Enclosed Combustor Performance Testing
40 CFR 60 Subpart OOOO Requirements

COMM OOOO Combustor 200

February 5 - 8, 2013
Armstrong Environmental, Inc.
Project W-2734-13

Report Prepared For:
Steve Hogg
COMM Engineering
1319 W. Pinhook Road, Suite 401
Lafayette, LA 70503
(337) 237-4373

Report Prepared February 27, 2013 By:
Armstrong Environmental, Inc.
1748 Hlavek Rd.
Decatur, Texas 76234
(214) 631-0021

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I. INTRODUCTION

A series of tests was performed on the exhaust associated with COMM OOOO Combustor Model 200 at the COMM Engineering facility in Lafayette, LA February 5 - 8, 2013. The methods used were specified in 40 CFR 60 Subpart OOOO to demonstrate the performance efficiency of COMM Engineering's enclosed combustion device known as the "COMM OOOO Combustor 200". Specifically, methods in 40 CFR 60.5413(d) were used.

The purpose of this test series was to determine the exhaust concentration of CO and VOC corrected to 3% CO2 and the VOC destruction efficiency. Testing was performed for four phases:

Phase	Load
I (Runs 1 - 3)	>90%
II (Runs 4 - 6)	Ramping between 70% and 100%
III (Runs 7 - 9)	Ramping between 30% and 70%
IV (Runs 10 - 12)	Ramping between 0% and 30%

Testing followed procedures detailed in Title 40: Code of Federal Regulations, Part 60.5413(d)

Sampling on the Combustor exhaust was performed by Tom Armstrong and Larry Whicher of Armstrong Environmental, Inc. using an Apex Method 5 sampling train, a GasMet IR continuous CO analyzer, and a ThermoEnvironmental Model 51 continuous FID analyzer.

The integrated sampling bags were supplied Armstrong Environmental, Inc. and chemically analyzed by Enthalpy Analytical, Inc.

Sampling on the Combustor inlet fuel supply was performed by Steve Hogg of COMM Engineering using a Southern Flow 2200 turbine meter and Silonite-coated stainless steel evacuated canister fitted with a flow controller The Silonite canisters were supplied by KeikaVentures and the canisters were chemically analyzed by Enthalpy Analytical, Inc.

Visual emission observations using EPA Method 22 were performed by Andrew Bienvenu and Steve Hogg of COMM Engineering. The visual emissions test results are contained in Appendix G.

Three one hour test repetitions were performed during each phase; twelve runs total, according to the following schedule:

Date	Phase	Run #	Start Time	Finish Time
2/5/13	I	1 - 3	2:00 PM	5:38 PM
2/6/13	II	4	3:00 PM	4:02 PM
2/7/13	II	5 - 6	9:50 AM	3:12 PM
2/7/13	III	7 - 8	3:30 PM	5:47 PM
2/8/13	III	9	9:25 AM	10:27 AM
2/8/13	IV	10 - 12	12:13 PM	3:42 PM

Submitted by:
Armstrong Environmental, Inc.

Tom Armstrong
President

II. SUMMARY

The series of tests were performed on the combustion exhaust for the COMM OOOO Combustor 200 at the COMM Engineering facility located in Lafayette, LA on February 5 - 8, 2013.

Sampling was performed following procedures detailed in Title 40: Code of Federal Regulations (40 CFR 60.5413).

The results of this test series are summarized in Tables 1 - 4.

The results demonstrated the COMM OOOO Combuster 200 meets a minimum destruction efficiency of 95.0 percent for VOC, operated without visible smoke emissions and had CO concentrations below 10 ppmv (corrected to 3% CO2). Actual destruction efficiency was 99.99%. This was true for all ranges of fuel flow used for the testing. The maximum flow of propene burned during the test was 3300 standard cubic feet per hour. This converts to 7.7 million BTU per hour with propene higher heating value of 2333 BTU per standard cubic feet.

Results indicate the following concentration, emission rates, and VOC Destruction for Phase I sampling:

Run #	1	2	3	Average
CO, ppm @ 3% CO2	7.51	11.23	7.88	8.87
VOC as C3H8, ppm @ 3% CO2	0.597	0.459	0.349	0.422
Exhaust VOC as C3H8, lbs/hr	0.0244	0.0174	0.0140	0.0186
Inlet VOC as C3H8, lbs/hr	322.0	344.75	291.36	319.37
Efficiency, %	99.99	99.99	99.99	99.99

Results indicate the following concentration, emission rates, and VOC Destruction for Phase II sampling:

Run #	4	5	6	Average
CO, ppm @ 3% CO2	11.02	7.96	5.24	8.07
VOC as C3H8, ppm @ 3% CO2	0.129	0.017	0.198	0.115
Exhaust VOC as C3H8, lbs/hr	0.0045	0.0006	0.0082	0.0051
Inlet VOC as C3H8, lbs/hr	284.06	265.49	149.04	232.87
Efficiency, %	99.99	99.99	99.99	99.99

Results indicate the following concentration, emission rates, and VOC Destruction for Phase III sampling:

Run #	7	8	9	Average
CO, ppm @ 3% CO2	3.80	4.10	3.29	3.73
VOC as C3H8, ppm @ 3% CO2	0.205	0.137	0.197	0.180
Exhaust VOC as C3H8, lbs/hr	0.0083	0.0057	0.0069	0.0070
Inlet VOC as C3H8, lbs/hr	193.08	201.96	192.67	195.90
Efficiency, %	99.99	99.99	99.99	99.99

Results indicate the following concentration, emission rates, and VOC Destruction for Phase IV sampling:

Run #	10	11	12	Average
CO, ppm @ 3% CO2	4.25	3.02	3.26	3.51
VOC as C3H8, ppm @ 3% CO2	0.352	0.291	0.297	0.313
Exhaust VOC as C3H8, lbs/hr	0.0094	0.0084	0.0089	0.0089
Inlet VOC as C3H8, lbs/hr	75.77	81.58	79.51	78.95
Efficiency, %	99.99	99.99	99.99	99.99

SUMMARY OF EMISSIONS TEST DATA

Table : 1
Plant : Comm Engineering, Lafayette, LA
Location : EFS 48-20 Enclosed Combustor Exhaust
Operator : L. Whicher, T. Armstrong
Test Date : 5-Feb-13

Repetition :	1	2	3
STACK GAS			
Temperature, F	1775.6	1806.7	1812.4
Velocity, fps	22.85	22.25	23.13
Volume Flow, acfm	14474.6	14096.4	14655.1
scfm	3190.9	3062.8	3192.9
scfh	191457	183770	191575
Moisture, %	6.89%	6.96%	6.47%
CO2, %	5.61	5.41	5.45
O2, %	13.40	13.50	13.30
SAMPLE			
Start Time, hrs:min	2:00 PM	3:20 PM	4:35 PM
Finish Time, hrs:min	3:04 PM	4:22 PM	5:38 PM
Sample Volume, scf	36.254	36.183	36.289
CARBON MONOXIDE			
Concentration, ppm	14.05	20.25	14.49
Concentration, ppm @ 3% CO2	7.513369	11.22921	7.976147
Emissions, lbs/hr	0.195532	0.270502	0.20178
Exhaust VOC AS C3H8			
Concentration, ppm WET	1.04	0.77	0.60
Concentration, ppm DRY	1.116966	0.827597	0.641481
Concentration, ppm DRY @ 3% CO2	0.597308	0.458926	0.353109
Emissions, lbs/hr	0.024427	0.017372	0.014037
Inlet VOC as C3H8			
Inlet Volume Flow, scfh	3139.11	3269.87	3122.08
Concentration, % DRY	89.8	92.3	81.7
Emissions, lbs/hr	321.9951	344.7455	291.3617
Destruction Efficiency, %	99.99241	99.99496	99.99518

SUMMARY OF EMISSIONS TEST DATA

Table : 2
Plant : Comm Engineering, Lafayette, LA
Location : EFS 48-20 Enclosed Combustor Exhaust
Operator : L. Whicher, T. Armstrong

Test Date :	6-Feb-13	7-Feb-13	7-Feb-13
Repetition :	4	5	6
STACK GAS			
Temperature, F	1768.3	1789.1	1805.8
Velocity, fps	21.48	20.75	21.85
Volume Flow, acfm	13606.6	13148.3	13843.5
scfm	3064.2	2900.6	3027.9
scfh	183850	174034	181675
Moisture, %	5.52%	6.27%	6.06%
CO2, %	5.45	5.54	5.97
O2, %	13.30	13.10	12.90
SAMPLE			
Start Time, hrs:min	3:00 PM	9:50 AM	2:10 PM
Finish Time, hrs:min	4:02 PM	10:52 AM	3:12 PM
Sample Volume, scf	36.685	36.549	35.386
CARBON MONOXIDE			
Concentration, ppm	18.07	14.7	10.43
Concentration, ppm @ 3% CO2	9.946789	7.960289	5.241206
Emissions, lbs/hr	0.241486	0.185961	0.137737
VOC AS C3H8			
Concentration, ppm WET	0.20	0.03	0.37
Concentration, ppm DRY	0.211676	0.032005	0.39387
Concentration, ppm DRY @ 3% CO2	0.116519	0.017331	0.197925
Emissions, lbs/hr	0.004445	0.000636	0.008174
Inlet VOC as C3H8			
Inlet Volume Flow, scfh	2848.59	2927.24	2938.69
Concentration, % DRY	87.3	79.4	44.4
Emissions, lbs/hr	284.0603	265.4882	149.0401
Destruction Efficiency, %	99.99844	99.99976	99.99452

SUMMARY OF EMISSIONS TEST DATA

Table : 3
Plant : Comm Engineering, Lafayette, LA
Location : EFS 48-20 Enclosed Combustor Exhaust
Operator : L. Whicher, T. Armstrong

Test Date :	7-Feb-13	7-Feb-13	8-Feb-13
Repetition :	7	8	9
STACK GAS			
Temperature, F	1764.6	1780.4	1809.1
Velocity, fps	19.24	20.57	17.30
Volume Flow, acfm	12191.9	13031.7	10958.1
scfm	2726.2	2890.7	2402.3
scfh	163575	173442	144137
Moisture, %	5.71%	5.80%	6.34%
CO2, %	6.53	6.27	6.35
O2, %	12.50	12.80	12.00
SAMPLE			
Start Time, hrs:min	3:30 PM	4:45 PM	9:25 AM
Finish Time, hrs:min	4:32 PM	5:47 PM	10:27 AM
Sample Volume, scf	35.206	35.334	36.600
CARBON MONOXIDE			
Concentration, ppm	8.27	8.56	6.95
Concentration, ppm @ 3% CO2	3.799387	4.095694	3.283465
Emissions, lbs/hr	0.098332	0.107919	0.072817
VOC AS C3H8			
Concentration, ppm WET	0.42	0.27	0.39
Concentration, ppm DRY	0.445438	0.286617	0.416382
Concentration, ppm DRY @ 3% CO2	0.204642	0.137137	0.196716
Emissions, lbs/hr	0.008323	0.005678	0.006855
Inlet VOC as C3H8			
Inlet Volume Flow, scfh	1817.54	1815.25	1813.65
Concentration, % DRY	93	97.4	93
Emissions, lbs/hr	193.0782	201.9583	192.665
Destruction Efficiency, %	99.99569	99.99719	99.99644

SUMMARY OF EMISSIONS TEST DATA

Table : 4
Plant : Comm Engineering, Lafayette, LA
Location : EFS 48-20 Enclosed Combustor Exhaust
Operator : L. Whicher, T. Armstrong

Test Date :	8-Feb-13	8-Feb-13	8-Feb-13
Repetition :	10	11	12
STACK GAS			
Temperature, F	1669.0	1662.5	1711.2
Velocity, fps	13.37	14.07	14.34
Volume Flow, acfm	8470.3	8915.7	9084.2
scfm	2011.2	2129.5	2109.2
scfh	120670	127767	126551
Moisture, %	4.81%	4.55%	5.08%
CO2, %	5.82	5.95	6.28
O2, %	12.90	12.20	12.40
SAMPLE			
Start Time, hrs:min	12:13 PM	1:28 PM	2:40 PM
Finish Time, hrs:min	1:15 PM	2:30 PM	3:42 PM
Sample Volume, scf	35.641	35.596	36.054
CARBON MONOXIDE			
Concentration, ppm	8.25	5.99	6.82
Concentration, ppm @ 3% CO2	4.252577	3.020168	3.257962
Emissions, lbs/hr	0.072364	0.055631	0.062737
VOC AS C3H8			
Concentration, ppm WET	0.65	0.55	0.59
Concentration, ppm DRY	0.682878	0.576194	0.621581
Concentration, ppm DRY @ 3% CO2	0.351999	0.290518	0.296934
Emissions, lbs/hr	0.009413	0.008409	0.008985
Inlet VOC as C3H8			
Inlet Volume Flow, scfh	716.32	755.77	749.29
Concentration, % DRY	92.6	94.5	92.9
Emissions, lbs/hr	75.76776	81.58078	79.51188
Destruction Efficiency, %	99.98758	99.98969	99.9887

III. PROCEDURES

The procedure for emissions sampling followed USEPA test methods as detailed in Title 40: Code of Federal Regulations. The following methods were used:

Method	Title
1	Sample and Velocity Traverses for Stationary Sources
2	Determination of Stack Gas Velocity and Volumetric Flow Rate (Type S Pitot Tube)
2A	Direct Measurement of Gas Volume through Small Pipes and Ducts
3	Gas Analysis for CO2, O2, Excess Air and Dry Molecular Weight
3C	Determination of Carbon Dioxide, Methane, Nitrogen and Oxygen from Stationary Sources
4	Determination of Moisture Content in Stack Gas
10	Determination of Carbon Monoxide Emissions from Stationary Sources
25A	Determination of Total Gaseous Organic Concentration using a Flame Ionization Analyzer

Moisture and Flow sampling was performed on the Combustor exhaust for 2.5 minutes at each of 24 points, 12 points per traverse, making a total run duration of 60 minutes. The sampling train was configured as follows:

Stainless Steel Nozzle
Stainless Steel Probe
Impinger #1 - 100 mls H2O
Impinger #2 - 100 mls H2O
Impinger #3 - Empty
Impinger #4 - 200 grams silica Gel

For each of the 12 tests, duplicate integrated gas bag samples were taken following EPA Method 3 during the moisture and flow sampling and analyzed for CO2, O2, CH4 and N2 by GC/TCD. Analysis was performed by Enthalpy Analytical, Inc.

Sample bag 5A had low volume and is suspected to have leaked during transport to Enthalpy Analytical laboratory. Based on this, Sample Bag 5B was also analyzed and only Sample Bag 5B results were used for the test result calculation.

Sample 3A and 4A had suspect results. Based on this Samples 3B and 4B were analyzed by Enthalpy. The results for Samples 3B and 4B were used for the test calculations. The propene (propylene) fuel was supplied by in 1000 gallon pressure vessels supplied by Gas Innovations of LaPorte, TX.

Inlet propene fuel gas volumes were measured using a Southern Flow 2200 gas turbine meter. Flow rate, pressure and temperature were recorded electronically for one minute integrated intervals. Flowrates were corrected to standard conditions of 68 degrees Fahrenheit at 14.7 psia.

Propane was used as the pilot gas for the testing. Pilot gas was not metered based on guidance from USEPA.

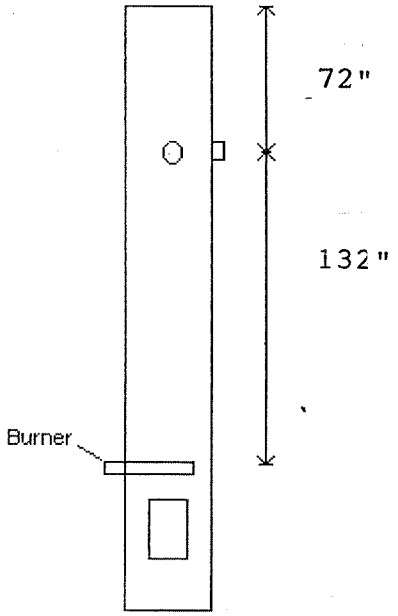
Results from Silonite canister No. 952-T6 are suspect. This is based on the low BTU/lb result of 14,424 and the low parts per million result of 443,831 for C3 (expressed as propane). The laboratory reported that Can 952-T6 did not meet their internal reproducibility requirements between injections. In addition the data set for this sample seemed anomalous compared to the other samples. It is believed that the sampling canister's quick-connect fitting had a small leak and allowed ambient air to enter when engaged, while at the same time holding vacuum when not being used.

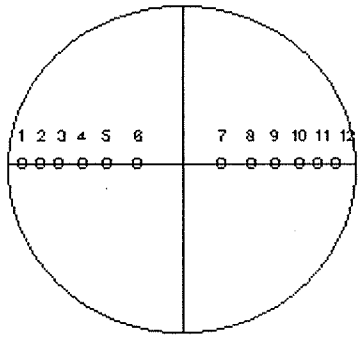
CEMs sampling was performed as follows:

Source	Monitor	Range	Standards
Combustor Exhaust	GasMet DX4000 Continuous CO SN 101826	0 - 25.1 ppm	Zero Air, 8.87 ppm, and 25.1 ppm CO in N2
Combustor Exhaust	Teco 51 continuous FID SN 51-30764-261	0 - 10 ppm	3.04 ppm, 5.14 ppm, and 8.44 ppm C3H8 in Air

All standard gases were EPA Protocol 1. Three traverse points were used on each port for CEMs sampling.

Enclosed Combustor EFS 48-20



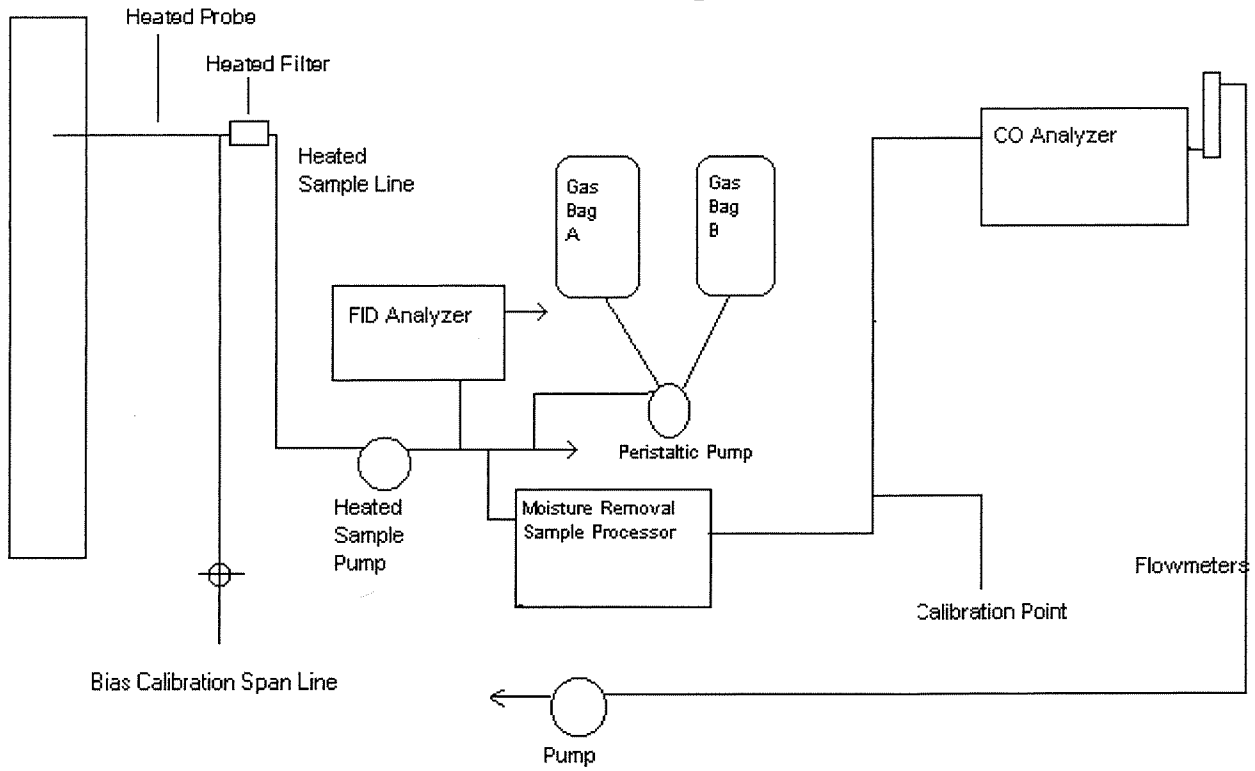


CEMS Points

Stack Daimeter - 44 inches
Point #1 - 7.35 inches
Point #2 - 22 inches
Point #3 - 36.65 inches

Stack Diameter - 44 inches
Point #1 - 1.0 inches
Point #2 - 2.9 inches
Point #3 - 5.2 inches
Point #4 - 7.8 inches
Point #5 - 11 inches
Point #6 - 15.7 inches
Point #7 - 28.3 inches
Point #8 - 33 inches
Point #9 - 36.2 inches
Point #10 - 38.8 inches
Point #11 - 41.1 inches
Point #12 - 43 inches

CEM Configuration



Appendix A
Calculation Summaries

EMISSION TEST SUMMARY

PLANT : Comm Engineering, Lafayette, LA
DATE : 5-Feb-13
PLACE : EFS 48-20 Enclosed Combustor Exhaust
RUN# : 1

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	57
NOZZLE DIAMETER (INCH.) :	0.5	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.021	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-0.07
GAS METER VOL.(Cu.Ft.) :	36.225	PERCENT CO2 :	5.61
BAROMETRIC PRESSURE :	30	PERCENT O2 :	13.4
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	44	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	10.55924	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.001364	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 10.5592

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	36.2537
VOLUME OF WATER VAPOR (STD. CU.FT.):	2.6830
FRACTIONAL MOISTURE CONTENT (%):	0.0689
DRY BASE:	80.9900
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.4336
MOLECULAR WT. OF STACK GAS (WET BASE):	28.6458
STACK PRESSURE (inch Hg):	29.9949
STACK GAS VELOCITY (ft/sec.):	22.8466
ACTUAL STACK GAS FLOW RATE (ACFM):	14474.5633
STANDARD STACK GAS FLOW RATE (SCFH):	191456.52

POINTS	STACK T. deg F	DELTA P	SQUAR D.F	DELTA H	METER T. INLET	METER T. OUTLET	
1	1739	0.03	0.173205	1.00	77	77	
2	1732	0.05	0.223607		78	77	
3	1847	0.05	0.223607		80	77	
4	1790	0.03	0.173205		81	77	
5	1807	0.06	0.244949		81	78	
6	1823	0.06	0.244949		82	78	
7	1753	0.05	0.223607		82	78	
8	1794	0.06	0.244949		83	78	
9	1743	0.05	0.223607		83	78	
10	1721	0.03	0.173205		83	79	
11	1702	0.03	0.173205		84	79	
12	1658	0.02	0.141421		84	79	
13	1739	0.03	0.173205		83	80	
14	1841	0.02	0.141421		83	79	
15	1781	0.03	0.173205		84	80	
16	1811	0.03	0.173205		84	80	
17	1852	0.04	0.2		85	80	
18	1771	0.05	0.223607		85	81	
19	1815	0.05	0.223607		85	81	
20	1857	0.05	0.223607		85	81	
21	1855	0.04	0.2		86	81	
22	1772	0.05	0.223607		86	81	
23	1702	0.03	0.173205		86	82	METER T.
24	1710	0.02	0.141421		86	81	AVERAGE
	1775.625		0.1972	1.0000	83.1667	79.2500	81.2083

EMISSION TEST SUMMARY

PLANT : Comm Engineering, Lafayette, LA
DATE : 5-Feb-13
PLACE : EFS 48-20 Enclosed Combustor Exhaust
RUN# : 2

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	57.5
NOZZLE DIAMETER (INCH.) :	0.5	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.021	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-0.06
GAS METER VOL.(Cu.Ft.) :	36.193	PERCENT CO2 :	5.41
BAROMETRIC PRESSURE :	30	PERCENT O2 :	13.5
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	44	STACK LENGTH(inches) :	
STACK AREA (Sq.Ft.) :	10.55924	STACK WIDTH(inches) :	
NOZZLE AREA (feet):	0.001364	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 10.5592

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	36.1827
VOLUME OF WATER VAPOR (STD. CU.FT.):	2.7065
FRACTIONAL MOISTURE CONTENT (%):	0.0696
DRY BASE:	81.0900
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.4056
MOLECULAR WT. OF STACK GAS (WET BASE):	28.6118
STACK PRESSURE (inch Hg):	29.9956
STACK GAS VELOCITY (ft/sec.):	22.2497
ACTUAL STACK GAS FLOW RATE (ACFM):	14096.4236
STANDARD STACK GAS FLOW RATE (SCFH):	183769.712

POINTS	STACK T. deg F	DELTA P	SQUAR D.F	DELTA H	METER T. INLET	METER T. OUTLET	
1	1831	0.02	0.141421	1.00	82	80	
2	1814	0.03	0.173205		81	80	
3	1818	0.04	0.2		83	80	
4	1839	0.03	0.173205		83	80	
5	1860	0.03	0.173205		84	80	
6	1841	0.03	0.173205		84	80	
7	1830	0.05	0.223607		84	80	
8	1852	0.05	0.223607		84	80	
9	1844	0.06	0.244949		84	80	
10	1746	0.03	0.173205		84	80	
11	1794	0.04	0.2		85	81	
12	1699	0.03	0.173205		85	81	
13	1870	0.02	0.141421		82	80	
14	1874	0.03	0.173205		84	80	
15	1831	0.03	0.173205		84	80	
16	1742	0.04	0.2		84	80	
17	1820	0.05	0.223607		84	80	
18	1768	0.06	0.244949		84	80	
19	1737	0.03	0.173205		83	79	
20	1799	0.04	0.2		84	80	
21	1780	0.04	0.2		84	80	
22	1823	0.03	0.173205		83	79	
23	1807	0.04	0.2		84	80	METER T.
24	1741	0.04	0.2		84	79	AVERAGE
	1806.6667		0.1907	1.0000	83.6250	79.9583	81.7917

EMISSION TEST SUMMARY

PLANT : Comm Engineering, Lafayette, LA
DATE : 5-Feb-13
PLACE : EFS 48-20 Enclosed Combustor Exhaust
RUN# : 3

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	53.3
NOZZLE DIAMETER (INCH.) :	0.5	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.021	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-0.07
GAS METER VOL.(Cu.Ft.) :	36.098	PERCENT CO2 :	5.45
BAROMETRIC PRESSURE :	30	PERCENT O2 :	13.3
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	44	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	10.55924	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.001364	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 10.5592

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	36.2887
VOLUME OF WATER VAPOR (STD. CU.FT.):	2.5088
FRACTIONAL MOISTURE CONTENT (%):	0.0647
DRY BASE:	81.2500
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.4040
MOLECULAR WT. OF STACK GAS (WET BASE):	28.6666
STACK PRESSURE (inch Hg):	29.9949
STACK GAS VELOCITY (ft/sec.):	23.1315
ACTUAL STACK GAS FLOW RATE (ACFM):	14655.0844
STANDARD STACK GAS FLOW RATE (SCFH):	191574.62

POINTS	STACK T. deg F	DELTA P	SQUAR D.F	DELTA H	METER T. INLET	METER T. OUTLET	
1	1838	0.05	0.223607	1.00	78	78	
2	1806	0.04	0.2		79	78	
3	1800	0.05	0.223607		80	78	
4	1831	0.06	0.244949		80	77	
5	1802	0.06	0.244949		81	78	
6	1832	0.06	0.244949		81	77	
7	1812	0.05	0.223607		81	78	
8	1795	0.05	0.223607		81	77	
9	1817	0.05	0.223607		82	78	
10	1811	0.03	0.173205		81	77	
11	1797	0.03	0.173205		82	78	
12	1789	0.02	0.141421		81	77	
13	1819	0.03	0.173205		79	77	
14	1832	0.03	0.173205		81	77	
15	1821	0.02	0.141421		81	77	
16	1833	0.03	0.173205		81	77	
17	1808	0.05	0.223607		80	76	
18	1832	0.05	0.223607		81	77	
19	1816	0.04	0.2		80	77	
20	1821	0.05	0.223607		80	77	
21	1810	0.04	0.2		80	76	
22	1801	0.04	0.2		80	77	
23	1791	0.02	0.141421		80	76	METER T.
24	1784	0.02	0.141421		80	77	AVERAGE
	1812.4167		0.1981	1.0000	80.4167	77.1667	78.7917

EMISSION TEST SUMMARY

PLANT : Comm Engineering, Lafayette, LA
DATE : 6-Feb-13
PLACE : EFS 48-20 Enclosed Combustor Exhaust
RUN# : 4

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	45.5
NOZZLE DIAMETER (INCH.) :	0.5	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.021	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-0.06
GAS METER VOL.(Cu.Ft.) :	36.048	PERCENT CO2 :	5.45
BAROMETRIC PRESSURE :	30.1	PERCENT O2 :	13.3
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	44	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	10.55924	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.001364	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 10.5592

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	36.6852
VOLUME OF WATER VAPOR (STD. CU.FT.):	2.1417
FRACTIONAL MOISTURE CONTENT (%):	0.0552
DRY BASE:	81.2500
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.4040
MOLECULAR WT. OF STACK GAS (WET BASE):	28.7750
STACK PRESSURE (inch Hg):	30.0956
STACK GAS VELOCITY (ft/sec.):	21.4766
ACTUAL STACK GAS FLOW RATE (ACFM):	13606.6187
STANDARD STACK GAS FLOW RATE (SCFH):	183849.693

POINTS	STACK T. deg F	DELTA P	SQUAR D.F	DELTA H	METER T. INLET	METER T. OUTLET	
1	1667	0.02	0.141421	1.00	69	70	
2	1669	0.02	0.141421		70	70	
3	1771	0.02	0.141421		71	70	
4	1811	0.05	0.223607		71	69	
5	1849	0.06	0.244949		72	69	
6	1746	0.04	0.2		73	69	
7	1759	0.04	0.2		74	70	
8	1725	0.05	0.223607		75	71	
9	1900	0.04	0.2		75	71	
10	1875	0.04	0.2		76	72	
11	1849	0.02	0.141421		76	72	
12	1799	0.02	0.141421		76	72	
13	1843	0.03	0.173205		75	73	
14	1874	0.05	0.223607		76	73	
15	1940	0.06	0.244949		77	73	
16	1857	0.05	0.223607		78	74	
17	1659	0.06	0.244949		77	74	
18	1732	0.04	0.2		78	74	
19	1659	0.04	0.2		79	75	
20	1838	0.05	0.223607		78	75	
21	1798	0.04	0.2		79	75	
22	1630	0.02	0.141421		79	75	
23	1611	0.01	0.1		80	76	METER T.
24	1578	0.01	0.1		80	76	AVERAGE
	1768.2917		0.1864	1.0000	75.5833	72.4167	74.0000

EMISSION TEST SUMMARY

PLANT : Comm Engineering, Lafayette, LA
DATE : 7-Feb-13
PLACE : EFS 48-20 Enclosed Combustor Exhaust
RUN# : 5

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	51.9
NOZZLE DIAMETER (INCH.) :	0.5	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.021	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-0.07
GAS METER VOL.(Cu.Ft.) :	36.079	PERCENT CO2 :	5.54
BAROMETRIC PRESSURE :	30	PERCENT O2 :	13.1
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	44	STACK LENGTH(inches) :	
STACK AREA (Sq.Ft.) :	10.55924	STACK WIDTH(inches) :	
NOZZLE AREA (feet):	0.001364	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 10.5592

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	36.5494
VOLUME OF WATER VAPOR (STD. CU.FT.):	2.4429
FRACTIONAL MOISTURE CONTENT (%):	0.0627
DRY BASE:	81.3600
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.4104
MOLECULAR WT. OF STACK GAS (WET BASE):	28.6955
STACK PRESSURE (inch Hg):	29.9949
STACK GAS VELOCITY (ft/sec.):	20.7532
ACTUAL STACK GAS FLOW RATE (ACFM):	13148.2543
STANDARD STACK GAS FLOW RATE (SCFH):	174033.915

POINTS	STACK T. deg F	DELTA P	SQUAR D.F	DELTA H	METER T. INLET	METER T. OUTLET	
1	1779	0.03	0.173205	1.00	66	65	
2	1817	0.04	0.2		65	64	
3	1760	0.05	0.223607		67	65	
4	1838	0.06	0.244949		69	66	
5	1715	0.05	0.223607		70	67	
6	1739	0.03	0.173205		72	68	
7	1723	0.03	0.173205		72	68	
8	1768	0.03	0.173205		74	70	
9	1843	0.04	0.2		75	70	
10	1800	0.03	0.173205		76	71	
11	1742	0.02	0.141421		76	72	
12	1724	0.01	0.1		77	72	
13	1762	0.02	0.141421		77	75	
14	1862	0.03	0.173205		78	75	
15	1842	0.05	0.223607		79	75	
16	1820	0.04	0.2		81	76	
17	1783	0.04	0.2		81	76	
18	1775	0.02	0.141421		82	77	
19	1840	0.03	0.173205		82	78	
20	1863	0.05	0.223607		83	79	
21	1811	0.04	0.2		83	79	
22	1800	0.03	0.173205		83	79	
23	1781	0.02	0.141421		84	80	METER T.
24	1751	0.01	0.1		85	80	AVERAGE
	1789.0833		0.1788	1.0000	76.5417	72.7917	74.6667

EMISSION TEST SUMMARY

PLANT : Comm Engineering, Lafayette, LA
DATE : 7-Feb-13
PLACE : EFS 48-20 Enclosed Combustor Exhaust
RUN# : 6

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	48.5
NOZZLE DIAMETER (INCH.) :	0.5	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.021	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-0.06
GAS METER VOL.(Cu.Ft.) :	36.024	PERCENT CO2 :	5.97
BAROMETRIC PRESSURE :	29.9	PERCENT O2 :	12.9
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	44	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	10.55924	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.001364	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 10.5592

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	35.3865
VOLUME OF WATER VAPOR (STD. CU.FT.):	2.2829
FRACTIONAL MOISTURE CONTENT (%):	0.0606
DRY BASE:	81.1300
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.4712
MOLECULAR WT. OF STACK GAS (WET BASE):	28.7760
STACK PRESSURE (inch Hg):	29.8956
STACK GAS VELOCITY (ft/sec.):	21.8505
ACTUAL STACK GAS FLOW RATE (ACFM):	13843.4527
STANDARD STACK GAS FLOW RATE (SCFH):	181675.379

POINTS	STACK T. deg F	DELTA P	SQUAR D.F	DELTA H	METER T. INLET	METER T. OUTLET	
1	1788	0.01	0.1	1.00	81	81	
2	1849	0.03	0.173205		84	82	
3	1861	0.04	0.2		85	82	
4	1815	0.04	0.2		86	83	
5	1759	0.03	0.173205		87	83	
6	1735	0.03	0.173205		88	84	
7	1770	0.04	0.2		90	85	
8	1800	0.05	0.223607		91	86	
9	1822	0.06	0.244949		92	87	
10	1830	0.05	0.223607		92	87	
11	1812	0.03	0.173205		92	88	
12	1755	0.02	0.141421		93	88	
13	1832	0.04	0.2		91	89	
14	1854	0.04	0.2		92	89	
15	1876	0.04	0.2		93	90	
16	1846	0.05	0.223607		94	91	
17	1821	0.04	0.2		95	91	
18	1745	0.03	0.173205		95	92	
19	1724	0.03	0.173205		95	92	
20	1860	0.05	0.223607		94	92	
21	1833	0.05	0.223607		94	92	
22	1788	0.03	0.173205		94	92	
23	1810	0.02	0.141421		95	92	METER T.
24	1755	0.02	0.141421		96	92	AVERAGE
	1805.8333		0.1875	1.0000	91.2083	87.9167	89.5625

EMISSION TEST SUMMARY

PLANT : Comm Engineering, Lafayette, LA
DATE : 7-Feb-13
PLACE : EFS 48-20 Enclosed Combustor Exhaust
RUN# : 7

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	45.3
NOZZLE DIAMETER (INCH.) :	0.5	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.021	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-0.05
GAS METER VOL.(Cu.Ft.) :	36.041	PERCENT CO2 :	6.53
BAROMETRIC PRESSURE :	29.9	PERCENT O2 :	12.5
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	44	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	10.55924	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.001364	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 10.5592

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	35.2056
VOLUME OF WATER VAPOR (STD. CU.FT.):	2.1323
FRACTIONAL MOISTURE CONTENT (%):	0.0571
DRY BASE:	80.9700
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.5448
MOLECULAR WT. OF STACK GAS (WET BASE):	28.8855
STACK PRESSURE (inch Hg):	29.8963
STACK GAS VELOCITY (ft/sec.):	19.2436
ACTUAL STACK GAS FLOW RATE (ACFM):	12191.858
STANDARD STACK GAS FLOW RATE (SCFH):	163574.904

POINTS	STACK T. deg F	DELTA P	SQUAR D.F	DELTA H	METER T. INLET	METER T. OUTLET	
1	1466	0.01	0.1	1.00	92	92	
2	1857	0.02	0.141421		92	92	
3	1842	0.04	0.2		92	92	
4	1822	0.04	0.2		92	91	
5	1834	0.03	0.173205		93	91	
6	1612	0.02	0.141421		93	91	
7	1454	0.02	0.141421		93	91	
8	1684	0.03	0.173205		93	91	
9	1774	0.04	0.2		93	91	
10	1884	0.04	0.2		93	90	
11	1840	0.02	0.141421		93	91	
12	1725	0.02	0.141421		93	91	
13	1847	0.02	0.141421		92	90	
14	1831	0.03	0.173205		94	91	
15	1932	0.04	0.2		94	91	
16	1870	0.04	0.2		94	91	
17	1848	0.02	0.141421		95	91	
18	1693	0.02	0.141421		95	92	
19	1771	0.03	0.173205		95	92	
20	1699	0.04	0.2		96	92	
21	1791	0.04	0.2		96	93	
22	1810	0.04	0.2		96	93	
23	1768	0.02	0.141421		96	93	METER T.
24	1697	0.02	0.141421		96	93	AVERAGE
	1764.625		0.1670	1.0000	93.7917	91.5000	92.6458

EMISSION TEST SUMMARY

PLANT : Comm Engineering, Lafayette, LA
DATE : 7-Feb-13
PLACE : EFS 48-20 Enclosed Combustor Exhaust
RUN# : 8

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	46.2
NOZZLE DIAMETER (INCH.) :	0.5	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.021	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-0.07
GAS METER VOL.(Cu.Ft.) :	36.142	PERCENT CO2 :	6.27
BAROMETRIC PRESSURE :	29.9	PERCENT O2 :	12.8
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	44	STACK LENGTH(inches) :	
STACK AREA (Sq.Ft.) :	10.55924	STACK WIDTH(inches) :	
NOZZLE AREA (feet):	0.001364	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 10.5592

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	35.3336
VOLUME OF WATER VAPOR (STD. CU.FT.):	2.1746
FRACTIONAL MOISTURE CONTENT (%):	0.0580
DRY BASE:	80.9300
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.5152
MOLECULAR WT. OF STACK GAS (WET BASE):	28.8476
STACK PRESSURE (inch Hg):	29.8949
STACK GAS VELOCITY (ft/sec.):	20.5692
ACTUAL STACK GAS FLOW RATE (ACFM):	13031.6922
STANDARD STACK GAS FLOW RATE (SCFH):	173441.608

POINTS	STACK T. deg F	DELTA P	SQUAR D.F	DELTA H	METER T. INLET	METER T. OUTLET	
1	1790	0.02	0.141421	1.00	92	92	
2	1815	0.03	0.173205		92	92	
3	1793	0.03	0.173205		93	92	
4	1776	0.04	0.2		93	91	
5	1764	0.03	0.173205		93	91	
6	1753	0.02	0.141421		94	91	
7	1689	0.02	0.141421		94	91	
8	1854	0.05	0.223607		94	91	
9	1765	0.05	0.223607		94	91	
10	1780	0.05	0.223607		94	92	
11	1671	0.04	0.2		94	91	
12	1712	0.02	0.141421		94	91	
13	1798	0.03	0.173205		92	92	
14	1804	0.04	0.2		93	91	
15	1851	0.04	0.2		93	91	
16	1863	0.03	0.173205		94	91	
17	1831	0.03	0.173205		93	90	
18	1785	0.02	0.141421		95	91	
19	1708	0.02	0.141421		93	90	
20	1859	0.04	0.2		94	90	
21	1768	0.05	0.223607		94	90	
22	1719	0.04	0.2		94	91	
23	1841	0.02	0.141421		93	90	METER T.
24	1741	0.02	0.141421		93	90	AVERAGE
	1780.4167		0.1777	1.0000	93.4167	90.9583	92.1875

EMISSION TEST SUMMARY

PLANT : Comm Engineering, Lafayette, LA
DATE : 8-Feb-13
PLACE : EFS 48-20 Enclosed Combustor Exhaust
RUN# : 9

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	52.6
NOZZLE DIAMETER (INCH.) :	0.5	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.021	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-0.06
GAS METER VOL.(Cu.Ft.) :	36.067	PERCENT CO2 :	6.35
BAROMETRIC PRESSURE :	30.1	PERCENT O2 :	12
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	44	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	10.55924	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.001364	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 10.5592

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	36.6003
VOLUME OF WATER VAPOR (STD. CU.FT.):	2.4759
FRACTIONAL MOISTURE CONTENT (%):	0.0634
DRY BASE:	81.6500
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.4960
MOLECULAR WT. OF STACK GAS (WET BASE):	28.7676
STACK PRESSURE (inch Hg):	30.0956
STACK GAS VELOCITY (ft/sec.):	17.2962
ACTUAL STACK GAS FLOW RATE (ACFM):	10958.0843
STANDARD STACK GAS FLOW RATE (SCFH):	144136.882

POINTS	STACK T. deg F	DELTA P	SQUAR D.F	DELTA H	METER T. INLET	METER T. OUTLET	
1	1775	0.01	0.1	1.00	63	63	
2	1886	0.02	0.141421		64	64	
3	1924	0.03	0.173205		66	64	
4	1890	0.03	0.173205		68	65	
5	1887	0.02	0.141421		70	66	
6	1777	0.01	0.1		71	67	
7	1691	0.02	0.141421		73	68	
8	1844	0.02	0.141421		74	69	
9	1803	0.04	0.2		75	70	
10	1745	0.03	0.173205		76	71	
11	1809	0.03	0.173205		77	72	
12	1732	0.01	0.1		78	73	
13	1750	0.01	0.1		78	75	
14	1932	0.02	0.141421		80	76	
15	1891	0.03	0.173205		81	76	
16	1845	0.02	0.141421		82	78	
17	1875	0.01	0.1		83	78	
18	1783	0.02	0.141421		84	79	
19	1781	0.02	0.141421		85	80	
20	1826	0.04	0.2		85	81	
21	1743	0.04	0.2		86	82	
22	1831	0.04	0.2		87	82	
23	1711	0.03	0.173205		87	83	METER T.
24	1688	0.01	0.1		87	83	AVERAGE
	1809.125		0.1488	1.0000	77.5000	73.5417	75.5208

EMISSION TEST SUMMARY

PLANT : Comm Engineering, Lafayette, LA
DATE : 7-Feb-13
PLACE : EFS 48-20 Enclosed Combustor Exhaust
RUN# : 10

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	38.3
NOZZLE DIAMETER (INCH.) :	0.5	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.021	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-0.07
GAS METER VOL.(Cu.Ft.) :	36.041	PERCENT CO2 :	5.82
BAROMETRIC PRESSURE :	30.1	PERCENT O2 :	12.9
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	44	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	10.55924	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.001364	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 10.5592

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	35.6407
VOLUME OF WATER VAPOR (STD. CU.FT.):	1.8028
FRACTIONAL MOISTURE CONTENT (%):	0.0481
DRY BASE:	81.2800
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.4472
MOLECULAR WT. OF STACK GAS (WET BASE):	28.8961
STACK PRESSURE (inch Hg):	30.0949
STACK GAS VELOCITY (ft/sec.):	13.3694
ACTUAL STACK GAS FLOW RATE (ACFM):	8470.25982
STANDARD STACK GAS FLOW RATE (SCFH):	120669.749

POINTS	STACK T. deg F	DELTA P	SQUAR D.F	DELTA H	METER T. INLET	METER T. OUTLET	
1	1690	0.01	0.1	1.00	86	86	
2	1534	0.01	0.1		86	86	
3	1751	0.02	0.141421		87	86	
4	1892	0.02	0.141421		88	87	
5	1798	0.02	0.141421		89	87	
6	1753	0.01	0.1		90	87	
7	1410	0.01	0.1		90	87	
8	1366	0.01	0.1		91	87	
9	1759	0.02	0.141421		91	88	
10	1718	0.02	0.141421		91	88	
11	1733	0.02	0.141421		92	88	
12	1689	0.01	0.1		92	88	
13	1639	0.01	0.1		91	89	
14	1811	0.02	0.141421		92	89	
15	1795	0.02	0.141421		92	89	
16	1784	0.01	0.1		92	89	
17	1754	0.01	0.1		92	89	
18	1594	0.01	0.1		92	89	
19	1667	0.01	0.1		92	89	
20	1738	0.02	0.141421		92	89	
21	1689	0.02	0.141421		93	90	
22	1725	0.02	0.141421		93	90	
23	1578	0.01	0.1		93	90	METER T.
24	1190	0.01	0.1		94	90	AVERAGE
	1669.0417		0.1190	1.0000	90.8750	88.2083	89.5417

EMISSION TEST SUMMARY

PLANT : Comm Engineering, Lafayette, LA
DATE : 7-Feb-13
PLACE : EFS 48-20 Enclosed Combustor Exhaust
RUN# : 11

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	36.016
NOZZLE DIAMETER (INCH.) :	0.5	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.021	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-0.06
GAS METER VOL.(Cu.Ft.) :	36.016	PERCENT CO2 :	5.95
BAROMETRIC PRESSURE :	30.1	PERCENT O2 :	12.2
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	44	STACK LENGTH(inches) :	
STACK AREA (Sq.Ft.) :	10.55924	STACK WIDTH(inches) :	
NOZZLE AREA (feet):	0.001364	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 10.5592

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	35.5958
VOLUME OF WATER VAPOR (STD. CU.FT.):	1.6953
FRACTIONAL MOISTURE CONTENT (%):	0.0455
DRY BASE:	81.8500
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.4400
MOLECULAR WT. OF STACK GAS (WET BASE):	28.9199
STACK PRESSURE (inch Hg):	30.0956
STACK GAS VELOCITY (ft/sec.):	14.0725
ACTUAL STACK GAS FLOW RATE (ACFM):	8915.68356
STANDARD STACK GAS FLOW RATE (SCFH):	127767.001

POINTS	STACK T. deg F	DELTA P	SQUAR D.F	DELTA H	METER T. INLET	METER T. OUTLET	
1	1466	0.01	0.1	1.00	92	93	
2	1604	0.01	0.1		94	93	
3	1737	0.02	0.141421		96	94	
4	1757	0.02	0.141421		97	95	
5	1787	0.02	0.141421		97	95	
6	1691	0.01	0.1		96	94	
7	1459	0.01	0.1		96	94	
8	1525	0.01	0.1		95	93	
9	1723	0.02	0.141421		97	92	
10	1698	0.02	0.141421		93	92	
11	1724	0.02	0.141421		92	91	
12	1596	0.01	0.1		91	90	
13	1721	0.02	0.141421		89	88	
14	1746	0.03	0.173205		89	88	
15	1751	0.02	0.141421		88	87	
16	1763	0.02	0.141421		88	86	
17	1711	0.02	0.141421		87	86	
18	1393	0.01	0.1		87	85	
19	1537	0.01	0.1		86	84	
20	1649	0.02	0.141421		85	84	
21	1785	0.02	0.141421		85	83	
22	1799	0.02	0.141421		84	83	
23	1779	0.01	0.1		83	82	METER T.
24	1500	0.01	0.1		93	81	AVERAGE
	1662.5417		0.1255	1.0000	90.8333	88.8750	89.8542

EMISSION TEST SUMMARY

PLANT : Comm Engineering, Lafayette, LA
DATE : 8-Feb-13
PLACE : EFS 48-20 Enclosed Combustor Exhaust
RUN# : 12

TEST DURATION (MINUTES) :	60	LIQUID COLLECTED (mls) :	41
NOZZLE DIAMETER (INCH.) :	0.5	PARTICULATE WEIGHT (Front half mg) :	0
METER COEFFICIENT (Y) :	1.021	PARTICULATE WEIGHT (Back half mg) :	0
PITOT COEFFICIENT (Cp) :	0.84	STATIC PRESSURE (in. H2O) :	-0.06
GAS METER VOL.(Cu.Ft.) :	35.974	PERCENT CO2 :	6.28
BAROMETRIC PRESSURE :	30.1	PERCENT O2 :	12.4
		PERCENT CO :	0

FOR CIRCULAR STACK		FOR RECTANGULAR STACK	
STACK DIAMETER (inch):	44	STACK LENGTH(inchs) :	
STACK AREA (Sq.Ft.) :	10.55924	STACK WIDTH(inchs) :	
NOZZLE AREA (feet):	0.001364	STACK AREA (Sq.Ft.) :	0

ENTER THE STACK AREA SHOWN ABOVE: 10.5592

FLOWS

SAMPLED VOLUME (STD. CU.FT.):	36.0542
VOLUME OF WATER VAPOR (STD. CU.FT.):	1.9299
FRACTIONAL MOISTURE CONTENT (%):	0.0508
DRY BASE:	81.3200
MOLECULAR WT. OF STACK GAS (DRY BASE):	29.5008
MOLECULAR WT. OF STACK GAS (WET BASE):	28.9165
STACK PRESSURE (inch Hg):	30.0956
STACK GAS VELOCITY (ft/sec.):	14.3384
ACTUAL STACK GAS FLOW RATE (ACFM):	9084.16646
STANDARD STACK GAS FLOW RATE (SCFH):	126550.654

POINTS	STACK T. deg F	DELTA P	SQUAR D.F	DELTA H	METER T. INLET	METER T. OUTLET	
1	1701	0.01	0.1	1.00	80	80	
2	1719	0.03	0.173205		80	80	
3	1833	0.02	0.141421		80	79	
4	1921	0.02	0.141421		81	79	
5	1917	0.03	0.173205		81	79	
6	1751	0.02	0.141421		82	79	
7	1314	0.01	0.1		82	79	
8	1610	0.01	0.1		83	80	
9	1753	0.02	0.141421		85	80	
10	1767	0.02	0.141421		84	80	
11	1750	0.01	0.1		84	81	
12	1611	0.01	0.1		85	81	
13	1595	0.01	0.1		84	82	
14	1712	0.02	0.141421		86	83	
15	1838	0.02	0.141421		86	83	
16	1826	0.01	0.1		86	83	
17	1705	0.01	0.1		85	83	
18	1447	0.02	0.141421		84	82	
19	1483	0.03	0.173205		84	82	
20	1776	0.02	0.141421		85	82	
21	1783	0.02	0.141421		85	82	
22	1761	0.01	0.1		85	81	
23	1855	0.01	0.1		84	81	METER T.
24	1641	0.01	0.1		84	81	AVERAGE
	1711.2083		0.1264	1.0000	83.5417	80.9167	82.2292

Summary of Emission Flow Rates (Method 2A)					
Plant:	Comm Engineering, Lafayette, LA				
Location:	Combustor Inlet				
Date:	2/5/13				
Run #:	1				
	Volume, Standard Conditions				
	Vms = 17.64 * Ym* (Vmf-Vmi)* ((Pb + Ps)/Tm)				
	Vms =	3139.111			
		Meter Coefficient, YM =			1
		Meter Flow Rate, acfh =			2772.7
		Barometric Pressure, in. Hg, Pb =			30
		Static Pressure, in. Hg, Ps =			2.91
		Meter Temperature Rankin, TM =			512.77

Summary of Emission Flow Rates (Method 2A)					
Plant:	Comm Engineering, Lafayette, LA				
Location:	Combustor Inlet				
Date:	2/5/13				
Run #:	2				
	Volume, Standard Conditions				
	Vms = 17.64 * Ym* (Vmf-Vmi)* ((Pb + Ps)/Tm)				
	Vms =	3269.871			
		Meter Coefficient, YM =			1
		Meter Flow Rate, acfh =			2860.28
		Barometric Pressure, in. Hg, Pb =			30
		Static Pressure, in. Hg, Ps =			3.25
		Meter Temperature Rankin, TM =			513.06

Summary of Emission Flow Rates (Method 2A)			
Plant:	Comm Engineering, Lafayette, LA		
Location:	Combustor Inlet		
Date:	2/5/13		
Run #:	3		
	Volume, Standard Conditions		
	Vms = 17.64 * Ym* (Vmf-Vmi)* ((Pb + Ps)/Tm)		
	Vms =	3122.077	
		Meter Coefficient, YM =	1
		Meter Flow Rate, acfh =	2732.95
		Barometric Pressure, in. Hg, Pb =	30
		Static Pressure, in. Hg, Ps =	3.19
		Meter Temperature Rankin, TM =	512.5

Summary of Emission Flow Rates (Method 2A)					
Plant:	Comm Engineering, Lafayette, LA				
Location:	Combustor Inlet				
Date:	2/6/13				
Run #:	4				
	Volume, Standard Conditions				
	Vms = 17.64 * Ym* (Vmf-Vmi)* ((Pb + Ps)/Tm)				
	Vms =	2848.589			
		Meter Coefficient, YM =			1
		Meter Flow Rate, acfh =			2573.74
		Barometric Pressure, in. Hg, Pb =			30.1
		Static Pressure, in. Hg, Ps =			2.15
		Meter Temperature Rankin, TM =			514

Summary of Emission Flow Rates (Method 2A)					
Plant:	Comm Engineering, Lafayette, LA				
Location:	Combustor Inlet				
Date:	2/7/13				
Run #:	5				
	Volume, Standard Conditions				
	Vms = 17.64 * Ym* (Vmf-Vmi)* ((Pb + Ps)/Tm)				
	Vms =	2927.243			
		Meter Coefficient, YM =			1
		Meter Flow Rate, acfh =			2626.16
		Barometric Pressure, in. Hg, Pb =			30
		Static Pressure, in. Hg, Ps =			2.23
		Meter Temperature Rankin, TM =			510.06

Summary of Emission Flow Rates (Method 2A)					
Plant:	Comm Engineering, Lafayette, LA				
Location:	Combustor Inlet				
Date:	2/7/13				
Run #:	6				
	Volume, Standard Conditions				
	Vms = 17.64 * Ym* (Vmf-Vmi)* ((Pb + Ps)/Tm)				
	Vms =	2938.691			
		Meter Coefficient, YM =			1
		Meter Flow Rate, acfh =			2666.15
		Barometric Pressure, in. Hg, Pb =			29.9
		Static Pressure, in. Hg, Ps =			2.4
		Meter Temperature Rankin, TM =			516.93

Summary of Emission Flow Rates (Method 2A)			
Plant:	Comm Engineering, Lafayette, LA		
Location:	Combustor Inlet		
Date:	2/7/13		
Run #:	7		
	Volume, Standard Conditions		
	Vms = 17.64 * Ym* (Vmf-Vmi)* ((Pb + Ps)/Tm)		
	Vms =	1817.544	
		Meter Coefficient, YM =	1
		Meter Flow Rate, acfh =	1734.02
		Barometric Pressure, in. Hg, Pb =	29.9
		Static Pressure, in. Hg, Ps =	0.75
		Meter Temperature Rankin, TM =	515.82

Summary of Emission Flow Rates (Method 2A)			
Plant:	Comm Engineering, Lafayette, LA		
Location:	Combustor Inlet		
Date:	2/7/13		
Run #:	8		
	Volume, Standard Conditions		
	Vms = 17.64 * Ym* (Vmf-Vmi)* ((Pb + Ps)/Tm)		
	Vms =	1815.254	
		Meter Coefficient, YM =	1
		Meter Flow Rate, acfh =	1673.77
		Barometric Pressure, in. Hg, Pb =	29.9
		Static Pressure, in. Hg, Ps =	1.71
		Meter Temperature Rankin, TM =	514.14

Summary of Emission Flow Rates (Method 2A)					
Plant:	Comm Engineering, Lafayette, LA				
Location:	Combustor Inlet				
Date:	2/8/13				
Run #:	9				
	Volume, Standard Conditions				
	Vms = 17.64 * Ym* (Vmf-Vmi)* ((Pb + Ps)/Tm)				
	Vms =	1813.649			
		Meter Coefficient, YM =			1
		Meter Flow Rate, acfh =			1641.14
		Barometric Pressure, in. Hg, Pb =			30.1
		Static Pressure, in. Hg, Ps =			2.12
		Meter Temperature Rankin, TM =			514.3

Summary of Emission Flow Rates (Method 2A)					
Plant:	Comm Engineering, Lafayette, LA				
Location:	Combustor Inlet				
Date:	2[illegible]/13				
Run #:	10				
	Volume, Standard Conditions				
	Vms = 17.64 * Ym* (Vmf-Vmi)* ((Pb + Ps)/Tm)				
	Vms =	716.3165			
		Meter Coefficient, YM =			1
		Meter Flow Rate, acfh =			673.01
		Barometric Pressure, in. Hg, Pb =			30.1
		Static Pressure, in. Hg, Ps =			1.79
		Meter Temperature Rankin, TM =			528.53

Summary of Emission Flow Rates (Method 2A)					
Plant:	Comm Engineering, Lafayette, LA				
Location:	Combustor Inlet				
Date:	2/8/13				
Run #:	11				
	Volume, Standard Conditions				
	Vms = 17.64 * Ym* (Vmf-Vmi)* ((Pb + Ps)/Tm)				
	Vms =	755.7658			
		Meter Coefficient, YM =			1
		Meter Flow Rate, acfh =			685.71
		Barometric Pressure, in. Hg, Pb =			30.1
		Static Pressure, in. Hg, Ps =			2.83
		Meter Temperature Rankin, TM =			527.04

Summary of Emission Flow Rates (Method 2A)					
Plant:	Comm Engineering, Lafayette, LA				
Location:	Combustor Inlet				
Date:	2/8/13				
Run #:	12				
	Volume, Standard Conditions				
	Vms = 17.64 * Ym* (Vmf-Vmi)* ((Pb + Ps)/Tm)				
	Vms =	749.292			
		Meter Coefficient, YM =			1
		Meter Flow Rate, acfh =			673.18
		Barometric Pressure, in. Hg, Pb =			30.1
		Static Pressure, in. Hg, Ps =			2.96
		Meter Temperature Rankin, TM =			523.94

Appendix B
Carbon Monoxide CEM Summaries

Summary of CO Analyzer Calibrations and Bias

Plant: Comm Engineering, Lafayette, LA
Source: Combustor Exhaust
Date: 2/5/2013

Analyzer Calibratrion Data

	Cylinder Value	Analyzer Response	Absolute Difference	% Span
Zero Gas	0	0.04	0.04	0.159363
Mid Range	8.87	9	0.13	0.517928
High Range	25.1	24.85	-0.25	-0.99602

System Calibration Bias and Drift Data

		Analyzer Calibration Response	Initial Values System Calibration Response	Initial Values System Calibration Bias	Final Values System Calibration Response	Final Values System Calibration Bias	Drift	Average Calibration Values
Run #1	Zero Gas	0.04	0.03	-0.03984	0	-0.15936	-0.11952	0.015
	Upscale	9	8.63	-1.4741	8.16	-3.34661	-1.87251	8.395
	Average CO Concentration:			13.29				
	Corrected CO Concentration:			14.05122				
Run #2	Zero Gas	0.04	0	-0.15936	0	-0.15936	0	0
	Upscale	9	8.16	-3.34661	8.26	-2.94821	0.398406	8.21
	Average CO Concentration:			18.74				
	Corrected CO Concentration:			20.2465				
Run #2	Zero Gas	0.04	0	-0.15936	0	-0.15936	0	0
	Upscale	9	8.26	-2.94821	8.22	-3.10757	-0.15936	8.24
	Average CO Concentration:			13.46				
	Corrected CO Concentration:			14.4891				

Line	Date	Time	Carbon dioxide C Unit	Carbon monoxide C Unit	
0	2/5/2013	7:53:55	0.07 vol-%	0.72 ppm	
0	2/5/2013	7:54:17	0.07 vol-%	0.71 ppm	
0	2/5/2013	7:54:39	0.05 vol-%	0.24 ppm	
0	2/5/2013	7:55:00	0.03 vol-%	0.21 ppm	
0	2/5/2013	7:55:22	0.01 vol-%	0.42 ppm	
0	2/5/2013	7:55:44	0 vol-%	0 ppm	
0	2/5/2013	7:56:05	0 vol-%	0 ppm	
0	2/5/2013	7:57:52	0 vol-%	0.36 ppm	
0	2/5/2013	7:58:14	0 vol-%	0.36 ppm	
0	2/5/2013	7:58:35	0 vol-%	0.4 ppm	
0	2/5/2013	8:00:15	0.01 vol-%	0.14 ppm	
0	2/5/2013	8:00:36	0.02 vol-%	0.02 ppm	
0	2/5/2013	8:00:58	0.01 vol-%	0.28 ppm	
0	2/5/2013	8:01:20	0.02 vol-%	0.15 ppm	
0	2/5/2013	8:01:41	0.01 vol-%	**0** ppm	
0	2/5/2013	8:02:03	0.02 vol-%	**0.03** ppm	Zero N2
0	2/5/2013	8:02:25	0.03 vol-%	**0.08** ppm	
0	2/5/2013	8:02:47	0.02 vol-%	0.24 ppm	
0	2/5/2013	8:03:08	0.03 vol-%	0 ppm	
0	2/5/2013	8:03:30	0.03 vol-%	0.2 ppm	
0	2/5/2013	8:03:51	0.07 vol-%	1.72 ppm	
0	2/5/2013	8:04:13	0.06 vol-%	1.9 ppm	
0	2/5/2013	8:04:35	0.06 vol-%	1.62 ppm	
0	2/5/2013	8:04:57	0.07 vol-%	1.46 ppm	
0	2/5/2013	8:05:18	0.05 vol-%	4.17 ppm	
0	2/5/2013	8:05:40	0.07 vol-%	8.1 ppm	
0	2/5/2013	8:06:02	0.03 vol-%	8.74 ppm	
0	2/5/2013	8:06:23	0.03 vol-%	**9.07** ppm	
0	2/5/2013	8:06:45	0.01 vol-%	**9.02** ppm	8.87 ppm CO
0	2/5/2013	8:07:07	0.01 vol-%	**8.91** ppm	
0	2/5/2013	8:07:28	0.01 vol-%	8.82 ppm	
0	2/5/2013	8:07:50	0.02 vol-%	6.6 ppm	
0	2/5/2013	8:08:12	0.06 vol-%	3.7 ppm	
0	2/5/2013	8:08:33	0.07 vol-%	15.06 ppm	
0	2/5/2013	8:08:55	0.02 vol-%	**24.86** ppm	
0	2/5/2013	8:09:17	0.01 vol-%	**25.01** ppm	25.1 ppm CO
0	2/5/2013	8:09:39	0.02 vol-%	**24.69** ppm	
0	2/5/2013	8:10:00	0.02 vol-%	14.54 ppm	
0	2/5/2013	8:10:22	0.04 vol-%	3.72 ppm	
0	2/5/2013	8:10:44	0.08 vol-%	2.98 ppm	
0	2/5/2013	8:11:05	0.08 vol-%	2.23 ppm	
0	2/5/2013	8:11:27	0.08 vol-%	1.92 ppm	
0	2/5/2013	8:11:48	0.08 vol-%	1.95 ppm	
0	2/5/2013	8:12:10	0.05 vol-%	1.63 ppm	
0	2/5/2013	8:12:32	0.05 vol-%	1.27 ppm	
0	2/5/2013	8:12:54	0.04 vol-%	1.21 ppm	
0	2/5/2013	8:13:15	0.04 vol-%	1.14 ppm	
0	2/5/2013	8:13:37	0.06 vol-%	1.12 ppm	
0	2/5/2013	8:13:59	0.05 vol-%	1.09 ppm	
0	2/5/2013	8:14:20	0.05 vol-%	0.98 ppm	
0	2/5/2013	8:14:42	0.06 vol-%	1.16 ppm	
0	2/5/2013	8:16:28	0.01 vol-%	**0** ppm	
0	2/5/2013	8:16:50	0.01 vol-%	**0.08** ppm	Zero N2 Bias
0	2/5/2013	8:17:12	0.01 vol-%	**0** ppm	
0	2/5/2013	8:17:33	0 vol-%	0.14 ppm	
0	2/5/2013	8:17:55	0.01 vol-%	0.19 ppm	
0	2/5/2013	8:18:17	0.02 vol-%	0.69 ppm	
0	2/5/2013	8:18:38	0.01 vol-%	4.77 ppm	
0	2/5/2013	8:19:00	0.01 vol-%	7.47 ppm	
0	2/5/2013	8:19:22	0 vol-%	8.35 ppm	
0	2/5/2013	8:19:43	0 vol-%	**8.53** ppm	8.87 ppm CO Bias
0	2/5/2013	8:20:05	0 vol-%	**8.62** ppm	
0	2/5/2013	8:20:27	0 vol-%	**8.74** ppm	
0	2/5/2013	8:20:48	0 vol-%	8.47 ppm	
0	2/5/2013	8:21:10	0 vol-%	4.48 ppm	

0	2/5/2013	8:21:32	0 vol-%	1.85 ppm
0	2/5/2013	8:21:53	0.01 vol-%	0.69 ppm
0	2/5/2013	8:22:15	0.01 vol-%	0.35 ppm
0	2/5/2013	8:22:37	0.02 vol-%	0.08 ppm
0	2/5/2013	8:22:59	0.02 vol-%	0.18 ppm
0	2/5/2013	8:23:20	0.02 vol-%	0.21 ppm
0	2/5/2013	8:23:42	0.03 vol-%	0.34 ppm
0	2/5/2013	8:24:04	0.03 vol-%	0.75 ppm
0	2/5/2013	8:24:25	0.03 vol-%	0 ppm
0	2/5/2013	8:24:47	0.02 vol-%	0.22 ppm
0	2/5/2013	8:25:09	0.02 vol-%	0.16 ppm
0	2/5/2013	8:25:30	0.01 vol-%	0.36 ppm
0	2/5/2013	8:25:52	0 vol-%	0.55 ppm
0	2/5/2013	8:26:14	0 vol-%	0.21 ppm
0	2/5/2013	8:26:35	0 vol-%	0.36 ppm
0	2/5/2013	8:26:57	0 vol-%	0.16 ppm
0	2/5/2013	8:27:19	0 vol-%	0.57 ppm
0	2/5/2013	8:27:40	0 vol-%	0.77 ppm
0	2/5/2013	8:28:02	0 vol-%	0.69 ppm
0	2/5/2013	8:28:24	0.01 vol-%	0.53 ppm
0	2/5/2013	8:28:45	0.01 vol-%	1.08 ppm
0	2/5/2013	8:29:07	0.02 vol-%	1.02 ppm
0	2/5/2013	8:29:29	0.02 vol-%	0.84 ppm
0	2/5/2013	8:29:50	0.03 vol-%	0.74 ppm
0	2/5/2013	8:30:12	0.04 vol-%	0.94 ppm
0	2/5/2013	8:30:33	0.03 vol-%	1.23 ppm
0	2/5/2013	8:30:55	0.03 vol-%	0.84 ppm
0	2/5/2013	8:31:17	0.04 vol-%	1.15 ppm
0	2/5/2013	8:31:38	0.04 vol-%	1.18 ppm
0	2/5/2013	8:32:00	0.03 vol-%	1.21 ppm
0	2/5/2013	8:32:22	0.03 vol-%	0.7 ppm
0	2/5/2013	8:32:43	0.02 vol-%	1.02 ppm
0	2/5/2013	8:33:05	0.02 vol-%	1.13 ppm
0	2/5/2013	8:33:27	0.01 vol-%	1.14 ppm
0	2/5/2013	8:33:48	0.01 vol-%	0.48 ppm
0	2/5/2013	8:34:10	0 vol-%	0.7 ppm
0	2/5/2013	8:34:32	0 vol-%	0.52 ppm
0	2/5/2013	8:34:54	0 vol-%	0.56 ppm
0	2/5/2013	8:35:15	0 vol-%	0.51 ppm
0	2/5/2013	8:35:37	0.01 vol-%	0.07 ppm
0	2/5/2013	12:04:43	0.01 vol-%	0 ppm
0	2/5/2013	12:05:04	0.03 vol-%	0.01 ppm
0	2/5/2013	12:05:26	0.03 vol-%	0 ppm
0	2/5/2013	13:47:22	3.35 vol-%	92.54 ppm
0	2/5/2013	13:47:44	3.87 vol-%	136.95 ppm
0	2/5/2013	13:48:05	4.19 vol-%	99.59 ppm
0	2/5/2013	13:48:27	4.49 vol-%	42.18 ppm
0	2/5/2013	13:48:49	4.28 vol-%	23.52 ppm
0	2/5/2013	13:49:11	3.99 vol-%	16.92 ppm
0	2/5/2013	13:49:33	3.99 vol-%	14.99 ppm
0	2/5/2013	13:49:54	4.14 vol-%	14.64 ppm
0	2/5/2013	13:50:16	4.18 vol-%	13.29 ppm
0	2/5/2013	13:50:38	4.17 vol-%	13.62 ppm
0	2/5/2013	13:51:00	4.5 vol-%	13.58 ppm
0	2/5/2013	13:51:21	4.01 vol-%	15.69 ppm
0	2/5/2013	13:51:43	4.1 vol-%	14.94 ppm
0	2/5/2013	13:52:05	4.05 vol-%	14.86 ppm
0	2/5/2013	13:52:26	4.02 vol-%	15.5 ppm
0	2/5/2013	13:52:48	3.82 vol-%	15.83 ppm
0	2/5/2013	13:53:10	3.85 vol-%	15.28 ppm
0	2/5/2013	13:53:32	4.08 vol-%	17.14 ppm
0	2/5/2013	13:53:53	4.2 vol-%	16.84 ppm
0	2/5/2013	13:54:15	3.89 vol-%	16.76 ppm
0	2/5/2013	13:54:37	3.88 vol-%	14.88 ppm
0	2/5/2013	13:54:58	4.37 vol-%	13.09 ppm
0	2/5/2013	13:55:20	4.08 vol-%	15.62 ppm

0	2/5/2013	13:55:42	3.84 vol-%	16.42 ppm
0	2/5/2013	13:56:03	3.72 vol-%	16.27 ppm
0	2/5/2013	13:56:25	3.87 vol-%	15.57 ppm
0	2/5/2013	13:56:47	4.01 vol-%	19.01 ppm
0	2/5/2013	13:57:08	4.69 vol-%	16.77 ppm
0	2/5/2013	13:57:30	5.19 vol-%	12.87 ppm
0	2/5/2013	13:57:52	5.45 vol-%	11.78 ppm
0	2/5/2013	13:58:14	5.49 vol-%	11.79 ppm
0	2/5/2013	13:58:35	5.83 vol-%	11.74 ppm
0	2/5/2013	13:58:57	5.87 vol-%	12.09 ppm
0	2/5/2013	13:59:18	5.73 vol-%	11.37 ppm
0	2/5/2013	13:59:40	5.55 vol-%	11.43 ppm
	Start Run #1			
0	2/5/2013	14:00:02	5.46 vol-%	11.21 ppm
0	2/5/2013	14:00:24	5.35 vol-%	10.93 ppm
0	2/5/2013	14:00:45	5.51 vol-%	11.98 ppm
0	2/5/2013	14:01:07	5.25 vol-%	11.27 ppm
0	2/5/2013	14:01:29	5.43 vol-%	11.95 ppm
0	2/5/2013	14:01:50	5.69 vol-%	11.16 ppm
0	2/5/2013	14:02:12	5.42 vol-%	11.65 ppm
0	2/5/2013	14:02:34	5.38 vol-%	11.43 ppm
0	2/5/2013	14:02:55	5.39 vol-%	11.88 ppm
0	2/5/2013	14:03:17	5.59 vol-%	12.5 ppm
0	2/5/2013	14:03:39	5.53 vol-%	12.73 ppm
0	2/5/2013	14:04:01	5.74 vol-%	26.13 ppm
0	2/5/2013	14:04:22	5.31 vol-%	16.23 ppm
0	2/5/2013	14:04:44	5.28 vol-%	13 ppm
0	2/5/2013	14:05:06	5.26 vol-%	13.24 ppm
0	2/5/2013	14:05:27	5.22 vol-%	12.86 ppm
0	2/5/2013	14:05:49	5.43 vol-%	13.09 ppm
0	2/5/2013	14:06:11	5.32 vol-%	12.5 ppm
0	2/5/2013	14:06:33	5.35 vol-%	13.33 ppm
0	2/5/2013	14:06:54	5.28 vol-%	13.8 ppm
0	2/5/2013	14:07:16	5.34 vol-%	13.9 ppm
0	2/5/2013	14:07:38	5.45 vol-%	13.68 ppm
0	2/5/2013	14:08:00	5.39 vol-%	14.32 ppm
0	2/5/2013	14:08:21	5.46 vol-%	13.42 ppm
0	2/5/2013	14:08:43	5.28 vol-%	12.75 ppm
0	2/5/2013	14:09:05	5.05 vol-%	13.07 ppm
0	2/5/2013	14:09:27	5.13 vol-%	12.32 ppm
0	2/5/2013	14:09:48	5.19 vol-%	13.16 ppm
0	2/5/2013	14:10:10	5.23 vol-%	13.38 ppm
0	2/5/2013	14:10:32	5.51 vol-%	13.5 ppm
0	2/5/2013	14:10:54	5.37 vol-%	12.89 ppm
0	2/5/2013	14:11:15	5.38 vol-%	13.15 ppm
0	2/5/2013	14:11:37	5.37 vol-%	19.25 ppm
0	2/5/2013	14:11:59	5.64 vol-%	26.19 ppm
0	2/5/2013	14:12:21	5.81 vol-%	17.74 ppm
0	2/5/2013	14:12:42	5.42 vol-%	18.61 ppm
0	2/5/2013	14:13:04	5.26 vol-%	18.75 ppm
0	2/5/2013	14:13:26	5.39 vol-%	14.81 ppm
0	2/5/2013	14:13:47	5.57 vol-%	15.03 ppm
0	2/5/2013	14:14:09	5.53 vol-%	14.58 ppm
0	2/5/2013	14:14:31	5.52 vol-%	14.4 ppm
0	2/5/2013	14:14:52	5.44 vol-%	14.18 ppm
0	2/5/2013	14:15:14	5.63 vol-%	19.56 ppm
0	2/5/2013	14:15:36	5.62 vol-%	16.03 ppm
0	2/5/2013	14:15:58	5.68 vol-%	15.48 ppm
0	2/5/2013	14:16:19	5.77 vol-%	14.44 ppm
0	2/5/2013	14:16:41	5.64 vol-%	13.89 ppm
0	2/5/2013	14:17:03	5.67 vol-%	15.28 ppm
0	2/5/2013	14:17:25	5.61 vol-%	14.22 ppm
0	2/5/2013	14:17:46	5.69 vol-%	14.3 ppm
0	2/5/2013	14:18:08	5.56 vol-%	13.18 ppm
0	2/5/2013	14:18:30	5.6 vol-%	14.16 ppm
0	2/5/2013	14:18:51	5.8 vol-%	14.19 ppm

