5.89	6,313	-0.7	6,385	0.5	6,368	0.2	6,355	9.26E-04
Hexane	5.85	7,333	0.0	7,433	1.3	7,241	-1.3	7,336	7.97E-04
Heptane	5.51	8,501	2.6	8,288	0.0	8,074	-2.6	8,288	6.65E-04

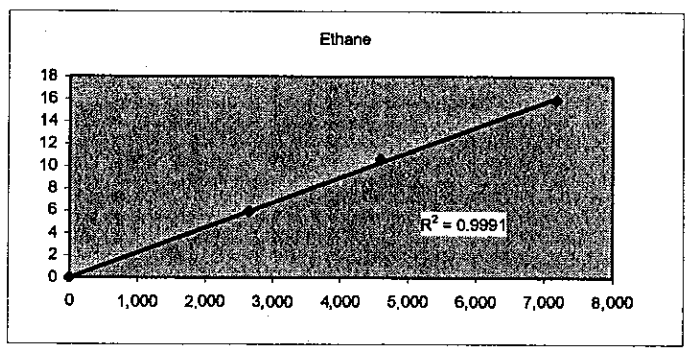
Methane

Cal Gas	Area	Concentration	RF
Zero	0	0	
WS1	3,609	15.6	4.32E-03
WS2	2,346	10.4	4.43E-03
WS3	1,357	5.85	4.31E-03
Average RF			4.36E-03
Linear Regression Results (y=mx)			**4.35E-03**



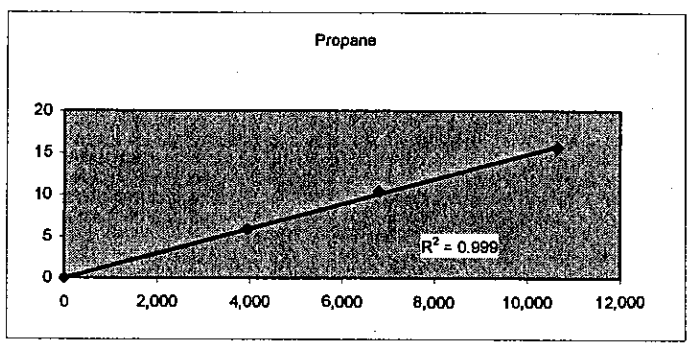
Ethane

Cal Gas	Area	Concentration	RF
Zero	0	0	
WS1	7,176	15.9	2.22E-03
WS2	4,600	10.6	2.30E-03
WS3	2,651	5.96	2.25E-03
Average RF			2.26E-03
Linear Regression Results (y=mx)			**2.24E-03**



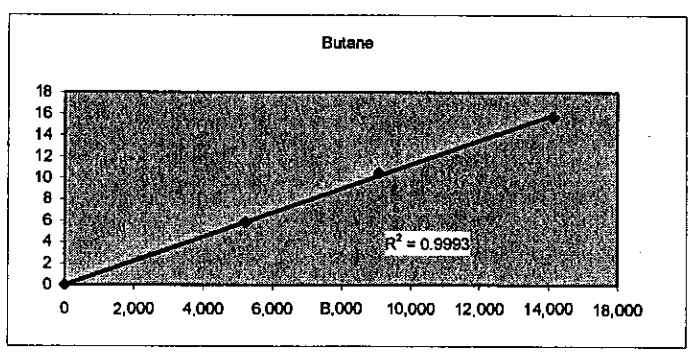
Propane

Cal Gas	Area	Concentration	RF
Zero	0	0	
WS1	10,659	15.6	1.46E-03
WS2	6,811	10.4	1.53E-03
WS3	3,943	5.85	1.48E-03
Average RF			1.49E-03
Linear Regression Results (y=mx)			**1.48E-03**



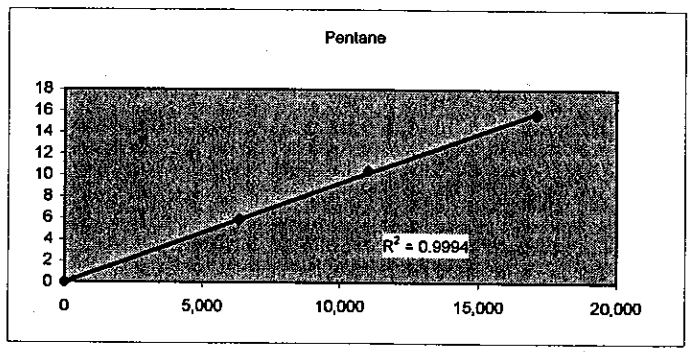
Butane

Cal Gas	Area	Concentration	RF
Zero	0	0	
WS1	14,139	15.7	1.11E-03
WS2	9,091	10.5	1.15E-03
WS3	5,225	5.89	1.13E-03
Average RF			1.13E-03
Linear Regression Results (y=mx)			**1.12E-03**



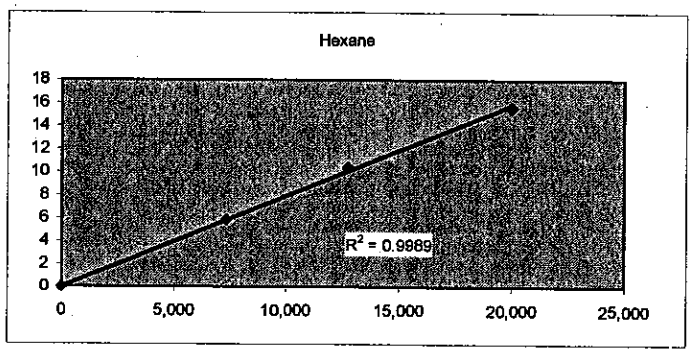
Pentane

Cal Gas	Area	Concentration	RF
Zero	0	0	
WS1	17,089	15.7	9.19E-04
WS2	11,034	10.5	9.49E-04
WS3	6,355	5.89	9.26E-04
Average RF			9.31E-04
Linear Regression Results (y=mx)			**9.27E-04**



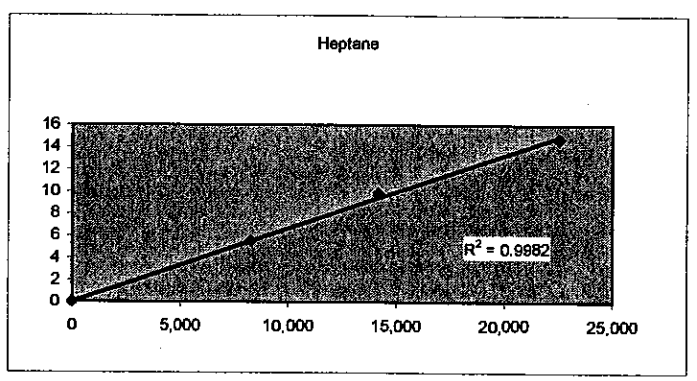
Hexane

Cal Gas	Area	Concentration	RF
Zero	0	0	
WS1	19,973	15.6	7.81E-04
WS2	12,753	10.4	8.16E-04
WS3	7,336	5.85	7.97E-04
Average RF			7.98E-04
Linear Regression Results (y=mx)			**7.92E-04**



Heptane

Cal Gas	Area	Concentration	RF
Zero	0	0	
WS1	22,533	14.7	6.52E-04
WS2	14,185	9.80	6.91E-04
WS3	8,288	5.51	6.65E-04
Average RF			6.69E-04
Linear Regression Results (y=mx)			**6.63E-04**



Run 1A	Inject 1 Area Count	Percent of Mean (%)	Inject 2 Area Count	Percent of Mean (%)	Inject 3 Area Count	Percent of Mean (%)	Average	Conc. (ppm)
Methane	363	-7.6	418	6.5	397	1.1	393	1.71
Ethane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Propane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Butane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Pentane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Hexane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Heptane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL

Run 1B	Inject 1 Area Count	Percent of Mean (%)	Inject 2 Area Count	Percent of Mean (%)	Inject 3 Area Count	Percent of Mean (%)	Average	Conc. (ppm)
Methane	384	-3.6	402	0.9	409	2.7	398	1.73
Ethane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Propane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Butane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Pentane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Hexane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Heptane	BDL	NA	NA	NA	BDL	NA	BDL	BDL

Run 2A	Inject 1 Area Count	Percent of Mean (%)	Inject 2 Area Count	Percent of Mean (%)	Inject 3 Area Count	Percent of Mean (%)	Average	Conc. (ppm)
Methane	427	4.0	399	-2.8	406	-1.1	411	1.79
Ethane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Propane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Butane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Pentane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Hexane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Heptane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL

Run 2B	Inject 1 Area Count	Percent of Mean (%)	Inject 2 Area Count	Percent of Mean (%)	Inject 3 Area Count	Percent of Mean (%)	Average	Conc. (ppm)
Methane	419	4.9	397	NA	382	-4.3	399	1.74
Ethane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Propane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Butane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Pentane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Hexane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Heptane	BDL	NA	NA	NA	BDL	NA	BDL	BDL

Method 0040
Summary of Results

Run 3A	Inject 1 Area Count	Percent of Mean (%)	Inject 2 Area Count	Percent of Mean (%)	Inject 3 Area Count	Percent of Mean (%)	Average	Conc. (ppm)
Methane	391	0.9	384	-0.9	388	0.1	388	1.69
Ethane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Propane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Butane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Pentane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Hexane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL
Heptane	BDL	NA	BDL	NA	BDL	NA	BDL	BDL

Run 3B	Inject 1 Area Count	Percent of Mean (%)	Inject 2 Area Count	Percent of Mean (%)	Inject 3 Area Count	Percent of Mean (%)	Average	Conc. (ppm)
Methane	393	2.8	365	NA	389	1.7	382	1.66
Ethane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Propane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Butane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Pentane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Hexane	BDL	NA	NA	NA	BDL	NA	BDL	BDL
Heptane	BDL	NA	NA	NA	BDL	NA	BDL	BDL

Drift Check WS1 - 3/29/06 AM

	Actual (ppm)	Inject 1 Area Count	Percent of Mean (%)	Inject 2 Area Count	Percent of Mean (%)	Inject 3 Area Count	Percent of Mean (%)	Average	Initial Average	Percent Drift
Methane	15.6	3,530	0.0	3,570	1.1	3,495	-1.0	3,532	3,609	-2.19
Ethane	15.9	6,978	-1.2	7,093	0.4	7,118	0.8	7,063	7,176	-1.60
Propane	15.6	10,315	-1.3	10,536	0.6	10,506	0.5	10,452	10,659	-1.96
Butane	15.7	13,698	-1.2	13,993	0.9	13,895	0.2	13,862	14,139	-2.00
Pentane	15.7	16,562	-1.2	16,877	0.7	16,847	0.5	16,762	17,089	-1.95
Hexane	15.6	19,392	-1.0	19,750	0.8	19,625	0.2	19,589	19,973	-1.96
Heptane	14.7	21,730	-1.5	22,269	0.9	22,199	0.6	22,066	22,533	-2.12

Drift Check WS1 - 3/29/06 PM

	Actual (ppm)	Inject 1 Area Count	Percent of Mean (%)	Inject 2 Area Count	Percent of Mean (%)	Inject 3 Area Count	Percent of Mean (%)	Average	Initial Average	Percent Drift
Methane	15.6	3,558	0.6	3,516	-0.6			3,538	3,609	-2.01
Ethane	15.9	7,059	0.3	7,011	-0.3			7,035	7,176	-2.00
Propane	15.6	10,480	0.4	10,393	-0.4			10,437	10,659	-2.14
Butane	15.7	13,848	0.4	13,750	-0.4			13,799	14,139	-2.46
Pentane	15.7	16,734	0.5	16,565	-0.5			16,650	17,089	-2.64
Hexane	15.6	19,642	0.5	19,452	-0.5			19,547	19,973	-2.18
Heptane	14.7	22,022	0.6	21,776	-0.6			21,899	22,533	-2.90

Drift Check WS1 - 3/30/06 AM

	Actual (ppm)	Inject 1 Area Count	Percent of Mean (%)	Inject 2 Area Count	Percent of Mean (%)	Inject 3 Area Count	Percent of Mean (%)	Average	Initial Average	Percent Drift
Methane	15.6	3,521	0.4	3,491	-0.4			3,506	3,609	-2.94
Ethane	15.9	6,949	0.3	6,906	-0.3			6,928	7,176	-3.58
Propane	15.6	10,273	0.0	10,268	0.0			10,271	10,659	-3.79
Butane	15.7	13,727	0.3	13,658	-0.3			13,693	14,139	-3.26
Pentane	15.7	16,542	0.1	16,505	-0.1			16,524	17,089	-3.42
Hexane	15.6	19,407	-0.1	19,430	0.1			19,419	19,973	-2.86
Heptane	14.7	21,879	0.2	21,809	-0.2			21,844	22,533	-3.16

Drift Check WS1 - 3/30/06 PM

	Actual (ppm)	Inject 1 Area Count	Percent of Mean (%)	Inject 2 Area Count	Percent of Mean (%)	Inject 3 Area Count	Percent of Mean (%)	Average	Initial Average	Percent Drift
Methane	15.6	3,387	-0.3	3,410	0.3			3,399	3,609	-6.19
Ethane	15.9	6,740	-0.6	6,821	0.6			6,781	7,176	-5.83
Propane	15.6	10,027	-0.4	10,105	0.4			10,066	10,659	-5.89
Butane	15.7	13,354	-0.1	13,369	0.1			13,362	14,139	-5.62
Pentane	15.7	16,032	-0.5	16,179	0.5			16,106	17,089	-6.10
Hexane	15.6	18,736	-0.7	18,988	0.7			16,862	19,973	-5.89
Heptane	14.7	21,402	0.2	21,314	-0.2			21,358	22,533	-5.50

Field Blank

	Actual (ppm)	Zero Inject 1 Area Count	Percent of Mean (%)	Zero Inject 2 Area Count	Percent of Mean (%)	Zero Inject 3 Area Count	Percent of Mean (%)	Zero Inject 4 Area Count	Percent of Mean (%)	Average
Methane	0.0	BDL	NA	BDL	NA					BDL
Ethane	0.0	BDL	NA	BDL	NA					BDL
Propane	0.0	BDL	NA	BDL	NA					BDL
Butane	0.0	BDL	NA	BDL	NA					BDL
Pentane	0.0	BDL	NA	BDL	NA					BDL
Hexane	0.0	BDL	NA	BDL	NA					BDL
Heptane	0.0	BDL	NA	BDL	NA					BDL

Zero Nitrogen

	Actual (ppm)	Zero Inject 1 Area Count	Parcent of Mean (%)	Zero Inject 2 Area Count	Percent of Mean (%)	Zero Inject 3 Area Count	Percent of Mean (%)	Zero Inject 4 Area Count	Percant of Mean (%)	Average
Methane	0.0	BDL	NA							BDL
Ethane	0.0	BDL	NA							BDL
Propane	0.0	BDL	NA							BDL
Butane	0.0	BDL	NA							BDL
Pentane	0.0	BDL	NA							BDL
Hexane	0.0	BDL	NA							BDL
Heptane	0.0	BDL	NA							BDL

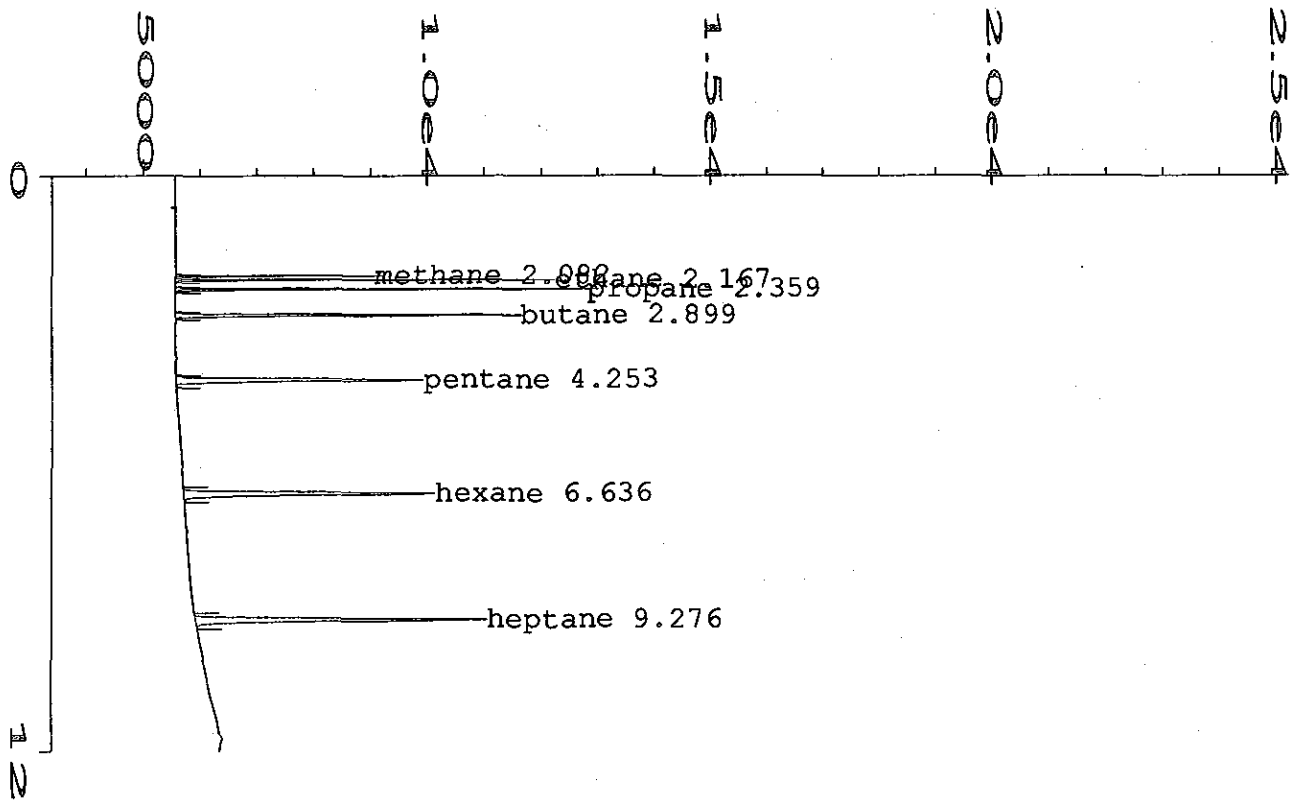
Detection Limits WS4
Part 136, App B

	Actual	Inject 1		Inject 2		Inject 3		Inject 4	
	(ppm)	Area Count	(ppm)	Area Count	(ppm)	Area Count	(ppm)	Area Count	(ppm)
Mathane	3.51	855	3.72	861	3.75	837	3.64	874	3.80
Ethane	3.58	1,583	3.55	1,810	3.61	1,591	3.57	1,804	3.60
Propane	3.51	2,318	3.44	2,389	3.54	2,354	3.49	2,382	3.53
Butane	3.53	3,119	3.50	3,161	3.55	3,152	3.54	3,183	3.57
Pentane	3.53	3,726	3.48	3,844	3.57	3,764	3.49	3,807	3.53
Hexane	3.51	4,326	3.42	4,441	3.52	4,468	3.54	4,417	3.50
Heptane	3.31	4,953	3.29	5,052	3.35	4,864	3.23	5,129	3.40

	Actual	Inject 5		Inject 6		Inject 7		Inject 8	
	(ppm)	Area Count	(ppm)	Area Count	(ppm)	Area Count	(ppm)	Area Count	(ppm)
Methane	3.51	878	3.82	838	3.65	852	3.71		
Ethane	3.58	1,617	3.63	1,605	3.60	1,609	3.61		
Propane	3.51	2,380	3.53	2,376	3.52	2,364	3.50		
Butane	3.53	3,137	3.52	3,124	3.51	3,132	3.52		
Pentane	3.53	3,822	3.54	3,855	3.58	3,770	3.50		
Hexane	3.51	4,495	3.56	4,422	3.50	4,418	3.50		
Heptane	3.31	5,052	3.35	5,085	3.37	5,031	3.34		

Detection Limits
SUMMARY

	Actual (ppm)	n	S^2	S	t	MDL (ppm)
Methane	3.51	7	0.00484	0.0696	3.143	**0.22**
Ethane	3.58	7	0.00070	0.0284	3.143	**0.083**
Propane	3.51	7	0.00129	0.0360	3.143	**0.11**
Butane	3.53	7	0.00065	0.0255	3.143	**0.080**
Pentane	3.53	7	0.00188	0.0434	3.143	**0.14**
Hexane	3.51	7	0.00177	0.0421	3.143	**0.13**
Heptane	3.31	7	0.00345	0.0587	3.143	**0.18**



==========

External Standard Report

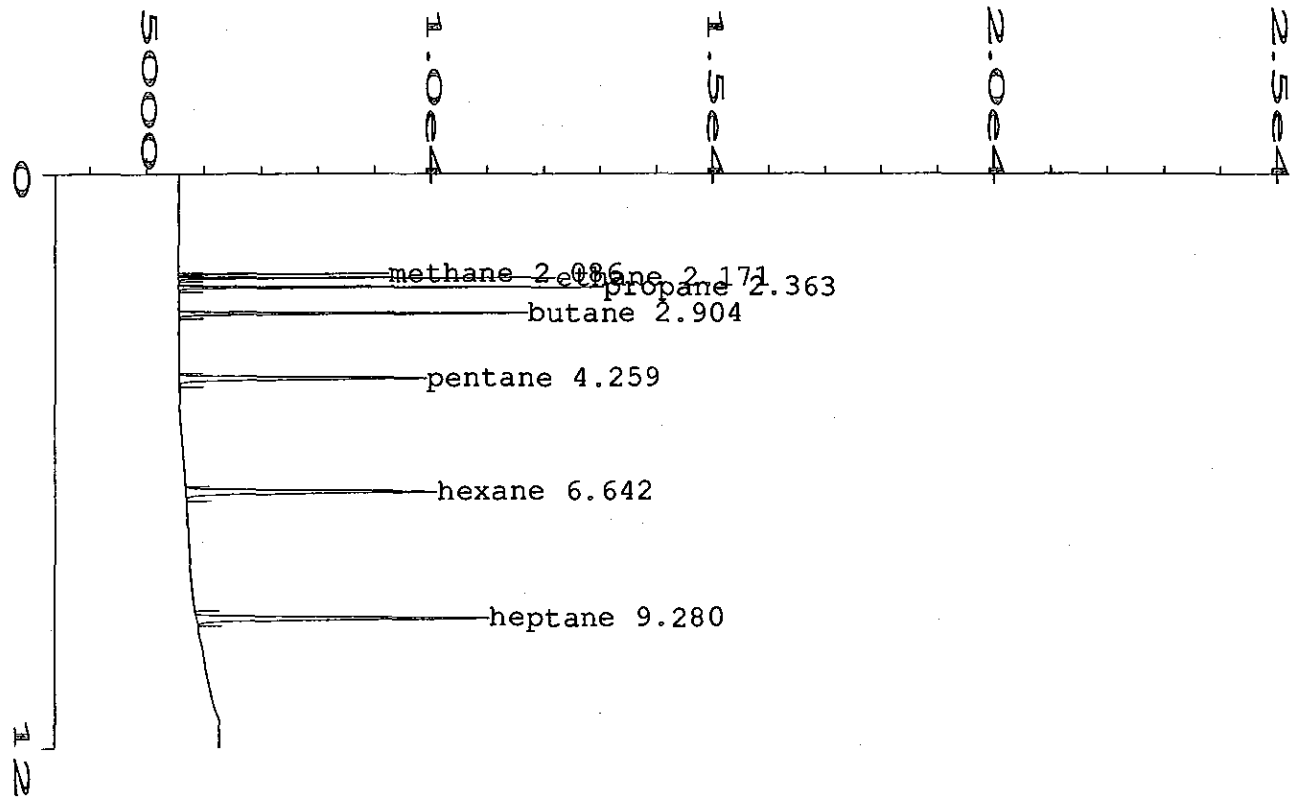
==========

1 File Name	: C:\HPCHEM\1\DATA\2325\WS100008.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 28 Mar 06 05:16 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:46 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS100008.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.082	3624	BV	0.023	1	8.552	methane
2.167	7174	VB	0.017	1	8.321	ethane
2.359	10619	BB	0.022	1	8.091	propane
2.899	14119	BB	0.036	1	8.006	butane
4.253	17051	BB	0.061	1	8.082	pentane
6.636	19963	BB	0.071	1	7.945	hexane
9.276	22600	BB	0.066	1	7.707	heptane

==========

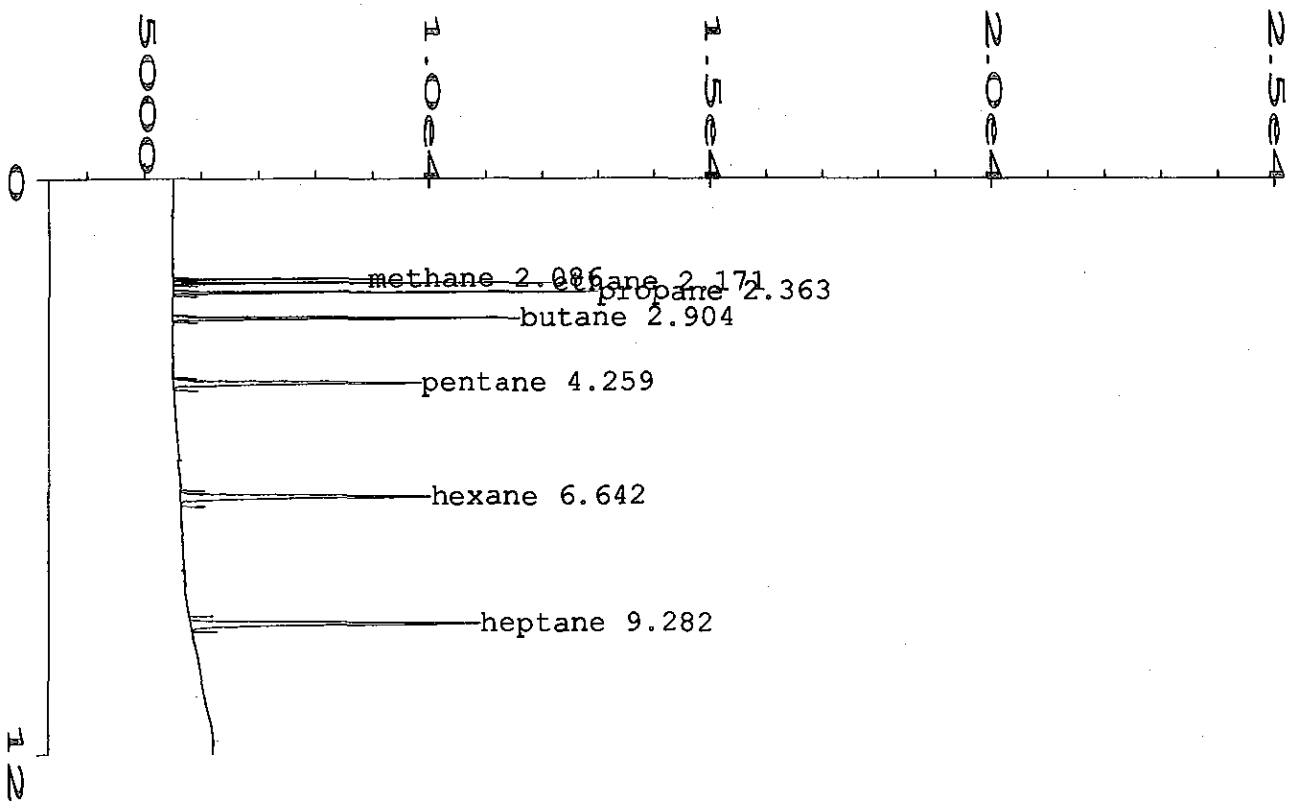


External Standard Report

File Name	: C:\HPCHEM\1\DATA\2325\WS100009.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 28 Mar 06 05:43 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:47 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS100009.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.086	3620	BB	0.016	1	8.543	methane
2.171	7213	BB	0.017	1	8.367	ethane
2.363	10728	BB	0.022	1	8.174	propane
2.904	14188	BB	0.036	1	8.045	butane
4.259	17162	BB	0.061	1	8.135	pentane
6.642	20036	BB	0.070	1	7.974	hexane
9.280	22574	BB	0.069	1	7.698	heptane

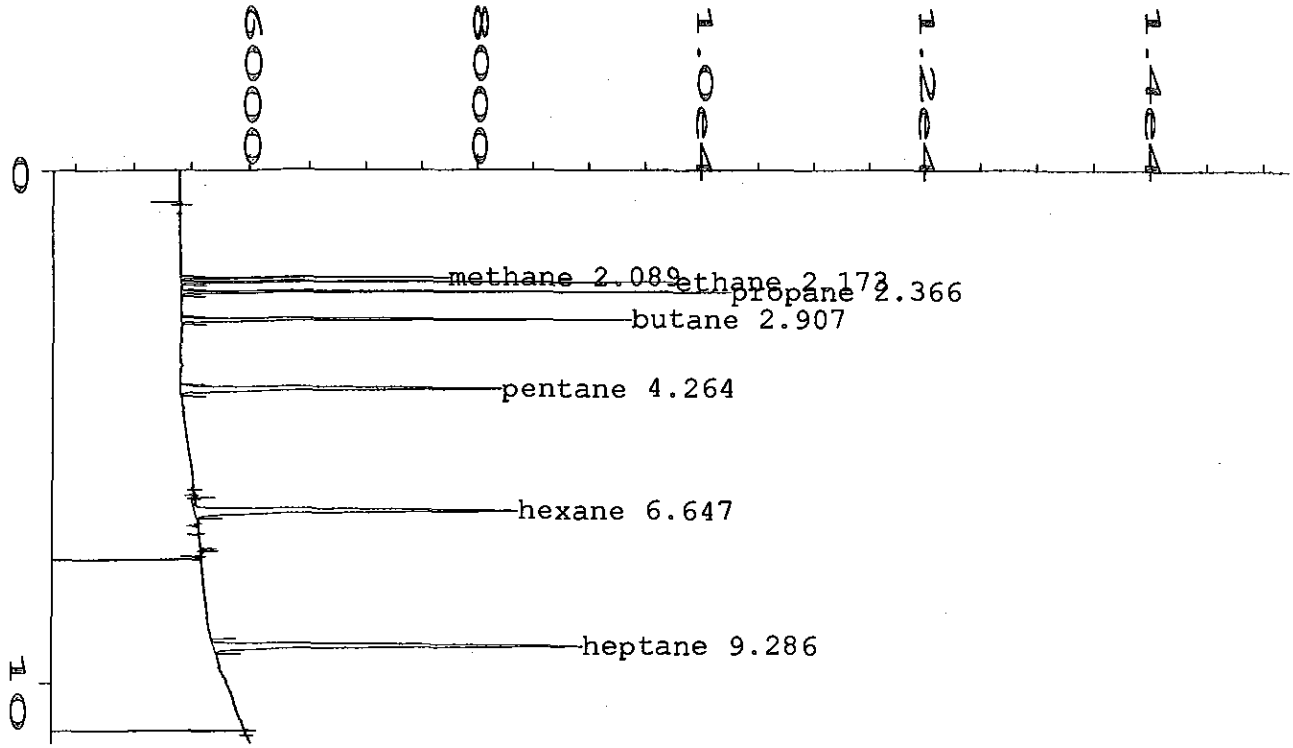


External Standard Report

D File Name	: C:\HPCHEM\1\DATA\2325\WS100010.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 28 Mar 06 06:02 PM	Instrument Method:	WESTATES.MTH
Report Created on:	14 Apr 06 06:48 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS100010.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.086	3583	BV	0.016	1	8.455	methane
2.171	7140	PB	0.017	1	8.283	ethane
2.363	10631	BB	0.022	1	8.101	propane
2.904	14110	BB	0.036	1	8.000	butane
4.259	17053	BB	0.062	1	8.083	pentane
6.642	19921	BB	0.071	1	7.929	hexane
9.282	22426	BB	0.068	1	7.647	heptane