0	2/5/2013	14:19:13	5.45 vol-%	13.98 ppm
0	2/5/2013	14:19:35	5.66 vol-%	13.58 ppm
0	2/5/2013	14:19:57	5.42 vol-%	14.06 ppm
0	2/5/2013	14:20:18	5.4 vol-%	14.32 ppm
0	2/5/2013	14:20:40	5.26 vol-%	13.37 ppm
0	2/5/2013	14:21:02	5.28 vol-%	13.41 ppm
0	2/5/2013	14:21:24	5.31 vol-%	13.4 ppm
0	2/5/2013	14:21:45	5.62 vol-%	13.93 ppm
0	2/5/2013	14:22:07	5.41 vol-%	13.92 ppm
0	2/5/2013	14:22:29	5.5 vol-%	13.25 ppm
0	2/5/2013	14:22:50	5.41 vol-%	13.78 ppm
0	2/5/2013	14:23:12	5.34 vol-%	13.49 ppm
0	2/5/2013	14:23:34	5.31 vol-%	13.61 ppm
0	2/5/2013	14:23:55	5.37 vol-%	12.83 ppm
0	2/5/2013	14:24:17	5.18 vol-%	12.97 ppm
0	2/5/2013	14:24:39	5.21 vol-%	12.9 ppm
0	2/5/2013	14:25:00	5.43 vol-%	13.52 ppm
0	2/5/2013	14:25:22	5.48 vol-%	13.31 ppm
0	2/5/2013	14:25:44	5.57 vol-%	13.74 ppm
0	2/5/2013	14:26:05	5.48 vol-%	13.7 ppm
0	2/5/2013	14:26:27	5.58 vol-%	13.88 ppm
0	2/5/2013	14:26:49	5.33 vol-%	13.89 ppm
0	2/5/2013	14:27:11	5.51 vol-%	14.3 ppm
0	2/5/2013	14:27:32	5.64 vol-%	15.16 ppm
0	2/5/2013	14:27:54	5.33 vol-%	14.19 ppm
0	2/5/2013	14:28:16	5.44 vol-%	14.09 ppm
0	2/5/2013	14:28:37	5.19 vol-%	13.79 ppm
0	2/5/2013	14:28:59	5.24 vol-%	13.43 ppm
0	2/5/2013	14:29:21	5.35 vol-%	13.22 ppm
0	2/5/2013	14:29:42	5.3 vol-%	13.31 ppm
Port Change				
0	2/5/2013	14:30:04	5.46 vol-%	13.67 ppm
0	2/5/2013	14:30:26	5.61 vol-%	14.81 ppm
0	2/5/2013	14:30:47	5.61 vol-%	12.9 ppm
0	2/5/2013	14:31:09	5.4 vol-%	12.81 ppm
0	2/5/2013	14:31:31	5.35 vol-%	12.54 ppm
0	2/5/2013	14:31:52	5.55 vol-%	11.22 ppm
0	2/5/2013	14:32:14	5.74 vol-%	15.04 ppm
0	2/5/2013	14:32:36	5.23 vol-%	13.13 ppm
0	2/5/2013	14:32:57	2.43 vol-%	6.03 ppm
0	2/5/2013	14:33:19	0.74 vol-%	0.89 ppm
0	2/5/2013	14:33:41	0.29 vol-%	0 ppm
0	2/5/2013	14:34:02	0.13 vol-%	0 ppm
0	2/5/2013	14:34:24	2.01 vol-%	2.96 ppm
0	2/5/2013	14:34:46	3.98 vol-%	7 ppm
Resume Sampling				
0	2/5/2013	14:35:07	4.91 vol-%	8.1 ppm
0	2/5/2013	14:35:29	5.2 vol-%	7.21 ppm
0	2/5/2013	14:35:51	5.12 vol-%	6.49 ppm
0	2/5/2013	14:36:13	5.18 vol-%	6.5 ppm
0	2/5/2013	14:36:34	5.35 vol-%	6.51 ppm
0	2/5/2013	14:36:56	5.38 vol-%	6.25 ppm
0	2/5/2013	14:37:18	5.28 vol-%	6.94 ppm
0	2/5/2013	14:37:39	5.2 vol-%	7.58 ppm
0	2/5/2013	14:38:01	5.35 vol-%	20.16 ppm
0	2/5/2013	14:38:23	5.34 vol-%	16.2 ppm
0	2/5/2013	14:38:44	5.19 vol-%	9.86 ppm
0	2/5/2013	14:39:06	5.3 vol-%	11.63 ppm
0	2/5/2013	14:39:27	5.43 vol-%	9.98 ppm
0	2/5/2013	14:39:49	5.43 vol-%	9.79 ppm
0	2/5/2013	14:40:11	5.38 vol-%	9.02 ppm
0	2/5/2013	14:40:33	5.47 vol-%	11.02 ppm
0	2/5/2013	14:40:55	5.34 vol-%	11.71 ppm
0	2/5/2013	14:41:16	5.18 vol-%	11.58 ppm
0	2/5/2013	14:41:38	4.86 vol-%	11.53 ppm
0	2/5/2013	14:42:00	5.21 vol-%	10.63 ppm

0	2/5/2013	14:42:22	5.35 vol-%	9.74 ppm
0	2/5/2013	14:42:43	5.34 vol-%	9.38 ppm
0	2/5/2013	14:43:05	5.09 vol-%	9.3 ppm
0	2/5/2013	14:43:27	5.11 vol-%	8.59 ppm
0	2/5/2013	14:43:49	4.95 vol-%	8.18 ppm
0	2/5/2013	14:44:10	4.84 vol-%	8.77 ppm
0	2/5/2013	14:44:32	4.79 vol-%	8.51 ppm
0	2/5/2013	14:44:54	4.82 vol-%	8.22 ppm
0	2/5/2013	14:45:16	5 vol-%	9.08 ppm
0	2/5/2013	14:45:37	5.22 vol-%	8.61 ppm
0	2/5/2013	14:45:59	5.24 vol-%	8.81 ppm
0	2/5/2013	14:46:20	5.12 vol-%	8.82 ppm
0	2/5/2013	14:46:42	5.27 vol-%	8.9 ppm
0	2/5/2013	14:47:04	5.37 vol-%	9.13 ppm
0	2/5/2013	14:47:25	5.28 vol-%	9.98 ppm
0	2/5/2013	14:47:47	5.33 vol-%	9.96 ppm
0	2/5/2013	14:48:09	5.24 vol-%	9.42 ppm
0	2/5/2013	14:48:31	4.95 vol-%	10.15 ppm
0	2/5/2013	14:48:53	4.98 vol-%	10.45 ppm
0	2/5/2013	14:49:14	5.13 vol-%	9.55 ppm
0	2/5/2013	14:49:36	5.24 vol-%	8.59 ppm
0	2/5/2013	14:49:58	5.16 vol-%	8.62 ppm
0	2/5/2013	14:50:19	5.14 vol-%	8.81 ppm
0	2/5/2013	14:50:41	5.05 vol-%	8.35 ppm
0	2/5/2013	14:51:03	5.06 vol-%	8.34 ppm
0	2/5/2013	14:51:24	5.03 vol-%	8.11 ppm
0	2/5/2013	14:51:46	5.08 vol-%	8.28 ppm
0	2/5/2013	14:52:08	5.02 vol-%	7.36 ppm
0	2/5/2013	14:52:29	5.17 vol-%	8.18 ppm
0	2/5/2013	14:52:51	5.5 vol-%	12.24 ppm
0	2/5/2013	14:53:13	5.62 vol-%	10.67 ppm
0	2/5/2013	14:53:34	5.63 vol-%	12.32 ppm
0	2/5/2013	14:53:56	5.72 vol-%	13.08 ppm
0	2/5/2013	14:54:18	5.58 vol-%	10.8 ppm
0	2/5/2013	14:54:40	5.62 vol-%	10.03 ppm
0	2/5/2013	14:55:01	5.72 vol-%	64.49 ppm
0	2/5/2013	14:55:23	5.84 vol-%	39.04 ppm
0	2/5/2013	14:55:44	5.64 vol-%	19.5 ppm
0	2/5/2013	14:56:06	5.59 vol-%	12.77 ppm
0	2/5/2013	14:56:28	5.7 vol-%	10.87 ppm
0	2/5/2013	14:56:49	5.72 vol-%	13.7 ppm
0	2/5/2013	14:57:11	6.07 vol-%	30.2 ppm
0	2/5/2013	14:57:33	5.96 vol-%	23.6 ppm
0	2/5/2013	14:57:54	5.36 vol-%	18.5 ppm
0	2/5/2013	14:58:16	5.28 vol-%	12.12 ppm
0	2/5/2013	14:58:38	5.13 vol-%	10.48 ppm
0	2/5/2013	14:59:00	5 vol-%	9.86 ppm
0	2/5/2013	14:59:21	5.48 vol-%	13.2 ppm
0	2/5/2013	14:59:43	5.92 vol-%	23.95 ppm
0	2/5/2013	15:00:05	5.51 vol-%	16.31 ppm
0	2/5/2013	15:00:26	5.23 vol-%	13.99 ppm
0	2/5/2013	15:00:48	5.48 vol-%	15.85 ppm
0	2/5/2013	15:01:10	5.73 vol-%	14.08 ppm
0	2/5/2013	15:01:31	5.34 vol-%	13.11 ppm
0	2/5/2013	15:01:53	5.39 vol-%	13.33 ppm
0	2/5/2013	15:02:15	5.5 vol-%	13.27 ppm
0	2/5/2013	15:02:37	5.64 vol-%	14.29 ppm
0	2/5/2013	15:02:58	5.82 vol-%	18.21 ppm
0	2/5/2013	15:03:20	5.54 vol-%	19.72 ppm
0	2/5/2013	15:03:42	5.71 vol-%	14.98 ppm
0	2/5/2013	15:04:04	5.36 vol-%	14.73 ppm
0	2/5/2013	15:04:25	4.85 vol-%	12.65 ppm
0	2/5/2013	15:04:47	5.09 vol-%	12.66 ppm

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0	2/5/2013	15:05:09	5.5 vol-%	59.39 ppm	
0	2/5/2013	15:05:30	5.43 vol-%	35.33 ppm	
0	2/5/2013	15:05:52	3.12 vol-%	17.48 ppm	
0	2/5/2013	15:06:14	0.99 vol-%	4.26 ppm	
0	2/5/2013	15:06:35	0.29 vol-%	0.75 ppm	
0	2/5/2013	15:06:57	0.09 vol-%	0 ppm	
0	2/5/2013	15:07:19	0.03 vol-%	**0** ppm	
0	2/5/2013	15:07:40	0.02 vol-%	**0** ppm	Zero N2
0	2/5/2013	15:08:02	0 vol-%	**0** ppm	
0	2/5/2013	15:08:24	0.02 vol-%	0 ppm	
0	2/5/2013	15:08:45	0.02 vol-%	4.13 ppm	
0	2/5/2013	15:09:07	0.03 vol-%	6.97 ppm	
0	2/5/2013	15:09:29	0.02 vol-%	7.89 ppm	
0	2/5/2013	15:09:50	0.02 vol-%	**8.23** ppm	
0	2/5/2013	15:10:12	0.03 vol-%	**8.09** ppm	8.87 ppm CO
0	2/5/2013	15:10:34	0.03 vol-%	**8.16** ppm	
0	2/5/2013	15:10:55	0.04 vol-%	6.25 ppm	
0	2/5/2013	15:11:17	0.02 vol-%	2.05 ppm	
0	2/5/2013	15:11:39	0.02 vol-%	0.27 ppm	
0	2/5/2013	15:12:00	0 vol-%	0 ppm	
0	2/5/2013	15:12:22	0 vol-%	0 ppm	
0	2/5/2013	15:12:44	0.01 vol-%	0 ppm	
0	2/5/2013	15:13:05	0.02 vol-%	0 ppm	
0	2/5/2013	15:13:27	0.02 vol-%	0 ppm	
0	2/5/2013	15:13:49	0.03 vol-%	0 ppm	
0	2/5/2013	15:14:10	0.02 vol-%	0 ppm	
0	2/5/2013	15:14:32	0.03 vol-%	0 ppm	
0	2/5/2013	15:14:54	0.02 vol-%	0 ppm	
0	2/5/2013	15:15:15	0.04 vol-%	0 ppm	
0	2/5/2013	15:15:37	0.05 vol-%	0 ppm	
0	2/5/2013	15:15:59	0.05 vol-%	0 ppm	
0	2/5/2013	15:16:20	0.05 vol-%	0 ppm	
0	2/5/2013	15:16:42	0.05 vol-%	0 ppm	
0	2/5/2013	15:17:04	0.05 vol-%	0 ppm	
0	2/5/2013	15:17:25	0.89 vol-%	0.41 ppm	
0	2/5/2013	15:17:47	3.35 vol-%	4.33 ppm	
0	2/5/2013	15:18:09	4.59 vol-%	7.22 ppm	
0	2/5/2013	15:18:30	3.99 vol-%	7.84 ppm	
0	2/5/2013	15:18:52	4.37 vol-%	6.48 ppm	
0	2/5/2013	15:19:14	4.67 vol-%	6.49 ppm	
0	2/5/2013	15:19:36	5.04 vol-%	6.62 ppm	
0	2/5/2013	15:19:57	5.01 vol-%	17.14 ppm	
	Start Run #2				
0	2/5/2013	15:20:19	5.21 vol-%	9.85 ppm	
0	2/5/2013	15:20:41	5.11 vol-%	6.91 ppm	
0	2/5/2013	15:21:02	5.06 vol-%	5.96 ppm	
0	2/5/2013	15:21:24	5.11 vol-%	5.94 ppm	
0	2/5/2013	15:21:46	5.18 vol-%	5.81 ppm	
0	2/5/2013	15:22:07	5.28 vol-%	8.56 ppm	
0	2/5/2013	15:22:29	5.6 vol-%	10.89 ppm	
0	2/5/2013	15:22:51	5.77 vol-%	8.4 ppm	
0	2/5/2013	15:23:12	5.51 vol-%	7.48 ppm	
0	2/5/2013	15:23:34	5.69 vol-%	7.38 ppm	
0	2/5/2013	15:23:56	5.69 vol-%	7.63 ppm	
0	2/5/2013	15:24:18	5.53 vol-%	8.07 ppm	
0	2/5/2013	15:24:39	5.45 vol-%	8.36 ppm	
0	2/5/2013	15:25:01	5.36 vol-%	8.4 ppm	
0	2/5/2013	15:25:23	5.74 vol-%	8.4 ppm	
0	2/5/2013	15:25:45	5.44 vol-%	7.95 ppm	
0	2/5/2013	15:26:06	5.33 vol-%	8.06 ppm	
0	2/5/2013	15:26:28	5.21 vol-%	7.66 ppm	
0	2/5/2013	15:26:50	5.13 vol-%	7.88 ppm	
0	2/5/2013	15:27:11	5.29 vol-%	7.85 ppm	
0	2/5/2013	15:27:33	5.13 vol-%	8.08 ppm	
0	2/5/2013	15:27:55	5.09 vol-%	8.21 ppm	
0	2/5/2013	15:28:16	5.1 vol-%	8.54 ppm	

0	2/5/2013	15:28:38	5.12 vol-%	8.77 ppm
0	2/5/2013	15:29:00	5.2 vol-%	9.28 ppm
0	2/5/2013	15:29:21	5.26 vol-%	10.11 ppm
0	2/5/2013	15:29:43	5.24 vol-%	10.31 ppm
0	2/5/2013	15:30:05	5.4 vol-%	10.06 ppm
0	2/5/2013	15:30:26	5.11 vol-%	9.78 ppm
0	2/5/2013	15:30:48	5.4 vol-%	18.38 ppm
0	2/5/2013	15:31:10	5.93 vol-%	18.49 ppm
0	2/5/2013	15:31:31	6.02 vol-%	12.34 ppm
0	2/5/2013	15:31:53	6.01 vol-%	11.51 ppm
0	2/5/2013	15:32:15	5.98 vol-%	10.65 ppm
0	2/5/2013	15:32:36	5.93 vol-%	9.98 ppm
0	2/5/2013	15:32:58	6.25 vol-%	42.41 ppm
0	2/5/2013	15:33:20	6.18 vol-%	35 ppm
0	2/5/2013	15:33:41	6.42 vol-%	21.41 ppm
0	2/5/2013	15:34:03	6.59 vol-%	28.62 ppm
0	2/5/2013	15:34:25	6.58 vol-%	53.76 ppm
0	2/5/2013	15:34:46	6.61 vol-%	47.38 ppm
0	2/5/2013	15:35:08	6.32 vol-%	23.22 ppm
0	2/5/2013	15:35:30	6.16 vol-%	16.34 ppm
0	2/5/2013	15:35:51	5.97 vol-%	14.1 ppm
0	2/5/2013	15:36:13	5.92 vol-%	15.98 ppm
0	2/5/2013	15:36:35	6.1 vol-%	20.25 ppm
0	2/5/2013	15:36:56	6.07 vol-%	15.22 ppm
0	2/5/2013	15:37:18	5.81 vol-%	13.74 ppm
0	2/5/2013	15:37:40	5.97 vol-%	25.19 ppm
0	2/5/2013	15:38:01	6.06 vol-%	18.26 ppm
0	2/5/2013	15:38:23	5.9 vol-%	14.58 ppm
0	2/5/2013	15:38:45	6.01 vol-%	14.32 ppm
0	2/5/2013	15:39:06	6.23 vol-%	15.79 ppm
0	2/5/2013	15:39:28	6.38 vol-%	14.78 ppm
0	2/5/2013	15:39:50	6.02 vol-%	27.47 ppm
0	2/5/2013	15:40:11	6.24 vol-%	34.45 ppm
0	2/5/2013	15:40:33	6.43 vol-%	21.64 ppm
0	2/5/2013	15:40:55	6.27 vol-%	14.72 ppm
0	2/5/2013	15:41:16	6.28 vol-%	12.54 ppm
0	2/5/2013	15:41:38	6.21 vol-%	24.64 ppm
0	2/5/2013	15:42:00	5.56 vol-%	24.2 ppm
0	2/5/2013	15:42:21	5.75 vol-%	16.69 ppm
0	2/5/2013	15:42:43	5.79 vol-%	25.62 ppm
0	2/5/2013	15:43:05	5.67 vol-%	40.03 ppm
0	2/5/2013	15:43:26	5.91 vol-%	80.55 ppm
0	2/5/2013	15:43:48	5.79 vol-%	47.51 ppm
0	2/5/2013	15:44:10	5.67 vol-%	23.94 ppm
0	2/5/2013	15:44:32	5.44 vol-%	17.28 ppm
0	2/5/2013	15:44:53	5.22 vol-%	15.35 ppm
0	2/5/2013	15:45:15	5.24 vol-%	14.65 ppm
0	2/5/2013	15:45:37	5.63 vol-%	84.32 ppm
0	2/5/2013	15:45:59	5.41 vol-%	50.89 ppm
0	2/5/2013	15:46:20	5.12 vol-%	23.77 ppm
0	2/5/2013	15:46:42	5.18 vol-%	16.13 ppm
0	2/5/2013	15:47:04	5.63 vol-%	77.63 ppm
0	2/5/2013	15:47:26	5.86 vol-%	90.36 ppm
0	2/5/2013	15:47:47	5.93 vol-%	37.64 ppm
0	2/5/2013	15:48:09	5.3 vol-%	19.25 ppm
0	2/5/2013	15:48:31	5.39 vol-%	24.73 ppm
0	2/5/2013	15:48:52	5.83 vol-%	49.53 ppm
0	2/5/2013	15:49:14	5.34 vol-%	23.92 ppm
0	2/5/2013	15:49:36	5 vol-%	15.63 ppm
0	2/5/2013	15:49:57	5.27 vol-%	12.78 ppm
	Port Change			
0	2/5/2013	15:50:19	5.13 vol-%	12.4 ppm
0	2/5/2013	15:50:40	5.08 vol-%	12.21 ppm
0	2/5/2013	15:51:02	5.75 vol-%	19.93 ppm
0	2/5/2013	15:51:24	6.19 vol-%	23.97 ppm
0	2/5/2013	15:51:45	4.13 vol-%	12.74 ppm

0	2/5/2013	15:52:07	3.44 vol-%	16.92 ppm
	Resume			
0	2/5/2013	15:52:29	5.32 vol-%	23.16 ppm
0	2/5/2013	15:52:50	5.87 vol-%	17.65 ppm
0	2/5/2013	15:53:12	5.81 vol-%	24.82 ppm
0	2/5/2013	15:53:34	5.91 vol-%	37.51 ppm
0	2/5/2013	15:53:55	6.02 vol-%	28.74 ppm
0	2/5/2013	15:54:17	6.18 vol-%	34.41 ppm
0	2/5/2013	15:54:39	6.31 vol-%	38.28 ppm
0	2/5/2013	15:55:00	6.11 vol-%	21.46 ppm
0	2/5/2013	15:55:22	6.36 vol-%	24.97 ppm
0	2/5/2013	15:55:44	6.5 vol-%	70.32 ppm
0	2/5/2013	15:56:06	6.57 vol-%	46.86 ppm
0	2/5/2013	15:56:27	5.91 vol-%	48.47 ppm
0	2/5/2013	15:56:49	5.84 vol-%	68.41 ppm
0	2/5/2013	15:57:11	5.7 vol-%	29.04 ppm
0	2/5/2013	15:57:33	5.83 vol-%	19.75 ppm
0	2/5/2013	15:57:54	5.86 vol-%	22.64 ppm
0	2/5/2013	15:58:16	5.89 vol-%	23.87 ppm
0	2/5/2013	15:58:38	5.68 vol-%	15.6 ppm
0	2/5/2013	15:59:00	5.62 vol-%	11.35 ppm
0	2/5/2013	15:59:21	5.47 vol-%	9.53 ppm
0	2/5/2013	15:59:43	5.56 vol-%	11.06 ppm
0	2/5/2013	16:00:05	4.98 vol-%	12.2 ppm
0	2/5/2013	16:00:26	5.03 vol-%	12.46 ppm
0	2/5/2013	16:00:48	5.31 vol-%	14.26 ppm
0	2/5/2013	16:01:09	5.09 vol-%	10.03 ppm
0	2/5/2013	16:01:31	5.2 vol-%	9.43 ppm
0	2/5/2013	16:01:53	5.61 vol-%	8.94 ppm
0	2/5/2013	16:02:14	5.77 vol-%	8.26 ppm
0	2/5/2013	16:02:36	5.51 vol-%	14.51 ppm
0	2/5/2013	16:02:58	5.14 vol-%	13.51 ppm
0	2/5/2013	16:03:19	5.18 vol-%	9.41 ppm
0	2/5/2013	16:03:41	5.41 vol-%	8.45 ppm
0	2/5/2013	16:04:03	5.61 vol-%	7.91 ppm
0	2/5/2013	16:04:25	5.57 vol-%	13.8 ppm
0	2/5/2013	16:04:46	5.53 vol-%	28.15 ppm
0	2/5/2013	16:05:08	5.53 vol-%	19.02 ppm
0	2/5/2013	16:05:30	5.81 vol-%	11.24 ppm
0	2/5/2013	16:05:52	5.84 vol-%	10.23 ppm
0	2/5/2013	16:06:13	6.05 vol-%	10.54 ppm
0	2/5/2013	16:06:35	5.54 vol-%	13.8 ppm
0	2/5/2013	16:06:57	5.47 vol-%	15.85 ppm
0	2/5/2013	16:07:19	5.57 vol-%	23.01 ppm
0	2/5/2013	16:07:40	5.4 vol-%	39.43 ppm
0	2/5/2013	16:08:02	5.32 vol-%	23.66 ppm
0	2/5/2013	16:08:24	5.42 vol-%	12.48 ppm
0	2/5/2013	16:08:45	5.17 vol-%	10.65 ppm
0	2/5/2013	16:09:07	5.2 vol-%	8.28 ppm
0	2/5/2013	16:09:29	5.38 vol-%	10.05 ppm
0	2/5/2013	16:09:50	5.64 vol-%	10.51 ppm
0	2/5/2013	16:10:12	5.56 vol-%	8.02 ppm
0	2/5/2013	16:10:34	5.57 vol-%	7.09 ppm
0	2/5/2013	16:10:55	5.35 vol-%	6.55 ppm
0	2/5/2013	16:11:17	5.41 vol-%	6.96 ppm
0	2/5/2013	16:11:39	5.47 vol-%	7.46 ppm
0	2/5/2013	16:12:01	5.36 vol-%	7.58 ppm
0	2/5/2013	16:12:23	5.3 vol-%	7.53 ppm
0	2/5/2013	16:12:44	5.6 vol-%	10.23 ppm
0	2/5/2013	16:13:06	5.36 vol-%	11.49 ppm
0	2/5/2013	16:13:28	5.22 vol-%	9.36 ppm
0	2/5/2013	16:13:49	5.3 vol-%	8.76 ppm
0	2/5/2013	16:14:11	5.49 vol-%	8.84 ppm
0	2/5/2013	16:14:33	5.42 vol-%	8.55 ppm
0	2/5/2013	16:14:54	5.11 vol-%	9 ppm
0	2/5/2013	16:15:16	4.86 vol-%	9.71 ppm

0	2/5/2013	16:15:38	5.13 vol-%	9.88 ppm	
0	2/5/2013	16:15:59	5.21 vol-%	9.56 ppm	
0	2/5/2013	16:16:21	5.01 vol-%	9.73 ppm	
0	2/5/2013	16:16:43	5.05 vol-%	9.95 ppm	
0	2/5/2013	16:17:04	5.04 vol-%	10.96 ppm	
0	2/5/2013	16:17:26	4.88 vol-%	11.29 ppm	
0	2/5/2013	16:17:48	4.77 vol-%	12.38 ppm	
0	2/5/2013	16:18:09	5 vol-%	12.38 ppm	
0	2/5/2013	16:18:31	4.86 vol-%	12.54 ppm	
0	2/5/2013	16:18:53	5.02 vol-%	12.44 ppm	
0	2/5/2013	16:19:14	5.26 vol-%	12.6 ppm	
0	2/5/2013	16:19:36	5.02 vol-%	11.58 ppm	
0	2/5/2013	16:19:57	5.13 vol-%	12.25 ppm	
0	2/5/2013	16:20:19	5.27 vol-%	12.28 ppm	
0	2/5/2013	16:20:41	5.1 vol-%	12.32 ppm	
0	2/5/2013	16:21:03	5.08 vol-%	11.89 ppm	
0	2/5/2013	16:21:24	5 vol-%	11.91 ppm	
0	2/5/2013	16:21:46	4.91 vol-%	11.18 ppm	
	Stop Run #2		5.571151515	18.74157576	
0	2/5/2013	16:22:08	5.25 vol-%	25.53 ppm	
0	2/5/2013	16:22:29	5.06 vol-%	20.34 ppm	
0	2/5/2013	16:22:51	4.89 vol-%	13.83 ppm	
0	2/5/2013	16:23:13	3.93 vol-%	10.81 ppm	
0	2/5/2013	16:23:34	1.44 vol-%	4.48 ppm	
0	2/5/2013	16:23:56	0.51 vol-%	2.45 ppm	
0	2/5/2013	16:24:18	0.15 vol-%	0 ppm	
0	2/5/2013	16:24:39	0.04 vol-%	**0** ppm	
0	2/5/2013	16:25:01	0.03 vol-%	**0** ppm	ero N2
0	2/5/2013	16:25:22	0.02 vol-%	**0** ppm	
0	2/5/2013	16:25:44	0.03 vol-%	4.64 ppm	
0	2/5/2013	16:26:06	0.02 vol-%	6.85 ppm	
0	2/5/2013	16:26:27	0.03 vol-%	7.66 ppm	
0	2/5/2013	16:26:49	0.03 vol-%	7.97 ppm	
0	2/5/2013	16:27:11	0.03 vol-%	**8.22** ppm	8.87 ppm CO
0	2/5/2013	16:27:33	0.02 vol-%	**8.04** ppm	
0	2/5/2013	16:27:54	0.02 vol-%	**8.53** ppm	
0	2/5/2013	16:28:16	0.01 vol-%	6.99 ppm	
0	2/5/2013	16:28:38	0.02 vol-%	2.28 ppm	
0	2/5/2013	16:28:59	0 vol-%	0.47 ppm	
0	2/5/2013	16:29:21	0 vol-%	0 ppm	
0	2/5/2013	16:29:43	0 vol-%	0 ppm	
0	2/5/2013	16:30:04	0 vol-%	0 ppm	
0	2/5/2013	16:30:26	0.01 vol-%	0 ppm	
0	2/5/2013	16:30:47	0.02 vol-%	0 ppm	
0	2/5/2013	16:31:09	0.02 vol-%	0 ppm	
0	2/5/2013	16:31:31	0.03 vol-%	0 ppm	
0	2/5/2013	16:31:53	0.03 vol-%	0 ppm	
0	2/5/2013	16:32:14	0.05 vol-%	0 ppm	
0	2/5/2013	16:32:36	0.05 vol-%	0 ppm	
0	2/5/2013	16:32:58	0.05 vol-%	0 ppm	
0	2/5/2013	16:33:19	1.35 vol-%	4.46 ppm	
0	2/5/2013	16:33:41	4.05 vol-%	21.6 ppm	
0	2/5/2013	16:34:03	5.32 vol-%	19.26 ppm	
0	2/5/2013	16:34:24	5.67 vol-%	18.37 ppm	
0	2/5/2013	16:34:46	5.56 vol-%	15.45 ppm	
	Start Run #3				
0	2/5/2013	16:35:08	5.51 vol-%	13.14 ppm	
0	2/5/2013	16:35:29	5.43 vol-%	16.91 ppm	
0	2/5/2013	16:35:51	5.57 vol-%	12.93 ppm	
0	2/5/2013	16:36:13	5.57 vol-%	10.87 ppm	
0	2/5/2013	16:36:34	5.51 vol-%	11.64 ppm	
0	2/5/2013	16:36:56	5.42 vol-%	11.45 ppm	
0	2/5/2013	16:37:18	5.35 vol-%	11.37 ppm	
0	2/5/2013	16:37:39	5.34 vol-%	10.46 ppm	

0	2/5/2013	16:38:01	5.65 vol-%	14.65 ppm
0	2/5/2013	16:38:23	5.85 vol-%	20.87 ppm
0	2/5/2013	16:38:44	5.67 vol-%	19.71 ppm
0	2/5/2013	16:39:06	5.72 vol-%	17.05 ppm
0	2/5/2013	16:39:28	5.31 vol-%	14.63 ppm
0	2/5/2013	16:39:49	5.6 vol-%	11.95 ppm
0	2/5/2013	16:40:11	5.76 vol-%	10.06 ppm
0	2/5/2013	16:40:33	5.42 vol-%	8.96 ppm
0	2/5/2013	16:40:55	5.3 vol-%	9.73 ppm
0	2/5/2013	16:41:16	5.44 vol-%	10.68 ppm
0	2/5/2013	16:41:38	5.45 vol-%	9.34 ppm
0	2/5/2013	16:42:00	4.84 vol-%	10.7 ppm
0	2/5/2013	16:42:22	4.77 vol-%	11.21 ppm
0	2/5/2013	16:42:43	5.2 vol-%	16.37 ppm
0	2/5/2013	16:43:05	5.15 vol-%	13.45 ppm
0	2/5/2013	16:43:27	5.55 vol-%	10.2 ppm
0	2/5/2013	16:43:48	5.55 vol-%	9.29 ppm
0	2/5/2013	16:44:10	5.29 vol-%	14.79 ppm
0	2/5/2013	16:44:32	5.33 vol-%	15.12 ppm
0	2/5/2013	16:44:53	5.7 vol-%	10.36 ppm
0	2/5/2013	16:45:15	5.74 vol-%	11.73 ppm
0	2/5/2013	16:45:37	5.56 vol-%	10.94 ppm
0	2/5/2013	16:45:58	5.26 vol-%	12.33 ppm
0	2/5/2013	16:46:20	5.29 vol-%	10.67 ppm
0	2/5/2013	16:46:42	5.46 vol-%	9.94 ppm
0	2/5/2013	16:47:03	5.24 vol-%	10.27 ppm
0	2/5/2013	16:47:25	5.14 vol-%	10.83 ppm
0	2/5/2013	16:47:47	4.94 vol-%	10.73 ppm
0	2/5/2013	16:48:08	5.44 vol-%	10.8 ppm
0	2/5/2013	16:48:30	5.59 vol-%	10.99 ppm
0	2/5/2013	16:48:52	5.87 vol-%	49.1 ppm
0	2/5/2013	16:49:13	5.71 vol-%	26.83 ppm
0	2/5/2013	16:49:35	5.8 vol-%	16.86 ppm
0	2/5/2013	16:49:57	5.44 vol-%	29.52 ppm
0	2/5/2013	16:50:18	5.55 vol-%	19.88 ppm
0	2/5/2013	16:50:40	5.66 vol-%	13.33 ppm
0	2/5/2013	16:51:02	5.65 vol-%	9.36 ppm
0	2/5/2013	16:51:23	5.81 vol-%	9.93 ppm
0	2/5/2013	16:51:45	5.68 vol-%	9.49 ppm
0	2/5/2013	16:52:07	5.73 vol-%	9.01 ppm
0	2/5/2013	16:52:28	5.82 vol-%	8.52 ppm
0	2/5/2013	16:52:50	5.97 vol-%	8.78 ppm
0	2/5/2013	16:53:12	6.05 vol-%	9.57 ppm
0	2/5/2013	16:53:33	5.97 vol-%	9.59 ppm
0	2/5/2013	16:53:55	5.81 vol-%	9.88 ppm
0	2/5/2013	16:54:17	5.88 vol-%	10.42 ppm
0	2/5/2013	16:54:38	5.95 vol-%	12.27 ppm
0	2/5/2013	16:55:00	5.95 vol-%	12.55 ppm
0	2/5/2013	16:55:22	5.9 vol-%	12.4 ppm
0	2/5/2013	16:55:43	5.79 vol-%	15.54 ppm
0	2/5/2013	16:56:05	5.81 vol-%	17.51 ppm
0	2/5/2013	16:56:27	5.91 vol-%	20.34 ppm
0	2/5/2013	16:56:48	6.01 vol-%	16.47 ppm
0	2/5/2013	16:57:10	6.09 vol-%	21.85 ppm
0	2/5/2013	16:57:32	5.84 vol-%	16.11 ppm
0	2/5/2013	16:57:54	6 vol-%	13.75 ppm
0	2/5/2013	16:58:16	5.98 vol-%	12.84 ppm
0	2/5/2013	16:58:37	6.05 vol-%	14.69 ppm
0	2/5/2013	16:58:59	6.07 vol-%	15.05 ppm
0	2/5/2013	16:59:21	6.13 vol-%	14.69 ppm
0	2/5/2013	16:59:42	5.96 vol-%	12.71 ppm
0	2/5/2013	17:00:04	5.9 vol-%	12.83 ppm
0	2/5/2013	17:00:26	6.05 vol-%	12.63 ppm
0	2/5/2013	17:00:48	5.92 vol-%	12.59 ppm
0	2/5/2013	17:01:10	5.89 vol-%	13 ppm
0	2/5/2013	17:01:31	5.87 vol-%	13.15 ppm

0	2/5/2013	17:01:53	5.91 vol-%	13.23 ppm
0	2/5/2013	17:02:15	5.9 vol-%	13.38 ppm
0	2/5/2013	17:02:37	5.91 vol-%	13.49 ppm
0	2/5/2013	17:02:58	5.97 vol-%	13.64 ppm
0	2/5/2013	17:03:20	5.9 vol-%	13.79 ppm
0	2/5/2013	17:03:42	5.77 vol-%	13.31 ppm
0	2/5/2013	17:04:04	5.89 vol-%	13.12 ppm
0	2/5/2013	17:04:26	5.8 vol-%	12.86 ppm
0	2/5/2013	17:04:48	5.96 vol-%	12.82 ppm
	Port Change			
0	2/5/2013	17:05:09	5.89 vol-%	16.34 ppm
0	2/5/2013	17:05:31	5.53 vol-%	14.7 ppm
0	2/5/2013	17:05:53	2.78 vol-%	6.48 ppm
0	2/5/2013	17:06:14	0.88 vol-%	1.69 ppm
0	2/5/2013	17:06:36	0.31 vol-%	0 ppm
0	2/5/2013	17:06:58	0.12 vol-%	0 ppm
0	2/5/2013	17:07:19	1.66 vol-%	2.31 ppm
0	2/5/2013	17:07:41	3.8 vol-%	6.89 ppm
	Resume			
0	2/5/2013	17:08:03	4.77 vol-%	7.89 ppm
0	2/5/2013	17:08:24	4.98 vol-%	7.97 ppm
0	2/5/2013	17:08:46	5.16 vol-%	8.42 ppm
0	2/5/2013	17:09:08	5.28 vol-%	8.3 ppm
0	2/5/2013	17:09:29	5.34 vol-%	9.45 ppm
0	2/5/2013	17:09:51	5.47 vol-%	9.14 ppm
0	2/5/2013	17:10:13	5.48 vol-%	9.9 ppm
0	2/5/2013	17:10:34	5.39 vol-%	9.49 ppm
0	2/5/2013	17:10:56	5.21 vol-%	9.66 ppm
0	2/5/2013	17:11:18	5.02 vol-%	9.64 ppm
0	2/5/2013	17:11:40	4.91 vol-%	9.35 ppm
0	2/5/2013	17:12:01	5.05 vol-%	8.64 ppm
0	2/5/2013	17:12:23	4.99 vol-%	8.92 ppm
0	2/5/2013	17:12:45	4.91 vol-%	9.63 ppm
0	2/5/2013	17:13:07	5.21 vol-%	9.04 ppm
0	2/5/2013	17:13:28	5.23 vol-%	8.44 ppm
0	2/5/2013	17:13:50	5.07 vol-%	8.46 ppm
0	2/5/2013	17:14:12	5.23 vol-%	8.83 ppm
0	2/5/2013	17:14:33	5.52 vol-%	8.62 ppm
0	2/5/2013	17:14:55	5.35 vol-%	9.47 ppm
0	2/5/2013	17:15:17	5.21 vol-%	9.66 ppm
0	2/5/2013	17:15:38	5.23 vol-%	10.05 ppm
0	2/5/2013	17:16:00	5.21 vol-%	10.14 ppm
0	2/5/2013	17:16:21	5.09 vol-%	10.29 ppm
0	2/5/2013	17:16:43	5.07 vol-%	10.26 ppm
0	2/5/2013	17:17:05	5.27 vol-%	10.2 ppm
0	2/5/2013	17:17:27	5.23 vol-%	10.92 ppm
0	2/5/2013	17:17:48	5.09 vol-%	11.7 ppm
0	2/5/2013	17:18:10	5.01 vol-%	12.06 ppm
0	2/5/2013	17:18:32	5.29 vol-%	12.24 ppm
0	2/5/2013	17:18:53	5.14 vol-%	11.41 ppm
0	2/5/2013	17:19:15	5.3 vol-%	10.1 ppm
0	2/5/2013	17:19:37	5.25 vol-%	9.27 ppm
0	2/5/2013	17:19:58	5.21 vol-%	9.32 ppm
0	2/5/2013	17:20:20	5.25 vol-%	10.51 ppm
0	2/5/2013	17:20:42	5.41 vol-%	9.66 ppm
0	2/5/2013	17:21:03	5.39 vol-%	10.06 ppm
0	2/5/2013	17:21:25	5.17 vol-%	10.36 ppm
0	2/5/2013	17:21:47	5.34 vol-%	10.42 ppm
0	2/5/2013	17:22:08	5.26 vol-%	9.78 ppm
0	2/5/2013	17:22:30	5.13 vol-%	9.33 ppm
0	2/5/2013	17:22:52	5.12 vol-%	9.65 ppm
0	2/5/2013	17:23:14	5.52 vol-%	11.51 ppm
0	2/5/2013	17:23:35	5.65 vol-%	11.22 ppm
0	2/5/2013	17:23:57	5.68 vol-%	10.68 ppm
0	2/5/2013	17:24:19	5.63 vol-%	14.83 ppm
0	2/5/2013	17:24:40	5.65 vol-%	14.2 ppm

0	2/5/2013	17:25:02	5.69 vol-%	12.02 ppm	
0	2/5/2013	17:25:24	5.95 vol-%	11.26 ppm	
0	2/5/2013	17:25:45	5.87 vol-%	10.9 ppm	
0	2/5/2013	17:26:07	5.57 vol-%	16.07 ppm	
0	2/5/2013	17:26:29	5.61 vol-%	20.8 ppm	
0	2/5/2013	17:26:50	5.71 vol-%	29.46 ppm	
0	2/5/2013	17:27:12	5.62 vol-%	17.19 ppm	
0	2/5/2013	17:27:34	5.83 vol-%	13.64 ppm	
0	2/5/2013	17:27:55	5.67 vol-%	11.74 ppm	
0	2/5/2013	17:28:17	5.51 vol-%	12.07 ppm	
0	2/5/2013	17:28:39	5.66 vol-%	12.23 ppm	
0	2/5/2013	17:29:00	5.47 vol-%	11.54 ppm	
0	2/5/2013	17:29:22	5.18 vol-%	11.87 ppm	
0	2/5/2013	17:29:44	5.3 vol-%	14.17 ppm	
0	2/5/2013	17:30:05	5.77 vol-%	29.7 ppm	
0	2/5/2013	17:30:27	5.72 vol-%	49.46 ppm	
0	2/5/2013	17:30:49	5.48 vol-%	24.05 ppm	
0	2/5/2013	17:31:10	5.46 vol-%	17.58 ppm	
0	2/5/2013	17:31:32	5.71 vol-%	17.72 ppm	
0	2/5/2013	17:31:54	5.25 vol-%	37.62 ppm	
0	2/5/2013	17:32:16	5.2 vol-%	29.9 ppm	
0	2/5/2013	17:32:38	5.7 vol-%	20.25 ppm	
0	2/5/2013	17:32:59	5.81 vol-%	17.48 ppm	
0	2/5/2013	17:33:21	5.52 vol-%	16.62 ppm	
0	2/5/2013	17:33:43	5.32 vol-%	15.95 ppm	
0	2/5/2013	17:34:05	5.08 vol-%	14.6 ppm	
0	2/5/2013	17:34:26	5.42 vol-%	14.27 ppm	
0	2/5/2013	17:34:48	5.35 vol-%	13.67 ppm	
0	2/5/2013	17:35:09	5.53 vol-%	14.1 ppm	
0	2/5/2013	17:35:31	6.12 vol-%	15.18 ppm	
0	2/5/2013	17:35:53	6.1 vol-%	15.08 ppm	
0	2/5/2013	17:36:14	5.79 vol-%	14.06 ppm	
0	2/5/2013	17:36:36	5.42 vol-%	13.62 ppm	
0	2/5/2013	17:36:58	5.29 vol-%	13.06 ppm	
	Stop Run #3		5.527073171	13.46231707	
0	2/5/2013	17:37:20	5.48 vol-%	16.6 ppm	
0	2/5/2013	17:37:41	5.56 vol-%	17.22 ppm	
0	2/5/2013	17:38:03	5.71 vol-%	21.85 ppm	
0	2/5/2013	17:38:25	5.93 vol-%	17.39 ppm	
0	2/5/2013	17:38:47	4.69 vol-%	12.7 ppm	
0	2/5/2013	17:39:08	1.63 vol-%	4.01 ppm	
0	2/5/2013	17:39:30	0.55 vol-%	1.97 ppm	
0	2/5/2013	17:39:52	0.16 vol-%	0.05 ppm	
0	2/5/2013	17:40:13	0.04 vol-%	**0** ppm	
0	2/5/2013	17:40:35	0.01 vol-%	**0** ppm	Zero N2
0	2/5/2013	17:40:57	0 vol-%	**0** ppm	
0	2/5/2013	17:41:18	0.02 vol-%	0.13 ppm	
0	2/5/2013	17:41:40	0 vol-%	4.51 ppm	
0	2/5/2013	17:42:02	0 vol-%	7.03 ppm	
0	2/5/2013	17:42:23	0 vol-%	8.05 ppm	
0	2/5/2013	17:42:45	0 vol-%	**8.26** ppm	
0	2/5/2013	17:43:07	0.01 vol-%	**8.25** ppm	8.87 ppm CO
0	2/5/2013	17:43:28	0.02 vol-%	**8.15** ppm	
0	2/5/2013	17:43:50	0.03 vol-%	5.85 ppm	
0	2/5/2013	17:44:12	0.02 vol-%	2.06 ppm	
0	2/5/2013	17:44:33	0.02 vol-%	0.53 ppm	

Summary of CO Analyzer Calibrations and Bias

Plant: Comm Engineering, Lafayette, LA
Source: Combustor Exhaust
Date: 2/6/2013

Analyzer Calibratrion Data

	Cylinder Value	Analyzer Response	Absolute Difference	% Span
Zero Gas	0	0	0	0
Mid Range	8.87	8.83	-0.04	-0.15936
High Range	25.1	25.02	-0.08	-0.31873

System Calibration Bias and Drift Data

		Analyzer Calibration Response	Initial Values System Calibration Response	Initial Values System Calibration Bias	Final Values System Calibration Response	Final Values System Calibration Bias	Drift	Average Calibration Values
Run #4	Zero Gas	0	0.02	0.079681	0.04	0.159363	0.079681	0.03
	Upscale	25.02	24.27	-2.98805	24.25	-3.06773	-0.07968	24.26

Average CO Concentration: 17.48
Corrected CO Concentration: 18.07656

Line		Date	Time	Carbon dioxide C	Unit	Carbon monoxide C	Unit		
	0	2/6/2013	7:17:22	0.04	vol-%	0	ppm		
	0	2/6/2013	7:17:44	0.03	vol-%	0	ppm		
	0	2/6/2013	7:18:05	0.04	vol-%	0	ppm		
	0	2/6/2013	7:18:27	0.03	vol-%	0.03	ppm		
	0	2/6/2013	7:18:49	0.03	vol-%	0.09	ppm		
	0	2/6/2013	7:19:11	0.03	vol-%	0.08	ppm		
	0	2/6/2013	7:19:32	0.02	vol-%	0	ppm		
	0	2/6/2013	7:19:54	0.02	vol-%	**0**	ppm		
	0	2/6/2013	7:20:16	0.02	vol-%	**0**	ppm	Zero N2	
	0	2/6/2013	7:20:37	0.01	vol-%	**0**	ppm		
	0	2/6/2013	7:20:59	0	vol-%	0	ppm		
	0	2/6/2013	7:21:21	0.21	vol-%	0.39	ppm		
	0	2/6/2013	7:21:43	0.42	vol-%	0	ppm		
	0	2/6/2013	7:22:04	0.51	vol-%	0	ppm		
	0	2/6/2013	7:22:26	0.55	vol-%	2.03	ppm		
	0	2/6/2013	7:22:48	0.57	vol-%	0	ppm		
	0	2/6/2013	7:23:10	0.58	vol-%	2.01	ppm		
	0	2/6/2013	7:24:46	0.01	vol-%	0.05	ppm		
	0	2/6/2013	7:25:08	0.01	vol-%	0.19	ppm		
	0	2/6/2013	7:26:43	0	vol-%	0.05	ppm		
	0	2/6/2013	7:27:05	0	vol-%	0.15	ppm		
	0	2/6/2013	7:28:40	0	vol-%	0.19	ppm		
	0	2/6/2013	7:29:01	0.01	vol-%	0.08	ppm		
	0	2/6/2013	7:29:23	0	vol-%	0.13	ppm		
	0	2/6/2013	7:29:45	0.02	vol-%	0.14	ppm		
	0	2/6/2013	7:30:06	0.04	vol-%	0.33	ppm		
	0	2/6/2013	7:30:28	0.1	vol-%	6.75	ppm		
	0	2/6/2013	7:30:50	0.06	vol-%	19.84	ppm		
	0	2/6/2013	7:31:12	0.05	vol-%	23.37	ppm		
	0	2/6/2013	7:31:33	0.03	vol-%	24.44	ppm		
	0	2/6/2013	7:31:55	0.02	vol-%	24.6	ppm		
	0	2/6/2013	7:32:17	0.04	vol-%	24.81	ppm		
	0	2/6/2013	7:32:38	0.02	vol-%	24.67	ppm		
	0	2/6/2013	7:33:00	0.03	vol-%	**24.93**	ppm		
	0	2/6/2013	7:33:22	0.02	vol-%	**25.03**	ppm	25.1 ppm CO	
	0	2/6/2013	7:33:43	0.02	vol-%	**25.09**	ppm		
	0	2/6/2013	7:34:05	0.05	vol-%	14.15	ppm		
	0	2/6/2013	7:34:27	0.1	vol-%	6.03	ppm		
	0	2/6/2013	7:34:48	0.07	vol-%	8.02	ppm		
	0	2/6/2013	7:35:10	0.05	vol-%	9.21	ppm		
	0	2/6/2013	7:35:32	0.02	vol-%	9.07	ppm		
	0	2/6/2013	7:35:53	0.02	vol-%	**8.86**	ppm		
	0	2/6/2013	7:36:15	0.01	vol-%	**8.89**	ppm	8.87 ppm CO	
	0	2/6/2013	7:36:37	0.01	vol-%	**8.74**	ppm		
	0	2/6/2013	7:36:59	0.05	vol-%	4.97	ppm		
	0	2/6/2013	7:37:20	0.13	vol-%	2.99	ppm		
	0	2/6/2013	7:37:42	0.11	vol-%	2	ppm		
	0	2/6/2013	7:38:04	0.09	vol-%	1.43	ppm		
	0	2/6/2013	7:38:26	0.09	vol-%	2.56	ppm		
	0	2/6/2013	7:38:47	0.08	vol-%	1.92	ppm		
	0	2/6/2013	7:39:09	0.07	vol-%	1.52	ppm		
	0	2/6/2013	7:39:31	0.07	vol-%	1.31	ppm		
	0	2/6/2013	7:39:53	0.06	vol-%	1.18	ppm		
	0	2/6/2013	7:40:14	0.05	vol-%	1.09	ppm		
	0	2/6/2013	7:40:36	0.06	vol-%	1.29	ppm		
	0	2/6/2013	7:42:08	0	vol-%	**0**	ppm		
	0	2/6/2013	7:42:30	0	vol-%	**0**	ppm	Zero N2 Bias	
	0	2/6/2013	7:42:52	0	vol-%	**0.05**	ppm		
	0	2/6/2013	7:43:14	0.02	vol-%	0.64	ppm		
	0	2/6/2013	7:43:35	0	vol-%	12.55	ppm		
	0	2/6/2013	7:43:57	0	vol-%	21.21	ppm		
	0	2/6/2013	7:44:19	0	vol-%	23.59	ppm		
	0	2/6/2013	7:44:40	0	vol-%	**24.3**	ppm	25.1 ppm CO Bias	
	0	2/6/2013	7:45:02	0	vol-%	**24.56**	ppm		
	0	2/6/2013	7:45:24	0.06	vol-%	**24.42**	ppm		

0	2/6/2013	7:45:45	0.01 vol-%	24.05 ppm
0	2/6/2013	7:46:07	0.04 vol-%	24.21 ppm
0	2/6/2013	7:46:29	0.02 vol-%	19.77 ppm
0	2/6/2013	7:46:50	0.05 vol-%	8.04 ppm
0	2/6/2013	7:47:12	0.04 vol-%	2.55 ppm
0	2/6/2013	7:47:34	0.04 vol-%	0.7 ppm
0	2/6/2013	7:47:55	0.04 vol-%	0.2 ppm
0	2/6/2013	7:48:17	0.05 vol-%	0.33 ppm
0	2/6/2013	7:48:39	0.06 vol-%	0.31 ppm
0	2/6/2013	7:49:01	0.04 vol-%	0.17 ppm
0	2/6/2013	7:49:22	0.03 vol-%	0.1 ppm
0	2/6/2013	7:49:44	0.03 vol-%	0.12 ppm
0	2/6/2013	7:50:05	0.04 vol-%	0.03 ppm
0	2/6/2013	7:50:27	0.06 vol-%	0.11 ppm
0	2/6/2013	7:50:49	0.06 vol-%	0 ppm
0	2/6/2013	7:51:11	0.07 vol-%	0.09 ppm
0	2/6/2013	7:51:32	0.06 vol-%	0 ppm
0	2/6/2013	7:51:54	0.07 vol-%	0.14 ppm
0	2/6/2013	7:52:16	0.1 vol-%	0.27 ppm
0	2/6/2013	7:52:38	0.11 vol-%	0.75 ppm
0	2/6/2013	14:43:59	0.66 vol-%	2.93 ppm
0	2/6/2013	14:44:21	3.17 vol-%	14.1 ppm
0	2/6/2013	14:44:42	4.34 vol-%	16.49 ppm
0	2/6/2013	14:45:04	4.12 vol-%	18.81 ppm
0	2/6/2013	14:45:26	3.94 vol-%	17.62 ppm
0	2/6/2013	14:45:47	3.93 vol-%	22.21 ppm
0	2/6/2013	14:46:09	4.03 vol-%	37.33 ppm
0	2/6/2013	14:46:30	4.36 vol-%	26.36 ppm
0	2/6/2013	14:46:52	4.39 vol-%	30.48 ppm
0	2/6/2013	14:47:14	4.34 vol-%	25.48 ppm
0	2/6/2013	14:47:36	4.42 vol-%	19.2 ppm
0	2/6/2013	14:47:57	4.41 vol-%	19.45 ppm
0	2/6/2013	14:48:19	4.31 vol-%	26.58 ppm
0	2/6/2013	14:48:41	4.34 vol-%	34.25 ppm
0	2/6/2013	14:49:03	4.54 vol-%	22.04 ppm
0	2/6/2013	14:49:24	4.63 vol-%	17.94 ppm
0	2/6/2013	14:49:46	4.66 vol-%	17.67 ppm
0	2/6/2013	14:50:08	4.52 vol-%	26.82 ppm
0	2/6/2013	14:50:29	4.61 vol-%	23.1 ppm
0	2/6/2013	14:50:51	4.85 vol-%	17.41 ppm
0	2/6/2013	14:51:13	4.73 vol-%	12.9 ppm
0	2/6/2013	14:51:35	4.6 vol-%	14.11 ppm
0	2/6/2013	14:51:56	4.56 vol-%	16.57 ppm
0	2/6/2013	14:52:18	4.47 vol-%	18.6 ppm
0	2/6/2013	14:52:40	4.66 vol-%	20.17 ppm
0	2/6/2013	14:53:01	4.93 vol-%	19.84 ppm
0	2/6/2013	14:53:23	4.81 vol-%	25.9 ppm
0	2/6/2013	14:53:45	4.56 vol-%	27.2 ppm
0	2/6/2013	14:54:07	4.68 vol-%	17.22 ppm
0	2/6/2013	14:54:28	4.88 vol-%	13.14 ppm
0	2/6/2013	14:54:50	4.97 vol-%	14.58 ppm
0	2/6/2013	14:55:12	4.57 vol-%	16.05 ppm
0	2/6/2013	14:55:33	4.62 vol-%	16.15 ppm
0	2/6/2013	14:55:55	4.83 vol-%	15.01 ppm
0	2/6/2013	14:56:17	4.57 vol-%	14.44 ppm
0	2/6/2013	14:56:38	4.7 vol-%	14.05 ppm
0	2/6/2013	14:57:00	4.69 vol-%	13.99 ppm
0	2/6/2013	14:57:22	4.67 vol-%	26.18 ppm
0	2/6/2013	14:57:43	4.91 vol-%	17.03 ppm
0	2/6/2013	14:58:05	4.97 vol-%	14.6 ppm
0	2/6/2013	14:58:27	5.16 vol-%	12.11 ppm
0	2/6/2013	14:58:48	4.84 vol-%	15.27 ppm
0	2/6/2013	14:59:10	4.69 vol-%	14.45 ppm
0	2/6/2013	14:59:32	4.86 vol-%	14.32 ppm
0	2/6/2013	14:59:53	4.74 vol-%	17.9 ppm

Start Run #4

0	2/6/2013	15:00:15	4.74 vol-%	17.6 ppm
0	2/6/2013	15:00:37	4.75 vol-%	15.27 ppm
0	2/6/2013	15:00:58	4.78 vol-%	12.67 ppm
0	2/6/2013	15:01:20	4.84 vol-%	14.16 ppm
0	2/6/2013	15:01:42	4.7 vol-%	14.09 ppm
0	2/6/2013	15:02:03	4.69 vol-%	12.47 ppm
0	2/6/2013	15:02:25	4.78 vol-%	14.92 ppm
0	2/6/2013	15:02:47	4.95 vol-%	13.24 ppm
0	2/6/2013	15:03:08	4.98 vol-%	10.73 ppm
0	2/6/2013	15:03:30	5.09 vol-%	9.53 ppm
0	2/6/2013	15:03:52	5.08 vol-%	8.42 ppm
0	2/6/2013	15:04:14	5.1 vol-%	8.17 ppm
0	2/6/2013	15:04:35	5.14 vol-%	8.62 ppm
0	2/6/2013	15:04:57	5.32 vol-%	9.53 ppm
0	2/6/2013	15:05:19	5.41 vol-%	8.25 ppm
0	2/6/2013	15:05:41	5.33 vol-%	8.58 ppm
0	2/6/2013	15:06:02	5.16 vol-%	9.64 ppm
0	2/6/2013	15:06:24	5.04 vol-%	9.42 ppm
0	2/6/2013	15:06:46	4.78 vol-%	9.14 ppm
0	2/6/2013	15:07:08	4.65 vol-%	8.24 ppm
0	2/6/2013	15:07:29	4.65 vol-%	7.52 ppm
0	2/6/2013	15:07:51	4.49 vol-%	8.21 ppm
0	2/6/2013	15:08:13	4.6 vol-%	8.78 ppm
0	2/6/2013	15:08:34	4.65 vol-%	10.06 ppm
0	2/6/2013	15:08:56	4.5 vol-%	12.75 ppm
0	2/6/2013	15:09:18	4.53 vol-%	11.04 ppm
0	2/6/2013	15:09:40	4.02 vol-%	9.62 ppm
0	2/6/2013	15:10:01	4.05 vol-%	11.08 ppm
0	2/6/2013	15:10:23	4.07 vol-%	9.31 ppm
0	2/6/2013	15:10:45	4.13 vol-%	10.5 ppm
0	2/6/2013	15:11:07	3.6 vol-%	13.39 ppm
0	2/6/2013	15:11:29	3.63 vol-%	13.66 ppm
0	2/6/2013	15:11:50	3.63 vol-%	12 ppm
0	2/6/2013	15:12:12	3.45 vol-%	15.3 ppm
0	2/6/2013	15:12:34	3.6 vol-%	12.26 ppm
0	2/6/2013	15:12:56	3.91 vol-%	11.3 ppm
0	2/6/2013	15:13:17	3.82 vol-%	10.1 ppm
0	2/6/2013	15:13:39	3.58 vol-%	9.34 ppm
0	2/6/2013	15:14:01	3.44 vol-%	10.14 ppm
0	2/6/2013	15:14:22	3.84 vol-%	13.34 ppm
0	2/6/2013	15:14:44	3.89 vol-%	11.11 ppm
0	2/6/2013	15:15:06	3.62 vol-%	12.89 ppm
0	2/6/2013	15:15:27	3.54 vol-%	12.64 ppm
0	2/6/2013	15:15:49	3.4 vol-%	13.31 ppm
0	2/6/2013	15:16:11	3.24 vol-%	14.52 ppm
0	2/6/2013	15:16:32	3.44 vol-%	16.76 ppm
0	2/6/2013	15:16:54	3.58 vol-%	15.83 ppm
0	2/6/2013	15:17:16	3.59 vol-%	12.15 ppm
0	2/6/2013	15:17:38	3.57 vol-%	10.98 ppm
0	2/6/2013	15:18:00	3.73 vol-%	10.91 ppm
0	2/6/2013	15:18:21	3.98 vol-%	11.6 ppm
0	2/6/2013	15:18:43	4.14 vol-%	10.69 ppm
0	2/6/2013	15:19:05	4.54 vol-%	9.37 ppm
0	2/6/2013	15:19:27	4.39 vol-%	9.88 ppm
0	2/6/2013	15:19:49	4.94 vol-%	9.25 ppm
0	2/6/2013	15:20:10	5.61 vol-%	10.95 ppm
0	2/6/2013	15:20:32	5.89 vol-%	9.95 ppm
0	2/6/2013	15:20:54	5.77 vol-%	8.9 ppm
0	2/6/2013	15:21:15	5.44 vol-%	11.01 ppm
0	2/6/2013	15:21:37	5.64 vol-%	10.27 ppm
0	2/6/2013	15:21:59	5.62 vol-%	10.78 ppm
0	2/6/2013	15:22:20	5.65 vol-%	9.6 ppm
0	2/6/2013	15:22:42	5.9 vol-%	8.88 ppm
0	2/6/2013	15:23:04	5.88 vol-%	8.93 ppm
0	2/6/2013	15:23:25	5.75 vol-%	25.17 ppm

0	2/6/2013	15:23:47	5.95 vol-%	32.16 ppm
0	2/6/2013	15:24:09	5.74 vol-%	16.17 ppm
0	2/6/2013	15:24:31	5.55 vol-%	11.45 ppm
0	2/6/2013	15:24:52	5.78 vol-%	27.62 ppm
0	2/6/2013	15:25:14	6.02 vol-%	108.31 ppm
0	2/6/2013	15:25:36	5.91 vol-%	49.62 ppm
0	2/6/2013	15:25:58	6.11 vol-%	23.21 ppm
0	2/6/2013	15:26:19	5.7 vol-%	15.21 ppm
0	2/6/2013	15:26:41	5.6 vol-%	12.78 ppm
0	2/6/2013	15:27:03	5.37 vol-%	11.8 ppm
0	2/6/2013	15:27:25	5.35 vol-%	50.99 ppm
0	2/6/2013	15:27:46	5.42 vol-%	25.12 ppm
0	2/6/2013	15:28:08	5.41 vol-%	16.34 ppm
0	2/6/2013	15:28:30	5.63 vol-%	13.49 ppm
0	2/6/2013	15:28:51	5.63 vol-%	11.82 ppm
0	2/6/2013	15:29:13	5.16 vol-%	13.12 ppm
0	2/6/2013	15:29:35	5 vol-%	12.37 ppm
0	2/6/2013	15:29:56	5.11 vol-%	10.72 ppm
	Port Change			
0	2/6/2013	15:30:18	4.77 vol-%	14.28 ppm
0	2/6/2013	15:30:40	4.43 vol-%	21.16 ppm
0	2/6/2013	15:31:01	4.31 vol-%	19.47 ppm
0	2/6/2013	15:31:23	4.36 vol-%	18.04 ppm
0	2/6/2013	15:31:45	2.71 vol-%	14.63 ppm
	Resume			
0	2/6/2013	15:32:06	2.73 vol-%	16.75 ppm
0	2/6/2013	15:32:28	3.61 vol-%	13.43 ppm
0	2/6/2013	15:32:50	4.3 vol-%	10.66 ppm
0	2/6/2013	15:33:11	4.95 vol-%	10.54 ppm
0	2/6/2013	15:33:33	5.65 vol-%	11.6 ppm
0	2/6/2013	15:33:55	5.43 vol-%	12.13 ppm
0	2/6/2013	15:34:16	5.54 vol-%	12.27 ppm
0	2/6/2013	15:34:38	5.51 vol-%	10.86 ppm
0	2/6/2013	15:35:00	5.63 vol-%	12.33 ppm
0	2/6/2013	15:35:21	5.39 vol-%	24.78 ppm
0	2/6/2013	15:35:43	5.44 vol-%	18.72 ppm
0	2/6/2013	15:36:05	4.91 vol-%	11.61 ppm
0	2/6/2013	15:36:27	4.58 vol-%	9.61 ppm
0	2/6/2013	15:36:49	4.93 vol-%	9.5 ppm
0	2/6/2013	15:37:10	5.29 vol-%	12.57 ppm
0	2/6/2013	15:37:32	5.49 vol-%	14.56 ppm
0	2/6/2013	15:37:54	5.35 vol-%	55.25 ppm
0	2/6/2013	15:38:15	4.94 vol-%	24.5 ppm
0	2/6/2013	15:38:37	5.34 vol-%	36.65 ppm
0	2/6/2013	15:38:59	5.87 vol-%	59.36 ppm
0	2/6/2013	15:39:20	5.5 vol-%	33.98 ppm
0	2/6/2013	15:39:42	5.28 vol-%	55 ppm
0	2/6/2013	15:40:04	5.56 vol-%	60.16 ppm
0	2/6/2013	15:40:25	5.36 vol-%	39.18 ppm
0	2/6/2013	15:40:47	4.46 vol-%	21.27 ppm
0	2/6/2013	15:41:09	3.93 vol-%	16.58 ppm
0	2/6/2013	15:41:30	4.35 vol-%	16.13 ppm
0	2/6/2013	15:41:52	4.54 vol-%	16.93 ppm
0	2/6/2013	15:42:14	4.7 vol-%	16.3 ppm
0	2/6/2013	15:42:35	4.82 vol-%	20.31 ppm
0	2/6/2013	15:42:57	5.22 vol-%	20.75 ppm
0	2/6/2013	15:43:19	5.27 vol-%	14.09 ppm
0	2/6/2013	15:43:40	5.07 vol-%	11.32 ppm
0	2/6/2013	15:44:02	4.7 vol-%	9.28 ppm
0	2/6/2013	15:44:24	5.11 vol-%	11.4 ppm
0	2/6/2013	15:44:45	5.38 vol-%	12.94 ppm
0	2/6/2013	15:45:07	5.04 vol-%	19.82 ppm
0	2/6/2013	15:45:29	4.74 vol-%	25.81 ppm
0	2/6/2013	15:45:50	4.84 vol-%	17.65 ppm
0	2/6/2013	15:46:12	5.04 vol-%	14.09 ppm
0	2/6/2013	15:46:34	5.24 vol-%	12.42 ppm

0	2/6/2013	15:46:55	5.4 vol-%	10.91 ppm	
0	2/6/2013	15:47:17	5.6 vol-%	10.33 ppm	
0	2/6/2013	15:47:39	5.71 vol-%	10.7 ppm	
0	2/6/2013	15:48:00	5.82 vol-%	10.31 ppm	
0	2/6/2013	15:48:22	5.7 vol-%	10.49 ppm	
0	2/6/2013	15:48:44	6.24 vol-%	9.53 ppm	
0	2/6/2013	15:49:05	6.38 vol-%	13.11 ppm	
0	2/6/2013	15:49:27	6.46 vol-%	14.03 ppm	
0	2/6/2013	15:49:49	6.34 vol-%	13.96 ppm	
0	2/6/2013	15:50:10	6.42 vol-%	66.79 ppm	
0	2/6/2013	15:50:32	6.32 vol-%	59.24 ppm	
0	2/6/2013	15:50:54	6.2 vol-%	46.42 ppm	
0	2/6/2013	15:51:15	5.97 vol-%	56.35 ppm	
0	2/6/2013	15:51:37	6.17 vol-%	40.29 ppm	
0	2/6/2013	15:51:59	5.96 vol-%	24.92 ppm	
0	2/6/2013	15:52:20	5.64 vol-%	20.9 ppm	
0	2/6/2013	15:52:42	5.82 vol-%	18.8 ppm	
0	2/6/2013	15:53:04	5.74 vol-%	20.67 ppm	
0	2/6/2013	15:53:26	5.25 vol-%	20.4 ppm	
0	2/6/2013	15:53:47	5.01 vol-%	16.48 ppm	
0	2/6/2013	15:54:09	5.01 vol-%	14.21 ppm	
0	2/6/2013	15:54:31	5.14 vol-%	12.65 ppm	
0	2/6/2013	15:54:53	5.02 vol-%	13.04 ppm	
0	2/6/2013	15:55:15	4.11 vol-%	16.37 ppm	
0	2/6/2013	15:55:36	3.79 vol-%	24.92 ppm	
0	2/6/2013	15:55:58	3.9 vol-%	22.8 ppm	
0	2/6/2013	15:56:19	4.11 vol-%	16.01 ppm	
0	2/6/2013	15:56:41	4.63 vol-%	12.9 ppm	
0	2/6/2013	15:57:03	4.54 vol-%	14.52 ppm	
0	2/6/2013	15:57:24	4.51 vol-%	16.5 ppm	
0	2/6/2013	15:57:46	4.52 vol-%	15.59 ppm	
0	2/6/2013	15:58:08	4.71 vol-%	12.88 ppm	
0	2/6/2013	15:58:29	4.78 vol-%	15.76 ppm	
0	2/6/2013	15:58:51	4.67 vol-%	17.44 ppm	
0	2/6/2013	15:59:13	4.66 vol-%	13.76 ppm	
0	2/6/2013	15:59:34	4.52 vol-%	13.19 ppm	
0	2/6/2013	15:59:56	4.31 vol-%	15.36 ppm	
0	2/6/2013	16:00:18	4.33 vol-%	20.93 ppm	
0	2/6/2013	16:00:39	4.32 vol-%	18.5 ppm	
0	2/6/2013	16:01:01	4.39 vol-%	16.24 ppm	
0	2/6/2013	16:01:23	4.46 vol-%	13.31 ppm	
0	2/6/2013	16:01:45	4.58 vol-%	16.65 ppm	
	Stop Run #4		4.920903614	17.48355422	
0	2/6/2013	16:02:07	4.6 vol-%	20.12 ppm	
0	2/6/2013	16:02:28	4.72 vol-%	18.11 ppm	
0	2/6/2013	16:02:50	4.62 vol-%	20.77 ppm	
0	2/6/2013	16:03:12	4.1 vol-%	29.36 ppm	
0	2/6/2013	16:03:34	1.75 vol-%	23.3 ppm	
0	2/6/2013	16:03:55	0.68 vol-%	12.66 ppm	
0	2/6/2013	16:04:17	0.19 vol-%	4.08 ppm	
0	2/6/2013	16:04:39	0.07 vol-%	1.47 ppm	
0	2/6/2013	16:05:00	0.02 vol-%	0.66 ppm	
0	2/6/2013	16:05:22	0.01 vol-%	0.3 ppm	
0	2/6/2013	16:05:43	0.01 vol-%	**0.12** ppm	
0	2/6/2013	16:06:05	0.01 vol-%	**0** ppm	Zero N2
0	2/6/2013	16:06:27	0.01 vol-%	**0** ppm	
0	2/6/2013	16:06:48	0.02 vol-%	2.92 ppm	
0	2/6/2013	16:07:10	0 vol-%	16.78 ppm	
0	2/6/2013	16:07:32	0.04 vol-%	21.9 ppm	
0	2/6/2013	16:07:53	0.06 vol-%	23.77 ppm	
0	2/6/2013	16:08:15	0.06 vol-%	**24.29** ppm	
0	2/6/2013	16:08:37	0.06 vol-%	**24.09** ppm	25.1 ppm CO
0	2/6/2013	16:08:59	0.07 vol-%	**24.37** ppm	
0	2/6/2013	16:09:20	0.06 vol-%	22.33 ppm	

0	2/6/2013	16:09:42	0.02 vol-%	10.68 ppm
0	2/6/2013	16:10:04	0.04 vol-%	3.63 ppm
0	2/6/2013	16:10:25	0.04 vol-%	1.26 ppm
0	2/6/2013	16:10:47	0.04 vol-%	0.36 ppm
0	2/6/2013	16:15:29	0.07 vol-%	3.6 ppm
0	2/6/2013	16:15:51	0.09 vol-%	2.29 ppm

Summary of CO Analyzer Calibrations and Bias

Plant: Comm Engineering, Lafayette, LA
Source: Combustor Exhaust
Date: 2/7/2013

Analyzer Calibratrion Data

	Cylinder Value	Analyzer Response	Absolute Difference	% Span
Zero Gas	0	0	0	0
Mid Range	8.87	8.83	-0.04	-0.15936
High Range	25.1	24.87	-0.23	-0.91633

System Calibration Bias and Drift Data

		Analyzer Calibration Response	Initial Values System Calibration Response	Initial Values System Calibration Bias	Final Values System Calibration Response	Final Values System Calibration Bias	Drift	Average Calibration Values
Run #5	Zero Gas	0	0	0	0	0	0	0
	Upscale	24.87	24.82	-0.1992	24.33	-2.15139	-1.95219	24.575
	Average CO Concentration:			14.39				
	Corrected CO Concentration:			14.69742				
Run #6	Zero Gas	0	0	0	0	0	0	0
	Upscale	24.87	24.33	-2.15139	24.42	-1.79283	0.358566	24.375
	Average CO Concentration:			10.13				
	Corrected CO Concentration:			10.4313				
Run #7	Zero Gas	0	0	0	0	0	0	0
	Upscale	24.87	24.42	-1.79283	24.06	-3.22709	-1.43426	24.24
	Average CO Concentration:			7.99				
	Corrected CO Concentration:			8.273474				
Run #8	Zero Gas	0	0	0	0	0	0	0
	Upscale	24.87	24.06	-3.22709	24.54	-1.31474	1.912351	24.3
	Average CO Concentration:			8.29				
	Corrected CO Concentration:			8.562922				