==========

External Standard Report

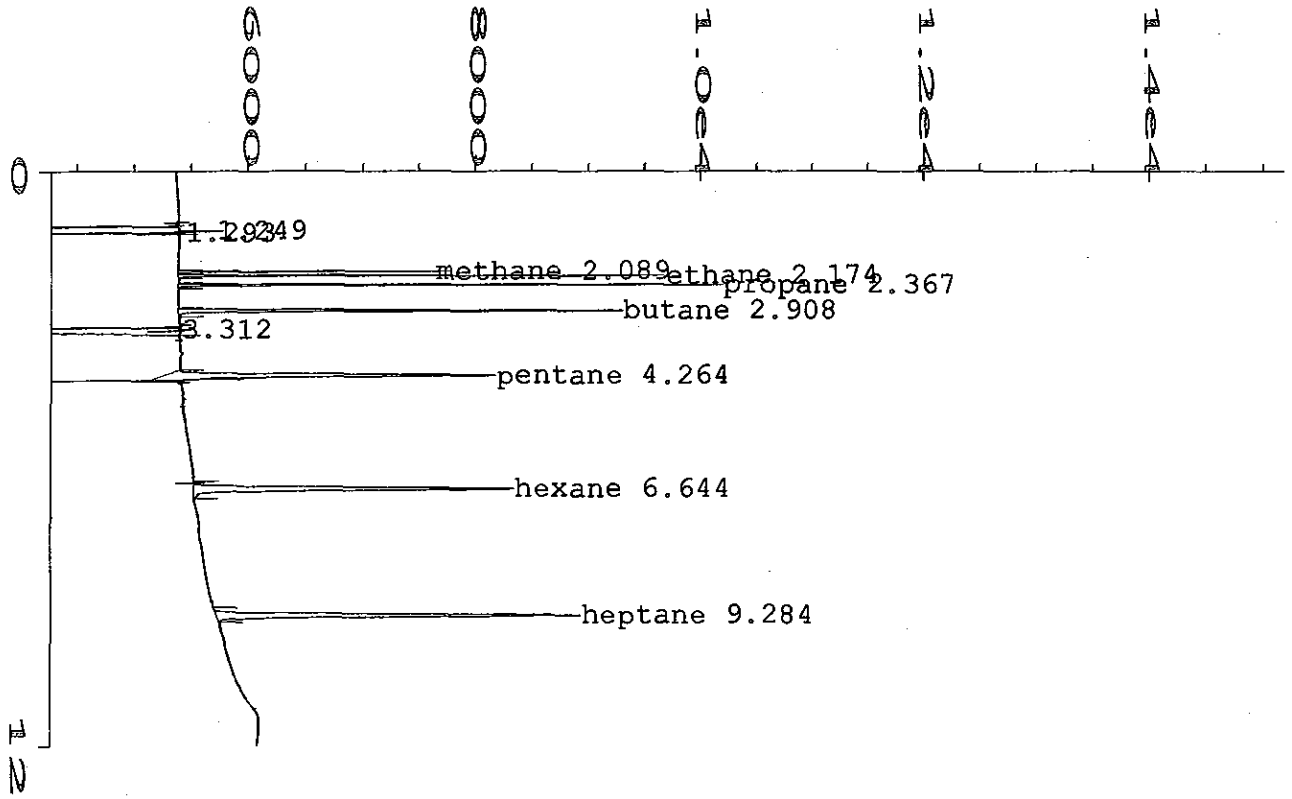
==========

D File Name	: C:\HPCHEM\1\DATA\2325\WS200014.D		
Op ator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 28 Mar 06 07:28 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:57 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS200014.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.089	2361	BV	0.024	1	5.572	methane
2.173	4626	PB	0.017	1	5.366	ethane
2.366	6883	BB	0.022	1	5.245	propane
2.907	9126	BB	0.036	1	5.174	butane
4.264	11013	BB	0.060	1	5.220	pentane
6.647	12,742 ~~13230~~	PV	0.073	1	5.266	hexane
9.286	PC 14311	BB	0.068	1	4.880	heptane

==========



==========

External Standard Report

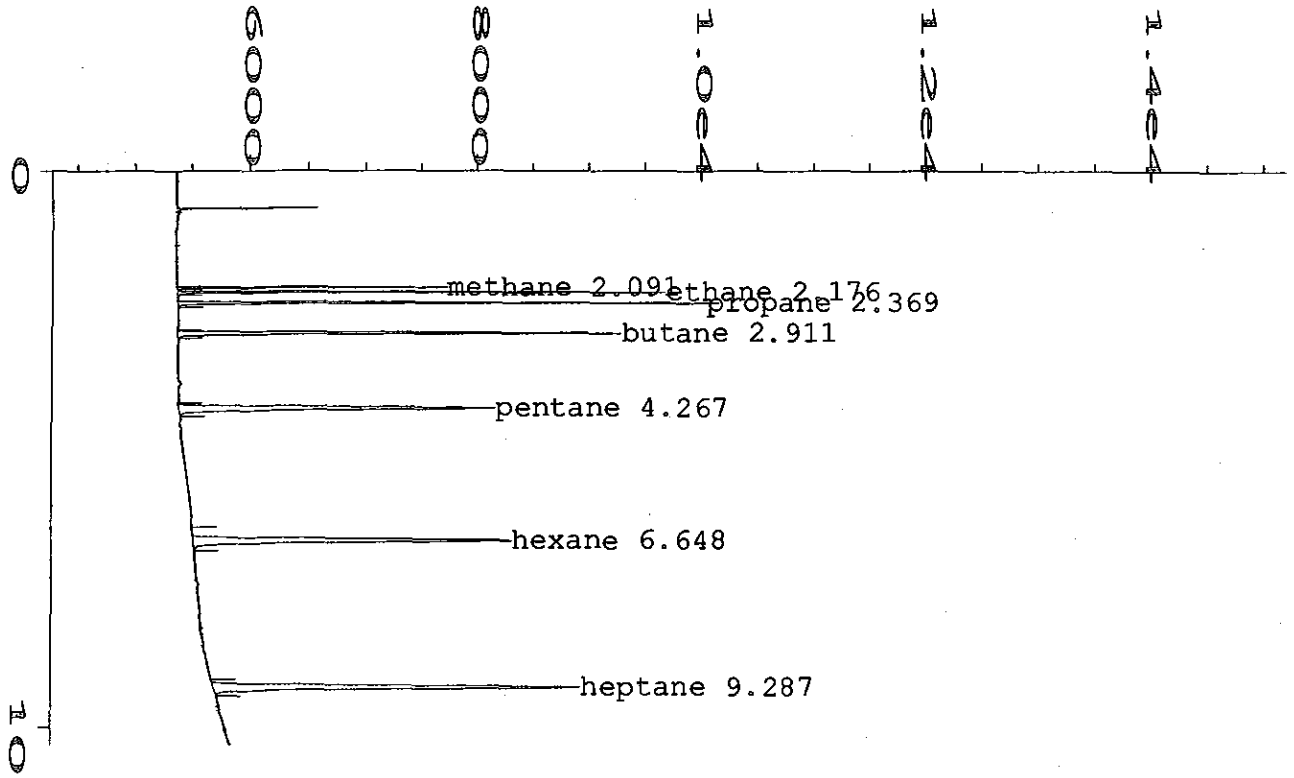
==========

File Name	: C:\HPCHEM\1\DATA\2325\WS200015.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 28 Mar 06 07:44 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:58 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS200015.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.089	2355	BV	0.023	1	5.557	methane
2.174	4604	VB	0.017	1	5.341	ethane
2.367	6777	BB	0.022	1	5.164	propane
2.908	9114	BB	0.036	1	5.168	butane
4.264	11,191 ~~12506~~	BV	0.065	1	5.928	pentane
6.644	PL 12878	BB	0.071	1	5.125	hexane
9.284	14141	BB	0.069	1	4.822	heptane

==========

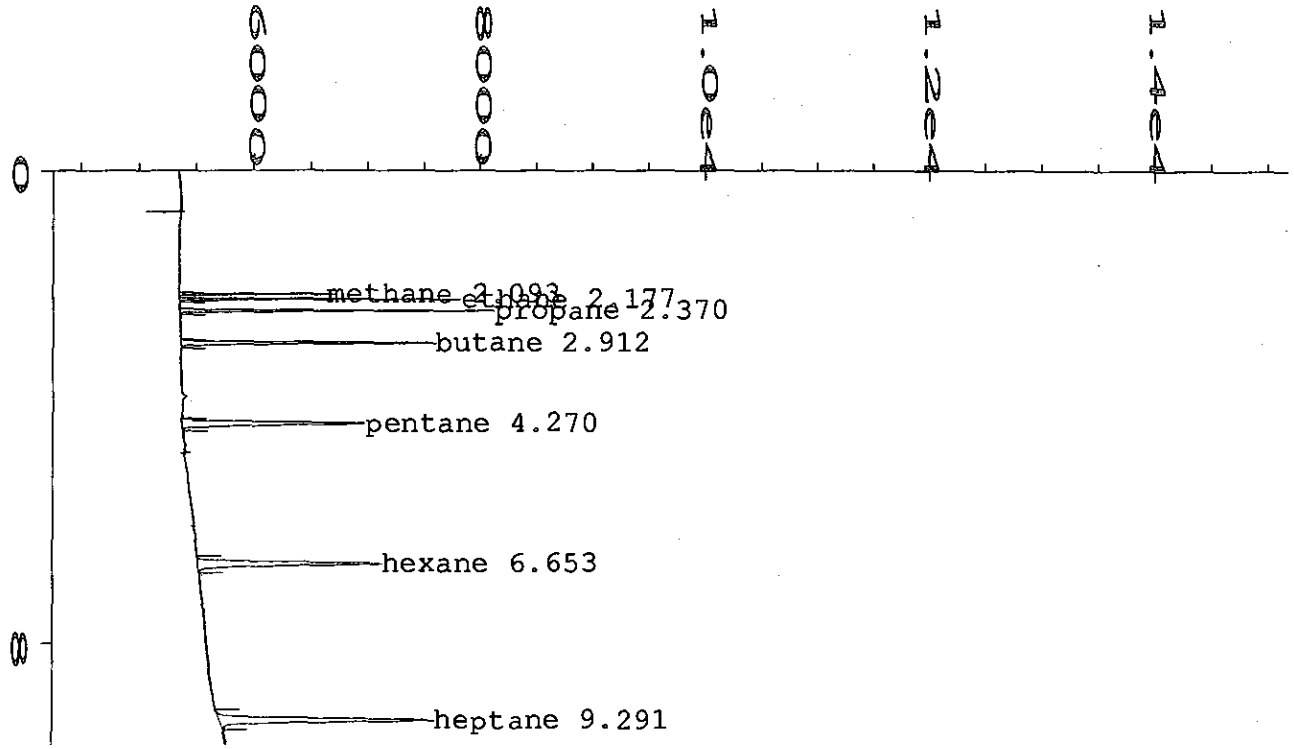


External Standard Report

D File Name	: C:\HPCHEM\1\DATA\2325\WS200016.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 28 Mar 06 08:04 PM	Instrument Method	: WESTATES.MTH
Report Created on:	14 Apr 06 06:59 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS200016.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.091	2323	BB	0.016	1	5.482	methane
2.176	4571	BB	0.017	1	5.302	ethane
2.369	6773	BB	0.022	1	5.161	propane
2.911	9034	BB	0.036	1	5.122	butane
4.267	10897	BB	0.062	1	5.165	pentane
6.648	12638	BB	0.070	1	5.030	hexane
9.287	14103	BB	0.068	1	4.809	heptane



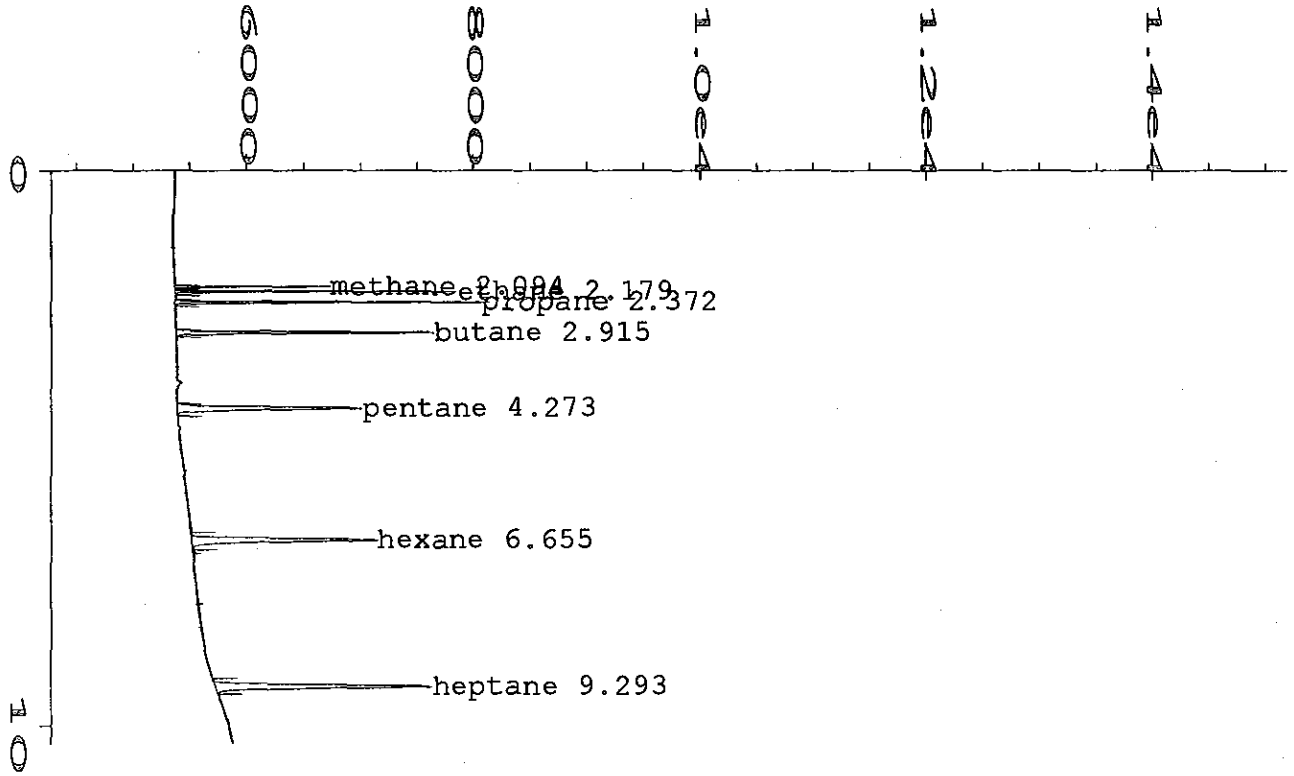
External Standard Report

D File Name : C:\HPCHEM\1\DATA\2325\WS000017.D
Operator : pclark WS3
Instrument : INSTRUMEN
Sample Name : Westates
Run Time Bar Code:
Acquired on : 28 Mar 06 08:21 PM
Report Created on: 14 Apr 06 06:39 PM
Last Recalib on : 08 DEC 03 02:07 PM
Multiplier : 1

Page Number : 1
Vial Number :
Injection Number :
Sequence Line :
Instrument Method: WESTATES.MTH
Analysis Method : WESTATES.MTH
Sample Amount : 0
ISTD Amount :

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS000017.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.093	1354	BB	0.022	1	3.196	methane
2.177	2631	BB	0.017	1	3.051	ethane
2.370	3919	BB	0.022	1	2.986	propane
2.912	5189	BB	0.036	1	2.942	butane
4.270	6313	BB	0.061	1	2.992	pentane
6.653	7333	BB	0.072	1	2.919	hexane
9.291	8501	BB	0.070	1	2.899	heptane

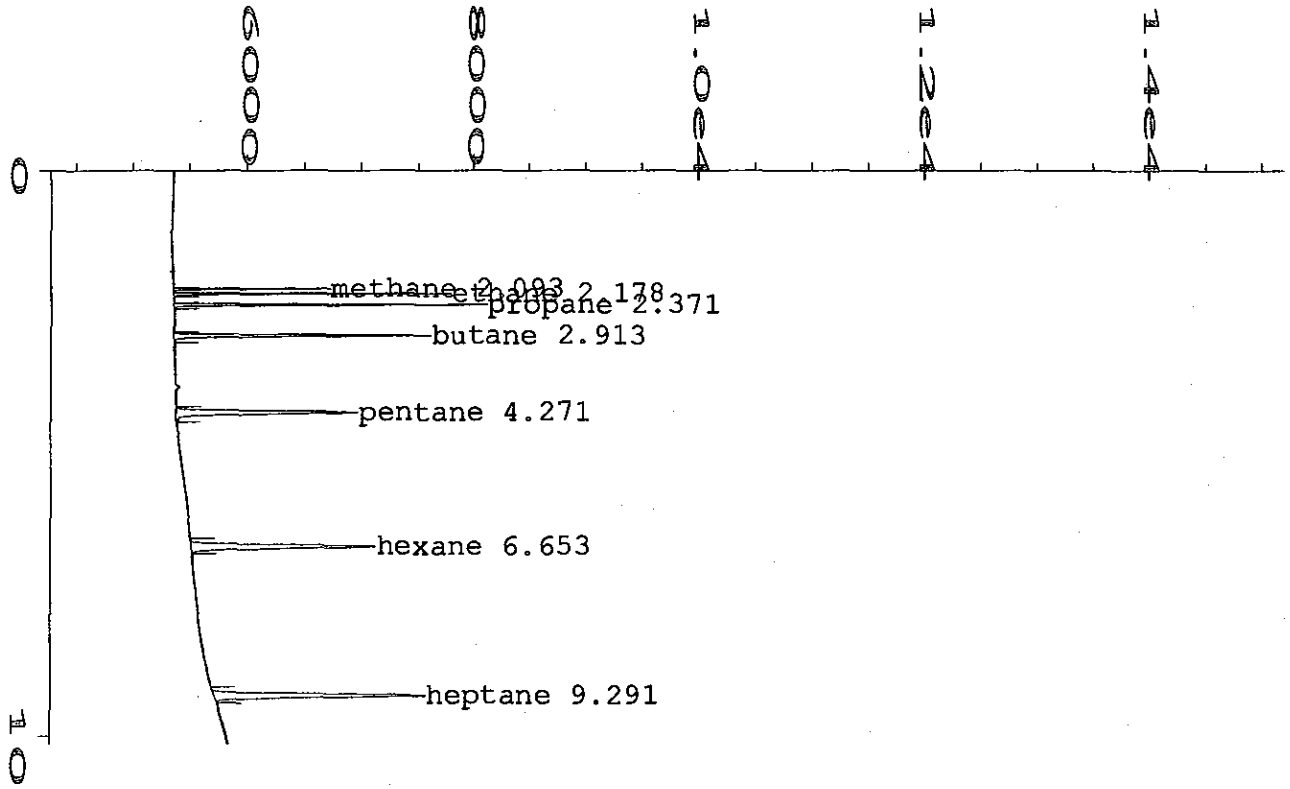


External Standard Report

File Name	: C:\HPCHEM\1\DATA\2325\WS000018.D		
Operator	: pclark WS3	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code	:	Sequence Line	:
Acquired on	: 28 Mar 06 08:36 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:40 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS000018.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.094	1365	BB	0.016	1	3.220	methane
2.179	2690	BB	0.017	1	3.120	ethane
2.372	3995	BB	0.022	1	3.044	propane
2.915	5245	BB	0.036	1	2.974	butane
4.273	6385	BB	0.062	1	3.026	pentane
6.655	7433	BB	0.071	1	2.958	hexane
9.293	8288	BV	0.068	1	2.826	heptane



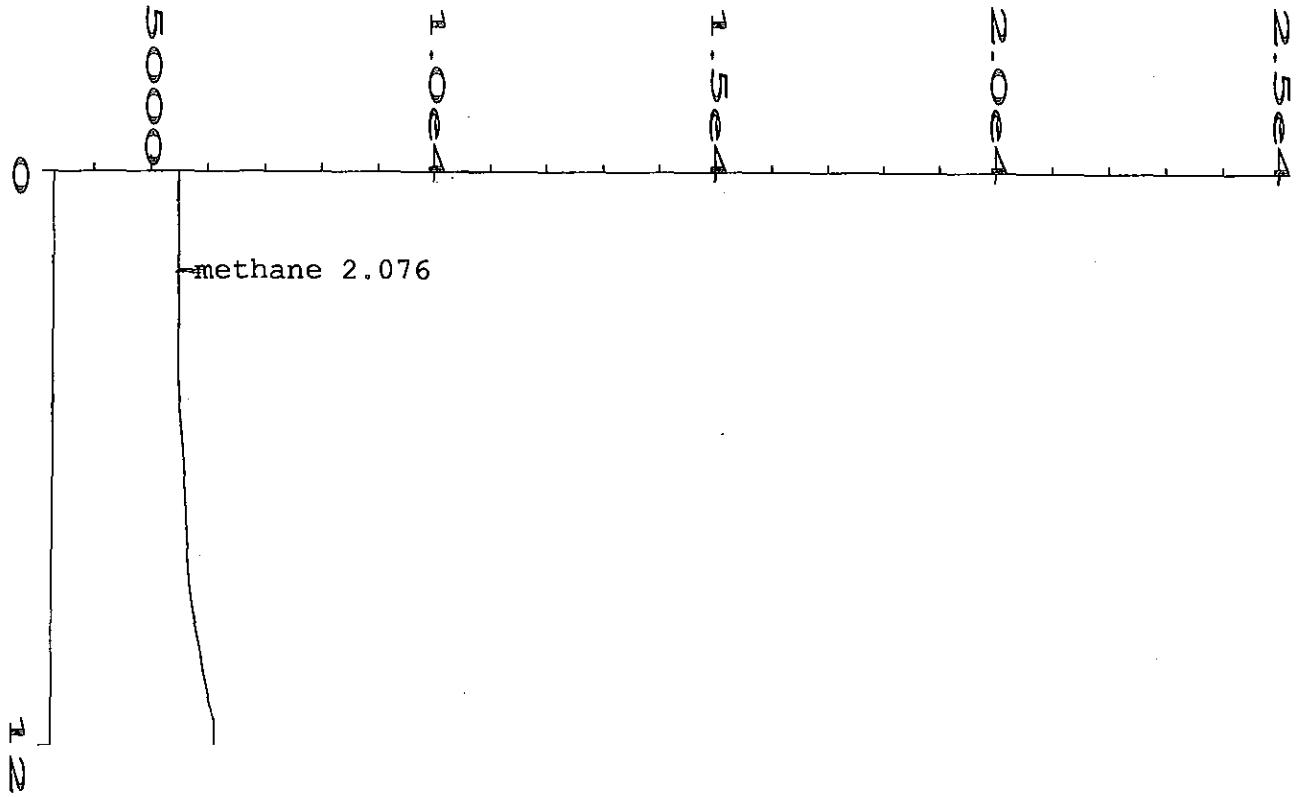
External Standard Report

D File Name : C:\HPCHEM\1\DATA\2325\WS000019.D
Operator : pclark
Instrument : INSTRUMEN
Sample Name : Westates
Run Time Bar Code:
Acquired on : 28 Mar 06 08:53 PM
Report Created on: 14 Apr 06 06:41 PM
Last Recalib on : 08 DEC 03 02:07 PM
Multiplier : 1

Page Number : 1
Vial Number :
Injection Number :
Sequence Line :
Instrument Method: WESTATES.MTH
Analysis Method : WESTATES.MTH
Sample Amount : 0
ISTD Amount :

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS000019.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.093	1352	BB	0.016	1	3.192	methane
2.178	2632	BB	0.017	1	3.053	ethane
2.371	3916	BB	0.022	1	2.984	propane
2.913	5242	BB	0.036	1	2.972	butane
4.271	6368	BB	0.062	1	3.018	pentane
6.653	7241	BB	0.068	1	2.882	hexane
9.291	8074	BB	0.069	1	2.753	heptane



==========

Normalized Percent Report

==========

D File Name : C:\HPCHEM\1\DATA\2325\RUN1A011.D
Operator : pclark
Instrument : INSTRUMEN
Sample Name : Westates
Run Time Bar Code:
Acquired on : 28 Mar 06 06:28 PM
Report Created on: 14 Apr 06 05:36 PM
Last Recalib on : 08 DEC 03 02:07 PM
Multiplier : 1

Page Number : 1
Vial Number :
Injection Number :
Sequence Line :
Instrument Method: WESTATES.MTH
Analysis Method : WESTATES.MTH
Sample Amount : 0
ISTD Amount :

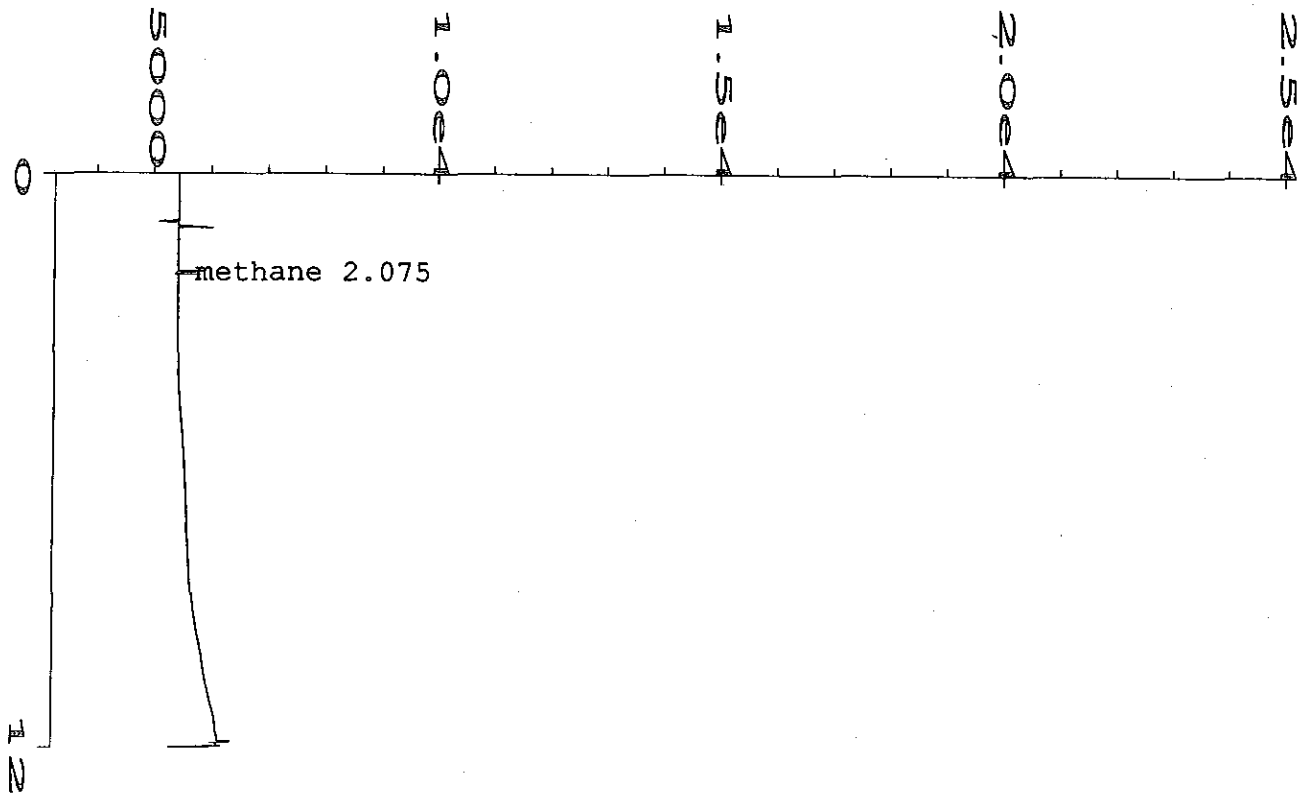
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN1A011.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.076	363	BV	0.024	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.857467

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

D File Name : C:\HPCHEM\1\DATA\2325\RUN1A012.D
C ator : pclark
Instrument : INSTRUMEN
Sample Name : Westates
Run Time Bar Code:
Acquired on : 28 Mar 06 06:46 PM
Report Created on: 14 Apr 06 05:39 PM
Last Recalib on : 08 DEC 03 02:07 PM
Multiplier : 1

Page Number : 1
Vial Number :
Injection Number :
Sequence Line :
Instrument Method: WESTATES.MTH
Analysis Method : WESTATES.MTH
Sample Amount : 0
ISTD Amount :