Line	Date	Time	Carbon dioxide C	Unit	Carbon monoxide C	Unit	
0	2/7/2013	9:08:03	0.01	vol-%	0.21	ppm	
0	2/7/2013	9:08:25	0.03	vol-%	0.18	ppm	
0	2/7/2013	9:08:46	0.02	vol-%	0.05	ppm	
0	2/7/2013	9:09:08	0.02	vol-%	0.56	ppm	
0	2/7/2013	9:09:30	0.01	vol-%	0	ppm	
0	2/7/2013	9:09:52	0.01	vol-%	0.2	ppm	
0	2/7/2013	9:10:13	0.02	vol-%	0.39	ppm	
0	2/7/2013	9:10:35	0.02	vol-%	**0**	ppm	
0	2/7/2013	9:10:57	0	vol-%	**0**	ppm	Zero N2
0	2/7/2013	9:11:19	0.22	vol-%	1.84	ppm	
0	2/7/2013	9:11:40	0.42	vol-%	0	ppm	
0	2/7/2013	9:12:02	0.55	vol-%	0	ppm	
0	2/7/2013	9:12:24	0.62	vol-%	3.84	ppm	
0	2/7/2013	9:14:03	0.01	vol-%	0.51	ppm	
0	2/7/2013	9:14:24	0.01	vol-%	0.37	ppm	
0	2/7/2013	9:16:00	0.01	vol-%	0.12	ppm	
0	2/7/2013	9:16:26	0	vol-%	0.01	ppm	
0	2/7/2013	9:16:47	0	vol-%	0.16	ppm	
0	2/7/2013	9:17:09	0	vol-%	0.27	ppm	
0	2/7/2013	9:17:31	0.08	vol-%	1.79	ppm	
0	2/7/2013	9:17:53	0.07	vol-%	6.4	ppm	
0	2/7/2013	9:18:14	0.03	vol-%	8.6	ppm	
0	2/7/2013	9:18:36	0.02	vol-%	8.69	ppm	
0	2/7/2013	9:18:58	0.03	vol-%	**8.79**	ppm	
0	2/7/2013	9:19:19	0.01	vol-%	**8.84**	ppm	8.87 ppm CO
0	2/7/2013	9:19:41	0.01	vol-%	**8.86**	ppm	
0	2/7/2013	9:20:03	0.02	vol-%	8.7	ppm	
0	2/7/2013	9:20:24	0.06	vol-%	4.57	ppm	
0	2/7/2013	9:20:46	0.09	vol-%	5.37	ppm	
0	2/7/2013	9:21:08	0.07	vol-%	19.96	ppm	
0	2/7/2013	9:21:29	0.04	vol-%	23.99	ppm	
0	2/7/2013	9:21:51	0.04	vol-%	**24.94**	ppm	
0	2/7/2013	9:22:13	0.03	vol-%	**24.88**	ppm	25.1 ppm CO
0	2/7/2013	9:22:34	0.03	vol-%	**24.8**	ppm	
0	2/7/2013	9:22:56	0.03	vol-%	24.59	ppm	
0	2/7/2013	9:23:18	0.08	vol-%	10.65	ppm	
0	2/7/2013	9:23:39	0.1	vol-%	3.28	ppm	
0	2/7/2013	9:24:01	0.09	vol-%	2.16	ppm	
0	2/7/2013	9:24:23	0.12	vol-%	4.73	ppm	
0	2/7/2013	9:24:44	0.06	vol-%	2.45	ppm	
0	2/7/2013	9:25:06	0.09	vol-%	1.45	ppm	
0	2/7/2013	9:25:28	0.08	vol-%	1.08	ppm	
0	2/7/2013	9:25:49	0.07	vol-%	0.95	ppm	
0	2/7/2013	9:26:11	0.06	vol-%	1.19	ppm	
0	2/7/2013	9:27:45	0	vol-%	0.13	ppm	
0	2/7/2013	9:28:06	0	vol-%	**0**	**ppm**	
0	2/7/2013	9:28:28	0	vol-%	**0**	**ppm**	Zero N2 Bias
0	2/7/2013	9:28:50	0	vol-%	1.86	ppm	
0	2/7/2013	9:29:11	0.01	vol-%	17.44	ppm	
0	2/7/2013	9:29:33	0.02	vol-%	23.47	ppm	
0	2/7/2013	9:29:55	0.02	vol-%	**24.73**	ppm	
0	2/7/2013	9:30:16	0.02	vol-%	**24.93**	ppm	25.1 ppm CO Bias
0	2/7/2013	9:30:38	0.03	vol-%	**24.81**	ppm	
0	2/7/2013	9:31:00	0.03	vol-%	24.73	ppm	
0	2/7/2013	9:31:21	0.04	vol-%	17.04	ppm	
0	2/7/2013	9:31:43	0.06	vol-%	4.1	ppm	
0	2/7/2013	9:32:05	0.05	vol-%	0.75	ppm	
0	2/7/2013	9:32:27	0.05	vol-%	0.37	ppm	
0	2/7/2013	9:32:48	0.05	vol-%	0	ppm	
0	2/7/2013	9:33:10	0.05	vol-%	0.07	ppm	
0	2/7/2013	9:33:32	0.05	vol-%	0.44	ppm	
0	2/7/2013	9:33:54	0.07	vol-%	0.86	ppm	
0	2/7/2013	9:34:16	0.04	vol-%	0.13	ppm	
0	2/7/2013	9:34:38	0.02	vol-%	0.23	ppm	
0	2/7/2013	9:34:59	0.03	vol-%	0	ppm	

0	2/7/2013	9:35:21	0.02 vol-%	0 ppm
0	2/7/2013	9:35:43	0.02 vol-%	0 ppm
0	2/7/2013	9:36:04	0.04 vol-%	0.21 ppm
0	2/7/2013	9:36:26	0.03 vol-%	0.65 ppm
0	2/7/2013	9:36:48	0.02 vol-%	0.32 ppm
0	2/7/2013	9:37:10	0.03 vol-%	0.02 ppm
0	2/7/2013	9:37:31	0.03 vol-%	0.38 ppm
0	2/7/2013	9:37:53	0.07 vol-%	1.06 ppm
0	2/7/2013	9:44:45	0.07 vol-%	1.29 ppm
0	2/7/2013	9:45:07	0.05 vol-%	1.16 ppm
0	2/7/2013	9:45:29	0.06 vol-%	1.09 ppm
0	2/7/2013	9:45:50	2.69 vol-%	7.18 ppm
0	2/7/2013	9:46:12	5.14 vol-%	9.62 ppm
0	2/7/2013	9:46:34	5.58 vol-%	10.04 ppm
0	2/7/2013	9:46:56	5.61 vol-%	10.62 ppm
0	2/7/2013	9:47:18	5.57 vol-%	10.64 ppm
0	2/7/2013	9:47:40	5.62 vol-%	9.85 ppm
0	2/7/2013	9:48:01	5.66 vol-%	10.28 ppm
0	2/7/2013	9:48:23	5.65 vol-%	11.21 ppm
0	2/7/2013	9:48:45	5.61 vol-%	10.91 ppm
0	2/7/2013	9:49:07	5.58 vol-%	10.74 ppm
0	2/7/2013	9:49:28	5.67 vol-%	9.52 ppm
0	2/7/2013	9:49:50	5.73 vol-%	9.07 ppm
Start Run #5				
0	2/7/2013	9:50:12	5.58 vol-%	9.51 ppm
0	2/7/2013	9:50:34	5.47 vol-%	9.23 ppm
0	2/7/2013	9:50:55	5.57 vol-%	9.31 ppm
0	2/7/2013	9:51:17	5.75 vol-%	9.48 ppm
0	2/7/2013	9:51:39	5.45 vol-%	14.32 ppm
0	2/7/2013	9:52:00	5 vol-%	20.32 ppm
0	2/7/2013	9:52:22	5.04 vol-%	21.51 ppm
0	2/7/2013	9:52:44	5.19 vol-%	16.4 ppm
0	2/7/2013	9:53:06	5.02 vol-%	17.95 ppm
0	2/7/2013	9:53:28	5.07 vol-%	16.46 ppm
0	2/7/2013	9:53:50	4.93 vol-%	14.74 ppm
0	2/7/2013	9:54:11	5.12 vol-%	13.54 ppm
0	2/7/2013	9:54:33	4.92 vol-%	13.41 ppm
0	2/7/2013	9:54:55	4.92 vol-%	25.44 ppm
0	2/7/2013	9:55:17	5.04 vol-%	26.12 ppm
0	2/7/2013	9:55:39	6 vol-%	34.05 ppm
0	2/7/2013	9:56:00	5.33 vol-%	24.4 ppm
0	2/7/2013	9:56:22	5.4 vol-%	21.83 ppm
0	2/7/2013	9:56:44	5.34 vol-%	27.34 ppm
0	2/7/2013	9:57:05	5.28 vol-%	22.45 ppm
0	2/7/2013	9:57:27	5.26 vol-%	24.44 ppm
0	2/7/2013	9:57:49	5.92 vol-%	60.66 ppm
0	2/7/2013	9:58:10	5.6 vol-%	21.24 ppm
0	2/7/2013	9:58:32	5.68 vol-%	13.51 ppm
0	2/7/2013	9:58:54	5.72 vol-%	12 ppm
0	2/7/2013	9:59:16	5.54 vol-%	12.25 ppm
0	2/7/2013	9:59:37	5.56 vol-%	12.58 ppm
0	2/7/2013	9:59:59	5.34 vol-%	12.81 ppm
0	2/7/2013	10:00:21	5.48 vol-%	12.63 ppm
0	2/7/2013	10:00:43	5.38 vol-%	12.97 ppm
0	2/7/2013	10:01:04	5.6 vol-%	14.64 ppm
0	2/7/2013	10:01:26	5.53 vol-%	13.13 ppm
0	2/7/2013	10:01:48	5.39 vol-%	13.1 ppm
0	2/7/2013	10:02:10	5.12 vol-%	13.2 ppm
0	2/7/2013	10:02:31	5.14 vol-%	13.24 ppm
0	2/7/2013	10:02:53	5.52 vol-%	13.86 ppm
0	2/7/2013	10:03:15	5.68 vol-%	12.22 ppm
0	2/7/2013	10:03:36	5.53 vol-%	11.71 ppm
0	2/7/2013	10:03:58	5.47 vol-%	12.04 ppm
0	2/7/2013	10:04:20	5.27 vol-%	14.18 ppm
0	2/7/2013	10:04:41	5.3 vol-%	14.84 ppm
0	2/7/2013	10:05:03	5.09 vol-%	13.02 ppm

0	2/7/2013	10:05:25	5.14 vol-%	11.93 ppm
0	2/7/2013	10:05:47	5.37 vol-%	12.79 ppm
0	2/7/2013	10:06:09	5.35 vol-%	12.33 ppm
0	2/7/2013	10:06:30	5.21 vol-%	13.29 ppm
0	2/7/2013	10:06:52	5.16 vol-%	14.03 ppm
0	2/7/2013	10:07:14	5.58 vol-%	12.44 ppm
0	2/7/2013	10:07:36	5.89 vol-%	11.24 ppm
0	2/7/2013	10:07:57	5.51 vol-%	13.47 ppm
0	2/7/2013	10:08:19	5.5 vol-%	14.66 ppm
0	2/7/2013	10:08:41	5.52 vol-%	12.82 ppm
0	2/7/2013	10:09:03	5.51 vol-%	13.56 ppm
0	2/7/2013	10:09:24	5.43 vol-%	13.4 ppm
0	2/7/2013	10:09:46	5.32 vol-%	12.63 ppm
0	2/7/2013	10:10:08	5.33 vol-%	11.74 ppm
0	2/7/2013	10:10:29	5.2 vol-%	11.52 ppm
0	2/7/2013	10:10:51	5.29 vol-%	11.04 ppm
0	2/7/2013	10:11:13	5.33 vol-%	12.2 ppm
0	2/7/2013	10:11:35	5.45 vol-%	14.98 ppm
0	2/7/2013	10:11:56	5.14 vol-%	13.46 ppm
0	2/7/2013	10:12:18	5.21 vol-%	12.45 ppm
0	2/7/2013	10:12:40	5.1 vol-%	12.22 ppm
0	2/7/2013	10:13:02	4.91 vol-%	14.81 ppm
0	2/7/2013	10:13:23	5.46 vol-%	19.76 ppm
0	2/7/2013	10:13:45	5.87 vol-%	39.36 ppm
0	2/7/2013	10:14:07	5.87 vol-%	21.75 ppm
0	2/7/2013	10:14:29	5.24 vol-%	15.95 ppm
0	2/7/2013	10:14:50	5.39 vol-%	14.88 ppm
0	2/7/2013	10:15:12	5.8 vol-%	17.19 ppm
0	2/7/2013	10:15:34	6.12 vol-%	15.96 ppm
0	2/7/2013	10:15:55	6.14 vol-%	14.12 ppm
0	2/7/2013	10:16:17	5.93 vol-%	13.15 ppm
0	2/7/2013	10:16:39	5.76 vol-%	13.2 ppm
0	2/7/2013	10:17:01	5.73 vol-%	12.71 ppm
0	2/7/2013	10:17:23	5.66 vol-%	12.39 ppm
0	2/7/2013	10:17:44	5.62 vol-%	12.28 ppm
0	2/7/2013	10:18:06	5.62 vol-%	11.29 ppm
0	2/7/2013	10:18:28	5.61 vol-%	10.75 ppm
0	2/7/2013	10:18:50	5.47 vol-%	12.33 ppm
0	2/7/2013	10:19:11	5.44 vol-%	12.39 ppm
0	2/7/2013	10:19:33	5.39 vol-%	12.4 ppm
0	2/7/2013	10:19:55	5.47 vol-%	10.52 ppm
Port Change				
0	2/7/2013	10:20:17	5.51 vol-%	9.55 ppm
0	2/7/2013	10:20:38	5.52 vol-%	9.51 ppm
0	2/7/2013	10:21:00	5.63 vol-%	10.44 ppm
0	2/7/2013	10:21:22	2.36 vol-%	7.25 ppm
0	2/7/2013	10:21:43	2.18 vol-%	5.35 ppm
Resume				
0	2/7/2013	10:22:05	4.54 vol-%	9 ppm
0	2/7/2013	10:22:27	4.85 vol-%	12.64 ppm
0	2/7/2013	10:22:49	4.79 vol-%	13.82 ppm
0	2/7/2013	10:23:10	4.78 vol-%	14.38 ppm
0	2/7/2013	10:23:32	4.88 vol-%	14.62 ppm
0	2/7/2013	10:23:54	5.05 vol-%	12.89 ppm
0	2/7/2013	10:24:16	4.92 vol-%	12.41 ppm
0	2/7/2013	10:24:37	5.03 vol-%	11.12 ppm
0	2/7/2013	10:24:59	4.81 vol-%	13.7 ppm
0	2/7/2013	10:25:21	4.69 vol-%	13.15 ppm
0	2/7/2013	10:25:43	4.7 vol-%	11.33 ppm
0	2/7/2013	10:26:04	4.84 vol-%	11.01 ppm
0	2/7/2013	10:26:26	4.63 vol-%	12.21 ppm
0	2/7/2013	10:26:48	4.84 vol-%	12.49 ppm
0	2/7/2013	10:27:10	4.83 vol-%	13.87 ppm
0	2/7/2013	10:27:32	4.77 vol-%	13.87 ppm
0	2/7/2013	10:27:53	4.74 vol-%	12.37 ppm
0	2/7/2013	10:28:15	4.96 vol-%	11.55 ppm

0	2/7/2013	10:28:37	4.9 vol-%	12.45 ppm
0	2/7/2013	10:28:59	4.68 vol-%	12.55 ppm
0	2/7/2013	10:29:20	4.67 vol-%	13.53 ppm
0	2/7/2013	10:29:42	4.56 vol-%	14.32 ppm
0	2/7/2013	10:30:04	4.69 vol-%	14.96 ppm
0	2/7/2013	10:30:26	4.67 vol-%	18.36 ppm
0	2/7/2013	10:30:47	4.78 vol-%	15.07 ppm
0	2/7/2013	10:31:09	4.91 vol-%	12.96 ppm
0	2/7/2013	10:31:31	4.74 vol-%	13.1 ppm
0	2/7/2013	10:31:52	4.65 vol-%	12.76 ppm
0	2/7/2013	10:32:14	4.49 vol-%	13.2 ppm
0	2/7/2013	10:32:36	4.62 vol-%	12.34 ppm
0	2/7/2013	10:32:58	4.67 vol-%	15.05 ppm
0	2/7/2013	10:33:20	4.62 vol-%	17.23 ppm
0	2/7/2013	10:33:41	4.99 vol-%	12.77 ppm
0	2/7/2013	10:34:03	5.49 vol-%	11.12 ppm
0	2/7/2013	10:34:25	5.67 vol-%	9.39 ppm
0	2/7/2013	10:34:47	5.7 vol-%	10.77 ppm
0	2/7/2013	10:35:08	5.47 vol-%	10.72 ppm
0	2/7/2013	10:35:30	5.34 vol-%	10.91 ppm
0	2/7/2013	10:35:52	5.36 vol-%	11.91 ppm
0	2/7/2013	10:36:14	5.32 vol-%	10.34 ppm
0	2/7/2013	10:36:35	5.52 vol-%	10.54 ppm
0	2/7/2013	10:36:57	5.69 vol-%	10.26 ppm
0	2/7/2013	10:37:19	5.84 vol-%	11.45 ppm
0	2/7/2013	10:37:41	5.73 vol-%	11.98 ppm
0	2/7/2013	10:38:02	5.65 vol-%	12.03 ppm
0	2/7/2013	10:38:24	5.61 vol-%	11.96 ppm
0	2/7/2013	10:38:46	5.68 vol-%	11.59 ppm
0	2/7/2013	10:39:08	5.58 vol-%	12.21 ppm
0	2/7/2013	10:39:29	5.57 vol-%	12.25 ppm
0	2/7/2013	10:39:51	5.59 vol-%	12.95 ppm
0	2/7/2013	10:40:13	5.65 vol-%	13.38 ppm
0	2/7/2013	10:40:34	5.75 vol-%	13.66 ppm
0	2/7/2013	10:40:56	5.64 vol-%	14.59 ppm
0	2/7/2013	10:41:18	5.33 vol-%	14.57 ppm
0	2/7/2013	10:41:40	5.36 vol-%	14.79 ppm
0	2/7/2013	10:42:02	5.56 vol-%	13.99 ppm
0	2/7/2013	10:42:23	5.6 vol-%	14.43 ppm
0	2/7/2013	10:42:45	5.54 vol-%	14.42 ppm
0	2/7/2013	10:43:07	5.53 vol-%	14.81 ppm
0	2/7/2013	10:43:29	5.62 vol-%	14.51 ppm
0	2/7/2013	10:43:50	5.45 vol-%	14.74 ppm
0	2/7/2013	10:44:12	5.62 vol-%	14.54 ppm
0	2/7/2013	10:44:34	5.88 vol-%	14.67 ppm
0	2/7/2013	10:44:56	5.64 vol-%	16.11 ppm
0	2/7/2013	10:45:17	5.5 vol-%	15.03 ppm
0	2/7/2013	10:45:39	5.55 vol-%	15.5 ppm
0	2/7/2013	10:46:01	5.51 vol-%	14.62 ppm
0	2/7/2013	10:46:23	5.41 vol-%	14.36 ppm
0	2/7/2013	10:46:45	5.29 vol-%	14.49 ppm
0	2/7/2013	10:47:07	5.47 vol-%	13.75 ppm
0	2/7/2013	10:47:28	5.39 vol-%	13.83 ppm
0	2/7/2013	10:47:50	5.44 vol-%	13.06 ppm
0	2/7/2013	10:48:12	5.36 vol-%	13.17 ppm
0	2/7/2013	10:48:34	5.41 vol-%	12.86 ppm
0	2/7/2013	10:48:55	5.36 vol-%	12.09 ppm
0	2/7/2013	10:49:17	5.51 vol-%	12.01 ppm
0	2/7/2013	10:49:39	5.71 vol-%	12.47 ppm
0	2/7/2013	10:50:01	5.85 vol-%	14.29 ppm
0	2/7/2013	10:50:23	5.98 vol-%	13.94 ppm
0	2/7/2013	10:50:45	6.1 vol-%	14.25 ppm
0	2/7/2013	10:51:06	5.93 vol-%	13.46 ppm
0	2/7/2013	10:51:28	5.86 vol-%	12.26 ppm
0	2/7/2013	10:51:50	5.85 vol-%	12.66 ppm

Stop Run #5 5.345361446 14.38698795

0	2/7/2013	10:52:11	5.93 vol-%	12.55 ppm	
0	2/7/2013	10:52:33	5.85 vol-%	12.39 ppm	
0	2/7/2013	10:52:55	4.39 vol-%	32.41 ppm	
0	2/7/2013	10:53:17	1.12 vol-%	20.33 ppm	
0	2/7/2013	10:53:39	0.26 vol-%	6 ppm	
0	2/7/2013	10:54:00	0.08 vol-%	2.35 ppm	
0	2/7/2013	10:54:22	0.05 vol-%	1.72 ppm	
0	2/7/2013	10:54:43	0.04 vol-%	2.67 ppm	
0	2/7/2013	10:55:05	0 vol-%	0.76 ppm	
0	2/7/2013	10:55:27	0 vol-%	0.31 ppm	
0	2/7/2013	10:55:48	0.01 vol-%	**0** ppm	
0	2/7/2013	10:56:10	0.01 vol-%	**0.01** ppm	Zero N2
0	2/7/2013	10:56:32	0.02 vol-%	0.5 ppm	
0	2/7/2013	10:56:53	0 vol-%	15.56 ppm	
0	2/7/2013	10:57:15	0.04 vol-%	22.99 ppm	
0	2/7/2013	10:57:37	0.04 vol-%	**24.21** ppm	
0	2/7/2013	10:57:58	0.03 vol-%	**24.25** ppm	25.1 ppm CO
0	2/7/2013	10:58:20	0.03 vol-%	**24.54** ppm	
0	2/7/2013	10:58:42	0.01 vol-%	16.85 ppm	
0	2/7/2013	10:59:03	0.02 vol-%	3.82 ppm	
0	2/7/2013	10:59:25	0 vol-%	1.1 ppm	
0	2/7/2013	10:59:47	0 vol-%	0.58 ppm	
0	2/7/2013	11:00:08	0.01 vol-%	0.19 ppm	
0	2/7/2013	11:00:30	0.03 vol-%	0.15 ppm	
0	2/7/2013	11:00:52	0.04 vol-%	0.71 ppm	
0	2/7/2013	11:01:13	0.04 vol-%	1.17 ppm	
0	2/7/2013	11:01:35	0.04 vol-%	1.09 ppm	
0	2/7/2013	11:01:57	0.06 vol-%	0.63 ppm	
0	2/7/2013	11:02:19	0.05 vol-%	0.86 ppm	
0	2/7/2013	11:02:41	0.3 vol-%	2.27 ppm	
0	2/7/2013	11:03:02	2.42 vol-%	8.64 ppm	
0	2/7/2013	11:03:24	4.03 vol-%	12.61 ppm	
0	2/7/2013	11:03:46	3.81 vol-%	16.11 ppm	
0	2/7/2013	11:04:08	3.51 vol-%	19.8 ppm	
0	2/7/2013	11:04:29	3.71 vol-%	17.86 ppm	
0	2/7/2013	11:04:51	4.07 vol-%	18.17 ppm	
0	2/7/2013	11:05:13	4.28 vol-%	17.95 ppm	
0	2/7/2013	11:05:35	4.12 vol-%	15.62 ppm	
0	2/7/2013	11:05:56	4.22 vol-%	18.01 ppm	
0	2/7/2013	11:06:18	4.16 vol-%	17.8 ppm	
0	2/7/2013	11:06:40	4.08 vol-%	16.98 ppm	
0	2/7/2013	11:07:02	3.81 vol-%	21.97 ppm	
0	2/7/2013	11:07:23	4 vol-%	22.21 ppm	
0	2/7/2013	11:07:45	3.81 vol-%	19.7 ppm	
0	2/7/2013	11:12:19	4.77 vol-%	7.96 ppm	
0	2/7/2013	11:12:40	4.63 vol-%	7.42 ppm	
0	2/7/2013	11:13:02	4.98 vol-%	7.63 ppm	
0	2/7/2013	11:13:24	5.24 vol-%	7.01 ppm	
0	2/7/2013	11:13:46	5.41 vol-%	7.07 ppm	
0	2/7/2013	11:14:08	5.43 vol-%	6.82 ppm	
0	2/7/2013	11:14:30	5.14 vol-%	7.29 ppm	
0	2/7/2013	11:14:51	5.31 vol-%	7.33 ppm	
0	2/7/2013	11:15:13	5.26 vol-%	7.68 ppm	
0	2/7/2013	11:15:35	4.07 vol-%	37.43 ppm	
0	2/7/2013	12:55:03	0.06 vol-%	0 ppm	
0	2/7/2013	14:05:21	0.6 vol-%	0.08 ppm	
0	2/7/2013	14:05:43	3.85 vol-%	3.26 ppm	
0	2/7/2013	14:06:05	5.18 vol-%	4.82 ppm	
0	2/7/2013	14:06:26	5.77 vol-%	5.24 ppm	
0	2/7/2013	14:06:48	5.61 vol-%	4.6 ppm	
0	2/7/2013	14:07:10	5.75 vol-%	4.41 ppm	
0	2/7/2013	14:07:32	5.78 vol-%	3.63 ppm	
0	2/7/2013	14:07:53	5.51 vol-%	3.49 ppm	
0	2/7/2013	14:08:15	5.46 vol-%	3.04 ppm	

0	2/7/2013	14:08:37	5.33 vol-%	3.78 ppm
0	2/7/2013	14:08:59	4.89 vol-%	6.02 ppm
0	2/7/2013	14:09:21	5.14 vol-%	5.06 ppm
0	2/7/2013	14:09:43	5.18 vol-%	5.11 ppm
Start Run #6				
0	2/7/2013	14:10:04	4.94 vol-%	4.95 ppm
0	2/7/2013	14:10:26	4.86 vol-%	5.14 ppm
0	2/7/2013	14:10:48	5.13 vol-%	4.65 ppm
0	2/7/2013	14:11:10	5.35 vol-%	4.5 ppm
0	2/7/2013	14:11:31	5.34 vol-%	4.13 ppm
0	2/7/2013	14:11:53	5.3 vol-%	5.64 ppm
0	2/7/2013	14:12:15	5.07 vol-%	10.55 ppm
0	2/7/2013	14:12:37	5.26 vol-%	7.03 ppm
0	2/7/2013	14:12:58	5.16 vol-%	6.77 ppm
0	2/7/2013	14:13:20	5.02 vol-%	7.92 ppm
0	2/7/2013	14:13:42	5.16 vol-%	6.8 ppm
0	2/7/2013	14:14:04	4.95 vol-%	6.66 ppm
0	2/7/2013	14:14:25	5.18 vol-%	7.6 ppm
0	2/7/2013	14:14:47	5.35 vol-%	6.99 ppm
0	2/7/2013	14:15:09	5.39 vol-%	6.83 ppm
0	2/7/2013	14:15:30	5.17 vol-%	7.25 ppm
0	2/7/2013	14:15:52	5.22 vol-%	9.96 ppm
0	2/7/2013	14:16:14	5.14 vol-%	8.22 ppm
0	2/7/2013	14:16:36	5.53 vol-%	9.54 ppm
0	2/7/2013	14:16:58	5.24 vol-%	10.45 ppm
0	2/7/2013	14:17:19	5.19 vol-%	9.84 ppm
0	2/7/2013	14:17:41	5.3 vol-%	8.05 ppm
0	2/7/2013	14:18:03	5.17 vol-%	7.97 ppm
0	2/7/2013	14:18:25	5.34 vol-%	10.49 ppm
0	2/7/2013	14:18:46	5.23 vol-%	9.82 ppm
0	2/7/2013	14:19:08	5 vol-%	9.53 ppm
0	2/7/2013	14:19:30	5.11 vol-%	9.73 ppm
0	2/7/2013	14:19:52	4.93 vol-%	8.69 ppm
0	2/7/2013	14:20:13	4.97 vol-%	8.08 ppm
0	2/7/2013	14:20:35	4.83 vol-%	7.31 ppm
0	2/7/2013	14:20:57	4.64 vol-%	8.48 ppm
0	2/7/2013	14:21:19	4.44 vol-%	10.72 ppm
0	2/7/2013	14:21:40	4.42 vol-%	12.41 ppm
0	2/7/2013	14:22:02	4.64 vol-%	12.47 ppm
0	2/7/2013	14:22:24	4.82 vol-%	9.24 ppm
0	2/7/2013	14:22:46	4.75 vol-%	12.36 ppm
0	2/7/2013	14:23:08	4.83 vol-%	9.34 ppm
0	2/7/2013	14:23:29	4.88 vol-%	9.56 ppm
0	2/7/2013	14:23:51	4.97 vol-%	7.58 ppm
0	2/7/2013	14:24:13	4.81 vol-%	12.33 ppm
0	2/7/2013	14:24:34	4.74 vol-%	13.44 ppm
0	2/7/2013	14:24:56	4.74 vol-%	14.54 ppm
0	2/7/2013	14:25:18	4.68 vol-%	9.98 ppm
0	2/7/2013	14:25:40	4.76 vol-%	7.36 ppm
0	2/7/2013	14:26:01	4.98 vol-%	5.8 ppm
0	2/7/2013	14:26:23	5.11 vol-%	7.04 ppm
0	2/7/2013	14:26:45	4.56 vol-%	29.56 ppm
0	2/7/2013	14:27:07	4.69 vol-%	17.59 ppm
0	2/7/2013	14:27:28	4.64 vol-%	15.58 ppm
0	2/7/2013	14:27:50	4.64 vol-%	19.35 ppm
0	2/7/2013	14:28:12	4.81 vol-%	12.06 ppm
0	2/7/2013	14:28:34	5.34 vol-%	8.49 ppm
0	2/7/2013	14:28:55	5.74 vol-%	7.59 ppm
0	2/7/2013	14:29:17	5.4 vol-%	7.37 ppm
0	2/7/2013	14:29:39	5.39 vol-%	6.72 ppm
0	2/7/2013	14:30:01	5.36 vol-%	7.49 ppm
0	2/7/2013	14:30:23	4.95 vol-%	9.96 ppm
0	2/7/2013	14:30:44	5.2 vol-%	8.51 ppm
0	2/7/2013	14:31:06	5.03 vol-%	9.33 ppm
0	2/7/2013	14:31:28	5.22 vol-%	8.34 ppm
0	2/7/2013	14:31:49	5.22 vol-%	8.86 ppm

0	2/7/2013	14:32:11	5.19 vol-%	8.71 ppm
0	2/7/2013	14:32:33	5.18 vol-%	9.36 ppm
0	2/7/2013	14:32:55	5.31 vol-%	8.89 ppm
0	2/7/2013	14:33:16	5.42 vol-%	9.59 ppm
0	2/7/2013	14:33:38	5.42 vol-%	9.89 ppm
0	2/7/2013	14:34:00	5.19 vol-%	10.55 ppm
0	2/7/2013	14:34:22	5.05 vol-%	10.88 ppm
0	2/7/2013	14:34:43	5.32 vol-%	10.5 ppm
0	2/7/2013	14:35:05	5.3 vol-%	10.99 ppm
0	2/7/2013	14:35:27	5.16 vol-%	11.37 ppm
0	2/7/2013	14:35:49	4.81 vol-%	12.2 ppm
0	2/7/2013	14:36:10	5.44 vol-%	11.57 ppm
0	2/7/2013	14:36:32	5.44 vol-%	11.38 ppm
0	2/7/2013	14:36:54	5.51 vol-%	11.55 ppm
0	2/7/2013	14:37:15	5.04 vol-%	11.76 ppm
0	2/7/2013	14:37:37	5.13 vol-%	11.55 ppm
0	2/7/2013	14:37:59	5.2 vol-%	10.93 ppm
0	2/7/2013	14:38:20	5.14 vol-%	11.19 ppm
0	2/7/2013	14:38:42	5.35 vol-%	11.1 ppm
0	2/7/2013	14:39:04	5.65 vol-%	10.78 ppm
0	2/7/2013	14:39:26	5.77 vol-%	10 ppm
0	2/7/2013	14:39:47	5.82 vol-%	10.22 ppm
Port Change				
0	2/7/2013	14:40:09	5.74 vol-%	10.38 ppm
0	2/7/2013	14:40:31	5.32 vol-%	10.87 ppm
0	2/7/2013	14:40:53	3.1 vol-%	7.74 ppm
0	2/7/2013	14:41:14	4.89 vol-%	6.35 ppm
0	2/7/2013	14:41:36	5.82 vol-%	5.81 ppm
0	2/7/2013	14:41:58	6.21 vol-%	6.36 ppm
Resume				
0	2/7/2013	14:42:19	6.95 vol-%	7.74 ppm
0	2/7/2013	14:42:41	6.88 vol-%	7.91 ppm
0	2/7/2013	14:43:03	5.77 vol-%	8.2 ppm
0	2/7/2013	14:43:24	5.35 vol-%	8.25 ppm
0	2/7/2013	14:43:46	5.53 vol-%	8.25 ppm
0	2/7/2013	14:44:08	5.73 vol-%	9.3 ppm
0	2/7/2013	14:44:30	5.64 vol-%	9.2 ppm
0	2/7/2013	14:44:51	5.89 vol-%	9.11 ppm
0	2/7/2013	14:45:13	6.01 vol-%	8.73 ppm
0	2/7/2013	14:45:35	5.78 vol-%	9.75 ppm
0	2/7/2013	14:45:57	5.91 vol-%	9.71 ppm
0	2/7/2013	14:46:19	5.89 vol-%	14.28 ppm
0	2/7/2013	14:46:40	6.45 vol-%	13.22 ppm
0	2/7/2013	14:47:02	6.64 vol-%	13.75 ppm
0	2/7/2013	14:47:24	6.76 vol-%	19.53 ppm
0	2/7/2013	14:47:46	6.79 vol-%	21.15 ppm
0	2/7/2013	14:48:07	6.43 vol-%	13.07 ppm
0	2/7/2013	14:48:29	6.65 vol-%	19.95 ppm
0	2/7/2013	14:48:51	6.41 vol-%	17.14 ppm
0	2/7/2013	14:49:13	6.17 vol-%	10.62 ppm
0	2/7/2013	14:49:35	6.59 vol-%	10.13 ppm
0	2/7/2013	14:49:56	6.46 vol-%	15.67 ppm
0	2/7/2013	14:50:18	6.43 vol-%	12.45 ppm
0	2/7/2013	14:50:40	6.54 vol-%	10.62 ppm
0	2/7/2013	14:51:01	6.38 vol-%	10.33 ppm
0	2/7/2013	14:51:23	6.3 vol-%	10.53 ppm
0	2/7/2013	14:51:45	6.23 vol-%	10.07 ppm
0	2/7/2013	14:52:07	6.36 vol-%	10.09 ppm
0	2/7/2013	14:52:29	6.5 vol-%	9.59 ppm
0	2/7/2013	14:52:50	6.29 vol-%	8.13 ppm
0	2/7/2013	14:53:12	6.32 vol-%	8.53 ppm
0	2/7/2013	14:53:34	6.32 vol-%	8.82 ppm
0	2/7/2013	14:53:56	6.29 vol-%	10.06 ppm
0	2/7/2013	14:54:17	6.32 vol-%	8.58 ppm
0	2/7/2013	14:54:39	5.89 vol-%	7.67 ppm
0	2/7/2013	14:55:01	5.78 vol-%	7.54 ppm

0	2/7/2013	14:55:22	6.15 vol-%	7.62 ppm	
0	2/7/2013	14:55:44	6.22 vol-%	6.91 ppm	
0	2/7/2013	14:56:06	6.28 vol-%	6.64 ppm	
0	2/7/2013	14:56:27	6.45 vol-%	7 ppm	
0	2/7/2013	14:56:49	6.52 vol-%	7.01 ppm	
0	2/7/2013	14:57:11	6.11 vol-%	6.92 ppm	
0	2/7/2013	14:57:33	5.98 vol-%	7.43 ppm	
0	2/7/2013	14:57:55	6.01 vol-%	8.15 ppm	
0	2/7/2013	14:58:17	5.9 vol-%	8.54 ppm	
0	2/7/2013	14:58:38	5.62 vol-%	9.35 ppm	
0	2/7/2013	14:59:00	5.65 vol-%	9.41 ppm	
0	2/7/2013	14:59:22	5.82 vol-%	9.44 ppm	
0	2/7/2013	14:59:44	5.7 vol-%	9.85 ppm	
0	2/7/2013	15:00:05	5.64 vol-%	9.84 ppm	
0	2/7/2013	15:00:27	5.63 vol-%	10.41 ppm	
0	2/7/2013	15:00:49	5.25 vol-%	10.5 ppm	
0	2/7/2013	15:01:11	5.21 vol-%	10.94 ppm	
0	2/7/2013	15:01:33	5.45 vol-%	10.68 ppm	
0	2/7/2013	15:01:54	5.52 vol-%	10.85 ppm	
0	2/7/2013	15:02:16	5.45 vol-%	13.94 ppm	
0	2/7/2013	15:02:38	5.55 vol-%	12.59 ppm	
0	2/7/2013	15:02:59	5.37 vol-%	11.01 ppm	
0	2/7/2013	15:03:21	5.48 vol-%	10.85 ppm	
0	2/7/2013	15:03:43	5.16 vol-%	11.28 ppm	
0	2/7/2013	15:04:04	4.86 vol-%	11.95 ppm	
0	2/7/2013	15:04:26	5.61 vol-%	11.39 ppm	
0	2/7/2013	15:04:48	5.91 vol-%	11.08 ppm	
0	2/7/2013	15:05:10	6.01 vol-%	11.6 ppm	
0	2/7/2013	15:05:31	5.73 vol-%	11.67 ppm	
0	2/7/2013	15:05:53	5.37 vol-%	11.6 ppm	
0	2/7/2013	15:06:14	5.58 vol-%	11.99 ppm	
0	2/7/2013	15:06:36	5.55 vol-%	11.46 ppm	
0	2/7/2013	15:06:58	5.02 vol-%	12.05 ppm	
0	2/7/2013	15:07:20	5.09 vol-%	11.84 ppm	
0	2/7/2013	15:07:41	5.7 vol-%	11.22 ppm	
0	2/7/2013	15:08:03	6.24 vol-%	11.21 ppm	
0	2/7/2013	15:08:25	6.27 vol-%	11.02 ppm	
0	2/7/2013	15:08:46	6.19 vol-%	10.78 ppm	
0	2/7/2013	15:09:08	5.94 vol-%	10.41 ppm	
0	2/7/2013	15:09:30	5.82 vol-%	10.36 ppm	
0	2/7/2013	15:09:52	5.67 vol-%	10.26 ppm	
0	2/7/2013	15:10:13	5.65 vol-%	10.26 ppm	
0	2/7/2013	15:10:35	5.48 vol-%	10.18 ppm	
0	2/7/2013	15:10:57	5.36 vol-%	9.78 ppm	
0	2/7/2013	15:11:18	5.32 vol-%	9.97 ppm	
0	2/7/2013	15:11:40	5.34 vol-%	9.52 ppm	
			5.518363636	10.13290909	
0	2/7/2013	15:12:02	5.37 vol-%	9.97 ppm	
0	2/7/2013	15:12:23	5.4 vol-%	9.76 ppm	
0	2/7/2013	15:12:45	5.46 vol-%	9.95 ppm	
0	2/7/2013	15:13:07	5.68 vol-%	10 ppm	
0	2/7/2013	15:13:29	4.59 vol-%	32.07 ppm	
0	2/7/2013	15:13:50	1.31 vol-%	29.96 ppm	
0	2/7/2013	15:14:12	0.29 vol-%	6.16 ppm	
0	2/7/2013	15:14:34	0.08 vol-%	0.89 ppm	
0	2/7/2013	15:14:55	0.02 vol-%	0.02 ppm	
0	2/7/2013	15:15:17	0.01 vol-%	**0 ppm**	
0	2/7/2013	15:15:38	0 vol-%	**0 ppm**	Zero N2
0	2/7/2013	15:16:00	0 vol-%	1.14 ppm	
0	2/7/2013	15:16:22	0.02 vol-%	15.87 ppm	
0	2/7/2013	15:16:43	0.03 vol-%	22.9 ppm	
0	2/7/2013	15:17:05	0.02 vol-%	23.89 ppm	
0	2/7/2013	15:17:27	0.01 vol-%	**24.58 ppm**	
0	2/7/2013	15:17:48	0.03 vol-%	**24.38 ppm**	25.1 ppm CO

0	2/7/2013	15:18:10	0.01 vol-%	**24.31 ppm**
0	2/7/2013	15:18:32	0.03 vol-%	22.24 ppm
0	2/7/2013	15:18:53	0.02 vol-%	7.39 ppm
0	2/7/2013	15:19:15	0.02 vol-%	1.09 ppm
0	2/7/2013	15:19:37	0.02 vol-%	0.98 ppm
0	2/7/2013	15:19:59	0.02 vol-%	0 ppm
0	2/7/2013	15:20:21	0.03 vol-%	0 ppm
0	2/7/2013	15:20:42	0.06 vol-%	0 ppm
0	2/7/2013	15:21:04	0.06 vol-%	0.97 ppm
0	2/7/2013	15:27:24	2.67 vol-%	5.26 ppm
0	2/7/2013	15:27:45	4.2 vol-%	11.87 ppm
0	2/7/2013	15:28:07	4.73 vol-%	10.55 ppm
0	2/7/2013	15:28:29	4.88 vol-%	9.38 ppm
0	2/7/2013	15:28:51	4.71 vol-%	9.48 ppm
0	2/7/2013	15:29:13	4.67 vol-%	9.29 ppm
0	2/7/2013	15:29:34	4.73 vol-%	7.76 ppm
0	2/7/2013	15:29:56	4.79 vol-%	7.18 ppm
Start Run #7				
0	2/7/2013	15:30:18	4.75 vol-%	8.63 ppm
0	2/7/2013	15:30:40	4.65 vol-%	7.7 ppm
0	2/7/2013	15:31:01	4.7 vol-%	8.78 ppm
0	2/7/2013	15:31:23	4.95 vol-%	8.1 ppm
0	2/7/2013	15:31:45	5.03 vol-%	7.02 ppm
0	2/7/2013	15:32:07	5.14 vol-%	5.31 ppm
0	2/7/2013	15:32:28	5.33 vol-%	4.03 ppm
0	2/7/2013	15:32:50	5.65 vol-%	3.29 ppm
0	2/7/2013	15:33:12	5.83 vol-%	3.18 ppm
0	2/7/2013	15:33:34	6.83 vol-%	4.8 ppm
0	2/7/2013	15:33:56	8.32 vol-%	4.65 ppm
0	2/7/2013	15:34:17	7.42 vol-%	8.37 ppm
0	2/7/2013	15:34:39	6.95 vol-%	7.15 ppm
0	2/7/2013	15:35:01	6.74 vol-%	6.34 ppm
0	2/7/2013	15:35:23	6.47 vol-%	5.97 ppm
0	2/7/2013	15:35:44	5.88 vol-%	5.21 ppm
0	2/7/2013	15:36:06	6.02 vol-%	5.17 ppm
0	2/7/2013	15:36:27	5.98 vol-%	5.1 ppm
0	2/7/2013	15:36:49	5.81 vol-%	4.75 ppm
0	2/7/2013	15:37:11	6.02 vol-%	5.02 ppm
0	2/7/2013	15:37:33	6.15 vol-%	5.69 ppm
0	2/7/2013	15:37:54	6.22 vol-%	5.39 ppm
0	2/7/2013	15:38:16	6.26 vol-%	5.9 ppm
0	2/7/2013	15:38:38	5.8 vol-%	5.64 ppm
0	2/7/2013	15:39:00	5.97 vol-%	5.91 ppm
0	2/7/2013	15:39:22	6.13 vol-%	6.47 ppm
0	2/7/2013	15:39:43	6 vol-%	6.24 ppm
0	2/7/2013	15:40:05	6 vol-%	6.29 ppm
0	2/7/2013	15:40:27	6.06 vol-%	6.69 ppm
0	2/7/2013	15:40:49	6.51 vol-%	7.45 ppm
0	2/7/2013	15:41:10	6.24 vol-%	9.11 ppm
0	2/7/2013	15:41:32	6.16 vol-%	8.33 ppm
0	2/7/2013	15:41:54	6.03 vol-%	8.93 ppm
0	2/7/2013	15:42:16	5.86 vol-%	8.16 ppm
0	2/7/2013	15:42:37	5.5 vol-%	6.89 ppm
0	2/7/2013	15:42:59	5.36 vol-%	5.84 ppm
0	2/7/2013	15:43:21	5.15 vol-%	5.44 ppm
0	2/7/2013	15:43:43	5.1 vol-%	5.4 ppm
0	2/7/2013	15:44:04	4.91 vol-%	5.12 ppm
0	2/7/2013	15:44:26	4.7 vol-%	5.17 ppm
0	2/7/2013	15:44:48	4.52 vol-%	5.44 ppm
0	2/7/2013	15:45:10	4.37 vol-%	7.1 ppm
0	2/7/2013	15:45:31	4.07 vol-%	10.88 ppm
0	2/7/2013	15:45:53	3.76 vol-%	31.55 ppm
0	2/7/2013	15:46:15	3.39 vol-%	60.06 ppm
0	2/7/2013	15:46:37	3.63 vol-%	50.18 ppm
0	2/7/2013	15:46:59	5.01 vol-%	13.28 ppm
0	2/7/2013	15:47:20	5.63 vol-%	5.81 ppm

0	2/7/2013	15:47:42	6.01 vol-%	4.9 ppm
0	2/7/2013	15:48:04	6.48 vol-%	6.11 ppm
0	2/7/2013	15:48:25	7.08 vol-%	7.53 ppm
0	2/7/2013	15:48:47	6.91 vol-%	8.8 ppm
0	2/7/2013	15:49:09	6 vol-%	8.63 ppm
0	2/7/2013	15:49:31	5.62 vol-%	7.86 ppm
0	2/7/2013	15:49:52	5.63 vol-%	7.62 ppm
0	2/7/2013	15:50:14	6 vol-%	8.07 ppm
0	2/7/2013	15:50:36	6.5 vol-%	8.96 ppm
0	2/7/2013	15:50:57	6.6 vol-%	10.32 ppm
0	2/7/2013	15:51:19	6.64 vol-%	11.35 ppm
0	2/7/2013	15:51:41	6.66 vol-%	11.82 ppm
0	2/7/2013	15:52:03	6.6 vol-%	11.62 ppm
0	2/7/2013	15:52:25	6.63 vol-%	11.58 ppm
0	2/7/2013	15:52:46	6.66 vol-%	11.84 ppm
0	2/7/2013	15:53:08	6.39 vol-%	11.34 ppm
0	2/7/2013	15:53:30	6.29 vol-%	11.19 ppm
0	2/7/2013	15:53:52	6.26 vol-%	11.02 ppm
0	2/7/2013	15:54:14	6.25 vol-%	11.23 ppm
0	2/7/2013	15:54:35	6.25 vol-%	11.5 ppm
0	2/7/2013	15:54:57	6.26 vol-%	11.75 ppm
0	2/7/2013	15:55:19	6.23 vol-%	11.6 ppm
0	2/7/2013	15:55:41	6.3 vol-%	11.59 ppm
0	2/7/2013	15:56:02	6.29 vol-%	10.85 ppm
0	2/7/2013	15:56:24	6.08 vol-%	10.23 ppm
0	2/7/2013	15:56:45	5.71 vol-%	9.7 ppm
0	2/7/2013	15:57:07	5.24 vol-%	9.13 ppm
0	2/7/2013	15:57:29	4.96 vol-%	8.8 ppm
0	2/7/2013	15:57:50	5.51 vol-%	8.95 ppm
0	2/7/2013	15:58:12	5.72 vol-%	9.1 ppm
0	2/7/2013	15:58:34	5.52 vol-%	8.86 ppm
0	2/7/2013	15:58:56	5.49 vol-%	9.02 ppm
0	2/7/2013	15:59:17	5.84 vol-%	9.74 ppm
0	2/7/2013	15:59:39	6.05 vol-%	9.58 ppm
Port Change				
0	2/7/2013	16:00:01	5.89 vol-%	9.52 ppm
0	2/7/2013	16:00:22	5.53 vol-%	9.25 ppm
0	2/7/2013	16:00:44	5.16 vol-%	9.23 ppm
0	2/7/2013	16:01:06	4.88 vol-%	8.45 ppm
0	2/7/2013	16:01:27	5.4 vol-%	9.49 ppm
0	2/7/2013	16:01:49	5.9 vol-%	9.62 ppm
0	2/7/2013	16:02:10	3.43 vol-%	6.98 ppm
0	2/7/2013	16:02:32	1.85 vol-%	1.68 ppm
0	2/7/2013	16:02:54	5.09 vol-%	3.46 ppm
Resume				
0	2/7/2013	16:03:16	6.17 vol-%	5.12 ppm
0	2/7/2013	16:03:38	6.17 vol-%	5.2 ppm
0	2/7/2013	16:03:59	6.58 vol-%	6.17 ppm
0	2/7/2013	16:04:21	6.26 vol-%	5.52 ppm
0	2/7/2013	16:04:42	5.45 vol-%	4.79 ppm
0	2/7/2013	16:05:04	5.68 vol-%	4.79 ppm
0	2/7/2013	16:05:26	5.84 vol-%	4.86 ppm
0	2/7/2013	16:05:47	5.77 vol-%	4.99 ppm
0	2/7/2013	16:06:09	5.75 vol-%	4.51 ppm
0	2/7/2013	16:06:31	5.49 vol-%	4.18 ppm
0	2/7/2013	16:06:52	5.62 vol-%	4.39 ppm
0	2/7/2013	16:07:14	5.57 vol-%	4.38 ppm
0	2/7/2013	16:07:36	5.67 vol-%	4.52 ppm
0	2/7/2013	16:07:58	5.81 vol-%	4.7 ppm
0	2/7/2013	16:08:19	5.93 vol-%	5.01 ppm
0	2/7/2013	16:08:41	6.3 vol-%	5.26 ppm
0	2/7/2013	16:09:03	6.17 vol-%	5.61 ppm
0	2/7/2013	16:09:25	6.01 vol-%	5.4 ppm
0	2/7/2013	16:09:46	6.05 vol-%	5.4 ppm
0	2/7/2013	16:10:08	5.96 vol-%	5.96 ppm
0	2/7/2013	16:10:30	6 vol-%	5.49 ppm

0	2/7/2013	16:10:51	5.94 vol-%	5.52 ppm
0	2/7/2013	16:11:13	5.5 vol-%	5.27 ppm
0	2/7/2013	16:11:35	4.83 vol-%	5.85 ppm
0	2/7/2013	16:11:57	4.73 vol-%	6 ppm
0	2/7/2013	16:12:19	5.3 vol-%	5.69 ppm
0	2/7/2013	16:12:40	6.25 vol-%	4.98 ppm
0	2/7/2013	16:13:02	6.8 vol-%	5.15 ppm
0	2/7/2013	16:13:24	6.65 vol-%	4.83 ppm
0	2/7/2013	16:13:46	6.4 vol-%	4.72 ppm
0	2/7/2013	16:14:07	6.24 vol-%	4.96 ppm
0	2/7/2013	16:14:29	6.23 vol-%	5.19 ppm
0	2/7/2013	16:14:51	5.91 vol-%	4.84 ppm
0	2/7/2013	16:15:13	5.65 vol-%	4.72 ppm
0	2/7/2013	16:15:34	5.54 vol-%	4.75 ppm
0	2/7/2013	16:15:56	5.63 vol-%	5.06 ppm
0	2/7/2013	16:16:18	5.68 vol-%	5.17 ppm
0	2/7/2013	16:16:40	5.58 vol-%	5.14 ppm
0	2/7/2013	16:17:01	5.61 vol-%	4.77 ppm
0	2/7/2013	16:17:23	5.86 vol-%	4.4 ppm
0	2/7/2013	16:17:45	6.1 vol-%	5.2 ppm
0	2/7/2013	16:18:07	6.58 vol-%	6.88 ppm
0	2/7/2013	16:18:28	6.69 vol-%	7.46 ppm
0	2/7/2013	16:18:50	5.93 vol-%	7.47 ppm
0	2/7/2013	16:19:12	5.82 vol-%	7.58 ppm
0	2/7/2013	16:19:33	5.75 vol-%	6.94 ppm
0	2/7/2013	16:19:55	5.7 vol-%	6.84 ppm
0	2/7/2013	16:20:17	5.86 vol-%	7.12 ppm
0	2/7/2013	16:20:38	5.97 vol-%	6.97 ppm
0	2/7/2013	16:21:00	5.67 vol-%	7.05 ppm
0	2/7/2013	16:21:22	5.39 vol-%	7.21 ppm
0	2/7/2013	16:21:44	5.54 vol-%	7.46 ppm
0	2/7/2013	16:22:05	5.69 vol-%	7.24 ppm
0	2/7/2013	16:22:27	5.84 vol-%	7.6 ppm
0	2/7/2013	16:22:49	5.83 vol-%	7.04 ppm
0	2/7/2013	16:23:11	5.71 vol-%	7.2 ppm
0	2/7/2013	16:23:32	5.83 vol-%	7.72 ppm
0	2/7/2013	16:23:54	5.71 vol-%	7.5 ppm
0	2/7/2013	16:24:16	5.79 vol-%	8.03 ppm
0	2/7/2013	16:24:38	5.87 vol-%	7.44 ppm
0	2/7/2013	16:24:59	5.88 vol-%	7.74 ppm
0	2/7/2013	16:25:21	5.94 vol-%	7.65 ppm
0	2/7/2013	16:25:43	6.1 vol-%	7.92 ppm
0	2/7/2013	16:26:04	5.74 vol-%	8.05 ppm
0	2/7/2013	16:26:26	5.39 vol-%	7.43 ppm
0	2/7/2013	16:26:48	6.3 vol-%	8.5 ppm
0	2/7/2013	16:27:10	6.64 vol-%	8.72 ppm
0	2/7/2013	16:27:32	6.19 vol-%	8.28 ppm
0	2/7/2013	16:27:54	6.11 vol-%	8.49 ppm
0	2/7/2013	16:28:15	6.35 vol-%	9.04 ppm
0	2/7/2013	16:28:37	6.49 vol-%	9.4 ppm
0	2/7/2013	16:28:59	6.96 vol-%	9.98 ppm
0	2/7/2013	16:29:21	6.79 vol-%	9.94 ppm
0	2/7/2013	16:29:42	6.52 vol-%	10.05 ppm
0	2/7/2013	16:30:04	5.95 vol-%	9.7 ppm
0	2/7/2013	16:30:26	5.63 vol-%	9.5 ppm
0	2/7/2013	16:30:48	5.88 vol-%	9.94 ppm
0	2/7/2013	16:31:09	6.01 vol-%	10.1 ppm
0	2/7/2013	16:31:31	5.91 vol-%	9.49 ppm
0	2/7/2013	16:31:53	6.19 vol-%	9.32 ppm
0	2/7/2013	16:32:14	6.24 vol-%	9.2 ppm
0	2/7/2013	16:32:36	6.35 vol-%	8.61 ppm
0	2/7/2013	16:32:58	6.2 vol-%	8.47 ppm
			5.886242424	7.986969697
0	2/7/2013	16:33:20	6.21 vol-%	8.3 ppm

0	2/7/2013	16:33:41	2.82 vol-%	4.87 ppm	
0	2/7/2013	16:34:03	0.7 vol-%	0.49 ppm	
0	2/7/2013	16:34:25	0.19 vol-%	**0 ppm**	
0	2/7/2013	16:34:46	0.05 vol-%	**0 ppm**	Zero N2
0	2/7/2013	16:35:08	0 vol-%	**0 ppm**	
0	2/7/2013	16:35:30	0 vol-%	6.48 ppm	
0	2/7/2013	16:35:51	0.02 vol-%	20.52 ppm	
0	2/7/2013	16:36:13	0.02 vol-%	23.58 ppm	
0	2/7/2013	16:36:35	0.03 vol-%	**24.09** ppm	
0	2/7/2013	16:36:56	0.04 vol-%	**24.02** ppm	25.1 ppm CO
0	2/7/2013	16:37:18	0.04 vol-%	23.83 ppm	
0	2/7/2013	16:37:40	0.01 vol-%	17.35 ppm	
0	2/7/2013	16:38:01	0.04 vol-%	3.87 ppm	
0	2/7/2013	16:38:23	0.04 vol-%	1.38 ppm	
0	2/7/2013	16:38:45	0.03 vol-%	0.05 ppm	
0	2/7/2013	16:39:06	0.04 vol-%	0 ppm	
0	2/7/2013	16:39:28	0.05 vol-%	1.06 ppm	
0	2/7/2013	16:39:50	0.05 vol-%	0.26 ppm	
0	2/7/2013	16:40:12	0.05 vol-%	0 ppm	
0	2/7/2013	16:40:33	0.05 vol-%	0.25 ppm	
0	2/7/2013	16:40:55	1.91 vol-%	1.29 ppm	
0	2/7/2013	16:41:17	3.2 vol-%	2.47 ppm	
0	2/7/2013	16:41:38	3.78 vol-%	2.29 ppm	
0	2/7/2013	16:42:00	3.98 vol-%	2.27 ppm	
0	2/7/2013	16:42:22	4.96 vol-%	2.78 ppm	
0	2/7/2013	16:42:44	6.23 vol-%	3.53 ppm	
0	2/7/2013	16:43:05	6.38 vol-%	4.08 ppm	
0	2/7/2013	16:43:27	6.44 vol-%	4.13 ppm	
0	2/7/2013	16:43:49	6.41 vol-%	4.74 ppm	
0	2/7/2013	16:44:11	6.42 vol-%	4.69 ppm	
0	2/7/2013	16:44:33	6.37 vol-%	4.93 ppm	
0	2/7/2013	16:44:54	6.38 vol-%	5.6 ppm	
Start Run #8					
0	2/7/2013	16:45:16	6.34 vol-%	5.78 ppm	
0	2/7/2013	16:45:38	6.28 vol-%	5.75 ppm	
0	2/7/2013	16:46:00	6.31 vol-%	5.54 ppm	
0	2/7/2013	16:46:22	6.5 vol-%	5.64 ppm	
0	2/7/2013	16:46:43	6.2 vol-%	5.28 ppm	
0	2/7/2013	16:47:05	5.69 vol-%	4.49 ppm	
0	2/7/2013	16:47:27	5.76 vol-%	4.51 ppm	
0	2/7/2013	16:47:49	6.19 vol-%	4.84 ppm	
0	2/7/2013	16:48:11	6.53 vol-%	5.73 ppm	
0	2/7/2013	16:48:32	5.84 vol-%	6.73 ppm	
0	2/7/2013	16:48:54	5.65 vol-%	6.44 ppm	
0	2/7/2013	16:49:16	6.08 vol-%	6.17 ppm	
0	2/7/2013	16:49:38	5.63 vol-%	6.01 ppm	
0	2/7/2013	16:49:59	5.46 vol-%	6.24 ppm	
0	2/7/2013	16:50:21	5.59 vol-%	6.69 ppm	
0	2/7/2013	16:50:43	5.35 vol-%	6.83 ppm	
0	2/7/2013	16:51:05	5.54 vol-%	7.19 ppm	
0	2/7/2013	16:51:26	5.54 vol-%	7.63 ppm	
0	2/7/2013	16:51:48	5.42 vol-%	7.76 ppm	
0	2/7/2013	16:52:10	5.47 vol-%	8.25 ppm	
0	2/7/2013	16:52:32	5.51 vol-%	8.56 ppm	
0	2/7/2013	16:52:53	5.74 vol-%	8.17 ppm	
0	2/7/2013	16:53:15	5.65 vol-%	8.45 ppm	
0	2/7/2013	16:53:37	5.56 vol-%	8.38 ppm	
0	2/7/2013	16:53:59	5.23 vol-%	7.85 ppm	
0	2/7/2013	16:54:21	5.05 vol-%	7.98 ppm	
0	2/7/2013	16:54:42	4.95 vol-%	7.41 ppm	
0	2/7/2013	16:55:04	4.94 vol-%	7.34 ppm	
0	2/7/2013	16:55:26	5.07 vol-%	7.09 ppm	
0	2/7/2013	16:55:48	5.02 vol-%	7.3 ppm	
0	2/7/2013	16:56:09	4.68 vol-%	8.64 ppm	
0	2/7/2013	16:56:31	4.77 vol-%	7.64 ppm	
0	2/7/2013	16:56:53	5.26 vol-%	6.77 ppm	

0	2/7/2013	16:57:14	5.36 vol-%	6.71 ppm
0	2/7/2013	16:57:36	5.37 vol-%	6.95 ppm
0	2/7/2013	16:57:58	5.33 vol-%	7.2 ppm
0	2/7/2013	16:58:20	5.38 vol-%	7.22 ppm
0	2/7/2013	16:58:41	5.62 vol-%	7.7 ppm
0	2/7/2013	16:59:03	5.63 vol-%	7.93 ppm
0	2/7/2013	16:59:25	5.71 vol-%	7.93 ppm
0	2/7/2013	16:59:46	5.55 vol-%	7.97 ppm
0	2/7/2013	17:00:08	5.47 vol-%	7.93 ppm
0	2/7/2013	17:00:30	5.75 vol-%	8.09 ppm
0	2/7/2013	17:00:52	5.86 vol-%	7.94 ppm
0	2/7/2013	17:01:14	5.89 vol-%	8.34 ppm
0	2/7/2013	17:01:35	5.9 vol-%	8.17 ppm
0	2/7/2013	17:01:57	6.24 vol-%	8.11 ppm
0	2/7/2013	17:02:19	6.77 vol-%	8.45 ppm
0	2/7/2013	17:02:41	6.18 vol-%	7.83 ppm
0	2/7/2013	17:03:02	5.49 vol-%	6.83 ppm
0	2/7/2013	17:03:24	5.57 vol-%	7.32 ppm
0	2/7/2013	17:03:46	5.24 vol-%	7.08 ppm
0	2/7/2013	17:04:07	5.38 vol-%	7.46 ppm
0	2/7/2013	17:04:29	5.75 vol-%	8.28 ppm
0	2/7/2013	17:04:51	5.25 vol-%	8.91 ppm
0	2/7/2013	17:05:13	5.03 vol-%	9.17 ppm
0	2/7/2013	17:05:34	5.12 vol-%	8.97 ppm
0	2/7/2013	17:05:56	5.22 vol-%	8.87 ppm
0	2/7/2013	17:06:18	5.15 vol-%	9.13 ppm
0	2/7/2013	17:06:40	5.25 vol-%	9 ppm
0	2/7/2013	17:07:01	5.26 vol-%	8.89 ppm
0	2/7/2013	17:07:23	5.26 vol-%	9.42 ppm
0	2/7/2013	17:07:45	5.13 vol-%	9.31 ppm
0	2/7/2013	17:08:07	5.43 vol-%	9.25 ppm
0	2/7/2013	17:08:29	5.6 vol-%	8.63 ppm
0	2/7/2013	17:08:50	5.49 vol-%	8.93 ppm
0	2/7/2013	17:09:12	5.54 vol-%	8.92 ppm
0	2/7/2013	17:09:34	5.56 vol-%	8.68 ppm
0	2/7/2013	17:09:56	5.37 vol-%	8.84 ppm
0	2/7/2013	17:10:17	5.03 vol-%	8.38 ppm
0	2/7/2013	17:10:39	4.89 vol-%	8.64 ppm
0	2/7/2013	17:11:01	4.85 vol-%	8.83 ppm
0	2/7/2013	17:11:23	4.51 vol-%	8.8 ppm
0	2/7/2013	17:11:44	4.5 vol-%	8.87 ppm
0	2/7/2013	17:12:06	5.1 vol-%	7.94 ppm
0	2/7/2013	17:12:28	5.08 vol-%	7.79 ppm
0	2/7/2013	17:12:49	5.12 vol-%	8.07 ppm
0	2/7/2013	17:13:11	5.36 vol-%	8.33 ppm
0	2/7/2013	17:13:33	5.46 vol-%	8.61 ppm
0	2/7/2013	17:13:55	5.27 vol-%	8.83 ppm
0	2/7/2013	17:14:17	5.2 vol-%	9.01 ppm
0	2/7/2013	17:14:38	5.13 vol-%	8.83 ppm
Port Change				
0	2/7/2013	17:15:00	5.27 vol-%	8.93 ppm
0	2/7/2013	17:15:22	6.33 vol-%	10.44 ppm
0	2/7/2013	17:15:44	6.15 vol-%	10.47 ppm
0	2/7/2013	17:16:05	5.56 vol-%	9.78 ppm
0	2/7/2013	17:16:27	2.26 vol-%	6.43 ppm
0	2/7/2013	17:16:49	5.14 vol-%	6.27 ppm
Resume				
0	2/7/2013	17:17:11	7.14 vol-%	7.52 ppm
0	2/7/2013	17:17:32	6.63 vol-%	6.28 ppm
0	2/7/2013	17:17:54	6.49 vol-%	6.21 ppm
0	2/7/2013	17:18:16	7.46 vol-%	7.8 ppm
0	2/7/2013	17:18:38	7.33 vol-%	7.82 ppm
0	2/7/2013	17:18:59	7.25 vol-%	8.36 ppm
0	2/7/2013	17:19:21	7.3 vol-%	8.45 ppm
0	2/7/2013	17:19:43	6.84 vol-%	8.19 ppm
0	2/7/2013	17:20:04	7.1 vol-%	9.6 ppm

0	2/7/2013	17:20:26	7.22 vol-%	9.71 ppm
0	2/7/2013	17:20:48	6.86 vol-%	9.46 ppm
0	2/7/2013	17:21:09	6.63 vol-%	9.38 ppm
0	2/7/2013	17:21:31	6.67 vol-%	9.42 ppm
0	2/7/2013	17:21:53	6.63 vol-%	8.96 ppm
0	2/7/2013	17:22:14	6.49 vol-%	8.54 ppm
0	2/7/2013	17:22:36	6.47 vol-%	8.37 ppm
0	2/7/2013	17:22:58	7 vol-%	8.08 ppm
0	2/7/2013	17:23:19	7.11 vol-%	8.24 ppm
0	2/7/2013	17:23:41	7.18 vol-%	8.27 ppm
0	2/7/2013	17:24:03	7.15 vol-%	8.22 ppm
0	2/7/2013	17:24:24	7.2 vol-%	8.27 ppm
0	2/7/2013	17:24:46	7.14 vol-%	8.08 ppm
0	2/7/2013	17:25:08	7.26 vol-%	8.41 ppm
0	2/7/2013	17:25:30	7.29 vol-%	8.24 ppm
0	2/7/2013	17:25:51	7.15 vol-%	8.44 ppm
0	2/7/2013	17:26:13	6.35 vol-%	8.02 ppm
0	2/7/2013	17:26:35	5.9 vol-%	8.04 ppm
0	2/7/2013	17:26:56	6.38 vol-%	9.05 ppm
0	2/7/2013	17:27:18	6.88 vol-%	8.77 ppm
0	2/7/2013	17:27:40	6.89 vol-%	8.59 ppm
0	2/7/2013	17:28:02	6.86 vol-%	8.82 ppm
0	2/7/2013	17:28:23	6.45 vol-%	9.02 ppm
0	2/7/2013	17:28:45	6.39 vol-%	8.93 ppm
0	2/7/2013	17:29:07	6.71 vol-%	9.4 ppm
0	2/7/2013	17:29:28	6.73 vol-%	9.11 ppm
0	2/7/2013	17:29:50	6.72 vol-%	8.65 ppm
0	2/7/2013	17:30:12	6.33 vol-%	8.06 ppm
0	2/7/2013	17:30:33	6.09 vol-%	7.61 ppm
0	2/7/2013	17:30:55	5.64 vol-%	7.1 ppm
0	2/7/2013	17:31:17	5.73 vol-%	7.14 ppm
0	2/7/2013	17:31:39	6.52 vol-%	7.88 ppm
0	2/7/2013	17:32:00	7.36 vol-%	8.59 ppm
0	2/7/2013	17:32:22	7.07 vol-%	7.94 ppm
0	2/7/2013	17:32:44	5.75 vol-%	7.11 ppm
0	2/7/2013	17:33:05	5.66 vol-%	7.25 ppm
0	2/7/2013	17:33:27	6.28 vol-%	8.32 ppm
0	2/7/2013	17:33:49	6.7 vol-%	8.68 ppm
0	2/7/2013	17:34:10	6.96 vol-%	8.99 ppm
0	2/7/2013	17:34:32	6.69 vol-%	9.09 ppm
0	2/7/2013	17:34:54	5.31 vol-%	10.18 ppm
0	2/7/2013	17:35:15	5.26 vol-%	10.44 ppm
0	2/7/2013	17:35:37	5.79 vol-%	9.7 ppm
0	2/7/2013	17:35:59	5.86 vol-%	8.87 ppm
0	2/7/2013	17:36:21	5.48 vol-%	8.66 ppm
0	2/7/2013	17:36:42	4.87 vol-%	7.91 ppm
0	2/7/2013	17:37:04	4.7 vol-%	8.03 ppm
0	2/7/2013	17:37:26	4.72 vol-%	7.88 ppm
0	2/7/2013	17:37:47	4.7 vol-%	7.81 ppm
0	2/7/2013	17:38:09	4.8 vol-%	7.27 ppm
0	2/7/2013	17:38:31	4.61 vol-%	7.46 ppm
0	2/7/2013	17:38:53	4.71 vol-%	7.98 ppm
0	2/7/2013	17:39:14	4.77 vol-%	7.94 ppm
0	2/7/2013	17:39:36	4.84 vol-%	8.11 ppm
0	2/7/2013	17:39:58	4.75 vol-%	8.07 ppm
0	2/7/2013	17:40:19	4.77 vol-%	8.58 ppm
0	2/7/2013	17:40:41	4.78 vol-%	8.78 ppm
0	2/7/2013	17:41:03	4.54 vol-%	10.63 ppm
0	2/7/2013	17:41:25	4.99 vol-%	13.34 ppm
0	2/7/2013	17:41:46	6.15 vol-%	11.84 ppm
0	2/7/2013	17:42:08	6.46 vol-%	12.23 ppm
0	2/7/2013	17:42:30	6.26 vol-%	12.6 ppm
0	2/7/2013	17:42:51	5.88 vol-%	12.21 ppm
0	2/7/2013	17:43:13	6.1 vol-%	12.31 ppm
0	2/7/2013	17:43:35	5.77 vol-%	11.58 ppm
0	2/7/2013	17:43:56	5.68 vol-%	11.16 ppm

0	2/7/2013	17:44:18	5.62 vol-%	10.85 ppm	
0	2/7/2013	17:44:40	5.57 vol-%	10.21 ppm	
0	2/7/2013	17:45:02	5.78 vol-%	10.4 ppm	
0	2/7/2013	17:45:23	5.18 vol-%	9.55 ppm	
0	2/7/2013	17:45:45	4.95 vol-%	8.7 ppm	
0	2/7/2013	17:46:07	5 vol-%	8.61 ppm	
0	2/7/2013	17:46:29	5.2 vol-%	8.46 ppm	
0	2/7/2013	17:46:51	5.4 vol-%	8.81 ppm	
Stop Run #8			5.810181818	8.290969697	
0	2/7/2013	17:47:12	5.77 vol-%	8.92 ppm	
0	2/7/2013	17:47:34	5.7 vol-%	9.24 ppm	
0	2/7/2013	17:47:56	2.44 vol-%	25.53 ppm	
0	2/7/2013	17:48:18	0.59 vol-%	29.17 ppm	
0	2/7/2013	17:48:40	0.17 vol-%	11.06 ppm	
0	2/7/2013	17:49:01	0.02 vol-%	2.03 ppm	
0	2/7/2013	17:49:23	0 vol-%	0.19 ppm	
0	2/7/2013	17:49:45	0 vol-%	**0 ppm**	
0	2/7/2013	17:50:06	0.01 vol-%	**0 ppm**	Zero N2
0	2/7/2013	17:50:28	0.01 vol-%	0.8 ppm	
0	2/7/2013	17:50:50	0.02 vol-%	16.27 ppm	
0	2/7/2013	17:51:11	0.02 vol-%	22.89 ppm	
0	2/7/2013	17:51:33	0.01 vol-%	24.16 ppm	
0	2/7/2013	17:51:55	0.01 vol-%	**24.41** ppm	
0	2/7/2013	17:52:16	0.01 vol-%	**24.69** ppm	25.1 ppm CO
0	2/7/2013	17:52:38	0.01 vol-%	**24.52** ppm	
0	2/7/2013	17:53:00	0 vol-%	15.25 ppm	

Summary of CO Analyzer Calibrations and Bias

Plant: Comm Engineering, Lafayette, LA
Source: Combustor Exhaust
Date: 2/8/2013

Analyzer Calibratrion Data

	Cylinder Value	Analyzer Response	Absolute Difference	% Span
Zero Gas	0	0	0	0
Mid Range	8.87	8.78	-0.09	-0.35857
High Range	25.1	25.35	0.25	0.996016

System Calibration Bias and Drift Data

		Analyzer Calibration Response	Initial Values System Calibration Response	Initial Values System Calibration Bias	Final Values System Calibration Response	Final Values System Calibration Bias	Drift	Average Calibration Values
Run #9	Zero Gas	0	0	0	0	0	0	0
	Upscale	25.35	24.6	-2.98805	24.78	-2.27092	0.717131	24.69
	Average CO Concentration:			6.95				
	Corrected CO Concentration:			7.065411				
Run #10	Zero Gas	0	0	0	0	0	0	0
	Upscale	25.35	24.78	-2.27092	24.76	-2.3506	-0.07968	24.77
	Average CO Concentration:			8.15				
	Corrected CO Concentration:			8.258579				
Run #11	Zero Gas	0	0	0	0	0	0	0
	Upscale	25.35	24.76	-2.3506	24.45	-3.58566	-1.23506	24.605
	Average CO Concentration:			5.87				
	Corrected CO Concentration:			5.988092				
Run #12	Zero Gas	0	0	0	0	0	0	0
	Upscale	25.35	24.45	-3.58566	24.58	-3.06773	0.517928	24.515
	Average CO Concentration:			6.66				
	Corrected CO Concentration:			6.818927				

Line	Date	Time	Carbon dioxide C(Unit	Carbon monoxide C(Unit	
0	2/8/2013	7:31:44	0.13 vol-%	0.94 ppm	
0	2/8/2013	7:32:06	0.42 vol-%	0 ppm	
0	2/8/2013	7:32:27	0.53 vol-%	0 ppm	
0	2/8/2013	7:32:49	0.57 vol-%	2.55 ppm	
0	2/8/2013	7:34:34	0.02 vol-%	0.19 ppm	
0	2/8/2013	7:34:56	0.02 vol-%	0 ppm	
0	2/8/2013	7:35:18	0.03 vol-%	0.07 ppm	
0	2/8/2013	7:35:40	0.05 vol-%	0.1 ppm	
0	2/8/2013	7:36:01	0.04 vol-%	**0.04** ppm	
0	2/8/2013	7:36:23	0.05 vol-%	**0.04** ppm	
0	2/8/2013	7:36:45	0.05 vol-%	**0** ppm	
0	2/8/2013	7:37:06	0.09 vol-%	5.38 ppm	
0	2/8/2013	7:37:28	0.06 vol-%	20.3 ppm	
0	2/8/2013	7:37:49	0.04 vol-%	23.85 ppm	
0	2/8/2013	7:38:11	0.03 vol-%	24.45 ppm	
0	2/8/2013	7:38:33	0.05 vol-%	24.52 ppm	
0	2/8/2013	7:38:54	0.03 vol-%	24.47 ppm	
0	2/8/2013	7:39:16	0.03 vol-%	**24.84** ppm	
0	2/8/2013	7:39:38	0.04 vol-%	**25.5** ppm	25.1 ppm CO
0	2/8/2013	7:40:00	0.03 vol-%	**25.71** ppm	
0	2/8/2013	7:40:21	0.05 vol-%	12.35 ppm	
0	2/8/2013	7:40:43	0.09 vol-%	2.71 ppm	
0	2/8/2013	7:41:05	0.07 vol-%	2.63 ppm	
0	2/8/2013	7:41:26	0.07 vol-%	7.9 ppm	
0	2/8/2013	7:41:48	0.01 vol-%	9.15 ppm	
0	2/8/2013	7:42:10	0 vol-%	**8.87** ppm	
0	2/8/2013	7:42:32	0 vol-%	**8.67** ppm	8.87 ppm CO
0	2/8/2013	7:42:53	0 vol-%	**8.82** ppm	
0	2/8/2013	7:43:15	0.02 vol-%	5.75 ppm	
0	2/8/2013	7:43:37	0.08 vol-%	1.07 ppm	
0	2/8/2013	7:43:58	0.11 vol-%	0.16 ppm	
0	2/8/2013	7:44:20	0.09 vol-%	12.03 ppm	
0	2/8/2013	7:44:42	0.06 vol-%	**24.46** ppm	
0	2/8/2013	7:45:03	0.06 vol-%	**24.69** ppm	25.1 ppm CO Bias
0	2/8/2013	7:45:25	0.06 vol-%	**24.66** ppm	
0	2/8/2013	7:45:47	0.05 vol-%	9.88 ppm	
0	2/8/2013	7:47:22	0 vol-%	0 ppm	
0	2/8/2013	7:47:44	0 vol-%	0.03 ppm	
0	2/8/2013	7:48:06	0 vol-%	**0** ppm	
0	2/8/2013	7:48:27	0 vol-%	**0** ppm	Zero N2 Bias
0	2/8/2013	7:48:49	0.01 vol-%	0.02 ppm	
0	2/8/2013	7:49:11	0.03 vol-%	0 ppm	
0	2/8/2013	7:49:32	0.03 vol-%	0.62 ppm	
0	2/8/2013	7:49:54	0.03 vol-%	0.24 ppm	
0	2/8/2013	7:50:16	0.03 vol-%	0.3 ppm	
0	2/8/2013	7:50:38	0.03 vol-%	0.03 ppm	
0	2/8/2013	7:51:00	0.05 vol-%	0 ppm	
0	2/8/2013	7:51:21	0.03 vol-%	0 ppm	
0	2/8/2013	7:51:43	0.02 vol-%	0 ppm	
0	2/8/2013	7:52:05	0.01 vol-%	0 ppm	
0	2/8/2013	7:52:26	0.01 vol-%	0 ppm	
0	2/8/2013	7:52:48	0.03 vol-%	0 ppm	
0	2/8/2013	7:53:09	0.05 vol-%	0 ppm	
0	2/8/2013	7:53:31	0.01 vol-%	0 ppm	
0	2/8/2013	7:53:53	0 vol-%	0 ppm	
0	2/8/2013	7:54:14	0 vol-%	0 ppm	
0	2/8/2013	7:54:36	0 vol-%	0 ppm	
0	2/8/2013	7:54:58	0.02 vol-%	0 ppm	
0	2/8/2013	9:13:49	0 vol-%	0 ppm	
0	2/8/2013	9:14:11	3.1 vol-%	5.85 ppm	
0	2/8/2013	9:14:32	6.4 vol-%	6.36 ppm	
0	2/8/2013	9:14:54	6.97 vol-%	5.96 ppm	
0	2/8/2013	9:15:16	7.04 vol-%	6.09 ppm	
0	2/8/2013	9:15:38	7.16 vol-%	6.42 ppm	
0	2/8/2013	9:15:59	7.07 vol-%	7.01 ppm	

0	2/8/2013	9:16:21	6.57 vol-%	6.53 ppm
0	2/8/2013	9:16:43	6.89 vol-%	7.1 ppm
0	2/8/2013	9:17:05	6.35 vol-%	6.6 ppm
0	2/8/2013	9:17:26	6.37 vol-%	6.33 ppm
0	2/8/2013	9:17:48	6.32 vol-%	6.28 ppm
0	2/8/2013	9:18:10	6.25 vol-%	6.07 ppm
0	2/8/2013	9:18:31	6.03 vol-%	5.6 ppm
0	2/8/2013	9:18:53	5.63 vol-%	4.65 ppm
0	2/8/2013	9:19:15	6.44 vol-%	5.83 ppm
0	2/8/2013	9:19:36	7.1 vol-%	7.15 ppm
0	2/8/2013	9:19:58	7.11 vol-%	7.51 ppm
0	2/8/2013	9:20:20	5.88 vol-%	7.05 ppm
0	2/8/2013	9:20:42	6.28 vol-%	6.54 ppm
0	2/8/2013	9:21:03	6.62 vol-%	6.98 ppm
0	2/8/2013	9:21:25	6.46 vol-%	6.66 ppm
0	2/8/2013	9:21:47	6.16 vol-%	5.85 ppm
0	2/8/2013	9:22:08	5.6 vol-%	4.47 ppm
0	2/8/2013	9:22:30	5.82 vol-%	3.9 ppm
0	2/8/2013	9:22:52	6.53 vol-%	4.62 ppm
0	2/8/2013	9:23:13	6.62 vol-%	4.86 ppm
0	2/8/2013	9:23:35	6.62 vol-%	4.38 ppm
0	2/8/2013	9:23:57	6.58 vol-%	4.37 ppm
0	2/8/2013	9:24:19	6.57 vol-%	4.34 ppm
0	2/8/2013	9:24:41	6.53 vol-%	4.36 ppm
	Start Run #9			
0	2/8/2013	9:25:02	6.6 vol-%	4.17 ppm
0	2/8/2013	9:25:24	6.59 vol-%	4.3 ppm
0	2/8/2013	9:25:46	6.12 vol-%	4.47 ppm
0	2/8/2013	9:26:08	5.64 vol-%	3.75 ppm
0	2/8/2013	9:26:29	6.36 vol-%	4.34 ppm
0	2/8/2013	9:26:51	6.87 vol-%	5.31 ppm
0	2/8/2013	9:27:13	6.27 vol-%	4.97 ppm
0	2/8/2013	9:27:35	6.5 vol-%	5.18 ppm
0	2/8/2013	9:27:56	6.93 vol-%	5.93 ppm
0	2/8/2013	9:28:18	7.02 vol-%	6.71 ppm
0	2/8/2013	9:28:40	6.59 vol-%	6.39 ppm
0	2/8/2013	9:29:02	6.32 vol-%	6.78 ppm
0	2/8/2013	9:29:23	6.5 vol-%	6.48 ppm
0	2/8/2013	9:29:45	6.77 vol-%	6.9 ppm
0	2/8/2013	9:30:07	7.54 vol-%	8.44 ppm
0	2/8/2013	9:30:29	8.16 vol-%	7.06 ppm
0	2/8/2013	9:30:50	7.51 vol-%	10.04 ppm
0	2/8/2013	9:31:12	7.31 vol-%	9.8 ppm
0	2/8/2013	9:31:34	7.29 vol-%	9.88 ppm
0	2/8/2013	9:31:55	7.24 vol-%	9.96 ppm
0	2/8/2013	9:32:17	7.33 vol-%	10.05 ppm
0	2/8/2013	9:32:39	7.25 vol-%	10.62 ppm
0	2/8/2013	9:33:00	7.31 vol-%	10.24 ppm
0	2/8/2013	9:33:22	7.36 vol-%	10.43 ppm
0	2/8/2013	9:33:44	7.4 vol-%	10.85 ppm
0	2/8/2013	9:34:05	7.47 vol-%	10.89 ppm
0	2/8/2013	9:34:27	7.47 vol-%	10.68 ppm
0	2/8/2013	9:34:49	7.35 vol-%	10.83 ppm
0	2/8/2013	9:35:10	7.3 vol-%	10.51 ppm
0	2/8/2013	9:35:32	7.29 vol-%	10.14 ppm
0	2/8/2013	9:35:54	7.24 vol-%	10.14 ppm
0	2/8/2013	9:36:16	6.75 vol-%	9.15 ppm
0	2/8/2013	9:36:38	6.32 vol-%	8.02 ppm
0	2/8/2013	9:36:59	6.09 vol-%	7.17 ppm
0	2/8/2013	9:37:21	5.84 vol-%	6.53 ppm
0	2/8/2013	9:37:43	5.55 vol-%	6.53 ppm
0	2/8/2013	9:38:05	5.53 vol-%	5.93 ppm
0	2/8/2013	9:38:26	5.89 vol-%	5.5 ppm
0	2/8/2013	9:38:48	6.2 vol-%	5.92 ppm
0	2/8/2013	9:39:10	6.31 vol-%	6.3 ppm
0	2/8/2013	9:39:32	6.64 vol-%	6.78 ppm

0	2/8/2013	9:39:53	6.62 vol-%	7.02 ppm
0	2/8/2013	9:40:15	6.07 vol-%	6.65 ppm
0	2/8/2013	9:40:37	5.7 vol-%	6.27 ppm
0	2/8/2013	9:40:59	5.43 vol-%	5.58 ppm
0	2/8/2013	9:41:20	5.76 vol-%	5.66 ppm
0	2/8/2013	9:41:42	6.32 vol-%	6.07 ppm
0	2/8/2013	9:42:04	6.76 vol-%	6.85 ppm
0	2/8/2013	9:42:26	6.61 vol-%	7.21 ppm
0	2/8/2013	9:42:47	6.73 vol-%	7.41 ppm
0	2/8/2013	9:43:09	7.17 vol-%	8.68 ppm
0	2/8/2013	9:43:31	6.65 vol-%	8.7 ppm
0	2/8/2013	9:43:52	6.03 vol-%	8.86 ppm
0	2/8/2013	9:44:14	5.12 vol-%	8.42 ppm
0	2/8/2013	9:44:36	4.95 vol-%	7.54 ppm
0	2/8/2013	9:44:58	4.98 vol-%	6.62 ppm
0	2/8/2013	9:45:20	5.47 vol-%	6.78 ppm
0	2/8/2013	9:45:41	5.61 vol-%	7.32 ppm
0	2/8/2013	9:46:03	5.69 vol-%	8.12 ppm
0	2/8/2013	9:46:25	5.79 vol-%	8.96 ppm
0	2/8/2013	9:46:47	5.86 vol-%	9.53 ppm
0	2/8/2013	9:47:08	5.72 vol-%	9.74 ppm
0	2/8/2013	9:47:30	5.32 vol-%	9.4 ppm
0	2/8/2013	9:47:52	5.29 vol-%	9.09 ppm
0	2/8/2013	9:48:13	5.39 vol-%	8.86 ppm
0	2/8/2013	9:48:35	5.42 vol-%	8.89 ppm
0	2/8/2013	9:48:57	5.37 vol-%	8.72 ppm
0	2/8/2013	9:49:18	5.28 vol-%	8.65 ppm
0	2/8/2013	9:49:40	5.28 vol-%	8.11 ppm
0	2/8/2013	9:50:01	5.5 vol-%	8.63 ppm
0	2/8/2013	9:50:23	5.89 vol-%	8.9 ppm
0	2/8/2013	9:50:45	5.84 vol-%	9.16 ppm
0	2/8/2013	9:51:07	5.69 vol-%	9.29 ppm
0	2/8/2013	9:51:29	5.43 vol-%	8.56 ppm
0	2/8/2013	9:51:50	5.34 vol-%	7.93 ppm
0	2/8/2013	9:52:12	5.3 vol-%	7.7 ppm
0	2/8/2013	9:52:34	5.35 vol-%	6.92 ppm
0	2/8/2013	9:52:56	5.07 vol-%	6.51 ppm
0	2/8/2013	9:53:18	5.5 vol-%	7.23 ppm
0	2/8/2013	9:53:39	5.98 vol-%	7.7 ppm
0	2/8/2013	9:54:01	5.93 vol-%	7.77 ppm
0	2/8/2013	9:54:23	6.45 vol-%	9.35 ppm
0	2/8/2013	9:54:44	6.6 vol-%	9.89 ppm
	Port Change			
0	2/8/2013	9:55:06	6.25 vol-%	9.61 ppm
0	2/8/2013	9:55:27	6.24 vol-%	10.09 ppm
0	2/8/2013	9:55:49	6.43 vol-%	9.58 ppm
0	2/8/2013	9:56:11	3.56 vol-%	5.34 ppm
0	2/8/2013	9:56:32	1.74 vol-%	0.59 ppm
0	2/8/2013	9:56:54	3.14 vol-%	1.06 ppm
	Resume			
0	2/8/2013	9:57:16	4.03 vol-%	1.78 ppm
0	2/8/2013	9:57:38	5.44 vol-%	2.27 ppm
0	2/8/2013	9:57:59	6.05 vol-%	3.02 ppm
0	2/8/2013	9:58:21	6.29 vol-%	3.01 ppm
0	2/8/2013	9:58:43	6.47 vol-%	3.14 ppm
0	2/8/2013	9:59:05	6.99 vol-%	3.61 ppm
0	2/8/2013	9:59:27	7.11 vol-%	4.05 ppm
0	2/8/2013	9:59:49	8.02 vol-%	2.66 ppm
0	2/8/2013	10:00:10	7.37 vol-%	4.77 ppm
0	2/8/2013	10:00:32	7.09 vol-%	4.94 ppm
0	2/8/2013	10:00:54	6.93 vol-%	5.26 ppm
0	2/8/2013	10:01:16	6.87 vol-%	5.68 ppm
0	2/8/2013	10:01:37	6.81 vol-%	5.53 ppm
0	2/8/2013	10:01:59	6.47 vol-%	5.53 ppm
0	2/8/2013	10:02:21	5.92 vol-%	5.25 ppm
0	2/8/2013	10:02:43	5.82 vol-%	5.46 ppm

0	2/8/2013	10:03:05	5.88 vol-%	5.8 ppm
0	2/8/2013	10:03:27	5.98 vol-%	5.39 ppm
0	2/8/2013	10:03:49	5.83 vol-%	5.07 ppm
0	2/8/2013	10:04:10	5.97 vol-%	4.15 ppm
0	2/8/2013	10:04:32	5.92 vol-%	3.92 ppm
0	2/8/2013	10:04:54	6.43 vol-%	4.85 ppm
0	2/8/2013	10:05:16	6.55 vol-%	4.22 ppm
0	2/8/2013	10:05:38	6.53 vol-%	4.42 ppm
0	2/8/2013	10:05:59	6.19 vol-%	3.92 ppm
0	2/8/2013	10:06:21	6.02 vol-%	4.59 ppm
0	2/8/2013	10:06:43	6.63 vol-%	5.22 ppm
0	2/8/2013	10:07:05	6.94 vol-%	5.34 ppm
0	2/8/2013	10:07:27	7.22 vol-%	5.09 ppm
0	2/8/2013	10:07:49	7.11 vol-%	5.5 ppm
0	2/8/2013	10:08:10	6.68 vol-%	5.03 ppm
0	2/8/2013	10:08:32	6.56 vol-%	4.28 ppm
0	2/8/2013	10:08:54	6.47 vol-%	4.57 ppm
0	2/8/2013	10:09:16	6.02 vol-%	4.94 ppm
0	2/8/2013	10:09:38	6.29 vol-%	5.83 ppm
0	2/8/2013	10:10:00	6.74 vol-%	8.16 ppm
0	2/8/2013	10:10:21	6.68 vol-%	8.12 ppm
0	2/8/2013	10:10:43	6.22 vol-%	8.17 ppm
0	2/8/2013	10:11:05	5.73 vol-%	6.65 ppm
0	2/8/2013	10:11:27	5.83 vol-%	7.53 ppm
0	2/8/2013	10:11:48	6.3 vol-%	7.08 ppm
0	2/8/2013	10:12:10	6.72 vol-%	7.31 ppm
0	2/8/2013	10:12:32	6.38 vol-%	5.95 ppm
0	2/8/2013	10:12:54	5.78 vol-%	5.6 ppm
0	2/8/2013	10:13:16	5.63 vol-%	5.35 ppm
0	2/8/2013	10:13:37	5.75 vol-%	5.52 ppm
0	2/8/2013	10:13:59	5.66 vol-%	5.5 ppm
0	2/8/2013	10:14:21	5.52 vol-%	5.26 ppm
0	2/8/2013	10:14:43	5.11 vol-%	5.37 ppm
0	2/8/2013	10:15:04	4.81 vol-%	5.87 ppm
0	2/8/2013	10:15:26	5 vol-%	5.97 ppm
0	2/8/2013	10:15:48	4.65 vol-%	6.98 ppm
0	2/8/2013	10:16:10	4.42 vol-%	7.15 ppm
0	2/8/2013	10:16:32	4.56 vol-%	6.81 ppm
0	2/8/2013	10:16:53	4.68 vol-%	6.79 ppm
0	2/8/2013	10:17:15	4.59 vol-%	7.14 ppm
0	2/8/2013	10:17:37	4.5 vol-%	7.38 ppm
0	2/8/2013	10:17:59	4.7 vol-%	6.94 ppm
0	2/8/2013	10:18:20	4.5 vol-%	7.19 ppm
0	2/8/2013	10:18:42	4.63 vol-%	5.81 ppm
0	2/8/2013	10:19:04	4.78 vol-%	6.63 ppm
0	2/8/2013	10:19:25	4.71 vol-%	5.89 ppm
0	2/8/2013	10:19:47	4.77 vol-%	5.68 ppm
0	2/8/2013	10:20:09	4.56 vol-%	5.36 ppm
0	2/8/2013	10:20:31	4.34 vol-%	5.59 ppm
0	2/8/2013	10:20:52	3.99 vol-%	5.56 ppm
0	2/8/2013	10:21:14	4.01 vol-%	6.05 ppm
0	2/8/2013	10:21:36	4.26 vol-%	5.95 ppm
0	2/8/2013	10:21:57	4.16 vol-%	6.91 ppm
0	2/8/2013	10:22:19	4.07 vol-%	6.69 ppm
0	2/8/2013	10:22:41	4.94 vol-%	6.3 ppm
0	2/8/2013	10:23:03	5.74 vol-%	7.62 ppm
0	2/8/2013	10:23:24	5.83 vol-%	8.26 ppm
0	2/8/2013	10:23:46	5.66 vol-%	8.83 ppm
0	2/8/2013	10:24:08	5.68 vol-%	8.76 ppm
0	2/8/2013	10:24:30	5.64 vol-%	9.18 ppm
0	2/8/2013	10:24:51	6.13 vol-%	9.58 ppm
0	2/8/2013	10:25:13	6.79 vol-%	10.86 ppm
0	2/8/2013	10:25:35	6.96 vol-%	11.74 ppm
0	2/8/2013	10:25:56	6.66 vol-%	10.95 ppm
0	2/8/2013	10:26:18	6.34 vol-%	10.32 ppm
0	2/8/2013	10:26:40	6.27 vol-%	10.37 ppm

Stop Run #9			6.039757576	6.946	
0	2/8/2013	10:27:02	6.21 vol-%	11.28 ppm	
0	2/8/2013	10:27:23	2.89 vol-%	7.03 ppm	
0	2/8/2013	10:27:45	0.68 vol-%	1.78 ppm	
0	2/8/2013	10:28:07	0.2 vol-%	**0** ppm	
0	2/8/2013	10:28:28	0.04 vol-%	**0** ppm	Zero N2
0	2/8/2013	10:28:50	0 vol-%	0.38 ppm	
0	2/8/2013	10:29:12	0.02 vol-%	12.87 ppm	
0	2/8/2013	10:29:33	0.04 vol-%	22.16 ppm	
0	2/8/2013	10:29:55	0.04 vol-%	24.17 ppm	
0	2/8/2013	10:30:17	0 vol-%	24.2 ppm	
0	2/8/2013	10:30:38	0.01 vol-%	**24.79** ppm	
0	2/8/2013	10:31:00	0.01 vol-%	**24.74** ppm	25,1 ppm CO
0	2/8/2013	10:31:22	0.01 vol-%	**24.81** ppm	
0	2/8/2013	10:31:43	0.01 vol-%	14.85 ppm	
0	2/8/2013	10:32:05	0.02 vol-%	3.19 ppm	
0	2/8/2013	10:32:27	0.02 vol-%	0.06 ppm	
0	2/8/2013	10:32:48	0 vol-%	0 ppm	
0	2/8/2013	10:33:10	0.02 vol-%	0 ppm	
0	2/8/2013	12:11:53	3.44 vol-%	2.87 ppm	
0	2/8/2013	12:12:15	3.49 vol-%	2.82 ppm	
0	2/8/2013	12:12:37	3.73 vol-%	2.89 ppm	
0	2/8/2013	12:12:58	3.44 vol-%	2.61 ppm	
Start Run #10					
0	2/8/2013	12:13:20	3.17 vol-%	3.24 ppm	
0	2/8/2013	12:13:42	2.82 vol-%	10.89 ppm	
0	2/8/2013	12:14:03	3.78 vol-%	7.29 ppm	
0	2/8/2013	12:14:25	3.98 vol-%	4.86 ppm	
0	2/8/2013	12:14:47	4.05 vol-%	3.89 ppm	
0	2/8/2013	12:15:08	5.24 vol-%	4.44 ppm	
0	2/8/2013	12:15:30	5.91 vol-%	5.37 ppm	
0	2/8/2013	12:15:52	5.52 vol-%	4.89 ppm	
0	2/8/2013	12:16:14	5.48 vol-%	5.97 ppm	
0	2/8/2013	12:16:36	4.63 vol-%	4.73 ppm	
0	2/8/2013	12:16:58	4.91 vol-%	5.37 ppm	
0	2/8/2013	12:17:20	5.94 vol-%	5.85 ppm	
0	2/8/2013	12:17:41	5.79 vol-%	5.89 ppm	
0	2/8/2013	12:18:03	5.71 vol-%	5.83 ppm	
0	2/8/2013	12:18:25	5.4 vol-%	5.15 ppm	
0	2/8/2013	12:18:47	5.61 vol-%	4.66 ppm	
0	2/8/2013	12:19:09	6.62 vol-%	6.75 ppm	
0	2/8/2013	12:19:31	6.89 vol-%	6.7 ppm	
0	2/8/2013	12:19:53	7.06 vol-%	7.48 ppm	
0	2/8/2013	12:20:15	6.8 vol-%	7.17 ppm	
0	2/8/2013	12:20:36	6.66 vol-%	7 ppm	
0	2/8/2013	12:20:58	6.67 vol-%	7.6 ppm	
0	2/8/2013	12:21:20	6.68 vol-%	7.52 ppm	
0	2/8/2013	12:21:42	6.61 vol-%	7.43 ppm	
0	2/8/2013	12:22:03	6.65 vol-%	8.03 ppm	
0	2/8/2013	12:22:25	6.7 vol-%	8.12 ppm	
0	2/8/2013	12:22:47	6.68 vol-%	8.3 ppm	
0	2/8/2013	12:23:09	6.68 vol-%	8.67 ppm	
0	2/8/2013	12:23:30	6.7 vol-%	8.45 ppm	
0	2/8/2013	12:23:52	6.75 vol-%	8.79 ppm	
0	2/8/2013	12:24:14	6.64 vol-%	9.55 ppm	
0	2/8/2013	12:24:36	6.81 vol-%	9.86 ppm	
0	2/8/2013	12:24:57	7.35 vol-%	9.88 ppm	
0	2/8/2013	12:25:19	7.24 vol-%	9.3 ppm	
0	2/8/2013	12:25:41	7.32 vol-%	9.68 ppm	
0	2/8/2013	12:26:02	6.84 vol-%	9.18 ppm	
0	2/8/2013	12:26:24	6.82 vol-%	9.05 ppm	
0	2/8/2013	12:26:46	6.4 vol-%	7.88 ppm	
0	2/8/2013	12:27:08	5.47 vol-%	7.23 ppm	
0	2/8/2013	12:27:29	4.61 vol-%	5.08 ppm	

0	2/8/2013	12:27:51	4.33 vol-%	5.27 ppm
0	2/8/2013	12:28:13	2.64 vol-%	20.05 ppm
0	2/8/2013	12:28:34	2.06 vol-%	15.17 ppm
0	2/8/2013	12:28:56	2.61 vol-%	8.2 ppm
0	2/8/2013	12:29:18	3.63 vol-%	5.4 ppm
0	2/8/2013	12:29:39	4.31 vol-%	4.62 ppm
0	2/8/2013	12:30:01	4.67 vol-%	4.42 ppm
0	2/8/2013	12:30:23	4.81 vol-%	5.46 ppm
0	2/8/2013	12:30:44	4.19 vol-%	4.67 ppm
0	2/8/2013	12:31:06	3.96 vol-%	4.58 ppm
0	2/8/2013	12:31:28	3.99 vol-%	4.43 ppm
0	2/8/2013	12:31:49	5.42 vol-%	5.92 ppm
0	2/8/2013	12:32:11	6.45 vol-%	14.54 ppm
0	2/8/2013	12:32:33	7.03 vol-%	35.85 ppm
0	2/8/2013	12:32:55	7.08 vol-%	22.5 ppm
0	2/8/2013	12:33:16	7.26 vol-%	13.34 ppm
0	2/8/2013	12:33:38	8.45 vol-%	10.01 ppm
0	2/8/2013	12:34:00	8.46 vol-%	9.83 ppm
0	2/8/2013	12:34:21	8.39 vol-%	11.38 ppm
0	2/8/2013	12:34:43	8.35 vol-%	12.29 ppm
0	2/8/2013	12:35:05	8.24 vol-%	12.28 ppm
0	2/8/2013	12:35:26	7.35 vol-%	12.33 ppm
0	2/8/2013	12:35:48	6.42 vol-%	10.98 ppm
0	2/8/2013	12:36:10	6.18 vol-%	10.48 ppm
0	2/8/2013	12:36:31	6.19 vol-%	9.98 ppm
0	2/8/2013	12:36:53	6.32 vol-%	10.49 ppm
0	2/8/2013	12:37:15	6.31 vol-%	10.8 ppm
0	2/8/2013	12:37:37	6.2 vol-%	9.94 ppm
0	2/8/2013	12:37:58	6.15 vol-%	10.84 ppm
0	2/8/2013	12:38:20	6.09 vol-%	11.36 ppm
0	2/8/2013	12:38:42	5.95 vol-%	10.22 ppm
0	2/8/2013	12:39:03	6.14 vol-%	11.49 ppm
0	2/8/2013	12:39:25	6.38 vol-%	12.44 ppm
0	2/8/2013	12:39:47	6.27 vol-%	11.84 ppm
0	2/8/2013	12:40:08	6.24 vol-%	11.34 ppm
0	2/8/2013	12:40:30	6.2 vol-%	11.42 ppm
0	2/8/2013	12:40:52	6.54 vol-%	11.2 ppm
0	2/8/2013	12:41:13	6.74 vol-%	12.49 ppm
0	2/8/2013	12:41:35	6.86 vol-%	12 ppm
0	2/8/2013	12:41:57	7.15 vol-%	12.9 ppm
0	2/8/2013	12:42:19	7.12 vol-%	12.22 ppm
0	2/8/2013	12:42:41	7.09 vol-%	11.91 ppm
	Port Change			
0	2/8/2013	12:43:02	6.49 vol-%	10.87 ppm
0	2/8/2013	12:43:24	5.42 vol-%	8.95 ppm
0	2/8/2013	12:43:46	3.32 vol-%	13.2 ppm
0	2/8/2013	12:44:07	2.48 vol-%	14.54 ppm
0	2/8/2013	12:44:29	0.91 vol-%	5.46 ppm
0	2/8/2013	12:44:50	1.66 vol-%	3.11 ppm
	Resume			
0	2/8/2013	12:45:12	3.81 vol-%	4.21 ppm
0	2/8/2013	12:45:34	4.08 vol-%	5.54 ppm
0	2/8/2013	12:45:55	4.12 vol-%	4.58 ppm
0	2/8/2013	12:46:17	4.81 vol-%	4.4 ppm
0	2/8/2013	12:46:39	5.3 vol-%	5.38 ppm
0	2/8/2013	12:47:01	5.25 vol-%	4.85 ppm
0	2/8/2013	12:47:22	5.48 vol-%	5.35 ppm
0	2/8/2013	12:47:44	5.65 vol-%	5.5 ppm
0	2/8/2013	12:48:06	6.01 vol-%	5.6 ppm
0	2/8/2013	12:48:28	7.14 vol-%	7.06 ppm
0	2/8/2013	12:48:50	8.78 vol-%	6.1 ppm
0	2/8/2013	12:49:11	8.41 vol-%	6.2 ppm
0	2/8/2013	12:49:33	7.15 vol-%	7.69 ppm
0	2/8/2013	12:49:55	6.55 vol-%	7.09 ppm
0	2/8/2013	12:50:17	6.38 vol-%	6.97 ppm
0	2/8/2013	12:50:39	6.28 vol-%	7.33 ppm

0	2/8/2013	12:51:01	5.96 vol-%	7.23 ppm
0	2/8/2013	12:51:22	6.05 vol-%	6.92 ppm
0	2/8/2013	12:51:44	6.27 vol-%	6.92 ppm
0	2/8/2013	12:52:06	6.07 vol-%	6.5 ppm
0	2/8/2013	12:52:28	5.9 vol-%	5.81 ppm
0	2/8/2013	12:52:50	5.87 vol-%	5.67 ppm
0	2/8/2013	12:53:12	5.93 vol-%	5.84 ppm
0	2/8/2013	12:53:34	5.97 vol-%	6.56 ppm
0	2/8/2013	12:53:55	6.64 vol-%	6.69 ppm
0	2/8/2013	12:54:17	6.54 vol-%	6.44 ppm
0	2/8/2013	12:54:39	5.95 vol-%	5.08 ppm
0	2/8/2013	12:55:01	5.97 vol-%	5.89 ppm
0	2/8/2013	12:55:23	5.92 vol-%	5.11 ppm
0	2/8/2013	12:55:45	6.21 vol-%	5.2 ppm
0	2/8/2013	12:56:07	6.52 vol-%	5.87 ppm
0	2/8/2013	12:56:28	6.73 vol-%	6.25 ppm
0	2/8/2013	12:56:50	6.69 vol-%	6.41 ppm
0	2/8/2013	12:57:12	6.86 vol-%	7.05 ppm
0	2/8/2013	12:57:34	7.06 vol-%	7.61 ppm
0	2/8/2013	12:57:56	6.36 vol-%	7.53 ppm
0	2/8/2013	12:58:17	4.7 vol-%	5.03 ppm
0	2/8/2013	12:58:39	3.12 vol-%	8.99 ppm
0	2/8/2013	12:59:01	2.98 vol-%	12.18 ppm
0	2/8/2013	12:59:23	3.82 vol-%	7.11 ppm
0	2/8/2013	12:59:45	3.71 vol-%	5.5 ppm
0	2/8/2013	13:00:07	4.06 vol-%	3.93 ppm
0	2/8/2013	13:00:28	4.54 vol-%	4.58 ppm
0	2/8/2013	13:00:50	5.6 vol-%	5.2 ppm
0	2/8/2013	13:01:12	6.72 vol-%	5.72 ppm
0	2/8/2013	13:01:34	6.66 vol-%	6.05 ppm
0	2/8/2013	13:01:56	6.52 vol-%	5.9 ppm
0	2/8/2013	13:02:17	6.86 vol-%	6.14 ppm
0	2/8/2013	13:02:39	6.92 vol-%	7.9 ppm
0	2/8/2013	13:03:01	6.91 vol-%	7.24 ppm
0	2/8/2013	13:03:23	6.09 vol-%	6.3 ppm
0	2/8/2013	13:03:44	5.58 vol-%	5.72 ppm
0	2/8/2013	13:04:06	5.77 vol-%	6.17 ppm
0	2/8/2013	13:04:28	5.73 vol-%	6.49 ppm
0	2/8/2013	13:04:50	5.72 vol-%	6.5 ppm
0	2/8/2013	13:05:12	5.88 vol-%	6.54 ppm
0	2/8/2013	13:05:34	5.83 vol-%	6.5 ppm
0	2/8/2013	13:05:55	5.71 vol-%	6.25 ppm
0	2/8/2013	13:06:17	5.7 vol-%	6.46 ppm
0	2/8/2013	13:06:39	5.74 vol-%	6.19 ppm
0	2/8/2013	13:07:01	6.19 vol-%	6.87 ppm
0	2/8/2013	13:07:23	6.45 vol-%	7.15 ppm
0	2/8/2013	13:07:45	6.52 vol-%	7.6 ppm
0	2/8/2013	13:08:06	6.56 vol-%	7.2 ppm
0	2/8/2013	13:08:28	6.57 vol-%	7.41 ppm
0	2/8/2013	13:08:50	6.47 vol-%	7.33 ppm
0	2/8/2013	13:09:11	6.34 vol-%	7.23 ppm
0	2/8/2013	13:09:33	5.95 vol-%	6.61 ppm
0	2/8/2013	13:09:55	5.57 vol-%	6.49 ppm
0	2/8/2013	13:10:16	5.68 vol-%	6 ppm
0	2/8/2013	13:10:38	5.06 vol-%	5.34 ppm
0	2/8/2013	13:11:00	5.3 vol-%	6.51 ppm
0	2/8/2013	13:11:21	5.24 vol-%	6.57 ppm
0	2/8/2013	13:11:43	4.86 vol-%	5.51 ppm
0	2/8/2013	13:12:05	3.18 vol-%	15.16 ppm
0	2/8/2013	13:12:27	1.9 vol-%	31.48 ppm
0	2/8/2013	13:12:49	3.16 vol-%	13.78 ppm
0	2/8/2013	13:13:10	3.68 vol-%	6.33 ppm
0	2/8/2013	13:13:32	2.06 vol-%	11.21 ppm
0	2/8/2013	13:13:54	0.76 vol-%	18.66 ppm
0	2/8/2013	13:14:15	2.6 vol-%	15.8 ppm
0	2/8/2013	13:14:37	3.97 vol-%	6.85 ppm

0	2/8/2013	13:14:59	4.52 vol-%	4.68 ppm	
	Stop Run #10		5.757212121	8.149636364	
0	2/8/2013	13:15:20	4.88 vol-%	3.46 ppm	
0	2/8/2013	13:15:42	4.82 vol-%	4.18 ppm	
0	2/8/2013	13:16:04	2.24 vol-%	2.37 ppm	
0	2/8/2013	13:16:26	0.65 vol-%	0.47 ppm	
0	2/8/2013	13:16:47	0.21 vol-%	4.03 ppm	
0	2/8/2013	13:17:09	0.05 vol-%	1.07 ppm	
0	2/8/2013	13:17:31	0.02 vol-%	0.51 ppm	
0	2/8/2013	13:17:52	0.01 vol-%	0 ppm	
0	2/8/2013	13:18:14	0 vol-%	**0** ppm	
0	2/8/2013	13:18:36	0 vol-%	**0** ppm	Zero N2
0	2/8/2013	13:18:57	0 vol-%	**0** ppm	
0	2/8/2013	13:19:19	0 vol-%	0.46 ppm	
0	2/8/2013	13:19:41	0.05 vol-%	15.84 ppm	
0	2/8/2013	13:20:02	0.05 vol-%	22.66 ppm	
0	2/8/2013	13:20:24	0.04 vol-%	24.07 ppm	
0	2/8/2013	13:20:46	0.01 vol-%	24.17 ppm	
0	2/8/2013	13:21:07	0.04 vol-%	**24.63** ppm	
0	2/8/2013	13:21:29	0.04 vol-%	**24.8** ppm	25.1 ppm CO
0	2/8/2013	13:21:51	0.02 vol-%	**24.84** ppm	
0	2/8/2013	13:22:12	0.03 vol-%	14.48 ppm	
0	2/8/2013	13:22:34	0.02 vol-%	3.37 ppm	
0	2/8/2013	13:22:56	0.01 vol-%	0.53 ppm	
0	2/8/2013	13:23:17	0 vol-%	0.04 ppm	
0	2/8/2013	13:23:39	0 vol-%	0 ppm	
0	2/8/2013	13:24:01	0.02 vol-%	0 ppm	
0	2/8/2013	13:24:22	0.04 vol-%	0 ppm	
0	2/8/2013	13:24:44	0.18 vol-%	0 ppm	
0	2/8/2013	13:25:06	3.36 vol-%	2.35 ppm	
0	2/8/2013	13:25:27	5.36 vol-%	3.71 ppm	
0	2/8/2013	13:25:49	6.75 vol-%	5.86 ppm	
0	2/8/2013	13:26:11	7.1 vol-%	6.75 ppm	
0	2/8/2013	13:26:33	6.97 vol-%	7 ppm	
0	2/8/2013	13:26:55	7.32 vol-%	7.81 ppm	
0	2/8/2013	13:27:17	7.16 vol-%	7.79 ppm	
0	2/8/2013	13:27:38	4.92 vol-%	4.36 ppm	
	Start Run #11				
0	2/8/2013	13:28:00	3.78 vol-%	3.91 ppm	
0	2/8/2013	13:28:22	2.78 vol-%	10.2 ppm	
0	2/8/2013	13:28:44	2.34 vol-%	6.79 ppm	
0	2/8/2013	13:29:05	2.76 vol-%	2.74 ppm	
0	2/8/2013	13:29:27	3.35 vol-%	1.91 ppm	
0	2/8/2013	13:29:49	4.3 vol-%	2.11 ppm	
0	2/8/2013	13:30:10	4.62 vol-%	2.48 ppm	
0	2/8/2013	13:30:32	5.1 vol-%	3.07 ppm	
0	2/8/2013	13:30:54	5.01 vol-%	2.92 ppm	
0	2/8/2013	13:31:15	5.41 vol-%	2.98 ppm	
0	2/8/2013	13:31:37	5.28 vol-%	2.75 ppm	
0	2/8/2013	13:31:59	6.37 vol-%	4.28 ppm	
0	2/8/2013	13:32:21	6.59 vol-%	3.94 ppm	
0	2/8/2013	13:32:43	6.56 vol-%	4.72 ppm	
0	2/8/2013	13:33:04	6.21 vol-%	4.54 ppm	
0	2/8/2013	13:33:26	5.59 vol-%	4.43 ppm	
0	2/8/2013	13:33:48	5.74 vol-%	4.45 ppm	
0	2/8/2013	13:34:10	5.91 vol-%	4.73 ppm	
0	2/8/2013	13:34:32	5.98 vol-%	5 ppm	
0	2/8/2013	13:34:54	5.79 vol-%	4.8 ppm	
0	2/8/2013	13:35:16	5.67 vol-%	4.97 ppm	
0	2/8/2013	13:35:37	5.65 vol-%	4.1 ppm	
0	2/8/2013	13:35:59	5.84 vol-%	5.02 ppm	
0	2/8/2013	13:36:21	5.89 vol-%	4.41 ppm	
0	2/8/2013	13:36:43	5.96 vol-%	4.21 ppm	
0	2/8/2013	13:37:05	5.99 vol-%	4.86 ppm	

0	2/8/2013	13:37:26	6.01 vol-%	4.53 ppm
0	2/8/2013	13:37:48	6.04 vol-%	5.05 ppm
0	2/8/2013	13:38:10	5.76 vol-%	4.56 ppm
0	2/8/2013	13:38:32	5.91 vol-%	4.79 ppm
0	2/8/2013	13:38:54	5.91 vol-%	5.39 ppm
0	2/8/2013	13:39:16	5.67 vol-%	4.89 ppm
0	2/8/2013	13:39:38	5.82 vol-%	5.42 ppm
0	2/8/2013	13:39:59	6.03 vol-%	5.74 ppm
0	2/8/2013	13:40:21	6.21 vol-%	6.5 ppm
0	2/8/2013	13:40:43	5.98 vol-%	6.04 ppm
0	2/8/2013	13:41:05	5.61 vol-%	6.14 ppm
0	2/8/2013	13:41:26	5.42 vol-%	5.73 ppm
0	2/8/2013	13:41:48	5.29 vol-%	5.73 ppm
0	2/8/2013	13:42:10	4.68 vol-%	4.92 ppm
0	2/8/2013	13:42:32	4.11 vol-%	4.39 ppm
0	2/8/2013	13:42:54	3.7 vol-%	3.84 ppm
0	2/8/2013	13:43:15	2.78 vol-%	13.95 ppm
0	2/8/2013	13:43:37	3.24 vol-%	7.89 ppm
0	2/8/2013	13:43:59	3.95 vol-%	4.29 ppm
0	2/8/2013	13:44:21	4.38 vol-%	3.34 ppm
0	2/8/2013	13:44:42	4.88 vol-%	3.52 ppm
0	2/8/2013	13:45:04	5.06 vol-%	3.66 ppm
0	2/8/2013	13:45:26	5.38 vol-%	3.75 ppm
0	2/8/2013	13:45:48	5.68 vol-%	4.33 ppm
0	2/8/2013	13:46:10	6.52 vol-%	5.27 ppm
0	2/8/2013	13:46:32	7.16 vol-%	6.25 ppm
0	2/8/2013	13:46:54	7.44 vol-%	7.42 ppm
0	2/8/2013	13:47:15	6.88 vol-%	6.63 ppm
0	2/8/2013	13:47:37	6.12 vol-%	5.86 ppm
0	2/8/2013	13:47:59	6.04 vol-%	5.93 ppm
0	2/8/2013	13:48:21	6.06 vol-%	6.15 ppm
0	2/8/2013	13:48:43	6.19 vol-%	6.37 ppm
0	2/8/2013	13:49:05	6.39 vol-%	6.58 ppm
0	2/8/2013	13:49:26	6.37 vol-%	6.67 ppm
0	2/8/2013	13:49:48	6.32 vol-%	6.61 ppm
0	2/8/2013	13:50:10	6.06 vol-%	6.13 ppm
0	2/8/2013	13:50:32	5.88 vol-%	5.93 ppm
0	2/8/2013	13:50:53	5.88 vol-%	7.17 ppm
0	2/8/2013	13:51:15	5.93 vol-%	6.98 ppm
0	2/8/2013	13:51:37	5.95 vol-%	6.14 ppm
0	2/8/2013	13:51:59	6.04 vol-%	5.83 ppm
0	2/8/2013	13:52:20	6.16 vol-%	6.11 ppm
0	2/8/2013	13:52:42	6.28 vol-%	7.17 ppm
0	2/8/2013	13:53:04	6.2 vol-%	7.2 ppm
0	2/8/2013	13:53:26	6.17 vol-%	7.02 ppm
0	2/8/2013	13:53:47	6.26 vol-%	7.11 ppm
0	2/8/2013	13:54:09	6.46 vol-%	7.33 ppm
0	2/8/2013	13:54:31	6.96 vol-%	8.19 ppm
0	2/8/2013	13:54:53	7.13 vol-%	8.85 ppm
0	2/8/2013	13:55:14	7.22 vol-%	9.36 ppm
0	2/8/2013	13:55:36	7.05 vol-%	9.34 ppm
0	2/8/2013	13:55:58	6.83 vol-%	8.99 ppm
0	2/8/2013	13:56:19	6.5 vol-%	8.29 ppm
0	2/8/2013	13:56:41	6.01 vol-%	7.45 ppm
0	2/8/2013	13:57:03	5.9 vol-%	7.35 ppm
0	2/8/2013	13:57:25	4.85 vol-%	5.77 ppm
0	2/8/2013	13:57:46	3.24 vol-%	14.52 ppm
	Port Change			
0	2/8/2013	13:58:08	3.92 vol-%	8.41 ppm
0	2/8/2013	13:58:30	5.06 vol-%	5.28 ppm
0	2/8/2013	13:58:52	2.84 vol-%	3.45 ppm
0	2/8/2013	13:59:13	1.67 vol-%	1.43 ppm
0	2/8/2013	13:59:35	3.91 vol-%	3.17 ppm
0	2/8/2013	13:59:57	4.88 vol-%	4.34 ppm
	Resume			
0	2/8/2013	14:00:19	5.16 vol-%	4.9 ppm

0	2/8/2013	14:00:40	4.97 vol-%	4.91 ppm
0	2/8/2013	14:01:02	5.16 vol-%	5.09 ppm
0	2/8/2013	14:01:24	5.75 vol-%	5.68 ppm
0	2/8/2013	14:01:46	6.45 vol-%	7.55 ppm
0	2/8/2013	14:02:07	6.36 vol-%	7.82 ppm
0	2/8/2013	14:02:29	6.2 vol-%	6.45 ppm
0	2/8/2013	14:02:51	5.66 vol-%	5.54 ppm
0	2/8/2013	14:03:13	5.58 vol-%	5.68 ppm
0	2/8/2013	14:03:35	5.79 vol-%	5.68 ppm
0	2/8/2013	14:03:56	6.08 vol-%	5.7 ppm
0	2/8/2013	14:04:18	6.13 vol-%	5.77 ppm
0	2/8/2013	14:04:40	5.99 vol-%	5.28 ppm
0	2/8/2013	14:05:02	6.34 vol-%	5.7 ppm
0	2/8/2013	14:05:24	6.57 vol-%	5.89 ppm
0	2/8/2013	14:05:46	6.66 vol-%	5.71 ppm
0	2/8/2013	14:06:07	6.82 vol-%	5.88 ppm
0	2/8/2013	14:06:29	6.49 vol-%	5.57 ppm
0	2/8/2013	14:06:51	5.6 vol-%	5.09 ppm
0	2/8/2013	14:07:13	6.12 vol-%	5.2 ppm
0	2/8/2013	14:07:35	6.63 vol-%	6.12 ppm
0	2/8/2013	14:07:56	6.77 vol-%	6.41 ppm
0	2/8/2013	14:08:18	6.88 vol-%	6.76 ppm
0	2/8/2013	14:08:40	6.87 vol-%	6.85 ppm
0	2/8/2013	14:09:02	6.34 vol-%	6.19 ppm
0	2/8/2013	14:09:24	5.85 vol-%	5.81 ppm
0	2/8/2013	14:09:45	6.32 vol-%	6.35 ppm
0	2/8/2013	14:10:07	6.26 vol-%	6.19 ppm
0	2/8/2013	14:10:29	6.35 vol-%	6.03 ppm
0	2/8/2013	14:10:51	5.71 vol-%	5.51 ppm
0	2/8/2013	14:11:13	4.96 vol-%	4.5 ppm
0	2/8/2013	14:11:34	3.9 vol-%	3.48 ppm
0	2/8/2013	14:11:56	3.44 vol-%	3.01 ppm
0	2/8/2013	14:12:18	3.25 vol-%	2.54 ppm
0	2/8/2013	14:12:40	2.39 vol-%	5.16 ppm
0	2/8/2013	14:13:01	2.52 vol-%	4.73 ppm
0	2/8/2013	14:13:23	3.12 vol-%	3.1 ppm
0	2/8/2013	14:13:45	3.75 vol-%	2.71 ppm
0	2/8/2013	14:14:07	4.1 vol-%	2.89 ppm
0	2/8/2013	14:14:29	4.35 vol-%	3.08 ppm
0	2/8/2013	14:14:50	4.87 vol-%	4.06 ppm
0	2/8/2013	14:15:12	6.05 vol-%	5.52 ppm
0	2/8/2013	14:15:34	6.2 vol-%	6.2 ppm
0	2/8/2013	14:15:55	6.46 vol-%	6.21 ppm
0	2/8/2013	14:16:17	6.65 vol-%	6.11 ppm
0	2/8/2013	14:16:39	7.07 vol-%	6.1 ppm
0	2/8/2013	14:17:01	7.38 vol-%	6.58 ppm
0	2/8/2013	14:17:22	6.15 vol-%	5.09 ppm
0	2/8/2013	14:17:44	5.64 vol-%	4.4 ppm
0	2/8/2013	14:18:06	5.49 vol-%	3.96 ppm
0	2/8/2013	14:18:28	5.8 vol-%	3.76 ppm
0	2/8/2013	14:18:50	6.72 vol-%	4.76 ppm
0	2/8/2013	14:19:11	6.85 vol-%	4.97 ppm
0	2/8/2013	14:19:33	6.79 vol-%	4.77 ppm
0	2/8/2013	14:19:55	6.81 vol-%	4.78 ppm
0	2/8/2013	14:20:17	6.84 vol-%	5.1 ppm
0	2/8/2013	14:20:38	6.76 vol-%	5.12 ppm
0	2/8/2013	14:21:00	6.91 vol-%	5.81 ppm
0	2/8/2013	14:21:22	7.02 vol-%	6.02 ppm
0	2/8/2013	14:21:43	6.95 vol-%	6.15 ppm
0	2/8/2013	14:22:05	6.85 vol-%	7.28 ppm
0	2/8/2013	14:22:27	6.71 vol-%	6.92 ppm
0	2/8/2013	14:22:48	6.82 vol-%	7.32 ppm
0	2/8/2013	14:23:10	6.92 vol-%	9.27 ppm
0	2/8/2013	14:23:32	6.92 vol-%	8.94 ppm
0	2/8/2013	14:23:53	6.57 vol-%	8.83 ppm
0	2/8/2013	14:24:15	6.16 vol-%	8.07 ppm

0	2/8/2013	14:24:37	6.55 vol-%	8.38 ppm	
0	2/8/2013	14:24:58	6.89 vol-%	8.53 ppm	
0	2/8/2013	14:25:20	8.56 vol-%	7.99 ppm	
0	2/8/2013	14:25:42	8.44 vol-%	8.18 ppm	
0	2/8/2013	14:26:03	8.15 vol-%	8.34 ppm	
0	2/8/2013	14:26:25	8.21 vol-%	8.13 ppm	
0	2/8/2013	14:26:47	6.51 vol-%	8.97 ppm	
0	2/8/2013	14:27:09	5.07 vol-%	6.01 ppm	
0	2/8/2013	14:27:30	4.69 vol-%	4.69 ppm	
0	2/8/2013	14:27:52	4.51 vol-%	4.14 ppm	
0	2/8/2013	14:28:14	4.46 vol-%	3.77 ppm	
0	2/8/2013	14:28:36	3.48 vol-%	12.21 ppm	
0	2/8/2013	14:28:57	5.5 vol-%	11.26 ppm	
0	2/8/2013	14:29:19	6.99 vol-%	7.97 ppm	
0	2/8/2013	14:29:41	7.5 vol-%	8.81 ppm	
	Stop Run #11		5.793515152	5.870727273	
0	2/8/2013	14:30:02	7.35 vol-%	7.71 ppm	
0	2/8/2013	14:30:24	7.33 vol-%	7.84 ppm	
0	2/8/2013	14:30:46	6.92 vol-%	7.09 ppm	
0	2/8/2013	14:31:07	3.77 vol-%	10.45 ppm	
0	2/8/2013	14:31:29	1 vol-%	2.38 ppm	
0	2/8/2013	14:31:51	0.32 vol-%	2.04 ppm	
0	2/8/2013	14:32:12	0.1 vol-%	0.46 ppm	
0	2/8/2013	14:32:34	0.05 vol-%	**0** ppm	
0	2/8/2013	14:32:56	0.03 vol-%	**0** ppm	Zero N2
0	2/8/2013	14:33:17	0.02 vol-%	**0** ppm	
0	2/8/2013	14:33:39	0.03 vol-%	6.37 ppm	
0	2/8/2013	14:34:01	0.04 vol-%	19.94 ppm	
0	2/8/2013	14:34:22	0.03 vol-%	23.81 ppm	
0	2/8/2013	14:34:44	0.03 vol-%	**24.16** ppm	
0	2/8/2013	14:35:06	0.02 vol-%	**24.3** ppm	25.1 ppm CO
0	2/8/2013	14:35:27	0.05 vol-%	**24.89** ppm	
0	2/8/2013	14:35:49	0.02 vol-%	21.5 ppm	
0	2/8/2013	14:36:10	0.04 vol-%	7.52 ppm	
0	2/8/2013	14:36:32	0.04 vol-%	1.56 ppm	
0	2/8/2013	14:36:54	0.03 vol-%	0.07 ppm	
0	2/8/2013	14:37:16	0.03 vol-%	0 ppm	
0	2/8/2013	14:37:37	0.04 vol-%	0 ppm	
0	2/8/2013	14:37:59	0.07 vol-%	0 ppm	
0	2/8/2013	14:38:21	0.06 vol-%	0 ppm	
0	2/8/2013	14:38:43	0.12 vol-%	0 ppm	
0	2/8/2013	14:39:04	2.72 vol-%	0.14 ppm	
0	2/8/2013	14:39:26	3.65 vol-%	1.06 ppm	
0	2/8/2013	14:39:48	2.56 vol-%	2.94 ppm	
	Start Run #12				
0	2/8/2013	14:40:09	3.77 vol-%	3.77 ppm	
0	2/8/2013	14:40:31	5.96 vol-%	2.76 ppm	
0	2/8/2013	14:40:53	6.51 vol-%	3.2 ppm	
0	2/8/2013	14:41:15	6.89 vol-%	3.17 ppm	
0	2/8/2013	14:41:36	6.95 vol-%	3.2 ppm	
0	2/8/2013	14:41:58	7.1 vol-%	3.54 ppm	
0	2/8/2013	14:42:20	7.12 vol-%	4.38 ppm	
0	2/8/2013	14:42:42	6.75 vol-%	3.78 ppm	
0	2/8/2013	14:43:04	6.47 vol-%	3.93 ppm	
0	2/8/2013	14:43:25	6.82 vol-%	4.35 ppm	
0	2/8/2013	14:43:47	6.91 vol-%	4.86 ppm	
0	2/8/2013	14:44:09	7.03 vol-%	5.28 ppm	
0	2/8/2013	14:44:31	6.97 vol-%	5.41 ppm	
0	2/8/2013	14:44:52	7.41 vol-%	5.91 ppm	
0	2/8/2013	14:45:14	8.23 vol-%	5.04 ppm	
0	2/8/2013	14:45:35	8.17 vol-%	5.35 ppm	
0	2/8/2013	14:45:57	7.4 vol-%	7.36 ppm	
0	2/8/2013	14:46:19	7.34 vol-%	7.71 ppm	
0	2/8/2013	14:46:40	7.35 vol-%	7.91 ppm	

0	2/8/2013	14:47:02	7.29 vol-%	7.51 ppm
0	2/8/2013	14:47:24	7.26 vol-%	7.38 ppm
0	2/8/2013	14:47:46	7.54 vol-%	7.7 ppm
0	2/8/2013	14:48:08	7.53 vol-%	8 ppm
0	2/8/2013	14:48:29	7.42 vol-%	8.02 ppm
0	2/8/2013	14:48:51	7.36 vol-%	8.54 ppm
0	2/8/2013	14:49:13	8.03 vol-%	6.44 ppm
0	2/8/2013	14:49:35	7.36 vol-%	9.07 ppm
0	2/8/2013	14:49:56	7.17 vol-%	8.91 ppm
0	2/8/2013	14:50:18	6.9 vol-%	8.94 ppm
0	2/8/2013	14:50:40	6.46 vol-%	8.05 ppm
0	2/8/2013	14:51:02	6.58 vol-%	8.55 ppm
0	2/8/2013	14:51:23	6.63 vol-%	7.8 ppm
0	2/8/2013	14:51:45	6.64 vol-%	7.8 ppm
0	2/8/2013	14:52:07	6.13 vol-%	6.83 ppm
0	2/8/2013	14:52:29	5.99 vol-%	6.46 ppm
0	2/8/2013	14:52:50	5.95 vol-%	6.22 ppm
0	2/8/2013	14:53:12	6.01 vol-%	6.05 ppm
0	2/8/2013	14:53:34	6.01 vol-%	5.83 ppm
0	2/8/2013	14:53:56	5.88 vol-%	5.23 ppm
0	2/8/2013	14:54:17	5.09 vol-%	4.45 ppm
0	2/8/2013	14:54:39	3.5 vol-%	6.33 ppm
0	2/8/2013	14:55:01	2.73 vol-%	7.25 ppm
0	2/8/2013	14:55:23	3.25 vol-%	2.61 ppm
0	2/8/2013	14:55:44	3.71 vol-%	1.74 ppm
0	2/8/2013	14:56:06	4.4 vol-%	1.54 ppm
0	2/8/2013	14:56:28	4.7 vol-%	1.69 ppm
0	2/8/2013	14:56:50	4.88 vol-%	2.04 ppm
0	2/8/2013	14:57:11	5.95 vol-%	3.05 ppm
0	2/8/2013	14:57:33	6.48 vol-%	4.11 ppm
0	2/8/2013	14:57:55	6.91 vol-%	4.93 ppm
0	2/8/2013	14:58:17	6.88 vol-%	5.34 ppm
0	2/8/2013	14:58:38	6.94 vol-%	5.73 ppm
0	2/8/2013	14:59:00	6.47 vol-%	5.15 ppm
0	2/8/2013	14:59:22	6.29 vol-%	4.95 ppm
0	2/8/2013	14:59:43	6.13 vol-%	4.77 ppm
0	2/8/2013	15:00:05	6.21 vol-%	4.85 ppm
0	2/8/2013	15:00:27	6.04 vol-%	4.33 ppm
0	2/8/2013	15:00:48	6.15 vol-%	4.28 ppm
0	2/8/2013	15:01:10	6.45 vol-%	4.07 ppm
0	2/8/2013	15:01:32	6.46 vol-%	6.04 ppm
0	2/8/2013	15:01:53	6.49 vol-%	5.72 ppm
0	2/8/2013	15:02:15	6.58 vol-%	4.75 ppm
0	2/8/2013	15:02:37	6.44 vol-%	5.02 ppm
0	2/8/2013	15:02:59	6.43 vol-%	5.85 ppm
0	2/8/2013	15:03:20	6.52 vol-%	6.15 ppm
0	2/8/2013	15:03:42	6.61 vol-%	6.18 ppm
0	2/8/2013	15:04:04	6.56 vol-%	6.75 ppm
0	2/8/2013	15:04:25	6.62 vol-%	7.36 ppm
0	2/8/2013	15:04:47	6.57 vol-%	7.68 ppm
0	2/8/2013	15:05:09	6.36 vol-%	8.37 ppm
0	2/8/2013	15:05:30	5.4 vol-%	7.4 ppm
0	2/8/2013	15:05:52	5.56 vol-%	7.41 ppm
0	2/8/2013	15:06:14	6.01 vol-%	7.86 ppm
0	2/8/2013	15:06:35	6.38 vol-%	8.37 ppm
0	2/8/2013	15:06:57	6.32 vol-%	7.63 ppm
0	2/8/2013	15:07:19	5.49 vol-%	6.67 ppm
0	2/8/2013	15:07:40	4.72 vol-%	4.55 ppm
0	2/8/2013	15:08:02	4.49 vol-%	3.81 ppm
0	2/8/2013	15:08:24	4.05 vol-%	2.7 ppm
0	2/8/2013	15:08:46	4.03 vol-%	2.02 ppm
0	2/8/2013	15:09:07	3.32 vol-%	2.01 ppm
0	2/8/2013	15:09:29	2.79 vol-%	2.68 ppm
0	2/8/2013	15:09:51	2.39 vol-%	2.7 ppm
	Port Change			
0	2/8/2013	15:10:13	2.76 vol-%	1.85 ppm

0	2/8/2013	15:10:35	1.66 vol-%	0.47 ppm
0	2/8/2013	15:10:56	2.53 vol-%	0.12 ppm
0	2/8/2013	15:11:18	3.07 vol-%	0.69 ppm
0	2/8/2013	15:11:40	3.69 vol-%	1.28 ppm
Resume				
0	2/8/2013	15:12:01	3.42 vol-%	1.15 ppm
0	2/8/2013	15:12:23	3.68 vol-%	1.46 ppm
0	2/8/2013	15:12:45	3.91 vol-%	1.43 ppm
0	2/8/2013	15:13:07	4.15 vol-%	1.65 ppm
0	2/8/2013	15:13:28	5.06 vol-%	2.49 ppm
0	2/8/2013	15:13:50	6.37 vol-%	3.58 ppm
0	2/8/2013	15:14:12	8.38 vol-%	2.8 ppm
0	2/8/2013	15:14:34	9.33 vol-%	4.34 ppm
0	2/8/2013	15:14:55	8.68 vol-%	4.11 ppm
0	2/8/2013	15:15:17	6.95 vol-%	5.86 ppm
0	2/8/2013	15:15:39	6.19 vol-%	4.17 ppm
0	2/8/2013	15:16:00	5.93 vol-%	3.61 ppm
0	2/8/2013	15:16:22	6.09 vol-%	3.74 ppm
0	2/8/2013	15:16:44	6.15 vol-%	3.57 ppm
0	2/8/2013	15:17:05	6.37 vol-%	3.66 ppm
0	2/8/2013	15:17:27	6.3 vol-%	3.58 ppm
0	2/8/2013	15:17:48	6.33 vol-%	3.62 ppm
0	2/8/2013	15:18:10	6.11 vol-%	3.45 ppm
0	2/8/2013	15:18:32	6.29 vol-%	3.95 ppm
0	2/8/2013	15:18:53	6.27 vol-%	4.33 ppm
0	2/8/2013	15:19:15	6.36 vol-%	4.81 ppm
0	2/8/2013	15:19:37	6.41 vol-%	5.72 ppm
0	2/8/2013	15:19:58	6.47 vol-%	5.37 ppm
0	2/8/2013	15:20:20	6.33 vol-%	5.42 ppm
0	2/8/2013	15:20:42	6.43 vol-%	5.77 ppm
0	2/8/2013	15:21:03	6.3 vol-%	5.69 ppm
0	2/8/2013	15:21:25	6.5 vol-%	5.53 ppm
0	2/8/2013	15:21:47	6.41 vol-%	5.46 ppm
0	2/8/2013	15:22:09	6.2 vol-%	4.69 ppm
0	2/8/2013	15:22:31	5.39 vol-%	3.99 ppm
0	2/8/2013	15:22:52	4.95 vol-%	2.82 ppm
0	2/8/2013	15:23:14	4.17 vol-%	1.78 ppm
0	2/8/2013	15:23:36	3.7 vol-%	1.17 ppm
0	2/8/2013	15:23:58	4 vol-%	0.9 ppm
0	2/8/2013	15:24:19	3.9 vol-%	0.91 ppm
0	2/8/2013	15:24:41	3.09 vol-%	5.02 ppm
0	2/8/2013	15:25:03	3.16 vol-%	9.8 ppm
0	2/8/2013	15:25:24	4.37 vol-%	3.08 ppm
0	2/8/2013	15:25:46	4.67 vol-%	1.82 ppm
0	2/8/2013	15:26:08	5.14 vol-%	2.32 ppm
0	2/8/2013	15:26:30	5.95 vol-%	3.4 ppm
0	2/8/2013	15:26:52	6.02 vol-%	3.32 ppm
0	2/8/2013	15:27:13	6.75 vol-%	4.27 ppm
0	2/8/2013	15:27:35	7.43 vol-%	5.29 ppm
0	2/8/2013	15:27:57	7.3 vol-%	7.43 ppm
0	2/8/2013	15:28:19	6.87 vol-%	6.51 ppm
0	2/8/2013	15:28:41	6.68 vol-%	5.52 ppm
0	2/8/2013	15:29:02	6.46 vol-%	4.46 ppm
0	2/8/2013	15:29:24	6.27 vol-%	4.57 ppm
0	2/8/2013	15:29:46	6.37 vol-%	4.43 ppm
0	2/8/2013	15:30:07	6.59 vol-%	4.62 ppm
0	2/8/2013	15:30:29	6.44 vol-%	4.62 ppm
0	2/8/2013	15:30:51	6.35 vol-%	4.55 ppm
0	2/8/2013	15:31:12	6.63 vol-%	5.01 ppm
0	2/8/2013	15:31:34	6.65 vol-%	5.11 ppm
0	2/8/2013	15:31:56	6.75 vol-%	5.49 ppm
0	2/8/2013	15:32:17	6.88 vol-%	6.08 ppm
0	2/8/2013	15:32:39	6.9 vol-%	6.69 ppm
0	2/8/2013	15:33:01	6.85 vol-%	7.17 ppm
0	2/8/2013	15:33:22	6.73 vol-%	7.31 ppm
0	2/8/2013	15:33:44	6.79 vol-%	7.18 ppm

0	2/8/2013	15:34:05	6.72 vol-%	7.79 ppm	
0	2/8/2013	15:34:27	6.71 vol-%	7.14 ppm	
0	2/8/2013	15:34:49	6.53 vol-%	7.46 ppm	
0	2/8/2013	15:35:10	6.72 vol-%	7.47 ppm	
0	2/8/2013	15:35:32	6.57 vol-%	7.48 ppm	
0	2/8/2013	15:35:54	8.09 vol-%	6.44 ppm	
0	2/8/2013	15:36:15	9.21 vol-%	8.61 ppm	
0	2/8/2013	15:36:37	9.38 vol-%	9.25 ppm	
0	2/8/2013	15:36:59	9.37 vol-%	9.79 ppm	
0	2/8/2013	15:37:21	9.31 vol-%	11.12 ppm	
0	2/8/2013	15:37:43	8.83 vol-%	9.67 ppm	
0	2/8/2013	15:38:04	7.16 vol-%	11.13 ppm	
0	2/8/2013	15:38:26	6.39 vol-%	9.17 ppm	
0	2/8/2013	15:38:48	5.46 vol-%	7.18 ppm	
0	2/8/2013	15:39:10	4.97 vol-%	5.08 ppm	
0	2/8/2013	15:39:31	4.85 vol-%	3.96 ppm	
0	2/8/2013	15:39:53	4.66 vol-%	3.36 ppm	
0	2/8/2013	15:40:15	2.59 vol-%	9.35 ppm	
0	2/8/2013	15:40:37	0.94 vol-%	24.1 ppm	
0	2/8/2013	15:40:58	0.58 vol-%	28.2 ppm	
0	2/8/2013	15:41:20	2.66 vol-%	14.04 ppm	
0	2/8/2013	15:41:42	4.48 vol-%	4.58 ppm	
	Stop Run #12		5.380638374	6.661793831	
0	2/8/2013	15:42:03	5.19 vol-%	2.39 ppm	
0	2/8/2013	15:42:25	4 vol-%	5.4 ppm	
0	2/8/2013	15:42:47	1.42 vol-%	13.47 ppm	
0	2/8/2013	15:43:08	0.42 vol-%	2.97 ppm	
0	2/8/2013	15:43:30	0.15 vol-%	1.54 ppm	
0	2/8/2013	15:43:52	0.06 vol-%	0.21 ppm	
0	2/8/2013	15:44:13	0.03 vol-%	**0** ppm	
0	2/8/2013	15:44:35	0.02 vol-%	**0** ppm	Zero N2
0	2/8/2013	15:44:57	0.01 vol-%	**0** ppm	
0	2/8/2013	15:45:18	0.04 vol-%	1.98 ppm	
0	2/8/2013	15:45:40	0.03 vol-%	17.12 ppm	
0	2/8/2013	15:46:01	0.04 vol-%	23.12 ppm	
0	2/8/2013	15:46:23	0.02 vol-%	**24.42** ppm	
0	2/8/2013	15:46:45	0.02 vol-%	**24.77** ppm	25.1 ppm CO
0	2/8/2013	15:47:06	0.02 vol-%	**24.54** ppm	
0	2/8/2013	15:47:28	0.08 vol-%	22.24 ppm	
0	2/8/2013	15:47:50	0 vol-%	7.71 ppm	
0	2/8/2013	15:48:11	0.04 vol-%	1.23 ppm	
0	2/8/2013	15:48:33	0.01 vol-%	0.19 ppm	
0	2/8/2013	15:48:55	0 vol-%	0 ppm	
0	2/8/2013	15:49:16	0.04 vol-%	0 ppm	

Appendix C
Total VOC CEM Summaries

DATE	TIME	VOC	O2	
MM/DD/Y	HH:MM:SS	ppm		
2/5/2013	8:14:04	0.01	0.49	
2/5/2013	8:14:24	**0.01**	0.48	
2/5/2013	8:14:44	**0.01**	0.48	
2/5/2013	8:15:04	**0.01**	0.47	Zero N2
2/5/2013	8:15:24	**0.01**	0.47	
2/5/2013	8:15:44	0.01	0.47	
2/5/2013	8:16:04	0.11	0.47	
2/5/2013	8:16:24	0.01	0.47	
2/5/2013	8:16:44	0.01	0.47	
2/5/2013	8:17:04	0.00	0.47	
2/5/2013	8:17:24	0.90	0.55	
2/5/2013	8:17:44	0.47	4.76	
2/5/2013	8:18:04	0.04	9.22	
2/5/2013	8:18:24	0.01	5.89	
2/5/2013	8:18:44	0.01	2.72	
2/5/2013	8:19:04	0.01	1.32	
2/5/2013	8:19:24	0.00	0.78	
2/5/2013	8:19:44	0.00	0.58	
2/5/2013	8:20:04	0.08	0.51	
2/5/2013	8:20:24	1.21	0.86	
2/5/2013	8:20:44	6.90	6.32	
2/5/2013	8:21:04	7.14	12.78	
2/5/2013	8:21:24	8.19	17.02	
2/5/2013	8:21:44	**8.42**	19.11	
2/5/2013	8:22:04	**8.42**	19.92	8.44 ppm C3H8
2/5/2013	8:22:24	**8.42**	20.09	
2/5/2013	8:22:44	7.24	20.09	
2/5/2013	8:23:04	1.53	20.09	
2/5/2013	8:23:24	4.33	20.09	
2/5/2013	8:23:44	**5.24**	20.09	
2/5/2013	8:24:04	**5.24**	20.09	5.14 ppm C3H8
2/5/2013	8:24:24	**5.24**	20.09	
2/5/2013	8:24:44	3.92	20.09	
2/5/2013	8:25:04	1.50	20.09	
2/5/2013	8:25:24	2.77	20.09	
2/5/2013	8:25:44	**3.77**	20.09	3.84 ppm C3H8
2/5/2013	8:26:04	**3.77**	20.09	
2/5/2013	8:26:24	3.25	20.09	
2/5/2013	8:26:44	3.19	20.09	
2/5/2013	8:27:04	2.42	20.09	
2/5/2013	8:27:24	1.31	20.09	
2/5/2013	8:27:44	1.49	20.09	
2/5/2013	8:28:04	1.33	20.09	
2/5/2013	8:28:24	1.31	20.09	
2/5/2013	8:28:44	1.34	20.09	
2/5/2013	8:29:04	1.37	20.09	

DATE	TIME	VOC	O2
MM/DD/YY	HH:MM:SS	ppm	
2/5/2013	13:59:53	1.12	12.61
Start Run #1			
2/5/2013	14:00:13	1.12	12.65
2/5/2013	14:00:33	1.17	12.75
2/5/2013	14:00:53	1.31	12.79
2/5/2013	14:01:13	1.31	12.63
2/5/2013	14:01:33	1.31	12.47
2/5/2013	14:01:53	1.27	12.48
2/5/2013	14:02:13	1.15	12.55
2/5/2013	14:02:33	1.31	12.55
2/5/2013	14:02:53	1.31	12.44
2/5/2013	14:03:13	1.36	12.35
2/5/2013	14:03:33	1.31	12.27
2/5/2013	14:03:53	1.26	12.44
2/5/2013	14:04:13	1.21	12.66
2/5/2013	14:04:33	1.31	12.75
2/5/2013	14:04:53	1.31	12.84
2/5/2013	14:05:13	1.31	12.76
2/5/2013	14:05:33	1.31	12.63
2/5/2013	14:05:53	1.31	12.67
2/5/2013	14:06:13	1.31	12.71
2/5/2013	14:06:33	1.31	12.90
2/5/2013	14:06:53	1.31	12.88
2/5/2013	14:07:13	1.31	12.57
2/5/2013	14:07:33	1.31	12.52
2/5/2013	14:07:53	1.24	12.47
2/5/2013	14:08:13	1.31	12.57
2/5/2013	14:08:33	1.13	12.77
2/5/2013	14:08:53	1.12	13.00
2/5/2013	14:09:13	1.12	12.94
2/5/2013	14:09:33	1.12	12.91
2/5/2013	14:09:53	1.28	12.78
2/5/2013	14:10:13	1.28	12.48
2/5/2013	14:10:33	1.20	12.49
2/5/2013	14:10:53	1.17	12.60
2/5/2013	14:11:13	1.12	12.63
2/5/2013	14:11:33	1.23	12.37
2/5/2013	14:11:53	1.31	12.20
2/5/2013	14:12:13	1.17	12.35
2/5/2013	14:12:33	1.12	12.55
2/5/2013	14:12:53	1.26	12.73
2/5/2013	14:13:13	1.28	12.62
2/5/2013	14:13:33	1.26	12.43
2/5/2013	14:13:53	1.31	12.36
2/5/2013	14:14:13	1.31	12.38
2/5/2013	14:14:33	1.20	12.47
2/5/2013	14:14:53	1.12	12.44
2/5/2013	14:15:13	1.12	12.33
2/5/2013	14:15:33	1.19	12.18
2/5/2013	14:15:53	1.23	12.06
2/5/2013	14:16:13	1.12	12.13
2/5/2013	14:16:33	1.12	12.19
2/5/2013	14:16:53	1.12	12.19
2/5/2013	14:17:13	1.12	12.17
2/5/2013	14:17:33	1.12	12.18
2/5/2013	14:17:53	1.12	12.33
2/5/2013	14:18:13	1.12	12.28
2/5/2013	14:18:33	1.12	12.24
2/5/2013	14:18:53	1.12	12.38
2/5/2013	14:19:13	1.12	12.46
2/5/2013	14:19:33	1.12	12.55
2/5/2013	14:19:53	1.12	12.59
2/5/2013	14:20:13	1.12	12.71

2/5/2013	14:20:33	1.12	12.79
2/5/2013	14:20:53	1.12	12.80
2/5/2013	14:21:13	1.12	12.61
2/5/2013	14:21:33	1.12	12.44
2/5/2013	14:21:53	1.12	12.49
2/5/2013	14:22:13	1.12	12.42
2/5/2013	14:22:33	1.12	12.46
2/5/2013	14:22:53	1.12	12.56
2/5/2013	14:23:13	1.28	12.66
2/5/2013	14:23:33	1.25	12.66
2/5/2013	14:23:53	1.31	12.73
2/5/2013	14:24:13	1.31	12.78
2/5/2013	14:24:33	1.31	12.77
2/5/2013	14:24:53	1.31	12.61
2/5/2013	14:25:13	1.15	12.38
2/5/2013	14:25:33	1.12	12.38
2/5/2013	14:25:53	1.12	12.45
2/5/2013	14:26:13	1.12	12.58
2/5/2013	14:26:33	1.12	12.64
2/5/2013	14:26:53	1.12	12.48
2/5/2013	14:27:13	1.12	12.29
2/5/2013	14:27:33	1.12	12.51
2/5/2013	14:27:53	1.12	12.57
2/5/2013	14:28:13	1.12	12.70
2/5/2013	14:28:33	1.12	12.82
2/5/2013	14:28:53	1.12	12.84
2/5/2013	14:29:13	1.12	12.79
2/5/2013	14:29:33	1.12	12.53
2/5/2013	14:29:53	1.12	12.39
Port Change			
2/5/2013	14:30:13	1.12	12.25
2/5/2013	14:30:33	1.12	12.35
2/5/2013	14:30:53	1.12	12.58
2/5/2013	14:31:13	1.12	12.62
2/5/2013	14:31:33	1.12	12.42
2/5/2013	14:31:53	1.41	12.39
2/5/2013	14:32:13	2.18	12.80
2/5/2013	14:32:33	2.09	15.10
2/5/2013	14:32:53	2.12	18.05
2/5/2013	14:33:13	2.68	19.61
2/5/2013	14:33:33	2.16	20.08
2/5/2013	14:33:53	1.16	19.66
Resume			
2/5/2013	14:34:13	1.17	17.01
2/5/2013	14:34:33	1.12	14.77
2/5/2013	14:34:53	1.12	13.48
2/5/2013	14:35:13	1.03	13.05
2/5/2013	14:35:33	0.99	13.03
2/5/2013	14:35:53	0.96	12.93
2/5/2013	14:36:13	1.12	12.73
2/5/2013	14:36:33	0.98	12.69
2/5/2013	14:36:53	0.93	12.71
2/5/2013	14:37:13	0.93	12.83
2/5/2013	14:37:33	0.93	12.83
2/5/2013	14:37:53	0.93	12.72
2/5/2013	14:38:13	0.93	12.77
2/5/2013	14:38:33	0.93	12.86
2/5/2013	14:38:53	0.93	12.75
2/5/2013	14:39:13	0.93	12.75
2/5/2013	14:39:33	0.93	12.65
2/5/2013	14:39:53	0.93	12.62
2/5/2013	14:40:13	0.94	12.59
2/5/2013	14:40:33	0.92	12.64
2/5/2013	14:40:53	1.02	12.83
2/5/2013	14:41:13	0.93	13.24
2/5/2013	14:41:33	0.93	13.18