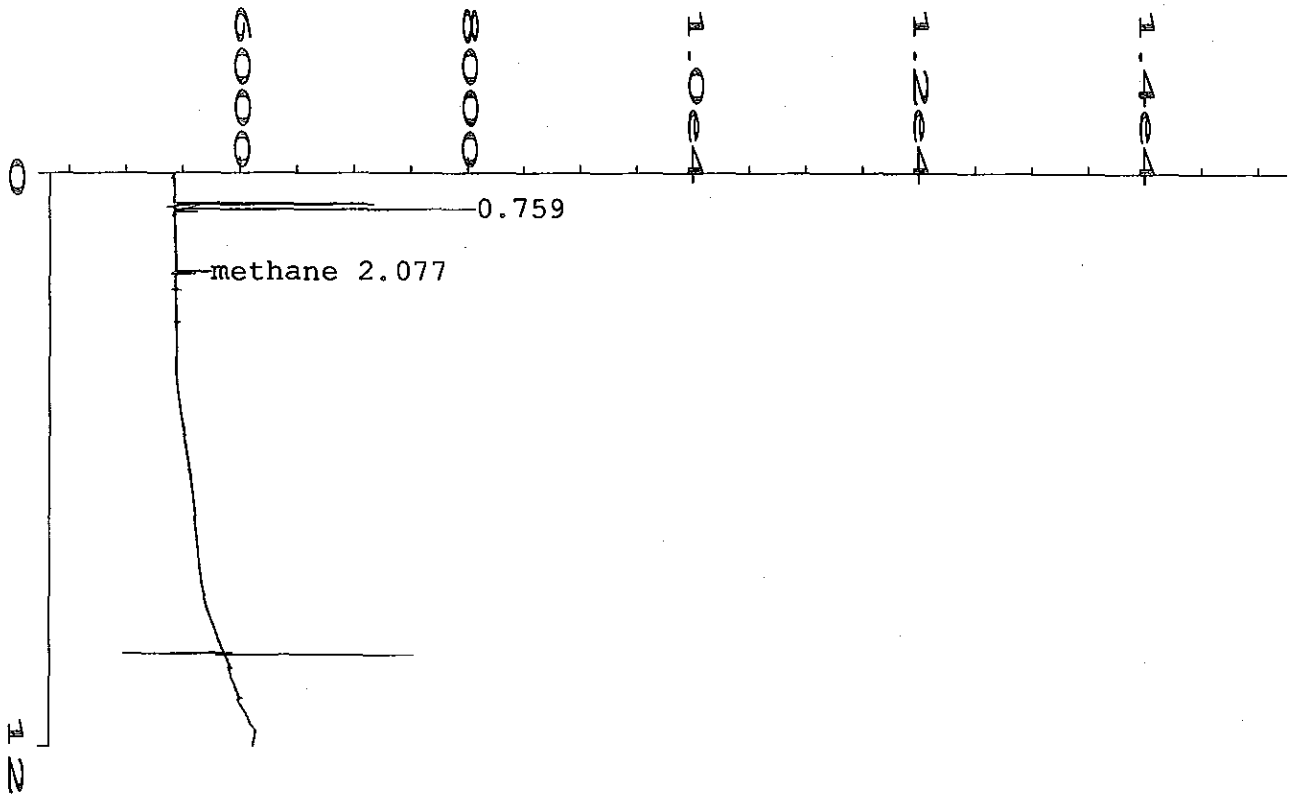
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN1A012.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.075	418	BV	0.026	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.986366

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

File Name	: C:\HPCHEM\1\DATA\2325\RUN1A013.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 28 Mar 06 07:08 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 05:41 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

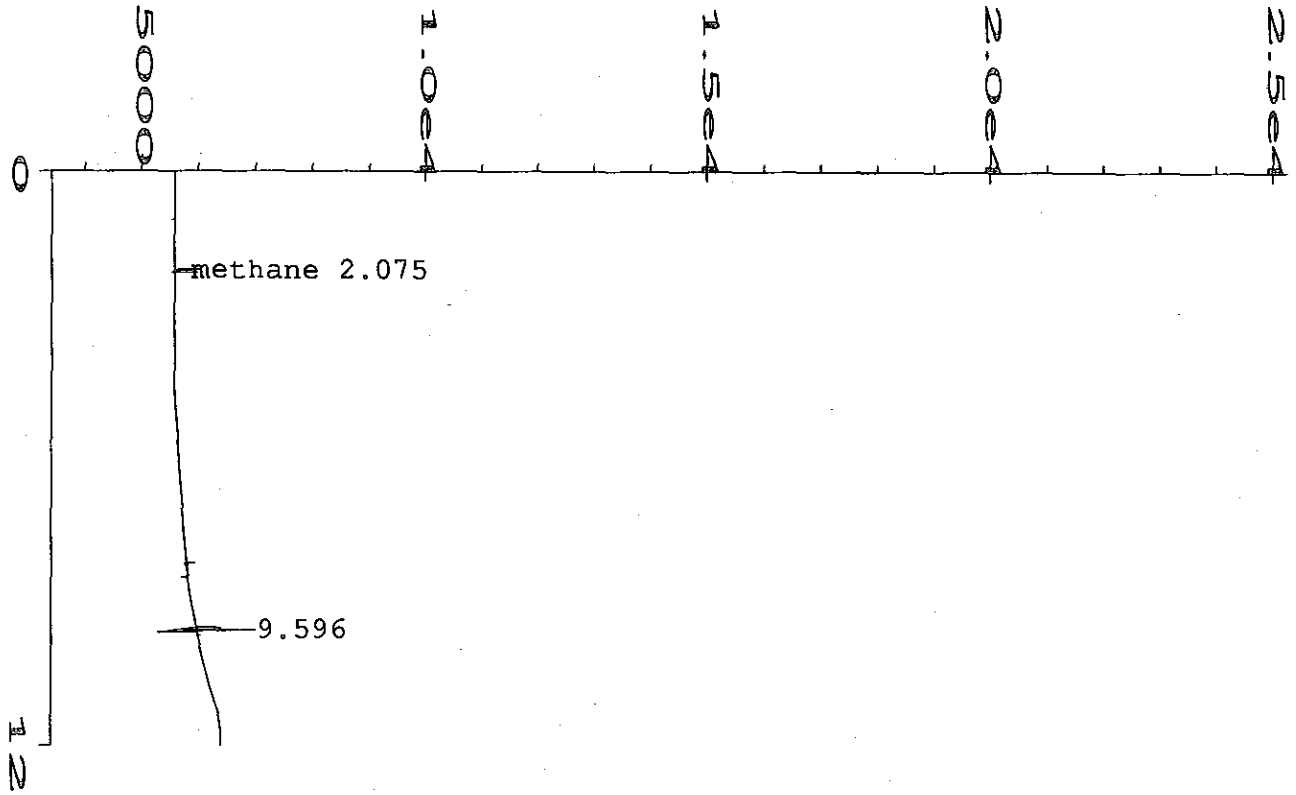
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN1A013.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.077	397	BV	0.024	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.936336

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

File Name	: C:\HPCHEM\1\DATA\2325\RUN1B023.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 29 Mar 06 12:31 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 05:42 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

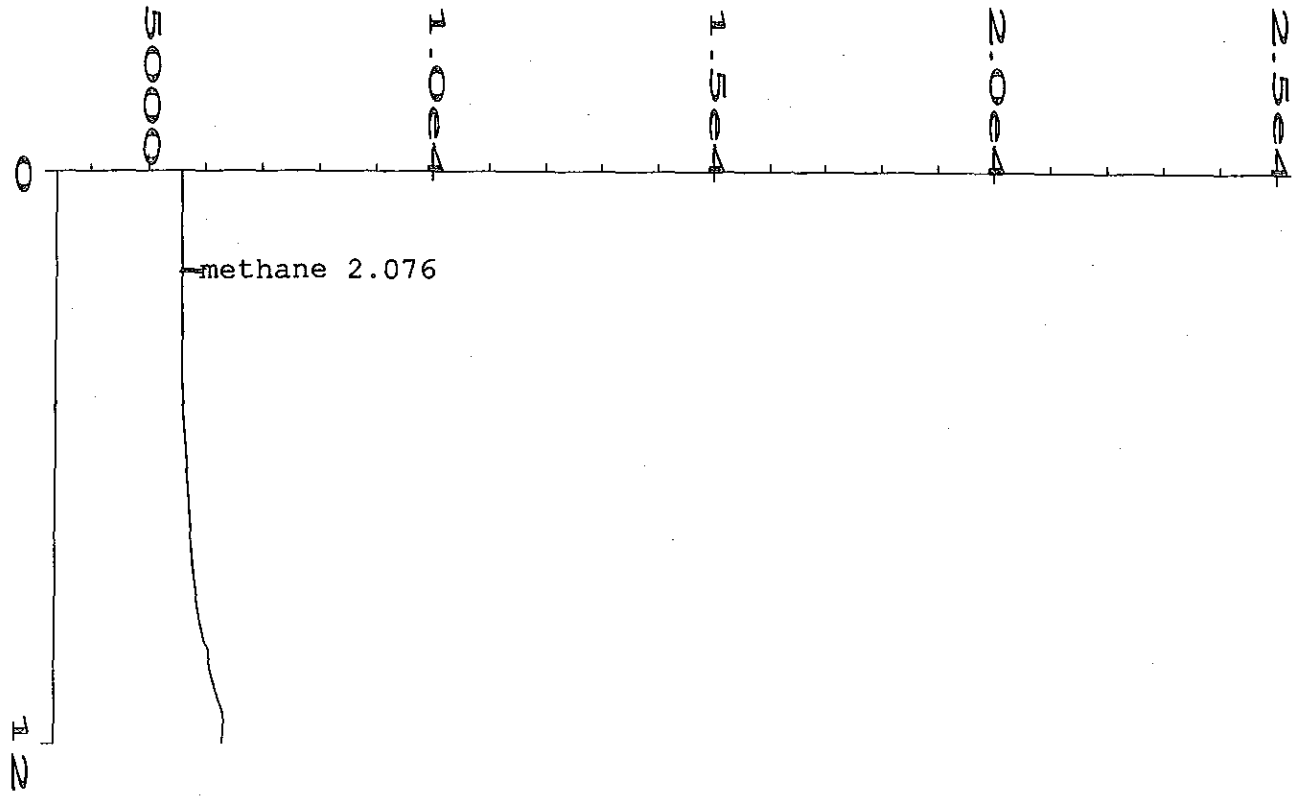
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN1B023.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.075	384	BV	0.024	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.90579

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

D File Name	: C:\HPCHEM\1\DATA\2325\RUN1B024.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 29 Mar 06 01:28 PM	Instrument Method:	WESTATES.MTH
Report Created on:	14 Apr 06 05:43 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

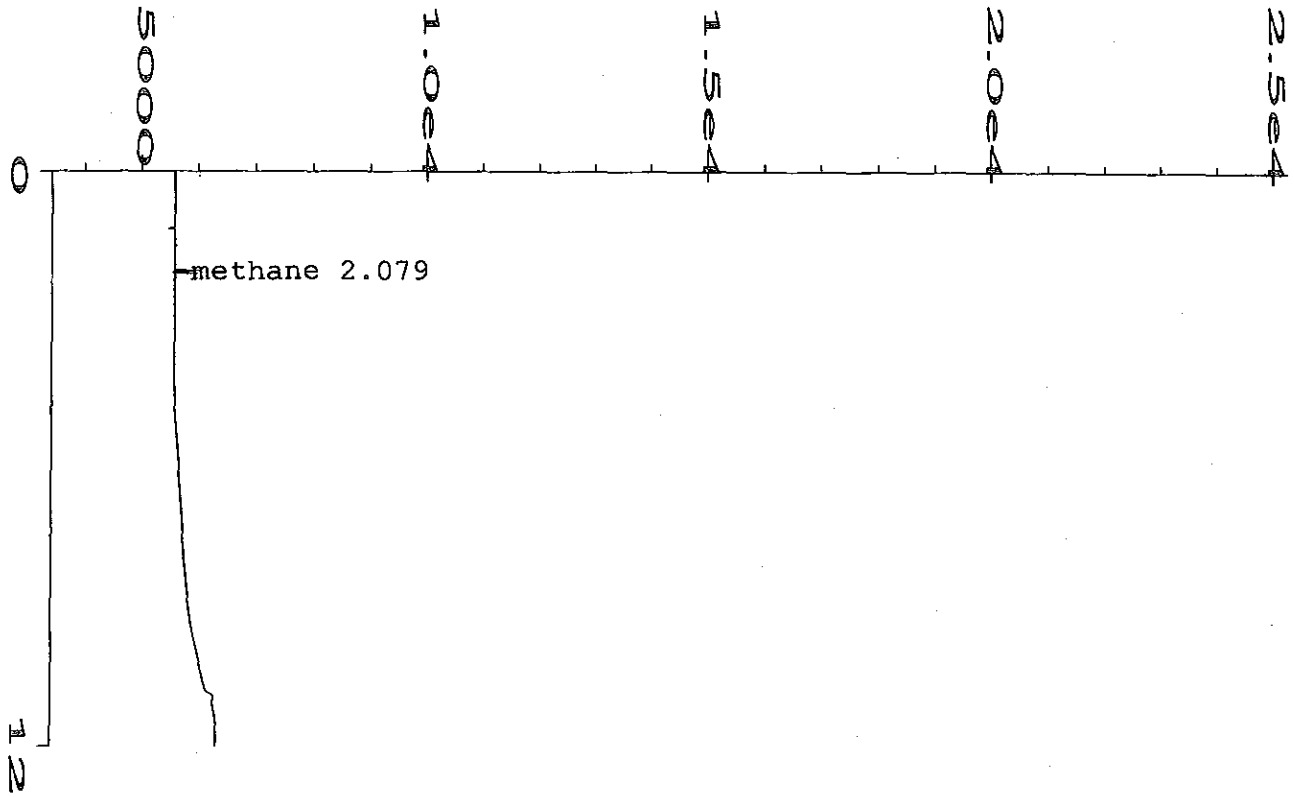
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN1B024.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.076	402	BV	0.024	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.947689

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

File Name	: C:\HPCHEM\1\DATA\2325\RUN1B025.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 29 Mar 06 02:06 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 05:51 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

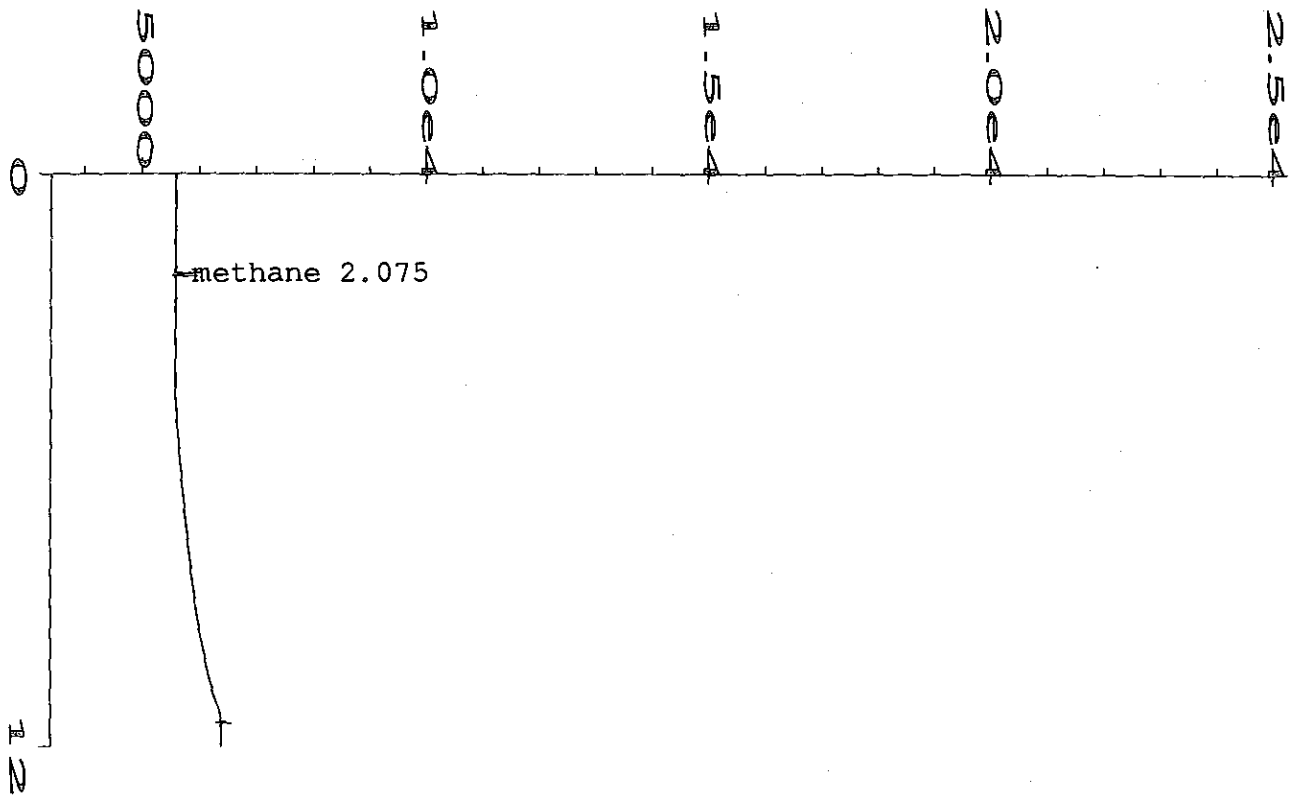
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN1B025.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.079	409	BV	0.025	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.964365

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

Data File Name	: C:\HPCHEM\1\DATA\2325\RUN2A026.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 29 Mar 06 04:46 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 05:52 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

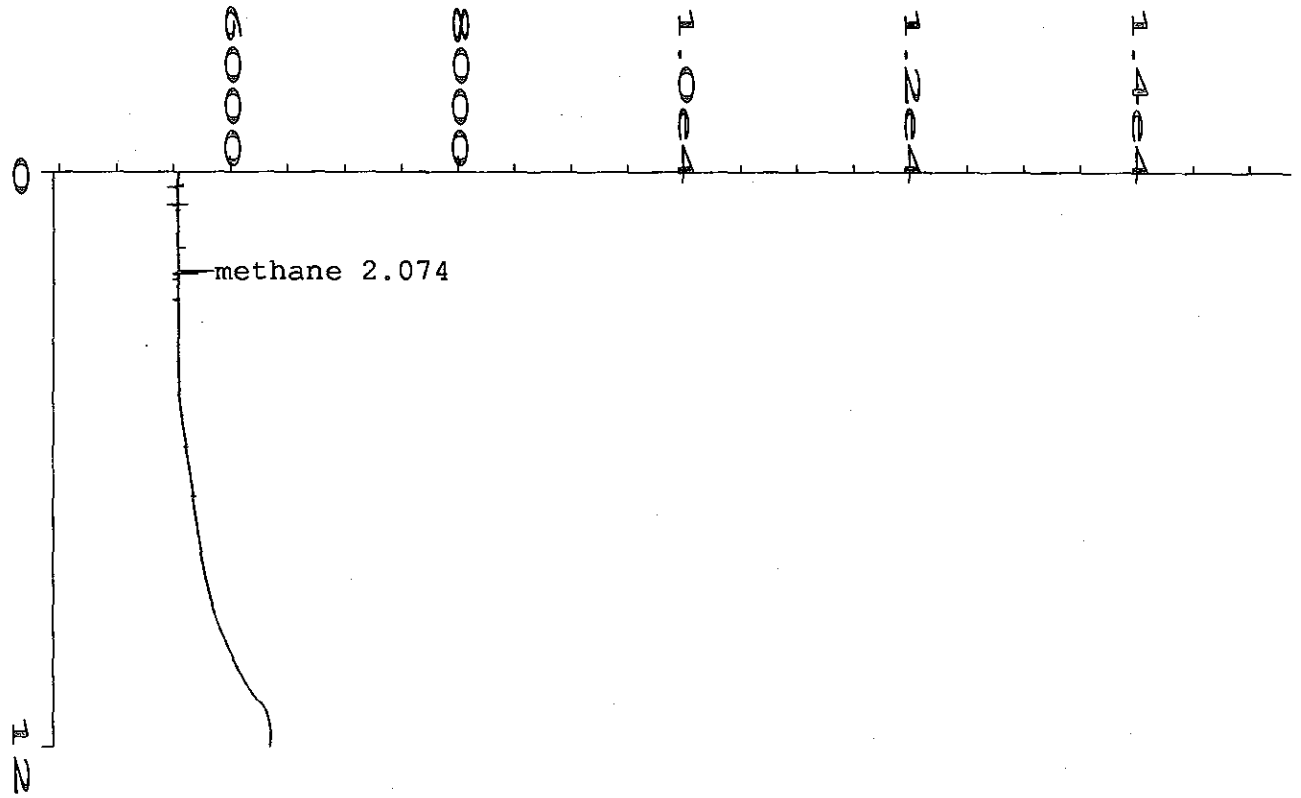
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN2A026.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.075	427	BV	0.021	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 1.00752

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

D File Name : C:\HPCHEM\1\DATA\2325\RUN2A027.D

Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 29 Mar 06 05:22 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 05:53 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

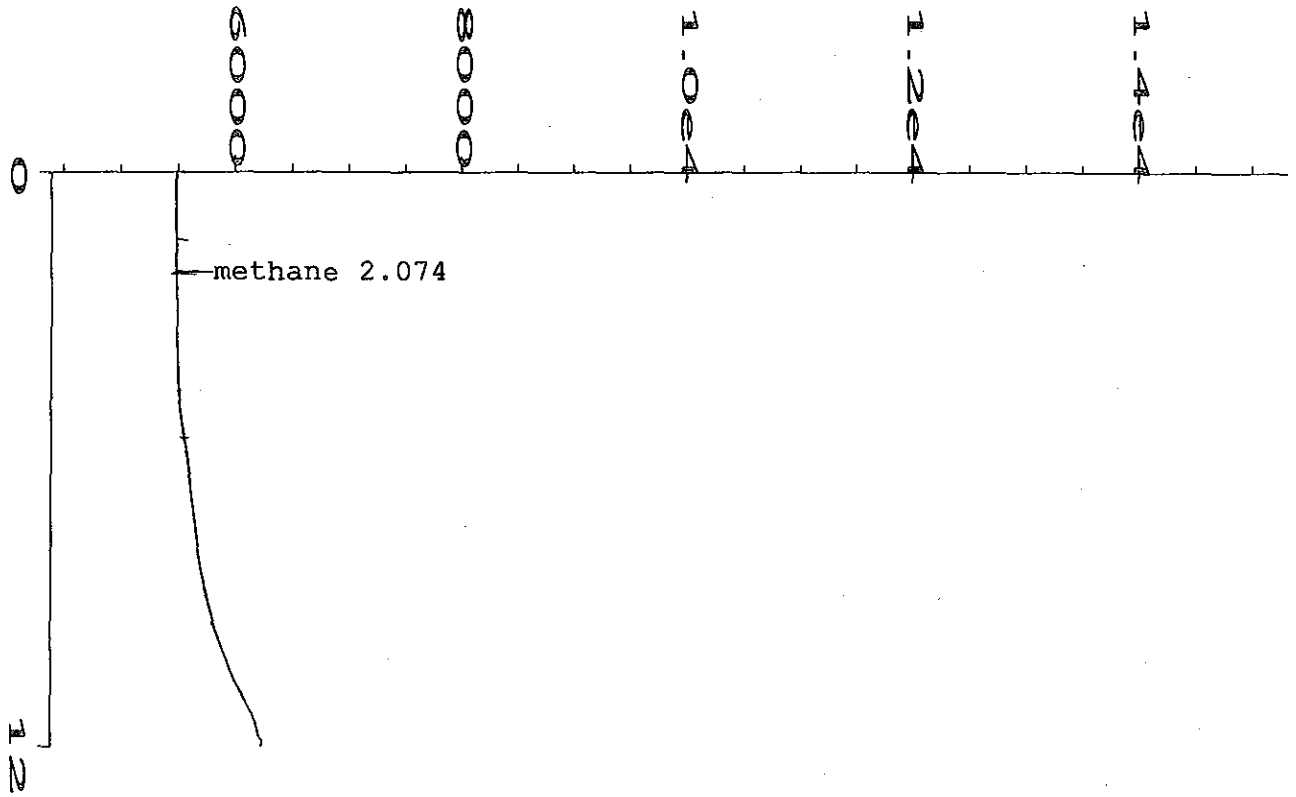
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN2A027.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.074	399	BV	0.018	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.942695

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

File Name	: C:\HPCHEM\1\DATA\2325\RUN2A028.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 29 Mar 06 05:40 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 05:54 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

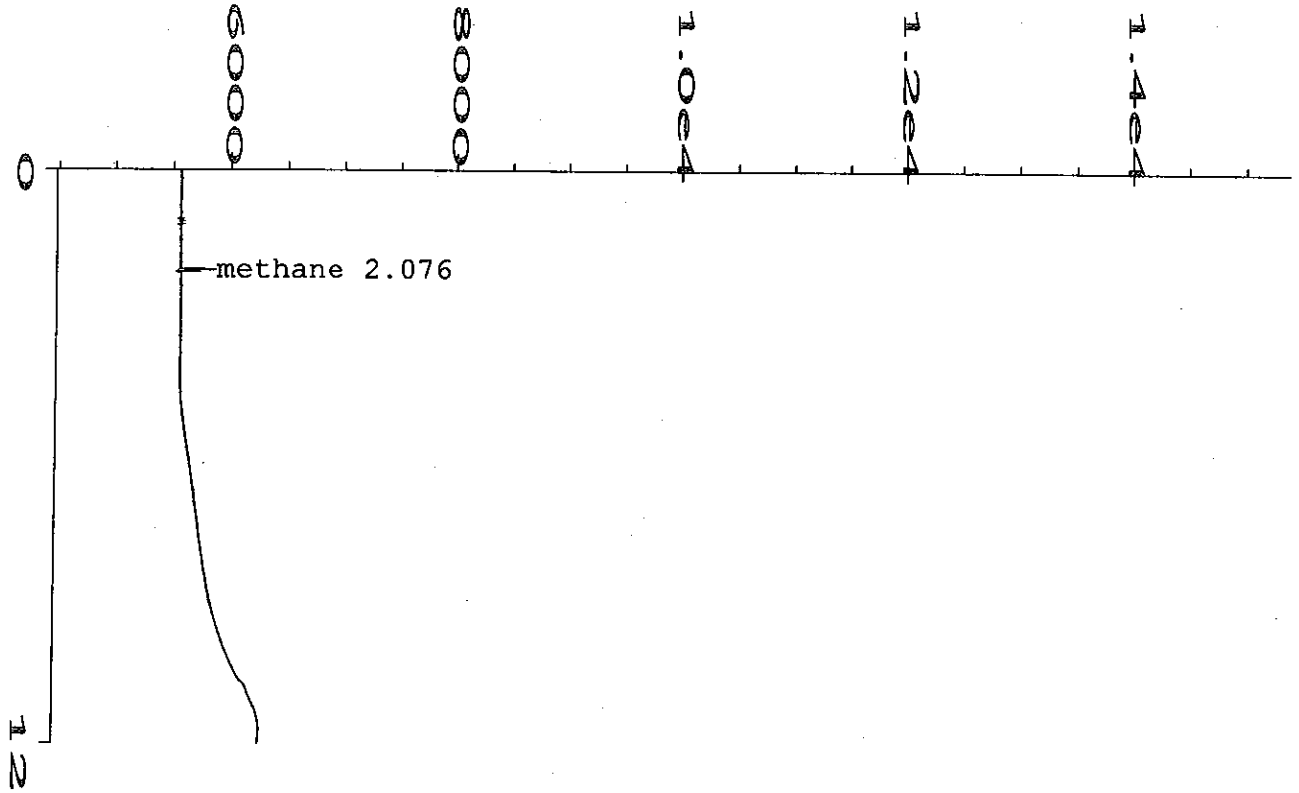
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN2A028.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.074	406	BV	0.019	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.959116

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

Data File Name	: C:\HPCHEM\1\DATA\2325\RUN2B029.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 29 Mar 06 06:23 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 05:55 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

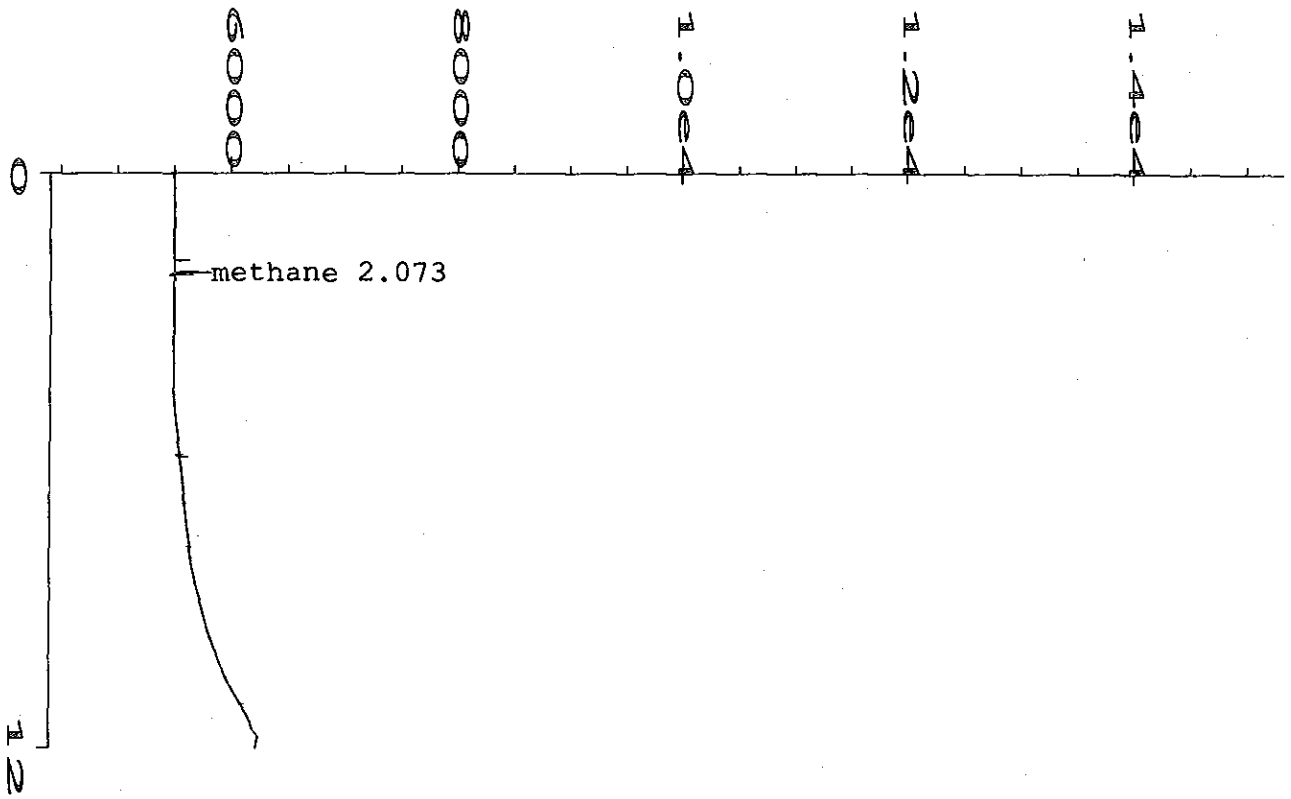
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN2B029.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.076	419	BV	0.025	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.987936

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

1 File Name	: C:\HPCHEM\1\DATA\2325\RUN2B030.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 29 Mar 06 06:43 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 05:55 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

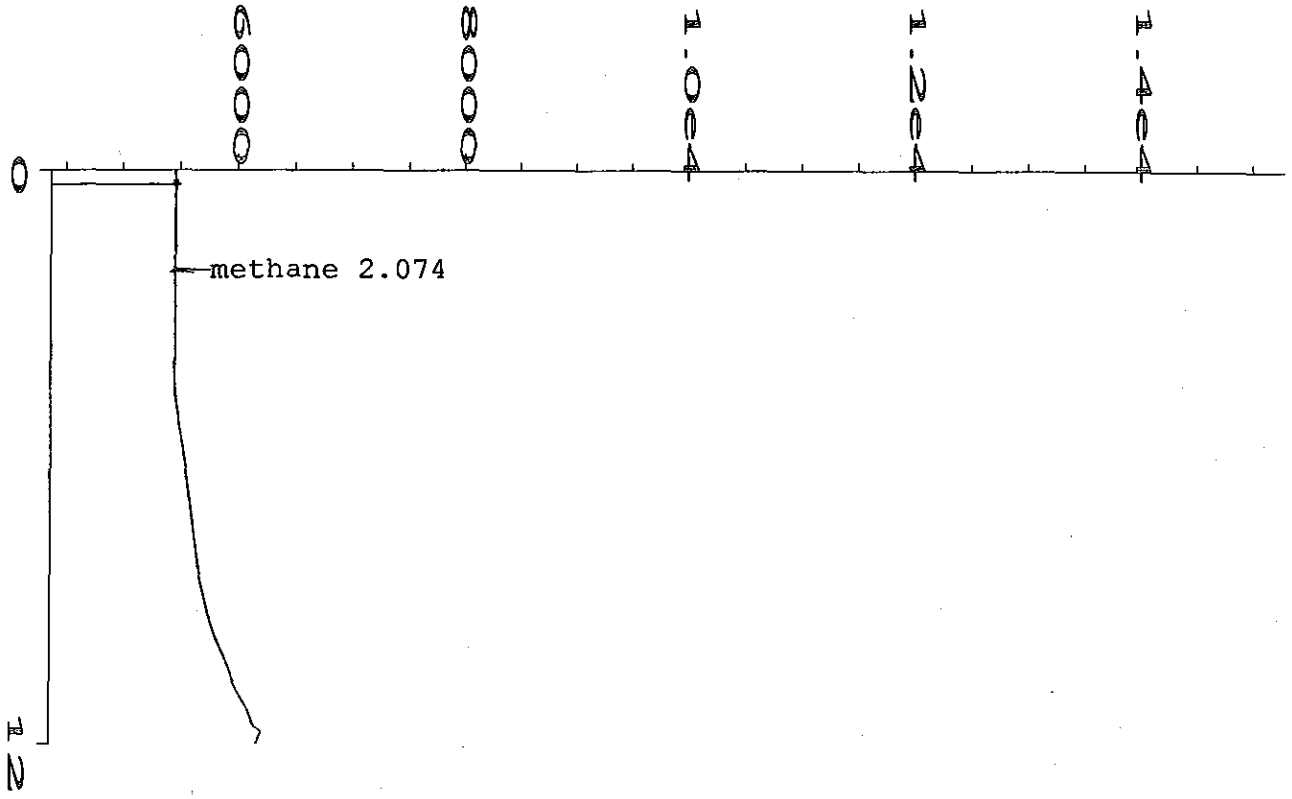
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN2B030.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.073	397	BV	0.024	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.937852

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

D File Name	: C:\HPCHEM\1\DATA\2325\RUN2B031.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 29 Mar 06 07:03 PM	Instrument Method:	WESTATES.MTH
Report Created on:	14 Apr 06 05:56 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

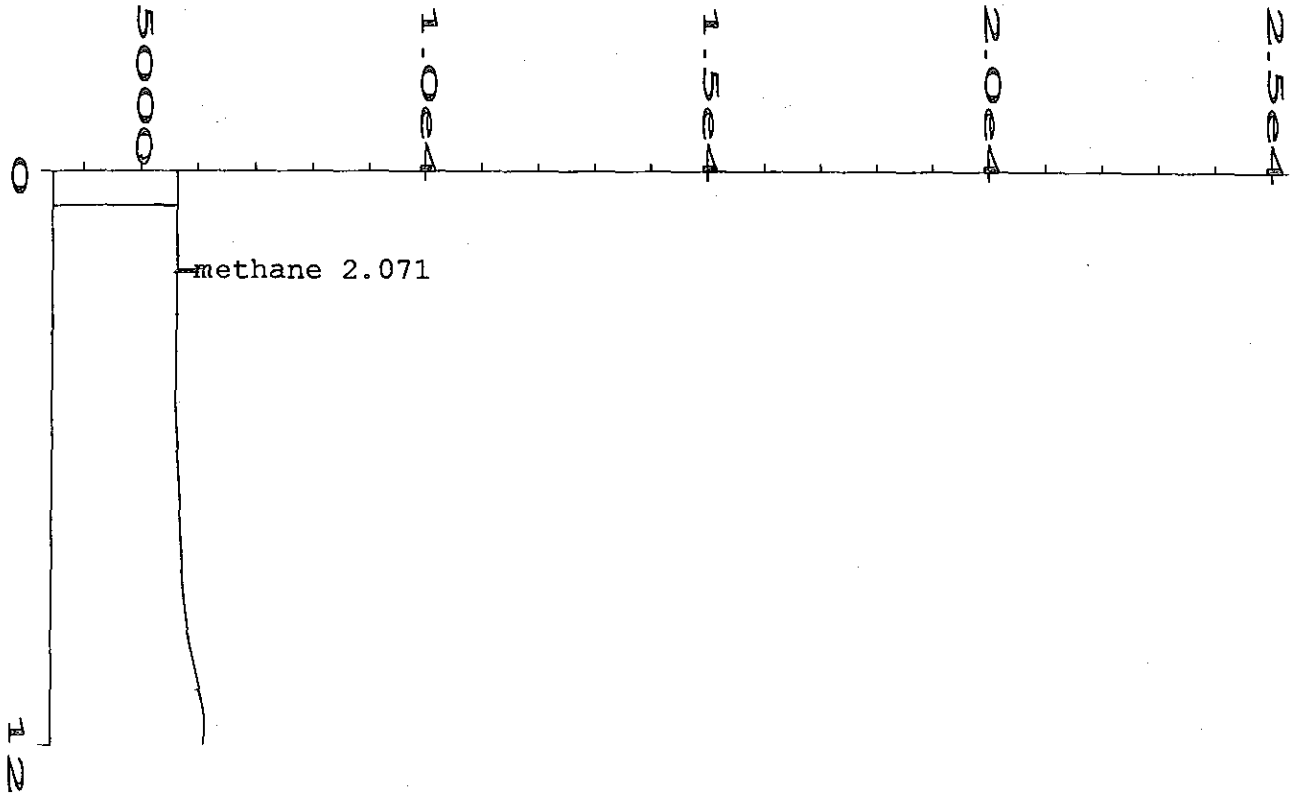
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN2B031.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.074	382	BV	0.024	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.902641

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

File Name	: C:\HPCHEM\1\DATA\2325\RUN3A043.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 03:25 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:00 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

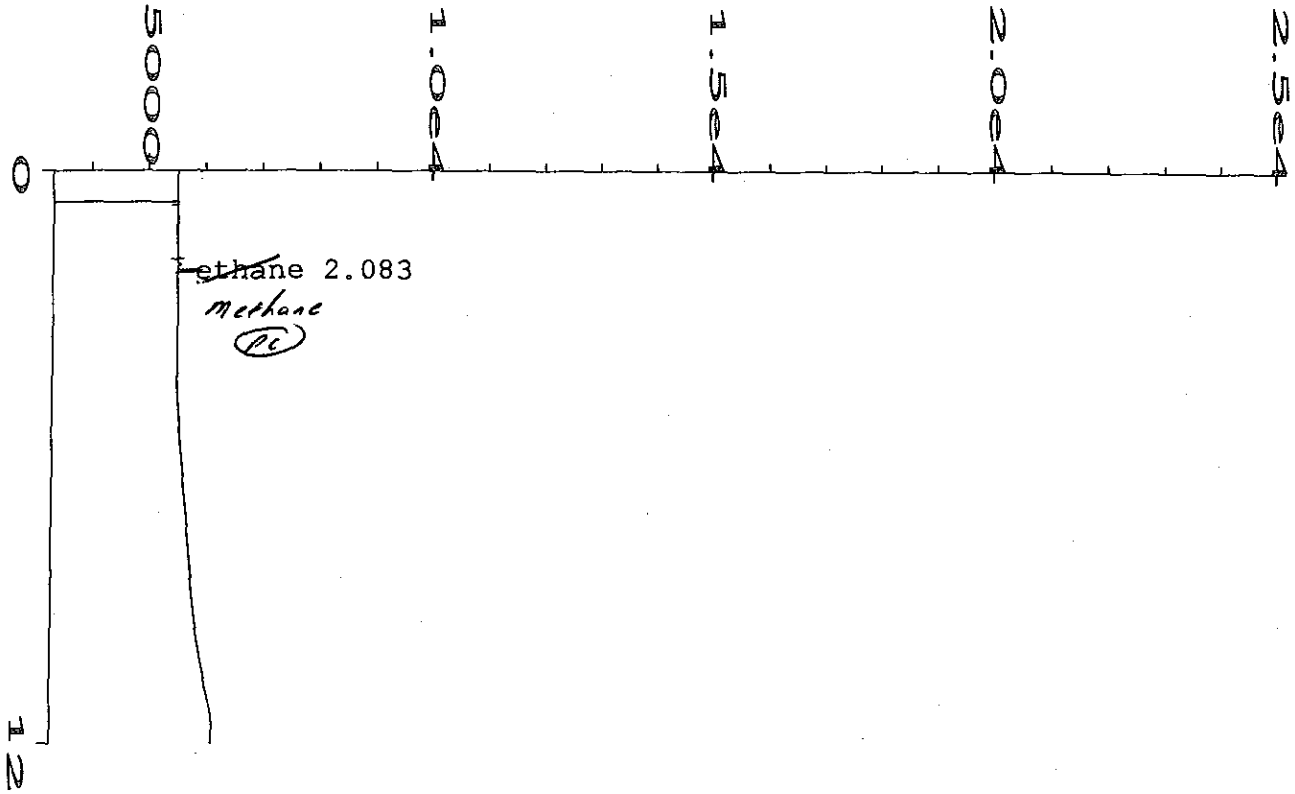
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN3A043.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.071	391	BV	0.018	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.923147

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

D File Name	: C:\HPCHEM\1\DATA\2325\RUN3A044.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 05:27 PM	Instrument Method	: WESTATES.MTH
Report Created on:	14 Apr 06 06:01 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

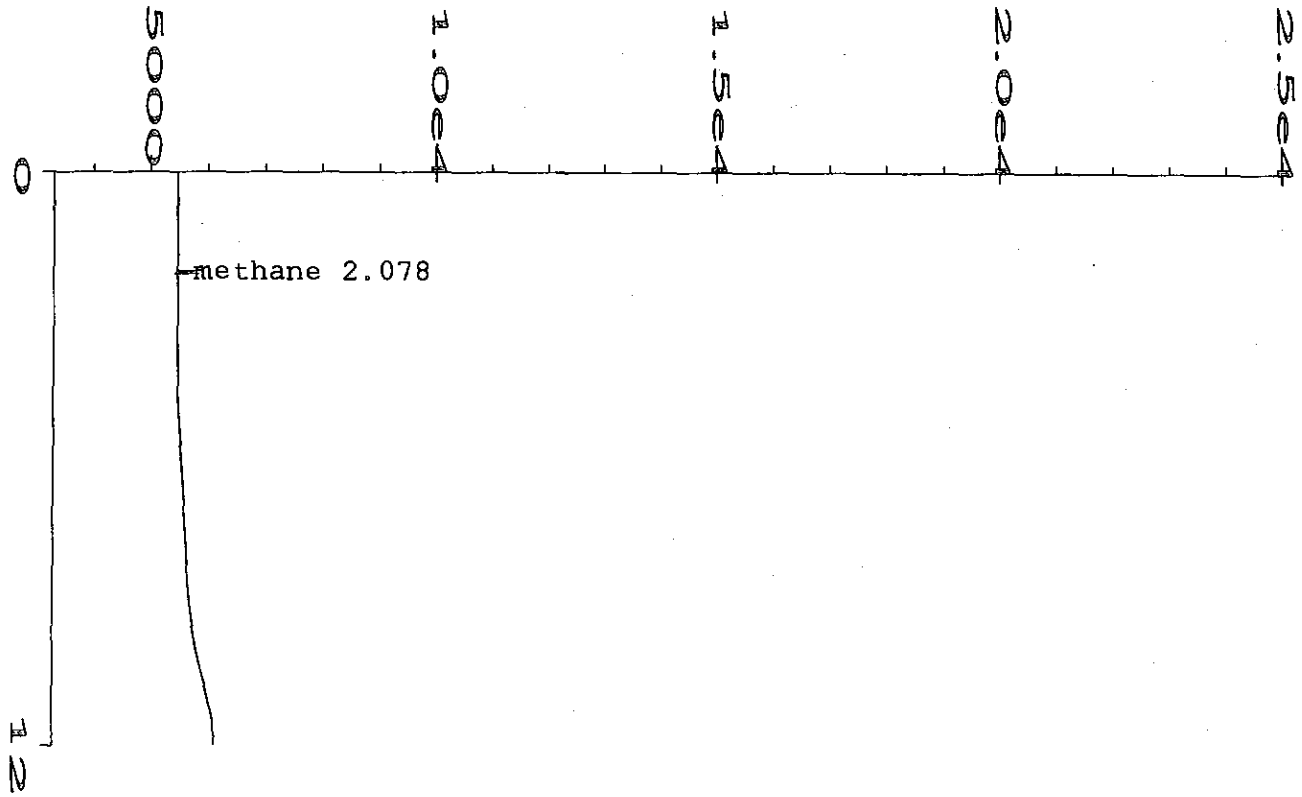
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN3A044.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.039	* not found *			1		~~methane~~
2.083	384	BV	0.018	1	100.000	~~ethane~~ methane PC
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.445379

Not all calibrated peaks were found

==========



==========

Normalized Percent Report

==========

D File Name	: C:\HPCHEM\1\DATA\2325\RUN3A045.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 05:48 PM	Instrument Method:	WESTATES.MTH
Report Created on:	14 Apr 06 06:02 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

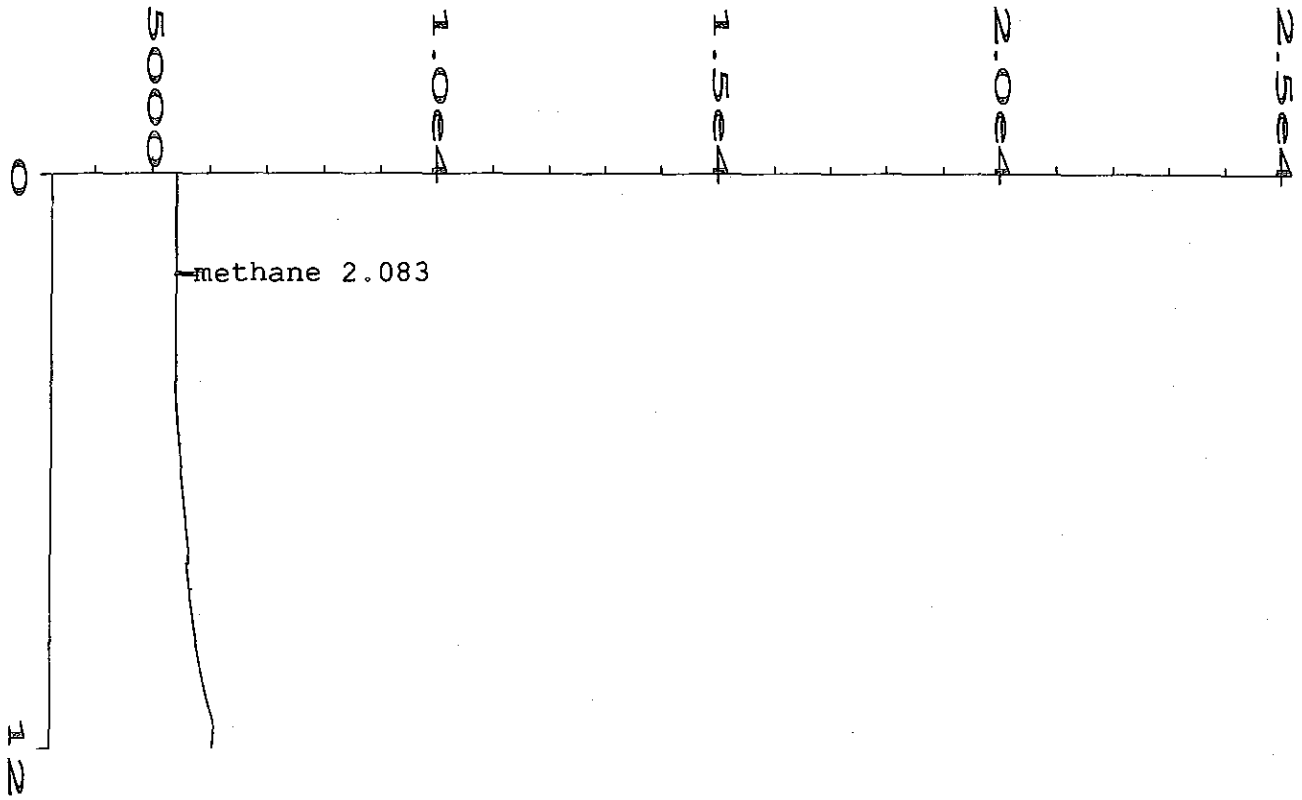
Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN3A045.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.078	388	BV	0.019	1	100.000	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0.915518

Not all calibrated peaks were found

==========



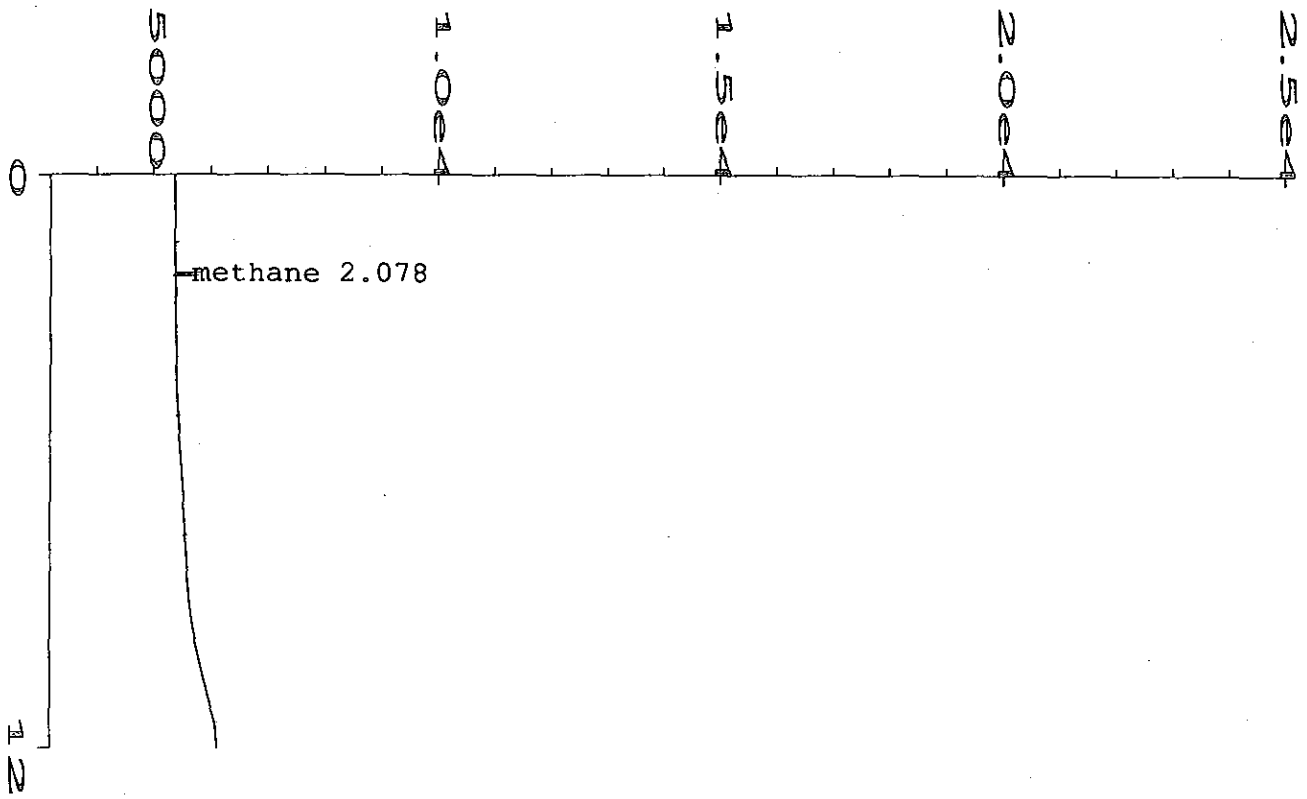
External Standard Report

File Name	: C:\HPCHEM\1\DATA\2325\RUN3B046.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 07:31 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:35 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN3B046.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.083	393	BV	0.024	1	0.928	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.167	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Not all calibrated peaks were found



==========

External Standard Report

==========

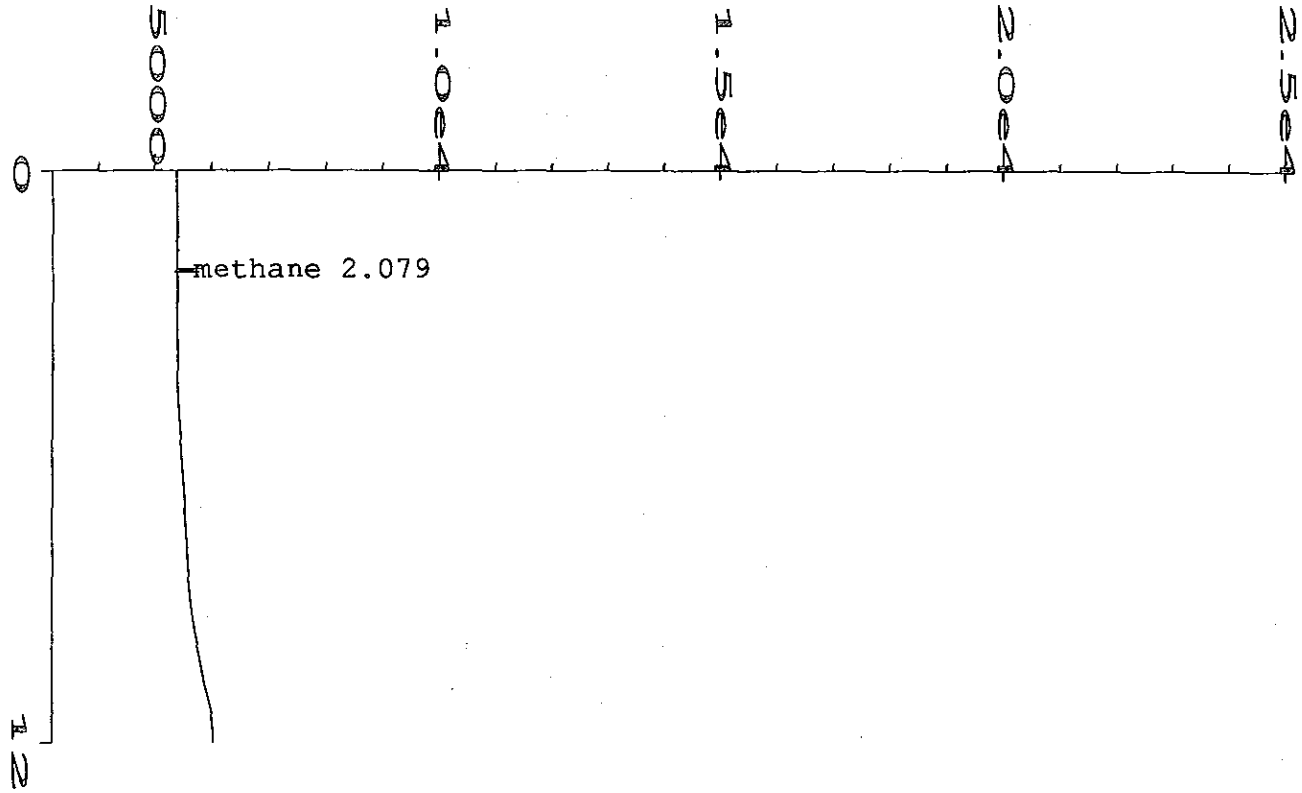
L File Name	: C:\HPCHEM\1\DATA\2325\RUN3B047.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 07:50 PM	Instrument Method	: WESTATES.MTH
Report Created on:	14 Apr 06 06:36 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN3B047.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.078	365	BV	0.017	1	0.861	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.167	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Not all calibrated peaks were found

==========



==========

External Standard Report

==========

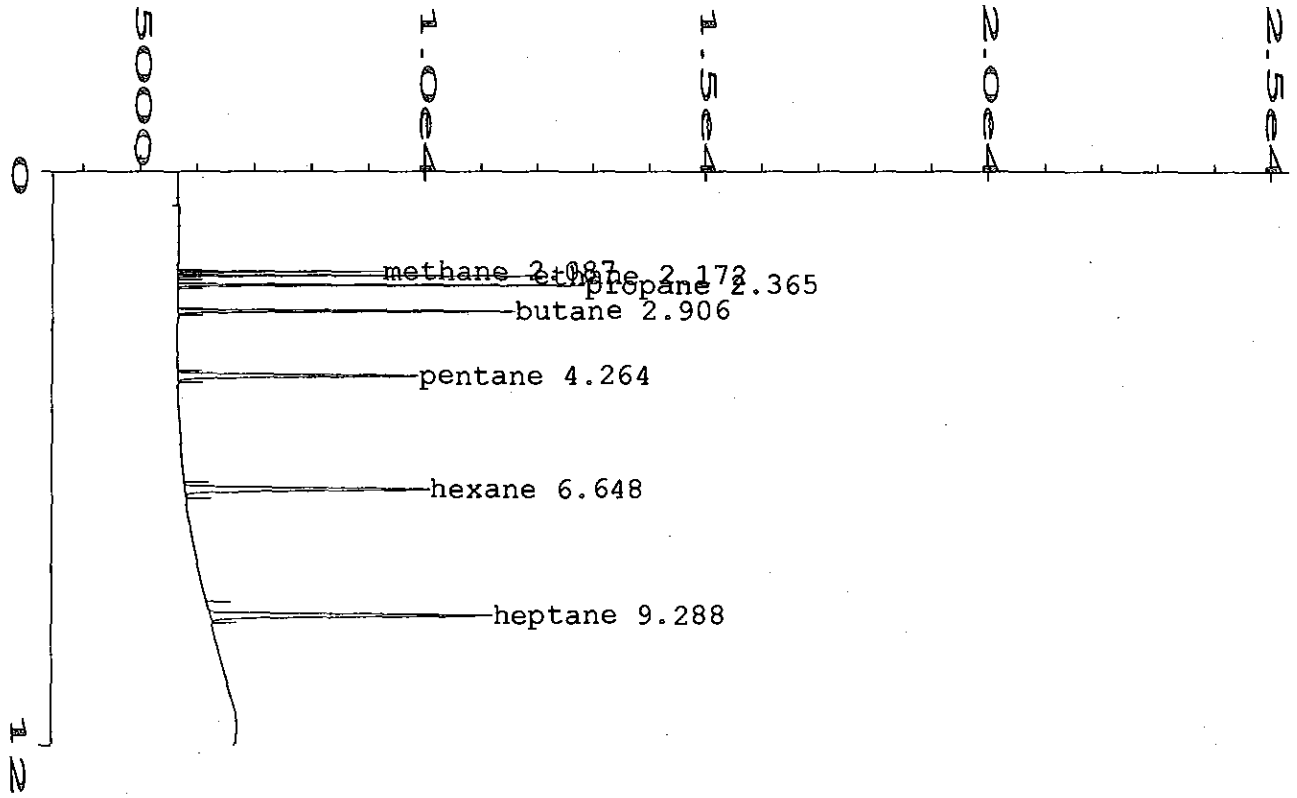
File Name	: C:\HPCHEM\1\DATA\2325\RUN3B048.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 08:12 PM	Instrument Method:	WESTATES.MTH
Report Created on:	14 Apr 06 06:38 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\RUN3B048.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.079	389	BV	0.024	1	0.918	methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.167	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Not all calibrated peaks were found

==========



==========

External Standard Report

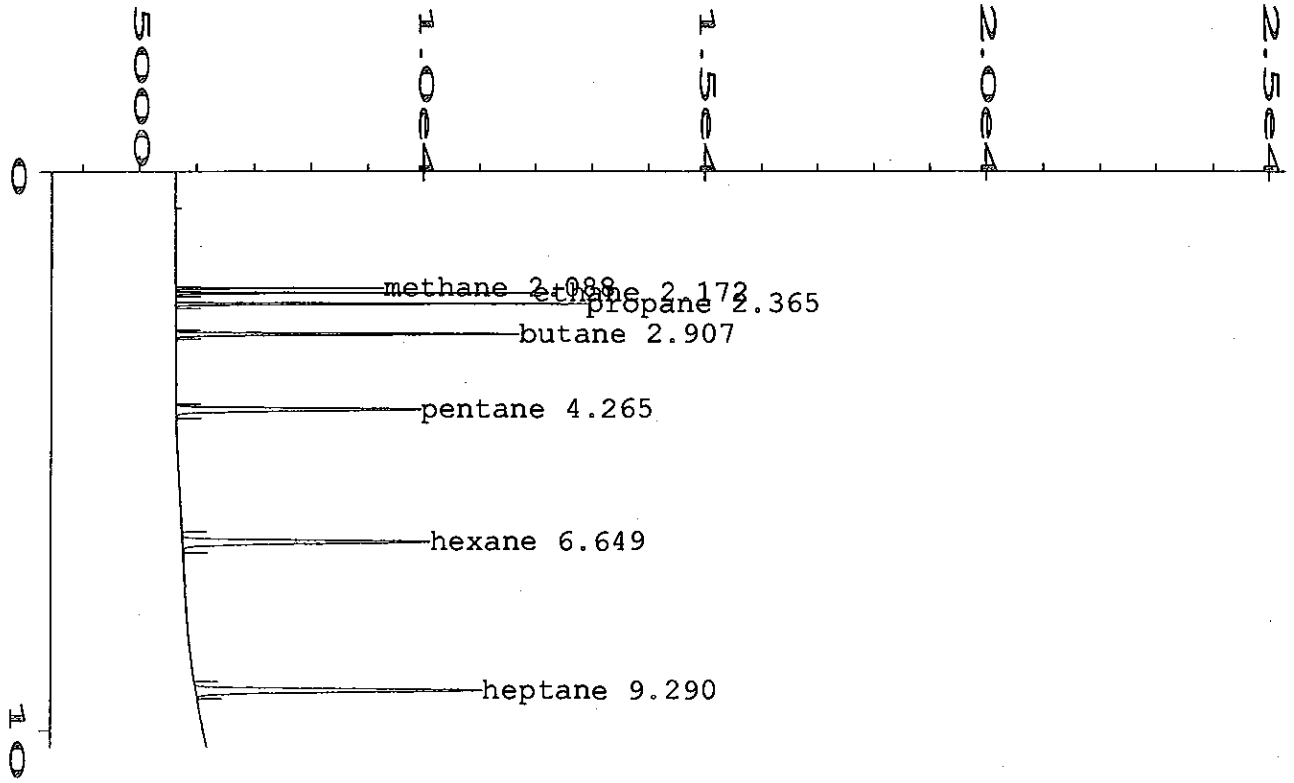
==========

File Name	: C:\HPCHEM\1\DATA\2325\WS100020.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 29 Mar 06 11:27 AM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:49 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS100020.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.087	3530	BV	0.016	1	8.331	methane
2.172	6978	VB	0.025	1	8.095	ethane
2.365	10315	BB	0.022	1	7.860	propane
2.906	13698	BB	0.036	1	7.767	butane
4.264	16562	BB	0.061	1	7.850	pentane
6.648	19392	BB	0.071	1	7.718	hexane
9.288	21730	BB	0.068	1	7.410	heptane