2/5/2013	14:41:53	0.93	12.98
2/5/2013	14:42:13	0.93	12.93
2/5/2013	14:42:33	0.93	12.99
2/5/2013	14:42:53	0.93	13.05
2/5/2013	14:43:13	0.93	13.10
2/5/2013	14:43:33	0.93	13.24
2/5/2013	14:43:53	0.93	13.39
2/5/2013	14:44:13	0.93	13.46
2/5/2013	14:44:33	0.93	13.43
2/5/2013	14:44:53	0.93	13.24
2/5/2013	14:45:13	0.93	13.02
2/5/2013	14:45:33	0.93	12.98
2/5/2013	14:45:53	0.86	13.03
2/5/2013	14:46:13	0.76	12.94
2/5/2013	14:46:33	0.93	12.79
2/5/2013	14:46:53	0.93	12.73
2/5/2013	14:47:13	0.86	12.77
2/5/2013	14:47:33	0.81	12.76
2/5/2013	14:47:53	0.85	12.92
2/5/2013	14:48:13	0.85	13.21
2/5/2013	14:48:33	0.75	13.29
2/5/2013	14:48:53	0.75	13.14
2/5/2013	14:49:13	0.75	12.97
2/5/2013	14:49:33	0.75	12.98
2/5/2013	14:49:53	0.75	12.97
2/5/2013	14:50:13	0.75	13.07
2/5/2013	14:50:33	0.78	13.11
2/5/2013	14:50:53	0.93	13.13
2/5/2013	14:51:13	0.76	13.18
2/5/2013	14:51:33	0.75	13.08
2/5/2013	14:51:53	0.75	13.13
2/5/2013	14:52:13	0.75	12.98
2/5/2013	14:52:33	0.75	12.56
2/5/2013	14:52:53	0.75	12.28
2/5/2013	14:53:13	0.75	12.20
2/5/2013	14:53:33	0.75	12.13
2/5/2013	14:53:53	0.75	12.25
2/5/2013	14:54:13	1.09	12.31
2/5/2013	14:54:33	0.93	12.17
2/5/2013	14:54:53	0.93	12.08
2/5/2013	14:55:13	0.93	12.07
2/5/2013	14:55:33	0.93	12.34
2/5/2013	14:55:53	0.82	12.26
2/5/2013	14:56:13	0.86	12.22
2/5/2013	14:56:33	0.84	12.18
2/5/2013	14:56:53	0.75	11.99
2/5/2013	14:57:13	0.84	12.03
2/5/2013	14:57:33	0.93	12.38
2/5/2013	14:57:53	0.93	12.74
2/5/2013	14:58:13	0.93	12.90
2/5/2013	14:58:33	0.93	13.08
2/5/2013	14:58:53	0.95	12.88
2/5/2013	14:59:13	0.93	12.20
2/5/2013	14:59:33	0.83	12.15
2/5/2013	14:59:53	0.75	12.55
2/5/2013	15:00:13	0.75	12.73
2/5/2013	15:00:33	0.86	12.50
2/5/2013	15:00:53	0.75	12.38
2/5/2013	15:01:13	0.89	12.55
2/5/2013	15:01:33	0.93	12.58
2/5/2013	15:01:53	0.93	12.53
2/5/2013	15:02:13	0.93	12.35
2/5/2013	15:02:33	0.93	12.07
2/5/2013	15:02:53	0.93	12.18
2/5/2013	15:03:13	0.93	12.46
2/5/2013	15:03:33	0.93	12.44

2/5/2013	15:03:53	0.93	12.85	
Stop Run #1		1.04	12.68	
2/5/2013	15:04:13	1.02	13.23	
2/5/2013	15:04:33	1.03	12.98	
2/5/2013	15:04:53	2.19	12.43	
2/5/2013	15:05:13	0.90	12.20	
2/5/2013	15:05:33	0.75	8.48	
2/5/2013	15:05:53	0.75	4.19	
2/5/2013	15:06:13	0.75	1.95	
2/5/2013	15:06:33	0.75	1.03	
2/5/2013	15:06:53	0.75	0.69	
2/5/2013	15:07:13	0.75	0.57	
2/5/2013	15:07:33	1.43	0.52	
2/5/2013	15:07:53	1.04	3.24	
2/5/2013	15:08:13	0.75	7.36	
2/5/2013	15:08:33	0.75	4.80	
2/5/2013	15:08:53	0.75	2.20	
2/5/2013	15:09:13	**0.57**	1.11	
2/5/2013	15:09:33	**0.56**	0.71	Zero N2
2/5/2013	15:09:53	**0.56**	0.57	
2/5/2013	15:10:13	3.93	0.53	
2/5/2013	15:10:33	8.55	3.07	
2/5/2013	15:10:53	**8.59**	10.33	8.44 ppm C3H8
2/5/2013	15:11:13	**8.59**	15.83	
2/5/2013	15:11:33	**8.59**	18.56	
2/5/2013	15:11:53	3.57	19.68	
2/5/2013	15:12:13	2.40	20.07	

DATE	TIME	VOC	O2
MM/DD/Y\	HH:MM:SS	ppm	
2/5/2013	15:19:51	0.78	13.08
Start Run #2			
2/5/2013	15:20:11	0.75	12.99
2/5/2013	15:20:31	0.75	13.09
2/5/2013	15:20:51	0.75	13.20
2/5/2013	15:21:11	0.75	13.08
2/5/2013	15:21:31	0.75	12.94
2/5/2013	15:21:51	0.75	12.81
2/5/2013	15:22:11	0.75	12.45
2/5/2013	15:22:31	0.75	12.20
2/5/2013	15:22:51	0.75	12.32
2/5/2013	15:23:11	0.75	12.28
2/5/2013	15:23:31	0.75	12.26
2/5/2013	15:23:51	0.75	12.33
2/5/2013	15:24:11	0.75	12.41
2/5/2013	15:24:31	0.75	12.63
2/5/2013	15:24:51	0.75	12.56
2/5/2013	15:25:11	0.75	12.51
2/5/2013	15:25:31	0.75	12.57
2/5/2013	15:25:51	0.75	12.74
2/5/2013	15:26:11	0.75	12.91
2/5/2013	15:26:31	0.85	12.97
2/5/2013	15:26:51	0.93	12.83
2/5/2013	15:27:11	0.78	12.90
2/5/2013	15:27:31	0.86	13.05
2/5/2013	15:27:51	0.75	13.05
2/5/2013	15:28:11	0.91	13.01
2/5/2013	15:28:31	0.93	12.98
2/5/2013	15:28:51	0.80	12.99
2/5/2013	15:29:11	0.75	13.05
2/5/2013	15:29:31	0.75	12.78
2/5/2013	15:29:51	0.75	12.74
2/5/2013	15:30:11	0.75	12.92
2/5/2013	15:30:31	0.75	12.60
2/5/2013	15:30:51	0.75	11.99
2/5/2013	15:31:11	0.75	11.75
2/5/2013	15:31:31	0.75	11.66
2/5/2013	15:31:51	0.75	11.73
2/5/2013	15:32:11	0.75	11.77
2/5/2013	15:32:31	0.75	11.70
2/5/2013	15:32:51	0.75	11.62
2/5/2013	15:33:11	0.75	11.36
2/5/2013	15:33:31	0.75	11.06
2/5/2013	15:33:51	0.75	10.87
2/5/2013	15:34:11	0.75	10.69
2/5/2013	15:34:31	0.75	10.75
2/5/2013	15:34:51	0.75	11.11
2/5/2013	15:35:11	0.75	11.46
2/5/2013	15:35:31	0.75	11.69
2/5/2013	15:35:51	0.75	11.81
2/5/2013	15:36:11	0.75	11.64
2/5/2013	15:36:31	0.74	11.56
2/5/2013	15:36:51	0.75	11.82
2/5/2013	15:37:11	0.75	11.87
2/5/2013	15:37:31	0.75	11.75
2/5/2013	15:37:51	0.75	11.74
2/5/2013	15:38:11	0.75	11.88
2/5/2013	15:38:31	0.75	11.71
2/5/2013	15:38:51	0.75	11.42
2/5/2013	15:39:11	0.75	11.38
2/5/2013	15:39:31	0.75	11.55
2/5/2013	15:39:51	0.75	11.42
2/5/2013	15:40:11	0.75	11.20

2/5/2013	15:40:31	0.75	11.24
2/5/2013	15:40:51	0.75	11.42
2/5/2013	15:41:11	0.75	11.46
2/5/2013	15:41:31	0.75	11.83
2/5/2013	15:41:51	0.75	12.08
2/5/2013	15:42:11	0.81	12.06
2/5/2013	15:42:31	0.75	12.15
2/5/2013	15:42:51	0.75	12.01
2/5/2013	15:43:11	0.75	11.69
2/5/2013	15:43:31	0.75	11.77
2/5/2013	15:43:51	0.75	12.04
2/5/2013	15:44:11	0.75	12.33
2/5/2013	15:44:31	0.75	12.58
2/5/2013	15:44:51	0.98	12.74
2/5/2013	15:45:11	0.80	12.36
2/5/2013	15:45:31	0.75	12.21
2/5/2013	15:45:51	0.75	12.58
2/5/2013	15:46:11	0.75	12.87
2/5/2013	15:46:31	1.08	12.68
2/5/2013	15:46:51	0.85	12.08
2/5/2013	15:47:11	0.87	11.81
2/5/2013	15:47:31	0.93	11.98
2/5/2013	15:47:51	0.93	12.50
2/5/2013	15:48:11	0.93	12.50
2/5/2013	15:48:31	0.93	12.02
2/5/2013	15:48:51	0.81	12.33
2/5/2013	15:49:11	0.92	12.87
2/5/2013	15:49:31	0.93	12.96
2/5/2013	15:49:51	0.79	12.86
Port Change			
2/5/2013	15:50:11	0.93	12.98
2/5/2013	15:50:31	0.93	12.70
2/5/2013	15:50:51	0.93	11.99
2/5/2013	15:51:11	2.22	11.81
2/5/2013	15:51:31	0.95	14.32
2/5/2013	15:51:51	0.93	14.76
Resume			
2/5/2013	15:52:11	0.86	13.17
2/5/2013	15:52:31	0.75	12.19
2/5/2013	15:52:51	0.88	12.19
2/5/2013	15:53:11	0.75	12.24
2/5/2013	15:53:31	0.77	11.95
2/5/2013	15:53:51	0.76	11.58
2/5/2013	15:54:11	0.75	11.42
2/5/2013	15:54:31	0.69	11.46
2/5/2013	15:54:51	0.97	11.49
2/5/2013	15:55:11	0.75	11.17
2/5/2013	15:55:31	0.84	10.97
2/5/2013	15:55:51	0.84	11.01
2/5/2013	15:56:11	0.92	11.55
2/5/2013	15:56:31	0.80	11.85
2/5/2013	15:56:51	0.75	12.14
2/5/2013	15:57:11	0.75	11.96
2/5/2013	15:57:31	0.75	12.00
2/5/2013	15:57:51	0.75	11.95
2/5/2013	15:58:11	0.75	12.01
2/5/2013	15:58:31	0.75	12.30
2/5/2013	15:58:51	0.75	12.50
2/5/2013	15:59:11	0.86	12.45
2/5/2013	15:59:31	0.94	12.66
2/5/2013	15:59:51	0.76	13.19
2/5/2013	16:00:11	0.84	13.07
2/5/2013	16:00:31	0.90	12.85
2/5/2013	16:00:51	0.82	13.02
2/5/2013	16:01:11	0.75	12.98
2/5/2013	16:01:31	0.75	12.55

2/5/2013	16:01:51	0.85	12.19
2/5/2013	16:02:11	0.82	12.22
2/5/2013	16:02:31	0.79	12.70
2/5/2013	16:02:51	0.75	12.97
2/5/2013	16:03:11	0.75	12.81
2/5/2013	16:03:31	0.75	12.55
2/5/2013	16:03:51	0.84	12.38
2/5/2013	16:04:11	0.77	12.39
2/5/2013	16:04:31	0.71	12.43
2/5/2013	16:04:51	0.56	12.40
2/5/2013	16:05:11	0.56	12.19
2/5/2013	16:05:31	0.56	12.05
2/5/2013	16:05:51	0.68	12.03
2/5/2013	16:06:11	0.71	12.26
2/5/2013	16:06:31	0.69	12.61
2/5/2013	16:06:51	0.99	12.53
2/5/2013	16:07:11	0.84	12.50
2/5/2013	16:07:31	0.75	12.69
2/5/2013	16:07:51	0.81	12.69
2/5/2013	16:08:11	0.78	12.63
2/5/2013	16:08:31	0.74	12.90
2/5/2013	16:08:51	0.59	12.90
2/5/2013	16:09:11	0.75	12.63
2/5/2013	16:09:31	0.75	12.29
2/5/2013	16:09:51	0.75	12.31
2/5/2013	16:10:11	0.75	12.45
2/5/2013	16:10:31	0.75	12.58
2/5/2013	16:10:51	0.75	12.67
2/5/2013	16:11:11	0.75	12.58
2/5/2013	16:11:31	0.75	12.61
2/5/2013	16:11:51	0.75	12.66
2/5/2013	16:12:11	0.73	12.62
2/5/2013	16:12:31	0.56	12.47
2/5/2013	16:12:51	0.71	12.71
2/5/2013	16:13:11	0.56	12.81
2/5/2013	16:13:31	0.56	12.79
2/5/2013	16:13:51	0.70	12.65
2/5/2013	16:14:11	0.75	12.58
2/5/2013	16:14:31	0.75	12.81
2/5/2013	16:14:51	0.75	13.20
2/5/2013	16:15:11	0.65	13.20
2/5/2013	16:15:31	0.57	12.89
2/5/2013	16:15:51	0.75	12.98
2/5/2013	16:16:11	0.65	13.11
2/5/2013	16:16:31	0.66	13.16
2/5/2013	16:16:51	0.75	13.17
2/5/2013	16:17:11	0.75	13.38
2/5/2013	16:17:31	0.75	13.50
2/5/2013	16:17:51	0.75	13.43
2/5/2013	16:18:11	0.75	13.36
2/5/2013	16:18:31	0.75	13.23
2/5/2013	16:18:51	0.75	12.93
2/5/2013	16:19:11	0.75	13.00
2/5/2013	16:19:31	0.75	13.11
2/5/2013	16:19:51	0.75	12.90
2/5/2013	16:20:11	0.75	12.89
2/5/2013	16:20:31	0.75	13.05
2/5/2013	16:20:51	0.75	13.07
2/5/2013	16:21:11	0.75	13.21
2/5/2013	16:21:31	0.92	13.25
2/5/2013	16:21:51	0.83	12.96
Stop Run #2		0.77	12.37
2/5/2013	16:22:11	0.91	13.03
2/5/2013	16:22:31	1.88	13.25

2/5/2013	16:22:51	3.78	14.19	
2/5/2013	16:23:11	2.27	16.92	
2/5/2013	16:23:31	0.56	15.05	
2/5/2013	16:23:51	0.56	8.05	
2/5/2013	16:24:11	0.56	3.43	
2/5/2013	16:24:31	1.28	1.50	
2/5/2013	16:24:51	0.97	2.10	
2/5/2013	16:25:11	0.56	5.23	
2/5/2013	16:25:31	0.56	3.52	
2/5/2013	16:25:51	0.53	1.74	
2/5/2013	16:26:11	0.46	0.97	
2/5/2013	16:26:31	**0.38**	0.67	
2/5/2013	16:26:51	**0.38**	0.56	Zero N2
2/5/2013	16:27:11	**0.38**	0.51	
2/5/2013	16:27:31	1.14	0.50	
2/5/2013	16:27:51	8.38	1.74	
2/5/2013	16:28:11	**8.50**	8.41	
2/5/2013	16:28:31	**8.50**	14.74	8.84 ppm C3H8
2/5/2013	16:28:51	**8.50**	18.11	
2/5/2013	16:29:11	8.97	19.53	
2/5/2013	16:29:29	2.31	20.03	

DATE	TIME	VOC	O2
MM/DD/Y\	HH:MM:SS	ppm	
2/5/2013	16:34:42	0.74	12.53
Start Run #3			
2/5/2013	16:35:02	0.74	12.55
2/5/2013	16:35:22	0.66	12.60
2/5/2013	16:35:42	0.75	12.45
2/5/2013	16:36:02	0.73	12.47
2/5/2013	16:36:22	0.82	12.44
2/5/2013	16:36:42	0.61	12.65
2/5/2013	16:37:02	0.86	12.66
2/5/2013	16:37:22	0.59	12.68
2/5/2013	16:37:42	0.56	12.37
2/5/2013	16:38:02	0.56	12.06
2/5/2013	16:38:22	0.67	12.13
2/5/2013	16:38:42	0.73	12.21
2/5/2013	16:39:02	0.56	12.58
2/5/2013	16:39:22	0.56	12.51
2/5/2013	16:39:42	0.65	12.24
2/5/2013	16:40:02	0.75	12.30
2/5/2013	16:40:22	0.70	12.62
2/5/2013	16:40:42	0.56	12.75
2/5/2013	16:41:02	0.87	12.60
2/5/2013	16:41:22	1.06	12.68
2/5/2013	16:41:42	0.90	13.32
2/5/2013	16:42:02	0.87	13.57
2/5/2013	16:42:22	0.67	13.23
2/5/2013	16:42:42	0.68	13.08
2/5/2013	16:43:02	0.71	12.74
2/5/2013	16:43:22	0.74	12.34
2/5/2013	16:43:42	0.75	12.65
2/5/2013	16:44:02	0.68	12.72
2/5/2013	16:44:22	0.56	12.53
2/5/2013	16:44:42	0.65	12.23
2/5/2013	16:45:02	0.58	12.23
2/5/2013	16:45:22	0.82	12.31
2/5/2013	16:45:42	0.78	12.70
2/5/2013	16:46:02	0.64	12.90
2/5/2013	16:46:22	0.73	12.80
2/5/2013	16:46:42	0.83	12.82
2/5/2013	16:47:02	0.74	12.87
2/5/2013	16:47:22	0.67	13.22
2/5/2013	16:47:42	0.59	12.91
2/5/2013	16:48:02	0.53	12.59
2/5/2013	16:48:22	0.60	12.18
2/5/2013	16:48:42	0.56	12.01
2/5/2013	16:49:02	0.58	12.14
2/5/2013	16:49:22	0.59	12.30
2/5/2013	16:49:42	0.56	12.52
2/5/2013	16:50:02	0.56	12.34
2/5/2013	16:50:22	0.56	12.20
2/5/2013	16:50:42	0.46	12.18
2/5/2013	16:51:02	0.38	12.08
2/5/2013	16:51:22	0.38	12.07
2/5/2013	16:51:42	0.44	12.09
2/5/2013	16:52:02	0.56	12.02
2/5/2013	16:52:22	0.56	11.93
2/5/2013	16:52:42	0.56	11.76
2/5/2013	16:53:02	0.56	11.77
2/5/2013	16:53:22	0.56	11.90
2/5/2013	16:53:42	0.56	11.95
2/5/2013	16:54:02	0.56	11.88
2/5/2013	16:54:22	0.56	11.83
2/5/2013	16:54:42	0.56	11.83
2/5/2013	16:55:02	0.56	11.91

2/5/2013	16:55:22	0.56	12.04
2/5/2013	16:55:42	0.56	12.05
2/5/2013	16:56:02	0.56	12.09
2/5/2013	16:56:22	0.56	12.10
2/5/2013	16:56:42	0.56	11.95
2/5/2013	16:57:02	0.56	11.93
2/5/2013	16:57:22	0.56	11.90
2/5/2013	16:57:42	0.56	11.79
2/5/2013	16:58:02	0.56	11.73
2/5/2013	16:58:22	0.56	11.66
2/5/2013	16:58:42	0.56	11.63
2/5/2013	16:59:02	0.56	11.60
2/5/2013	16:59:22	0.56	11.70
2/5/2013	16:59:42	0.56	11.82
2/5/2013	17:00:02	0.56	11.78
2/5/2013	17:00:22	0.50	11.82
2/5/2013	17:00:42	0.46	11.93
2/5/2013	17:01:02	0.50	11.92
2/5/2013	17:01:22	0.54	11.90
2/5/2013	17:01:42	0.56	11.88
2/5/2013	17:02:02	0.56	11.87
2/5/2013	17:02:22	0.43	11.88
2/5/2013	17:02:42	0.46	11.85
2/5/2013	17:03:02	0.56	11.89
2/5/2013	17:03:22	0.56	11.99
2/5/2013	17:03:42	0.56	11.90
2/5/2013	17:04:02	0.56	11.97
2/5/2013	17:04:22	0.56	11.92
2/5/2013	17:04:42	0.56	11.84
Port Change			
2/5/2013	17:05:02	1.06	11.97
2/5/2013	17:05:22	2.85	13.68
2/5/2013	17:05:42	2.42	16.99
2/5/2013	17:06:02	2.19	19.03
2/5/2013	17:06:22	1.50	19.94
2/5/2013	17:06:42	1.05	20.06
Resume			
2/5/2013	17:07:02	0.74	18.34
2/5/2013	17:07:22	0.56	15.76
2/5/2013	17:07:42	0.56	14.15
2/5/2013	17:08:02	0.56	13.45
2/5/2013	17:08:22	0.56	13.14
2/5/2013	17:08:42	0.56	12.93
2/5/2013	17:09:02	0.56	12.84
2/5/2013	17:09:22	0.56	12.63
2/5/2013	17:09:42	0.56	12.58
2/5/2013	17:10:02	0.56	12.56
2/5/2013	17:10:22	0.56	12.73
2/5/2013	17:10:42	0.56	13.03
2/5/2013	17:11:02	0.56	13.26
2/5/2013	17:11:22	0.56	13.33
2/5/2013	17:11:42	0.56	13.24
2/5/2013	17:12:02	0.56	13.22
2/5/2013	17:12:22	0.56	13.28
2/5/2013	17:12:42	0.56	13.12
2/5/2013	17:13:02	0.55	12.88
2/5/2013	17:13:22	0.56	12.97
2/5/2013	17:13:42	0.45	13.03
2/5/2013	17:14:02	0.56	12.70
2/5/2013	17:14:22	0.56	12.55
2/5/2013	17:14:42	0.56	12.80
2/5/2013	17:15:02	0.56	12.92
2/5/2013	17:15:22	0.54	12.88
2/5/2013	17:15:42	0.56	12.91
2/5/2013	17:16:02	0.56	13.04
2/5/2013	17:16:22	0.56	13.09

2/5/2013	17:16:42	0.56	12.93
2/5/2013	17:17:02	0.61	12.87
2/5/2013	17:17:22	0.56	13.03
2/5/2013	17:17:42	0.56	13.28
2/5/2013	17:18:02	0.56	13.19
2/5/2013	17:18:22	0.56	13.09
2/5/2013	17:18:42	0.56	12.92
2/5/2013	17:19:02	0.56	12.82
2/5/2013	17:19:22	0.56	12.85
2/5/2013	17:19:42	0.56	12.87
2/5/2013	17:20:02	0.56	12.85
2/5/2013	17:20:22	0.56	12.67
2/5/2013	17:20:42	0.56	12.65
2/5/2013	17:21:02	0.56	12.82
2/5/2013	17:21:22	0.56	12.83
2/5/2013	17:21:42	0.48	12.86
2/5/2013	17:22:02	0.56	13.04
2/5/2013	17:22:22	0.46	13.06
2/5/2013	17:22:42	0.38	12.85
2/5/2013	17:23:02	0.38	12.50
2/5/2013	17:23:22	0.54	12.27
2/5/2013	17:23:42	0.48	12.18
2/5/2013	17:24:02	0.38	12.26
2/5/2013	17:24:22	0.38	12.28
2/5/2013	17:24:42	0.55	12.20
2/5/2013	17:25:02	0.40	12.12
2/5/2013	17:25:22	0.38	12.07
2/5/2013	17:25:42	0.38	12.16
2/5/2013	17:26:02	0.54	12.30
2/5/2013	17:26:22	0.56	12.19
2/5/2013	17:26:42	0.56	12.16
2/5/2013	17:27:02	0.56	12.19
2/5/2013	17:27:22	0.56	12.00
2/5/2013	17:27:42	0.56	12.22
2/5/2013	17:28:02	0.56	12.33
2/5/2013	17:28:22	0.56	12.29
2/5/2013	17:28:42	0.56	12.50
2/5/2013	17:29:02	0.56	12.77
2/5/2013	17:29:22	0.63	12.74
2/5/2013	17:29:42	0.58	12.29
2/5/2013	17:30:02	0.56	11.96
2/5/2013	17:30:22	0.56	12.28
2/5/2013	17:30:42	0.70	12.50
2/5/2013	17:31:02	0.64	12.33
2/5/2013	17:31:22	0.76	12.38
2/5/2013	17:31:42	0.75	12.78
2/5/2013	17:32:02	0.75	12.92
2/5/2013	17:32:22	0.73	12.29
2/5/2013	17:32:42	0.75	12.05
2/5/2013	17:33:02	0.75	12.31
2/5/2013	17:33:22	0.75	12.57
2/5/2013	17:33:42	0.75	12.84
2/5/2013	17:34:02	0.75	12.73
2/5/2013	17:34:22	0.75	12.59
2/5/2013	17:34:42	0.75	12.54
2/5/2013	17:35:02	0.75	12.08
2/5/2013	17:35:22	0.75	11.71
2/5/2013	17:35:42	0.75	11.73
2/5/2013	17:36:02	0.75	11.98
2/5/2013	17:36:22	0.75	12.46
2/5/2013	17:36:42	0.75	12.67
Stop Run #3		0.60	12.51
2/5/2013	17:37:02	0.75	12.51
2/5/2013	17:37:22	0.75	12.38

2/5/2013	17:37:42	0.75	12.20	
2/5/2013	17:38:02	0.97	11.96	
2/5/2013	17:38:22	1.66	12.60	
2/5/2013	17:38:42	1.42	15.86	
2/5/2013	17:39:02	0.56	14.22	
2/5/2013	17:39:22	0.56	7.40	
2/5/2013	17:39:42	0.56	3.17	
2/5/2013	17:40:02	0.56	1.47	
2/5/2013	17:40:22	0.68	0.85	
2/5/2013	17:40:42	1.08	1.17	
2/5/2013	17:41:02	0.56	4.84	
2/5/2013	17:41:22	0.56	4.10	
2/5/2013	17:41:42	0.56	2.16	
2/5/2013	17:42:02	**0.56**	1.14	
2/5/2013	17:42:22	**0.56**	0.73	Zero N2
2/5/2013	17:42:42	**0.56**	0.57	
2/5/2013	17:43:02	1.31	0.52	
2/5/2013	17:43:22	8.52	1.62	
2/5/2013	17:43:42	**8.49**	8.15	
2/5/2013	17:44:02	**8.50**	14.55	8.44 ppm C3H8
2/5/2013	17:44:22	**8.50**	18.03	
2/5/2013	17:44:42	2.18	19.49	
2/5/2013	17:44:52	1.87	19.98	

DATE	TIME	VOC	O2	
MM/DD/Y	HH:MM:SS	ppm		
2/6/2013	7:39:22	0.00	0.98	
2/6/2013	7:39:42	0.01	0.66	
2/6/2013	7:40:02	0.01	0.55	
2/6/2013	7:40:22	**0.01**	0.51	
2/6/2013	7:40:42	**0.01**	0.50	Zero N2
2/6/2013	7:41:02	**0.01**	0.49	
2/6/2013	7:41:22	**0.01**	0.49	
2/6/2013	7:41:42	0.01	0.49	
2/6/2013	7:42:02	0.01	0.48	
2/6/2013	7:42:22	0.50	0.48	
2/6/2013	7:42:42	0.46	2.00	
2/6/2013	7:43:02	0.01	6.32	
2/6/2013	7:43:22	0.01	4.41	
2/6/2013	7:43:42	0.01	2.04	
2/6/2013	7:44:02	0.01	1.04	
2/6/2013	7:44:22	0.01	0.67	
2/6/2013	7:44:42	0.01	0.55	
2/6/2013	7:45:02	0.01	0.50	
2/6/2013	7:45:22	0.01	0.49	
2/6/2013	7:45:42	1.42	0.48	
2/6/2013	7:46:02	8.42	2.11	
2/6/2013	7:46:22	8.50	9.12	
2/6/2013	7:46:42	**8.50**	15.25	
2/6/2013	7:47:02	**8.50**	18.39	8.44 ppm C3H8
2/6/2013	7:47:22	**8.50**	19.67	
2/6/2013	7:47:42	2.30	20.07	
2/6/2013	7:48:02	3.16	20.09	
2/6/2013	7:48:22	**5.17**	20.09	
2/6/2013	7:48:42	**5.12**	20.09	5.14 ppm C3H8
2/6/2013	7:49:02	**5.12**	20.09	
2/6/2013	7:49:22	4.08	20.09	
2/6/2013	7:49:42	1.50	20.09	
2/6/2013	7:50:02	**3.75**	20.09	
2/6/2013	7:50:22	**3.77**	20.09	3.84 ppm C3H8
2/6/2013	7:50:42	**3.77**	20.09	
2/6/2013	7:51:02	2.88	20.09	
2/6/2013	7:51:22	1.54	20.09	
2/6/2013	7:51:42	1.50	20.09	
2/6/2013	7:52:02	1.50	20.09	
2/6/2013	7:52:19	1.50	20.09	

DATE	TIME	VOC	O2
MM/DD/Y\	HH:MM:SS	ppm	
2/6/2013	14:59:48	0.01	13.60
Start Run #4			
2/6/2013	15:00:08	0.11	13.57
2/6/2013	15:00:28	0.19	13.59
2/6/2013	15:00:48	0.17	13.56
2/6/2013	15:01:08	0.17	13.57
2/6/2013	15:01:28	0.09	13.69
2/6/2013	15:01:48	0.12	13.62
2/6/2013	15:02:08	0.17	13.45
2/6/2013	15:02:28	0.17	13.26
2/6/2013	15:02:48	0.17	13.17
2/6/2013	15:03:08	0.17	13.03
2/6/2013	15:03:28	0.17	13.00
2/6/2013	15:03:48	0.12	13.03
2/6/2013	15:04:08	0.09	12.96
2/6/2013	15:04:28	0.17	12.92
2/6/2013	15:04:48	0.17	12.60
2/6/2013	15:05:08	0.15	12.61
2/6/2013	15:05:28	0.03	12.77
2/6/2013	15:05:48	0.17	12.95
2/6/2013	15:06:08	0.17	13.09
2/6/2013	15:06:28	0.17	13.41
2/6/2013	15:06:48	0.17	13.60
2/6/2013	15:07:08	0.17	13.74
2/6/2013	15:07:28	0.23	13.95
2/6/2013	15:07:48	0.19	13.92
2/6/2013	15:08:08	0.56	13.75
2/6/2013	15:08:28	0.14	13.84
2/6/2013	15:08:48	0.17	13.96
2/6/2013	15:09:08	0.41	14.12
2/6/2013	15:09:28	0.20	14.40
2/6/2013	15:09:48	0.18	14.41
2/6/2013	15:10:08	0.40	14.37
2/6/2013	15:10:28	0.85	14.36
2/6/2013	15:10:48	0.28	14.92
2/6/2013	15:11:08	0.35	15.09
2/6/2013	15:11:28	0.84	15.06
2/6/2013	15:11:48	0.24	15.28
2/6/2013	15:12:08	0.22	15.27
2/6/2013	15:12:28	0.26	14.91
2/6/2013	15:12:48	0.17	14.77
2/6/2013	15:13:08	0.28	14.94
2/6/2013	15:13:28	0.46	15.22
2/6/2013	15:13:48	0.27	15.27
2/6/2013	15:14:08	0.19	14.84
2/6/2013	15:14:28	0.35	14.76
2/6/2013	15:14:48	0.44	15.03
2/6/2013	15:15:08	0.42	15.26
2/6/2013	15:15:28	0.50	15.49
2/6/2013	15:15:48	0.44	15.64
2/6/2013	15:16:08	0.35	15.55
2/6/2013	15:16:28	0.28	15.30
2/6/2013	15:16:48	0.33	15.15
2/6/2013	15:17:08	0.27	15.18
2/6/2013	15:17:28	0.17	15.12
2/6/2013	15:17:48	0.17	14.88
2/6/2013	15:18:08	0.17	14.53
2/6/2013	15:18:28	0.17	14.26
2/6/2013	15:18:48	0.17	13.96
2/6/2013	15:19:08	0.17	14.01
2/6/2013	15:19:28	0.17	13.49
2/6/2013	15:19:48	0.08	12.60
2/6/2013	15:20:08	0.17	12.05

2/6/2013	15:20:28	0.11	11.91
2/6/2013	15:20:48	0.01	12.31
2/6/2013	15:21:08	0.06	12.48
2/6/2013	15:21:28	0.17	12.36
2/6/2013	15:21:48	0.17	12.30
2/6/2013	15:22:08	0.17	12.22
2/6/2013	15:22:28	0.17	12.00
2/6/2013	15:22:48	0.16	12.02
2/6/2013	15:23:08	0.10	11.97
2/6/2013	15:23:28	0.01	11.80
2/6/2013	15:23:48	0.01	11.93
2/6/2013	15:24:08	0.11	12.16
2/6/2013	15:24:28	0.67	12.05
2/6/2013	15:24:48	0.19	11.71
2/6/2013	15:25:08	0.10	11.70
2/6/2013	15:25:28	0.06	11.49
2/6/2013	15:25:48	0.17	11.73
2/6/2013	15:26:08	0.17	12.08
2/6/2013	15:26:28	0.23	12.36
2/6/2013	15:26:48	0.18	12.57
2/6/2013	15:27:08	0.17	12.54
2/6/2013	15:27:28	0.17	12.54
2/6/2013	15:27:48	0.04	12.55
2/6/2013	15:28:08	0.01	12.40
2/6/2013	15:28:28	0.01	12.37
2/6/2013	15:28:48	0.01	12.67
2/6/2013	15:29:08	0.01	13.02
2/6/2013	15:29:28	0.17	13.10
2/6/2013	15:29:48	0.17	13.22
Port Change			
2/6/2013	15:30:08	0.17	13.57
2/6/2013	15:30:28	0.17	13.94
2/6/2013	15:30:48	0.38	14.10
2/6/2013	15:31:08	1.47	14.35
2/6/2013	15:31:28	0.59	16.03
2/6/2013	15:31:48	0.27	16.32
Resume			
2/6/2013	15:32:08	0.17	15.39
2/6/2013	15:32:28	0.17	14.48
2/6/2013	15:32:48	0.15	13.64
2/6/2013	15:33:08	0.19	12.68
2/6/2013	15:33:28	0.12	12.48
2/6/2013	15:33:48	0.01	12.40
2/6/2013	15:34:08	0.01	12.38
2/6/2013	15:34:28	0.07	12.34
2/6/2013	15:34:48	0.12	12.37
2/6/2013	15:35:08	0.13	12.55
2/6/2013	15:35:28	0.17	12.68
2/6/2013	15:35:48	0.17	13.19
2/6/2013	15:36:08	0.17	13.60
2/6/2013	15:36:28	0.09	13.37
2/6/2013	15:36:48	0.01	12.93
2/6/2013	15:37:08	0.15	12.53
2/6/2013	15:37:28	0.11	12.46
2/6/2013	15:37:48	0.17	12.83
2/6/2013	15:38:08	0.21	13.04
2/6/2013	15:38:28	0.17	12.25
2/6/2013	15:38:48	0.19	11.99
2/6/2013	15:39:08	0.63	12.43
2/6/2013	15:39:28	0.17	12.49
2/6/2013	15:39:48	0.58	12.27
2/6/2013	15:40:08	0.52	12.68
2/6/2013	15:40:28	0.55	13.73
2/6/2013	15:40:48	0.30	14.40
2/6/2013	15:41:08	0.39	14.22
2/6/2013	15:41:28	0.26	13.97

2/6/2013	15:41:48	0.29	13.66
2/6/2013	15:42:08	0.17	13.72
2/6/2013	15:42:28	0.17	13.28
2/6/2013	15:42:48	0.17	12.88
2/6/2013	15:43:08	0.17	12.92
2/6/2013	15:43:28	0.17	13.28
2/6/2013	15:43:48	0.16	13.44
2/6/2013	15:44:08	0.06	13.02
2/6/2013	15:44:28	0.21	12.70
2/6/2013	15:44:48	0.17	12.96
2/6/2013	15:45:08	0.17	13.37
2/6/2013	15:45:28	0.14	13.41
2/6/2013	15:45:48	0.01	13.20
2/6/2013	15:46:08	0.11	12.95
2/6/2013	15:46:28	0.17	12.68
2/6/2013	15:46:48	0.17	12.48
2/6/2013	15:47:08	0.17	12.25
2/6/2013	15:47:28	0.17	12.09
2/6/2013	15:47:48	0.17	12.04
2/6/2013	15:48:08	0.17	12.02
2/6/2013	15:48:28	0.17	11.41
2/6/2013	15:48:48	0.17	11.13
2/6/2013	15:49:08	0.17	11.04
2/6/2013	15:49:28	0.33	11.11
2/6/2013	15:49:48	0.04	11.01
2/6/2013	15:50:08	0.23	11.00
2/6/2013	15:50:28	0.19	11.24
2/6/2013	15:50:48	0.19	11.53
2/6/2013	15:51:08	0.15	11.48
2/6/2013	15:51:28	0.14	11.50
2/6/2013	15:51:48	0.13	11.81
2/6/2013	15:52:08	0.06	12.04
2/6/2013	15:52:28	0.17	11.92
2/6/2013	15:52:48	0.17	12.09
2/6/2013	15:53:08	0.17	12.64
2/6/2013	15:53:28	0.17	13.02
2/6/2013	15:53:48	0.17	13.11
2/6/2013	15:54:08	0.17	13.00
2/6/2013	15:54:28	0.17	13.03
2/6/2013	15:54:48	0.31	13.69
2/6/2013	15:55:08	0.30	14.48
2/6/2013	15:55:28	0.17	14.81
2/6/2013	15:55:48	0.17	14.57
2/6/2013	15:56:08	0.17	14.24
2/6/2013	15:56:28	0.17	13.92
2/6/2013	15:56:48	0.17	13.92
2/6/2013	15:57:08	0.17	13.88
2/6/2013	15:57:28	0.17	13.82
2/6/2013	15:57:48	0.17	13.69
2/6/2013	15:58:08	0.17	13.61
2/6/2013	15:58:28	0.17	13.70
2/6/2013	15:58:48	0.15	13.68
2/6/2013	15:59:08	0.17	13.73
2/6/2013	15:59:28	0.17	13.98
2/6/2013	15:59:48	0.17	14.14
2/6/2013	16:00:08	0.17	14.11
2/6/2013	16:00:28	0.17	14.11
2/6/2013	16:00:48	0.17	14.04
2/6/2013	16:01:08	0.17	13.92
2/6/2013	16:01:28	0.17	13.83
2/6/2013	16:01:48	0.17	13.78
Stop Run #4		0.20	13.25
2/6/2013	16:02:08	0.17	13.65
2/6/2013	16:02:28	3.62	13.71

2/6/2013	16:02:48	5.18	14.07	
2/6/2013	16:03:08	0.81	16.38	
2/6/2013	16:03:28	0.17	13.42	
2/6/2013	16:03:48	0.17	6.62	
2/6/2013	16:04:08	0.17	2.87	
2/6/2013	16:04:28	0.15	1.39	
2/6/2013	16:04:48	**0.01**	0.83	
2/6/2013	16:05:08	**0.01**	0.61	Zero N2
2/6/2013	16:05:28	**0.01**	0.54	
2/6/2013	16:05:48	0.08	0.51	
2/6/2013	16:06:08	1.81	0.81	
2/6/2013	16:06:28	0.01	3.80	
2/6/2013	16:06:48	0.01	3.25	
2/6/2013	16:07:08	0.01	1.68	
2/6/2013	16:07:28	0.01	0.93	
2/6/2013	16:07:48	0.01	0.64	
2/6/2013	16:08:08	0.01	0.54	
2/6/2013	16:08:28	0.01	0.50	
2/6/2013	16:08:48	3.67	0.58	
2/6/2013	16:09:08	8.38	4.46	
2/6/2013	16:09:28	8.38	11.76	8.44 ppm C3H8
2/6/2013	16:09:48	8.39	16.66	
2/6/2013	16:10:08	4.26	18.94	
2/6/2013	16:10:13	2.11	19.63	

DATE	TIME	VOC	O2	
MM/DD/Y	HH:MM:SS	ppm		
2/7/2013	9:24:40	0.01	1.98	
2/7/2013	9:25:00	0.01	0.89	
2/7/2013	9:25:20	**0.01**	0.59	
2/7/2013	9:25:40	**0.01**	0.51	Zero N2
2/7/2013	9:26:00	**0.01**	0.49	
2/7/2013	9:26:20	**0.01**	0.48	
2/7/2013	9:26:40	0.01	0.48	
2/7/2013	9:27:00	0.01	0.48	
2/7/2013	9:27:20	0.01	0.47	
2/7/2013	9:27:40	0.01	0.47	
2/7/2013	9:28:00	0.47	0.48	
2/7/2013	9:28:20	0.09	3.54	
2/7/2013	9:28:40	0.01	5.09	
2/7/2013	9:29:00	0.00	2.48	
2/7/2013	9:29:20	0.01	1.08	
2/7/2013	9:29:40	0.01	0.63	
2/7/2013	9:30:00	0.01	0.51	
2/7/2013	9:30:20	0.01	0.48	
2/7/2013	9:30:40	3.22	0.83	
2/7/2013	9:31:00	7.78	7.09	
2/7/2013	9:31:20	7.92	15.10	
2/7/2013	9:31:40	8.23	18.83	
2/7/2013	9:32:00	**8.37**	19.94	
2/7/2013	9:32:20	**8.43**	20.09	8.44 ppm C3H8
2/7/2013	9:32:40	**8.33**	20.09	
2/7/2013	9:33:00	1.61	20.09	
2/7/2013	9:33:20	4.01	20.09	
2/7/2013	9:33:40	5.19	20.09	
2/7/2013	9:34:00	**5.13**	20.09	
2/7/2013	9:34:20	**5.13**	20.09	5.14 ppm C3H8
2/7/2013	9:34:40	**5.14**	20.09	
2/7/2013	9:35:00	3.22	20.09	
2/7/2013	9:35:20	1.29	20.09	
2/7/2013	9:35:40	**3.80**	20.09	
2/7/2013	9:36:00	**3.82**	20.09	3.84 ppm C3H8
2/7/2013	9:36:20	**3.82**	20.09	
2/7/2013	9:36:40	2.92	20.09	
2/7/2013	9:37:00	1.29	20.09	
2/7/2013	9:37:20	1.29	20.09	
2/7/2013	9:37:28	1.29	20.09	

DATE	TIME	VOC	O2
MM/DD/YY	HH:MM:SS	ppm	
2/7/2013	9:49:56	0.01	12.30
Start Run #5			
2/7/2013	9:50:16	0.01	12.40
2/7/2013	9:50:36	0.01	12.31
2/7/2013	9:50:56	0.01	12.10
2/7/2013	9:51:16	0.05	12.48
2/7/2013	9:51:36	0.01	13.00
2/7/2013	9:51:56	0.01	13.08
2/7/2013	9:52:16	0.01	12.93
2/7/2013	9:52:36	0.01	13.05
2/7/2013	9:52:56	0.01	13.06
2/7/2013	9:53:16	0.01	13.11
2/7/2013	9:53:36	0.01	13.19
2/7/2013	9:53:56	0.11	13.05
2/7/2013	9:54:16	0.66	13.22
2/7/2013	9:54:36	0.36	13.36
2/7/2013	9:54:56	0.20	12.99
2/7/2013	9:55:16	0.43	12.12
2/7/2013	9:55:36	0.23	12.47
2/7/2013	9:55:56	0.50	12.59
2/7/2013	9:56:16	0.25	12.57
2/7/2013	9:56:36	0.36	12.73
2/7/2013	9:56:56	0.13	12.74
2/7/2013	9:57:16	0.01	12.09
2/7/2013	9:57:36	0.01	12.10
2/7/2013	9:57:56	0.01	12.18
2/7/2013	9:58:16	0.01	12.13
2/7/2013	9:58:36	0.01	12.13
2/7/2013	9:58:56	0.01	12.25
2/7/2013	9:59:16	0.01	12.34
2/7/2013	9:59:36	0.01	12.54
2/7/2013	9:59:56	0.01	12.46
2/7/2013	10:00:16	0.01	12.53
2/7/2013	10:00:36	0.01	12.36
2/7/2013	10:00:56	0.01	12.23
2/7/2013	10:01:16	0.01	12.47
2/7/2013	10:01:36	0.01	12.73
2/7/2013	10:01:56	0.01	12.96
2/7/2013	10:02:16	0.01	12.91
2/7/2013	10:02:36	0.01	12.50
2/7/2013	10:02:56	0.01	12.31
2/7/2013	10:03:16	0.01	12.36
2/7/2013	10:03:36	0.01	12.45
2/7/2013	10:03:56	0.01	12.65
2/7/2013	10:04:16	0.01	12.70
2/7/2013	10:04:36	0.01	12.89
2/7/2013	10:04:56	0.01	12.96
2/7/2013	10:05:16	0.01	12.78
2/7/2013	10:05:36	0.01	12.63
2/7/2013	10:05:56	0.01	12.67
2/7/2013	10:06:16	0.01	12.87
2/7/2013	10:06:36	0.01	12.71
2/7/2013	10:06:56	0.01	12.22
2/7/2013	10:07:16	0.01	11.95
2/7/2013	10:07:36	0.01	12.31
2/7/2013	10:07:56	0.01	12.40
2/7/2013	10:08:16	0.01	12.38
2/7/2013	10:08:36	0.01	12.39
2/7/2013	10:08:56	0.01	12.53
2/7/2013	10:09:16	0.01	12.69
2/7/2013	10:09:36	0.01	12.71
2/7/2013	10:09:56	0.01	12.79
2/7/2013	10:10:16	0.01	12.79

2/7/2013	10:10:36	0.01	12.67
2/7/2013	10:10:56	0.01	12.66
2/7/2013	10:11:16	0.15	12.54
2/7/2013	10:11:36	0.11	12.84
2/7/2013	10:11:56	0.12	12.86
2/7/2013	10:12:16	0.13	13.03
2/7/2013	10:12:36	0.05	13.22
2/7/2013	10:12:56	0.08	12.74
2/7/2013	10:13:16	0.01	12.15
2/7/2013	10:13:36	0.01	11.83
2/7/2013	10:13:56	0.19	12.31
2/7/2013	10:14:16	0.01	12.68
2/7/2013	10:14:36	0.01	12.37
2/7/2013	10:14:56	0.01	11.90
2/7/2013	10:15:16	0.01	11.50
2/7/2013	10:15:36	0.01	11.48
2/7/2013	10:15:56	0.01	11.68
2/7/2013	10:16:16	0.01	11.93
2/7/2013	10:16:36	0.01	12.07
2/7/2013	10:16:56	0.01	12.15
2/7/2013	10:17:16	0.01	12.16
2/7/2013	10:17:36	0.01	12.18
2/7/2013	10:17:56	0.01	12.20
2/7/2013	10:18:16	0.01	12.27
2/7/2013	10:18:36	0.01	12.46
2/7/2013	10:18:56	0.01	12.53
2/7/2013	10:19:16	0.01	12.54
2/7/2013	10:19:36	0.01	12.49
2/7/2013	10:19:56	0.01	12.39
Port Change			
2/7/2013	10:20:16	0.01	12.32
2/7/2013	10:20:36	0.78	12.42
2/7/2013	10:20:56	0.60	15.66
2/7/2013	10:21:16	0.13	17.28
2/7/2013	10:21:36	0.01	14.92
2/7/2013	10:21:56	0.01	13.74
Resume			
2/7/2013	10:22:16	0.01	13.48
2/7/2013	10:22:36	0.01	13.45
2/7/2013	10:22:56	0.01	13.46
2/7/2013	10:23:16	0.01	13.25
2/7/2013	10:23:36	0.01	13.26
2/7/2013	10:23:56	0.01	13.24
2/7/2013	10:24:16	0.01	13.16
2/7/2013	10:24:36	0.01	13.38
2/7/2013	10:24:56	0.01	13.56
2/7/2013	10:25:16	0.01	13.59
2/7/2013	10:25:36	0.01	13.45
2/7/2013	10:25:56	0.01	13.56
2/7/2013	10:26:16	0.01	13.59
2/7/2013	10:26:36	0.01	13.42
2/7/2013	10:26:56	0.01	13.41
2/7/2013	10:27:16	0.01	13.49
2/7/2013	10:27:36	0.01	13.42
2/7/2013	10:27:56	0.01	13.24
2/7/2013	10:28:16	0.01	13.31
2/7/2013	10:28:36	0.01	13.56
2/7/2013	10:28:56	0.08	13.62
2/7/2013	10:29:16	0.20	13.71
2/7/2013	10:29:36	0.34	13.75
2/7/2013	10:29:56	0.01	13.73
2/7/2013	10:30:16	0.01	13.63
2/7/2013	10:30:36	0.01	13.40
2/7/2013	10:30:56	0.01	13.39
2/7/2013	10:31:16	0.01	13.57
2/7/2013	10:31:36	0.01	13.71

2/7/2013	10:31:56	0.01	13.82
2/7/2013	10:32:16	0.01	13.71
2/7/2013	10:32:36	0.01	13.65
2/7/2013	10:32:56	0.01	13.66
2/7/2013	10:33:16	0.01	13.34
2/7/2013	10:33:36	0.01	12.71
2/7/2013	10:33:56	0.01	12.25
2/7/2013	10:34:16	0.01	12.09
2/7/2013	10:34:36	0.01	12.18
2/7/2013	10:34:56	0.01	12.45
2/7/2013	10:35:16	0.01	12.54
2/7/2013	10:35:36	0.01	12.60
2/7/2013	10:35:56	0.01	12.59
2/7/2013	10:36:16	0.01	12.35
2/7/2013	10:36:36	0.01	12.13
2/7/2013	10:36:56	0.01	12.03
2/7/2013	10:37:16	0.01	12.11
2/7/2013	10:37:36	0.01	12.14
2/7/2013	10:37:56	0.01	12.23
2/7/2013	10:38:16	0.01	12.23
2/7/2013	10:38:36	0.01	12.20
2/7/2013	10:38:56	0.01	12.23
2/7/2013	10:39:16	0.01	12.22
2/7/2013	10:39:36	0.01	12.29
2/7/2013	10:39:56	0.01	12.18
2/7/2013	10:40:16	0.01	12.09
2/7/2013	10:40:36	0.01	12.22
2/7/2013	10:40:56	0.01	12.55
2/7/2013	10:41:16	0.01	12.56
2/7/2013	10:41:36	0.01	12.35
2/7/2013	10:41:56	0.01	12.27
2/7/2013	10:42:16	0.01	12.28
2/7/2013	10:42:36	0.01	12.35
2/7/2013	10:42:56	0.01	12.21
2/7/2013	10:43:16	0.01	12.33
2/7/2013	10:43:36	0.01	12.37
2/7/2013	10:43:56	0.01	12.08
2/7/2013	10:44:16	0.01	11.99
2/7/2013	10:44:36	0.01	12.28
2/7/2013	10:44:56	0.01	12.41
2/7/2013	10:45:16	0.01	12.30
2/7/2013	10:45:36	0.01	12.33
2/7/2013	10:45:56	0.01	12.46
2/7/2013	10:46:16	0.01	12.62
2/7/2013	10:46:36	0.01	12.56
2/7/2013	10:46:56	0.01	12.55
2/7/2013	10:47:16	0.01	12.47
2/7/2013	10:47:36	0.01	12.50
2/7/2013	10:47:56	0.01	12.54
2/7/2013	10:48:16	0.01	12.54
2/7/2013	10:48:36	0.01	12.51
2/7/2013	10:48:56	0.01	12.35
2/7/2013	10:49:16	0.01	12.11
2/7/2013	10:49:36	0.01	11.90
2/7/2013	10:49:56	0.01	11.72
2/7/2013	10:50:16	0.01	11.47
2/7/2013	10:50:36	0.01	11.62
2/7/2013	10:50:56	0.01	11.79
2/7/2013	10:51:16	0.01	11.89
2/7/2013	10:51:36	0.01	11.77
2/7/2013	10:51:56	0.01	11.80
Stop Run #5		0.03	12.62
2/7/2013	10:52:16	2.53	11.95
2/7/2013	10:52:36	1.57	14.99

2/7/2013	10:52:56	1.46	18.38	
2/7/2013	10:53:16	1.46	19.85	
2/7/2013	10:53:36	1.65	20.09	
2/7/2013	10:53:56	1.53	20.09	
2/7/2013	10:54:16	0.01	17.38	
2/7/2013	10:54:36	0.01	7.70	
2/7/2013	10:54:56	**0.01**	2.75	
2/7/2013	10:55:16	**0.01**	1.11	Zero N2
2/7/2013	10:55:36	**0.01**	0.65	
2/7/2013	10:55:56	1.15	1.18	
2/7/2013	10:56:16	0.01	5.00	
2/7/2013	10:56:36	0.01	3.11	
2/7/2013	10:56:56	0.01	1.31	
2/7/2013	10:57:16	0.01	0.69	
2/7/2013	10:57:36	0.01	0.53	
2/7/2013	10:57:56	1.76	0.52	
2/7/2013	10:58:16	**4.15**	4.64	
2/7/2013	10:58:36	**4.15**	13.52	4.15 ppm C3H8
2/7/2013	10:58:56	**4.15**	18.25	
2/7/2013	10:59:16	4.04	19.75	
2/7/2013	10:59:36	1.65	20.08	
2/7/2013	10:59:48	1.65	20.09	

DATE	TIME	VOC	O2
MM/DD/Y\	HH:MM:SS	ppm	
2/7/2013	14:09:50	0.37	13.28
Start Run #6			
2/7/2013	14:10:10	0.37	13.25
2/7/2013	14:10:30	0.37	12.99
2/7/2013	14:10:50	0.37	12.76
2/7/2013	14:11:10	0.39	12.67
2/7/2013	14:11:30	0.39	12.75
2/7/2013	14:11:50	0.37	13.09
2/7/2013	14:12:10	0.37	13.06
2/7/2013	14:12:30	0.37	13.01
2/7/2013	14:12:50	0.37	13.11
2/7/2013	14:13:10	0.37	13.03
2/7/2013	14:13:30	0.37	13.05
2/7/2013	14:13:50	0.37	13.15
2/7/2013	14:14:10	0.37	12.81
2/7/2013	14:14:30	0.37	12.66
2/7/2013	14:14:50	0.37	12.75
2/7/2013	14:15:10	0.37	12.88
2/7/2013	14:15:30	0.37	12.85
2/7/2013	14:15:50	0.37	12.85
2/7/2013	14:16:10	0.37	12.52
2/7/2013	14:16:30	0.37	12.67
2/7/2013	14:16:50	0.37	12.84
2/7/2013	14:17:10	0.37	12.80
2/7/2013	14:17:30	0.37	12.74
2/7/2013	14:17:50	0.46	12.80
2/7/2013	14:18:10	0.37	12.79
2/7/2013	14:18:30	0.37	12.98
2/7/2013	14:18:50	0.37	13.11
2/7/2013	14:19:10	0.37	13.13
2/7/2013	14:19:30	0.37	13.20
2/7/2013	14:19:50	0.37	13.20
2/7/2013	14:20:10	0.37	13.34
2/7/2013	14:20:30	0.46	13.61
2/7/2013	14:20:50	0.37	13.86
2/7/2013	14:21:10	0.37	13.98
2/7/2013	14:21:30	0.37	13.88
2/7/2013	14:21:50	0.39	13.64
2/7/2013	14:22:10	0.25	13.51
2/7/2013	14:22:30	0.18	13.49
2/7/2013	14:22:50	0.18	13.38
2/7/2013	14:23:10	0.18	13.33
2/7/2013	14:23:30	0.21	13.25
2/7/2013	14:23:50	0.37	13.37
2/7/2013	14:24:10	0.37	13.51
2/7/2013	14:24:30	0.37	13.56
2/7/2013	14:24:50	0.37	13.56
2/7/2013	14:25:10	0.37	13.56
2/7/2013	14:25:30	0.37	13.44
2/7/2013	14:25:50	0.51	13.21
2/7/2013	14:26:10	0.38	13.44
2/7/2013	14:26:30	0.37	13.68
2/7/2013	14:26:50	0.37	13.61
2/7/2013	14:27:10	0.37	13.71
2/7/2013	14:27:30	0.37	13.68
2/7/2013	14:27:50	0.37	13.42
2/7/2013	14:28:10	0.37	12.81
2/7/2013	14:28:30	0.37	12.27
2/7/2013	14:28:50	0.37	12.45
2/7/2013	14:29:10	0.37	12.57
2/7/2013	14:29:30	0.37	12.50
2/7/2013	14:29:50	0.37	12.85
2/7/2013	14:30:10	0.37	13.03

2/7/2013	14:30:30	0.37	12.92
2/7/2013	14:30:50	0.37	12.95
2/7/2013	14:31:10	0.37	12.88
2/7/2013	14:31:30	0.37	12.82
2/7/2013	14:31:50	0.37	12.82
2/7/2013	14:32:10	0.37	12.84
2/7/2013	14:32:30	0.37	12.71
2/7/2013	14:32:50	0.37	12.65
2/7/2013	14:33:10	0.37	12.66
2/7/2013	14:33:30	0.37	12.78
2/7/2013	14:33:50	0.37	13.03
2/7/2013	14:34:10	0.37	12.80
2/7/2013	14:34:30	0.37	12.69
2/7/2013	14:34:50	0.37	12.67
2/7/2013	14:35:10	0.37	13.09
2/7/2013	14:35:30	0.37	13.16
2/7/2013	14:35:50	0.37	12.70
2/7/2013	14:36:10	0.37	12.47
2/7/2013	14:36:30	0.37	12.39
2/7/2013	14:36:50	0.37	12.86
2/7/2013	14:37:10	0.37	12.98
2/7/2013	14:37:30	0.37	12.85
2/7/2013	14:37:50	0.37	12.91
2/7/2013	14:38:10	0.37	12.81
2/7/2013	14:38:30	0.37	12.46
2/7/2013	14:38:50	0.37	12.12
2/7/2013	14:39:10	0.37	12.03
2/7/2013	14:39:30	0.37	12.08
2/7/2013	14:39:50	0.53	12.00
Port Change			
2/7/2013	14:40:10	0.99	13.23
2/7/2013	14:40:30	0.37	15.13
2/7/2013	14:40:50	0.37	13.79
2/7/2013	14:41:10	0.37	12.40
2/7/2013	14:41:30	0.37	11.65
2/7/2013	14:41:50	0.37	10.87
Resume			
2/7/2013	14:42:10	0.37	10.34
2/7/2013	14:42:30	0.37	10.99
2/7/2013	14:42:50	0.37	12.18
2/7/2013	14:43:10	0.37	12.46
2/7/2013	14:43:30	0.37	12.30
2/7/2013	14:43:50	0.36	12.10
2/7/2013	14:44:10	0.28	12.15
2/7/2013	14:44:30	0.37	11.88
2/7/2013	14:44:50	0.37	11.73
2/7/2013	14:45:10	0.37	11.89
2/7/2013	14:45:30	0.37	11.86
2/7/2013	14:45:50	0.37	11.87
2/7/2013	14:46:10	0.37	11.41
2/7/2013	14:46:30	0.37	10.89
2/7/2013	14:46:50	0.37	10.73
2/7/2013	14:47:10	0.37	10.72
2/7/2013	14:47:30	0.37	10.81
2/7/2013	14:47:50	0.37	10.95
2/7/2013	14:48:10	0.37	10.95
2/7/2013	14:48:30	0.37	11.21
2/7/2013	14:48:50	0.37	11.43
2/7/2013	14:49:10	0.37	11.10
2/7/2013	14:49:30	0.37	11.00
2/7/2013	14:49:50	0.37	11.01
2/7/2013	14:50:10	0.37	10.88
2/7/2013	14:50:30	0.37	10.98
2/7/2013	14:50:50	0.37	11.17
2/7/2013	14:51:10	0.37	11.24
2/7/2013	14:51:30	0.37	11.31

2/7/2013	14:51:50	0.37	11.08
2/7/2013	14:52:10	0.37	11.06
2/7/2013	14:52:30	0.37	11.24
2/7/2013	14:52:50	0.37	11.19
2/7/2013	14:53:10	0.37	11.18
2/7/2013	14:53:30	0.37	11.23
2/7/2013	14:53:50	0.37	11.29
2/7/2013	14:54:10	0.37	11.64
2/7/2013	14:54:30	0.37	11.90
2/7/2013	14:54:50	0.37	11.76
2/7/2013	14:55:10	0.37	11.42
2/7/2013	14:55:30	0.37	11.41
2/7/2013	14:55:50	0.37	11.33
2/7/2013	14:56:10	0.37	11.09
2/7/2013	14:56:30	0.37	11.02
2/7/2013	14:56:50	0.37	11.39
2/7/2013	14:57:10	0.37	11.61
2/7/2013	14:57:30	0.37	11.62
2/7/2013	14:57:50	0.37	11.71
2/7/2013	14:58:10	0.37	12.07
2/7/2013	14:58:30	0.37	12.13
2/7/2013	14:58:50	0.37	12.08
2/7/2013	14:59:10	0.37	11.93
2/7/2013	14:59:30	0.37	12.14
2/7/2013	14:59:50	0.37	12.17
2/7/2013	15:00:10	0.37	12.27
2/7/2013	15:00:30	0.37	12.63
2/7/2013	15:00:50	0.37	12.73
2/7/2013	15:01:10	0.37	12.58
2/7/2013	15:01:30	0.47	12.43
2/7/2013	15:01:50	0.55	12.44
2/7/2013	15:02:10	0.55	12.27
2/7/2013	15:02:30	0.55	12.44
2/7/2013	15:02:50	0.55	12.41
2/7/2013	15:03:10	0.47	12.63
2/7/2013	15:03:30	0.37	13.10
2/7/2013	15:03:50	0.37	12.87
2/7/2013	15:04:10	0.37	12.16
2/7/2013	15:04:30	0.37	11.76
2/7/2013	15:04:50	0.37	11.68
2/7/2013	15:05:10	0.37	12.02
2/7/2013	15:05:30	0.51	12.41
2/7/2013	15:05:50	0.46	12.32
2/7/2013	15:06:10	0.37	12.28
2/7/2013	15:06:30	0.37	12.80
2/7/2013	15:06:50	0.37	13.04
2/7/2013	15:07:10	0.37	12.54
2/7/2013	15:07:30	0.37	11.85
2/7/2013	15:07:50	0.37	11.38
2/7/2013	15:08:10	0.37	11.26
2/7/2013	15:08:30	0.37	11.46
2/7/2013	15:08:50	0.37	11.72
2/7/2013	15:09:10	0.37	11.97
2/7/2013	15:09:30	0.37	12.07
2/7/2013	15:09:50	0.37	12.12
2/7/2013	15:10:10	0.37	12.36
2/7/2013	15:10:30	0.37	12.51
2/7/2013	15:10:50	0.44	12.61
2/7/2013	15:11:10	0.37	12.60
2/7/2013	15:11:30	0.37	12.60
2/7/2013	15:11:50	0.38	12.58
Stop Run #6		0.37	12.39
2/7/2013	15:12:10	0.55	12.46
2/7/2013	15:12:30	0.55	12.41

2/7/2013	15:12:50	3.01	12.28	
2/7/2013	15:13:10	0.83	13.72	
2/7/2013	15:13:30	0.55	8.39	
2/7/2013	15:13:50	0.37	3.31	
2/7/2013	15:14:10	0.46	1.37	
2/7/2013	15:14:30	**0.37**	0.74	
2/7/2013	15:14:50	**0.37**	0.55	Zero N2
2/7/2013	15:15:10	0.99	0.51	
2/7/2013	15:15:30	0.83	2.57	
2/7/2013	15:15:50	0.55	4.63	
2/7/2013	15:16:10	0.55	2.42	
2/7/2013	15:16:30	0.55	1.09	
2/7/2013	15:16:50	0.40	0.64	
2/7/2013	15:17:10	0.37	0.51	
2/7/2013	15:17:30	0.37	0.48	
2/7/2013	15:17:50	1.02	0.47	
2/7/2013	15:18:10	5.13	2.63	
2/7/2013	15:18:30	**5.20**	11.26	
2/7/2013	15:18:50	**5.20**	17.31	5.15 ppm C3H8
2/7/2013	15:19:10	**5.20**	19.46	
2/7/2013	15:19:30	4.37	20.03	
2/7/2013	15:19:43	2.04	20.09	

DATE	TIME	VOC	O2
MM/DD/Y\	HH:MM:SS	ppm	
2/7/2013	15:29:42	0.55	13.51
Start Run #7			
2/7/2013	15:30:02	0.55	13.58
2/7/2013	15:30:22	0.55	13.67
2/7/2013	15:30:42	0.55	13.59
2/7/2013	15:31:02	0.50	13.44
2/7/2013	15:31:22	0.37	13.30
2/7/2013	15:31:42	0.37	13.05
2/7/2013	15:32:02	0.37	12.79
2/7/2013	15:32:22	0.50	12.46
2/7/2013	15:32:42	0.55	12.13
2/7/2013	15:33:02	0.55	11.44
2/7/2013	15:33:22	0.55	9.65
2/7/2013	15:33:42	0.55	9.35
2/7/2013	15:34:02	0.55	9.69
2/7/2013	15:34:22	0.55	10.25
2/7/2013	15:34:42	0.55	10.58
2/7/2013	15:35:02	0.55	11.07
2/7/2013	15:35:22	0.55	11.67
2/7/2013	15:35:42	0.48	11.80
2/7/2013	15:36:02	0.37	11.77
2/7/2013	15:36:22	0.53	11.98
2/7/2013	15:36:42	0.55	11.89
2/7/2013	15:37:02	0.55	11.63
2/7/2013	15:37:22	0.55	11.47
2/7/2013	15:37:42	0.55	11.38
2/7/2013	15:38:02	0.55	11.55
2/7/2013	15:38:22	0.44	11.88
2/7/2013	15:38:42	0.37	11.70
2/7/2013	15:39:02	0.37	11.49
2/7/2013	15:39:22	0.37	11.59
2/7/2013	15:39:42	0.37	11.65
2/7/2013	15:40:02	0.37	11.60
2/7/2013	15:40:22	0.37	11.13
2/7/2013	15:40:42	0.37	11.15
2/7/2013	15:41:02	0.37	11.26
2/7/2013	15:41:22	0.37	11.44
2/7/2013	15:41:42	0.40	11.61
2/7/2013	15:42:02	0.48	11.99
2/7/2013	15:42:22	0.55	12.39
2/7/2013	15:42:42	0.55	12.64
2/7/2013	15:43:02	0.55	12.91
2/7/2013	15:43:22	0.48	13.03
2/7/2013	15:43:42	0.49	13.24
2/7/2013	15:44:02	0.55	13.52
2/7/2013	15:44:22	0.55	13.75
2/7/2013	15:44:42	0.55	13.98
2/7/2013	15:45:02	0.55	14.24
2/7/2013	15:45:22	0.87	14.61
2/7/2013	15:45:42	1.16	15.11
2/7/2013	15:46:02	0.57	15.34
2/7/2013	15:46:22	0.55	14.42
2/7/2013	15:46:42	0.55	13.11
2/7/2013	15:47:02	0.55	12.25
2/7/2013	15:47:22	0.55	11.71
2/7/2013	15:47:42	0.55	11.06
2/7/2013	15:48:02	0.55	10.26
2/7/2013	15:48:22	0.50	10.23
2/7/2013	15:48:42	0.39	11.22
2/7/2013	15:49:02	0.55	11.94
2/7/2013	15:49:22	0.55	12.17
2/7/2013	15:49:42	0.42	12.00
2/7/2013	15:50:02	0.45	11.38

2/7/2013	15:50:22	0.39	10.99
2/7/2013	15:50:42	0.37	10.76
2/7/2013	15:51:02	0.46	10.68
2/7/2013	15:51:22	0.55	10.71
2/7/2013	15:51:42	0.55	10.73
2/7/2013	15:52:02	0.55	10.70
2/7/2013	15:52:22	0.55	10.70
2/7/2013	15:52:42	0.45	10.97
2/7/2013	15:53:02	0.37	11.14
2/7/2013	15:53:22	0.37	11.14
2/7/2013	15:53:42	0.37	11.23
2/7/2013	15:54:02	0.38	11.23
2/7/2013	15:54:22	0.37	11.19
2/7/2013	15:54:42	0.37	11.23
2/7/2013	15:55:02	0.37	11.22
2/7/2013	15:55:22	0.37	11.12
2/7/2013	15:55:42	0.37	11.18
2/7/2013	15:56:02	0.37	11.44
2/7/2013	15:56:22	0.37	11.89
2/7/2013	15:56:42	0.37	12.48
2/7/2013	15:57:02	0.37	13.00
2/7/2013	15:57:22	0.37	12.75
2/7/2013	15:57:42	0.37	12.23
2/7/2013	15:58:02	0.37	12.26
2/7/2013	15:58:22	0.37	12.37
2/7/2013	15:58:42	0.37	12.26
2/7/2013	15:59:02	0.37	11.79
2/7/2013	15:59:22	0.37	11.62
2/7/2013	15:59:42	0.37	11.90
Port Change			
2/7/2013	16:00:02	0.37	12.34
2/7/2013	16:00:22	0.37	12.81
2/7/2013	16:00:42	0.37	13.13
2/7/2013	16:01:02	0.37	12.70
2/7/2013	16:01:22	0.80	12.04
2/7/2013	16:01:42	1.51	13.75
Resume			
2/7/2013	16:02:02	0.60	17.15
2/7/2013	16:02:22	0.55	15.29
2/7/2013	16:02:42	0.49	12.55
2/7/2013	16:03:02	0.37	11.61
2/7/2013	16:03:22	0.37	11.36
2/7/2013	16:03:42	0.37	10.95
2/7/2013	16:04:02	0.37	11.54
2/7/2013	16:04:22	0.37	12.31
2/7/2013	16:04:42	0.37	12.20
2/7/2013	16:05:02	0.37	12.01
2/7/2013	16:05:22	0.37	12.02
2/7/2013	16:05:42	0.37	12.04
2/7/2013	16:06:02	0.37	12.26
2/7/2013	16:06:22	0.37	12.30
2/7/2013	16:06:42	0.37	12.32
2/7/2013	16:07:02	0.37	12.29
2/7/2013	16:07:22	0.37	12.24
2/7/2013	16:07:42	0.37	11.92
2/7/2013	16:08:02	0.37	11.68
2/7/2013	16:08:22	0.37	11.34
2/7/2013	16:08:42	0.37	11.42
2/7/2013	16:09:02	0.37	11.59
2/7/2013	16:09:22	0.37	11.61
2/7/2013	16:09:42	0.37	11.71
2/7/2013	16:10:02	0.37	11.80
2/7/2013	16:10:22	0.37	11.89
2/7/2013	16:10:42	0.37	12.17
2/7/2013	16:11:02	0.37	12.91
2/7/2013	16:11:22	0.37	13.36

2/7/2013	16:11:42	0.37	13.40
2/7/2013	16:12:02	0.37	12.39
2/7/2013	16:12:22	0.37	11.35
2/7/2013	16:12:42	0.37	10.72
2/7/2013	16:13:02	0.37	10.78
2/7/2013	16:13:22	0.37	11.13
2/7/2013	16:13:42	0.37	11.29
2/7/2013	16:14:02	0.37	11.33
2/7/2013	16:14:22	0.37	11.57
2/7/2013	16:14:42	0.37	12.03
2/7/2013	16:15:02	0.37	12.22
2/7/2013	16:15:22	0.37	12.29
2/7/2013	16:15:42	0.37	12.23
2/7/2013	16:16:02	0.37	12.18
2/7/2013	16:16:22	0.37	12.25
2/7/2013	16:16:42	0.37	12.24
2/7/2013	16:17:02	0.37	11.97
2/7/2013	16:17:22	0.37	11.58
2/7/2013	16:17:42	0.37	10.99
2/7/2013	16:18:02	0.37	10.82
2/7/2013	16:18:22	0.33	11.39
2/7/2013	16:18:42	0.37	11.80
2/7/2013	16:19:02	0.37	11.90
2/7/2013	16:19:22	0.37	12.04
2/7/2013	16:19:42	0.37	12.00
2/7/2013	16:20:02	0.37	11.78
2/7/2013	16:20:22	0.37	11.80
2/7/2013	16:20:42	0.37	12.14
2/7/2013	16:21:02	0.37	12.44
2/7/2013	16:21:22	0.37	12.30
2/7/2013	16:21:42	0.37	12.10
2/7/2013	16:22:02	0.37	11.93
2/7/2013	16:22:22	0.37	11.89
2/7/2013	16:22:42	0.37	12.00
2/7/2013	16:23:02	0.37	11.97
2/7/2013	16:23:22	0.37	12.03
2/7/2013	16:23:42	0.37	12.04
2/7/2013	16:24:02	0.37	11.94
2/7/2013	16:24:22	0.37	11.87
2/7/2013	16:24:42	0.37	11.81
2/7/2013	16:25:02	0.37	11.71
2/7/2013	16:25:22	0.37	11.58
2/7/2013	16:25:42	0.37	11.94
2/7/2013	16:26:02	0.37	12.34
2/7/2013	16:26:22	0.37	11.58
2/7/2013	16:26:42	0.37	10.94
2/7/2013	16:27:02	0.37	11.10
2/7/2013	16:27:22	0.37	11.46
2/7/2013	16:27:42	0.37	11.40
2/7/2013	16:28:02	0.37	11.23
2/7/2013	16:28:22	0.37	10.68
2/7/2013	16:28:42	0.37	10.31
2/7/2013	16:29:02	0.37	10.54
2/7/2013	16:29:22	0.37	10.89
2/7/2013	16:29:42	0.37	11.57
2/7/2013	16:30:02	0.37	12.08
2/7/2013	16:30:22	0.37	11.92
2/7/2013	16:30:42	0.37	11.73
2/7/2013	16:31:02	0.37	11.76
2/7/2013	16:31:22	0.37	11.58
2/7/2013	16:31:42	0.37	11.36
Stop Run #7		0.42	11.90
2/7/2013	16:32:02	0.37	11.34
2/7/2013	16:32:22	0.37	11.35

2/7/2013	16:32:42	0.80	11.35	
2/7/2013	16:33:02	0.39	10.51	
2/7/2013	16:33:22	0.32	5.25	
2/7/2013	16:33:42	**0.37**	2.12	
2/7/2013	16:34:02	**0.35**	1.03	Zero N2
2/7/2013	16:34:22	**0.18**	0.64	
2/7/2013	16:34:42	0.68	0.65	
2/7/2013	16:35:02	0.26	2.89	
2/7/2013	16:35:22	0.18	2.26	
2/7/2013	16:35:42	0.18	1.08	
2/7/2013	16:36:02	0.18	0.64	
2/7/2013	16:36:22	0.18	0.51	
2/7/2013	16:36:42	0.18	0.48	
2/7/2013	16:37:02	3.53	0.94	
2/7/2013	16:37:22	**5.23**	7.67	
2/7/2013	16:37:42	**5.31**	15.59	5.14 ppm C3H8
2/7/2013	16:38:02	**5.31**	18.94	
2/7/2013	16:38:22	3.11	19.90	
2/7/2013	16:38:29	2.79	20.09	

DATE	TIME	VOC	O2
MM/DD/Y\	HH:MM:SS	ppm	
2/7/2013	16:44:54	0.36	11.18
Start Run #8			
2/7/2013	16:45:14	0.18	11.26
2/7/2013	16:45:34	0.18	11.22
2/7/2013	16:45:54	0.18	11.06
2/7/2013	16:46:14	0.18	11.09
2/7/2013	16:46:34	0.18	11.88
2/7/2013	16:46:54	0.23	12.12
2/7/2013	16:47:14	0.37	11.79
2/7/2013	16:47:34	0.36	11.19
2/7/2013	16:47:54	0.19	11.14
2/7/2013	16:48:14	0.24	11.84
2/7/2013	16:48:34	0.25	12.02
2/7/2013	16:48:54	0.37	11.75
2/7/2013	16:49:14	0.37	12.09
2/7/2013	16:49:34	0.37	12.39
2/7/2013	16:49:54	0.37	12.36
2/7/2013	16:50:14	0.37	12.53
2/7/2013	16:50:34	0.37	12.46
2/7/2013	16:50:54	0.37	12.33
2/7/2013	16:51:14	0.29	12.40
2/7/2013	16:51:34	0.18	12.48
2/7/2013	16:51:54	0.18	12.45
2/7/2013	16:52:14	0.18	12.37
2/7/2013	16:52:34	0.18	12.13
2/7/2013	16:52:54	0.18	12.17
2/7/2013	16:53:14	0.36	12.32
2/7/2013	16:53:34	0.37	12.67
2/7/2013	16:53:54	0.37	12.97
2/7/2013	16:54:14	0.37	13.11
2/7/2013	16:54:34	0.37	13.19
2/7/2013	16:54:54	0.37	13.09
2/7/2013	16:55:14	0.37	13.08
2/7/2013	16:55:34	0.37	13.23
2/7/2013	16:55:54	0.37	13.56
2/7/2013	16:56:14	0.37	13.30
2/7/2013	16:56:34	0.37	12.82
2/7/2013	16:56:54	0.37	12.60
2/7/2013	16:57:14	0.19	12.57
2/7/2013	16:57:34	0.18	12.62
2/7/2013	16:57:54	0.18	12.60
2/7/2013	16:58:14	0.18	12.37
2/7/2013	16:58:34	0.18	12.24
2/7/2013	16:58:54	0.18	12.13
2/7/2013	16:59:14	0.18	12.22
2/7/2013	16:59:34	0.18	12.40
2/7/2013	16:59:54	0.18	12.34
2/7/2013	17:00:14	0.18	12.03
2/7/2013	17:00:34	0.18	11.93
2/7/2013	17:00:54	0.18	11.97
2/7/2013	17:01:14	0.18	11.81
2/7/2013	17:01:34	0.18	11.41
2/7/2013	17:01:54	0.18	10.78
2/7/2013	17:02:14	0.18	11.05
2/7/2013	17:02:34	0.18	12.04
2/7/2013	17:02:54	0.18	12.20
2/7/2013	17:03:14	0.18	12.52
2/7/2013	17:03:34	0.20	12.69
2/7/2013	17:03:54	0.37	12.38
2/7/2013	17:04:14	0.22	12.26
2/7/2013	17:04:34	0.18	12.77
2/7/2013	17:04:54	0.18	13.00
2/7/2013	17:05:14	0.18	12.91

2/7/2013	17:05:34	0.18	12.83
2/7/2013	17:05:54	0.18	12.89
2/7/2013	17:06:14	0.18	12.82
2/7/2013	17:06:34	0.18	12.77
2/7/2013	17:06:54	0.18	12.78
2/7/2013	17:07:14	0.18	12.86
2/7/2013	17:07:34	0.18	12.85
2/7/2013	17:07:54	0.35	12.55
2/7/2013	17:08:14	0.35	12.42
2/7/2013	17:08:34	0.18	12.38
2/7/2013	17:08:54	0.36	12.33
2/7/2013	17:09:14	0.34	12.32
2/7/2013	17:09:34	0.18	12.55
2/7/2013	17:09:54	0.25	12.92
2/7/2013	17:10:14	0.37	13.15
2/7/2013	17:10:34	0.26	13.24
2/7/2013	17:10:54	0.37	13.56
2/7/2013	17:11:14	0.37	13.87
2/7/2013	17:11:34	0.37	13.39
2/7/2013	17:11:54	0.37	12.95
2/7/2013	17:12:14	0.37	13.02
2/7/2013	17:12:34	0.37	12.83
2/7/2013	17:12:54	0.37	12.60
2/7/2013	17:13:14	0.37	12.50
2/7/2013	17:13:34	0.37	12.71
2/7/2013	17:13:54	0.37	12.83
2/7/2013	17:14:14	0.37	12.92
2/7/2013	17:14:34	0.37	12.81
2/7/2013	17:14:54	0.30	11.85
Port Change			
2/7/2013	17:15:14	0.18	11.46
2/7/2013	17:15:34	0.93	11.83
2/7/2013	17:15:54	1.32	14.37
2/7/2013	17:16:14	0.37	15.98
2/7/2013	17:16:34	0.37	12.20
2/7/2013	17:16:54	0.37	10.50
Resume			
2/7/2013	17:17:14	0.37	10.77
2/7/2013	17:17:34	0.37	10.76
2/7/2013	17:17:54	0.37	9.93
2/7/2013	17:18:14	0.37	9.85
2/7/2013	17:18:34	0.37	9.84
2/7/2013	17:18:54	0.37	9.72
2/7/2013	17:19:14	0.37	10.17
2/7/2013	17:19:34	0.37	10.26
2/7/2013	17:19:54	0.35	9.88
2/7/2013	17:20:14	0.22	10.13
2/7/2013	17:20:34	0.24	10.52
2/7/2013	17:20:54	0.17	10.69
2/7/2013	17:21:14	0.18	10.74
2/7/2013	17:21:34	0.18	10.83
2/7/2013	17:21:54	0.18	10.91
2/7/2013	17:22:14	0.18	10.92
2/7/2013	17:22:34	0.18	10.52
2/7/2013	17:22:54	0.18	10.17
2/7/2013	17:23:14	0.18	10.01
2/7/2013	17:23:34	0.18	9.97
2/7/2013	17:23:54	0.18	9.90
2/7/2013	17:24:14	0.18	9.95
2/7/2013	17:24:34	0.18	9.91
2/7/2013	17:24:54	0.18	9.88
2/7/2013	17:25:14	0.18	9.89
2/7/2013	17:25:34	0.18	10.16
2/7/2013	17:25:54	0.18	11.03
2/7/2013	17:26:14	0.18	11.64
2/7/2013	17:26:34	0.18	11.19

2/7/2013	17:26:54	0.18	10.56
2/7/2013	17:27:14	0.18	10.41
2/7/2013	17:27:34	0.18	10.36
2/7/2013	17:27:54	0.18	10.75
2/7/2013	17:28:14	0.18	11.06
2/7/2013	17:28:34	0.24	10.92
2/7/2013	17:28:54	0.37	10.63
2/7/2013	17:29:14	0.37	10.67
2/7/2013	17:29:34	0.37	10.91
2/7/2013	17:29:54	0.37	11.17
2/7/2013	17:30:14	0.37	11.57
2/7/2013	17:30:34	0.27	12.04
2/7/2013	17:30:54	0.18	11.99
2/7/2013	17:31:14	0.18	11.18
2/7/2013	17:31:34	0.18	10.09
2/7/2013	17:31:54	0.18	9.95
2/7/2013	17:32:14	0.18	11.35
2/7/2013	17:32:34	0.18	12.13
2/7/2013	17:32:54	0.33	11.84
2/7/2013	17:33:14	0.28	11.02
2/7/2013	17:33:34	0.18	10.61
2/7/2013	17:33:54	0.18	10.22
2/7/2013	17:34:14	0.24	11.02
2/7/2013	17:34:34	0.37	12.39
2/7/2013	17:34:54	0.37	12.61
2/7/2013	17:35:14	0.37	12.13
2/7/2013	17:35:34	0.20	11.93
2/7/2013	17:35:54	0.31	12.22
2/7/2013	17:36:14	0.37	13.01
2/7/2013	17:36:34	0.37	13.37
2/7/2013	17:36:54	0.37	13.50
2/7/2013	17:37:14	0.37	13.56
2/7/2013	17:37:34	0.37	13.50
2/7/2013	17:37:54	0.36	13.50
2/7/2013	17:38:14	0.18	13.63
2/7/2013	17:38:34	0.18	13.54
2/7/2013	17:38:54	0.18	13.40
2/7/2013	17:39:14	0.22	13.35
2/7/2013	17:39:34	0.34	13.44
2/7/2013	17:39:54	0.27	13.44
2/7/2013	17:40:14	0.37	13.40
2/7/2013	17:40:34	0.37	13.56
2/7/2013	17:40:54	0.23	13.64
2/7/2013	17:41:14	0.33	12.25
2/7/2013	17:41:34	0.37	11.31
2/7/2013	17:41:54	0.37	11.08
2/7/2013	17:42:14	0.37	11.40
2/7/2013	17:42:34	0.37	11.60
2/7/2013	17:42:54	0.37	11.61
2/7/2013	17:43:14	0.37	11.92
2/7/2013	17:43:34	0.37	12.07
2/7/2013	17:43:54	0.37	12.13
2/7/2013	17:44:14	0.37	12.23
2/7/2013	17:44:34	0.37	12.04
2/7/2013	17:44:54	0.37	12.41
2/7/2013	17:45:14	0.37	13.01
2/7/2013	17:45:34	0.37	13.12
2/7/2013	17:45:54	0.37	13.01
2/7/2013	17:46:14	0.37	12.78
2/7/2013	17:46:34	0.37	12.49
2/7/2013	17:46:54	0.39	12.14
Stop Run #8		0.27	11.96
2/7/2013	17:47:14	6.78	12.55
2/7/2013	17:47:34	9.81	16.07

2/7/2013	17:47:54	2.26	18.92	
2/7/2013	17:48:14	0.37	15.72	
2/7/2013	17:48:34	0.19	6.53	
2/7/2013	17:48:54	**0.18**	2.27	
2/7/2013	17:49:14	**0.18**	0.97	Zero N2
2/7/2013	17:49:34	**0.19**	0.62	
2/7/2013	17:49:54	0.78	1.21	
2/7/2013	17:50:14	0.18	3.93	
2/7/2013	17:50:34	0.18	2.39	
2/7/2013	17:50:54	0.18	1.10	
2/7/2013	17:51:14	0.18	0.64	
2/7/2013	17:51:34	0.18	0.52	
2/7/2013	17:51:54	0.18	0.48	
2/7/2013	17:52:14	2.30	0.55	
2/7/2013	17:52:34	5.14	5.15	
2/7/2013	17:52:54	5.13	13.91	
2/7/2013	17:53:14	**5.14**	18.38	
2/7/2013	17:53:34	**5.14**	19.76	5.14 ppm C3H8
2/7/2013	17:53:54	**5.14**	20.08	
2/7/2013	17:54:14	4.83	20.09	
2/7/2013	17:54:34	1.67	20.09	
2/7/2013	17:54:54	1.56	20.09	
2/7/2013	17:54:56	1.46	20.09	

DATE	TIME	VOC	O2	
MM/DD/Y	HH:MM:SS	ppm		
2/8/2013	7:45:22	0.01	0.60	
2/8/2013	7:45:42	**0.01**	0.52	
2/8/2013	7:46:02	**0.01**	0.49	Zero N2
2/8/2013	7:46:22	**0.00**	0.49	
2/8/2013	7:46:42	**0.01**	0.48	
2/8/2013	7:47:02	0.01	0.48	
2/8/2013	7:47:22	0.01	0.48	
2/8/2013	7:47:42	2.50	0.48	
2/8/2013	7:48:02	0.58	0.48	
2/8/2013	7:48:22	3.01	3.37	
2/8/2013	7:48:42	**8.40**	11.62	8.44 ppm C3H8
2/8/2013	7:49:02	**8.43**	16.80	
2/8/2013	7:49:22	**8.43**	19.19	
2/8/2013	7:49:42	8.42	19.96	
2/8/2013	7:50:02	1.92	20.09	
2/8/2013	7:50:22	3.63	20.09	
2/8/2013	7:50:42	**5.15**	20.09	
2/8/2013	7:51:02	**5.21**	20.09	5.15 ppm C3H8
2/8/2013	7:51:22	**5.16**	20.09	
2/8/2013	7:51:42	5.26	20.09	
2/8/2013	7:52:02	2.79	20.09	
2/8/2013	7:52:22	1.35	20.09	
2/8/2013	7:52:42	**3.81**	20.09	3.84 ppm C3H8
2/8/2013	7:53:02	**3.80**	20.09	
2/8/2013	7:53:22	**3.78**	20.09	
2/8/2013	7:53:42	3.24	20.09	
2/8/2013	7:54:02	1.76	20.09	
2/8/2013	7:54:22	1.32	20.09	
2/8/2013	7:54:42	1.29	20.09	
2/8/2013	7:54:48	1.29	20.09	

DATE	TIME	VOC	O2
MM/DD/Y\	HH:MM:SS	ppm	
2/8/2013	9:24:43	0.36	10.75
Start Run #9			
2/8/2013	9:25:03	0.36	10.73
2/8/2013	9:25:23	0.35	11.31
2/8/2013	9:25:43	0.33	11.93
2/8/2013	9:26:03	0.37	11.43
2/8/2013	9:26:23	0.42	10.50
2/8/2013	9:26:43	0.40	11.08
2/8/2013	9:27:03	0.42	10.97
2/8/2013	9:27:23	0.37	10.68
2/8/2013	9:27:43	0.36	10.22
2/8/2013	9:28:03	0.34	10.32
2/8/2013	9:28:23	0.37	10.79
2/8/2013	9:28:43	0.37	11.02
2/8/2013	9:29:03	0.37	10.87
2/8/2013	9:29:23	0.34	10.50
2/8/2013	9:29:43	0.36	9.65
2/8/2013	9:30:03	0.37	9.18
2/8/2013	9:30:23	0.37	9.26
2/8/2013	9:30:43	0.36	9.53
2/8/2013	9:31:03	0.37	9.63
2/8/2013	9:31:23	0.35	9.73
2/8/2013	9:31:43	0.32	9.67
2/8/2013	9:32:03	0.37	9.65
2/8/2013	9:32:23	0.37	9.69
2/8/2013	9:32:43	0.37	9.60
2/8/2013	9:33:03	0.37	9.55
2/8/2013	9:33:23	0.36	9.53
2/8/2013	9:33:43	0.37	9.46
2/8/2013	9:34:03	0.35	9.43
2/8/2013	9:34:23	0.31	9.55
2/8/2013	9:34:43	0.35	9.64
2/8/2013	9:35:03	0.37	9.69
2/8/2013	9:35:23	0.31	9.75
2/8/2013	9:35:43	0.26	10.04
2/8/2013	9:36:03	0.31	10.68
2/8/2013	9:36:23	0.35	11.13
2/8/2013	9:36:43	0.35	11.43
2/8/2013	9:37:03	0.35	11.75
2/8/2013	9:37:23	0.37	12.10
2/8/2013	9:37:43	0.37	12.15
2/8/2013	9:38:03	0.38	11.82
2/8/2013	9:38:23	0.41	11.42
2/8/2013	9:38:43	0.37	11.18
2/8/2013	9:39:03	0.38	10.84
2/8/2013	9:39:23	0.37	10.61
2/8/2013	9:39:43	0.36	10.96
2/8/2013	9:40:03	0.37	11.65
2/8/2013	9:40:23	0.37	12.09
2/8/2013	9:40:43	0.37	12.32
2/8/2013	9:41:03	0.37	11.84
2/8/2013	9:41:23	0.38	11.19
2/8/2013	9:41:43	0.34	10.64
2/8/2013	9:42:03	0.38	10.66
2/8/2013	9:42:23	0.36	10.56
2/8/2013	9:42:43	0.34	10.11
2/8/2013	9:43:03	0.37	10.40
2/8/2013	9:43:23	0.37	11.08
2/8/2013	9:43:43	0.37	12.11
2/8/2013	9:44:03	0.36	12.91
2/8/2013	9:44:23	0.37	13.07
2/8/2013	9:44:43	0.37	12.88
2/8/2013	9:45:03	0.36	12.40

2/8/2013	9:45:23	0.36	12.19
2/8/2013	9:45:43	0.37	12.05
2/8/2013	9:46:03	0.37	11.90
2/8/2013	9:46:23	0.37	11.76
2/8/2013	9:46:43	0.37	11.85
2/8/2013	9:47:03	0.36	12.29
2/8/2013	9:47:23	0.37	12.59
2/8/2013	9:47:43	0.37	12.55
2/8/2013	9:48:03	0.37	12.47
2/8/2013	9:48:23	0.38	12.47
2/8/2013	9:48:43	0.37	12.60
2/8/2013	9:49:03	0.37	12.67
2/8/2013	9:49:23	0.37	12.64
2/8/2013	9:49:43	0.37	12.28
2/8/2013	9:50:03	0.37	11.87
2/8/2013	9:50:23	0.37	11.83
2/8/2013	9:50:43	0.37	11.97
2/8/2013	9:51:03	0.37	12.27
2/8/2013	9:51:23	0.37	12.48
2/8/2013	9:51:43	0.37	12.61
2/8/2013	9:52:03	0.34	12.54
2/8/2013	9:52:23	0.37	12.72
2/8/2013	9:52:43	0.37	12.73
2/8/2013	9:53:03	0.37	12.13
2/8/2013	9:53:23	0.38	11.69
2/8/2013	9:53:43	0.37	11.55
2/8/2013	9:54:03	0.37	11.00
2/8/2013	9:54:23	0.33	10.77
2/8/2013	9:54:43	0.37	11.07
Port Change			
2/8/2013	9:55:03	0.36	11.19
2/8/2013	9:55:23	1.15	11.08
2/8/2013	9:55:43	1.23	13.29
2/8/2013	9:56:03	0.68	16.87
2/8/2013	9:56:23	0.58	16.67
2/8/2013	9:56:43	0.40	15.27
Resume			
2/8/2013	9:57:03	0.37	13.86
2/8/2013	9:57:23	0.36	12.39
2/8/2013	9:57:43	0.37	11.64
2/8/2013	9:58:03	0.36	11.28
2/8/2013	9:58:23	0.37	10.91
2/8/2013	9:58:43	0.37	10.37
2/8/2013	9:59:03	0.37	10.05
2/8/2013	9:59:23	0.36	9.54
2/8/2013	9:59:43	0.37	9.44
2/8/2013	10:00:03	0.37	9.78
2/8/2013	10:00:23	0.37	10.05
2/8/2013	10:00:43	0.37	10.22
2/8/2013	10:01:03	0.37	10.32
2/8/2013	10:01:23	0.37	10.48
2/8/2013	10:01:43	0.38	11.04
2/8/2013	10:02:03	0.37	11.64
2/8/2013	10:02:23	0.37	11.81
2/8/2013	10:02:43	0.36	11.80
2/8/2013	10:03:03	0.37	11.73
2/8/2013	10:03:23	0.37	11.82
2/8/2013	10:03:43	0.33	11.77
2/8/2013	10:04:03	0.35	11.79
2/8/2013	10:04:23	0.36	11.37
2/8/2013	10:04:43	0.37	10.94
2/8/2013	10:05:03	0.37	10.82
2/8/2013	10:05:23	0.37	11.06
2/8/2013	10:05:43	0.37	11.32
2/8/2013	10:06:03	0.38	11.43
2/8/2013	10:06:23	0.37	10.77

2/8/2013	10:06:43	0.37	10.30
2/8/2013	10:07:03	0.37	9.94
2/8/2013	10:07:23	0.37	9.90
2/8/2013	10:07:43	0.36	10.33
2/8/2013	10:08:03	0.37	10.64
2/8/2013	10:08:23	0.37	10.77
2/8/2013	10:08:43	0.37	11.16
2/8/2013	10:09:03	0.35	11.48
2/8/2013	10:09:23	0.35	10.91
2/8/2013	10:09:43	0.29	10.60
2/8/2013	10:10:03	0.33	10.68
2/8/2013	10:10:23	0.34	11.24
2/8/2013	10:10:43	0.37	11.79
2/8/2013	10:11:03	0.37	11.81
2/8/2013	10:11:23	0.37	11.37
2/8/2013	10:11:43	0.36	10.75
2/8/2013	10:12:03	0.41	10.76
2/8/2013	10:12:23	0.42	11.47
2/8/2013	10:12:43	0.38	11.98
2/8/2013	10:13:03	0.37	12.02
2/8/2013	10:13:23	0.37	11.93
2/8/2013	10:13:43	0.45	12.09
2/8/2013	10:14:03	0.38	12.32
2/8/2013	10:14:23	0.40	12.81
2/8/2013	10:14:43	0.37	13.17
2/8/2013	10:15:03	0.38	13.09
2/8/2013	10:15:23	0.40	13.36
2/8/2013	10:15:43	0.37	13.74
2/8/2013	10:16:03	0.48	13.78
2/8/2013	10:16:23	0.45	13.58
2/8/2013	10:16:43	0.45	13.54
2/8/2013	10:17:03	0.41	13.68
2/8/2013	10:17:23	0.37	13.63
2/8/2013	10:17:43	0.40	13.65
2/8/2013	10:18:03	0.44	13.69
2/8/2013	10:18:23	0.37	13.54
2/8/2013	10:18:43	0.43	13.42
2/8/2013	10:19:03	0.40	13.42
2/8/2013	10:19:23	0.42	13.39
2/8/2013	10:19:43	0.37	13.58
2/8/2013	10:20:03	0.40	13.84
2/8/2013	10:20:23	0.48	14.21
2/8/2013	10:20:43	0.43	14.36
2/8/2013	10:21:03	0.46	14.19
2/8/2013	10:21:23	0.50	14.11
2/8/2013	10:21:43	0.43	14.19
2/8/2013	10:22:03	0.55	14.05
2/8/2013	10:22:23	0.58	13.00
2/8/2013	10:22:43	0.65	12.10
2/8/2013	10:23:03	0.56	11.84
2/8/2013	10:23:23	0.57	11.99
2/8/2013	10:23:43	0.64	12.03
2/8/2013	10:24:03	0.55	12.02
2/8/2013	10:24:23	0.55	11.70
2/8/2013	10:24:43	0.56	10.91
2/8/2013	10:25:03	0.62	10.31
2/8/2013	10:25:23	0.59	10.34
2/8/2013	10:25:43	0.69	10.69
2/8/2013	10:26:03	0.75	11.02
2/8/2013	10:26:23	1.13	11.11
2/8/2013	10:26:43	0.55	10.29
Stop Run #9		0.39	11.52
2/8/2013	10:27:03	0.51	5.54
2/8/2013	10:27:23	0.51	2.30

2/8/2013	10:27:43	0.42	1.12	
2/8/2013	10:28:03	0.70	0.69	
2/8/2013	10:28:23	0.73	1.67	
2/8/2013	10:28:43	**0.37**	4.05	
2/8/2013	10:29:03	**0.37**	2.32	Zero N2
2/8/2013	10:29:23	**0.36**	1.09	
2/8/2013	10:29:43	0.36	0.65	
2/8/2013	10:30:03	0.34	0.53	
2/8/2013	10:30:23	0.36	0.49	
2/8/2013	10:30:43	0.36	0.48	
2/8/2013	10:31:03	4.14	0.98	
2/8/2013	10:31:23	**5.17**	7.46	
2/8/2013	10:31:43	**5.12**	15.10	5.14 ppm C3H8
2/8/2013	10:32:03	**5.18**	18.61	
2/8/2013	10:32:23	2.38	19.74	
2/8/2013	10:32:27	1.65	20.02	

DATE	TIME	VOC	O2
MM/DD/Y\	HH:MM:SS	ppm	
2/8/2013	12:12:55	0.89	15.54
Start Run #10			
2/8/2013	12:13:15	0.93	16.06
2/8/2013	12:13:35	0.84	15.26
2/8/2013	12:13:55	0.79	14.54
2/8/2013	12:14:15	0.71	14.49
2/8/2013	12:14:35	0.67	13.72
2/8/2013	12:14:55	0.70	12.43
2/8/2013	12:15:15	0.68	11.96
2/8/2013	12:15:35	0.69	12.26
2/8/2013	12:15:55	0.74	12.51
2/8/2013	12:16:15	0.69	13.35
2/8/2013	12:16:35	0.63	13.15
2/8/2013	12:16:55	0.69	12.11
2/8/2013	12:17:15	0.69	11.95
2/8/2013	12:17:35	0.65	11.83
2/8/2013	12:17:55	0.71	12.26
2/8/2013	12:18:15	0.69	12.34
2/8/2013	12:18:35	0.71	11.51
2/8/2013	12:18:55	0.66	10.77
2/8/2013	12:19:15	0.67	10.18
2/8/2013	12:19:35	0.59	10.06
2/8/2013	12:19:55	0.66	10.31
2/8/2013	12:20:15	0.70	10.50
2/8/2013	12:20:35	0.69	10.54
2/8/2013	12:20:55	0.66	10.50
2/8/2013	12:21:15	0.71	10.57
2/8/2013	12:21:35	0.69	10.59
2/8/2013	12:21:55	0.62	10.54
2/8/2013	12:22:15	0.69	10.51
2/8/2013	12:22:35	0.69	10.53
2/8/2013	12:22:55	0.60	10.54
2/8/2013	12:23:15	0.66	10.51
2/8/2013	12:23:35	0.65	10.50
2/8/2013	12:23:55	0.67	10.65
2/8/2013	12:24:15	0.70	10.30
2/8/2013	12:24:35	0.68	9.76
2/8/2013	12:24:55	0.60	9.71
2/8/2013	12:25:15	0.60	9.65
2/8/2013	12:25:35	0.63	10.05
2/8/2013	12:25:55	0.58	10.27
2/8/2013	12:26:15	0.59	10.60
2/8/2013	12:26:35	0.70	11.32
2/8/2013	12:26:55	0.69	12.75
2/8/2013	12:27:15	0.76	13.50
2/8/2013	12:27:35	0.99	14.36
2/8/2013	12:27:55	0.87	16.32
2/8/2013	12:28:15	0.85	17.08
2/8/2013	12:28:35	0.69	16.50
2/8/2013	12:28:55	0.71	15.27
2/8/2013	12:29:15	0.63	14.33
2/8/2013	12:29:35	0.71	13.83
2/8/2013	12:29:55	0.83	13.34
2/8/2013	12:30:15	0.90	13.77
2/8/2013	12:30:35	0.78	14.17
2/8/2013	12:30:55	0.68	14.55
2/8/2013	12:31:15	0.63	13.77
2/8/2013	12:31:35	0.64	12.20
2/8/2013	12:31:55	0.55	10.81
2/8/2013	12:32:15	0.65	10.16
2/8/2013	12:32:35	0.61	9.93
2/8/2013	12:32:55	0.57	9.60
2/8/2013	12:33:15	0.64	8.84

2/8/2013	12:33:35	0.60	8.59
2/8/2013	12:33:55	0.64	8.59
2/8/2013	12:34:15	0.59	8.68
2/8/2013	12:34:35	0.58	8.74
2/8/2013	12:34:55	0.61	9.00
2/8/2013	12:35:15	0.62	10.02
2/8/2013	12:35:35	0.58	10.87
2/8/2013	12:35:55	0.55	11.19
2/8/2013	12:36:15	0.55	11.16
2/8/2013	12:36:35	0.55	11.07
2/8/2013	12:36:55	0.55	11.10
2/8/2013	12:37:15	0.55	11.21
2/8/2013	12:37:35	0.61	11.31
2/8/2013	12:37:55	0.60	11.39
2/8/2013	12:38:15	0.58	11.52
2/8/2013	12:38:35	0.55	11.46
2/8/2013	12:38:55	0.55	11.12
2/8/2013	12:39:15	0.57	11.08
2/8/2013	12:39:35	0.55	11.14
2/8/2013	12:39:55	0.55	11.22
2/8/2013	12:40:15	0.55	11.09
2/8/2013	12:40:35	0.55	10.70
2/8/2013	12:40:55	0.55	10.47
2/8/2013	12:41:15	0.55	10.23
2/8/2013	12:41:35	0.58	9.92
2/8/2013	12:41:55	0.61	9.85
2/8/2013	12:42:15	0.56	9.88
2/8/2013	12:42:35	0.59	10.39
2/8/2013	12:42:55	0.85	11.54
Port Change			
2/8/2013	12:43:15	0.95	13.72
2/8/2013	12:43:35	2.97	15.83
2/8/2013	12:43:55	2.09	17.34
2/8/2013	12:44:15	0.79	18.83
2/8/2013	12:44:35	0.69	17.07
2/8/2013	12:44:55	0.73	14.98
Resume			
2/8/2013	12:45:15	0.61	14.41
2/8/2013	12:45:35	0.55	14.14
2/8/2013	12:45:55	0.61	13.46
2/8/2013	12:46:15	0.60	12.81
2/8/2013	12:46:35	0.55	12.67
2/8/2013	12:46:55	0.57	12.46
2/8/2013	12:47:15	0.55	12.14
2/8/2013	12:47:35	0.56	11.94
2/8/2013	12:47:55	0.61	10.93
2/8/2013	12:48:15	0.57	9.40
2/8/2013	12:48:35	0.56	8.45
2/8/2013	12:48:55	0.56	8.83
2/8/2013	12:49:15	0.55	9.82
2/8/2013	12:49:35	0.55	10.55
2/8/2013	12:49:55	0.55	10.91
2/8/2013	12:50:15	0.55	11.10
2/8/2013	12:50:35	0.56	11.44
2/8/2013	12:50:55	0.55	11.56
2/8/2013	12:51:15	0.55	11.29
2/8/2013	12:51:35	0.55	11.29
2/8/2013	12:51:55	0.58	11.57
2/8/2013	12:52:15	0.54	11.72
2/8/2013	12:52:35	0.55	11.71
2/8/2013	12:52:55	0.56	11.66
2/8/2013	12:53:15	0.55	11.48
2/8/2013	12:53:35	0.55	10.82
2/8/2013	12:53:55	0.55	10.81
2/8/2013	12:54:15	0.55	11.38
2/8/2013	12:54:35	0.55	11.57

2/8/2013	12:54:55	0.55	11.61
2/8/2013	12:55:15	0.55	11.50
2/8/2013	12:55:35	0.55	10.98
2/8/2013	12:55:55	0.52	10.69
2/8/2013	12:56:15	0.53	10.48
2/8/2013	12:56:35	0.55	10.47
2/8/2013	12:56:55	0.53	10.26
2/8/2013	12:57:15	0.53	10.08
2/8/2013	12:57:35	0.54	10.99
2/8/2013	12:57:55	0.72	12.95
2/8/2013	12:58:15	0.59	15.01
2/8/2013	12:58:35	0.54	15.91
2/8/2013	12:58:55	0.59	15.12
2/8/2013	12:59:15	0.60	14.83
2/8/2013	12:59:35	0.60	14.64
2/8/2013	12:59:55	0.54	14.18
2/8/2013	13:00:15	0.55	13.20
2/8/2013	13:00:35	0.51	11.90
2/8/2013	13:00:55	0.51	10.71
2/8/2013	13:01:15	0.49	10.67
2/8/2013	13:01:35	0.55	10.65
2/8/2013	13:01:55	0.53	10.39
2/8/2013	13:02:15	0.51	10.26
2/8/2013	13:02:35	0.55	10.15
2/8/2013	13:02:55	0.55	10.88
2/8/2013	13:03:15	0.55	11.75
2/8/2013	13:03:35	0.54	11.95
2/8/2013	13:03:55	0.55	11.91
2/8/2013	13:04:15	0.55	11.95
2/8/2013	13:04:35	0.55	11.91
2/8/2013	13:04:55	0.55	11.75
2/8/2013	13:05:15	0.53	11.85
2/8/2013	13:05:35	0.55	11.99
2/8/2013	13:05:55	0.55	12.02
2/8/2013	13:06:15	0.51	11.96
2/8/2013	13:06:35	0.54	11.53
2/8/2013	13:06:55	0.55	11.07
2/8/2013	13:07:15	0.55	10.86
2/8/2013	13:07:35	0.55	10.78
2/8/2013	13:07:55	0.47	10.72
2/8/2013	13:08:15	0.53	10.77
2/8/2013	13:08:35	0.54	10.88
2/8/2013	13:08:55	0.55	11.11
2/8/2013	13:09:15	0.55	11.63
2/8/2013	13:09:35	0.55	12.00
2/8/2013	13:09:55	0.55	12.07
2/8/2013	13:10:15	0.52	12.67
2/8/2013	13:10:35	0.52	12.68
2/8/2013	13:10:55	0.55	12.63
2/8/2013	13:11:15	0.67	12.91
2/8/2013	13:11:35	0.99	14.28
2/8/2013	13:11:55	0.63	16.47
2/8/2013	13:12:15	0.55	16.71
2/8/2013	13:12:35	0.81	15.47
2/8/2013	13:12:55	2.85	15.44
2/8/2013	13:13:15	5.26	17.49
2/8/2013	13:13:35	0.57	18.72
2/8/2013	13:13:55	0.59	16.78
2/8/2013	13:14:15	0.59	14.90
2/8/2013	13:14:35	0.54	14.01
2/8/2013	13:14:55	0.78	13.47
Stop Run #10		0.65	11.88
2/8/2013	13:15:15	1.50	13.32
2/8/2013	13:15:35	3.33	15.42

2/8/2013	13:15:55	2.14	18.31	
2/8/2013	13:16:15	0.42	17.67	
2/8/2013	13:16:35	0.42	8.99	
2/8/2013	13:16:55	0.38	3.61	
2/8/2013	13:17:15	0.38	1.53	
2/8/2013	13:17:35	**0.37**	0.81	
2/8/2013	13:17:55	**0.39**	0.58	Zero N2
2/8/2013	13:18:15	**0.37**	0.52	
2/8/2013	13:18:35	0.79	0.50	
2/8/2013	13:18:55	0.38	2.55	
2/8/2013	13:19:15	0.40	3.21	
2/8/2013	13:19:35	0.37	1.59	
2/8/2013	13:19:55	0.36	0.83	
2/8/2013	13:20:15	0.37	0.58	
2/8/2013	13:20:35	0.39	0.51	
2/8/2013	13:20:55	0.37	0.48	
2/8/2013	13:21:15	0.60	0.48	
2/8/2013	13:21:35	4.64	1.50	
2/8/2013	13:21:55	**5.28**	8.82	
2/8/2013	13:22:15	**5.24**	15.80	5.14 ppm C3H8
2/8/2013	13:22:35	**5.30**	18.83	
2/8/2013	13:22:51	2.77	19.75	

DATE	TIME	VOC	O2
MM/DD/Y\	HH:MM:SS	ppm	
2/8/2013	13:27:46	0.75	14.91
Start Run #11			
2/8/2013	13:28:06	0.75	16.29
2/8/2013	13:28:26	0.67	16.78
2/8/2013	13:28:46	0.65	16.30
2/8/2013	13:29:06	0.61	15.51
2/8/2013	13:29:26	0.57	14.47
2/8/2013	13:29:46	0.58	13.81
2/8/2013	13:30:06	0.64	13.12
2/8/2013	13:30:26	0.55	13.03
2/8/2013	13:30:46	0.61	12.69
2/8/2013	13:31:06	0.55	12.67
2/8/2013	13:31:26	0.55	11.93
2/8/2013	13:31:46	0.55	11.04
2/8/2013	13:32:06	0.56	10.73
2/8/2013	13:32:26	0.55	10.79
2/8/2013	13:32:46	0.55	11.32
2/8/2013	13:33:06	0.55	11.96
2/8/2013	13:33:26	0.55	11.96
2/8/2013	13:33:46	0.55	11.77
2/8/2013	13:34:06	0.55	11.66
2/8/2013	13:34:26	0.55	11.76
2/8/2013	13:34:46	0.55	11.96
2/8/2013	13:35:06	0.55	12.11
2/8/2013	13:35:26	0.56	11.99
2/8/2013	13:35:46	0.55	11.77
2/8/2013	13:36:06	0.55	11.70
2/8/2013	13:36:26	0.56	11.65
2/8/2013	13:36:46	0.55	11.58
2/8/2013	13:37:06	0.55	11.53
2/8/2013	13:37:26	0.55	11.51
2/8/2013	13:37:46	0.55	11.78
2/8/2013	13:38:06	0.55	11.76
2/8/2013	13:38:26	0.62	11.64
2/8/2013	13:38:46	0.55	11.91
2/8/2013	13:39:06	0.55	11.87
2/8/2013	13:39:26	0.55	11.72
2/8/2013	13:39:46	0.55	11.45
2/8/2013	13:40:06	0.55	11.28
2/8/2013	13:40:26	0.55	11.68
2/8/2013	13:40:46	0.55	12.06
2/8/2013	13:41:06	0.55	12.36
2/8/2013	13:41:26	0.55	12.64
2/8/2013	13:41:46	0.55	13.28
2/8/2013	13:42:06	0.55	13.97
2/8/2013	13:42:26	0.67	14.58
2/8/2013	13:42:46	0.64	15.55
2/8/2013	13:43:06	0.54	16.06
2/8/2013	13:43:26	0.55	15.06
2/8/2013	13:43:46	0.50	14.47
2/8/2013	13:44:06	0.50	13.75
2/8/2013	13:44:26	0.51	13.31
2/8/2013	13:44:46	0.55	12.90
2/8/2013	13:45:06	0.55	12.56
2/8/2013	13:45:26	0.56	12.07
2/8/2013	13:45:46	0.55	11.10
2/8/2013	13:46:06	0.55	10.19
2/8/2013	13:46:26	0.55	9.58
2/8/2013	13:46:46	0.61	9.88
2/8/2013	13:47:06	0.55	10.72
2/8/2013	13:47:26	0.55	11.38
2/8/2013	13:47:46	0.55	11.43
2/8/2013	13:48:06	0.55	11.50

2/8/2013	13:48:26	0.55	11.24
2/8/2013	13:48:46	0.55	11.07
2/8/2013	13:49:06	0.55	11.06
2/8/2013	13:49:26	0.55	11.15
2/8/2013	13:49:46	0.55	11.42
2/8/2013	13:50:06	0.55	11.71
2/8/2013	13:50:26	0.55	11.80
2/8/2013	13:50:46	0.55	11.72
2/8/2013	13:51:06	0.55	11.70
2/8/2013	13:51:26	0.55	11.62
2/8/2013	13:51:46	0.55	11.50
2/8/2013	13:52:06	0.53	11.35
2/8/2013	13:52:26	0.55	11.24
2/8/2013	13:52:46	0.55	11.31
2/8/2013	13:53:06	0.55	11.31
2/8/2013	13:53:26	0.55	11.24
2/8/2013	13:53:46	0.55	10.99
2/8/2013	13:54:06	0.55	10.45
2/8/2013	13:54:26	0.55	10.11
2/8/2013	13:54:46	0.56	9.95
2/8/2013	13:55:06	0.55	9.99
2/8/2013	13:55:26	0.55	10.23
2/8/2013	13:55:46	0.55	10.55
2/8/2013	13:56:06	0.54	11.19
2/8/2013	13:56:26	0.55	11.50
2/8/2013	13:56:46	0.57	12.08
2/8/2013	13:57:06	0.67	13.38
2/8/2013	13:57:26	0.63	15.10
2/8/2013	13:57:46	0.60	14.65
Port Change			
2/8/2013	13:58:06	1.33	13.48
2/8/2013	13:58:26	1.36	15.26
2/8/2013	13:58:46	0.79	17.55
2/8/2013	13:59:06	0.78	15.93
2/8/2013	13:59:26	0.73	14.09
2/8/2013	13:59:46	0.67	13.25
Resume			
2/8/2013	14:00:06	0.73	12.97
2/8/2013	14:00:26	0.73	13.04
2/8/2013	14:00:46	0.73	12.74
2/8/2013	14:01:06	0.70	11.98
2/8/2013	14:01:26	0.61	11.16
2/8/2013	14:01:46	0.56	11.09
2/8/2013	14:02:06	0.55	11.32
2/8/2013	14:02:26	0.55	11.92
2/8/2013	14:02:46	0.55	12.23
2/8/2013	14:03:06	0.55	12.08
2/8/2013	14:03:26	0.52	11.76
2/8/2013	14:03:46	0.55	11.46
2/8/2013	14:04:06	0.55	11.69
2/8/2013	14:04:26	0.55	11.43
2/8/2013	14:04:46	0.55	11.14
2/8/2013	14:05:06	0.54	10.83
2/8/2013	14:05:26	0.55	10.63
2/8/2013	14:05:46	0.53	10.48
2/8/2013	14:06:06	0.56	10.81
2/8/2013	14:06:26	0.53	11.74
2/8/2013	14:06:46	0.54	11.72
2/8/2013	14:07:06	0.53	11.06
2/8/2013	14:07:26	0.49	10.65
2/8/2013	14:07:46	0.48	10.44
2/8/2013	14:08:06	0.52	10.34
2/8/2013	14:08:26	0.55	10.50
2/8/2013	14:08:46	0.55	11.31
2/8/2013	14:09:06	0.51	11.67
2/8/2013	14:09:26	0.55	11.24

2/8/2013	14:09:46	0.50	11.24
2/8/2013	14:10:06	0.52	11.19
2/8/2013	14:10:26	0.62	11.76
2/8/2013	14:10:46	0.69	12.72
2/8/2013	14:11:06	0.67	13.95
2/8/2013	14:11:26	0.68	14.88
2/8/2013	14:11:46	0.79	15.41
2/8/2013	14:12:06	0.91	15.90
2/8/2013	14:12:26	0.88	16.85
2/8/2013	14:12:46	0.68	16.59
2/8/2013	14:13:06	0.71	15.69
2/8/2013	14:13:26	0.63	14.94
2/8/2013	14:13:46	0.64	14.38
2/8/2013	14:14:06	0.51	14.13
2/8/2013	14:14:26	0.53	13.53
2/8/2013	14:14:46	0.52	12.16
2/8/2013	14:15:06	0.51	11.55
2/8/2013	14:15:26	0.52	11.18
2/8/2013	14:15:46	0.46	10.83
2/8/2013	14:16:06	0.47	10.60
2/8/2013	14:16:26	0.42	9.81
2/8/2013	14:16:46	0.44	10.23
2/8/2013	14:17:06	0.53	11.40
2/8/2013	14:17:26	0.47	12.11
2/8/2013	14:17:46	0.48	12.32
2/8/2013	14:18:06	0.51	11.93
2/8/2013	14:18:26	0.53	10.93
2/8/2013	14:18:46	0.55	10.47
2/8/2013	14:19:06	0.55	10.45
2/8/2013	14:19:26	0.51	10.44
2/8/2013	14:19:46	0.55	10.40
2/8/2013	14:20:06	0.53	10.47
2/8/2013	14:20:26	0.41	10.42
2/8/2013	14:20:46	0.44	10.27
2/8/2013	14:21:06	0.48	10.15
2/8/2013	14:21:26	0.55	10.20
2/8/2013	14:21:46	0.50	10.37
2/8/2013	14:22:06	0.48	10.49
2/8/2013	14:22:26	0.52	10.42
2/8/2013	14:22:46	0.43	10.30
2/8/2013	14:23:06	0.44	10.24
2/8/2013	14:23:26	0.50	10.51
2/8/2013	14:23:46	0.40	11.14
2/8/2013	14:24:06	0.37	11.05
2/8/2013	14:24:26	0.50	10.67
2/8/2013	14:24:46	0.54	9.64
2/8/2013	14:25:06	0.53	8.64
2/8/2013	14:25:26	0.45	8.82
2/8/2013	14:25:46	0.52	8.94
2/8/2013	14:26:06	0.51	9.19
2/8/2013	14:26:26	0.46	10.65
2/8/2013	14:26:46	0.42	12.40
2/8/2013	14:27:06	0.46	13.28
2/8/2013	14:27:26	0.45	13.68
2/8/2013	14:27:46	0.51	13.83
2/8/2013	14:28:06	0.46	14.48
2/8/2013	14:28:26	0.54	14.05
2/8/2013	14:28:46	0.46	11.57
2/8/2013	14:29:06	0.45	10.18
2/8/2013	14:29:26	0.50	9.62
2/8/2013	14:29:46	0.49	9.69
Stop Run #11		0.55	11.89
2/8/2013	14:30:06	0.48	9.80
2/8/2013	14:30:26	2.15	10.52

2/8/2013	14:30:46	1.61	14.34	
2/8/2013	14:31:06	1.10	18.05	
2/8/2013	14:31:26	0.32	14.49	
2/8/2013	14:31:46	**0.34**	6.19	
2/8/2013	14:32:06	**0.30**	2.53	Zero N2
2/8/2013	14:32:26	**0.35**	1.16	
2/8/2013	14:32:46	0.89	0.73	
2/8/2013	14:33:06	0.33	3.69	
2/8/2013	14:33:26	0.35	3.94	
2/8/2013	14:33:46	0.37	1.95	
2/8/2013	14:34:06	0.37	0.95	
2/8/2013	14:34:26	0.37	0.61	
2/8/2013	14:34:46	0.38	0.52	
2/8/2013	14:35:06	0.94	0.49	
2/8/2013	14:35:26	5.19	2.51	
2/8/2013	14:35:46	**5.26**	10.69	5.14 ppm C3H8
2/8/2013	14:36:06	**5.27**	16.78	
2/8/2013	14:36:26	**5.28**	19.18	
2/8/2013	14:36:46	5.18	19.90	
2/8/2013	14:37:03	1.75	20.08	

DATE	TIME	VOC	O2
MM/DD/Y\	HH:MM:SS	ppm	
2/8/2013	14:39:56	0.55	13.82
Start Run #12			
2/8/2013	14:40:16	0.55	11.87
2/8/2013	14:40:36	0.55	10.91
2/8/2013	14:40:56	0.55	10.43
2/8/2013	14:41:16	0.55	10.25
2/8/2013	14:41:36	0.55	10.04
2/8/2013	14:41:56	0.53	10.00
2/8/2013	14:42:16	0.53	10.34
2/8/2013	14:42:36	0.42	10.75
2/8/2013	14:42:56	0.54	10.64
2/8/2013	14:43:16	0.55	10.40
2/8/2013	14:43:36	0.51	10.23
2/8/2013	14:43:56	0.53	10.26
2/8/2013	14:44:16	0.50	10.12
2/8/2013	14:44:36	0.55	9.56
2/8/2013	14:44:56	0.55	9.14
2/8/2013	14:45:16	0.55	9.20
2/8/2013	14:45:36	0.55	9.49
2/8/2013	14:45:56	0.53	9.62
2/8/2013	14:46:16	0.55	9.65
2/8/2013	14:46:36	0.53	9.71
2/8/2013	14:46:56	0.55	9.76
2/8/2013	14:47:16	0.55	9.54
2/8/2013	14:47:36	0.55	9.38
2/8/2013	14:47:56	0.50	9.40
2/8/2013	14:48:16	0.55	9.58
2/8/2013	14:48:36	0.55	9.52
2/8/2013	14:48:56	0.55	9.35
2/8/2013	14:49:16	0.55	9.63
2/8/2013	14:49:36	0.51	9.86
2/8/2013	14:49:56	0.54	10.22
2/8/2013	14:50:16	0.52	10.72
2/8/2013	14:50:36	0.48	10.84
2/8/2013	14:50:56	0.51	10.77
2/8/2013	14:51:16	0.52	10.72
2/8/2013	14:51:36	0.55	11.06
2/8/2013	14:51:56	0.53	11.55
2/8/2013	14:52:16	0.45	11.68
2/8/2013	14:52:36	0.51	11.72
2/8/2013	14:52:56	0.53	11.67
2/8/2013	14:53:16	0.50	11.62
2/8/2013	14:53:36	0.51	11.90
2/8/2013	14:53:56	0.77	12.82
2/8/2013	14:54:16	0.62	14.77
2/8/2013	14:54:36	0.61	16.11
2/8/2013	14:54:56	0.56	15.84
2/8/2013	14:55:16	0.53	15.25
2/8/2013	14:55:36	0.49	14.50
2/8/2013	14:55:56	0.55	13.81
2/8/2013	14:56:16	0.54	13.55
2/8/2013	14:56:36	0.55	12.82
2/8/2013	14:56:56	0.55	11.73
2/8/2013	14:57:16	0.55	10.91
2/8/2013	14:57:36	0.52	10.45
2/8/2013	14:57:56	0.53	10.38
2/8/2013	14:58:16	0.48	10.33
2/8/2013	14:58:36	0.42	10.80
2/8/2013	14:58:56	0.51	11.18
2/8/2013	14:59:16	0.50	11.43
2/8/2013	14:59:36	0.44	11.36
2/8/2013	14:59:56	0.43	11.52
2/8/2013	15:00:16	0.53	11.52

2/8/2013	15:00:36	0.52	11.29
2/8/2013	15:00:56	0.42	11.01
2/8/2013	15:01:16	0.53	10.93
2/8/2013	15:01:36	0.45	10.81
2/8/2013	15:01:56	0.54	10.74
2/8/2013	15:02:16	0.55	10.85
2/8/2013	15:02:36	0.55	10.91
2/8/2013	15:02:56	0.54	10.82
2/8/2013	15:03:16	0.51	10.72
2/8/2013	15:03:36	0.51	10.69
2/8/2013	15:03:56	0.55	10.66
2/8/2013	15:04:16	0.53	10.68
2/8/2013	15:04:36	0.54	10.78
2/8/2013	15:04:56	0.54	11.43
2/8/2013	15:05:16	0.55	12.38
2/8/2013	15:05:36	0.55	12.06
2/8/2013	15:05:56	0.55	11.58
2/8/2013	15:06:16	0.55	11.14
2/8/2013	15:06:36	0.55	11.18
2/8/2013	15:06:56	0.54	12.11
2/8/2013	15:07:16	0.54	13.14
2/8/2013	15:07:36	0.55	13.62
2/8/2013	15:07:56	0.55	14.14
2/8/2013	15:08:16	0.55	14.30
2/8/2013	15:08:36	0.62	14.81
2/8/2013	15:08:56	0.67	15.74
2/8/2013	15:09:16	0.78	16.40
2/8/2013	15:09:36	0.93	16.79
2/8/2013	15:09:56	1.18	16.64
Port Change			
2/8/2013	15:10:16	0.64	17.61
2/8/2013	15:10:36	0.64	16.86
2/8/2013	15:10:56	0.62	16.02
2/8/2013	15:11:16	0.73	15.23
2/8/2013	15:11:36	0.65	15.22
2/8/2013	15:11:56	0.62	15.15
Resume			
2/8/2013	15:12:16	0.63	14.78
2/8/2013	15:12:36	0.60	14.42
2/8/2013	15:12:56	0.54	13.87
2/8/2013	15:13:16	0.55	12.46
2/8/2013	15:13:36	0.57	10.69
2/8/2013	15:13:56	0.62	8.65
2/8/2013	15:14:16	0.52	7.75
2/8/2013	15:14:36	0.54	8.44
2/8/2013	15:14:56	0.53	9.95
2/8/2013	15:15:16	0.55	11.03
2/8/2013	15:15:36	0.53	11.54
2/8/2013	15:15:56	0.55	11.52
2/8/2013	15:16:16	0.48	11.44
2/8/2013	15:16:36	0.52	11.22
2/8/2013	15:16:56	0.54	11.14
2/8/2013	15:17:16	0.47	11.14
2/8/2013	15:17:36	0.52	11.23
2/8/2013	15:17:56	0.44	11.29
2/8/2013	15:18:16	0.52	11.14
2/8/2013	15:18:36	0.53	11.20
2/8/2013	15:18:56	0.51	11.12
2/8/2013	15:19:16	0.41	11.02
2/8/2013	15:19:36	0.44	10.94
2/8/2013	15:19:56	0.55	11.05
2/8/2013	15:20:16	0.55	11.05
2/8/2013	15:20:36	0.54	11.07
2/8/2013	15:20:56	0.49	11.06
2/8/2013	15:21:16	0.47	10.92
2/8/2013	15:21:36	0.46	11.16

2/8/2013	15:21:56	0.55	11.62
2/8/2013	15:22:16	0.54	12.53
2/8/2013	15:22:36	0.52	13.30
2/8/2013	15:22:56	0.55	14.08
2/8/2013	15:23:16	0.47	14.68
2/8/2013	15:23:36	0.52	14.55
2/8/2013	15:23:56	0.68	14.57
2/8/2013	15:24:16	0.62	15.34
2/8/2013	15:24:36	0.55	15.85
2/8/2013	15:24:56	0.56	14.67
2/8/2013	15:25:16	0.57	13.82
2/8/2013	15:25:36	0.55	13.42
2/8/2013	15:25:56	0.54	12.43
2/8/2013	15:26:16	0.53	11.75
2/8/2013	15:26:36	0.55	11.36
2/8/2013	15:26:56	0.55	10.50
2/8/2013	15:27:16	0.54	9.70
2/8/2013	15:27:36	0.54	9.74
2/8/2013	15:27:56	0.48	10.20
2/8/2013	15:28:16	0.55	10.50
2/8/2013	15:28:36	0.55	10.81
2/8/2013	15:28:56	0.54	11.06
2/8/2013	15:29:16	0.55	11.12
2/8/2013	15:29:36	0.55	10.91
2/8/2013	15:29:56	0.55	10.81
2/8/2013	15:30:16	0.51	10.99
2/8/2013	15:30:36	0.50	10.95
2/8/2013	15:30:56	0.48	10.70
2/8/2013	15:31:16	0.55	10.62
2/8/2013	15:31:36	0.47	10.49
2/8/2013	15:31:56	0.46	10.34
2/8/2013	15:32:16	0.53	10.26
2/8/2013	15:32:36	0.53	10.29
2/8/2013	15:32:56	0.52	10.46
2/8/2013	15:33:16	0.48	10.45
2/8/2013	15:33:36	0.54	10.51
2/8/2013	15:33:56	0.51	10.54
2/8/2013	15:34:16	0.51	10.68
2/8/2013	15:34:36	0.44	10.75
2/8/2013	15:34:56	0.45	10.59
2/8/2013	15:35:16	0.52	10.56
2/8/2013	15:35:36	0.55	9.10
2/8/2013	15:35:56	0.58	7.76
2/8/2013	15:36:16	0.60	7.34
2/8/2013	15:36:36	0.56	7.25
2/8/2013	15:36:56	0.55	7.28
2/8/2013	15:37:16	0.55	7.67
2/8/2013	15:37:36	0.55	8.99
2/8/2013	15:37:56	0.55	10.28
2/8/2013	15:38:16	0.49	11.47
2/8/2013	15:38:36	0.38	12.54
2/8/2013	15:38:56	0.54	13.03
2/8/2013	15:39:16	0.54	13.26
2/8/2013	15:39:36	1.11	13.89
2/8/2013	15:39:56	4.30	16.42
2/8/2013	15:40:16	3.92	18.64
2/8/2013	15:40:36	0.59	19.33
2/8/2013	15:40:56	0.55	17.35
2/8/2013	15:41:16	0.55	14.76
2/8/2013	15:41:36	0.63	13.32
2/8/2013	15:41:56	1.75	13.56
Stop Run #12		0.59	11.55
2/8/2013	15:42:16	1.53	16.38
2/8/2013	15:42:36	1.35	18.84

2/8/2013	15:42:56	0.37	16.55	
2/8/2013	15:43:16	0.37	7.53	
2/8/2013	15:43:36	**0.37**	3.06	
2/8/2013	15:43:56	**0.37**	1.38	Zero N2
2/8/2013	15:44:16	**0.37**	0.77	
2/8/2013	15:44:36	0.79	0.74	
2/8/2013	15:44:56	0.37	3.63	
2/8/2013	15:45:16	0.34	3.06	
2/8/2013	15:45:36	0.37	1.48	
2/8/2013	15:45:56	0.32	0.78	
2/8/2013	15:46:16	0.35	0.57	
2/8/2013	15:46:36	0.35	0.50	
2/8/2013	15:46:56	3.25	0.66	
2/8/2013	15:47:16	**5.34**	5.83	
2/8/2013	15:47:36	**5.38**	14.01	5.14 ppm C3H8
2/8/2013	15:47:56	**5.40**	18.20	
2/8/2013	15:48:16	3.63	19.61	
2/8/2013	15:48:36	1.48	20.03	
2/8/2013	15:48:49	1.46	20.09	

Appendix D
Field Data Sheets

FIELD DATA

Plant: COMM
Date: 2-5-13
Repetition: 1
Location (Source #): Flare
Operator: LW, TH
Control Console#: 2
Sample Train#: 02
Barometric Pressure: 30.0
Ambient Temperature: 69
Assumed Moisture: 3%
Stack Diameter: 44.0"
Meter H: 1.472
C Factor: .84
Meter Co-Effiecent: 1.021
Nozzle Diameter: 1/2
Probe Length: 5'
Filter Number:

IMPINGERS

	Initial	Final
H_2O #1	100	138
#2	100	110
#3	—	4
#4	200	205.0
#5	~~0~~	
#6	~~0~~	57

CO2	O2
5.38	12.68

Pretest Leak Check
Meter 0.000 cu.ft.@ 10 in.Hg
Pitots ✓✓ @4.3 in. H2O

Post Test Leak Check
Meter 0.000 cu.ft@ 5 in.Hg
Pitots ✓✓ @4.8 in.H2O

	Pt#	Time	Static	Ts	Delta P	Delta H	Vm Cu. Ft.	TMi	TMo	Oven	Probe	Exit	Vac. in Hg
0	A1	14:00		1739	.03	1.0	599.013	77	77	243		67	3.0
	2		-.07	1732	.05	1.0	600.4	78	77	247		66	3.0
5	3	:05		1847	.05	1.0	601.0	80	77	245		66	3.0
	4			1790	.03	1.0	603.6	81	77	244		66	3.0
10	5	:10		1807	.06	1.0	605.1	81	78	243		65	3.0
	6			1823	.06	1.0	606.6	82	78	242		65	3.0
15	7	:15		1753	.05	1.0	608.1	82	78	241		65	3.0
	8			1794	.06	1.0	609.6	83	78	245		65	3.0
20	9	:20		1743	.05	1.0	611.1	83	78	243		66	3.0
	10			1721	.03	1.0	612.6	83	79	242		64	3.0
25	11	:25		1702	.03	1.0	614.1	84	79	245		64	3.0
	12			1658	.02	1.0	615.6	84	79	245		62	3.0
30	B1	14:30 14:34		1739	.03	1.0	617.139	83	80	246		66	3.0
14:39	2			1841	.02	1.0	618.7	83	79	246		62	3.0
5	3	:39		1781	.03	1.0	620.2	84	80	244		62	3.0
	4			1811	.03	1.0	621.7	84	80	245		62	3.0
10	5	:44		1852	.04	1.0	623.2	85	80	244		63	3.0
	6			1771	.05	1.0	624.7	85	80	241		63	3.0
15	7	:49		1815	.05	1.0	626.2	85	81	243		64	3.0
	8			1857	.05	1.0	627.7	85	81	245		63	3.0
20	9	:54		1855	.04	1.0	629.2	86	81	242		64	3.0
	10			1772	.05	1.0	630.7	86	81	244		63	3.0
25	11	:59		1702	.03	1.0	632.2	86	82	244		64	3.0
	12			1710	.02	1.0	633.7	86	81	243		63	3.0
30		15:04					635.238						

36.225

FIELD DATA

Plant: COMM
Date: 2-5-13
Reperition: 2
Location (Source #): Flare Ex.
Operator: LW, TH
Control Console#: 2
Sample Train#: 02
Barometric Pressure: 30.0
Ambient Temperature: 69
Assumed Moisture: 5%
Stack Diameter: 44"
Meter H: 1.472
C Factor: .84
Meter Co-Effiecent: 1.021
Nozzle Diameter: 1/2"
Probe Length: 5'
Filter Number: —

IMPINGERS

	Initial	Final
#1	100	138
#2	100	114
#3	70	2
#4	205.0	208.5 (3.5)
#5	—	
#6	—	57.5

H_2O

CO2 O2

Pretest Leak Check
Meter 0.000 cu.ft.@ 5 in.Hg
Pitots W @ 4.1 in. H2O

Post Test Leak Check
Meter 0.000 cu.ft@ 4 in.Hg
Pitots W @ 4.2 in.H2O

Pt#	Time	Static	Ts	Delta P	Delta H	Vm Cu. Ft.	TMi	TMo	Oven	Probe	E. it	Vac. in Hg
B1	15:20		1831	.02	1.0	635.340	82	80	235		66	2.0
2		-.06	1814	.03	1.0	636.9	81	80	241		63	2.0
3	:25		1818	.04	1.0	638.4	83	80	244		62	2.0
4			1839	.03	1.0	639.9	83	80	241		62	2.0
5	:30		1860	.03	1.0	641.4	84	80	244		63	2.0
6			1841	.03	1.0	642.9	84	80	244		62	2.0
7	:35		1830	.05	1.0	644.4	84	80	245		63	2.0
8			1852	.05	1.0	645.9	84	80	243		62	2.0
9	:40		1844	.06	1.0	647.4	84	80	246		63	2.0
10			1746	.03	1.0	648.9	84	80	243		63	2.0
11	:45		1794	.04	1.0	650.4	85	81	243		64	2.0
12			1699	.03	1.0	651.9	85	81	244		64	2.0
A1	15:50 / 15:52		1870	.02	1.0	653.447	82	80	242		64	2.0
2			1874	.03	1.0	655.0	84	80	244		64	2.0
3	:57		1831	.03	1.0	656.5	84	80	244		64	2.0
4			1742	.04	1.0	658.0	84	80	244		65	2.0
5	16:02		1820	.05	1.0	659.5	84	80	245		65	2.0
6			1768	.06	1.0	661.0	84	80	244		66	2.0
7	:07		1737	.03	1.0	662.5	83	79	242		62	2.0
8			1799	.04	1.0	664.0	84	80	242		62	2.0
9	:12		1780	.04	1.0	665.5	84	80	244		61	2.0
10			1823	.03	1.0	667.0	83	79	244		60	2.0
11	:17		1807	.04	1.0	668.5	84	80	243		60	2.0
12			1741	.04	1.0	670.0	84	79	243		59	2.0
	16:22 / 16:22					671.533						

36.193

FIELD DATA

Plant: CCMM
Date: 2-5-13
Repetition: 3
Location (Source #): Flare Ex.
Operator: LW, TM
Control Console#: 2
Sample Train#: 02
Barometric Pressure: 30.0
Ambient Temperature: 67
Assumed Moisture: 5%
Stack Diameter: 44.0"
Meter H: 1.472
C Factor: .84
Meter Co-Effiecent: 1.021
Nozzle Diameter: 1/2"
Probe Length: 5'
Filter Number: —

Pretest Leak Check
Meter 0.000 cu.ft.@ 5 in.Hg
Pitots ✓✓ @4.0 in. H2O

Post Test Leak Check
Meter 0.000 cu.ft@ 6 in.Hg
Pitots ✓✓ @5.0 in.H2O

IMPINGERS

	Initial	Final
#1	100	134
#2	100	112
#3	-0-	4
#4	208.5	211.8 (3.3)
#5	—	
#6	—	53.3

CO2 O2

	Pt#	Time	Static	Ts	Delta P	Delta H	Vm Cu. Ft.	TMi	TMo	Oven	Probe	Exit	Vac. in Hg
0	A1	16:35	-.07	1838	.05	1.0	671.635	78	78	239		66	2.0
	2			1806	.04	1.0	673.2	79	78	241		61	2.0
5	3	:40		1800	.05	1.0	674.7	80	78	243		60	2.0
	4			1831	.06	1.0	676.2	80	77	242		60	2.0
10	5	:45		1802	.06	1.0	677.7	81	78	245		61	2.0
	6			1832	.06	1.0	679.2	81	77	243		61	2.0
15	7	:50		1812	.05	1.0	680.7	81	78	243		62	2.0
	8			1795	.05	1.0	682.2	81	77	243		61	2.0
20	9	:55		1817	.05	1.0	683.7	82	78	242		62	2.0
	10			1811	.03	1.0	685.2	81	77	240		61	2.0
25	11	17:00		1797	.03	1.0	686.7	82	78	241		61	2.0
	12			1789	.02	1.0	688.2	81	77	244		61	2.0
30	B1	17:05 / 17:08		1819	.03	1.0	689.720	79	77	243		65	2.0
0	2			1832	.03	1.0	691.2	81	77	246		62	2.0
	3	:13		1821	.02	1.0	692.7	81	77	245		61	2.0
5	4			1833	.03	1.0	694.2	81	77	241		62	2.0
	5	:18		1808	.05	1.0	695.7	80	76	241		61	2.0
10	6			1832	.05	1.0	697.2	81	77	244		62	2.0
	7	:23		1816	.04	1.0	698.7	80	77	242		62	2.0
15	8			1821	.05	1.0	700.2	80	77	243		62	2.0
	9	:28		1810	.04	1.0	701.7	80	76	243		63	2.0
20	10			1801	.04	1.0	703.2	80	77	244		63	2.0
	11	:33		1791	.02	1.0	704.7	80	76	242		62	2.0
25	12			1784	.02	1.0	706.2	80	77	245		63	2.0
30		17:38					707.733						

36.098

FIELD DATA

Plant: COMM
Date: 2-6-13
Repetition: 4
Location (Source #): Flare Ex
Operator: LW, TH
Control Console#: 2
Sample Train#: 02
Barometric Pressure: 30.1
Ambient Temperature: 65
Assumed Moisture: 3%
Stack Diameter: 44.0"
Meter H: 1.472
C Factor: .84
Meter Co-Effiecent: 1.021
Nozzle Diameter: 1/2"
Probe Length: 5'
Filter Number: —

Pretest Leak Check
Meter 0.000 cu.ft.@ 8 in.Hg
Pitots ✓ @ 4.8 in. H2O

Post Test Leak Check
Meter 0.000 cu.ft@ 6 in.Hg
Pitots ✓ @ 4.2 in.H2O

IMPINGERS

	Initial	Final
#1	100	130
#2	100	110
#3	-0-	2
#4	211.8	215.3 (3.5)
#5	—	
#6	—	45.5

CO2 O2

Pt#	Time	Static	Ts	Delta P	Delta H	Vm Cu. Ft.	TMi	TMo	Oven	Probe	Exit	Vac. in.Hg
B1	15:00		1667	.02	1.0	707.892	69	70	247		65	2.0
2		-.06	1669	.02	1.0	709.4	70	70	242		63	2.0
3	:05		1771	.02	1.0	710.9	71	70	243		61	2.0
4			1811	.05	1.0	712.4	71	69	241		58	2.0
5	:10		1849	.06	1.0	713.9	72	69	242		56	2.0
6			1746	.04	1.0	715.4	73	69	245		56	2.0
7	:15		1759	.04	1.0	716.9	74	70	242		56	2.0
8			1725	.05	1.0	718.4	75	71	243		57	2.0
9	:20		1900	.04	1.0	719.9	75	71	241		58	2.0
10			1875	.04	1.0	721.4	76	72	243		59	2.0
11	:25		1849	.02	1.0	722.9	76	72	239		58	2.0
12			1799	.02	1.0	724.4	76	72	245		58	2.0
	15:30					725.903						
A1	15:32		1843	.03	1.0	725.903	75	73	244		56	2.0
2			1874	.04	1.0	727.4	76	73	245		55	2.0
3	:37		1940	.06	1.0	728.9	77	73	242		55	2.0
4			1857	.05	1.0	730.4	78	74	244		55	2.0
5	:42		1659	.06	1.0	731.9	77	74	243		55	2.0
6			1732	.04	1.0	733.4	78	74	240		56	2.0
7	:47		1659	.04	1.0	734.9	79	75	239		56	2.0
8			1838	.05	1.0	736.4	78	75	241		56	2.0
9	:52		1798	.04	1.0	737.9	79	75	243		56	2.0
10			1630	.02	1.0	739.4	79	75	243		57	2.0
11	:57		1611	.01	1.0	740.9	80	76	243		56	2.0
12			1578	.01	1.0	742.4	80	76	246		56	2.0
	16:02					743.940						

36.048

FIELD DATA

Plant: COMM
Date: 2-7-13
Repetition: 5
Location (Source #): Flare Ex
Operator: LW, TH
Control Console#: 2
Sample Train#: 02
Barometric Pressure: 30.0
Ambient Temperature: 66
Assumed Moisture: 4%
Stack Diameter: 44.0"
Meter H: 1.472
C Factor: .84
Meter Co-Effiecent: 1.021
Nozzle Diameter: 1/2"
Probe Length: 5'
Filter Number: -

IMPINGERS

	Initial	Final
#1	100	132
#2	100	110
#3	-	4
#4	200.0	205.9
#5	-	
#6	-	
		51.9

CO2 O2

Pretest Leak Check
Meter 0.000 cu.ft.@ 6 in.Hg
Pitots ✓✓ @4.3 in. H2O

Post Test Leak Check
Meter 0.000 cu.ft@ 5 in.Hg
Pitots ✓✓ @4.4 in.H2O

Pt#	Time	Static	Ts	Delta P	Delta H	Vm Cu. Ft.	TMi	TMo	Oven	Probe	Exit	Vac. in Hg
A1	9:50		1779	.03	1.0	754.654	66	65	244	N/A	53	2.0
2		-.07	1817	.04	1.0	756.2	65	64	242		52	2.0
3	:55		1760	.05	1.0	757.7	67	65	244		52	2.0
4			1838	.06	1.0	759.2	69	66	245		52	2.0
5	10:00		1715	.05	1.0	760.7	70	67	244		53	2.0
6			1739	.03	1.0	762.2	72	68	242		55	2.0
7	:05		1723	.03	1.0	763.7	72	68	242		57	2.0
8			1768	.03	1.0	765.2	74	70	242		57	2.0
9	:10		1843	.04	1.0	766.7	75	70	242		57	2.0
10			1800	.03	1.0	768.2	76	71	243		59	2.0
11	:15		1842	.02	1.0	769.7	76	72	244		60	2.0
12			1724	.01	1.0	771.2	77	72	242		59	2.0
	10:20					772.715						
B1	10:22		1762	.02	1.0	772.715	77	75	249		60	2.0
2			1862	.03	1.0	774.2	78	75	244		60	2.0
3	:27		1842	.05	1.0	775.7	79	75	243		59	2.0
4			1820	.04	1.0	777.2	81	76	243		59	2.0
5	:32		1783	.04	1.0	778.7	81	76	243		59	2.0
6			1775	.02	1.0	780.2	82	77	242		59	2.0
7	:37		1840	.03	1.0	781.7	82	78	243		58	2.0
8			1863	.05	1.0	783.2	83	79	244		59	2.0
9	:42		1811	.04	1.0	784.7	83	79	244		58	2.0
10			1800	.03	1.0	786.2	83	79	243		57	2.0
11	:47		1781	.02	1.0	787.7	84	80	243		58	2.0
12			1751	.01	1.0	789.2	85	80	244		58	2.0
	10:52					790.733						

36.079

FIELD DATA

Plant: COMM
Date: 2-7-13
Repetition: 6
Location (Source #): Flare Ex.
Operator: LW, TH
Control Console#: 2
Sample Train#: 02
Barometric Pressure: 29.9
Ambient Temperature: 70
Assumed Moisture: 4%
Stack Diameter: 44.0"
Meter H: 1.472
C Factor: .84
Meter Co-Effiecent: 1.021
Nozzle Diameter: 1/2"
Probe Length: 5'
Filter Number: -

IMPINGERS

	Initial	Final
#1	100	128
#2	100	112
#3	-0-	4
#4	205.9	210.4 (4.5)
#5	—	
#6	—	48.5

CO2 O2

Pretest Leak Check
Meter 0.000 cu.ft.@ in.Hg
Pitots ✓✓ @5, 2 in. H2O

Post Test Leak Check
Meter 0.000 cu.ft@ 5 in.Hg
Pitots ✓✓ @4.7 in.H2O

	Pt#	Time	Static	Ts	Delta P	Delta H	Vm Cu. Ft.	TMi	TMo	Oven	Probe	Exit	Vac. in.Hg
0	B1	14:10		1788	.01	1.0	790.917	81	81	243	N/A	67	2.0
	2		:06	1849	.03	1.0	792.4	84	82	239		65	2.0
5	3	:15		1861	.04	1.0	793.9	85	82	238		64	2.0
	4			1815	.04	1.0	795.4	86	83	244		64	2.0
10	5	:20		1759	.03	1.0	796.9	87	83	242		65	2.0
	6			1735	.03	1.0	798.4	88	84	243		64	2.0
15	7	:25		1770	.04	1.0	799.9	90	85	241		64	2.0
	8			1800	.05	1.0	801.4	91	86	242		63	2.0
20	9	:30		1822	.06	1.0	802.9	92	87	243		63	2.0
	10			1830	.05	1.0	804.4	92	87	239		64	2.0
25	11	:35		1812	.03	1.0	805.9	92	88	242		64	2.0
	12			1755	.02	1.0	807.4	93	88	244		65	2.0
30		14:40					808.927						
0	A1	14:42		1832	.04	1.0	808.927	91	89	241		67	2.0
	2			1854	.04	1.0	810.4	92	89	245		65	2.0
5	3	:47		1876	.04	1.0	811.9	93	90	245		65	2.0
	4			1846	.05	1.0	813.4	94	91	244		66	2.0
10	5	:52		1821	.04	1.0	814.9	95	91	242		66	2.0
	6			1745	.03	1.0	816.4	95	92	242		66	2.0
15	7	:57		1724	.03	1.0	817.9	95	92	244		65	2.0
	8			1860	.05	1.0	819.4	94	92	243		64	2.0
20	9	15:02		1833	.05	1.0	820.9	94	92	244		64	2.0
	10			1788	.03	1.0	822.4	94	92	242		64	2.0
25	11	:07		1810	.02	1.0	823.9	95	92	242		63	2.0
	12			1755	.02	1.0	825.4	96	92	241		63	2.0
60		15:12					826.941						

36.024

FIELD DATA

Plant: COMM
Date: 2-7-13
Repetition: 7
Location (Source #): Flare Ex
Operator: LW, TH
Control Console#: 2
Sample Train#: 02
Barometric Pressure: 29.9
Ambient Temperature: 71
Assumed Moisture: 4%
Stack Diameter: 44.0"
Meter H: 1.472
C Factor: .84
Meter Co-Effiecent: 1.021
Nozzle Diameter: 1/2"
Probe Length: 5'
Filter Number: —

IMPINGERS

	Initial	Final
H_2O #1	100	128
H_2O #2	100	112
#3	-0-	2
#4	210.4	213.7 (3.3)
#5	—	
#6	—	
		45.3