==========

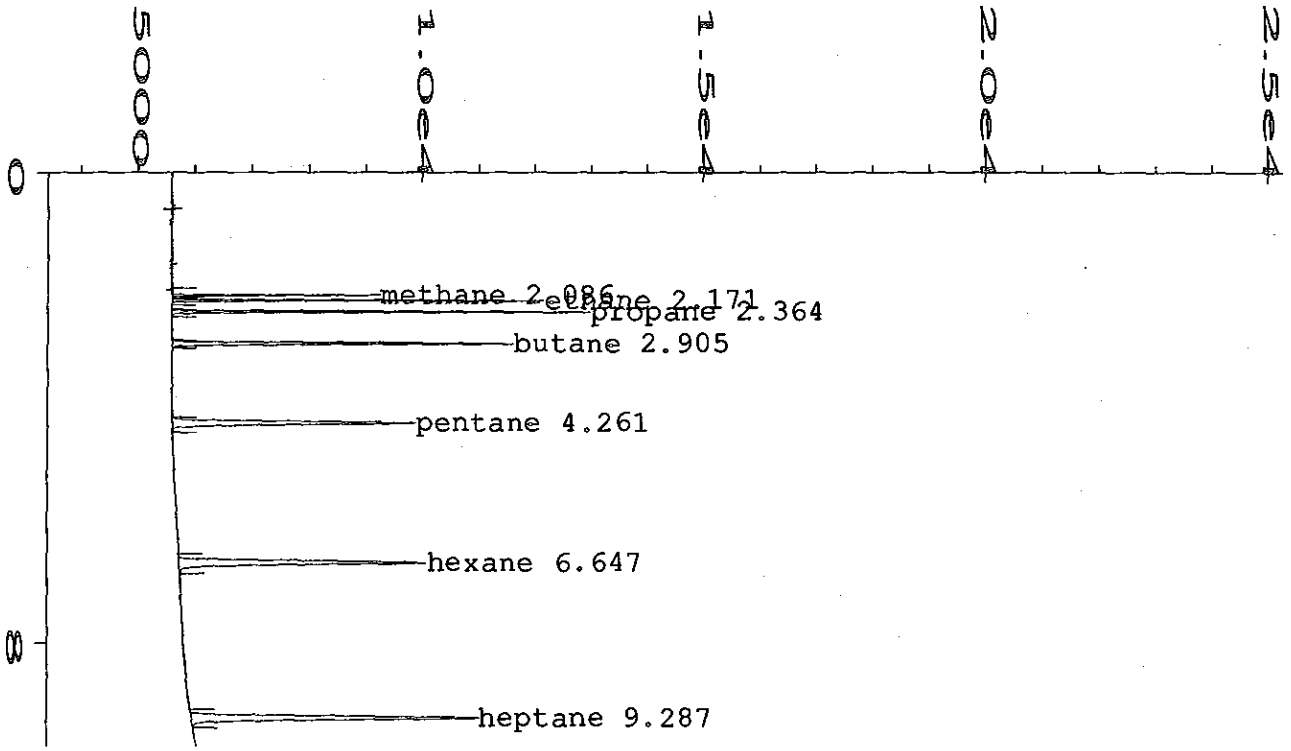


External Standard Report

File Name	: C:\HPCHEM\1\DATA\2325\WS100021.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 29 Mar 06 11:59 AM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:49 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS100021.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.088	3570	BV	0.016	1	8.425	methane
2.172	7093	VB	0.017	1	8.228	ethane
2.365	10536	BB	0.023	1	8.028	propane
2.907	13993	BB	0.036	1	7.934	butane
4.265	16877	BB	0.062	1	8.000	pentane
6.649	19750	BB	0.069	1	7.861	hexane
9.290	22269	BB	0.067	1	7.594	heptane



==========

External Standard Report

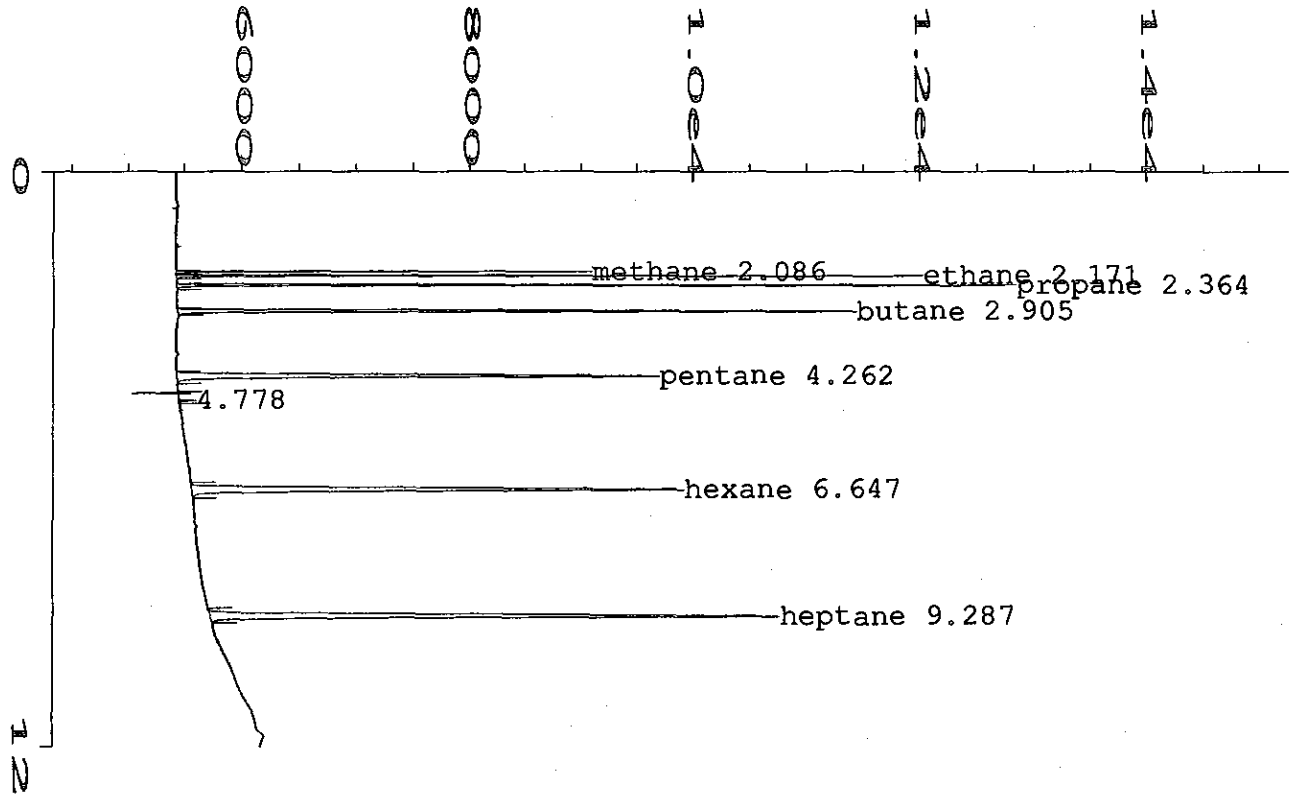
==========

L . File Name	: C:\HPCHEM\1\DATA\2325\WS100022.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 29 Mar 06 12:15 PM	Instrument Method	: WESTATES.MTH
Report Created on:	14 Apr 06 06:50 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS100022.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.086	3495	BV	0.016	1	8.248	methane
2.171	7118	VB	0.017	1	8.257	ethane
2.364	10506	BB	0.022	1	8.006	propane
2.905	13895	BB	0.036	1	7.879	butane
4.261	16847	BB	0.062	1	7.985	pentane
6.647	19625	BB	0.071	1	7.811	hexane
9.287	22199	BB	0.069	1	7.570	heptane

==========



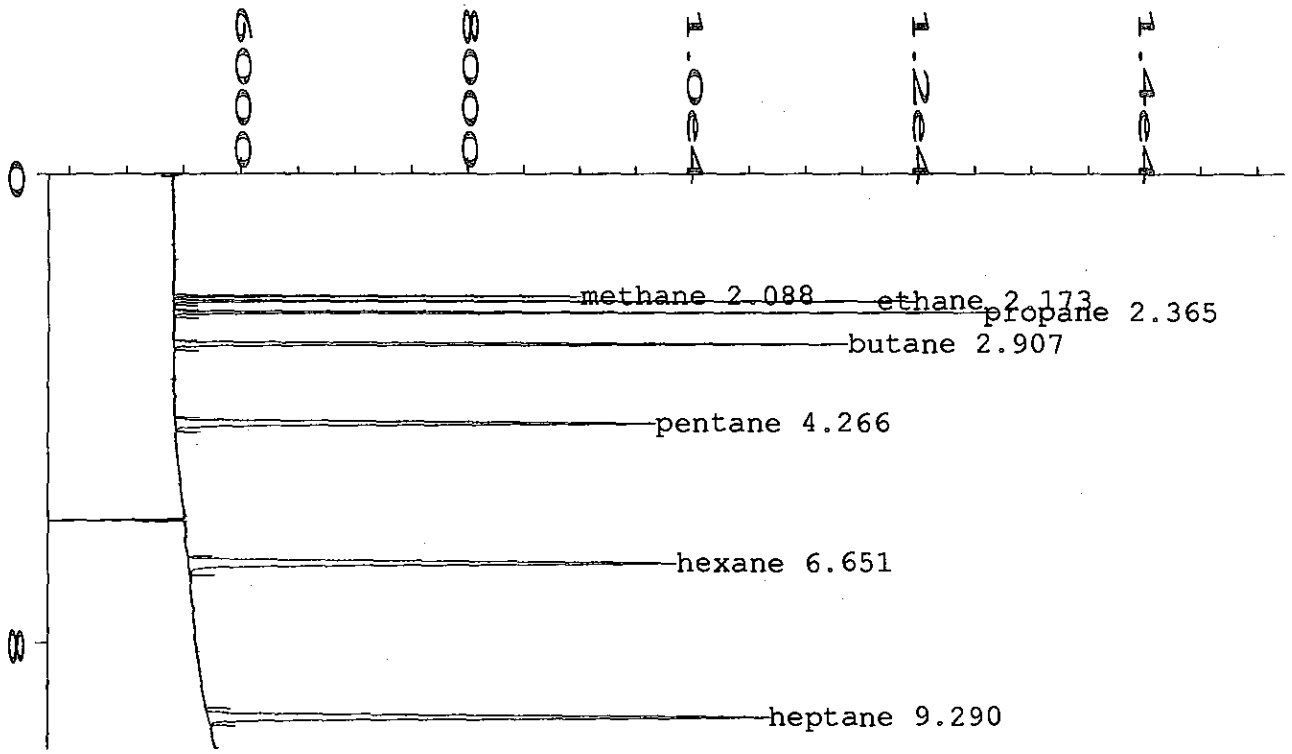
External Standard Report

D File Name : C:\HPCHEM\1\DATA\2325\WS100032.D
Operator : pclark
Instrument : INSTRUMEN
Sample Name : Westates
Run Time Bar Code:
Acquired on : 29 Mar 06 07:22 PM
Report Created on: 14 Apr 06 06:51 PM
Last Recalib on : 08 DEC 03 02:07 PM
Multiplier : 1

Page Number : 1
Vial Number :
Injection Number :
Sequence Line :
Instrument Method: WESTATES.MTH
Analysis Method : WESTATES.MTH
Sample Amount : 0
ISTD Amount :

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS100032.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.086	3558	BB	0.016	1	8.396	methane
2.171	7059	BB	0.017	1	8.189	ethane
2.364	10480	BB	0.022	1	7.986	propane
2.905	13848	BB	0.036	1	7.852	butane
4.262	16734	BB	0.062	1	7.932	pentane
6.647	19642	BB	0.071	1	7.817	hexane
9.287	22022	BB	0.069	1	7.509	heptane

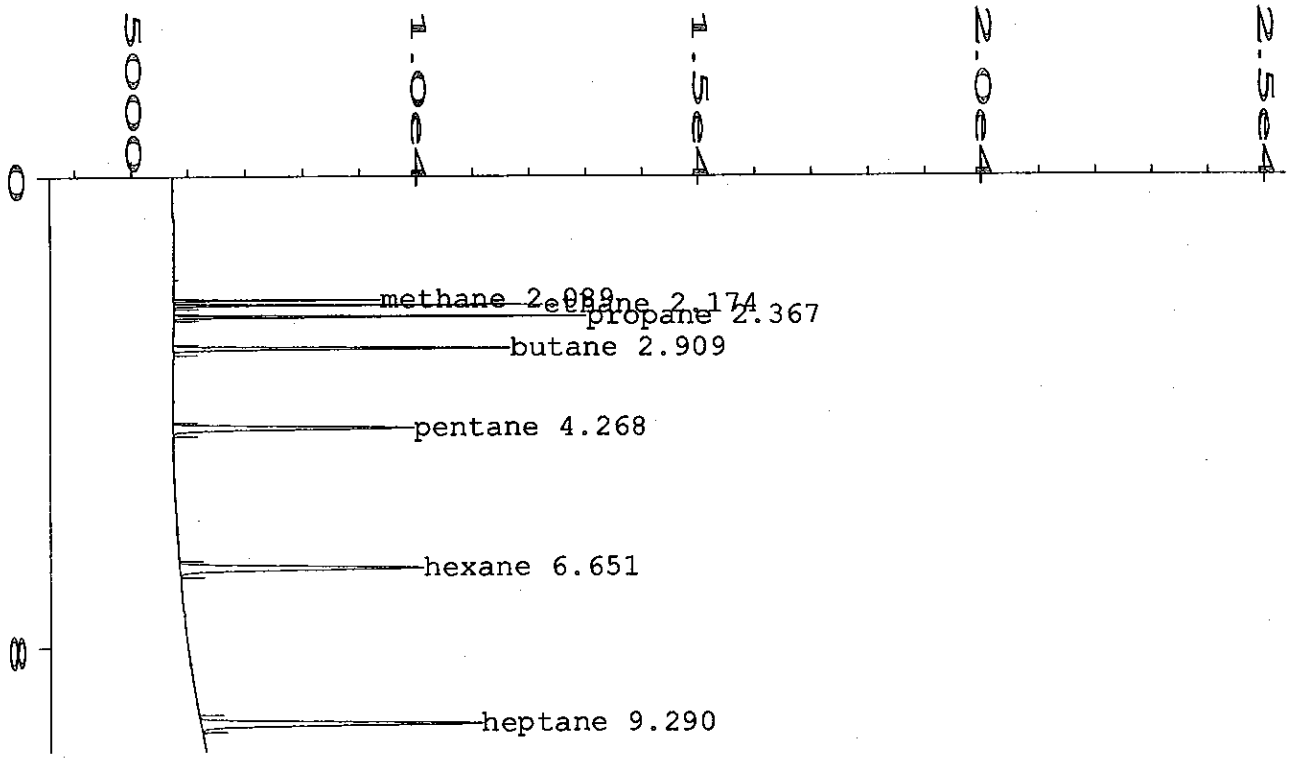


External Standard Report

File Name	: C:\HPCHEM\1\DATA\2325\WS100033.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 29 Mar 06 07:40 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:52 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS100033.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.088	3518	BV	0.016	1	8.303	methane
2.173	7011	PB	0.017	1	8.133	ethane
2.365	10393	BB	0.022	1	7.920	propane
2.907	13750	BB	0.036	1	7.796	butane
4.266	16565	BB	0.061	1	7.852	pentane
6.651	19452	BB	0.071	1	7.742	hexane
9.290	21776	BB	0.068	1	7.426	heptane

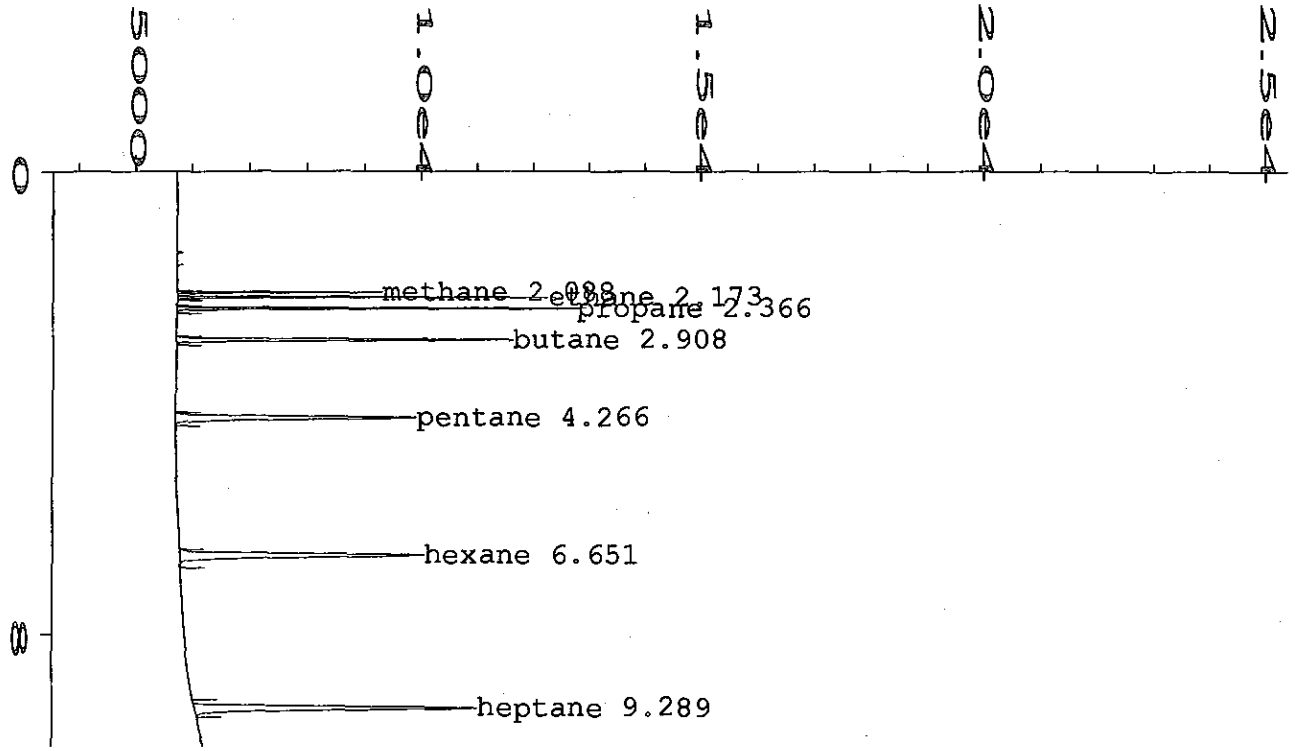


External Standard Report

File Name	: C:\HPCHEM\1\DATA\2325\WS100034.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 10:38 AM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:53 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS100034.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.089	3521	BB	0.022	1	8.310	methane
2.174	6949	BB	0.017	1	8.061	ethane
2.367	10273	BB	0.022	1	7.828	propane
2.909	13727	BB	0.036	1	7.783	butane
4.268	16542	BB	0.062	1	7.841	pentane
6.651	19407	BB	0.071	1	7.724	hexane
9.290	21879	BB	0.070	1	7.461	heptane

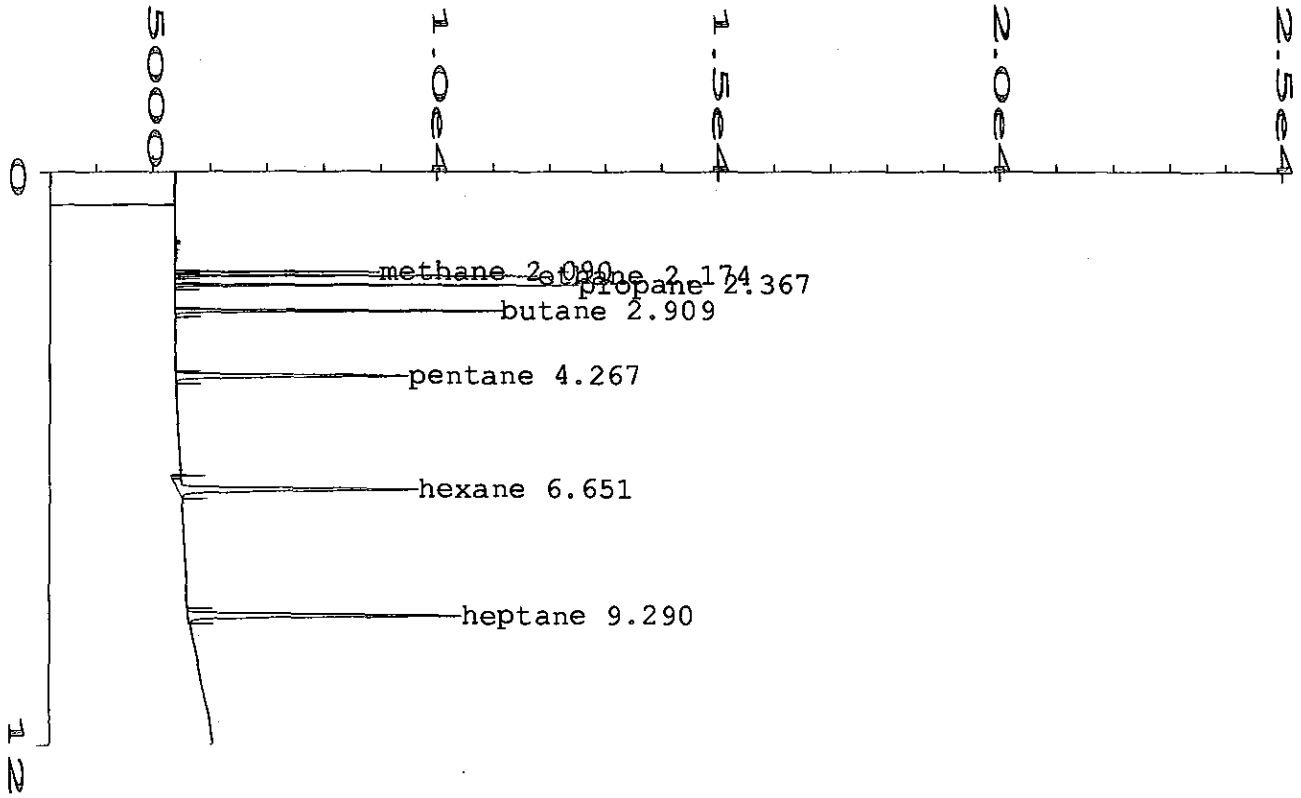


External Standard Report

File Name	: C:\HPCHEM\1\DATA\2325\WS100035.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code	:	Sequence Line	:
Acquired on	: 30 Mar 06 10:54 AM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:53 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS100035.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.088	3491	BB	0.015	1	8.238	methane
2.173	6906	BB	0.017	1	8.011	ethane
2.366	10268	BB	0.022	1	7.824	propane
2.908	13658	BB	0.036	1	7.744	butane
4.266	16505	BB	0.062	1	7.824	pentane
6.651	19430	BB	0.071	1	7.733	hexane
9.289	21809	BB	0.067	1	7.437	heptane



==========

External Standard Report

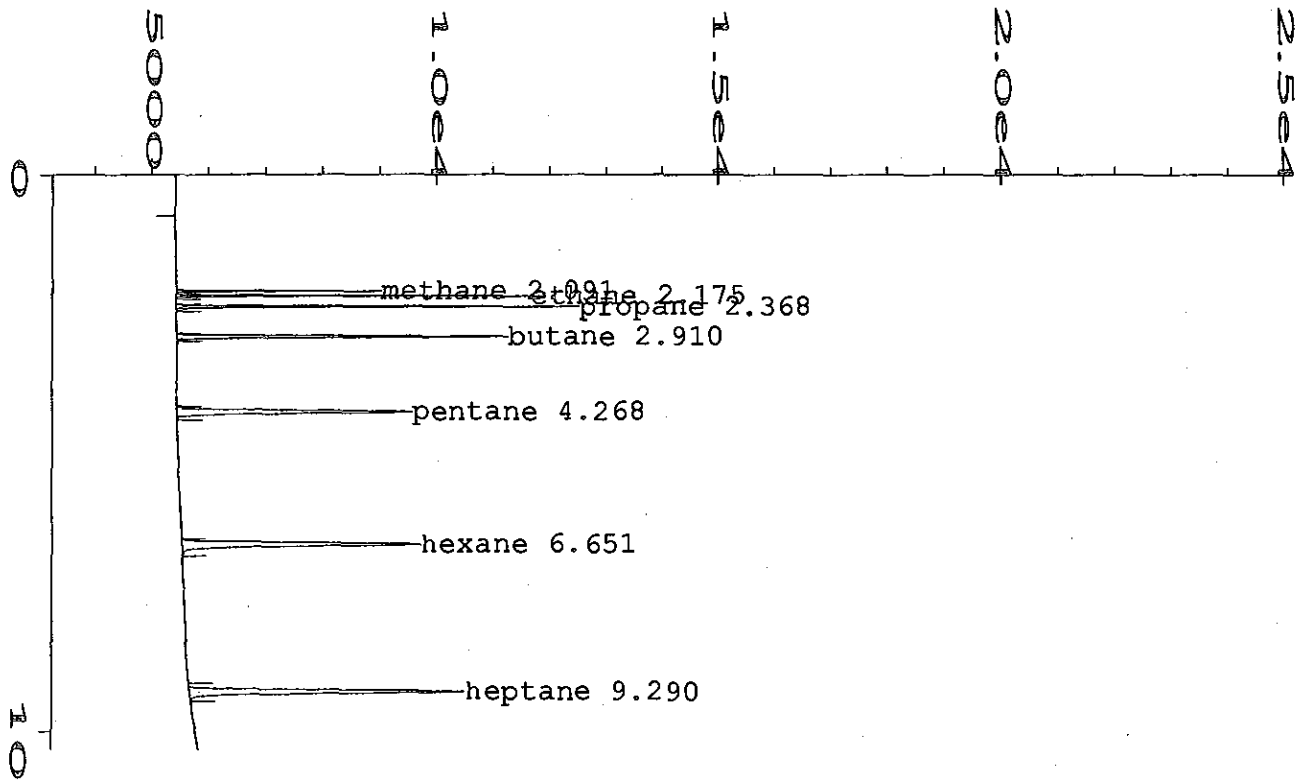
==========

1 File Name	: C:\HPCHEM\1\DATA\2325\WS100049.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 08:32 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:55 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS100049.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.090	3387	BB	0.021	1	7.993	methane
2.174	6740	BB	0.017	1	7.819	ethane
2.367	10027	BB	0.022	1	7.641	propane
2.909	13354	BB	0.036	1	7.572	butane
4.267	16032	BB	0.062	1	7.599	pentane
6.651	18,736 ~~21363~~	BB	0.077	1	8.503	hexane
9.290	RC 21402	BB	0.069	1	7.298	heptane

==========



==========

External Standard Report

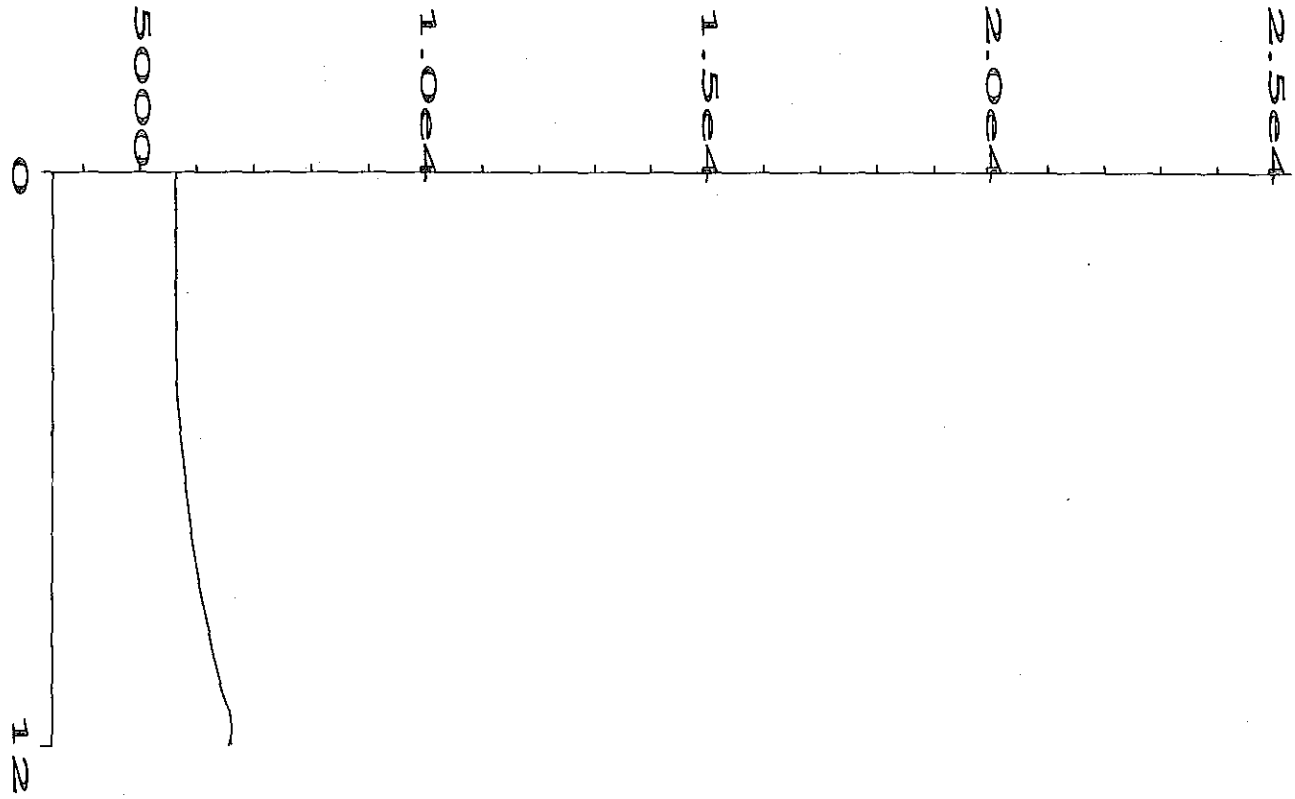
==========

File Name	: C:\HPCHEM\1\DATA\2325\WS100050.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 08:52 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 06:56 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS100050.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.091	3410	BV	0.015	1	8.048	methane
2.175	6821	PB	0.027	1	7.912	ethane
2.368	10105	BB	0.022	1	7.700	propane
2.910	13369	BB	0.036	1	7.580	butane
4.268	16179	BB	0.062	1	7.669	pentane
6.651	18988	BB	0.071	1	7.557	hexane
9.290	21314	BB	0.068	1	7.268	heptane

==========



==========

Normalized Percent Report

==========

File Name	: C:\HPCHEM\1\DATA\2325\FB000005.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 28 Mar 06 04:39 PM	Instrument Method:	WESTATES.MTH
Report Created on:	14 Apr 06 05:34 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

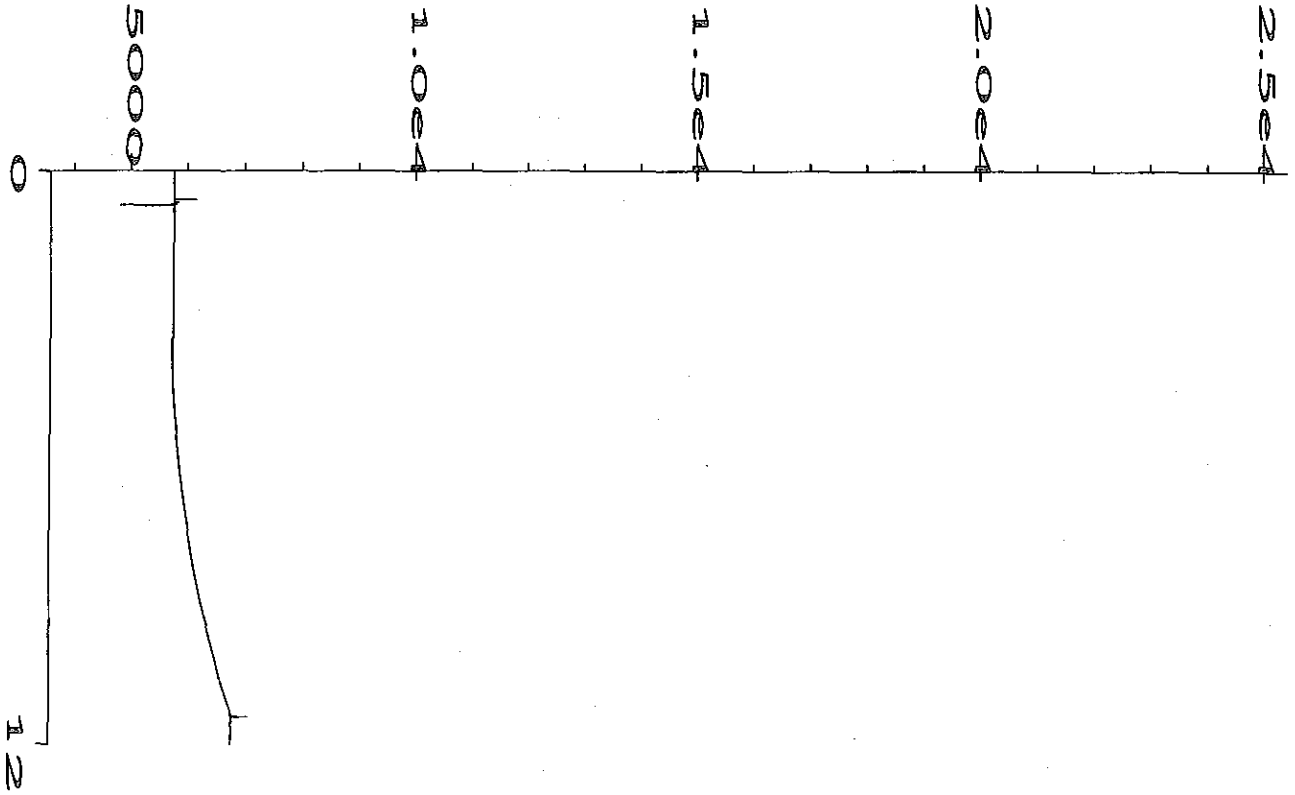
Sig. 1 in C:\HPCHEM\1\DATA\2325\FB000005.D

Ret Time	Area	Type	Width	Ref#	Amount %	Name
2.039	* not found *			1		methane
2.122	* not found *			1		ethane
2.310	* not found *			1		propane
2.837	* not found *			1		butane
4.164	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Total amount = 0

Not all calibrated peaks were found

==========



==========

External Standard Report

==========

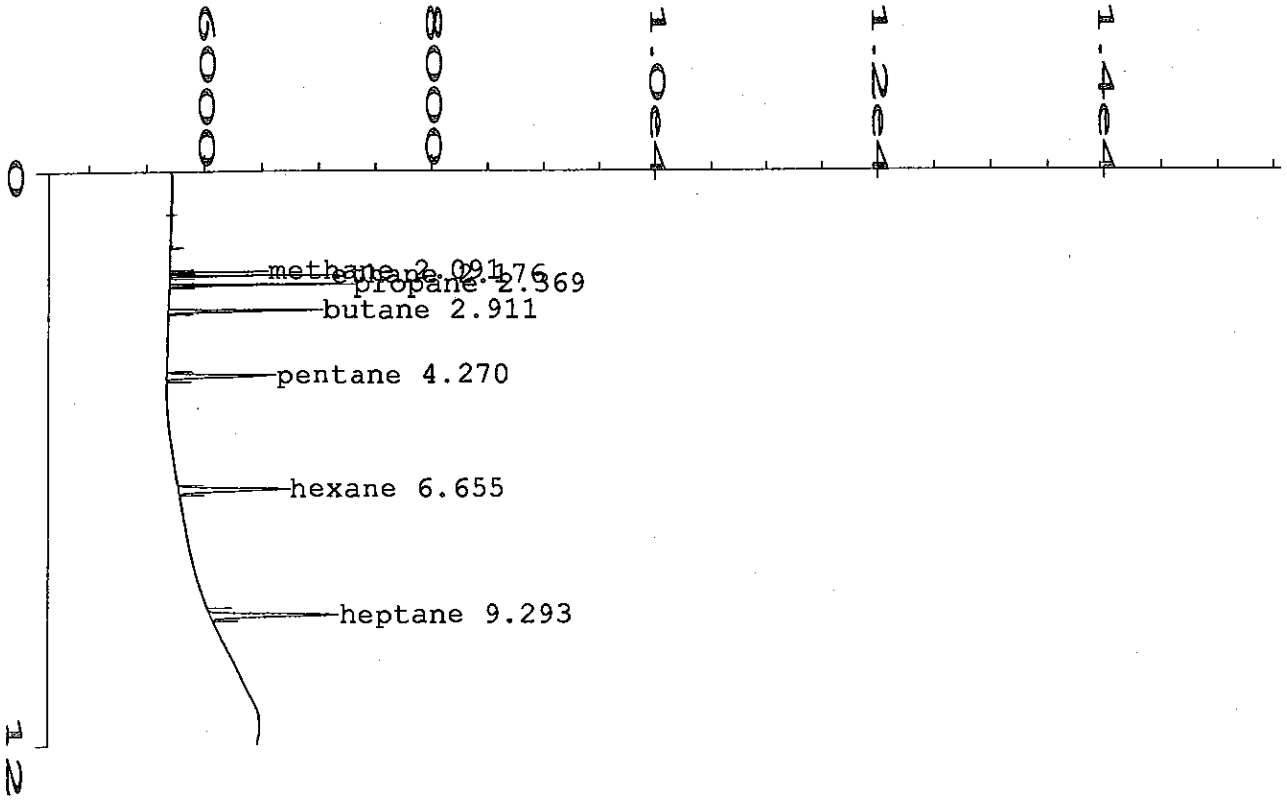
' ' File Name	: C:\HPCHEM\1\DATA\2325\ZNIT0004.D		
C_ ator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 28 Mar 06 02:19 PM	Instrument Method:	WESTATES.MTH
Report Created on:	14 Apr 06 07:06 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\ZNIT0004.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.083	* not found *			1		methane
2.150	* not found *			1		ethane
2.350	* not found *			1		propane
2.870	* not found *			1		butane
4.200	* not found *			1		pentane
6.530	* not found *			1		hexane
9.176	* not found *			1		heptane

Not all calibrated peaks were found

==========

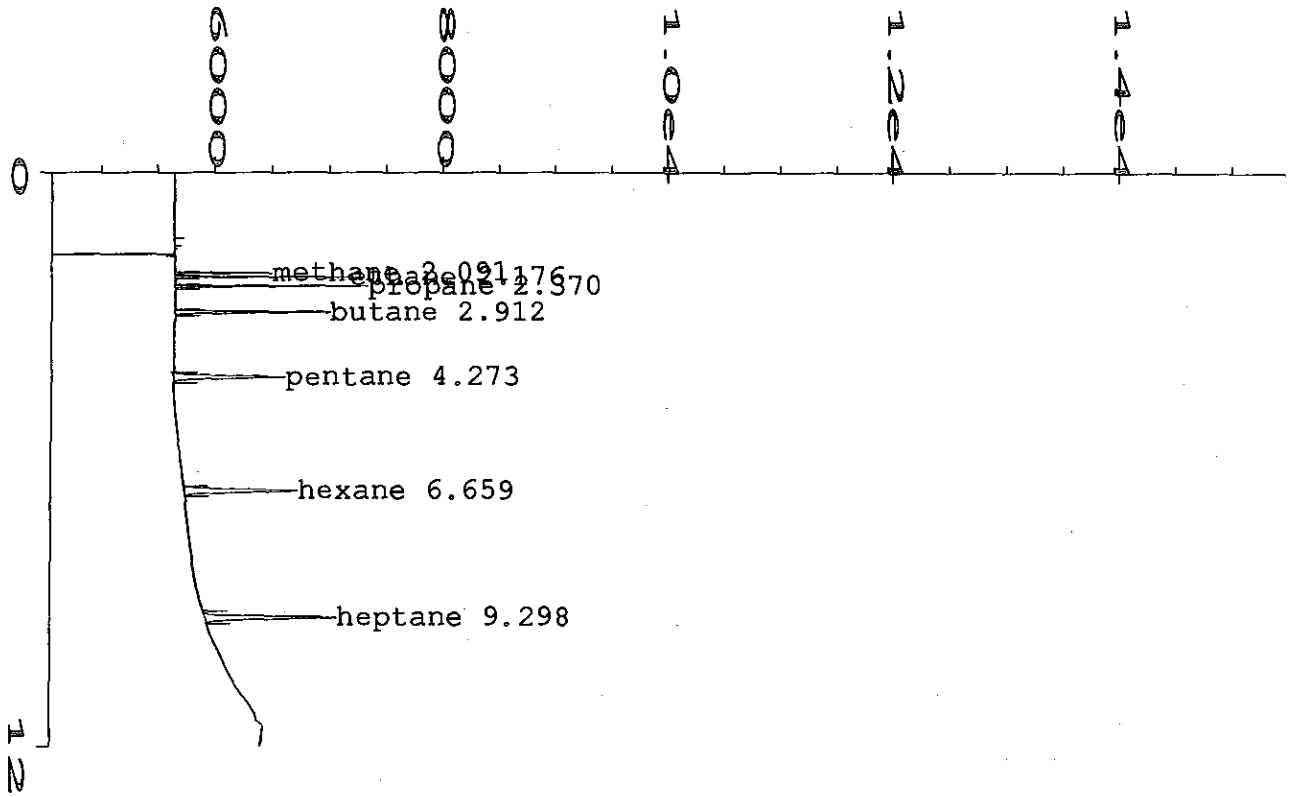


External Standard Report

Data File Name	: C:\HPCHEM\1\DATA\2325\WS400036.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 12:46 PM	Instrument Method:	WESTATES.MTH
Report Created on:	14 Apr 06 07:00 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS400036.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.091	855	BB	0.016	1	2.018	methane
2.176	1583	BB	0.017	1	1.836	ethane
2.369	2318	BB	0.022	1	1.766	propane
2.911	3119	BB	0.036	1	1.768	butane
4.270	3726	BB	0.061	1	1.766	pentane
6.655	4326	BB	0.071	1	1.722	hexane
9.293	4953	BB	0.069	1	1.689	heptane

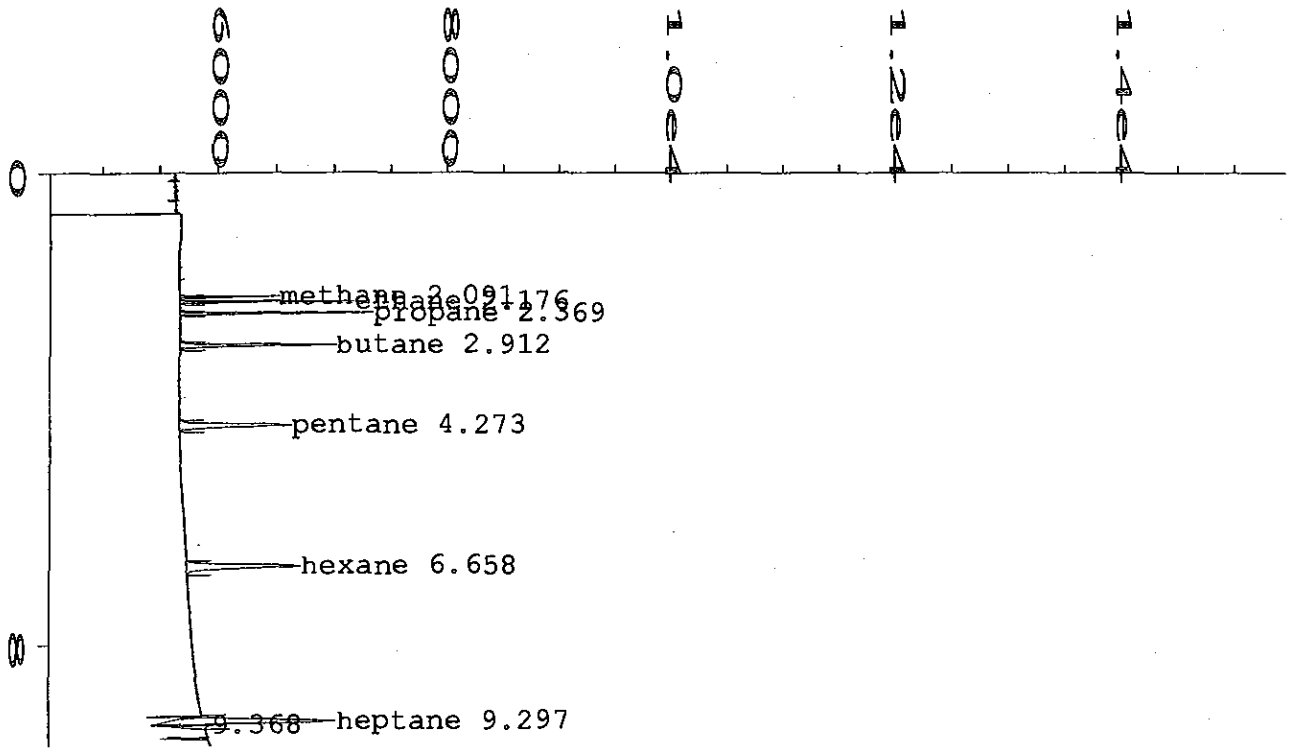


External Standard Report

File Name	: C:\HPCHEM\1\DATA\2325\WS400037.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 01:12 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 07:01 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS400037.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.091	861	BV	0.016	1	2.031	methane
2.176	1610	PB	0.017	1	1.868	ethane
2.370	2389	BB	0.022	1	1.820	propane
2.912	3161	BB	0.036	1	1.792	butane
4.273	3844	BB	0.061	1	1.822	pentane
6.659	4441	BB	0.069	1	1.767	hexane
9.298	5052	BB	0.068	1	1.723	heptane

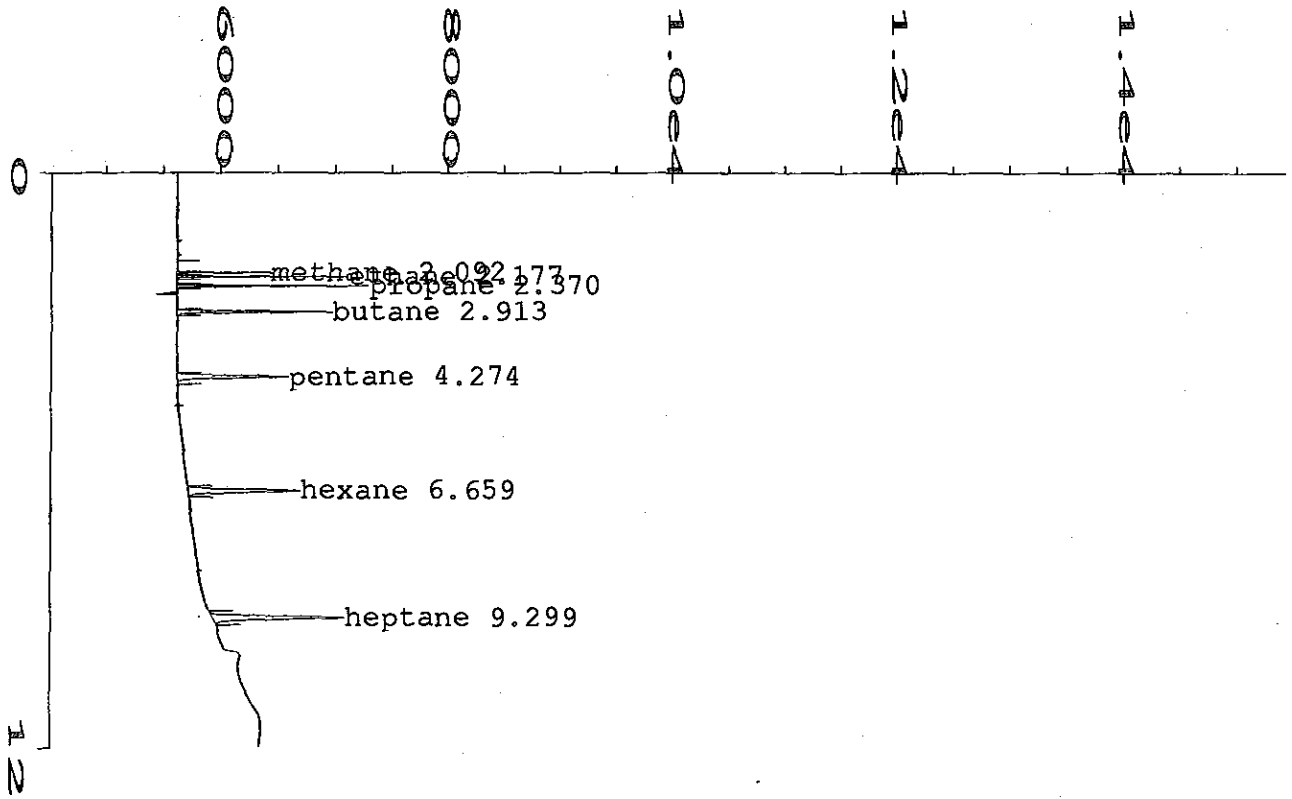


External Standard Report

D File Name	: C:\HPCHEM\1\DATA\2325\WS400038.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 01:30 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 07:02 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS400038.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.091	837	BB	0.015	1	1.975	methane
2.176	1591	BB	0.017	1	1.846	ethane
2.369	2354	BB	0.022	1	1.794	propane
2.912	3152	BB	0.036	1	1.787	butane
4.273	3764	BB	0.061	1	1.784	pentane
6.658	4468	BB	0.070	1	1.778	hexane
9.297	~~6265~~ 4864	BV	0.068	1	2.136	heptane



==========

External Standard Report

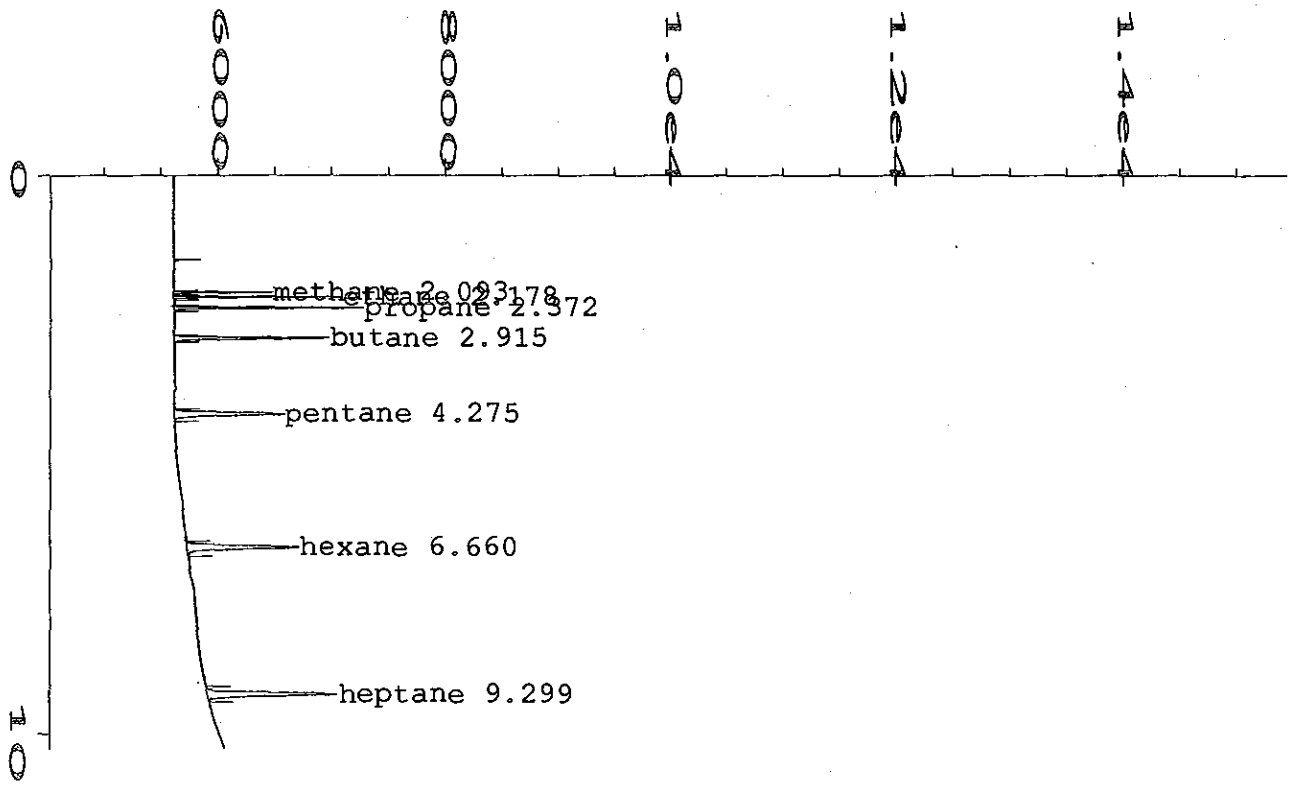
==========

File Name	: C:\HPCHEM\1\DATA\2325\WS400039.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 01:45 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 07:03 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS400039.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.092	874	BB	0.021	1	2.063	methane
2.177	1604	BB	0.017	1	1.860	ethane
2.370	2382	BB	0.022	1	1.815	propane
2.913	3183	BB	0.036	1	1.805	butane
4.274	3807	BB	0.060	1	1.805	pentane
6.659	4417	BB	0.071	1	1.758	hexane
9.299	~~5252~~	BB	0.072	1	1.791	heptane
	(PC) 5129					

==========

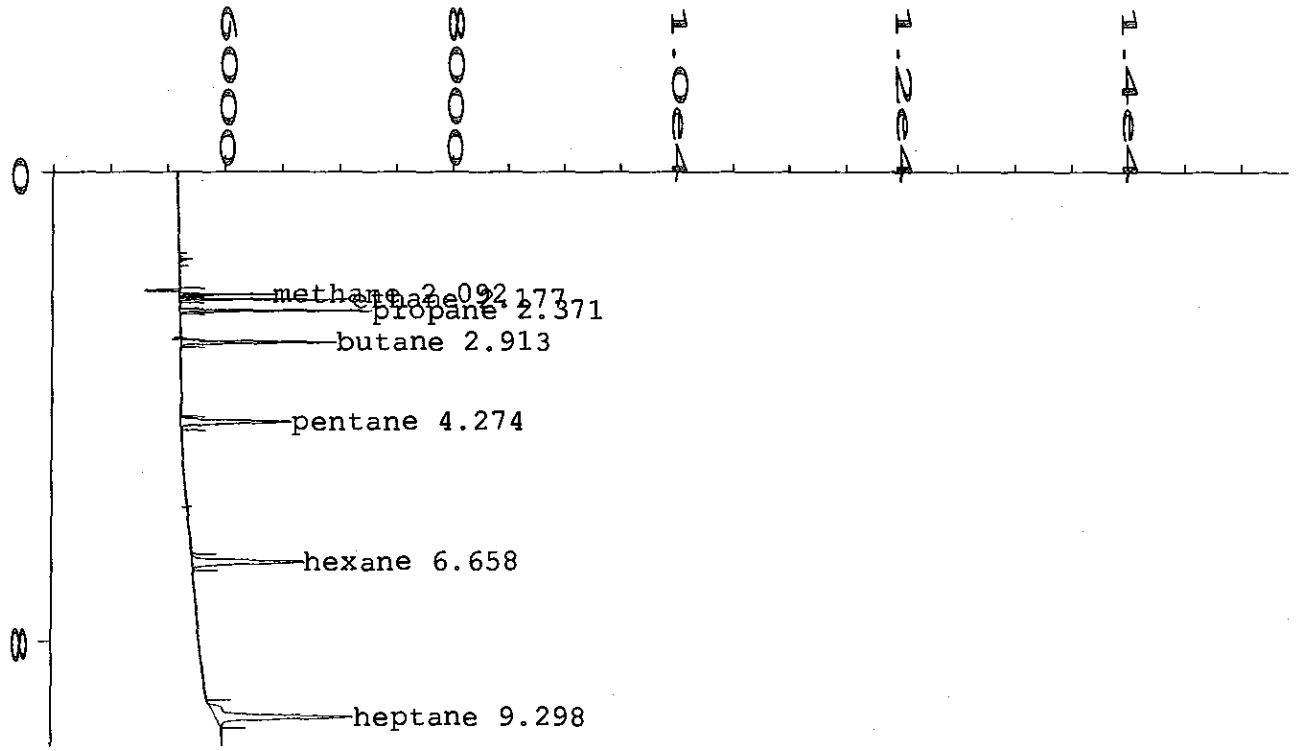


External Standard Report

File Name	: C:\HPCHEM\1\DATA\2325\WS400040.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 02:23 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 07:03 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS400040.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.093	878	BB	0.016	1	2.073	methane
2.178	1617	BB	0.027	1	1.876	ethane
2.372	2380	BB	0.022	1	1.814	propane
2.915	3137	BB	0.036	1	1.778	butane
4.275	3822	BB	0.060	1	1.811	pentane
6.660	4495	BB	0.069	1	1.789	hexane
9.299	5052	BB	0.069	1	1.723	heptane

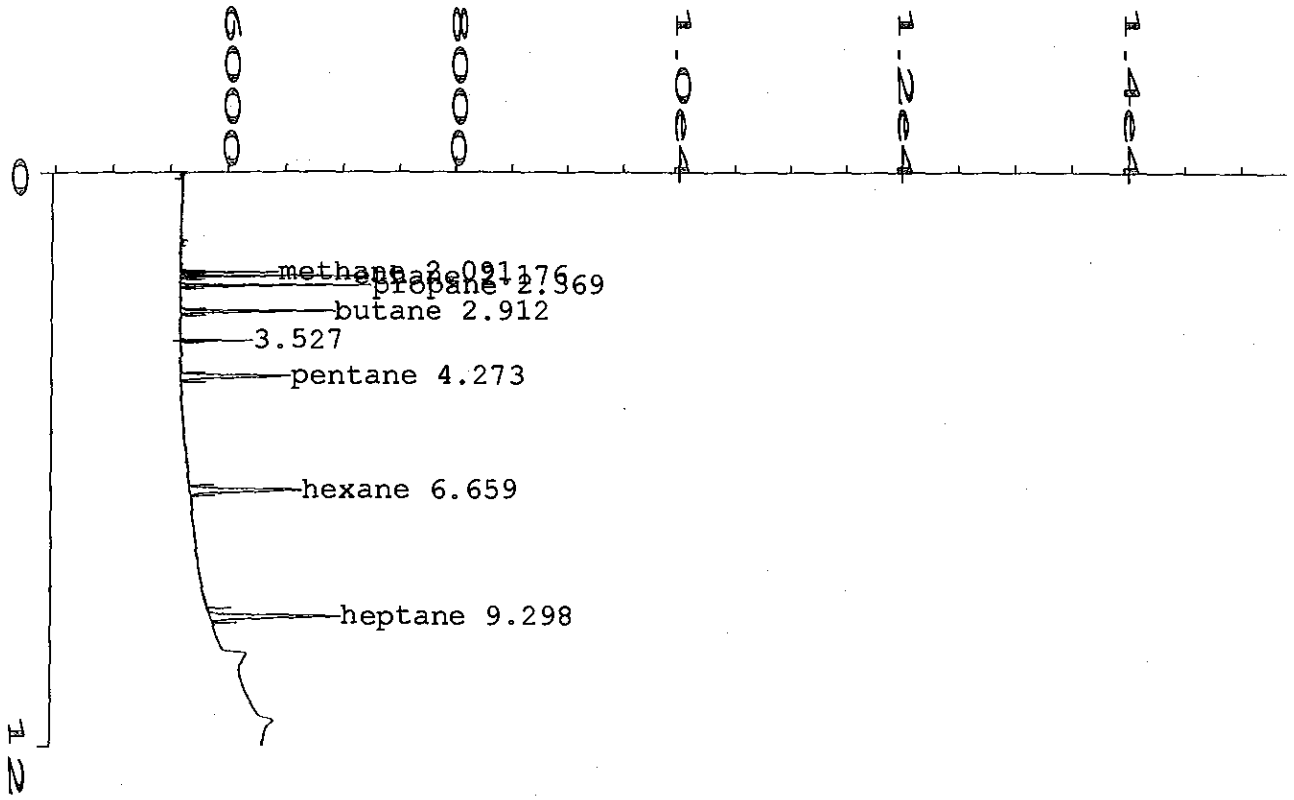


External Standard Report

Data File Name	: C:\HPCHEM\1\DATA\2325\WS400041.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 02:40 PM	Instrument Method	: WESTATES.MTH
Report Created on	: 14 Apr 06 07:04 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS400041.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.092	PC 338 ~~349~~	BB	0.015	1	0.823	methane
2.177	1605	BB	0.017	1	1.862	ethane
2.371	2376	BB	0.022	1	1.811	propane
2.913	3124	BB	0.036	1	1.772	butane
4.274	3855	BB	0.062	1	1.827	pentane
6.658	4422	BB	0.071	1	1.760	hexane
9.298	~~6453~~ PC 5035	BB	0.079	1	2.200	heptane



==========

External Standard Report

==========

L . File Name	: C:\HPCHEM\1\DATA\2325\WS400042.D		
Operator	: pclark	Page Number	: 1
Instrument	: INSTRUMEN	Vial Number	:
Sample Name	: Westates	Injection Number	:
Run Time Bar Code:		Sequence Line	:
Acquired on	: 30 Mar 06 02:53 PM	Instrument Method:	WESTATES.MTH
Report Created on:	14 Apr 06 07:05 PM	Analysis Method	: WESTATES.MTH
Last Recalib on	: 08 DEC 03 02:07 PM	Sample Amount	: 0
Multiplier	: 1	ISTD Amount	:

Sig. 1 in C:\HPCHEM\1\DATA\2325\WS400042.D

Ret Time	Area	Type	Width	Ref#	ppm	Name
2.091	852	BB	0.016	1	2.012	methane
2.176	1609	BB	0.017	1	1.866	ethane
2.369	2364	BB	0.022	1	1.802	propane
2.912	3132	BB	0.036	1	1.776	butane
4.273	3770	BB	0.063	1	1.787	pentane
6.659	4416	BB	0.072	1	1.758	hexane
9.298	5031	BB	0.067	1	1.716	heptane

==========

Airtech Environmental Services, Inc.
Nozzle Calibration Form

	Nozzle 1	Nozzle 2	Nozzle 3
[illegible]	3/27/06	3-27-06	3-27-06
[illegible]	A	B	C
[illegible]	1C	1C	1C
[illegible]			
[illegible]			
[illegible]	.277	.275	.273
[illegible]	.277	.276	.273
[illegible]	.277	.277	.271
[illegible]	.277	.276	.272

	Nozzle 4	Nozzle 5	Nozzle 6
[illegible]	3-27-06	3-27-06	3-27-06
[illegible]	D	E	F
[illegible]	1C	1C	1C
[illegible]			
[illegible]			
[illegible]	.269	.277	.275
[illegible]	.267	.277	.275
[illegible]	.267	.278	.275
[illegible]	.268	.277	.275

Notes:
Measurements must be made to the nearest 0.001 inches.
Three different diameters should be measured.
The difference between the high and low measurement must be less than 0.004 inches.