CO2 O2

Pretest Leak Check
Meter 0.000 cu.ft.@ 5 in.Hg
Pitots NV @ 9.2 in. H2O

Post Test Leak Check
Meter cu.ft@ in.Hg
Pitots @ in.H2O

Pt#	Time	Static	Ts	Delta P	Delta H	Vm Cu. Ft.	TMi	TMo	Oven	Probe	Exit	Vac. in Hg
A1	15:30		1466	.01	1.0	827.103	92	92	249	N/A	63	2.0
2		:05	1857	.02	1.0	828.6	92	92	247		61	2.0
3	:35		1842	.04	1.0	830.1	92	92	245		61	2.0
4			1822	.04	1.0	831.6	92	91	242		61	2.0
5	:40		1834	.03	1.0	833.1	93	91	242		62	2.0
6			1612	.02	1.0	834.6	93	91	245		62	2.0
7	:45		1454	.02	1.0	836.1	93	91	244		62	2.0
8			1684	.03	1.0	837.6	93	91	243		63	2.0
9	:50		1774	.04	1.0	839.1	93	91	243		63	2.0
10			1884	.04	1.0	840.6	93	90	243		63	2.0
11	:55		1810	.02	1.0	842.1	93	91	242		64	2.0
12			1725	.02	1.0	843.6	93	91	243		63	2.0
	16:00					845.135						
B1	16:02		1817	.02	1.0	845.135	92	90	250		66	2.0
2			1831	.03	1.0	846.6	94	91	246		64	2.0
3	:07		1932	.04	1.0	848.1	94	91	245		64	2.0
4			1870	.04	1.0	849.6	94	91	244		65	2.0
5	:12		1848	.02	1.0	851.1	95	91	243		64	2.0
6			1693	.02	1.0	852.6	95	92	241		64	2.0
7	:17		1771	.03	1.0	854.1	95	92	244		64	2.0
8			1699	.04	1.0	855.6	96	92	244		63	2.0
9	:22		1791	.04	1.0	857.1	96	93	242		63	2.0
10			1810	.04	1.0	858.6	96	93	243		63	2.0
11	:27		1768	.02	1.0	860.1	96	93	241		63	2.0
12			1697	.02	1.0	861.6	96	93	243		63	2.0
	16:32					863.144						

36,041

FIELD DATA

Plant: COMM
Date: 2-7-13
Repetition: 8
Location (Source #): Flare Ex
Operator: LW, TM
Control Console#: 2
Sample Train#: 02
Barometric Pressure: 29.9
Ambient Temperature: 68
Assumed Moisture: 4%
Stack Diameter: 44.0"
Meter H: 1.472
C Factor: .84
Meter Co-Effiecent: 1.021
Nozzle Diameter: 1/2"
Probe Length: 5'
Filter Number: —

Pretest Leak Check
Meter 0.000 cu.ft.@ 5" in.Hg
Pitots ✓✓ @3.8 in. H2O

Post Test Leak Check
Meter 0.000 cu.ft@ 5 in.Hg
Pitots ✓✓ @3.9 in.H2O

IMPINGERS

	Initial	Final
H_2O < #1	100	130
#2	100	112
#3	-0-	2
#4	213.7	215.9 (2,2)
#5	—	
#6	—	46.2

CO2 O2

	Pt#	Time	Static	Ts	Delta P	Delta H	Vm Cu. Ft.	TMi	TMo	Oven	Probe	Exit	Vac. in Hg
0	B1	16:45		1790	.02	1.0	863.257	92	92	243	N/A	62	2.0
	2		:07	1815	.03	1.0	864.8	92	92	246		58	2.0
5	3	:50		1793	.03	1.0	866.3	93	92	245		58	2.0
	4			1776	.04	1.0	867.8	93	91	244		57	2.0
10	5	:55		1764	.03	1.0	869.3	93	91	244		57	2.0
	6			1753	.02	1.0	870.8	94	91	244		57	2.0
15	7	17:00		1689	.02	1.0	872.3	94	91	244		56	2.0
	8			1854	.05	1.0	873.8	94	91	245		56	2.0
20	9	:05		1765	.05	1.0	875.3	94	91	242		56	2.0
	10			1780	.05	1.0	876.8	94	92	244		57	2.0
25	11	:10		1671	.04	1.0	878.3	94	91	244		57	2.0
	12			1712	.02	1.0	879.8	94	91	244		57	2.0
30		17:15					881.350						
0	A1	17:17		1798	.03	1.0	881.350	92	92	247		57	2.0
	2			1804	.04	1.0	882.9	93	91	250		59	2.0
5	3	:22		1851	.04	1.0	884.4	93	91	244		58	2.0
	4			1863	.03	1.0	885.9	94	91	244		58	2.0
10	5	:27		1831	.03	1.0	887.4	93	90	247		58	2.0
	6			1785	.02	1.0	888.9	95	91	245		58	2.0
15	7	:32		1708	.02	1.0	890.4	93	90	243		58	2.0
	8			1859	.04	1.0	891.9	94	90	245		59	2.0
20	9	:37		1768	.05	1.0	893.4	94	90	243		59	2.0
	10			1719	.04	1.0	894.9	94	91	242		59	2.0
25	11	:42		1841	.02	1.0	896.4	93	90	243		57	2.0
	12			1741	.02	1.0	897.9	93	90	244		58	2.0
30		17:47					899.419						

36.142

FIELD DATA

Plant: COMM
Date: 2-8-13
Repetition: 9
Location (Source #): Flare Ex.
Operator: LW, TA
Control Console#: 2
Sample Train#: 02
Barometric Pressure: 30.1
Ambient Temperature: 66
Assumed Moisture: 3%
Stack Diameter: 44.0"
Meter H: 1.472
C Factor: .84
Meter Co-Effiecent: 1.021
Nozzle Diameter: 1/2"
Probe Length: –
Filter Number:

IMPINGERS

	Initial	Final
H_2O #1	100	130
#2	100	114
#3	-0-	2
SG #4	200.0g	205.6
#5	–	
#6	–	52.6

CO2 O2

Pretest Leak Check
Meter 0.000 cu.ft.@ 5 in.Hg
Pitots ✓✓ @4.2 in. H2O

Post Test Leak Check
Meter 0.000 cu.ft@ 5 in.Hg
Pitots ✓✓ @4.8 in.H2O

Pt#	Time	Static	Ts	Delta P	Delta H	Vm Cu. Ft.	TMi	TMo	Oven	Probe	Exit	Vac. in Hg
A1	9:25		1775	.01	1.0	899.606	63	63	243	NA	65	2.0
2		-.06	1886	.02	1.0	901.1	64	64	242		54	2.0
3	:30		1924	.03	1.0	902.6	66	64	244		54	2.0
4			1890	.03	1.0	904.1	68	65	242		53	2.0
5	:35		1887	.02	1.0	905.6	70	66	240		54	2.0
6			1777	.01	1.0	907.1	71	67	242		56	2.0
7	:40		1691	.02	1.0	908.6	73	68	239		58	2.0
8			1844	.02	1.0	910.1	74	69	240		58	2.0
9	:45		1803	.04	1.0	911.6	75	70	242		59	2.0
10			1745	.03	1.0	913.1	76	71	241		60	2.0
11	:50		1809	.03	1.0	914.6	77	72	242		60	2.0
12			1732	.01	1.0	916.1	78	73	242		61	2.0
	9:55					917.585						
0 B1	9:57		1750	.01	1.0	917.585	78	75	246		62	2.0
2			1932	.02	1.0	919.1	80	76	243		60	2.0
5 3	10:02		1891	.03	1.0	920.6	81	76	244		60	2.0
4			1845	.02	1.0	922.1	82	78	245		60	2.0
10 5	:07		1875	.01	1.0	923.6	83	78	241		61	2.0
6			1783	.02	1.0	925.1	84	79	242		61	2.0
15 7	:12		1781	.02	1.0	926.6	85	80	241		61	2.0
8			1826	.04	1.0	928.1	85	81	242		61	2.0
20 9	:17		1743	.04	1.0	929.6	86	82	242		60	2.0
10			1831	.04	1.0	931.1	87	82	244		61	2.0
25 11	:22		1711	.03	1.0	932.6	87	83	242		61	2.0
12			1688	.01	1.0	934.1	87	83	242		61	2.0
60	10:27					935.673						

36.067

FIELD DATA

Plant: COMM
Date: 2-8-13
Repetition: 10
Location (Source #): Flare Ex
Operator: LW, TA
Control Console#: 2
Sample Train#: 02
Barometric Pressure: 30.1
Ambient Temperature: 70
Assumed Moisture: 3%
Stack Diameter: 44.0"
Meter H: 1.472
C Factor: .84
Meter Co-Effiecent: 1.021
Nozzle Diameter: 1/2"
Probe Length: 5'
Filter Number: —

IMPINGERS

	Initial	Final
#1	100	122
#2	100	110
#3	—0—	2
#4	205.6	210.1 (4.5)
#5	—	
#6	—	38.3

CO2 O2

Pretest Leak Check
Meter 0.000 cu.ft.@ 4 in.Hg
Pitots ✓ @ 4.2 in. H2O

Post Test Leak Check
Meter 0.000 cu.ft@ 5 in.Hg
Pitots ✓ @ 3.7 in.H2O

Pt#	Time	Static	Ts	Delta P	Delta H	Vm Cu. Ft.	TMi	TMo	Oven	Probe	Exit	Vac. in.Hg
B1	12:13		1690	.01	1.0	935.734	86	86	241	N/A	65	2.0
2			1534	.01	1.0	937.3	86	86	244		61	2.0
3	:18	-.07	1751	.02	1.0	938.8	87	86	244		59	2.0
4			1892	.02	1.0	940.3	88	87	243		59	2.0
5	:23		1798	.02	1.0	941.8	89	87	243		60	2.0
6			1753	.01	1.0	943.3	90	87	243		60	2.0
7	:28		1410	.01	1.0	944.8	90	87	242		61	2.0
8			1366	.01	1.0	946.3	91	87	242		60	2.0
9	:33		1759	.02	1.0	947.8	91	88	241		60	2.0
10			1718	.02	1.0	949.3	91	88	243		61	2.0
11	:38		1733	.02	1.0	950.8	92	88	244		61	2.0
12			1689	.01	1.0	952.3	92	88	242		61	2.0
	12:43					953.821						
A1	12:45		1639	.01	1.0	953.821	91	89	245		65	2.0
2			1811	.02	1.0	955.3	92	89	243		63	2.0
3	:50		1795	.02	1.0	956.8	92	89	244		63	2.0
4			1784	.01	1.0	958.3	92	89	243		64	2.0
5	:55		1757	.01	1.0	959.8	92	89	244		63	2.0
6			1594	.01	1.0	961.3	92	89	242		63	2.0
7	13:00		1667	.01	1.0	962.8	92	89	244		63	2.0
8			1738	.02	1.0	964.3	92	89	243		63	2.0
9	:05		1689	.02	1.0	965.8	93	90	244		63	2.0
10			1725	.02	1.0	967.3	93	90	244		62	2.0
11	:10		1578	.01	1.0	968.8	93	90	243		63	2.0
12			1190	.01	1.0	970.3	94	90	242		63	2.0
	13:15					971.840						

36.106

FIELD DATA

Plant: COMM
Date: 2-8-13
Repetition: 11
Location (Source #): Flare Ex
Operator: LW, TA
Control Console#: 2
Sample Train#: 02
Barometric Pressure: 30.1
Ambient Temperature: 71
Assumed Moisture: 3%
Stack Diameter: 44.0"
Meter H: 1.472
C Factor: .84
Meter Co-Effiecent: 1.021
Nozzle Diameter: ½"
Probe Length: 5'
Filter Number:

IMPINGERS

	Initial	Final
H_2O < #1	100	132
#2	100	112
#3	0	2
#4	210.1	213.9 (3.8)
#5	—	
#6	—	49.8
	CO2	O2

Pretest Leak Check
Meter 0.000 cu.ft.@ 5 in.Hg
Pitots ✓✓ @3.7 in. H2O

Post Test Leak Check
Meter 0.000 cu.ft@ 5 in.Hg
Pitots ✓✓ @3.7 in.H2O

972.103

	Pt#	Time	Static	Ts	Delta P	Delta H	Vm Cu. Ft.	TMi	TMo	O-n	Probe	Exit	Vac in.Hg
0	A1	13:28		1466	.01	1.0	972.103	92	93	241	N/A	64	2.0
	2			1604	.01	1.0	973.6	94	93	242		63	2.0
5	3	:33	-.06	1737	.02	1.0	975.1	96	94	244		62	2.0
	4			1757	.02	1.0	976.6	97	95	241		62	2.0
10	5	:38		1787	.02	1.0	978.1	97	95	245		62	2.0
	6			1691	.01	1.0	979.6	96	94	243		63	2.0
15	7	:43		1459	.01	1.0	981.1	96	94	246		63	2.0
	8			1525	.01	1.0	982.6	95	93	243		62	2.0
20	9	:48		1723	.02	1.0	984.1	94	92	248		63	2.0
	10			1698	.02	1.0	985.6	93	92	249		63	2.0
25	11	:53		1724	.02	1.0	987.1	92	91	247		62	2.0
	12			1596	.01	1.0	988.6	91	90	244		62	2.0
30		13:58					990.104						
0	B1	14:00		1721	.02	1.0	990.104	89	88	245		64	2.0
	2			1746	.03	1.0	991.6	89	88	244		61	2.0
5	3	:05		1751	.02	1.0	993.1	88	87	241		59	2.0
	4			1763	.02	1.0	994.6	88	86	244		60	2.0
10	5	:10		1711	.02	1.0	996.1	87	86	245		60	2.0
	6			1393	.01	1.0	997.6	87	85	245		59	2.0
15	7	:15		1537	.01	1.0	999.1	86	84	246		59	2.0
	8			1649	.02	1.0	1000.6	85	84	245		59	2.0
20	9	:20		1785	.02	1.0	1002.1	85	83	241		60	2.0
	10			1799	.02	1.0	1003.6	85	83	241		60	2.0
25	11	:25		1779	.01	1.0	1005.1	84	82	243		59	2.0
	12			1500	.01	1.0	1006.6	83	81	240		60	2.0
30		14:30					1008.119						

36.016

FIELD DATA

Plant COMM
Date: 2-8-13
Repetition: 12
Location (Source #): Flare Ex
Operator: LW, TA
Control Console#: 2
Sample Train#: 02
Barometric Pressure: 30.1
Ambient Temperature: 70
Assumed Moisture: 3%
Stack Diameter: 44.0"
Meter H: 1.472
C Factor: .84
Meter Co-Effiecent: 1.021
Nozzle Diameter: 1/2"
Probe Length: 5'
Filter Number: —

IMPINGERS

	Initial	Final
H_2O #1	100	130
#2	100	106
#3	-0-	2
#4	213.9	216.9 (3.0)
#5	—	
#6	—	41.0

CO2 O2

Pretest Leak Check
Meter 0.000 cu.ft.@ 5 in.Hg
Pitots ✓✓ @ 4.1 in. H2O

Post Test Leak Check
Meter 0.000 cu.ft@ 5 in.Hg
Pitots ✓✓ @ 4.9 in.H2O

	P#	Time	Static	Ts	Delta P	Delta H	Vm Cu. Ft.	TMi	TMo	Oven	Probe	Exit	Vac. in Hg
0	B1	14:40	-.06	1701	.01	1.0	8.241	80	80	245	N/A	67	2.0
	2			1719	.03	1.0	9.7	80	80	238		63	2.0
5	3	:45		1833	.02	1.0	11.2	80	79	247		59	2.0
	4			1921	.02	1.0	12.7	81	79	244		59	2.0
10	5	:50		1917	.03	1.0	14.2	81	79	245		59	2.0
	6			1751	.02	1.0	15.7	82	79	244		59	2.0
15	7	:55		1314	.01	1.0	17.2	82	79	246		59	2.0
	8			1610	.01	1.0	18.7	83	80	243		59	2.0
20	9	15:00		1753	.02	1.0	20.2	85	80	241		58	2.0
	10			1767	.02	1.0	21.7	84	80	242		58	2.0
25	11	:05		1750	.01	1.0	23.2	84	81	242		58	2.0
	12			1611	.01	1.0	24.7	85	81	241		58	2.0
30		15:10					26.226						
0	A1	15:12		1595	.01	1.0	26.226	84	82	234		59	2.0
	2			1712	.02	1.0	27.7	86	83	241		60	2.0
5	3	:17		1838	.02	1.0	29.2	86	83	242		60	2.0
	4			1826	.02	1.0	30.7	86	83	248		60	2.0
10	5	:22		1705	.01	1.0	32.2	85	83	244		60	2.0
	6			1447	.01	1.0	33.7	84	82	241		59	2.0
15	7	:27		1483	.02	1.0	35.2	84	82	243		60	2.0
	8			1776	.03	1.0	36.7	85	82	242		60	2.0
20	9	:32		1783	.02	1.0	38.2	85	82	243		61	2.0
	10			1761	.02	1.0	39.7	85	81	243		60	2.0
25	11	:37		1855	.01	1.0	41.2	84	81	243		60	2.0
	12			1641	.01	1.0	42.7	84	81	241		60	2.0
30		15:42					44.215						

35.974

Appendix E
Equipment Calibrations

Armstrong Environmental Inc.
EPA Method 5
522 Series Meter Box Calibration
Pre-Test Orifice Method
English Meter Box Units, English K' Factor

CONVERSION FACTORS

1 mm Hg	=	0.13330	kPa
1 cm	=	0.39370	inch
1 mm	=	0.03937	inch
1 cu ft	=	28.32	liters

leter Box #: 2
erial #: AR2

Date: ----------> 01/07/13
Barometric Pressure: ----------> 29.60 (in. Hg)
Theoretical Critical Vacuum:---> 13.96 (in. Hg)

!!!!!!!
MPORTANT For valid test results, the Actual Vacuum should be 1 to 2 in. Hg greater than the Theoretical Critical Vacuum shown above.
MPORTANT The Critical Orifice Coefficient, K', must be entered in English units, (ft)^3*(deg R)^0.5/((in.Hg)*(min)).
!!!!!!!

---------- DRY GAS METER READINGS ----------

-CRITICAL ORIFICE READINGS-

dH	Time	Volume Initial	Volume Final	Volume Total	Initial Temps. Inlet	Initial Temps. Outlet	Final Temps. Inlet	Outlet	Orifice Serial#	K' Orifice Coefficient	Actual Vacuum	-- Ambient Temperature -- Initial	Final	Average	-- Average Temperatures -- DGM Outlet	DGM Overall	Ambient Temp
ı H2O)	(min)	(cu ft)	(cu ft)	(cu ft)	(deg F)	(deg F)	(deg F)	(deg F)	(number)	(see above)	(in Hg)	(deg F)	(deg F)	(deg F)	(deg R)	(deg R)	(deg R)
0.25	5.00	583.245	584.762	1.517	59.0	59.0	61.0	61.0	40	0.243	20.0	68.0	68.0	68.0	520.0	520.0	528.0
0.52	5.00	584.762	586.900	2.138	61.0	61.0	63.0	63.0	48	0.344	18.5	68.0	68.0	68.0	522.0	522.0	528.0
0.95	5.00	586.900	589.835	2.935	63.0	63.0	64.0	63.0	55	0.464	17.0	68.0	68.0	68.0	523.0	523.3	528.0
1.55	5.00	589.835	593.600	3.765	64.0	63.0	65.0	64.0	63	0.593	16.0	68.0	68.0	68.0	523.5	524.0	528.0
2.90	5.00	593.600	598.838	5.238	65.0	65.0	67.0	65.0	73	0.824	14.0	68.0	68.0	68.0	525.0	525.5	528.0

Page 1 of 2

********** RESULTS **********

- DRY GAS METER --- OLUME ORRECTED Vm(std) (cu ft)	VOLUME CORRECTED Vm(std) (liters)	-------- ORIFICE -------- VOLUME CORRECTED Vcr(std) (cu ft)	VOLUME CORRECTED Vcr(std) (liters)	VOLUME NOMINAL Vcr (cu ft)	-- DRY GAS METER -- CALIBRATION FACTOR Y Value (number)	Variation (number)	-------- ORIFICE -------- CALIBRATION FACTOR dH@ Value (in H2O)	Variation (in H2O)
1.524	0.1	1.563	0.1	1.581	1.026	0.004	1.445	-0.0263
2.141	0.1	2.218	0.1	2.242	1.036	0.014	1.488	0.016
2.936	0.1	2.988	0.1	3.021	1.018	-0.003	1.495	0.023
3.766	0.1	3.822	0.2	3.865	1.015	-0.006	1.489	0.017
5.242	0.2	5.306	0.2	5.365	1.012	-0.009	1.441	-0.030

Average Y -----> 1.021 **1.472 <--- Average dH@**

ote: For Calibration Factor Y, the ratio of the reading of the calibration meter to the dry gas meter, acceptable tolerance of individual values from the average is +-0.02.

For Orifice Calibration Factor dH@, the orifice differential pressure in inches of H20 that equates to 0.75 cfm of air at 68 F and 29.92 inches of Hg, acceptable tolerance of individual values from the average is +-0.2.

SIGNED: _____ Date: 1/07/13

Temperature Meter Calibrations

Meter Box #: 2
Date: 01/07/13
Calibrated By: TA

	Emtech Thermo Checker	Probe	Stack	Oven	Exit	Auxillary
Degrees F						
Point 1	32	31	32	32	31	32
Point 2	212	213	213	213	213	213
Point 3	752	751	751	751	751	752
Degrees R						
Point 1	492	491	492	492	491	492
Point 2	672	673	673	673	673	673
Point 3	1212	1211	1211	1211	1211	1212
Percent Difference						
Point 1		-0.20325	0	0	-0.20325	0
Point 2		0.14881	0.14881	0.14881	0.14881	0.14881
Point 3		-0.08251	-0.08251	-0.08251	-0.08251	0

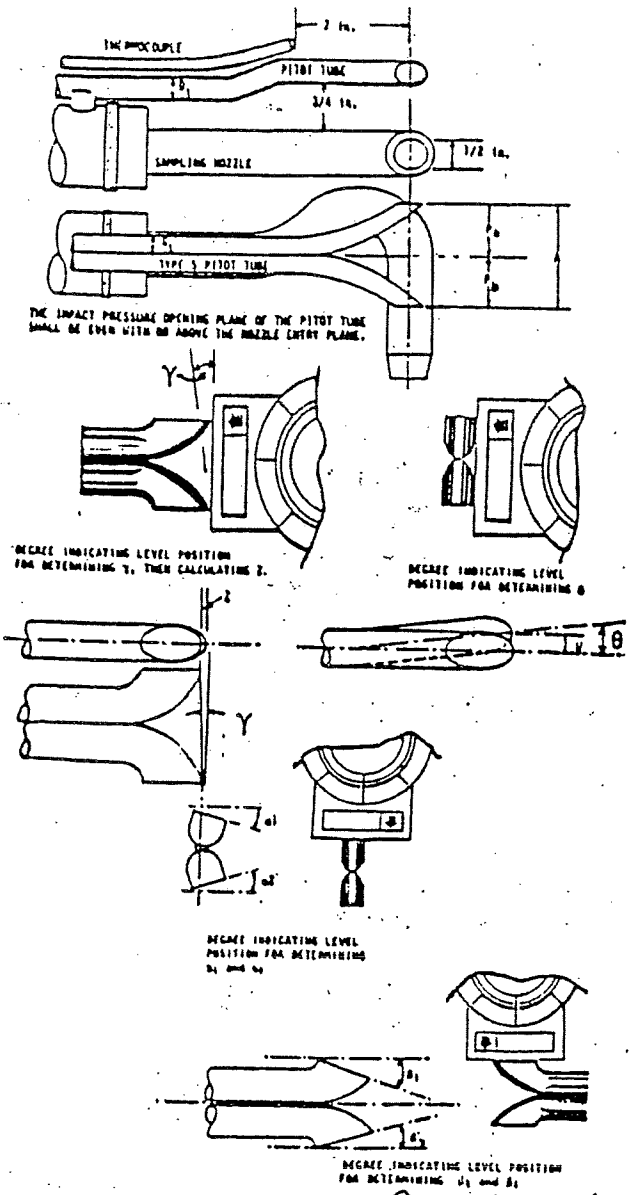
Barometer Calibrations						
Reference Barometer - Princo Instruments Hg in Glass Model #453, Serial #10030						
Date	Time	Temp. F	Watch	Actual	Diff, %	Watch Owner
2/3/12	2:40	70	29.2	29.2	—	TA
3/14/12	8:50	68	29.4	29.4	—	TA
4/24/12	3:35	80	29.2	29.2	—	TA
5/22/12	2:35	80	29.3	29.3	—	TA
6/9/12	6:45	76	29.2	29.2	—	TA
6/29/12	12:25	76	29.3	29.3	—	TA
7/18/12	8:05	80	29.4	29.4	—	TA
8/16/12	8:10	80	29.3	29.3	—	TA
9/15/12	7:37	72	29.5	29.5	—	TA
10/13/12	3:20	80	29.2	29.2	—	TA
10/29/12	2:20	70	29.5	29.5	—	TA
11/22/12	9:07	68	29.4	29.4	—	TA
12/02/12	11:20	68	29.55	29.55	—	TA
1/7/13	8:15	68	29.6	29.6	—	TA
2/28/13	9:07	68	29.6	29.6	—	TA

PITOT TUBE INSPECTION DATA SHEET

Company Name: Dalton

Pre-sample Date 10/14/11

Post Sample Date 10/31/11



✓	level?	✓
NO	obstructions?	NO
NO	damaged?	NO
0	$-10° < \alpha_1 < +10°$	0
0	$-10° < \alpha_2 < +10°$	0
0	$-5° < \beta_1 < +5°$	0
0	$-5° < \beta_2 < +5°$	0
0	γ	0
0	θ	0
1.098	A	1.098
.548	$1.05\ D_t < P_a < 1.5\ D_t$	.548
.550	$1.05\ D_t < P_b < 1.5\ D_t$	.550
.375	$3/16" \leq D_t \leq 3/8"$	.375
0	$A \tan \gamma < 0.125"$	0
0	$A \tan \theta < 0.03125"$	0
✓	$P_a = P_b \pm 0.063"$	✓

Comments: WESP Moisture + Traverse

Pitot tube/probe number 6555 meets or exceeds all specifications criteria and/or applicable design features* and is hereby assigned a pitot tube calibration factor of 0.84.

Signature [signature] [signature]

Date 10/14/11 10/31/11

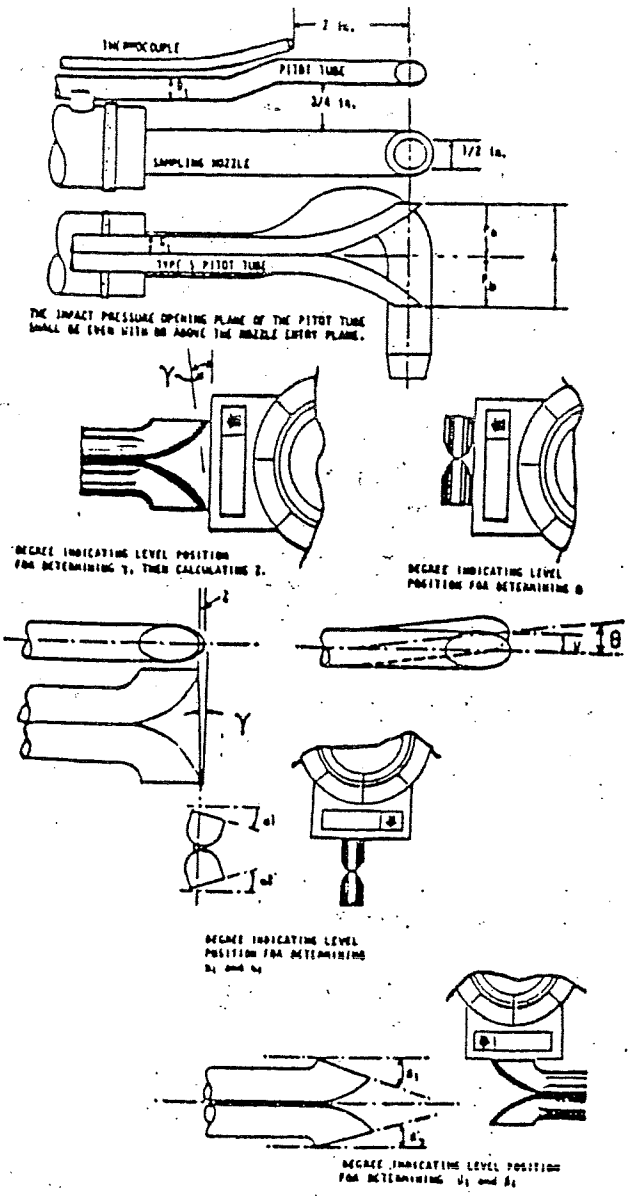
*See 40 CFR 60, Vol. 42, No. 160, Method 2. Verify the minimum 2 inch setback of the thermocouple and the minimum 3/4 inch separation between the pitot tube and the nozzle as shown at the top of this page.

PITOT TUBE INSPECTION DATA SHEET

Company Name: COMM

Pre-sample Date _____

Post Sample Date 2/12/13



	level?	✓
	obstructions?	NO
	damaged?	NO
	$-10° < \alpha_1 < +10°$	0
	$-10° < \alpha_2 < +10°$	0
	$-5° < \beta_1 < +5°$	0
	$-5° < \beta_2 < +5°$	0
	γ	0
	θ	0
	A	1.098
	$1.05\ D_t < P_a < 1.5\ D_t$	.548
	$1.05\ D_t < P_b < 1.5\ D_t$	.550
	$3/16" \leq D_t \leq 3/8"$	.375
	$A \tan \gamma < 0.125"$	0
	$A \tan \theta < 0.03125"$	0
	$P_a = P_b \pm 0.063"$	✓

Comments: _____

Pitot tube/probe number 6555 meets or exceeds all specifications criteria and/or applicable design features* and is hereby assigned a pitot tube calibration factor of 0.84.

Signature _____

Date 2/12/13

*See 40 CFR 60, Vol. 42, No. 160, Method 2. Verify the minimum 2 inch setback of the thermocouple and the minimum 3/4 inch separation between the pitot tube and the nozzle as shown at the top of this page.

Calibration Report

Device/Meter Name:	2200_Laf_Demo	Downloaded on:	02/08/2013 16:19:29
Company Name:	Southern Flow Zedi		
Site/Well Name:	Laf Demo 11-2	ModWorX Pro:	4.0.5
Field/Lease Name:	Lafayette	Device Type:	Scanner 2200
Location Name:	Lafayette	Firmware:	4.00
Legal Description:	Scanner 2200 Del	Board ID:	0

Analog Input #1

Calibration	Verification
Factory	Factory

Analog Input #2

Calibration	Verification
Factory	Factory

Differential Pressure

Zero Offset On:	2/2/2013	10:13:14	
Operator:	<Port 2 Default>		
Absolute Offset	-2.54835	In H2O	

Calibration	Verification
Factory	Factory

Process Temperature

Calibration	Verification
Factory	Factory

Propane

Calibrated On:	2/2/2013	10:11:11	
Operator:	<Port 2 Default>		
Linear K-Factor	329.21	pulses/ACF	

Static Pressure

Calibrated On:	2/2/2013	10:59:24	
Operator:	<Port 2 Default>		
Zero Offset On:	2/2/2013	10:14:03	
Operator:	<Port 2 Default>		
Absolute Offset	0	PSIG	

	Calibration			Verification
	Actual	Measured		Factory
1	0	2.7203	PSIG	
2	40.1	42.7323		
3	89.9	92.5724		

Turbine #2

Calibrated On:	2/2/2013	14:08:56	
Operator:	<Port 2 Default>		
Linear K-Factor	329.21	pulses/ACF	

Configuration Report

Device/Meter Name: 2200_Laf_Demo
Company Name: Southern Flow Zedi
Site/Well Name: Laf Demo 11-2
Field/Lease Name: Lafayette
Location Name: Lafayette
Legal Description: Scanner 2200 Demo

Downloaded on

ModWorX Pro:
Device Type:
Firmware:
Board ID:

Description	Value	Units
System Details		
Device Type	Scanner 2200	
Product Code	$01C1	
Product ID	193	
Register Table Version	15	
Firmware Version	4	
Manufacture Date	07-2010	
Sales Date	07-2010	
Main Board Serial Number	0	
Device Serial Number	1172	
Connected Device Port	2	
Internal System Sample Period	1 min	
Communication - Port 1		
Port Usage	Modbus Master	
Modbus Polling Block 1		
Polling Block Type	Disabled	
Modbus Polling Block 2		
Polling Block Type	Disabled	
Modbus Polling Block 3		
Polling Block Type	Disabled	
Modbus Polling Block 4		
Polling Block Type	Disabled	
Communication - Port 2		
Port Usage	Modbus Slave with Radio Controller	
Port Settings		
Slave Address	1	
Baud Rate	9600 baud	
Bus Delay	10	msec
Bus Timeout	50	msec
Radio Settings		
Power Mode	On/Off Times	
Power On Time	6:00:00	
Power Off Time	18:00:00	
Enable Sleep Control	No	
Awake Time	Disabled	
Sleep Time	Disabled	
Sleep Cycle Period	Disabled	
Flow Run #1		
Flow Run Name	Demo Site11-2	
Calculation Period	5 sec	
Rate Damping Factor	No damping	

Flow Rate: Calculation Method	AGA-7	
Wet Correction	No wet correction	
Flow Run Accumulation	Gas Phase Only	
Fluid Properties		
Calculation Method	AGA-8 Gross	
Calculation Interval	5 sec	
Input Assignments		
Differential Pressure Source	Integrated Differential Pressure	
Temperature Source	Integrated RTD	
Uncorrected Volume Source		
Turbine Source	Turbine 2	
Base Conditions		
Base Temperature	68	Deg F
Base Pressure	14.7	psi
Atmospheric Pressure	14.7	psi
Reference Conditions	United States (14.73 psi, 60 F)	
Isentropic Exponent	1.3	
Viscosity	0.00897	cP
Specific Gravity	0.87	
Heating Value	2000	BTU/SCF
Gas Fraction	No wet correction	
Gas Composition		
Analysis Ref. No.		
Carbon Dioxide (CO2)	0	%
Nitrogen (N2)	0	%
Display Units		
Volumetric Units	SCF/hour	
Mass Units	LBM	
Energy Units	MMBTU	
Input: Analog #1		
Sensor Name		
Sensor Model Number		
Sensor Serial Number		
Sampling Period	Disabled	
Damping Factor	No damping	
Input Signal Type	1 to 5 Volt	
Transducer Type	Static Pressure Transducer	
Enable Override	No	
Override Value	0	PSIG
Failure Value	0	PSIG
Low Pressure Cutoff	0	PSIG
Transducer Range Low	0	PSIG
Transducer Range High	1000	PSIG
Input: Analog #2		
Sensor Name		
Sensor Model Number		
Sensor Serial Number		
Sampling Period	Disabled	
Damping Factor	No damping	
Input Signal Type	1 to 5 Volt	
Transducer Type	Static Pressure Transducer	

Enable Override	No	
Override Value	0	PSIG
Failure Value	0	PSIG
Low Pressure Cutoff	0	PSIG
Transducer Range Low	0	PSIG
Transducer Range High	1000	PSIG
Input: Differential Pressure		
Sensor Name		
Sensor Model Number		
Sensor Serial Number	MV18F0827B	
Sampling Period	1 sec	
Damping Factor	No damping	
Enable Override	No	
Override Value	0	In H2O
Failure Value	0	In H2O
Low Pressure Cutoff	0.1	In H2O
Sensor Range Low	0	In H2O
Sensor Range High	400	In H2O
Input: Process Temperature		
Sensor Name		
Sensor Model Number		
Sensor Serial Number		
Sampling Period	5 sec	
Damping Factor	No damping	
Enable Override	No	
Override Value	0	Deg F
Failure Value	60	Deg F
Low Temperature Cutoff	-150	Deg F
Sensor Range Low	-40	Deg F
Sensor Range High	800	Deg F
Input: Propane		
Meter Name	Propane	
Model Number	NuFlo 2" Gas (Low)	
Serial Number	2SBG 21079	
Nominal K-Factor	329.21	pulses/ACF
Sampling Period	5 sec	
Damping Factor	No damping	
Input Threshold	Pulse Input 1	
Enable Override	No	
Override Value	0	CF/hour
Low Input Freq Cutoff	5	Hz
Low Flow Rate Cutoff	4.0104	CF/hour
Input: Static Pressure		
Sensor Name		
Sensor Model Number		
Sensor Serial Number	MV18F0827B	
Sampling Period	1 sec	
Damping Factor	No damping	
Enable Override	No	
Override Value	41594.7	In H2O
Failure Value	0	In H2O

	Low Pressure Cutoff	0.1	In H2O
	Sensor Range Low	0	In H2O
	Sensor Range High	41594.7	In H2O
-	**Input: Turbine #2**		
	Meter Name		
	Model Number	NuFlo 2" Gas (Low)	
	Serial Number	2SBG 21079	
	Nominal K-Factor	325	pulses/ACF
	Sampling Period	5 sec	
	Damping Factor	No damping	
	Input Threshold	Medium (50mV)	
	Enable Override	No	
	Override Value	0	ACF/hour
	Low Input Freq Cutoff	5	Hz
	Low Flow Rate Cutoff	4.0104	ACF/hour
-	**Output: Analog 1**		
	Output Mode	Disabled	
-	**Output: Digital 1**		
	Output Mode	Disabled	
-	**Output: Digital 2**		
	Output Mode	Disabled	
-	**Archive**		
	Contract Hour	4:00:00	
	Interval Period	1 min	
	Enable Partial Records	No	
	Number of Daily Records	768 Total	
	Number of Interval Records	6392 Total (4 days, 10.5 hrs)	
	Number of Event Records	1152 Total	
	Number of Parameters	6	
	Parameter #1	Real Date	
	Parameter #2	Real Time	
	Parameter #3	Static Pressure (Absolute)	In H2O-abs
	Parameter #4	Process Temperature	Deg F
	Parameter #5	Turbine 2 Flow Rate	ACF/hour
	Parameter #6	Flow Run 1 Flow Rate	SCF/hour
-	**Device Display**		
	LCD Settings		
	Display Contrast	45.2	%
	Display Toggle Period	4	sec
	Display #1		
	Display Item	Flow Run 1 Flow Rate	SCF/hour
	Description	RATE	
	Decimal Places	1	
	Update Rate	1	sec
	Display Text Format	Description & Units	
-	**User Modbus Configuration**		
		Source Type	
	Register 1 [Address: 9100]	8026 Flow Run 1 Grand Total	
	Register 2 [Address: 9102]	8028 Flow Run 1 Flow Rate	
	Register 3 [Address: 9104]	8030 Flow Run 1 Current Day Volume	

Register 4 [Address: 9106]	8036	Flow Run 1 Previous Day Volume	
Register 5 [Address: 9108]	8058	Flow Run 1 Grand Energy Total	
Register 6 [Address: 9110]	8060	Flow Run 1 Energy Flow Rate	
Register 7 [Address: 9112]	8062	Flow Run 1 Current Day Energy Total	
Register 8 [Address: 9114]	8068	Flow Run 1 Previous Day Energy Total	
Register 9 [Address: 9116]	8336	Static Pressure (Gauge)	
Register 10 [Address: 9118]	8380	Differential Pressure	
Register 11 [Address: 9120]	8424	Process Temperature	
Register 12 [Address: 9122]	8216	Propane Grand Total Volume	
Register 13 [Address: 9124]	8218	Propane Flow Rate	
Register 14 [Address: 9126]	8220	Propane Current Day Volume	
Register 15 [Address: 9128]	8226	Propane Previous Day Volume	
Register 16 [Address: 9130]	8558	Supply Voltage	
Register 17 [Address: 9132]	8560	Battery Voltage	
Register 18 [Address: 9134]	8276	Turbine 2 Grand Total Volume	
Register 19 [Address: 9136]	8278	Turbine 2 Flow Rate	
Register 20 [Address: 9138]	8280	Turbine 2 Current Day Volume	
Register 21 [Address: 9140]	8286	Turbine 2 Previous Day Volume	
Register 22 [Address: 9142]	8468	Analog Input 1	
Register 23 [Address: 9144]	8512	Analog Input 2	
Register 24 [Address: 9146]	8006	Real Date	
Register 25 [Address: 9148]	8008	Real Time	

: 02/08/2013 15:55:36

4.0.5
Scanner 2200
4.00
0

Turbine Meter Calibration

Y = 1.000

Serial Number	2SBG21079
Meter Size	2" Low
Material Number	9A-100003397
Shop Order	111981564

Cal Date: 2/9/2011

	Hertz		ACFM		Pulses / ACF
Mtr Freq #1	34.790325	Flow Rate #1	6.445781	kFactor #1	323.842755
Mtr Freq #2	35.757814	Flow Rate #2	6.573292	kFactor #2	326.391821
Mtr Freq #3	48.565822	Flow Rate #3	8.841156	kFactor #3	329.589182
Mtr Freq #4	60.078102	Flow Rate #4	10.920412	kFactor #4	330.086993
Mtr Freq #5	78.264141	Flow Rate #5	14.182186	kFactor #5	331.108929
Mtr Freq #6	93.590783	Flow Rate #6	16.915903	kFactor #6	331.962598
Mtr Freq #7	115.722766	Flow Rate #7	20.873797	kFactor #7	332.635501
Mtr Freq #8	135.844458	Flow Rate #8	24.458663	kFactor #8	333.242565
Mtr Freq #9	148.593614	Flow Rate #9	26.729834	kFactor #9	333.545534
Mtr Freq #10	167.698723	Flow Rate #10	30.074077	kFactor #10	334.571316

Mean kFactor 329.207036 p/acf

Linearity +/- 1.629455

The above calibration was performed using instrumentation traceable to the National Institute of Standards (NIST).

The above meter was manufactured and tested under Quality Standard ISO-9001:2008.

Appendix F
Standard Gas Certifications

Air Liquide America
Specialty Gases LLC

RATA CLASS

Dual-Analyzed Calibration Standard

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

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory

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

P.O. No.: ALAS-56936
Project No.: 05-88758-001

Customer

AIR LIQUIDE AMERICA
GAS & ALLOY
801 W NORTH CARRIER PKWY
GRAND PRAIRIE TX 75050-1003

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: CC137 **Certification Date:** 16Jun2010 **Exp. Date:** 15Jun2013
Cylinder Pressure*:** 2000 PSIG

COMPONENT	CERTIFIED CONCENTRATION (Moles)		ANALYTICAL ACCURACY**	TRACEABILITY
CARBON MONOXIDE	25.1	PPM	+/- 1%	Direct NIST and VSL
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 2635	02Oct2010	KAL003166	25.21 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS I/ULTRAMAT 6E/N1-VN-0545	14Jun2010	NDIR

ANALYZER READINGS

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

First Triad Analysis

CARBON MONOXIDE

Date: 08Jun2010	Response Unit:MV	
Z1 = 0.00000	R1 = 25.22000	T1 = 25.20000
R2 = 25.23000	Z2 = 0.00000	T2 = 25.18000
Z3 = 0.00000	T3 = 25.18000	R3 = 25.23000
Avg. Concentration:	25.13	PPM

Second Triad Analysis

Date: 16Jun2010	Response Unit: MV	
Z1 = 0.00000	R1 = 25.30000	T1 = 25.20000
R2 = 25.25000	Z2 = 0.00000	T2 = 25.20000
Z3 = 0.00000	T3 = 25.20000	R3 = 25.25000
Avg. Concentration:	25.14	PPM

Calibration Curve

Concentration = A + Bx + Cx2 + Dx3 + Ex4	
r = 0.999997	
Constants:	A = 0.00643118
B = 1.024142342	C = -0.0009733
D = 0	E = 0

APPROVED BY: _____
JEFF CROTEAU

AIR LIQUIDE SPECIALTY GASES Scott

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

RATA CLASS

Dual-Analyzed Calibration Standard

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A22010
AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 58250-71-65000
Project No.: 05-89250-002

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

ANALYTICAL INFORMATION Gas Type : NONE

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

Cylinder Number: ALM031150
Cylinder Pressure*:** 2000 PSIG
Certification Date: 11Jul2010
Exp. Date: 12Jul2018

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
CARBON MONOXIDE	8.87 PPM	+/- 1%	Direct NIST and VSL
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 2635	02Oct2010	KAL003166	25.21 PPM	CARBON MONOXIDE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
SIEMENS II/ULTRAMAT 6E/N1-VN-0548	06Jul2010	NDIR

ANALYZER READINGS

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

First Triad Analysis
CARBON MONOXIDE
Date: 06Jul2010 Response Unit: PPM
Z1=0.00000 R1=25.20000 T1=8.75000
R2=25.20000 Z2=0.00000 T2=8.75000
Z3=0.00000 T3=8.75000 R3=25.20000
Avg. Concentration: 8.897 PPM

Second Triad Analysis
Date: 13Jul2010 Response Unit: PPM
Z1=0.00000 R1=25.22000 T1=8.73000
R2=25.21000 Z2=0.00000 T2=8.72000
Z3=0.00000 T3=8.69000 R3=25.25000
Avg. Concentration: 8.850 PPM

Calibration Curve
Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.999997
Constants: A=0.006431183
B=1.024142342 C=-0.0009733
D=0 E=0

Special Notes:
The expiration date has been extended without re-assay per EPA 600/R23-23/542.

QUALITY ASSURANCE

APPROVED BY: SARAH HERBERT
(signature on file)

AIR LIQUIDE | Air Liquide America Specialty Gases LLC | Scott™

RATA CLASS

Dual-Analyzed Calibration Standard

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

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A22012

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

P.O. No.: 59748-71-65000
Document # : 46609118-015

Customer
CLEAN AIR ENGINEERING

500 WEST WOOD STREET
PALATINE IL 60067
US

ANALYTICAL INFORMATION Gas Type : NONE

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

Cylinder Number: ALM023799 **Certification Date:** 27Jun2012 **Exp. Date:** 27Jun2015
Cylinder Pressure*:** 1950 PSIG **Batch No:** TRO0060971

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
PROPANE	8.44 PPM	+/- 1%	Direct NIST and VSL
AIR	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	02Oct2013	ALM002439	99.50 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3400/7506	14Jun2012	TCD/FID

ANALYZER READINGS

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

First Triad Analysis

PROPANE
Date: 27Jun2012 Response Unit: AREA
Z1=0.00000 R1=2645098. T1=222869.0
R2=2640869. Z2=0.00000 T2=222160.0
Z3=0.00000 T3=221949.0 R3=2623861.
Avg. Concentration: 8.442 PPM

Second Triad Analysis

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.9999
Constants: A=0.044239133
B=3.65176E-05 C=0
D=0 E=0

Special Notes: DELIVERY DOC# IS 46607392

APPROVED BY: _____
JEFF CROTEAU

AIR LIQUIDE SPECIALTY GASES Scott

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

RATA CLASS

Dual-Analyzed Calibration Standard

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A22010
AIR LIQUIDE AMERICA SPECIALTY GASES LLC
1290 COMBERMERE STREET
TROY, MI 48083

P.O. No.: 58028-71-65000
Project No.: 05-86284-014

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

ANALYTICAL INFORMATION Gas Type : NONE

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

Cylinder Number: ALM030575
Cylinder Pressure*:** 1900 PSIG
Certification Date: 05Apr2010
Exp. Date: 06Apr2018

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
PROPANE	3.04 PPM	+/- 1%	Direct NIST and VSL
AIR	BALANCE		

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

REFERENCE STANDARD

TYPE/SRM NO.	EXPIRATION DATE	CYLINDER NUMBER	CONCENTRATION	COMPONENT
NTRM 1668	02Oct2012	ALM029313	98.80 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3400/7506	31Mar2010	TCD/FID

ANALYZER READINGS

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

First Triad Analysis
PROPANE
Date: 05Apr2010 Response Unit: AREA
Z1=0.00000 R1=2566032. T1=78910.00
R2=2561899. Z2=0.00000 T2=79148.00
Z3=0.00000 T3=79022.00 R3=2576724.
Avg. Concentration: 3.040 PPM

Second Triad Analysis

Calibration Curve
Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.999997
Constants: A=-0.00233747
B=3.73349E-05 C=0
D=0 E=0

Special Notes:
The expiration date has been extended without re-assay per EPA 600/R23-23/542.

QUALITY ASSURANCE

APPROVED BY: SARAH HERBERT
(signature on file)

AIR LIQUIDE Air Liquide America Specialty Gases LLC

Scott™

RATA CLASS

Dual-Analyzed Calibration Standard

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

CERTIFICATE OF ACCURACY: EPA Protocol Gas

Assay Laboratory - PGVP Vendor ID: A22012

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

P.O. No.: 59933-71-65000
Document # : 47534369-013

Customer
CLEAN AIR ENGINEERING

DON ALLEN
500 WEST WOOD STREET
PALATINE IL 60067
US

ANALYTICAL INFORMATION Gas Type : NONE

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

Cylinder Number: AAL17633 **Certification Date:** 10Sep2012 **Exp. Date:** 10Sep2020
Cylinder Pressure*:** 1900 PSIG **Batch No:** TRO0065782

COMPONENT	CERTIFIED CONCENTRATION (Moles)	ACCURACY**	TRACEABILITY
PROPANE	5.14 PPM	+/- 1%	Direct NIST and VSL
AIR	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	02Oct2013	ALM002439	99.50 PPM	PROPANE

INSTRUMENTATION

INSTRUMENT/MODEL/SERIAL#	DATE LAST CALIBRATED	ANALYTICAL PRINCIPLE
VARIAN/3400/7506	10Sep2012	TCD/FID

ANALYZER READINGS

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

First Triad Analysis

PROPANE
Date: 10Sep2012 Response Unit: AREA
Z1=0.00000 R1=2603234. T1=130435.0
R2=2600146. Z2=0.00000 T2=129927.0
Z3=0.00000 T3=130402.0 R3=2606665.
Avg. Concentration: 5.140 PPM

Second Triad Analysis

Calibration Curve

Concentration=A+Bx+Cx2+Dx3+Ex4
r=0.999989526
Constants: A=0.15995939
B=3.82866E-05 C=0
D=0 E=0

APPROVED BY: ROBERT LESNIAK

Appendix G
Method 22 Visible Emissions Data Sheets

METHOD 22 - FUGITIVE OR SMOKE EMISSION INSPECTION

COMM Enclosed Flare - Observation Datasheet
Job #11267

Company: COMM Engineering
Location: OAR's shop
Company Rep.: Steve Hogg
Date: 2/5/2013
Sky Conditions: Scattered Clouds
Precipitation: 0
Industry: oil and gas

Observer / Affiliation #1: Andrew Bienvenu / COMM
Observer / Affiliation #2: Steve Hogg / COMM
Test #: **ONE**
Emissions Frequency: 0%
Wind Direction: SE
Wind Speed: 5 MPH
Process Unit: 48" enclosed flare

Layout Sketch:



Observations

	Clock Time	Observation Period Duration	Accumulated Emission Time	Firing Rate	Percent of Max Firing Rate	
	24-hr CST	min:sec	min:sec	SCFH	%	
Begin Observation	14:00					
Period 1	14:00	20:00	0:00	3250	90-100	AB
Period 2	14:20	20:00	0:00	3080	90-100	~~SJ~~
Period 3	14:40	20:00	0:00	3100	90-100	AB
Period 4						
Period 5						
Period 6						
Period 7						
Period 8						
Period 9						
Period 10						
Period 11						
Period 12						
End Observation	15:00	60 Minutes	0:00	3120	90-100	


Test 1
2/5/2013
Time:
14:00
COMM

METHOD 22 - FUGITIVE OR SMOKE EMISSION INSPECTION

COMM Enclosed Flare - Observation Datasheet
Job #11267

Company: COMM Engineering
Location: OAR's shop
Company Rep.: Steve Hogg
Date: 2/5/2013
Sky Conditions: Mostly Cloudy
Precipitation: 10%
Industry: oil and gas

Observer / Affiliation #1: Andrew Bienvenu / COMM
Observer / Affiliation #2: Steve Hogg / COMM
Test #: **TWO**
Emissions Frequency: 0%
Wind Direction: NNE
Wind Speed: 6 MPH
Process Unit: 48" enclosed flare

Layout Sketch:



Observations

	Clock Time	Observation Period Duration	Accumulated Emission Time	Firing Rate	Percent of Max Firing Rate
	24-hr CST	min:sec	min:sec	SCFH	%
Begin Observation	15:20				
Period 1	15:20	20:00	0:00	3300	90-100
Period 2	15:40	20:00	0:00	3282	90-100
Period 3	16:00	20:00	0:00	3100	90-100
Period 4					
Period 5					
Period 6					
Period 7					
Period 8					
Period 9					
Period 10					
Period 11					
Period 12					
End Observation	16:20	60 Minutes	0:00	3160	90-100

AB
AB


Test 2
2/5/2013
Time:
15:20
PROPYLENE
FLAMMABLE
NO SMOKING
1075
DANGER
FLAMMABLE MATERIAL
NO SMOKING OR
OPEN FLAMES

METHOD 22 - FUGITIVE OR SMOKE EMISSION INSPECTION

COMM Enclosed Flare - Observation Datasheet
Job #11267

Company:	COMM Engineering	Observer / Affiliation #1:	Andrew Bienvenu / COMM
Location:	OAR's shop	Observer / Affiliation #2:	Steve Hogg / COMM
Company Rep.:	Steve Hogg	Test #:	**THREE**
Date:	2/5/2013	Emissions Frequency:	0%
Sky Conditions:	Partly Cloudy	Wind Direction:	NNE
Precipitation:	0	Wind Speed:	3 MPH
Industry:	oil and gas	Process Unit:	48" enclosed flare

Layout Sketch:



Observations

	Clock Time	Observation Period Duration	Accumulated Emission Time	Firing Rate	Percent of Max Firing Rate
	24-hr CST	min:sec	min:sec	SCFH	%
Begin Observation	16:35				
Period 1	16:35	20:00	0:00	3060	90-100
Period 2	16:55	20:00	0:00	3000	90-100
Period 3	17:15	20:00	0:00	3190	90-100
Period 4					
Period 5					
Period 6					
Period 7					
Period 8					
Period 9					
Period 10					
Period 11					
Period 12					
End Observation	17:35	60 Minutes	0:00	3125	90-100

AB
~~AB~~
AB

Test 3

2/5/2013

Time:
16:35



METHOD 22 - FUGITIVE OR SMOKE EMISSION INSPECTION

COMM Enclosed Flare - Observation Datasheet
Job #11267

Company: COMM Engineering
Location: OAR's shop
Company Rep.: Steve Hogg
Date: 2/6/2013
Sky Conditions: Cloudy
Precipitation: 10%
Industry: oil and gas

Observer / Affiliation #1: Andrew Bienvenu / COMM
Observer / Affiliation #2: Steve Hogg / COMM
Test #: FOUR
Emissions Frequency: 0%
Wind Direction: SW
Wind Speed: 2 MPH
Process Unit: 48" enclosed flare

Layout Sketch:



Observations

	Clock Time	Observation Period Duration	Accumulated Emission Time	Firing Rate	Percent of Max Firing Rate	
	24-hr CST	min:sec	min:sec	SCFH	%	
Begin Observation	15:00					
Period 1	15:00	5:00	0:00	2300	70	AB
Period 2	15:05	10:00	0:00	3292	100	
Period 3	15:15	5:00	0:00	3130	100	
Period 4	15:20	5:00	0:00	2280	70	SH
Period 5	15:25	5:00	0:00	3100	100	
Period 6	15:30	5:00	0:00	3015	100	
Period 7	15:35	5:00	0:00	2120	70	
Period 8	15:40	5:00	0:00	3170	100	AB
Period 9	15:45	5:00	0:00	2800	100	
Period 10	15:50	5:00	0:00	2300	70	
Period 11	15:55	5:00	0:00	3330	100	
Period 12	16:00	5:00	0:00	3000	100	
End Observation	16:00	60 Minutes	0:00	2260	70	

Test 4

2/6/2013

Time:
15:00



METHOD 22 - FUGITIVE OR SMOKE EMISSION INSPECTION

COMM Enclosed Flare - Observation Datasheet
Job #11267

Company:	COMM Engineering	Observer / Affiliation #1:	Andrew Bienvenu / COMM
Location:	OAR's shop	Observer / Affiliation #2:	Steve Hogg / COMM
Company Rep.:	Steve Hogg	Test #:	FIVE
Date:	2/7/2013	Emissions Frequency:	0%
Sky Conditions:	Cloudy	Wind Direction:	SW
Precipitation:	0	Wind Speed:	1 MPH
Industry:	oil and gas	Process Unit:	48" enclosed flare

Layout Sketch:



Observations

	Clock Time	Observation Period Duration	Accumulated Emission Time	Firing Rate	Percent of Max Firing Rate	
	24-hr CST	min:sec	min:sec	SCFH	%	
Begin Observation	9:50		0:00			
Period 1	9:50	5:00	0:00	2300	70	AB
Period 2	9:55	5:00	0:00	3300	100	
Period 3	10:00	5:00	0:00	3300	100	
Period 4	10:05	5:00	0:00	2300	70	
Period 5	10:10	5:00	0:00	3250	100	SD
Period 6	10:15	5:00	0:00	3300	100	
Period 7	10:20	5:00	0:00	2300	70	
Period 8	10:25	5:00	0:00	3300	100	
Period 9	10:30	5:00	0:00	3300	100	AB
Period 10	10:35	5:00	0:00	2300	70	
Period 11	10:40	5:00	0:00	3300	100	
Period 12	10:45	5:00	0:00	2390	100	
End Observation	10:50	60 Minutes	0:00	2300	70	

Test 5

2/7/2013

Time:
9:50 am



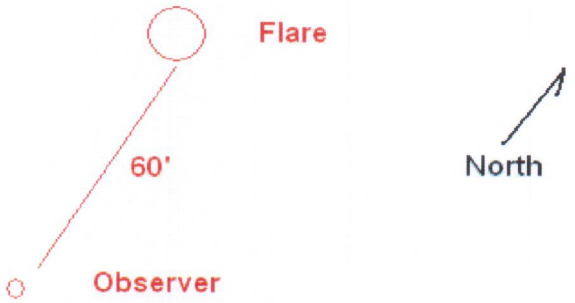
METHOD 22 - FUGITIVE OR SMOKE EMISSION INSPECTION

COMM Enclosed Flare - Observation Datasheet
Job #11267

Company: COMM Engineering
Location: OAR's shop
Company Rep.: Steve Hogg
Date: 2/7/2013
Sky Conditions: Fair
Precipitation: 0
Industry: oil and gas

Observer / Affiliation #1: Andrew Bienvenu / COMM
Observer / Affiliation #2: Steve Hogg / COMM
Test #: **SIX**
Emissions Frequency: 0%
Wind Direction: N
Wind Speed: 6 MPH
Process Unit: 48" enclosed flare

Layout Sketch:



Observations

	Clock Time	Observation Period Duration	Accumulated Emission Time	Firing Rate	Percent of Max Firing Rate	
	24-hr CST	min:sec	min:sec	SCFH	%	
Begin Observation	14:10					
Period 1	14:10	5:00	0:00	2300	70	AB
Period 2	14:15	5:00	0:00	3300	100	
Period 3	14:20	5:00	0:00	3300	100	
Period 4	14:25	5:00	0:00	2318	70	
Period 5	14:30	5:00	0:00	3304	100	SL
Period 6	14:35	5:00	0:00	3238	100	
Period 7	14:40	5:00	0:00	2289	70	
Period 8	14:45	5:00	0:00	3304	100	
Period 9	14:50	5:00	0:00	3295	100	AB
Period 10	14:55	5:00	0:00	2313	70	
Period 11	15:00	5:00	0:00	3278	100	
Period 12	15:05	5:00	0:00	3289	100	
End Observation	15:10	60 Minutes	0:00	2310	70	


Test 6
2/7/2013
Time:
14:10

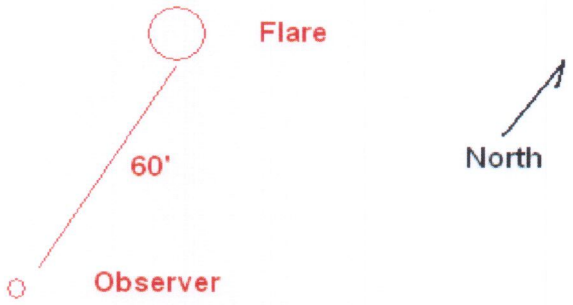
METHOD 22 - FUGITIVE OR SMOKE EMISSION INSPECTION

COMM Enclosed Flare - Observation Datasheet
Job #11267

Company: COMM Engineering
Location: OAR's shop
Company Rep.: Steve Hogg
Date: 2/7/2013
Sky Conditions: Sunny
Precipitation: 0
Industry: oil and gas

Observer / Affiliation #1: Andrew Bienvenu / COMM
Observer / Affiliation #2: Steve Hogg / COMM
Test #: **SEVEN**
Emissions Frequency: 0%
Wind Direction: N
Wind Speed: 3 MPH
Process Unit: 48" enclosed flare

Layout Sketch:



Observations

	Clock Time	Observation Period Duration	Accumulated Emission Time	Firing Rate	Percent of Max Firing Rate	
	24-hr CST	min:sec	min:sec	SCFH	%	
Begin Observation	15:30					
Period 1	15:30	5:00	0:00	1000	30	AB
Period 2	15:35	5:00	0:00	2319	70	
Period 3	15:40	5:00	0:00	2310	70	
Period 4	15:45	5:00	0:00	1073	30	
Period 5	15:50	5:00	0:00	2304	70	SH
Period 6	15:55	5:00	0:00	2296	70	
Period 7	16:00	5:00	0:00	1042	30	
Period 8	16:05	5:00	0:00	2282	70	
Period 9	16:10	5:00	0:00	2289	70	AB
Period 10	16:15	5:00	0:00	1048	30	
Period 11	16:20	5:00	0:00	2270	70	
Period 12	16:25	5:00	0:00	2282	70	
End Observation	16:30	60 Minutes	0:00	1045	30	


Test 7
2/7/2013
Time:
15:30
WGT 6500LB

METHOD 22 - FUGITIVE OR SMOKE EMISSION INSPECTION

COMM Enclosed Flare - Observation Datasheet

Job #11267

Company: COMM Engineering
Location: OAR's shop
Company Rep.: Steve Hogg
Date: 2/7/2013
Sky Conditions: Sunny
Precipitation: 0
Industry: oil and gas

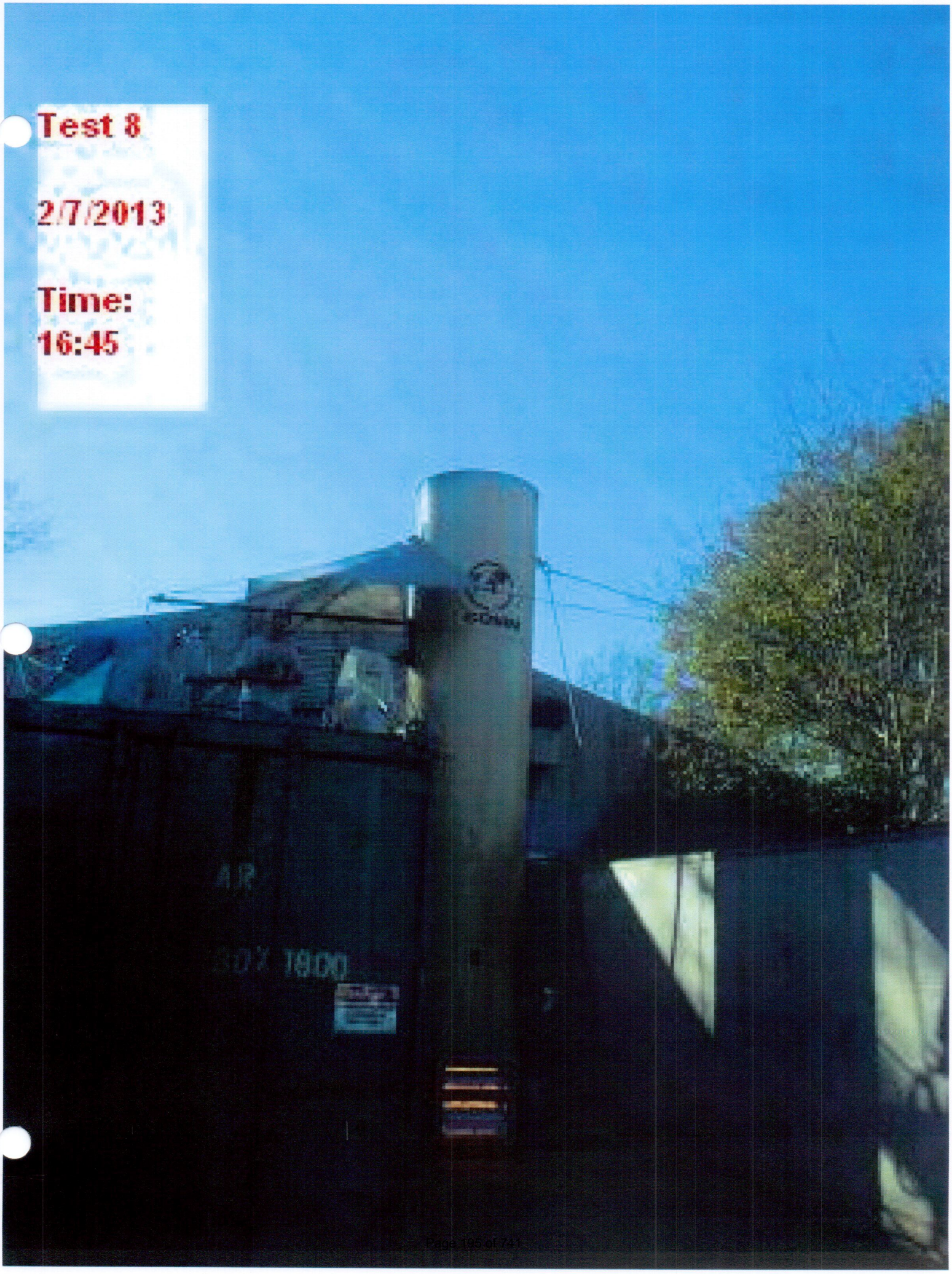
Observer / Affiliation #1: Andrew Bienvenu / COMM
Observer / Affiliation #2: Steve Hogg / COMM
Test #: EIGHT
Emissions Frequency: 0%
Wind Direction: N
Wind Speed: 2 MPH
Process Unit: 48" enclosed flare

Layout Sketch:



Observations

	Clock Time	Observation Period Duration	Accumulated Emission Time	Firing Rate	Percent of Max Firing Rate	
	24-hr CST	min:sec	min:sec	SCFH	%	
Begin Observation	16:45					
Period 1	16:45	5:00	0:00	1020	30	AB
Period 2	16:50	5:00	0:00	2303	70	
Period 3	16:55	5:00	0:00	2311	70	
Period 4	17:00	5:00	0:00	1081	30	
Period 5	17:05	5:00	0:00	2305	70	SH
Period 6	17:10	5:00	0:00	2298	70	
Period 7	17:15	5:00	0:00	1023	30	
Period 8	17:20	5:00	0:00	2310	70	
Period 9	17:25	5:00	0:00	2304	70	AB
Period 10	17:30	5:00	0:00	1015	30	
Period 11	17:35	5:00	0:00	2312	70	
Period 12	17:40	5:00	0:00	2316	70	
End Observation	17:45	60 Minutes	0:00	1026	30	


Test 8
2/7/2013
Time:
16:45

METHOD 22 - FUGITIVE OR SMOKE EMISSION INSPECTION

COMM Enclosed Flare - Observation Datasheet

Job #11267

Company: COMM Engineering
Location: OAR's shop
Company Rep.: Steve Hogg
Date: 2/8/2013
Sky Conditions: Cloudy
Precipitation: 0
Industry: oil and gas

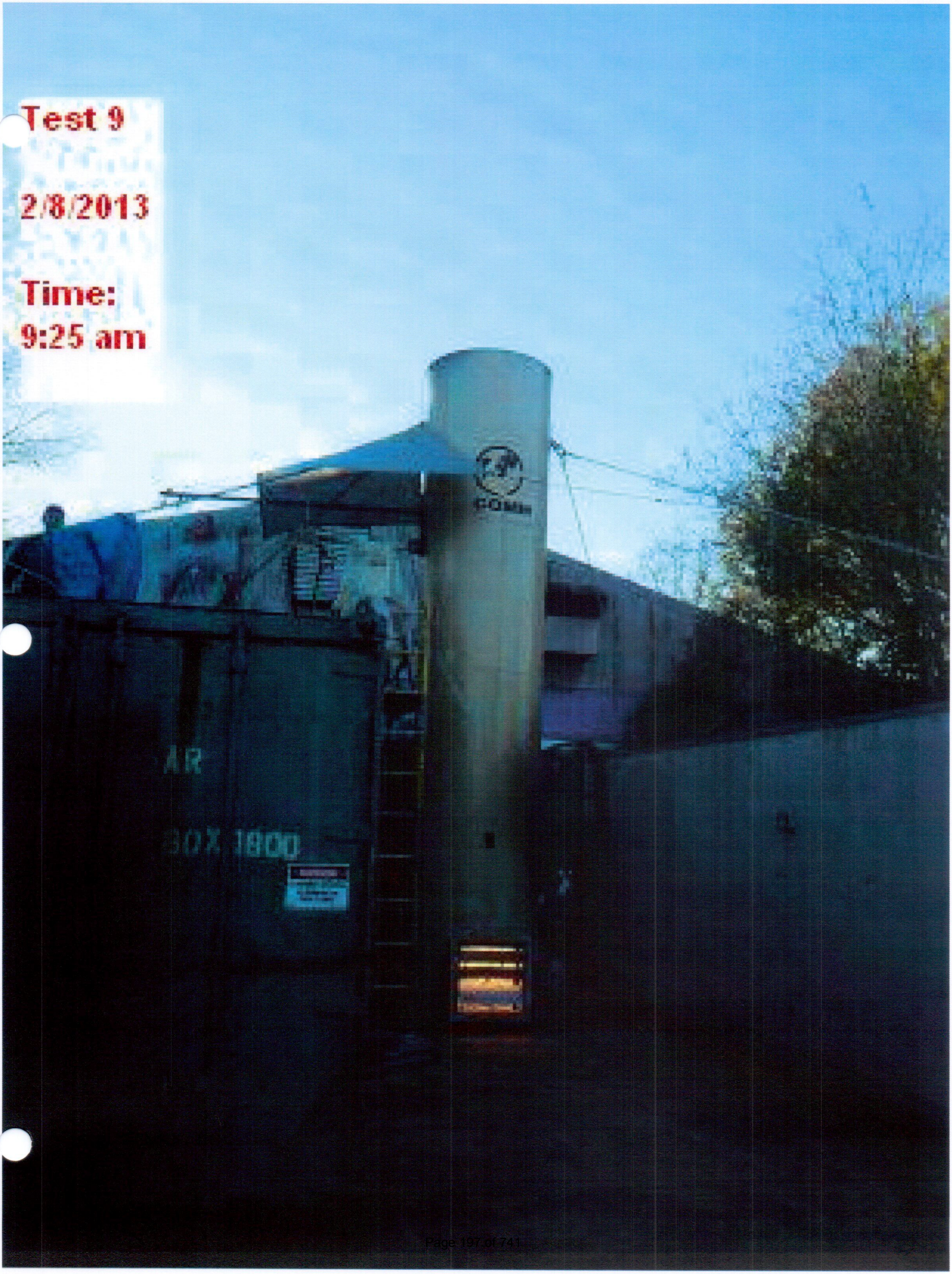
Observer / Affiliation #1: Andrew Bienvenu / COMM
Observer / Affiliation #2: Steve Hogg / COMM
Test #: **NINE**
Emissions Frequency: 0%
Wind Direction: NW
Wind Speed: 7 MPH
Process Unit: 48" enclosed flare

Layout Sketch:



Observations

	Clock Time	Observation Period Duration	Accumulated Emission Time	Firing Rate	Percent of Max Firing Rate	
	24-hr CST	min:sec	min:sec	SCFH	%	
Begin Observation	9:25					
Period 1	9:25	5:00	0:00	1036	30	AB
Period 2	9:30	5:00	0:00	2292	70	
Period 3	9:35	5:00	0:00	2285	70	
Period 4	9:40	5:00	0:00	1018	30	
Period 5	9:45	5:00	0:00	2279	70	SH
Period 6	9:50	5:00	0:00	2310	70	
Period 7	9:55	5:00	0:00	1065	30	
Period 8	10:00	5:00	0:00	2309	70	
Period 9	10:05	5:00	0:00	2268	70	AB
Period 10	10:10	5:00	0:00	1080	30	
Period 11	10:15	5:00	0:00	2256	70	
Period 12	10:20	5:00	0:00	2277	70	
End Observation	10:25	60 Minutes	0:00	1048	30	


Test 9
2/8/2013
Time:
9:25 am
AR
BOX 1800

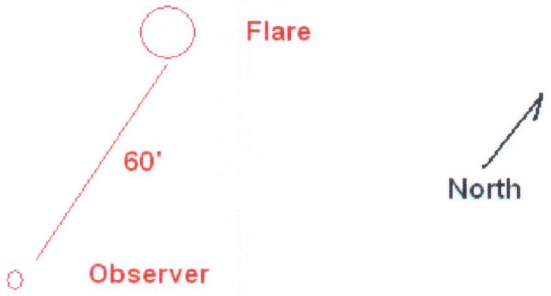
METHOD 22 - FUGITIVE OR SMOKE EMISSION INSPECTION

COMM Enclosed Flare - Observation Datasheet
Job #11267

Company: COMM Engineering
Location: OAR's shop
Company Rep.: Steve Hogg
Date: 2/8/2013
Sky Conditions: Cloudy
Precipitation: 0
Industry: oil and gas

Observer / Affiliation #1: Andrew Bienvenu / COMM
Observer / Affiliation #2: Steve Hogg / COMM
Test #: **TEN**
Emissions Frequency: 1.083%
Wind Direction: NW
Wind Speed: 5 MPH
Process Unit: 48" enclosed flare

Layout Sketch:



Potential & Actual emissions: Emissions occurred at the tip of the flare when ramping the firing rate from 30% back down to zero.