Signed [signature] Date 3/27/06

Airtech Environmental Services, Inc.
Nozzle Calibration Form

	Nozzle 1	Nozzle 2	Nozzle 3
[illegible]	3-27-06	3-27-06	3-27-06
[illegible]	N	P	R
[illegible]	TC	TC	TC
[illegible]			
[illegible]			
[illegible]	.310	.312	.313
[illegible]	.311	.312	.314
[illegible]	.313	.312	.314
[illegible]	.311	.312	.314

	Nozzle 4	Nozzle 5	Nozzle 6
[illegible]	3-27-06	3-27-06	
[illegible]	S	T	
[illegible]	TC	TC	
[illegible]			
[illegible]			
[illegible]	.308	.307	
[illegible]	.310	.307	
[illegible]	.310	.309	
[illegible]	.309	.308	

Notes:
Measurements must be made to the nearest 0.001 inches.
Three different diameters should be measured.
The difference between the high and low measurement must be less than 0.004 inches.

Signed [signature] Date 3/27/06

Airtech Environmental Services, Inc.
Nozzle Calibration Form

	Nozzle 1	Nozzle 2	Nozzle 3
[illegible]	3-27-06	3-27-06	3-27-06
[illegible]	G	~~[illegible]~~ H	J
[illegible]	YC	YC	
[illegible]			
[illegible]			
[illegible]	.277	.278	.274
[illegible]	.277	.278	.274
[illegible]	.277	.278	.275
[illegible]	.277	.278	.274

	Nozzle 4	Nozzle 5	Nozzle 6
[illegible]	3-27-06	3-27-06	3-27-06
[illegible]	K	L	M
[illegible]	YC	YC	YC
[illegible]			
[illegible]			
[illegible]	.272	.275	.308
[illegible]	.272	.274	.309
[illegible]	.271	.274	.309
[illegible]	.272	.275	.309

Notes:
Measurements must be made to the nearest 0.001 inches.
Three different diameters should be measured.
The difference between the high and low measurement must be less than 0.004 inches.

Signed [signature] Date 3/27/06

Airtech Environmental Services, Inc.
Nozzle Calibration Form

	Nozzle 1	Nozzle 2	Nozzle 3
Date	3-27-06	3-27-06	
Nozzle Number	V	W	
Technician	TL	TL	
Measurement 1	.250	.255	
Measurement 2	.250	.255	
Measurement 3	.249	.254	
Average	.250	.255	

	Nozzle 4	Nozzle 5	Nozzle 6
Date			
Nozzle Number			
Technician			
Measurement 1			
Measurement 2			
Measurement 3			
Average			

Notes:
Measurements must be made to the nearest 0.001 inches.
Three different diameters should be measured.
The difference between the high and low measurement must be less than 0.004 inches.

Signed _____ Date 3/27/06

Airtech Environmental Services, Inc.

Nozzle Calibration Form

	Nozzle 1	Nozzle 2	Nozzle 3
Date	3/28/06	3/28/06	3/28/06
Nozzle ID	A	B	C
Operator	TW	TW	TW
Test Location	STACK	STACK	STACK
Run Number (s)	1	1	1 -
Diameter 1	0.250	0.250	0.249
Diameter 2	0.248	0.249	0.250
Diameter 3	0.249	0.250	0.250
Average	0.249	0.250	0.250

	Nozzle 4	Nozzle 5	Nozzle 6
Date	3/28/06	3/28/06	
Nozzle ID	D	0061 - 1	
Operator	TW	~~STACK~~ TW	
Test Location	STACK	STACK	
Run Number (s)	1 -	~~0.276~~ TW 1 -	
Diameter 1	0.250	0.276	
Diameter 2	0.250	0.276	
Diameter 3	0.250	0.276	
Average	0.250	0.276	

Notes:
Measurements must be made to the nearest 0.001 inches.
Three different diameters should be measured.
The difference between the high and low measurement must be less than 0.004 inches.

Signed _____ Date 3/28/06

Airtech Environm. . Services, Inc.
Meter Box Full Test Calibration

Date: 7/18/2005

Operator: C.S

Meter Box ID	M-3			Meter Box ΔH@			1.832	Meter Box Y_d			1.0092	Barometric Pressure (in. Hg.)		29.50
Time	Orifice Data				Meter Box Data							Results	65	
8 (min)	K'	Vacuum	T_{amb}	V_{cr}	$V_{initial}$	V_{final}	V_d	ΔH	T_i	T_o	T_{avg}	V_{mstd}	Q	Y_d	ΔH@
5.0	0.714	15.0	73	4.562	419.20	423.79	4.59	2.70	77	72	74.5	4.499	0.912	1.0140	1.818
5.0	0.714	15.0	73	4.562	423.79	428.37	4.58	2.70	78	73	75.5	4.481	0.912	1.0181	1.829
5.0	0.714	15.0	73	4.562	426.37	432.96	4.59	2.70	79	73	76.0	4.486	0.912	1.0168	1.823
5.0	0.276	20.0	74	1.762	436.00	437.63	1.83	0.44	76	75	75.5	1.780	0.352	0.9896	1.867
5.0	0.276	20.0	74	1.762	437.63	439.63	1.80	0.44	76	75	75.5	1.751	0.352	1.0061	1.930
5.0	0.276	20.0	74	1.762	439.63	441.46	1.83	0.44	76	75	75.5	1.780	0.352	0.9896	1.867
5.0	0.409	18.0	76	2.606	445.00	447.64	2.64	0.88	76	74	75.0	2.573	0.521	1.0125	1.793
5.0	0.409	18.0	76	2.606	447.64	450.26	2.62	0.88	76	74	75.0	2.554	0.521	1.0203	1.820
5.0	0.409	18.0	77	2.603	450.26	452.90	2.64	0.88	77	74	75.5	2.571	0.521	1.0125	1.795
6.0	0.581	17.0	79	4.430	473.00	477.53	4.53	1.80	81	77	79.0	4.393	0.738	1.0083	1.807
5.0	0.581	17.0	79	3.691	477.53	481.31	3.78	1.80	82	78	80.0	3.659	0.738	1.0088	1.806
5.0	0.581	17.0	79	3.691	481.31	465.07	3.76	1.80	82	78	80.0	3.640	0.738	1.0142	1.825
												Average	1.0092	1.832	

Nomenclature	
K'	Critical Orifice Coefficient
T_{amb}	Ambient Temperature (°F)
V_{cr}	Volume Through Orifice (scf)
V_d	Gas Meter Volume (ft^3)
ΔH	Orifice Pressure Differential (in. H_2O)
T_i	Meter Inlet Temperature (°F)
T_o	Meter Outlet Temperauture (°F)
T_{avg}	Average Meter Box Temperature (°F)
V_{mstd}	Volume Metered Standardized (scf)
Q	Flow Rate (scfm)
Y_d	Meter Correction Factor (dimensionless)
ΔH@	ΔH yielding 0.75 scfm

Vacuum Guage (in. Hg.)		Thermometers (°F)			
Standard	Vacuum Gauge	Standard	Ch. No 2	Ch. No 4	Ch. No
5	5.0	32	32	32	
10	10.0	50	50	50	
15	15.0	100	100	100	
20	20.0	150	150	150	
25	25.0	212	212	212	
		250	250	250	
		300	300	300	
		350	350	350	
		400	400	400	
		500	501	500	
		600	600	601	

Equations

$$V_{cr} = \frac{K' * P_b * \theta}{(T_{amb} + 460)\ \wedge\ 0.5}$$

$$V_{mstd} = \frac{17.64 * V_d * (P_b + (\Delta H/13.6))}{(T_{avg} + 460)}$$

$$Q = V_{cr} / \theta$$

$$Y_d = V_{cr} / V_{mstd}$$

$$\Delta H@ = \frac{.0319 * \Delta H * (T_{avg} + 460) * \theta\wedge 2}{P_b * Y_d\wedge 2 * V_m\wedge 2}$$

Airtech Environmental Services
Meter Post Calibration

Average Field Sample Rate (cfm)		Date	4/5/2006
Highest Field Vacuum (inches Hg)		Client	Focus
Critical Orifice ID		Project No.	2325
Orifice Flow Rate (cfm)	0.763	Meter ID	M-3

	Run 1	Run 2	Run 3
Initial Volume (ft^3)	862.50	866.31	870.12
Final Volume (ft^3)	866.31	870.12	876.23
Volume Metered (ft^3)	3.81	3.81	6.11
DGM Inlet Temperature (°F)	84	84	85
DGM Outlet Temperature (°F)	79	79	78
Average DGM Temperature (°F)	81.5	81.5	81.5
Ambient Temperature (°F)	78	72	71
Elapsed Time (min.)	5	5	8
ΔH (inches H_2O)	1.80	1.80	1.80
Barometric Pressure (inches Hg)	29.33	29.33	29.33
Pump Vacuum (inches Hg)	17	17	17
K'	0.5810	0.5810	0.5810
Vcr (ft^3)	3.673	3.694	5.916
Vmstd (ft^3)	3.657	3.657	5.864
Post Test Yc	1.0046	1.0102	1.0088
Full Test Yd	1.0092	1.0092	1.0092
% Difference	0.46	-0.10	0.04
Average % Difference			**0.13**

Airtech Environn.. .al Services, Inc.
Meter Box Full Test Calibration

Dete: 12/8/2005

Operator: C.S

Meter Box iD	M7	Meter Box ΔH@	1.753	Meter Box Y_d	1.0011	Barometric Pressure (in. Hg.)	29.40

Time	Orifice Data				Meter Box Data								Results		
θ (min)	K'	Vacuum	T_{amb}	V_{cr}	$V_{initial}$	V_{final}	V_d	ΔH	T_i	T_o	T_{avg}	V_{mstd}	Q	Y_d	ΔH@
5.0	0.714	18.0	75	4.538	11.60	16.24	4.64	2.70	76	80	76	4.503	0.908	1.0077	1.826
5.0	0.714	18.0	75	4.538	16.24	20.87	4.63	2.70	76	79	77.5	4.498	0.908	1.0089	1.632
5.0	0.714	18.0	75	4.536	20.87	25.52	4.65	2.70	76	79	77.5	4.517	0.908	1.0046	1.617
5.0	0.276	23.0	75	1.754	35.80	37.62	1.62	0.39	77	75	76.0	1.763	0.351	0.9951	1.708
5.0	0.276	23.0	75	1.754	37.62	39.44	1.82	0.39	77	76	76.5	1.761	0.351	0.9960	1.710
5.0	0.276	23.0	75	1.754	39.44	41.26	1.82	0.39	77	76	76.5	1.781	0.351	0.9960	1.710
5.0	0.409	21.0	76	2.597	43.30	45.97	2.67	0.87	75	74	74.5	2.596	0.519	1.0002	1.765
5.0	0.409	21.0	76	2.597	45.97	48.64	2.67	0.87	75	74	74.5	2.596	0.519	1.0002	1.765
5.0	0.409	21.0	76	2.597	48.64	51.31	2.67	0.87	75	74	74.5	2.596	0.519	1.0002	1.765
5.0	0.581	20.0	74	3.696	56.00	59.79	3.79	1.70	74	76	75.0	3.690	0.739	1.0017	1.714
5.0	0.581	20.0	74	3.696	59.79	63.58	3.79	1.70	75	76	75.5	3.686	0.739	1.0027	1.715
5.0	0.581	20.0	74	3.698	63.56	67.38	3.80	1.70	75	76	75.5	3.696	0.739	1.0000	1.706
													Average	1.0011	1.753

Nomenclature	
K'	Critical Orifice Coefficient
T_{amb}	Ambient Temperature (°F)
V_{cr}	Volume Through Orifice (scf)
V_d	Gas Meter Volume (ft³)
ΔH	Orifice Pressure Differential (in. H_2O)
T_i	Meter inlet Temperature (°F)
T_o	Meter Outlet Temperauture (°F)
T_{avg}	Average Meter Box Temperature (°F)
V_{mstd}	Volume Metered Standardized (scf)
Q	Flow Rate (scfm)
Y_d	Meter Correction Factor (dimensionless)
ΔH@	ΔH yielding 0.75 scfm

Vacuum Guage (in. Hg.)		Thermometers (°F)				Equations
Standard	Vacuum Gauge	Standard	Ch. No. 1	Ch. No. 2	Ch. No.	
5		32	32	32	32	$V_{cr} = \frac{K' * P_b * \theta}{(T_{amb} + 460)^{0.5}}$
10		50	50	50	50	
15		100	100	101	100	$V_{mstd} = \frac{17.64 * V_d * (P_b + (\Delta H/13.6))}{(T_{avg} + 460)}$
20		150	150	151	150	
25		212	212	213	212	$Q = V_{cr} / \theta$
		250	251	251	250	
		300	300	301	300	$Y_d = V_{cr} / V_{mstd}$
		350	350	351	350	
		400	400	401	400	$\Delta H@ = \frac{.0319 * \Delta H * (T_{avg} + 460) * \theta^2}{P_b * Y_d^2 * V_m^2}$
		500	500	501	500	
		600	600	601	600	

Airtech Environmental Services
Meter Post Calibration

Average Field Sample Rate (cfm)		Date	4/4/2006
Highest Field Vacuum (inches Hg)		Client	Focus
Critical Orifice ID	0.581	Project No.	2325
Orifice Flow Rate (cfm)	0.774	Meter ID	M-7

	Run 1	Run 2	Run 3
Initial Volume (ft^3)	500.00	503.87	507.78
Final Volume (ft^3)	503.87	507.78	511.68
Volume Metered (ft^3)	3.87	3.91	3.90
DGM Inlet Temperature (°F)	71	71	71
DGM Outlet Temperature (°F)	73	73	74
Average DGM Temperature (°F)	72.0	72.0	72.5
Ambient Temperature (°F)	74	74	74
Elapsed Time (min.)	5	5	5
ΔH (inches H_2O)	1.80	1.80	1.80
Barometric Pressure (inches Hg)	29.45	29.45	29.45
Pump Vacuum (inches Hg)	20	20	20
K'	0.5810	0.5810	0.5810
Vcr (ft^3)	3.702	3.702	3.702
Vmstd (ft^3)	3.796	3.835	3.822
Post Test Yc	0.9753	0.9653	0.9687
Full Test Yd	1.0011	1.0011	1.0011
% Difference	2.58	3.58	3.24
Average % Difference			**3.13**

Airtech Environm. al Services, Inc.
Meter Box Full Test Calibration

Date: 12/9/2005

Operator: C.S

Meter Box ID 9				Meter Box ΔH@				1.782	Meter Box Y_d			0.9939	Barometric Pressure (in. Hg.)		29.75
Time	Orifice Data				Meter Box Data								Results		
θ (min)	K'	Vacuum	T_{amb}	V_{cr}	$V_{initial}$	V_{final}	V_d	ΔH	T_i	T_o	T_{avg}	V_{mstd}	Q	Y_d	ΔH@
5.0	0.714	16.0	69.0	4.818	782.40	787.07	4.67	2.70	68	73	70.5	4.651	0.924	0.9929	1.782
5.0	0.714	16.0	70.0	4.613	787.07	791.73	4.66	2.70	69	73	71.0	4.636	0.923	0.9951	1.792
5.0	0.714	16.0	70.0	4.613	791.73	796.41	4.68	2.70	69	74	71.5	4.652	0.923	0.9917	1.778
5.0	0.276	23.0	69.0	1.785	816.80	818.45	1.85	0.43	72	73	72.5	1.825	0.357	0.9780	1.816
5.0	0.276	23.0	69.0	1.785	818.45	820.30	1.65	0.43	72	73	72.5	1.825	0.357	0.9780	1.816
5.0	0.276	23.0	70.0	1.783	820.30	822.14	1.84	0.43	73	74	73.5	1.812	0.357	0.9842	1.839
5.0	0.409	20.0	73.0	2.635	826.00	826.71	2.71	0.90	74	76	75.0	2.664	0.527	0.9891	1.779
5.0	0.409	20.0	73.0	2.635	828.71	831.43	2.72	0.90	74	76	75.0	2.674	0.527	0.9855	1.766
5.0	0.409	20.0	73.0	2.635	831.43	834.12	2.69	0.90	74	76	75.0	2.645	0.527	0.9965	1.806
5.0	0.581	17.0	72.0	3.747	860.90	864.69	3.79	1.70	76	79	77.5	3.716	0.749	1.0083	1.726
5.0	0.581	17.0	72.0	3.747	864.69	868.46	3.77	1.70	76	79	77.5	3.696	0.749	1.0137	1.745
5.0	0.581	17.0	72.0	3.747	868.46	872.23	3.77	1.70	76	79	77.5	3.696	0.749	1.0137	1.745
													Average	0.9939	1.782

Nomenclature	
K'	Critical Orifice Coefficient
T_{amb}	Ambient Temperature (°F)
V_{cr}	Volume Through Orifice (scf)
V_d	Gas Meter Volume (ft^3)
ΔH	Orifice Pressure Differential (in. H_2O)
T_i	Meter Inlet Temperature (°F)
T_o	Meter Outlet Temperauture (°F)
T_{avg}	Average Meter Box Temperature (°F)
V_{mstd}	Volume Metered Standardized (scf)
Q	Flow Rate (scfm)
Y_d	Meter Correction Factor (dimensionless)
ΔH@	ΔH yielding 0.75 scfm

Vacuum Guage (In. Hg.)		Thermometers (°F)			
Standard	Vacuum Gauge	Standard	Ch. No. 1	Ch. No. 2	Ch. No. 3
5		32	32	32	32
10		50	50	50	50
15		100	100	101	100
20		150	150	151	150
25		212	213	213	213
		250	251	251	250
		300	300	301	300
		350	351	351	350
		400	400	401	400
		500	500	501	500
		600	600	600	600

Equations

$$V_{cr} = \frac{K' * P_b * \theta}{(T_{amb} + 460)\ \wedge\ 0.5}$$

$$V_{mstd} = \frac{17.64 * V_d * (P_b + (\Delta H/13.6))}{(T_{avg} + 460)}$$

$$Q = V_{cr} / \theta$$

$$Y_d = V_{cr} / V_{mstd}$$

$$\Delta H@ = \frac{.0319 * \Delta H * (T_{avg} + 460) * \theta\wedge 2}{P_b * Y_d\wedge 2 * V_m\wedge 2}$$

Airtech Environmental Services
Meter Post Calibration

Average Field Sample Rate (cfm)		Date	4/4/2006
Highest Field Vacuum (Inches Hg)		Client	Focus
Critical Orifice ID	0.409	Project No.	2325
Orifice Flow Rate (cfm)	0.54	Meter ID	M-9

	Run 1	Run 2	Run 3
Initial Volume (ft^3)	819.20	821.90	824.57
Final Volume (ft^3)	821.90	824.57	827.27
Volume Metered (ft^3)	2.70	2.67	2.70
DGM Inlet Temperature (°F)	68	68	68
DGM Outlet Temperature (°F)	70	70	71
Average DGM Temperature (°F)	69.0	69.0	69.5
Ambient Temperature (°F)	76	75	75
Elapsed Time (min.)	5	5	5
ΔH (inches H_2O)	0.90	0.90	0.90
Barometric Pressure (inches Hg)	29.45	29.45	29.45
Pump Vacuum (inches Hg)	18	18	18
K'	0.4090	0.4090	0.4090
Vcr (ft^3)	2.601	2.604	2.604
Vmstd (ft^3)	2.657	2.628	2.655
Post Test Yc	0.9789	0.9908	0.9807
Full Test Yd	0.9939	0.9939	0.9939
% Difference	1.51	0.31	1.33
Average % Difference			**1.05**

Airtech Environm. .. Services, Inc.
Meter Box Full Test Calibration

Date: 12/12/2005

Operator: C.S

Meter Box ID 10				Meter Box ΔH@			1.764	Meter Box Y_d			1.0094	Barometric Pressure (in. Hg.)		29.60
Time	Orifice Data				Meter Box Data							Results		
θ (min)	K'	Vacuum	T_{amb}	V_{cr}	$V_{initial}$	V_{final}	V_d	ΔH	T_i	T_o	T_{avg}	V_{mstd}	Q	Y_d	ΔH@
5.0	0.714	15.0	72.0	4.581	638.70	643.32	4.62	2.70	76	74	75	4.539	0.916	1.0093	1.790
5.0	0.714	15.0	72.0	4.581	643.32	647.92	4.60	2.70	76	73	74.5	4.524	0.916	1.0127	1.803
5.0	0.714	15.0	73.0	4.577	647.92	652.53	4.61	2.70	76	74	75.0	4.529	0.915	1.0105	1.797
5.0	0.276	20.0	73.0	1.769	655.50	657.32	1.82	0.41	74	73	73.5	1.783	0.354	0.9923	1.746
5.0	0.276	20.0	73.0	1.769	657.32	659.13	1.81	0.41	74	73	73.5	1.773	0.354	0.9978	1.766
5.0	0.276	20.0	72.0	1.771	659.13	660.94	1.81	0.41	74	73	73.5	1.773	0.354	0.9987	1.766
5.0	0.581	16.0	73.0	3.725	665.70	669.40	3.70	1.70	72	70	71.0	3.654	0.745	1.0194	1.744
5.0	0.581	16.0	73.0	3.725	669.40	673.11	3.71	1.70	73	72	72.5	3.653	0.745	1.0195	1.739
5.0	0.581	16.0	73.0	3.725	673.11	676.82	3.71	1.70	73	72	72.5	3.653	0.745	1.0195	1.739
5.0	0.409	17.0	73.0	2.622	689.00	691.66	2.66	0.87	73	73	73.0	2.611	0.524	1.0040	1.733
5.0	0.409	17.0	73.0	2.822	691.66	694.29	2.83	0.87	73	72	72.5	2.584	0.524	1.0145	1.771
5.0	0.409	17.0	73.0	2.822	694.29	696.92	2.63	0.87	73	72	72.5	2.564	0.524	1.0145	1.771
													Average	1.0094	1.764

Nomenclature	
K'	Critical Orifice Coefficient
T_{amb}	Ambient Temperature (°F)
V_{cr}	Volume Through Orifice (scf)
V_d	Gas Meter Volume (ft^3)
ΔH	Orifice Pressure Differential (in. H_2O)
T_i	Meter Inlet Temperature (°F)
T_o	Meter Outlet Temperauture (°F)
T_{avg}	Average Meter Box Temperature (°F)
V_{mstd}	Volume Metered Standardized (scf)
Q	Flow Rate (scfm)
Y_d	Meter Correction Factor (dimensionless)
ΔH@	ΔH yielding 0.75 scfm

Vacuum Guage (in. Hg.)		Thermometers (°F)			
Standard	Vacuum Gauge	Standard	Ch. No. 2	Ch. No. 4	Ch. No. 5
5		32	32	32	32
10		50	50	50	50
15		100	100	100	99
20		150	151	151	149
25		212	212	212	212
		250	250	251	250
		300	300	301	300
		350	350	351	350
		400	400	401	400
		500	500	501	500
		600	601	601	600

Equations

$$V_{cr} = \frac{K' * P_b * \theta}{(T_{amb} + 460)\ \wedge\ 0.5}$$

$$V_{mstd} = \frac{17.64 * V_d * (P_b + (\Delta H/13.6))}{(T_{avg} + 460)}$$

$$Q = V_{cr} / \theta$$

$$Y_d = V_{cr} / V_{mstd}$$

$$\Delta H@ = \frac{.0319 * \Delta H * (T_{avg} + 460) * \theta\wedge 2}{P_b * Y_d\wedge 2 * V_m\wedge 2}$$

Airtech Environmental Services
Meter Post Callbration

Average Field Sample Rate (cfm)		Date	4/11/2006
Highest Field Vacuum (inches Hg)		Client	Focus
Critical Orifice ID	0.581	Project No.	2325
Orifice Flow Rate (cfm)	0.768	Meter ID	M-10

	Run 1	Run 2	Run 3
Initial Volume (ft^3)	232.80	236.64	240.48
Final Volume (ft^3)	236.64	240.48	244.32
Volume Metered (ft^3)	3.84	3.84	3.84
DGM Inlet Temperature (°F)	74	74	74
DGM Outlet Temperature (°F)	72	74	74
Average DGM Temperature (°F)	73.0	74.0	74.0
Ambient Temperature (°F)	73	74	74
Elapsed Time (min.)	5	5	5
ΔH (inches H_2O)	1.80	1.80	1.80
Barometric Pressure (inches Hg)	29.44	29.44	29.44
Pump Vacuum (inches Hg)	19	19	19
K'	0.5810	0.5810	0.5810
Vcr (ft^3)	3.704	3.701	3.701
Vmstd (ft^3)	3.758	3.751	3.751
Post Test Yc	0.9857	0.9866	0.9866
Full Test Yd	1.0094	1.0094	1.0094
% Difference	2.35	2.26	2.26
Average % Difference			**2.29**

Airtech Environmental Services, Inc.
Meter Box Full Test Calibration

Date: 11/16/2005

Operator: I Lopez

Meter Box ID	M-16	Meter Box ΔH@	1.768	Meter Box Y_d	1.0032	Barometric Pressure (in. Hg.)	29.45

Time	Orifice Data				Meter Box Data								Results		
θ (min)	K'	Vacuum	T_{amb}	V_{cr}	$V_{initial}$	V_{final}	V_d	ΔH	T_i	T_o	T_{avg}	V_{mstd}	Q	Y_d	ΔH@
5.0	0.409	22.0	74.0	2.606	328.10	330.76	2.68	0.89	78	63	70.5	2.611	0.521	0.9983	1.795
5.0	0.409	22.0	71.0	2.614	330.76	333.41	2.65	0.89	76	65	70.5	2.601	0.523	1.0049	1.809
5.0	0.409	22.0	72.0	2.611	333.41	336.07	2.66	0.89	76	66	71.0	2.608	0.522	1.0011	1.797
5.0	0.714	19.0	72.0	4.558	336.80	341.45	4.65	2.50	76	67	71.5	4.573	0.912	0.9967	1.654
5.0	0.714	19.0	72.0	4.558	341.45	346.10	4.65	2.50	77	68	72.5	4.565	0.912	0.9986	1.657
5.0	0.714	19.0	72.0	4.558	346.10	350.71	4.61	2.50	78	69	73.5	4.517	0.912	1.0091	1.689
5.0	0.276	23.0	72.0	1.762	354.96	356.78	1.82	0.43	76	72	74.0	1.772	0.352	0.9941	1.865
5.0	0.276	23.0	72.0	1.762	356.78	356.60	1.82	0.43	76	72	74.0	1.772	0.352	0.9941	1.865
5.0	0.276	23.0	72.0	1.762	358.60	360.43	1.83	0.43	76	73	74.5	1.781	0.352	0.9898	1.847
5.0	0.581	20.0	72.0	3.709	361.20	364.93	3.73	1.70	75	72	73.5	3.648	0.742	1.0169	1.754
5.0	0.581	20.0	72.0	3.709	364.93	368.67	3.74	1.70	76	73	74.5	3.650	0.742	1.0161	1.748
5.0	0.581	20.0	72.0	3.709	368.67	372.41	3.74	1.70	77	75	76.0	3.840	0.742	1.0189	1.753
													Average	1.0032	1.769

Nomenclature	
K'	Critical Orifice Coefficient
T_{amb}	Ambient Tamperature (°F)
V_{cr}	Volume Through Orifice (scf)
V_d	Gas Meter Volume (ft^3)
ΔH	Orifice Pressure Differential (in. H_2O)
T_i	Meter Inlet Temperature (°F)
T_o	Meter Outlet Temperauture (°F)
T_{avg}	Avarage Meter Box Temperature (°F)
V_{mstd}	Volume Metered Standardized (scf)
Q	Flow Rata (scfm)
Y_d	Meter Correction Factor (dimensionless)
ΔH@	ΔH yielding 0.75 scfm

Vacuum Guage (in. Hg.)		Thermometers (°F)			
Standard	Vacuum Gauge	Standard	Ch. No. 1	Ch. No. 2	Ch. No. 3
5	5.0	32	32	32	32
10	10.0	50	50	50	50
15	15.5	100	100	100	100
20	20.5	150	150	150	149
25	25.5	212	212	212	212
		250	251	250	249
		300	300	300	299
		350	350	350	350
		400	400	400	400
		500	500	501	501
		600	601	601	601

Equations

$$V_{cr} = \frac{K' * P_b * \theta}{(T_{amb} + 460)\ \wedge 0.5}$$

$$V_{mstd} = \frac{17.64 * V_d * (P_b + (\Delta H/13.6))}{(T_{avg} + 460)}$$

$$Q = V_{cr} / 8$$

$$Y_d = V_{cr} / V_{mstd}$$

$$\Delta H@ = \frac{.0319 * \Delta H * (T_{avg} + 460) * \theta \wedge 2}{P_b * Y_d \wedge 2 * V_m \wedge 2}$$

Average Field Sample Rate (cfm)		Date	2/8/2006
Highest Field Vacuum (inches Hg)		Client	Focus
Critical Orifice ID	0.409	Project No.	2325
Orifice Flow Rate (cfm)	0.554	Meter ID	M-16

	Run 1	Run 2	Run 3
Initial Volume (ft^3)	414.40	417.17	419.94
Final Volume (ft^3)	417.17	419.94	422.69
Volume Metered (ft^3)	2.77	2.77	2.75
DGM Inlet Temperature (°F)	83	82	82
DGM Outlet Temperature (°F)	79	78	79
Average DGM Temperature (°F)	81.0	80.0	80.5
Ambient Temperature (°F)	81	81	81
Elapsed Time (min.)	5	5	5
ΔH (inches H_2O)	0.90	0.90	0.90
Barometric Pressure (inches Hg)	29.5	29.5	29.5
Pump Vacuum (inches Hg)	22	22	22
K'	0.409	0.409	0.409
Vcr (ft^3)	2.594	2.594	2.594
Vmstd (ft^3)	2.670	2.675	2.654
Post Test Yc	0.9713	0.9695	0.9774
Full Test Yd	1.0032	1.0032	1.0032
% Difference	3.18	3.36	2.57
Average % Difference			**3.04**

Airtech Environ. al Services, Inc.
Meter Box Full Test Calibration

Date: 11/16/2005 Operator: CS

Meter Box ID	M-17	Meter Box ΔH@	1.883	Meter Box Y_d	0.9998	Barometric Pressure (in. Hg.)	29.45

Time	Orifice Data				Meter Box Data								Results		
θ (min)	K'	Vacuum	T_{amb}	V_{cr}	$V_{initial}$	V_{final}	V_d	ΔH	T_I	T_o	T_{avg}	V_{mstd}	Q	Y_d	ΔH@
5.0	0.581	19.0	77.0	3.692	619.01	622.78	3.77	1.60	83	79	81	3.635	0.738	1.0157	1.650
5.0	0.581	19.0	77.0	3.692	622.76	626.57	3.79	1.60	83	79	81.0	3.654	0.738	1.0104	1.633
5.0	0.581	19.0	76.0	3.695	626.57	630.36	3.79	1.60	83	79	81.0	3.654	0.739	1.0113	1.633
5.0	0.276	22.0	76.0	1.755	637.10	638.93	1.83	0.41	81	80	80.5	1.761	0.351	0.9970	1.793
5.0	0.276	22.0	76.0	1.755	638.93	640.77	1.84	0.41	81	80	60.5	1.770	0.351	0.9918	1.774
5.0	0.276	22.0	76.0	1.755	640.77	642.61	1.84	0.41	61	80	80.5	1.770	0.351	0.9916	1.774
5.0	0.714	16.0	60.0	4.524	670.00	874.74	4.74	2.50	69	81	85.0	4.546	0.905	0.9951	1.643
5.0	0.714	16.0	80.0	4.524	674.74	679.50	4.76	2.50	69	81	85.0	4.566	0.905	0.9910	1.630
5.0	0.714	16.0	80.0	4.524	679.50	684.26	4.76	2.50	90	82	86.0	4.557	0.905	0.9928	1.633
5.0	0.409	21.0	75.0	2.604	695.00	697.70	2.70	0.86	82	82	82.0	2.593	0.521	1.0040	1.733
5.0	0.409	21.0	74.0	2.806	697.70	700.42	2.72	0.86	81	81	81.0	2.618	0.521	0.9957	1.704
5.0	0.409	21.0	74.0	2.806	700.42	703.13	2.71	0.66	81	81	81.0	2.608	0.521	0.9994	1.717
													Average	0.9996	1.693

Nomenclature	
K'	Criticel Orifice Coefficient
T_{amb}	Ambient Temperature (°F)
V_{cr}	Volume Through Orifice (scf)
V_d	Gas Meter Volume (ft^3)
ΔH	Orifice Pressure Differential (in. H_2O)
T_I	Meter Inlet Temperature (°F)
T_o	Meter Outlet Temperauture (°F)
T_{avg}	Average Meter Box Temperature (°F)
V_{mstd}	Volume Metered Standardized (scf)
Q	Flow Rate (scfm)
Y_d	Meter Correction Factor (dimensionless)
ΔH@	ΔH yielding 0.75 scfm

Vacuum Guage (In. Hg.)		Thermometers (°F)			
Standard	Vacuum Gauge	Standard	Ch. No. 2	Ch. No. 3	Ch. No. 4
5	5.0	32	32	32	32
10	10.0	50	50	50	50
15	15.0	100	100	100	100
20	20.0	150	150	150	151
25	25.0	212	213	212	213
		250	251	250	250
		300	300	300	300
		350	350	350	350
		400	400	400	400
		500	500	500	500
		600	600	600	600

Equations

$$V_{cr} = \frac{K' * P_b * \theta}{(T_{amb} + 460)^{0.5}}$$

$$V_{mstd} = \frac{17.64 * V_d * (P_b + (\Delta H/13.6))}{(T_{avg} + 460)}$$

$$Q = V_{cr} / \theta$$

$$Y_d = V_{cr} / V_{mstd}$$

$$\Delta H@ = \frac{.0319 * \Delta H * (T_{avg} + 460) * \theta^2}{P_b * Y_d^2 * V_m^2}$$

Airtech Environmental Services
Meter Post Calibration

Average Field Sample Rate (cfm)		Date	4/5/2006
Highest Field Vacuum (inches Hg)		Client	Focus
Critical Orifice ID	0.581	Project No.	2325
Orifice Flow Rate (cfm)	0.768	Meter ID	M-!7

	Run 1	Run 2	Run 3
Initial Volume (ft^3)	402.90	406.74	410.55
Final Volume (ft^3)	406.74	410.55	414.37
Volume Metered (ft^3)	3.84	3.81	3.82
DGM Inlet Temperature (°F)	77	78	79
DGM Outlet Temperature (°F)	73	73	74
Average DGM Temperature (°F)	75.0	75.5	76.5
Ambient Temperature (°F)	72	70	70
Elapsed Time (min.)	5	5	5
ΔH (inches H_2O)	1.60	1.60	1.60
Barometric Pressure (inches Hg)	29.33	29.33	29.33
Pump Vacuum (inches Hg)	20	20	20
K'	0.5810	0.5810	0.5810
Vcr (ft^3)	3.694	3.701	3.701
Vmstd (ft^3)	3.728	3.696	3.699
Post Test Yc	0.9908	1.0014	1.0006
Full Test Yd	0.9996	0.9996	0.9996
% Difference	0.88	-0.18	-0.10
	Average % Difference		**0.20**

Meter Box Full Test Calibration

Meter Box No: 0028-092705-2

Date of Calibration: 9/27/2005 (M-18)

Meter Box Y_d: 0.9916

Calibration conducted by: _____

Meter Box ΔH@: 1.8919

Signature

Barometric Pressure: 29.50

				Standard Meter Gas Volume (ft^3)			Meter Box Gas Volume (ft^3)			Std. Meter. Temperature (°F)			Meter Box Temperature (°F)			Time (min.)	Calibration Results	
Q	ΔH	ΔP	Y_{ds}	Initial	Final	V_{ds} Net	Initial	Final	V_d Net	In	Out	T_{ds} Avg.	In	T_o Out	T_d Avg.	Θ	Y_d	ΔH@
0.928	3.00	-1.90	1.0000	0.000	10.000	10.000	112.558	122.896	10.338	72.5	72.5	72.50	96.0	87.0	91.50	10.53	0.9897	1.8647
0.926	3.00	-1.90	1.0000	0.000	10.000	10.000	122.896	133.236	10.340	72.5	72.5	72.50	96.0	87.0	91.50	10.55	0.9895	1.8717
0.370	0.50	-1.10	1.0000	0.000	6.000	6.000	140.616	146.789	6.173	72.5	72.5	72.50	88.0	86.0	87.00	15.86	0.9945	1.9620
0.370	0.50	-1.10	1.0000	0.000	5.000	5.000	146.789	151.939	5.150	72.5	72.5	72.50	88.0	86.0	87.00	13.22	0.9933	1.9629
0.660	1.50	-1.40	1.0000	0.000	10.000	10.000	164.809	175.140	10.331	72.5	72.5	72.50	92.0	86.0	89.00	14.80	0.9908	1.8451
0.660	1.50	-1.40	1.0000	0.000	10.000	10.000	175.140	185.447	10.307	72.5	72.5	72.50	91.0	86.0	88.50	14.80	0.9922	1.8451

Averages 0.99165 1.89193

Nomenclature

- P_b Barometric Pressure (in. Hg)
- Q Flow Rate (cfm)
- ΔH Orifice Pressure differential (in. H_2O)
- ΔP Inlet Pressure Differential (in. H_2O)
- V_d Gas Meter Volume - Dry (ft^3)
- V_{ds} Standard Meter Volume - Dry (ft^3)
- T_o Average Meter Box Temperature (°F)
- T_d Outlet Meter Box Temperature (°F)
- T_{ds} Average Standard Meter Temperature (°F)
- Y_d Meter Correction Factor (unitless)
- Y_{ds} Standard Meter Correction Factor (unitless)
- ΔH@ Orifice Pressure Differential giving 0.75 cfm of air at 68 F and 29.92 in. Hg (in. H_2O)
- Θ Duration of Run (minutes)

Equations

$$Y_d = (Y_{ds})\left[\frac{V_{ds}}{V_d}\right]\left[\frac{T_d + 460}{T_{ds} + 460}\right]\left[\frac{P_b + \Delta P/13.6}{P_b + \Delta H/13.6}\right]$$

$$\Delta H @ = \frac{(0.0319)(\Delta H)}{P_b(T_o + 460)}\left[\frac{(T_{ds} + 460)\Theta}{(V_{ds})(Y_d)}\right]^2$$

$$Q = \frac{17.64(V_{ds})(P_b)}{(T_{ds} + 460)(\Theta)}$$

Vacuum Gauge		DGM Thermocouples		
Standard (in.Hg)	Gauge (in.Hg)	Standard (°F)	Inlet (°F)	Outlet (°F)
5.0	5.0			
10.0	9.7			
15.0	14.6			
20.0	19.5			
25.0	25.0			

CleanAir ENGINEERING

Pyrometer Calibration Test Report

(M-18)

Pyrometer No.:	0028-092705-2	Office:	Palatine, Il
Calibrated By:	M. V.	Client:	
Date:	9/27/2005	Job Number:	

Calibration Reference Settings for Fahrenheit Scale	Pyrometer Reading
50 °F	50 °F
100 °F	100 °F
150 °F	150 °F
200 °F	200 °F
250 °F	250 °F
300 °F	300 °F
350 °F	350 °F
400 °F	400 °F
450 °F	450 °F
500 °F	500 °F
550 °F	550 °F
600 °F	600 °F

Calibration Reference Information

Reference Used:	Omega CL23A	Serial No:	T-225950
Calibrated By:	METROLOGY CO.INC.	Exp. Date:	9/26/2006
Report No:	R044791		

CleanAir

Airtech Environmental Services
Meter Post Calibration

Average Field Sample Rate (cfm)		Date	4/5/2006
Highest Field Vacuum (inches Hg)		Client	Focus
Critical Orifice ID		Project No.	2325
Orifice Flow Rate (cfm)	0.75	Meter ID	M-18

	Run 1	Run 2	Run 3
Initial Volume (ft^3)	424.50	429.00	432.70
Final Volume (ft^3)	429.00	432.7	436.40
Volume Metered (ft^3)	4.50	3.70	3.70
DGM Inlet Temperature (°F)	74	75	76
DGM Outlet Temperature (°F)	72	71	72
Average DGM Temperature (°F)	73.0	73.0	74.0
Ambient Temperature (°F)	75	77	76
Elapsed Time (min.)	6	5	5
ΔH (inches H_2O)	1.80	1.80	1.80
Barometric Pressure (inches Hg)	29.33	29.33	29.33
Pump Vacuum (inches Hg)	20	20	20
K'	0.5810	0.5810	0.5810
Vcr (ft^3)	4.420	3.677	3.680
Vmstd (ft^3)	4.388	3.608	3.601
Post Test Yc	1.0074	1.0191	1.0220
Full Test Yd	0.9916	0.9916	0.9916
% Difference	-1.60	-2.78	-3.07
	Average % Difference		-2.48

Vost Meter Full Test Calibration

DATE: 10/11/2005

Operator: M.V.

Meter Box No: M-11										Meter Box Y_d: 1.0020						Barometric Pressure: 29.50		
				Standard Meter Gas Volume			Meter Box Gas Volume (ft_3)			Std. Meter Temperature (°F)			Meter Box Temperature (°F)					
Q	ΔH	ΔP	Y_{ds}	Initial	Final	V_{ds}	Initial	Final	V_d	Inlet	Outlet	T_{ds}	Inlet	T_o	T_d	Time	Y_d	
0.034	1.30	-0.70	1.0000	0.0	1.000	1.000	224.76	253.33	1.0090	69.0	69.0	69.0	78.0	77.0	77.5	28.85	1.0020	
0.034	1.30	-0.70	1.0000	0.0	1.000	1.000	253.33	281.89	1.0086	69.0	69.0	69.0	78.0	77.0	77.5	28.91	1.0024	
0.034	1.30	-0.70	1.0000	0.0	1.000	1.000	281.89	310.47	1.0093	69.0	69.0	69.0	78.0	77.0	77.5	28.83	1.0017	
															AVERAGE		1.0020	

Nomenclature

P_b	Barometric Pressure (in. Hg)
Q	Flow Rate (cfm)
ΔH	Orifice Pressure Differential (in. H_2O)
ΔP	Inlet Pressure Differential (in. H_2O)
V_d	Gas Meter Volume - Dry (ft^3)
V_{ds}	Standard Meter Volume - Dry (ft^3)
T_d	Average Meter Box Temperature (°F)
T_o	Outlet Meter Box Temperature (°F)
T_{ds}	Average Standard Meter Temperature (°F)
Y_d	Meter Correction Factor (unitless)
Y_{ds}	Standard Meter Correction Factor (unitless)
ΔH@	Orifice Pressure Differential giving 0.75 cfm of air at 68°F and 29.92 in. Hg (in. H_2O)

Vacuum Gauge

Standard (in. Hg)	Vacuum Gauge
4.3	5.0
9.4	10.0
14.7	15.0
19.3	20.0
23.8	25.0

Thermometers

Standard (°F)	Inlet	Outlet

Equations

$$Y_d = (Y_{ds})\left[\frac{V_{ds}}{V_d}\right]\left[\frac{T_d + 460}{T_{ds} + 460}\right]\left[\frac{P_b + \Delta P/13.6}{P_b + \Delta H/13.6}\right]$$

$$\Delta H@ = \frac{0.0319(\Delta H)}{P_d(T_d + 460)}\left[\frac{(T_d + 460)\Theta}{(V_d)(Y_d)}\right]$$

$$Q = \frac{17.64\,(V_d)(P_b)}{(T_d + 460)(\Theta)}$$

CleanAir ENGINEERING

Pyrometer Calibration Test Report

Pyrometer No.:	M-11	Office:	Palatine, Il
Calibrated By:	M. V.	Client:	
Date:	10/11/2005	Job Number:	

Calibration Reference Settings for Celsius Scale	Pyrometer Reading	
50 °F	49 °F	
100 °F	98 °F	
150 °F	149 °F	
200 °F	199 °F	
250 °F	249 °F	
300 °F	299 °F	
350 °F	348 °F	
400 °F	398 °F	
450 °F	449 °F	
500 °F	499 °F	
550 °F	549 °F	
600 °F	599 °F	

Calibration Reference Information

Reference Used	Omega CL23A	Serial No:	T-225950
Calibrated By:	Omega Engineering: Inc.	Exp. Date:	9/26/2006
Report No:	R 044791		

CleanAir

Vost Meter Full Test Calibration

DATE: 10/7/2005 Operator: M.V.

Meter Box No:	M-13									Meter Box Y_d:	0.9947					Barometric Pressure:	29.43	
				Standard Meter Gas Volume			Meter Box Gas Volume (ft_3)			Std. Meter Temperature (°F)			Meter Box Temperature (°F)					
Q	ΔH	ΔP	Y_{ds}	Initial	Final	V_{ds}	Initial	Final	V_d	Inlet	Outlet	T_{ds}	Inlet	T_o	T_d	Time	Y_d	
0.034	1.50	0.80	1.0000	0.0	1.000	1.000	1361.53	1389.91	1.0023	74.0	74.0	74.0	76.0	76.0	76.0	28.26	0.9957	
0.034	1.50	0.80	1.0000	0.0	1.000	1.000	1389.91	1418.32	1.0033	74.0	74.0	74.0	76.0	76.0	76.0	28.27	0.9947	
0.034	1.50	0.80	1.0000	0.0	1.000	1.000	1446.89	1475.33	1.0044	74.0	74.0	74.0	76.0	76.0	76.0	28.26	0.9936	
															AVERAGE		0.9947	

Nomenclature

P_b	Barometric Pressure (in. Hg)
Q	Flow Rate (cfm)
ΔH	Orifice Pressure Differential (in. H_2O)
ΔP	Inlet Pressure Differential (in. H_2O)
V_d	Gas Meter Volume - Dry (ft^3)
V_{ds}	Standard Meter Volume - Dry (ft^3)
T_d	Average Meter Box Temperature (°F)
T_o	Outlet Meter Box Temperature (°F)
T_{ds}	Average Standard Meter Temperature (°F)
Y_d	Meter Correction Factor (unitless)
Y_{ds}	Standard Meter Correction Factor (unitless)
ΔH@	Orifice Pressure Differential giving 0.75 cfm of air at 68°F and 29.92 in. Hg (in H_2O)

Vacuum Gauge

Standard (in. Hg)	Vacuum Gauge
4.8	5.0
9.7	10.0
14.7	15.0
19.5	20.0
24.7	25.0

Thermometers

Standard (°F)	Inlet	Outlet

Equations

$$Y_d = (Y_{ds})\left[\frac{V_{ds}}{V_d}\right]\left[\frac{T_d + 460}{T_{ds} + 460}\right]\left[\frac{P_b + {}^{2}P/13.6}{P_b + {}^{2}H/13.6}\right]$$

$$^{2}H@ = \frac{0.0319(^{2}H)}{P_b(T_{ds} + 460)}\left[\frac{(T_{ds} + 460)\Theta}{(V_{ds})(Y_{ds})}\right]^{2}$$

$$Q = \frac{17.64\,(V_{ds})\,(ft_3)}{(T_{ds} + 460)\,(\Theta)}$$

CleanAir ENGINEERING

Pyrometer Calibration Test Report

Pyrometer No.:	M-13	Office:	Palatine, Il
Calibrated By:	M. V.	Client:	
Date:	10/7/2005	Job Number:	

Calibration Reference Settings for Celsius Scale	Pyrometer Reading	
50 °F	48 °F	
100 °F	98 °F	
150 °F	148 °F	
200 °F	198 °F	
250 °F	248 °F	
300 °F	298 °F	
350 °F	348 °F	
400 °F	398 °F	
450 °F	449 °F	
500 °F	498 °F	
550 °F	548 °F	
600 °F	599 °F	

Calibration Reference Information

Reference Used	Omega CL23A	Serial No:	T-225950
Calibrated By:	Omega Engineering; Inc.	Exp. Date:	9/26/2006
Report No:	R 044791		

CleanAir

Airtech Environmental Services, Inc.
S-Type Pitot Tube Inspection Form

Date February 16, 2006
Pitot ID AE5-4-1
Operator C. Welch

	Measured	Allowed
Outside Tube Diameter - Dt (inches)	0.250	NA
Base To Opening Distance - Pa (inches)	0.366	NA
Base To Opening Distance - Pb (inches)	0.366	NA
Pa/Dt	1.46	1.05-1.50
Pb/Dt	1.46	1.05-1.50
Angle α1(°)	1	10
Angle α2(°)	0	10
Angle B1(°)	0	5
Angle B2(°)	2	5
Opening to Opening Distance Pa+Pb (inches)	0.732	NA
Angle Z (°)	2	NA
z (inches)	0.026	0.125
Angle W (°)	0	NA
w (inches)	0.000	0.031

Note Any Damage, Nicks or Dents to the Pitot Tube

Is the Pitot Tube Part of an Assembly Yes
If Yes, Complete the Section Below

	Measured	Allowed
Distance From Nozzle X (inches)	1	0.75 in.
Pitot to Thermocouple Distance W (inches)	2.25	2 in.
Pitot to Sample Probe Distance Y (inches)	6	3 in.

Does the Pitot Tube Meet the Above Requirements **Yes**
Is the Pitot Tube Free of Damage **Yes**

If Yes to Both, a Pitot Tube Coefficient of 0.84 is Assigned
If No to Either, then the Pitot Tube Must be Calibrated

Airtech Environmental Services, Inc.
S-Type Pitot Tube Inspection Form

Date February 16, 2006
Pitot ID AE5-4-2
Operator C.Welch

	Measured	Allowed
Outside Tube Diameter - Dt (inches)	0.250	NA
Base To Opening Distance - Pa (inches)	0.359	NA
Base To Opening Distance - Pb (inches)	0.362	NA
Pa/Dt	1.436	1.05-1.50
Pb/Dt	1.448	1.05-1.50
Angle α1(°)	0	10
Angle α2(°)	0	10
Angle B1(°)	0	5
Angle B2(°)	2	5
Opening to Opening Distance Pa+Pb (inches)	0.721	NA
Angle Z (°)	0	NA
z (inches)	0.000	0.125 in.
Angle W (°)	1	NA
w (inches)	0.013	0.031 in.

Note Any Damage, Nicks or Dents to the Pitot Tube

Is the Pitot Tube Part of an Assembly Yes
If Yes, Complete the Section Below

	Measured	Allowed
Distance From Nozzle,X (inches)	1	0.75 in.
Pitot to Thermocouple Distance,W (inches)	2.25	2 in.
Pitot to Sample Probe Distance,Y (inches)	6	3 in.

Does the Pitot Tube Meet the Above Requirements **Yes**
Is the Pitot Tube Free of Damage **Yes**

If Yes to Both, a Pitot Tube Coefficient of 0.84 is Assigned
If No to Either, then the Pitot Tube Must be Calibrated

Airtech Environmental Services, Inc.
S-Type Pitot Tube Inspection Form

Date April 8, 2005
Pitot ID AE5-4-3
Operator OL

	Measured	Allowed
Outside Tube Diameter - Dt (inches)	0.250	NA
Base To Opening Distance - Pa (inches)	0.372	NA
Base To Opening Distance - Pb (inches)	0.372	NA
Pa/Dt	1.488	1.05-1.50
Pb/Dt	1.488	1.05-1.50
Angle α1(°)	0	10
Angle α2(°)	1	10
Angle B1(°)	0	5
Angle B2(°)	1	5
Opening to Opening Distance Pa+Pb (inches)	0.744	NA
Angle Z (°)	2	NA
z (inches)	0.026	0.125
Angle W (°)	3	NA
w (inches)	0.039	0.031

Note Any Damage, Nicks or Dents to the Pitot Tube

Is the Pitot Tube Part of an Assembly Yes
If Yes, Complete the Section Below

Pitot	Measured	Minimum
Distance From Nozzle (inches)	1	0.75 in.
Pitot to Thermocouple Distance (inches)	2	2 in.
Pitot to Sample Probe Distance (inches)	5.75	3 in.

Does the Pitot Tube Meet the Above Requirements Yes
Is the Pitot Tube Free of Damage Yes

If Yes to Both, a Pitot Tube Coefficient of 0.84 is Assigned
If No to Either, then the Pitot Tube Must be Calibrated

AIRTECH ENVIRONMENTAL SERVICES INC.

Type S Pitot Tube Inspection Sheet

Pitot ID	4' Effective M5 Probe ID# AW-M5-4-A
Operator	O. LOPEZ
Date	4/8/2005

Parameter	Measured	Allowed
Outside Tube Diameter - Dt (inches)	0.250	NA
Base To Opening Distance - Pa (inches)	0.344	NA
Base To Opening Distance - Pb (inches)	0.344	NA
Pa/Dt	1.376	1.05 to 1.50
Pb/Dt	1.376	1.05 to 1.50
Angle α1(°)	1.0	10
Angle α2(°)	3.0	10
Angle B1(°)	2.0	5
Angle B2(°)	4.0	5
Opening to Opening Distance Pa+Pb (inches)	0.688	NA
Angle Z (°)	2.00	NA
z (inches)	0.02	< 0.125
Angle W (°)	5.0	NA
w (inches)	0.060	< 0.031
Distance from nozzle (inches)	0.500	< 0.75
Distance from thermocouple (inches)	1.38	< 2.00
Distance from sample probe (inches)	1.00	< 3.00

Note any damage, nicks or dents to pitot tube
None

Does the pitot tube meet all of the above requirements?	YES
Is the pitot tube free from damage?	YES

IF YES TO BOTH, ASSIGN A COEFFICIENCT OF 0.84 TO THE PITOT TUBE.
IF NO TO EITHER, THE PITOT TUBE MUST BE CALIBRATED.

Scott Specialty Gases

Shipped From: 1290 COMBERMERE STREET
TROY MI 48083
Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ANALYSIS

WAREHOUSE/STOCK
WAREHOUSE/STOCK/
CHICAGO WAREHOUSE
868 SIVERT
WOOD DALE IL 60191

PROJECT #: 05-33929-002
PO#: AIRTECH
ITEM #: 05020005060DAL
DATE: 10Aug2005

CYLINDER #: ALM028224
FILL PRESSURE: 2000 PSIA

ANALYTICAL ACCURACY: +/- 1%
PRODUCT EXPIRATION: 10Aug2008

BLEND TYPE : CEM 1 DAILY STANDARD

COMPONENT	REQUESTED GAS CONC MOLES		ANALYSIS (MOLES)	
CARBON DIOXIDE	7.	%	6.989	%
OXYGEN	14.	%	14.03	%
NITROGEN		BALANCE		BALANCE

ANALYST: _____

12/4/05

Scott Specialty Gases

Shipped From: 1290 COMBERMERE STREET
TROY MI 48083
Phone: 248-589-2950 Fax: 248-589-2134

CERTIFICATE OF ANALYSIS

WAREHOUSE/STOCK
WAREHOUSE/STOCK/
CHICAGO WAREHOUSE
868 SIVERT
WOOD DALE IL 60191

PROJECT #: 05-33929-001
PO#: AIRTECH
ITEM #: 05020005060DAL
DATE: 10Aug2005

CYLINDER #: 1L2213
FILL PRESSURE: 2000 PSIA

ANALYTICAL ACCURACY: +/- 1%
PRODUCT EXPIRATION: 10Aug2008

BLEND TYPE : CEM 1 DAILY STANDARD

COMPONENT	REQUESTED GAS CONC MOLES		ANALYSIS (MOLES)	
CARBON DIOXIDE	14.	%	14.00	%
OXYGEN	7.	%	7.011	%
NITROGEN		BALANCE		BALANCE

ANALYST:

12/4/05

RATA CLASS

Scott Specialty Gases

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

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY,MI 48083

P.O. No.: AIRTECH
05-34896-002

Customer

WAREHOUSE/STOCK
WAREHOUSE/STOCK/
CHICAGO WAREHOUSE
868 SIVERT
WOOD DALE IL 60191

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: ALM008963 **Certification Date:** 13Sep2005 **Exp. Date:** 12Sep2008
Cylinder Pressure*:** 1900 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
PROPANE	28.86	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
NIRM 1667	04Jul2008	ALM018225	49.80 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3600/0455	29Aug2005	FLAME IONIZATION

ANALYZER READINGS

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

PROPANE

First Triad Analysis	Second Triad Analysis	Calibration Curve
Date: 13Sep2005 Response Unit:MV		Concentration = A + Bx + Cx2 + Dx3 + Ex4
Z1 = 0.00000 R1 = 51824.00 T1 = 29806.00		r = 0.99999
R2 = 51720.00 Z2 = 0.00000 T2 = 29926.00		Constants: A = 0.105700
Z3 = 0.00000 T3 = 29905.00 R3 = 51610.00		B = 0.000945 C = 0
Avg. Concentration: 28.86 PPM		D = 0 E = 0

APPROVED BY: _____
HILARY THATCHER

RATA CLASS

Scott Specialty Gases

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

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY,MI 48083

P.O. No.: STOCK FOR WD/AIRTECH
Project No.: 05-34125-005

Customer

AIRTECH ENV SERVICES INC
601 A COUNTRY CLUB DR
BENSENVILLE IL 60106

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: ALM057175 **Certification Date:** 10Aug2005 **Exp. Date:** 10Aug2008
Cylinder Pressure*:** 1900 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
PROPANE	49.82	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 1666	04Jul2008	ALM013464	9.470 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3600/0455	12Jul2005	FLAME IONIZATION

ANALYZER READINGS

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

First Triad Analysis

PROPANE

Date: 10Aug2005 Response Unit:AREA

Z1 = 0.00000	R1 = 1030857.	T1 = 51355.00
R2 = 103657.0	Z2 = 0.00000	T2 = 51448.00
Z3 = 0.00000	T3 = 51383.00	R3 = 103377.0

Avg. Concentration: 49.82 PPM

Second Triad Analysis

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4
r = 0.9999

Constants:	A = 0.356147
B = 0.000993	C = 0
D = 0	E = 0

APPROVED BY: _____

RATA CLASS

Scott Specialty Gases

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

SCOTT SPECIALTY GASES
1290 COMBERMERE STREET
TROY,MI 48083

P.O. No.: AIRTECH STOCK
05-37064-002

Customer

WAREHOUSE/STOCK
WAREHOUSE/STOCK/
CHICAGO WAREHOUSE
868 SIVERT
WOOD OALE IL 60191

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: ALM039772 **Certification Date:** 15Nov2005 **Exp. Date:** 14Nov2008
Cylinder Pressure*:** 1900 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
PROPANE	79.91	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	ALM022966	98.80 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3600/0455	15Nov2005	FLAME IONIZATION

ANALYZER READINGS

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

PROPANE

First Triad Analysis			Second Triad Analysis	Calibration Curve	
Date: 15Nov2005	Response Unit:AREA			Concentration = A + Bx + Cx2 + Dx3 + Ex4	
Z1 = 0.00000	R1 = 102959.0	T1 = 82529.00		r = 0.999968	
R2 = 102636.0	Z2 = 0.00000	T2 = 82582.00		Constants:	A = 0.343569
Z3 = 0.00000	T3 = 82947.00	R3 = 102694.0		B = 0.000961	C = 0
Avg. Concentration:	79.91	PPM		D = 0	E = 0

APPROVED BY: _____
HILARY THATCHER

Parker 3.23.06

Scott Specialty Gases
6141 EASTON ROAD, BLDG 1 PO BOX 310
Shipped From: PLUMSTEADVILLE PA 18949-0310
Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ANALYSIS

AIRTECH ENV SERVICES INC

C/O US FILTER
2523 MUTAHAR STREET
PARKER AZ 85344

PROJECT #: 01-47980-001
PO#: 2325
ITEM #: 0104243 14
DATE: 24Mar2006

ANALYTICAL ACCURACY: +/-10%
PRODUCT EXPIRATION: 23Mar2008

SCOTT LOT#: 608306B

COMPONENT	REQUESTED GAS CONC MOLES		ANALYSIS (MOLES)	
N-BUTANE	15.	PPM	15.7	PPM
ETHANE	15.	PPM	15.9	PPM
N-HEPTANE	15.	PPM	14.7	PPM
N-HEXANE	15.	PPM	15.6	PPM
METHANE	15.	PPM	15.6	PPM
N-PENTANE	15.	PPM	15.7	PPM
PROPANE	15.	PPM	15.6	PPM
NITROGEN		BALANCE		BALANCE

MANUFACTURED DATE: 24Mar2006 SCOTTY SIZE: 14

ANALYST: GENYA KOGUT