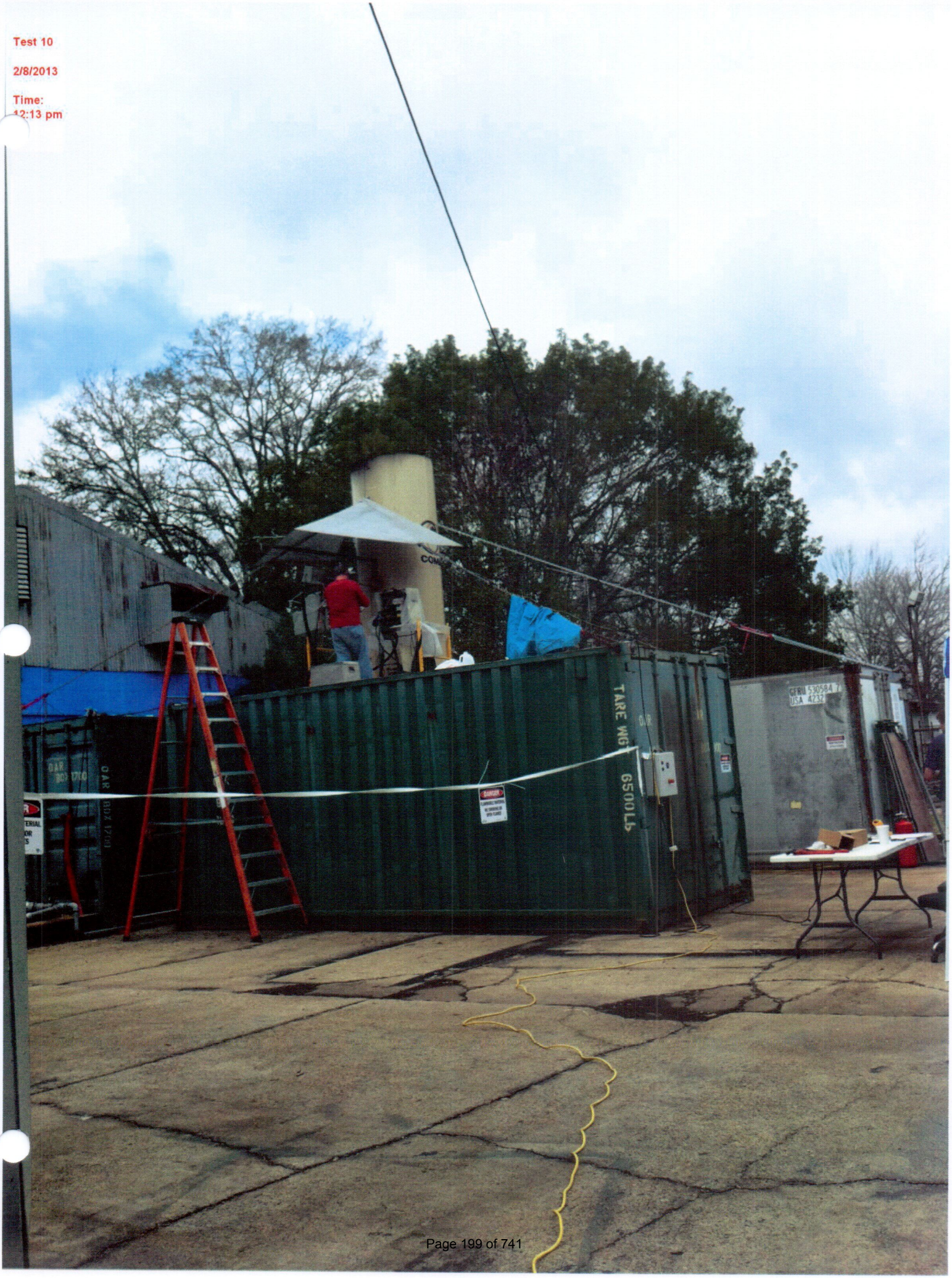
Observations

	Clock Time	Observation Period Duration	Accumulated Emission Time	Firing Rate	Percent of Max Firing Rate	
	24-hr CST	min:sec	min:sec	SCFH	%	
Begin Observation	12:13					
Period 1	12:13	5:00	0:00	0	0	AB
Period 2	12:18	5:00	0:00	952	30	
Period 3	12:23	5:00	0:00	1008	30	
Period 4	12:28	5:00	0:00	0	0	
Period 5	12:33	5:00	0:00	986	30	SP
Period 6	12:38	5:00	0:08	990	30	
Period 7	12:43	5:00	0:00	203	0	
Period 8	12:48	5:00	0:00	979	30	
Period 9	12:53	5:00	0:07	988	30	AB
Period 10	12:58	5:00	0:00	190	0	
Period 11	13:03	5:00	0:00	970	30	
Period 12	13:08	5:00	0:24	951	30	
End Observation	13:13	60 Minutes	0:39 Total	0	0	

Test 10

2/8/2013

Time:
12:13 pm



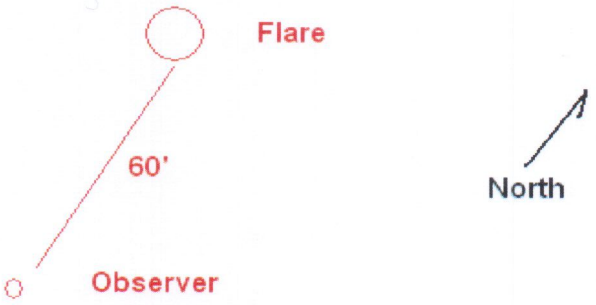
METHOD 22 - FUGITIVE OR SMOKE EMISSION INSPECTION

COMM Enclosed Flare - Observation Datasheet
Job #11267

Company: COMM Engineering
Location: OAR's shop
Company Rep.: Steve Hogg
Date: 2/8/2013
Sky Conditions: Cloudy
Precipitation: 0
Industry: oil and gas

Observer / Affiliation #1: Andrew Bienvenu / COMM
Observer / Affiliation #2: Steve Hogg / COMM
Test #: **ELEVEN**
Emissions Frequency: 0.778%
Wind Direction: NW
Wind Speed: 5 MPH
Process Unit: 48" enclosed flare

Layout Sketch:



Potential & Actual emissions: Emissions occurred at the tip of the flare when ramping the firing rate from 30% back down to zero.

Observations

	Clock Time	Observation Period Duration	Accumulated Emission Time	Firing Rate	Percent of Max Firing Rate	
	24-hr CST	min:sec	min:sec	SCFH	%	
Begin Observation	13:27					
Period 1	13:27	5:00	0:00	0	0	AB
Period 2	13:32	5:00	0:09	999	30	
Period 3	13:37	5:00	0:00	1001	30	
Period 4	13:42	5:00	0:00	0	0	
Period 5	13:47	5:00	0:08	966	30	SA
Period 6	13:52	5:00	0:00	997	30	
Period 7	13:57	5:00	0:00	0	0	
Period 8	14:02	5:00	0:08	998	30	
Period 9	14:07	5:00	0:00	987	30	AB
Period 10	14:12	5:00	0:00	26	0	
Period 11	14:17	5:00	0:03	1040	30	
Period 12	14:22	5:00	0:00	1014	30	
End Observation	14:27	60 Minutes	0:28 Total	210	0	


Test 11
2/8/2013
Time:
13:27
DANGER
FLAMMABLE MATERIAL
NO SMOKING OR
OPEN FLAMES
TARE WGT
65001Lb

METHOD 22 - FUGITIVE OR SMOKE EMISSION INSPECTION

COMM Enclosed Flare - Observation Datasheet

Job #11267

Company: COMM Engineering
Location: OAR's shop
Company Rep.: Steve Hogg
Date: 2/8/2013
Sky Conditions: Cloudy
Precipitation: 0
Industry: oil and gas

Observer / Affiliation #1: Andrew Bienvenu / COMM
Observer / Affiliation #2: Steve Hogg / COMM
Test #: **TWELVE**
Emissions Frequency: 0.417%
Wind Direction: NNE
Wind Speed: 13 MPH
Process Unit: 48" enclosed flare

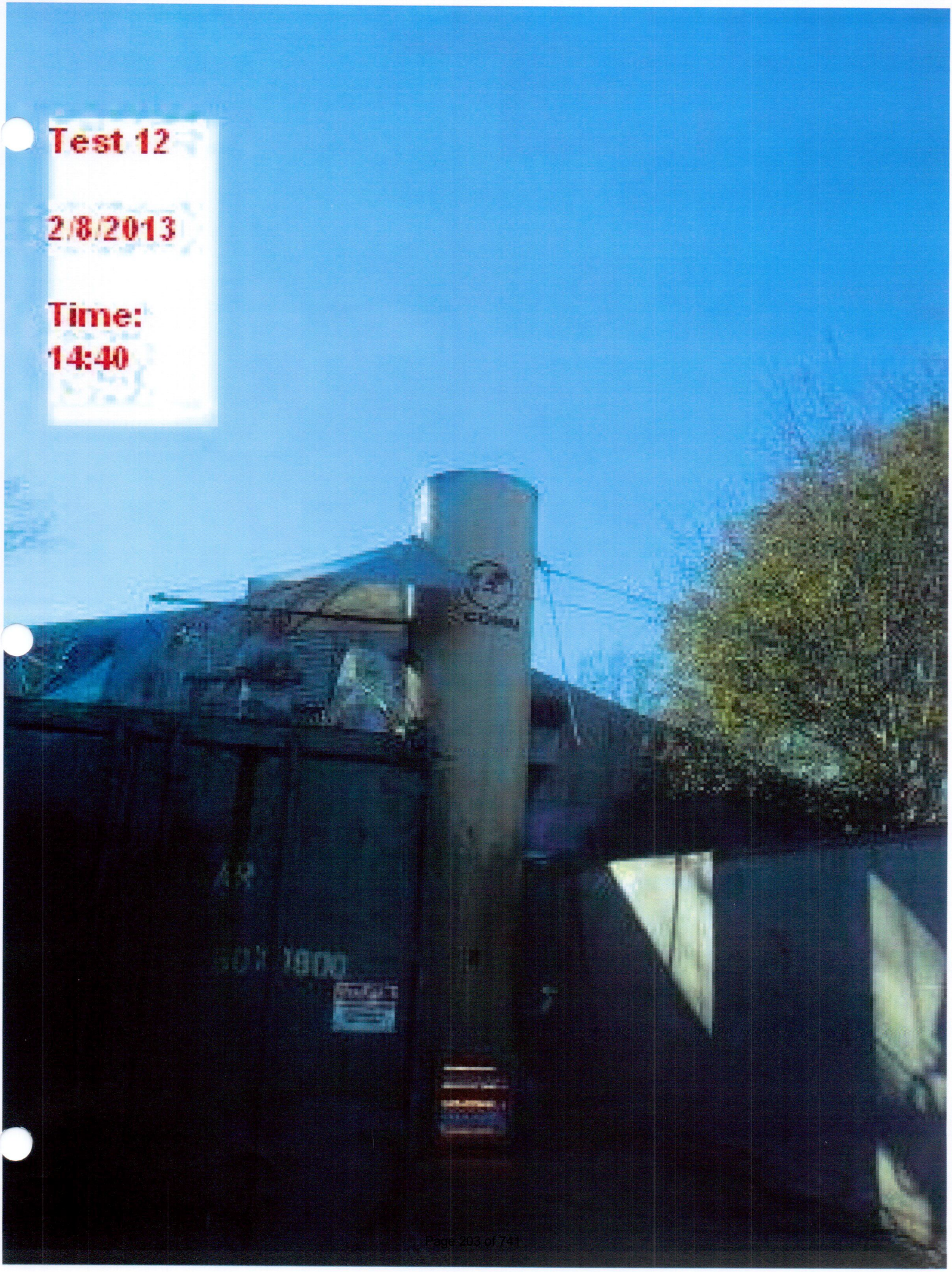
Layout Sketch:



Potential & Actual emissions: Emissions occurred at the tip of the flare when ramping the firing rate from 30% back down to zero.

Observations

	Clock Time	Observation Period Duration	Accumulated Emission Time	Firing Rate	Percent of Max Firing Rate	
	24-hr CST	min:sec	min:sec	SCFH	%	
Begin Observation	14:40					
Period 1	14:40	5:00	0:03	58	0	AB
Period 2	14:45	5:00	0:00	1000	30	
Period 3	14:50	5:00	0:04	990	30	
Period 4	14:55	5:00	0:00	72	0	
Period 5	15:00	5:00	0:00	1007	30	
Period 6	15:05	5:00	0:00	998	30	
Period 7	15:10	5:00	0:00	0	0	
Period 8	15:15	5:00	0:00	995	30	
Period 9	15:20	5:00	0:08	1001	30	AB
Period 10	15:25	5:00	0:00	0	0	
Period 11	15:30	5:00	0:00	997	30	
Period 12	15:35	5:00	0:00	995	30	
End Observation	15:40	60 Minutes	0:15 Total	0	0	


Test 12
2/8/2013
Time:
14:40

Appendix H
Inlet Gas Turbine Meter Logs

Summary of Turbine Meter Readings

	Run #	In H_2O (Abs) (static)	Temp F	Actth	Setth.
	1	446.49 (39.58)	52.77	2772.7	3130.51
2057	2	451.17 (44.26)	53.06	2860.28	3262.76
2136	3	450.36 (43.448)	52.50	2732.95	3114.97
3485	4	436.19 (29.28)	54.00	2573.74	2837.18
4619	5	437.20 (30.28)	50.06	2626.16	2924.99
4883	6	439.29 (32.38)	56.93	2666.15	2942.78
4967	7	417.16 (10.25)	55.82	1734.02	1824.19
5046	8	430.20 (23.29)	54.14	1673.77	1827.29
6050	9	435.77 (28.86)	54.30	1641.14	1815.91
6222	10	431.21 (24.29)	68.53	673.01	718.16
6301	11	445.35 (38.44)	67.04	685.71	755.53
6379	12	447.16 (40.25)	63.94	673.18	754.83

Interval Log Download

Device/Meter Name: 2200_Laf_Demo
Company Name: Southern Flow Zedi
Site/Well Name: Laf Demo 11-2
Field/Lease Name: Lafayette
Location Name: Lafayette
Legal Description: Scanner 2200 Demo

Downloaded on: 02/08/2013 15:55:36

ModWorX Pro: 4.0.5
Device Type: Scanner 2200
Firmware: 4.00
Board ID: 0

Rec	Timestamp	Static Pressure (A) (In H2O-abs)	Process Temperature (Deg F)	Turbine 2 Flow Rate (ACF/hour)	Flow Run 1 Flow Rate (SCF/hour)
2636	2/5/2013 13:56	445.9943486	52.21168137	2856.292386	3225.41208
2637	2/5/2013 13:57	445.8399089	52.313694	2830.047689	3192.067822
2638	2/5/2013 13:58	446.0983839	52.34935379	2834.421767	3200.695734
2639	2/5/2013 13:59	446.3331112	52.38578796	2854.105232	3217.448853
	Start Run #1				
2640	2/5/2013 14:00	446.238702	52.47310257	2779.745449	3136.233659
2641	2/5/2013 14:01	446.5401769	52.44982529	2777.558524	3138.710512
2642	2/5/2013 14:02	446.5776761	52.4178009	2578.536487	2912.262711
2643	2/5/2013 14:03	446.3669081	52.53491211	2797.24199	3158.533084
2644	2/5/2013 14:04	446.6719796	52.62365341	2784.119526	3145.83513
2645	2/5/2013 14:05	446.6757348	52.68540955	2775.371371	3134.20943
2646	2/5/2013 14:06	446.5961348	52.69455338	2823.486457	3190.640174
2647	2/5/2013 14:07	446.5300748	52.71285629	2801.616068	3158.893296
2648	2/5/2013 14:08	446.6800189	52.59918213	2786.30668	3146.340139
2649	2/5/2013 14:09	446.6427841	52.61587143	2810.364223	3175.327065
2650	2/5/2013 14:10	446.3543731	52.64332581	2790.680758	3153.338609
2651	2/5/2013 14:11	446.3637876	52.69090652	2878.162775	3244.992835
2652	2/5/2013 14:12	446.3397754	52.63827896	2893.472392	3267.177427
2653	2/5/2013 14:13	446.4293716	52.63394547	2840.982998	3208.408761
2654	2/5/2013 14:14	446.4258809	52.48435974	2838.795845	3208.281146
2655	2/5/2013 14:15	446.5360514	52.43802261	2840.982998	3213.84673
2656	2/5/2013 14:16	446.4631157	52.43824768	2856.292386	3231.668542
2657	2/5/2013 14:17	446.5061684	52.44625473	2840.982998	3213.800001
2658	2/5/2013 14:18	446.5564142	52.33122635	2836.608691	3202.060307
2659	2/5/2013 14:19	446.4066817	52.25895309	2718.507899	3069.195407
2660	2/5/2013 14:20	446.3474445	52.24157333	2727.256055	3083.934146
2661	2/5/2013 14:21	446.5774117	52.37765121	2760.061983	3115.128027
2662	2/5/2013 14:22	446.2041117	52.46227646	2784.119526	3141.54129
2663	2/5/2013 14:23	446.405571	52.55856323	2753.500752	3113.38543
2664	2/5/2013 14:24	446.3188308	52.559021	2777.558524	3132.892633
2665	2/5/2013 14:25	446.3558541	52.60386276	2786.30668	3144.266875
2666	2/5/2013 14:26	446.3401456	52.67474747	2775.371371	3131.338209
2667	2/5/2013 14:27	446.168252	52.68182755	2792.867682	3151.372005
2668	2/5/2013 14:28	446.443176	52.78682327	2875.975851	3248.309973
2669	2/5/2013 14:29	446.4112831	52.89683914	2849.731154	3217.011946
2670	2/5/2013 14:30	446.3206291	52.91772461	2832.234843	3194.408678
2671	2/5/2013 14:31	446.2651471	53.00778198	2847.544	3214.394068
2672	2/5/2013 14:32	446.559429	52.94488144	2823.486457	3190.236585
2673	2/5/2013 14:33	446.6065542	52.98535538	2836.608691	3197.490494
2674	2/5/2013 14:34	446.6411974	53.0027504	2875.975851	3247.799096

2675	2/5/2013 14:35	446.5858741	53.14411545	2862.853617	3231.537156
2676	2/5/2013 14:36	446.5421338	53.11922836	2858.47931	3223.145823
2677	2/5/2013 14:37	446.6328936	53.16056824	2823.486457	3183.865291
2678	2/5/2013 14:38	446.2542517	53.0928688	2840.982998	3206.356242
2679	2/5/2013 14:39	446.3848909	53.07847214	2805.989916	3166.533192
2680	2/5/2013 14:40	446.3773275	53.02065659	2757.874829	3112.65788
2681	2/5/2013 14:41	446.2252149	52.9192543	2775.371371	3127.66924
2682	2/5/2013 14:42	446.5346763	52.93182755	2727.256055	3075.882909
2683	2/5/2013 14:43	446.4215967	52.98217773	2711.946897	3060.560161
2684	2/5/2013 14:44	446.4547061	52.88380432	2727.256055	3080.952913
2685	2/5/2013 14:45	446.6846204	52.93367004	2663.831581	3005.424212
2686	2/5/2013 14:46	446.4479361	52.96246719	2655.083425	2998.52821
2687	2/5/2013 14:47	446.5085485	52.98696518	2670.392812	3014.836041
2688	2/5/2013 14:48	446.293655	52.97849655	2692.263431	3034.583176
2689	2/5/2013 14:49	446.51553	53.14205551	2657.270349	2998.11624
2690	2/5/2013 14:50	446.7242352	53.08532333	2679.140968	3024.560725
2691	2/5/2013 14:51	446.4106484	53.03751755	2770.997293	3128.603403
2692	2/5/2013 14:52	446.4105956	53.02241516	2620.090572	2959.902515
2693	2/5/2013 14:53	446.6789611	52.97598267	2655.083425	2993.916278
2694	2/5/2013 14:54	446.5528706	52.88394165	2751.313598	3107.484989
2695	2/5/2013 14:55	446.6073476	52.8681488	2742.565442	3098.251484
2696	2/5/2013 14:56	446.6792256	52.7787323	2672.579736	3020.081227
2697	2/5/2013 14:57	446.3702402	52.76386642	2600.407107	2934.274636
2698	2/5/2013 14:58	446.5706946	52.79335403	2589.471797	2923.799981
2699	2/5/2013 14:59	446.4876568	52.8118782	2740.378518	3092.158888
2700	2/5/2013 15:00	446.7747984	52.78352356	2781.932373	3142.116079
2701	2/5/2013 15:01	446.7657541	52.83270645	2889.098085	3268.440999
2702	2/5/2013 15:02	446.7813039	52.78513718	2740.378518	3098.616307
2703	2/5/2013 15:03	446.662618	52.79586792	2840.982998	3206.594288
	Stop Run #1	446.4876196	52.76667798	2772.705867	3130.51117
2704	2/5/2013 15:04	446.4168366	52.80978012	2736.00444	3090.388211
2705	2/5/2013 15:05	446.3832513	52.82624817	2755.687905	3107.649274
2706	2/5/2013 15:06	446.6030635	52.99525833	2744.752596	3096.614708
2707	2/5/2013 15:07	446.5783637	53.12336731	2650.709347	2991.476515
2708	2/5/2013 15:08	446.8240922	53.17733765	2681.328122	3025.483573
2709	2/5/2013 15:09	446.9741949	53.21097946	2650.709347	2994.192881
2710	2/5/2013 15:10	446.7350249	53.23408127	2696.63728	3040.733817
2711	2/5/2013 15:11	447.0189931	53.15951157	2895.659317	3278.784687
2712	2/5/2013 15:12	448.0883827	53.11100388	2781.932373	3149.375017
2713	2/5/2013 15:13	447.9301348	53.13051224	2703.198511	3060.545074
2714	2/5/2013 15:14	447.7956347	53.16346359	2808.177299	3178.048879
2715	2/5/2013 15:15	448.1523271	53.19226456	2714.133821	3076.520562
2716	2/5/2013 15:16	448.1564526	53.24200439	2788.493604	3157.458943
2717	2/5/2013 15:17	448.0497199	53.25961304	2690.076048	3039.647941
2718	2/5/2013 15:18	448.2746096	53.27279663	2736.00444	3097.194945
2719	2/5/2013 15:19	453.5145606	53.25252914	2897.846241	3330.474836
	Start Run #2				
2720	2/5/2013 15:20	454.5614719	53.2175293	2849.731154	3273.398057
2721	2/5/2013 15:21	454.6273204	53.21477127	2882.537083	3315.422195
2722	2/5/2013 15:22	454.8398337	53.17772293	2880.349929	3316.909564

2723	2/5/2013 15:23	454.5477204	53.17567444	2873.788697	3300.293908
2724	2/5/2013 15:24	454.8253418	53.14021301	2832.234843	3254.558262
2725	2/5/2013 15:25	454.9720067	53.07781601	2830.047689	3254.16096
2726	2/5/2013 15:26	454.7513482	53.05443954	2867.227466	3293.137858
2727	2/5/2013 15:27	455.030662	52.95271301	2906.594626	3343.579732
2728	2/5/2013 15:28	454.9686746	52.93577194	2902.220319	3335.216688
2729	2/5/2013 15:29	455.0440433	52.89233017	2897.846241	3337.410232
2730	2/5/2013 15:30	455.3217704	52.7857399	2856.292386	3290.203772
2731	2/5/2013 15:31	455.1784905	52.76583481	2803.802992	3226.780635
2732	2/5/2013 15:32	455.348004	52.77705002	2812.551148	3241.773765
2733	2/5/2013 15:33	454.973276	52.82689285	2821.299533	3249.786654
2734	2/5/2013 15:34	455.1996467	52.79282761	2893.472392	3332.035546
2735	2/5/2013 15:35	455.424219	52.76927567	2900.033394	3344.08097
2736	2/5/2013 15:36	455.2694619	52.72991562	2908.78155	3350.945748
2737	2/5/2013 15:37	455.1410971	52.79579163	2880.349929	3317.09669
2738	2/5/2013 15:38	454.800642	52.8742485	2880.349929	3311.028401
2739	2/5/2013 15:39	454.9910472	52.92663574	2891.285009	3325.2066
2740	2/5/2013 15:40	455.0781576	52.98335648	2873.788697	3311.996092
2741	2/5/2013 15:41	455.0792154	53.03297424	2849.731154	3278.144309
2742	2/5/2013 15:42	454.9662416	53.06319809	2840.982998	3271.174547
2743	2/5/2013 15:43	455.1462274	53.00553894	2867.227466	3297.918895
2744	2/5/2013 15:44	455.090481	53.03277206	2858.47931	3287.577513
2745	2/5/2013 15:45	455.2973351	52.93738174	2950.335635	3394.410945
2746	2/5/2013 15:46	454.9850706	52.8962059	2910.968704	3350.443253
2747	2/5/2013 15:47	454.9440277	52.83057022	2937.213401	3378.580883
2748	2/5/2013 15:48	454.9358826	52.77051163	2937.213401	3382.434463
2749	2/5/2013 15:49	454.7811254	52.8075676	2937.213401	3380.123782
2750	2/5/2013 15:50	454.7368033	52.8831749	2956.896866	3397.737932
2751	2/5/2013 15:51	454.6778835	52.97224808	2994.076643	3440.741496
2752	2/5/2013 15:52	454.9644962	52.9767189	2948.148711	3393.838881
2753	2/5/2013 15:53	454.9714778	52.9986763	3007.198877	3458.200162
2754	2/5/2013 15:54	455.2508445	52.94433594	3011.573185	3460.402088
2755	2/5/2013 15:55	454.8913489	52.91070175	3022.508494	3475.349955
2756	2/5/2013 15:56	454.9704728	52.96240616	3035.630728	3491.790849
2757	2/5/2013 15:57	455.1476026	53.00221252	3024.695418	3476.790595
2758	2/5/2013 15:58	450.8732174	52.91071701	2865.040542	3267.893451
2759	2/5/2013 15:59	444.1069042	52.89218521	2755.687905	3077.708487
2760	2/5/2013 16:00	442.4560118	52.99464798	2644.148115	2955.521503
2761	2/5/2013 16:01	442.6264245	52.94227982	2631.025881	2940.040966
2762	2/5/2013 16:02	444.8198659	53.00517654	2738.191364	3077.696753
2763	2/5/2013 16:03	445.0509438	53.01800156	2766.623215	3110.966203
2764	2/5/2013 16:04	445.0570262	53.11703491	2805.989916	3158.717486
2765	2/5/2013 16:05	444.8775693	53.11726761	2795.054836	3140.368243
2766	2/5/2013 16:06	444.9456391	53.33343506	2775.371371	3120.466461
2767	2/5/2013 16:07	445.0807739	53.40501785	2827.860535	3180.301515
2768	2/5/2013 16:08	445.0518429	53.33982849	2808.177299	3155.433247
2769	2/5/2013 16:09	445.2583796	53.36911011	2836.608691	3188.431123
2770	2/5/2013 16:10	445.209985	53.33600235	2803.802992	3155.424446
2771	2/5/2013 16:11	445.1982433	53.25474167	2808.177299	3158.477554
2772	2/5/2013 16:12	445.3968465	53.1401329	2768.810139	3116.005613
2773	2/5/2013 16:13	445.2611828	53.16460037	2819.112379	3173.626168
2774	2/5/2013 16:14	445.3564383	53.27737427	2873.788697	3234.203858

2775	2/5/2013 16:15	445.2173368	53.35081863	2862.853617	3220.606525
2776	2/5/2013 16:16	445.2255876	53.46564865	2856.292386	3212.800249
2777	2/5/2013 16:17	445.1643406	53.42674637	2847.544	3204.781702
2778	2/5/2013 16:18	444.9789071	53.48073959	2779.745449	3125.937958
2779	2/5/2013 16:19	445.2113601	53.54089737	2762.248907	3105.088812
2780	2/5/2013 16:20	445.2892147	53.5029335	2764.436061	3113.166243
2781	2/5/2013 16:21	445.2392862	53.55331421	2805.989916	3156.540496
	Stop Run #2	451.1723242	53.06181286	2860.278402	3262.756257
2782	2/5/2013 16:22	445.2346848	53.60317612	2760.061983	3102.640249
2783	2/5/2013 16:23	445.2687462	53.65031433	2770.997293	3110.971861
2784	2/5/2013 16:24	445.4594687	53.63491821	2751.313598	3095.922992
2785	2/5/2013 16:25	445.3036009	53.70149612	2770.997293	3110.671369
2786	2/5/2013 16:26	445.1799433	53.71937943	2781.932373	3128.64217
2787	2/5/2013 16:27	445.2107784	53.83537674	2801.616068	3145.56607
2788	2/5/2013 16:28	445.4714748	53.81152344	2746.939749	3085.791576
2789	2/5/2013 16:29	445.1949641	53.80311584	2801.616068	3142.754361
2790	2/5/2013 16:30	445.1913147	53.85293198	2709.759743	3044.834244
2791	2/5/2013 16:31	444.990543	53.86507034	2711.946897	3047.719714
2792	2/5/2013 16:32	446.8227699	53.85343933	2836.608691	3201.449057
2793	2/5/2013 16:33	447.5346738	53.83973694	2836.608691	3204.378532
2794	2/5/2013 16:34	447.5096038	53.86260605	2687.889124	3036.039742
	Start Run #3				
2795	2/5/2013 16:35	447.4204836	53.83903885	2692.263431	3043.18741
2796	2/5/2013 16:36	447.8570933	53.87609863	2698.824433	3051.141836
2797	2/5/2013 16:37	447.9295001	53.76446533	2683.515046	3031.868907
2798	2/5/2013 16:38	447.8136174	53.79808044	2751.313598	3103.898582
2799	2/5/2013 16:39	447.8744942	53.72374344	2703.198511	3055.944247
2800	2/5/2013 16:40	447.6982107	53.74067307	2672.579736	3020.766447
2801	2/5/2013 16:41	447.7823063	53.7855072	2663.831581	3011.128725
2802	2/5/2013 16:42	447.6575909	53.75782776	2674.76689	3022.488719
2803	2/5/2013 16:43	448.2146319	53.70132065	2687.889124	3043.916007
2804	2/5/2013 16:44	448.080026	53.52997971	2687.889124	3039.922239
2805	2/5/2013 16:45	447.9455788	53.52220535	2703.198511	3053.099848
2806	2/5/2013 16:46	448.048715	53.47141647	2803.802992	3170.903097
2807	2/5/2013 16:47	447.9166478	53.58603287	2731.630133	3094.124654
2808	2/5/2013 16:48	448.0734147	53.43595505	2742.565442	3105.679527
2809	2/5/2013 16:49	447.882798	53.44123459	2720.694823	3081.947425
2810	2/5/2013 16:50	447.9598592	53.33347702	2725.06913	3077.474423
2811	2/5/2013 16:51	447.975409	53.34148788	2729.443208	3089.134698
2812	2/5/2013 16:52	447.6715011	53.30625916	2631.025881	2975.168894
2813	2/5/2013 16:53	448.0396707	53.23033142	2617.903418	2961.246972
2814	2/5/2013 16:54	447.890044	53.15116882	2661.644656	3017.15259
2815	2/5/2013 16:55	447.805631	52.95010757	2655.083425	3005.886683
2816	2/5/2013 16:56	447.9484878	52.84489822	2648.522193	3000.829881
2817	2/5/2013 16:57	447.8830095	52.70377731	2641.960962	2991.453046
2818	2/5/2013 16:58	448.6669501	52.71429443	2727.256055	3103.157203
2819	2/5/2013 16:59	449.2141006	52.63455582	2631.025881	2989.110094
2820	2/5/2013 17:00	450.3421456	52.61146545	2703.198511	3087.111306
2821	2/5/2013 17:01	451.8335472	52.55223083	2742.565442	3133.927169
2822	2/5/2013 17:02	451.7306226	52.46073914	2760.061983	3156.028362

2823	2/5/2013 17:03	451.8431732	52.50534058	2792.867682	3191.210772
2824	2/5/2013 17:04	452.0208319	52.49289322	2790.680758	3195.91742
2825	2/5/2013 17:05	452.1496727	52.49367905	2795.054836	3199.523734
2826	2/5/2013 17:06	452.0792228	52.50946426	2773.184217	3174.63011
2827	2/5/2013 17:07	452.1137602	52.44448471	2786.30668	3191.944817
2828	2/5/2013 17:08	452.0997971	52.31253433	2832.234843	3238.612739
2829	2/5/2013 17:09	452.0606054	52.31392288	2803.802992	3207.558626
2830	2/5/2013 17:10	451.9144694	52.21717453	2768.810139	3169.054678
2831	2/5/2013 17:11	452.1254489	52.13551712	2832.234843	3240.434965
2832	2/5/2013 17:12	452.0221541	52.01956177	2834.421767	3244.316624
2833	2/5/2013 17:13	452.175113	51.91872025	2792.867682	3197.938716
2834	2/5/2013 17:14	451.8551264	51.85656738	2795.054836	3201.228194
2835	2/5/2013 17:15	451.9599551	51.8131218	2788.493604	3187.990445
2836	2/5/2013 17:16	452.0050705	51.80185318	2781.932373	3183.332831
2837	2/5/2013 17:17	451.7944083	51.81241989	2792.867682	3197.300015
2838	2/5/2013 17:18	451.9244128	51.82403564	2801.616068	3210.16435
2839	2/5/2013 17:19	451.829316	51.77716446	2795.054836	3198.096296
2840	2/5/2013 17:20	452.0456903	51.66921616	2775.371371	3177.794698
2841	2/5/2013 17:21	451.943136	51.70951843	2746.939749	3145.722183
2842	2/5/2013 17:22	452.0163891	51.65532303	2722.882206	3116.827039
2843	2/5/2013 17:23	451.8483036	51.61020279	2720.694823	3116.868949
2844	2/5/2013 17:24	451.91082	51.55624008	2749.126674	3149.881703
2845	2/5/2013 17:25	451.5616909	51.52749252	2720.694823	3119.03127
2846	2/5/2013 17:26	452.1243911	51.49272537	2746.939749	3146.514064
2847	2/5/2013 17:27	451.9916893	51.51491165	2722.882206	3120.318311
2848	2/5/2013 17:28	452.0977873	51.49843979	2738.191364	3143.087332
2849	2/5/2013 17:29	451.9497472	51.50509262	2705.385665	3095.120424
2850	2/5/2013 17:30	451.9981419	51.55310059	2744.752596	3152.072732
2851	2/5/2013 17:31	452.1973798	51.63817215	2731.630133	3135.1218
2852	2/5/2013 17:32	451.999041	51.59289551	2731.630133	3127.636132
2853	2/5/2013 17:33	452.1002202	51.60937119	2720.694823	3118.592058
2854	2/5/2013 17:34	452.0805979	51.64480591	2703.198511	3098.744759
2855	2/5/2013 17:35	451.8342348	51.66447067	2696.63728	3092.764691
2856	2/5/2013 17:36	451.9842846	51.58580399	2733.817286	3128.547664
2857	2/5/2013 17:37	452.0830309	51.64274979	2714.133821	3111.575358
	Stop Run #3	450.3634159	52.50360889	2732.949415	3114.97104
2858	2/5/2013 17:38	451.8541215	51.64021683	2727.256055	3115.021996
2859	2/5/2013 17:39	441.2300668	51.58808517	0	0
4138	2/6/2013 14:58	424.971023	56.40008545	2224.233881	2374.644717
4139	2/6/2013 14:59	424.8822466	56.26711655	2235.169191	2384.281391
	Start Run #4				
4140	2/6/2013 15:00	424.985039	56.07533264	2224.233881	2378.100995
4141	2/6/2013 15:01	425.0043968	56.03802109	2243.917117	2395.265875
4142	2/6/2013 15:02	426.1273115	55.91444397	2327.025286	2499.909955
4143	2/6/2013 15:03	428.4165373	55.84420395	2403.571994	2592.504001
4144	2/6/2013 15:04	431.4593975	55.69795609	2462.622619	2678.857092
4145	2/6/2013 15:05	437.497358	55.54177475	2834.421767	3167.028981
4146	2/6/2013 15:06	445.1325007	55.30813599	2910.968704	3274.381463
4147	2/6/2013 15:07	447.0399905	55.05291367	2917.529936	3286.138969

4148	2/6/2013 15:08	447.2591152	54.84549332	2880.349929	3246.71343
4149	2/6/2013 15:09	447.2960855	54.64136887	2897.846241	3264.799272
4150	2/6/2013 15:10	444.0754874	54.49952316	2790.680758	3113.052878
4151	2/6/2013 15:11	439.9036565	54.42265701	2547.917713	2800.412709
4152	2/6/2013 15:12	435.8652152	54.36888504	2582.910565	2843.279648
4153	2/6/2013 15:13	432.7485994	54.35699463	2414.507533	2626.081905
4154	2/6/2013 15:14	429.6499135	54.34418869	2324.838132	2507.324168
4155	2/6/2013 15:15	425.1382887	54.3956604	2160.809178	2304.487349
4156	2/6/2013 15:16	423.2103038	54.53660965	2167.370409	2310.516033
4157	2/6/2013 15:17	426.9813581	54.55558777	2377.327526	2572.369622
4158	2/6/2013 15:18	432.5377785	54.48420334	2639.774037	2894.687536
4159	2/6/2013 15:19	438.7945992	54.36065674	2681.328122	2967.922529
4160	2/6/2013 15:20	443.6165844	54.16297531	2928.465016	3309.06075
4161	2/6/2013 15:21	442.6773578	53.99917984	2718.507899	3011.47867
4162	2/6/2013 15:22	442.5132127	53.9065361	2838.795845	3190.136631
4163	2/6/2013 15:23	444.6052369	53.72627258	2830.047689	3178.670397
4164	2/6/2013 15:24	445.847578	53.66496658	2904.407472	3271.574783
4165	2/6/2013 15:25	445.5470022	53.53342819	2873.788697	3230.931982
4166	2/6/2013 15:26	443.1677041	53.57116699	2716.320975	3015.421098
4167	2/6/2013 15:27	439.2662487	53.61943054	2639.774037	2910.726937
4168	2/6/2013 15:28	436.8173998	53.6656456	2591.658721	2858.151868
4169	2/6/2013 15:29	434.6117936	53.6883049	2460.435695	2680.216217
4170	2/6/2013 15:30	428.5466476	53.82120895	2232.981808	2394.96727
4171	2/6/2013 15:31	419.7301199	53.99048996	2025.211845	2144.718217
4172	2/6/2013 15:32	424.4584628	54.1456604	2335.773442	2524.302131
4173	2/6/2013 15:33	435.378677	54.13719177	2663.831581	2936.212113
4174	2/6/2013 15:34	441.9141239	54.01818848	2749.126674	3071.691538
4175	2/6/2013 15:35	442.2725881	53.86221695	2755.687905	3080.927348
4176	2/6/2013 15:36	438.262734	53.79427719	2565.414254	2811.003244
4177	2/6/2013 15:37	444.3908195	53.7008667	2974.393178	3382.049943
4178	2/6/2013 15:38	449.8874474	53.53486252	2989.702565	3399.070655
4179	2/6/2013 15:39	448.1886628	53.39295959	2845.357076	3198.00619
4180	2/6/2013 15:40	442.4837263	53.27019119	2567.601178	2817.912027
4181	2/6/2013 15:41	433.8408641	53.3527832	2539.169557	2779.519558
4182	2/6/2013 15:42	433.9339775	53.35987473	2543.543635	2792.136418
4183	2/6/2013 15:43	433.6405684	53.40332413	2545.730788	2788.205515
4184	2/6/2013 15:44	432.2662925	53.43191528	2429.81692	2640.750865
4185	2/6/2013 15:45	427.7535306	53.41453934	2219.859574	2380.492981
4186	2/6/2013 15:46	424.9735882	53.5728302	2307.341821	2490.80637
4187	2/6/2013 15:47	431.236835	53.70757675	2506.363628	2733.695274
4188	2/6/2013 15:48	434.2549954	53.63139725	2571.975256	2829.06394
4189	2/6/2013 15:49	446.4979704	53.53829575	2948.148711	3332.885681
4190	2/6/2013 15:50	448.4218563	53.34567261	2937.213401	3331.875242
4191	2/6/2013 15:51	448.3623546	53.20248032	2924.091167	3308.190708
4192	2/6/2013 15:52	447.880841	53.03321838	2921.903784	3309.763782
4193	2/6/2013 15:53	447.894381	52.95911789	2939.400325	3331.114585
4194	2/6/2013 15:54	447.7989668	52.86120605	2932.839094	3317.774576
4195	2/6/2013 15:55	436.6107837	52.85343933	2141.125713	2290.472598
4196	2/6/2013 15:56	425.0404416	53.02498245	2213.298572	2379.789529
4197	2/6/2013 15:57	424.9187409	53.18463516	2217.67265	2381.716948
4198	2/6/2013 15:58	424.9518503	53.31365967	2224.233881	2384.320996
4199	2/6/2013 15:59	424.8192013	53.38913345	2232.981808	2394.401701

4200	2/6/2013 16:00	422.8002186	53.45097733	2136.751635	2281.248313
4201	2/6/2013 16:01	422.7915446	53.62209702	2141.125713	2285.81205
	Stop Run #4	436.1934978	54.00231915	2573.739075	2837.179065
4202	2/6/2013 16:02	422.730853	53.71590805	2138.938788	2282.432886
4203	2/6/2013 16:03	422.8024136	53.76017761	2132.377557	2275.071898
5267	2/7/2013 9:47	422.9967856	49.46014023	2162.996332	2324.062237
5268	2/7/2013 9:48	423.1892006	49.57329941	2154.247946	2318.907785
5269	2/7/2013 9:49	422.9265737	49.63180542	2147.686715	2309.4662
	Start Run #5				
5270	2/7/2013 9:50	422.9795433	49.85128403	2187.053875	2353.721811
5271	2/7/2013 9:51	423.8153693	49.99439621	2222.046728	2401.777566
5272	2/7/2013 9:52	427.9590888	49.98634338	2414.507533	2636.748715
5273	2/7/2013 9:53	431.9857357	49.8780098	2536.982403	2797.13748
5274	2/7/2013 9:54	436.89499	49.74978638	2648.522193	2951.955004
5275	2/7/2013 9:55	441.2861041	49.5627861	2805.989916	3165.64932
5276	2/7/2013 9:56	445.7536447	49.36915588	2882.537083	3272.529691
5277	2/7/2013 9:57	445.9345826	49.17092896	2889.098085	3281.293809
5278	2/7/2013 9:58	445.7740075	49.0973053	2900.033394	3293.761681
5279	2/7/2013 9:59	445.9586477	48.96473312	2900.033394	3296.759049
5280	2/7/2013 10:00	445.8067995	48.87334824	2891.285009	3284.172784
5281	2/7/2013 10:01	445.7405279	48.79809189	2856.292386	3236.203571
5282	2/7/2013 10:02	440.0031697	48.86779404	2670.392812	2982.862853
5283	2/7/2013 10:03	433.5576893	49.00356674	2484.493239	2736.208378
5284	2/7/2013 10:04	429.959745	49.17684555	2313.903052	2519.215154
5285	2/7/2013 10:05	425.158149	49.31240463	2191.427953	2365.580527
5286	2/7/2013 10:06	422.6157372	49.4527626	2134.564481	2294.069272
5287	2/7/2013 10:07	425.7530859	49.55630875	2355.456907	2572.178096
5288	2/7/2013 10:08	430.5324151	49.63153458	2471.370775	2714.60549
5289	2/7/2013 10:09	434.5390165	49.68501282	2622.277496	2912.113932
5290	2/7/2013 10:10	441.59382	49.69303894	2847.544	3225.236689
5291	2/7/2013 10:11	447.0481885	49.59563828	2991.889719	3413.30145
5292	2/7/2013 10:12	446.6437361	49.50192261	2900.033394	3296.623891
5293	2/7/2013 10:13	446.3138062	49.4452095	2891.285009	3284.85067
5294	2/7/2013 10:14	445.949339	49.32954407	2895.659317	3292.083624
5295	2/7/2013 10:15	446.010586	49.32339096	2895.659317	3289.275477
5296	2/7/2013 10:16	445.197926	49.36680603	2840.982998	3211.89228
5297	2/7/2013 10:17	439.3936351	49.42692566	2685.7022	2995.482017
5298	2/7/2013 10:18	436.2498337	49.48225021	2554.478944	2829.330484
5299	2/7/2013 10:19	431.1804539	49.66992569	2381.701604	2603.098308
5300	2/7/2013 10:20	425.0335923	49.85395813	2219.859574	2396.589797
5301	2/7/2013 10:21	424.6577536	50.00692368	2237.356115	2420.73806
5302	2/7/2013 10:22	430.1732633	50.14363098	2436.378152	2667.219657
5303	2/7/2013 10:23	432.2038025	50.17335892	2515.112013	2768.55058
5304	2/7/2013 10:24	436.0949179	50.13539505	2685.7022	2991.662174
5305	2/7/2013 10:25	442.9264449	50.04006958	2836.608691	3204.196016
5306	2/7/2013 10:26	445.90782	50.01354599	2895.659317	3285.521641
5307	2/7/2013 10:27	446.6602379	49.97926331	2926.278091	3326.819278
5308	2/7/2013 10:28	446.3811356	49.9691925	2939.400325	3333.621402
5309	2/7/2013 10:29	446.6354324	49.8960228	2891.285009	3279.698314

5310	2/7/2013 10:30	446.7012808	49.89673233	2913.155628	3312.536096
5311	2/7/2013 10:31	445.0303165	49.94198227	2816.925226	3170.429729
5312	2/7/2013 10:32	438.2174598	50.06430054	2598.219953	2881.372464
5313	2/7/2013 10:33	433.2866528	50.24697495	2473.557929	2710.712515
5314	2/7/2013 10:34	430.0163641	50.43170166	2357.644061	2571.375528
5315	2/7/2013 10:35	427.0109767	50.63999939	2200.176109	2373.933932
5316	2/7/2013 10:36	424.50855	50.81513596	2211.111418	2384.043136
5317	2/7/2013 10:37	428.7802377	50.98640823	2416.694457	2638.26102
5318	2/7/2013 10:38	432.5978884	51.04860306	2543.543635	2800.786332
5319	2/7/2013 10:39	435.3778307	51.08999252	2624.46465	2905.072086
5320	2/7/2013 10:40	440.5522243	51.13540649	2836.608691	3192.101559
5321	2/7/2013 10:41	446.1317577	51.09477615	2904.407472	3290.557489
5322	2/7/2013 10:42	446.0131776	51.08552933	2880.349929	3259.937768
5323	2/7/2013 10:43	446.1510627	51.10667038	2924.091167	3309.775935
5324	2/7/2013 10:44	446.2086603	51.16111374	2897.846241	3285.520384
5325	2/7/2013 10:45	446.1981351	51.2122345	2930.652169	3317.575087
5326	2/7/2013 10:46	444.4537061	51.24113846	2779.745449	3105.522576
5327	2/7/2013 10:47	436.2436455	51.29821777	2545.730788	2798.23991
5328	2/7/2013 10:48	430.7981097	51.37274551	2410.133226	2624.439262
5329	2/7/2013 10:49	427.9683182	51.44350052	2261.413658	2441.859618
5330	2/7/2013 10:50	425.7947371	51.65036392	2259.226734	2437.214367
5331	2/7/2013 10:51	424.0701155	51.82669067	2189.240799	2353.926958
	Stop Run #5	437.1995965	50.06159081	2626.157808	2924.992415
5332	2/7/2013 10:52	423.9962542	52.02505875	2191.427953	2355.088689
5333	2/7/2013 10:53	428.9305256	51.9559021	2550.104637	2823.425643
5334	2/7/2013 10:54	425.8575708	49.1680336	1902.736745	2037.164569
5335	2/7/2013 10:55	422.6349364	45.53749084	2005.528379	2188.469446
5527	2/7/2013 14:07	422.9796227	61.23044968	2143.312866	2252.739994
5528	2/7/2013 14:08	422.8433507	60.70708847	2132.377557	2246.382949
5529	2/7/2013 14:09	423.005486	60.20095444	2136.751635	2253.967943
	Start Run #6				
5530	2/7/2013 14:10	423.3255254	59.74982834	2156.4351	2281.568502
5531	2/7/2013 14:11	424.0842637	59.34521866	2206.73734	2342.087729
5532	2/7/2013 14:12	430.3972274	58.91636276	2434.190769	2625.93606
5533	2/7/2013 14:13	433.5298161	58.38175583	2576.349563	2798.266313
5534	2/7/2013 14:14	436.5486112	57.92847824	2628.838728	2883.56517
5535	2/7/2013 14:15	442.4975043	57.5230751	2854.105232	3185.461205
5536	2/7/2013 14:16	447.2406036	57.14309692	2928.465016	3289.05147
5537	2/7/2013 14:17	448.3726682	56.83821487	2954.709713	3328.335984
5538	2/7/2013 14:18	448.0621491	56.55784607	2945.961557	3314.419091
5539	2/7/2013 14:19	448.1012351	56.35577011	2915.342782	3281.461028
5540	2/7/2013 14:20	448.2878321	56.22348404	2937.213401	3305.947292
5541	2/7/2013 14:21	447.2477966	56.05550003	2768.810139	3090.905165
5542	2/7/2013 14:22	440.0902272	55.96748352	2650.709347	2920.708107
5543	2/7/2013 14:23	436.9320132	55.99028397	2596.033029	2841.842989
5544	2/7/2013 14:24	433.8720165	55.98798752	2449.500386	2659.553988
5545	2/7/2013 14:25	428.6235765	55.94359207	2257.03958	2419.832395
5546	2/7/2013 14:26	425.1524369	56.02127075	2202.363262	2353.981859
5547	2/7/2013 14:27	428.4801644	56.18753433	2438.565076	2630.657167

5548	2/7/2013 14:28	433.4604239	56.26057434	2580.723412	2823.26031
5549	2/7/2013 14:29	438.4948432	56.34258652	2762.248907	3062.316589
5550	2/7/2013 14:30	444.8391709	56.28229141	2878.162775	3220.555815
5551	2/7/2013 14:31	447.4117567	56.24622726	2930.652169	3298.115241
5552	2/7/2013 14:32	447.5291203	56.29556656	2897.846241	3254.927276
5553	2/7/2013 14:33	447.3203093	56.30435562	2913.155628	3271.829383
5554	2/7/2013 14:34	447.538429	56.3546257	2884.724007	3245.170531
5555	2/7/2013 14:35	447.8245657	56.29748917	2904.407472	3264.912218
5556	2/7/2013 14:36	448.3254372	56.33798599	2967.832176	3352.805274
5557	2/7/2013 14:37	445.8773023	56.37898636	2718.507899	2997.81994
5558	2/7/2013 14:38	434.4814718	56.55587387	2449.500386	2643.488394
5559	2/7/2013 14:39	428.8628789	56.88866806	2337.960596	2509.122295
5560	2/7/2013 14:40	426.3835123	57.125103	2257.03958	2407.933027
5561	2/7/2013 14:41	424.2943177	57.42473221	2189.240799	2330.849483
5562	2/7/2013 14:42	428.900193	57.64738083	2497.615472	2708.988148
5563	2/7/2013 14:43	434.4738292	57.66713333	2587.284643	2825.795626
5564	2/7/2013 14:44	439.465989	57.66430664	2731.630133	3013.309906
5565	2/7/2013 14:45	445.0306868	57.65203476	2873.788697	3210.982634
5566	2/7/2013 14:46	447.7230692	57.5684967	2900.033394	3254.57335
5567	2/7/2013 14:47	448.3006845	57.44363403	2967.832176	3338.584746
5568	2/7/2013 14:48	448.3644173	57.39075851	2904.407472	3263.14196
5569	2/7/2013 14:49	448.2202912	57.29324341	2939.400325	3299.631109
5570	2/7/2013 14:50	448.3311493	57.09136581	2924.091167	3285.42504
5571	2/7/2013 14:51	447.8188536	56.93572617	2893.472392	3240.004135
5572	2/7/2013 14:52	443.8732876	56.8064003	2768.810139	3078.397689
5573	2/7/2013 14:53	441.7990874	56.73339462	2718.507899	2999.704191
5574	2/7/2013 14:54	437.4889484	56.73086548	2547.917713	2774.322359
5575	2/7/2013 14:55	429.7556148	56.80914307	2307.341821	2471.314883
5576	2/7/2013 14:56	424.3608537	56.97624207	2180.492643	2319.459734
5577	2/7/2013 14:57	428.97974	57.19138718	2464.809544	2669.565333
5578	2/7/2013 14:58	434.1502197	57.18392563	2580.723412	2823.623875
5579	2/7/2013 14:59	438.7494308	57.19171143	2720.694823	3000.085568
5580	2/7/2013 15:00	444.5213	57.12319565	2880.349929	3225.713409
5581	2/7/2013 15:01	447.9098778	56.94053268	2893.472392	3251.12273
5582	2/7/2013 15:02	448.1182657	56.74986649	2915.342782	3277.906263
5583	2/7/2013 15:03	448.1913602	56.62445068	2895.659317	3259.166214
5584	2/7/2013 15:04	448.0342759	56.62147141	2948.148711	3308.06456
5585	2/7/2013 15:05	447.8949099	56.67000198	2945.961557	3316.697711
5586	2/7/2013 15:06	448.0165576	56.68990707	2921.903784	3284.280701
5587	2/7/2013 15:07	437.9368237	56.68555832	2506.363628	2720.109257
5588	2/7/2013 15:08	430.905054	56.83167648	2429.81692	2622.310678
5589	2/7/2013 15:09	430.8453937	56.93777847	2377.327526	2563.149319
5590	2/7/2013 15:10	428.1791655	56.90232468	2302.967743	2466.203389
5591	2/7/2013 15:11	425.8502984	56.87393188	2202.363262	2344.335546
	Stop Run #6	439.2851425	56.93289831	2666.159734	2942.784796
5592	2/7/2013 15:12	424.9995574	56.81029892	2226.420806	2372.684819
5593	2/7/2013 15:13	425.082225	56.71577835	2169.557334	2315.604058
5594	2/7/2013 15:14	424.4069212	56.58462524	2145.49979	2281.148988
5595	2/7/2013 15:15	422.2404803	56.59881973	2062.391622	2178.730094
5596	2/7/2013 15:16	420.678232	56.63063049	1955.226139	2055.859147

5597	2/7/2013 15:17	416.6372784	56.74507141	1797.758186	1871.124725
5598	2/7/2013 15:18	412.91208	56.87059021	1598.736379	1651.756489
5599	2/7/2013 15:19	411.054545	56.98273087	1502.505976	1545.482443
5600	2/7/2013 15:20	409.2502178	57.27708817	1393.15334	1425.110979
5601	2/7/2013 15:21	408.0626976	57.50737381	1336.289868	1363.844192
5602	2/7/2013 15:22	407.7846266	57.71648788	1261.930085	1287.376299
5603	2/7/2013 15:23	407.6339156	57.83837891	1178.822031	1202.245813
5604	2/7/2013 15:24	407.6275688	57.93383408	1148.203256	1170.944329
5605	2/7/2013 15:25	407.6275688	58.16871262	1104.462132	1125.589223
5606	2/7/2013 15:26	407.6275688	58.39329529	1054.160007	1074.014849
5607	2/7/2013 15:27	407.6275688	58.49494553	988.5482642	1006.814511
5608	2/7/2013 15:28	407.6275688	58.6071434	990.7354179	1009.158196
5609	2/7/2013 15:29	407.6275688	58.57646561	979.8001084	997.7444541
	Start Run #7				
5610	2/7/2013 15:30	407.6275688	58.60186768	979.8001084	997.8112997
5611	2/7/2013 15:31	407.6275688	58.5828743	1021.354078	1040.229911
5612	2/7/2013 15:32	407.6275688	58.54829407	1124.145712	1144.948171
5613	2/7/2013 15:33	408.3462426	58.39743042	1417.210883	1450.175699
5614	2/7/2013 15:34	421.1183854	58.03523254	2012.089611	2126.765228
5615	2/7/2013 15:35	425.2105369	57.4442482	2211.111418	2365.24106
5616	2/7/2013 15:36	424.8695265	56.94021606	2152.061022	2298.008348
5617	2/7/2013 15:37	425.1841975	56.52801514	2160.809178	2304.63068
5618	2/7/2013 15:38	425.0827539	56.15016174	2162.996332	2310.167137
5619	2/7/2013 15:39	425.3421545	55.84099197	2141.125713	2286.84512
5620	2/7/2013 15:40	424.9225755	55.54236221	2141.125713	2289.652638
5621	2/7/2013 15:41	423.3682344	55.36885071	1985.844914	2100.659162
5622	2/7/2013 15:42	419.049818	55.27852249	1821.815959	1913.374965
5623	2/7/2013 15:43	414.1530194	55.24649429	1624.980961	1684.429252
5624	2/7/2013 15:44	411.093869	55.34969711	1474.074355	1517.571753
5625	2/7/2013 15:45	408.2888831	55.4597435	1285.987628	1317.790034
5626	2/7/2013 15:46	407.6275688	55.76593399	1041.037658	1065.900538
5627	2/7/2013 15:47	407.6709918	56.03185654	1296.922937	1327.250479
5628	2/7/2013 15:48	410.7992434	56.25979233	1657.786775	1720.275509
5629	2/7/2013 15:49	417.4079699	56.30190659	1828.376961	1916.336711
5630	2/7/2013 15:50	419.4681012	56.30945969	2110.506938	2246.861346
5631	2/7/2013 15:51	424.8122463	56.30785751	2143.312866	2288.272767
5632	2/7/2013 15:52	424.9895082	56.20532608	2156.4351	2303.535584
5633	2/7/2013 15:53	425.1694676	56.17076111	2167.370409	2309.925109
5634	2/7/2013 15:54	424.9969129	56.06297302	2134.564481	2276.653564
5635	2/7/2013 15:55	424.9628515	56.03643799	2134.564481	2279.557684
5636	2/7/2013 15:56	424.2824967	56.0231514	2079.888163	2207.291638
5637	2/7/2013 15:57	417.2413124	55.96800613	1690.592589	1758.520352
5638	2/7/2013 15:58	411.5998444	56.08105087	1476.261279	1517.830754
5639	2/7/2013 15:59	409.2131681	56.17190933	1401.901496	1437.763986
5640	2/7/2013 16:00	408.1289692	56.32685471	1187.570301	1214.726677
5641	2/7/2013 16:01	407.6275688	56.47616196	1124.145712	1149.399485
5642	2/7/2013 16:02	407.9231729	56.70584488	1310.045286	1342.276612
5643	2/7/2013 16:03	411.9831406	56.75056839	1657.786775	1721.282699
5644	2/7/2013 16:04	418.3100409	56.72530746	1939.916751	2046.961966
5645	2/7/2013 16:05	422.7162024	56.54953003	2136.751635	2273.777733
5646	2/7/2013 16:06	424.5606734	56.33050156	2152.061022	2295.649471
5647	2/7/2013 16:07	424.5665971	56.2428627	2136.751635	2278.868482

5648	2/7/2013 16:08	424.7378296	56.09501648	2145.49979	2288.60511
5649	2/7/2013 16:09	425.2205596	56.04031754	2147.686715	2292.801929
5650	2/7/2013 16:10	425.0976425	55.85619736	2176.118565	2324.67181
5651	2/7/2013 16:11	421.507288	55.72428513	1710.276054	1780.933351
5652	2/7/2013 16:12	413.5174627	55.6009407	1664.348007	1729.332679
5653	2/7/2013 16:13	412.7316975	55.52473831	1515.628325	1564.363833
5654	2/7/2013 16:14	409.6126488	55.46592712	1415.023844	1455.520629
5655	2/7/2013 16:15	408.1550705	55.49911118	1097.901015	1124.837052
5656	2/7/2013 16:16	407.6275688	55.63616562	1183.196108	1211.920206
5657	2/7/2013 16:17	408.0609522	55.75779343	1310.045286	1346.064499
5658	2/7/2013 16:18	413.0515253	55.66740036	1616.232691	1686.409058
5659	2/7/2013 16:19	418.1787142	55.35449219	1926.794518	2036.062768
5660	2/7/2013 16:20	422.2164416	54.90999222	2084.262241	2228.931827
5661	2/7/2013 16:21	424.1274222	54.58098221	2049.269388	2179.754991
5662	2/7/2013 16:22	423.7117835	54.30003357	2095.19755	2240.694151
5663	2/7/2013 16:23	425.7227533	54.06643295	2138.938788	2299.48964
5664	2/7/2013 16:24	425.784397	53.85620499	2138.938788	2298.313659
5665	2/7/2013 16:25	425.1874238	53.68431473	2171.744487	2330.977726
5666	2/7/2013 16:26	422.4195934	53.55309677	1808.693496	1907.074498
5667	2/7/2013 16:27	416.2760374	53.53836441	1585.613916	1649.365237
5668	2/7/2013 16:28	411.1249421	53.58192062	1452.203736	1503.302925
5669	2/7/2013 16:29	409.4648996	53.73609924	1312.232325	1353.268535
5670	2/7/2013 16:30	407.7047622	53.82807541	1071.656433	1101.95016
5671	2/7/2013 16:31	407.6275688	54.01222229	1010.418883	1038.156752
	Stop Run #7	417.1586764	55.82240615	1734.016222	1824.193913
5672	2/7/2013 16:32	407.6275688	54.24124527	1021.354078	1049.124263
5673	2/7/2013 16:33	407.6275688	54.39657974	1012.605922	1039.903751
5674	2/7/2013 16:34	407.6275688	54.57206726	1008.231844	1034.809754
5675	2/7/2013 16:35	407.6275688	54.86231995	1012.605922	1038.65097
5676	2/7/2013 16:36	407.6434359	55.11501694	1016.980115	1042.697334
5677	2/7/2013 16:37	407.6692464	55.34313965	1016.980115	1042.197773
5678	2/7/2013 16:38	407.7197302	55.49201584	997.2965348	1022.540743
5679	2/7/2013 16:39	407.8400822	55.62529373	995.1094959	1019.276516
5680	2/7/2013 16:40	408.0164714	55.70584106	981.9871474	1007.459708
5681	2/7/2013 16:41	408.357667	55.76763916	1006.044805	1032.80386
5682	2/7/2013 16:42	408.2067708	55.79943848	1019.167039	1045.605959
5683	2/7/2013 16:43	408.7620136	55.85458755	990.7354179	1017.630729
5684	2/7/2013 16:44	408.7391649	55.89912033	1006.044805	1033.239823
	Start Run #8				
5685	2/7/2013 16:45	408.8844811	55.91545105	1006.044805	1032.12723
5686	2/7/2013 16:46	409.685135	55.93421936	1054.160007	1088.122325
5687	2/7/2013 16:47	413.3529209	55.93675232	1218.189076	1271.263976
5688	2/7/2013 16:48	423.2228653	55.82826614	1633.729232	1762.597309
5689	2/7/2013 16:49	431.7951189	55.71065903	1826.189922	2001.830237
5690	2/7/2013 16:50	438.9591674	55.40951157	2044.89531	2277.478133
5691	2/7/2013 16:51	444.2281817	55.16992569	2066.765929	2313.240361
5692	2/7/2013 16:52	443.9776402	54.95462036	2077.701238	2324.54692
5693	2/7/2013 16:53	443.6794445	54.74411392	2068.952853	2312.514908
5694	2/7/2013 16:54	443.7410618	54.57297134	2062.391622	2305.645728
5695	2/7/2013 16:55	443.5189753	54.38674545	2066.765929	2313.252725

5696	2/7/2013 16:56	438.2005878	54.17969131	1797.758186	1951.951208
5697	2/7/2013 16:57	429.0654488	54.15727234	1646.851466	1766.841905
5698	2/7/2013 16:58	423.2020001	54.21057129	1537.498829	1634.620945
5699	2/7/2013 16:59	418.2121409	54.31033707	1358.160487	1426.404621
5700	2/7/2013 17:00	413.3187802	54.45377731	1154.764487	1197.337895
5701	2/7/2013 17:01	409.6333553	54.63063431	1045.411736	1076.61502
5702	2/7/2013 17:02	413.6980568	54.77478027	1292.54886	1358.721382
5703	2/7/2013 17:03	424.7714678	54.76609421	1670.909009	1804.285124
5704	2/7/2013 17:04	430.5088525	54.58143616	1824.002883	1995.642716
5705	2/7/2013 17:05	438.6006503	54.48832321	1979.283682	2199.761546
5706	2/7/2013 17:06	444.3019109	54.34487915	2062.391622	2309.323708
5707	2/7/2013 17:07	443.6270038	54.13255692	2036.147154	2273.349208
5708	2/7/2013 17:08	443.2825555	53.93603516	2073.326931	2318.808041
5709	2/7/2013 17:09	443.5394438	53.87953568	2058.017773	2302.604774
5710	2/7/2013 17:10	443.7257236	53.74342728	2062.391622	2307.705162
5711	2/7/2013 17:11	439.017955	53.66268539	1758.39137	1912.01542
5712	2/7/2013 17:12	427.7869044	53.64848709	1659.973814	1787.590678
5713	2/7/2013 17:13	422.6570181	53.72786331	1495.94486	1589.851943
5714	2/7/2013 17:14	419.2288518	53.78115845	1360.347411	1429.501211
5715	2/7/2013 17:15	414.8767972	54.00216675	1185.383147	1235.461305
5716	2/7/2013 17:16	409.4760859	54.17625046	1023.541232	1055.986318
5717	2/7/2013 17:17	415.2646684	54.33732224	1283.800589	1351.256983
5718	2/7/2013 17:18	424.5113531	54.33731079	1655.599736	1795.886038
5719	2/7/2013 17:19	431.0952476	54.26709366	1778.074836	1947.653806
5720	2/7/2013 17:20	439.1237357	54.16894531	2014.276535	2260.030573
5721	2/7/2013 17:21	444.9798063	53.96990967	2036.147154	2285.504853
5722	2/7/2013 17:22	444.0169906	53.78369141	2036.147154	2279.575076
5723	2/7/2013 17:23	443.925649	53.66107178	2053.643695	2302.76424
5724	2/7/2013 17:24	444.1995152	53.50094223	2058.017773	2312.06438
5725	2/7/2013 17:25	444.3979068	53.40782547	2040.521232	2292.309282
5726	2/7/2013 17:26	438.2725451	53.36986923	1760.578409	1916.319737
5727	2/7/2013 17:27	427.2032066	53.40875626	1616.232691	1738.483517
5728	2/7/2013 17:28	423.0010697	53.46348953	1410.649766	1494.381018
5729	2/7/2013 17:29	419.4650865	53.51101685	1358.160487	1432.606601
5730	2/7/2013 17:30	416.7280646	53.66564941	1237.872427	1295.20992
5731	2/7/2013 17:31	410.1191002	53.7775116	1073.843357	1111.777104
5732	2/7/2013 17:32	416.0934071	53.90447617	1314.419364	1388.876536
5733	2/7/2013 17:33	421.3156928	53.95852661	1585.613916	1705.747785
5734	2/7/2013 17:34	433.0617102	53.91865921	1843.686464	2035.123366
5735	2/7/2013 17:35	438.5954935	53.80060959	1955.226139	2183.290059
5736	2/7/2013 17:36	447.935371	53.60760117	2060.204697	2321.429062
5737	2/7/2013 17:37	445.5156911	53.54812241	2058.017773	2314.978559
5738	2/7/2013 17:38	445.335864	53.43329239	2049.269388	2304.499503
5739	2/7/2013 17:39	445.1186963	53.45021439	2055.830619	2308.714762
5740	2/7/2013 17:40	445.0091075	53.35254288	2058.017773	2312.16664
5741	2/7/2013 17:41	437.2023621	53.28248215	1662.160968	1792.020514
5742	2/7/2013 17:42	427.2822513	53.35757446	1579.052914	1699.611288
5743	2/7/2013 17:43	423.5751149	53.40423965	1487.196589	1586.061961
5744	2/7/2013 17:44	420.8007525	53.47149658	1386.592108	1466.680295
5745	2/7/2013 17:45	415.1518269	53.58563614	1054.160007	1088.071195
5746	2/7/2013 17:46	408.4717779	53.7180748	1001.670727	1032.224775

	Stop Run #8	430.2023491	54.13830893	1673.766416	1827.295474
5747	2/7/2013 17:47	408.5577511	53.82584	1003.857652	1035.467628
5748	2/7/2013 17:48	408.4356273	53.9140625	0	0
290	2/8/2013 9:22	411.2940325	55.70055771	992.9224569	1026.704558
291	2/8/2013 9:23	411.3129937	55.74977112	988.5482642	1022.015826
292	2/8/2013 9:24	411.5946347	55.68590927	990.7354179	1024.843776
	Start Run #9				
293	2/8/2013 9:25	411.8332759	55.70810318	992.9224569	1027.511735
294	2/8/2013 9:26	412.6949916	55.70146179	1054.160007	1098.247769
295	2/8/2013 9:27	418.2639999	55.70170593	1266.304163	1338.825154
296	2/8/2013 9:28	428.0102602	55.56052017	1585.613916	1725.653652
297	2/8/2013 9:29	432.817013	55.20355606	1686.218511	1848.022733
298	2/8/2013 9:30	444.4638082	54.89167404	2027.398998	2303.183754
299	2/8/2013 9:31	451.0394517	54.46084595	2012.089611	2288.436424
300	2/8/2013 9:32	450.6714937	54.12751389	2007.715303	2282.646415
301	2/8/2013 9:33	450.3416696	53.83354187	2031.772847	2310.659364
302	2/8/2013 9:34	450.1420086	53.57481003	2018.650613	2293.648082
303	2/8/2013 9:35	450.1542262	53.38174057	2003.341455	2279.304131
304	2/8/2013 9:36	444.8046335	53.20469666	1769.326565	1955.551235
305	2/8/2013 9:37	435.8162652	53.20349121	1673.096277	1832.478913
306	2/8/2013 9:38	428.3978935	53.26410294	1430.333232	1534.648205
307	2/8/2013 9:39	423.7208542	53.42400742	1384.40507	1479.097141
308	2/8/2013 9:40	419.2461998	53.55576706	1141.642139	1197.519258
309	2/8/2013 9:41	412.5372197	53.84766006	1056.347046	1103.220857
310	2/8/2013 9:42	417.6090853	54.06843567	1255.368968	1331.482397
311	2/8/2013 9:43	426.4055675	54.11898422	1528.750673	1657.203364
312	2/8/2013 9:44	437.2274321	54.00734329	1719.024325	1897.49985
313	2/8/2013 9:45	444.3725195	53.75822067	2036.147154	2324.890369
314	2/8/2013 9:46	450.5770315	53.51000977	2033.96023	2322.072582
315	2/8/2013 9:47	451.5603686	53.31854248	2005.528379	2285.74248
316	2/8/2013 9:48	451.0073473	53.09758377	2016.463689	2296.894183
317	2/8/2013 9:49	451.0089869	52.96011353	2005.528379	2286.558878
318	2/8/2013 9:50	451.056694	52.91390991	2018.650613	2300.442033
319	2/8/2013 9:51	447.2509701	52.86062241	1828.376961	2039.10938
320	2/8/2013 9:52	437.1317006	52.95166016	1727.772596	1898.651524
321	2/8/2013 9:53	428.4523705	53.14035416	1460.951892	1573.185995
322	2/8/2013 9:54	423.8203409	53.43429565	1329.728751	1413.16572
323	2/8/2013 9:55	417.240043	53.69163895	1093.526937	1146.443922
324	2/8/2013 9:56	413.8971889	53.95999527	1060.721124	1109.829673
325	2/8/2013 9:57	418.6015196	54.26448059	1224.750193	1297.907322
326	2/8/2013 9:58	421.5513457	54.39076614	1327.541712	1412.799326
327	2/8/2013 9:59	430.7935611	54.46719742	1635.916271	1793.794334
328	2/8/2013 10:00	449.3821331	54.37475967	1988.031838	2269.602497
329	2/8/2013 10:01	454.0055416	54.22399902	2020.837767	2302.970854
330	2/8/2013 10:02	451.3350029	54.08467102	2025.211845	2305.602981
331	2/8/2013 10:03	450.5327623	54.07139969	1988.031838	2258.955175
332	2/8/2013 10:04	450.4698757	54.02381897	1996.780223	2271.804214
333	2/8/2013 10:05	450.3771061	53.97622681	2005.528379	2277.396619
334	2/8/2013 10:06	445.0835242	54.02267456	1740.894829	1919.692405
335	2/8/2013 10:07	437.9835259	54.06261826	1740.894829	1922.529889

336	2/8/2013 10:08	431.7329199	54.32375717	1500.318938	1621.195546
337	2/8/2013 10:09	425.7737132	54.5882225	1399.714457	1498.099754
338	2/8/2013 10:10	421.7850151	54.82562637	1209.440805	1279.46682
339	2/8/2013 10:11	414.5096325	55.10318375	1016.980115	1058.250898
340	2/8/2013 10:12	418.1167532	55.34594727	1220.376	1289.912767
341	2/8/2013 10:13	424.0638745	55.46151352	1487.196589	1606.633142
342	2/8/2013 10:14	439.4043189	55.45693588	1810.88065	2018.601797
343	2/8/2013 10:15	448.1340799	55.32717896	2018.650613	2308.907127
344	2/8/2013 10:16	451.6193942	55.12833786	1979.283682	2248.944039
345	2/8/2013 10:17	450.7471797	55.01303101	1970.535526	2236.787556
346	2/8/2013 10:18	450.9388543	55.00181198	1979.283682	2248.426876
347	2/8/2013 10:19	450.6292872	55.02378845	2003.341455	2274.873038
348	2/8/2013 10:20	450.499653	54.99311447	1974.909604	2239.754749
349	2/8/2013 10:21	449.3620877	54.90523911	1896.175743	2121.725818
350	2/8/2013 10:22	434.7175478	54.87618637	1554.99537	1681.41732
351	2/8/2013 10:23	428.688949	55.02514648	1489.383743	1602.262503
352	2/8/2013 10:24	422.6806336	55.02651978	1231.31131	1300.370449
353	2/8/2013 10:25	416.7238598	55.24824142	1062.908163	1108.548813
354	2/8/2013 10:26	413.7106182	55.4113884	988.5482642	1027.482189
	Stop Run #9	435.7665674	54.29814019	1641.136989	1815.912
355	2/8/2013 10:27	413.7205087	55.68484879	986.36134	1023.968391
356	2/8/2013 10:28	413.906524	55.88599777	977.6130694	1016.764459
458	2/8/2013 12:10	422.4218941	71.79045105	352.1156532	349.9693936
459	2/8/2013 12:11	407.8000177	71.68489838	330.2451202	327.9294149
460	2/8/2013 12:12	407.8530138	71.68177795	334.6192268	332.2695906
	Start Run #10				
461	2/8/2013 12:13	407.7645548	71.58668518	236.2018139	234.5949586
462	2/8/2013 12:14	409.515119	71.50551605	402.4179222	402.0776687
463	2/8/2013 12:15	415.0519171	71.4068985	544.5763724	553.5514152
464	2/8/2013 12:16	417.9323246	71.23827362	557.6987209	569.0805672
465	2/8/2013 12:17	423.9958046	71.05357361	710.7924806	745.4116072
466	2/8/2013 12:18	438.8926314	70.94255829	824.5192523	888.9509132
467	2/8/2013 12:19	449.6858823	70.78974915	916.375577	1010.306622
468	2/8/2013 12:20	451.3210927	70.6807785	916.375577	1008.257247
469	2/8/2013 12:21	449.8769751	70.60462189	912.0014417	1001.658489
470	2/8/2013 12:22	448.7112722	70.54909515	914.1884807	1002.35953
471	2/8/2013 12:23	448.6497078	70.43692017	920.7497123	1008.68179
472	2/8/2013 12:24	446.4579853	70.26511383	857.3251235	928.9093316
473	2/8/2013 12:25	436.929924	70.08367157	743.5982945	784.7745437
474	2/8/2013 12:26	427.868091	69.92493439	673.6125889	702.815142
475	2/8/2013 12:27	416.4398652	69.78591156	406.7920001	407.7748483
476	2/8/2013 12:28	408.980054	69.76780701	91.85626016	0
477	2/8/2013 12:29	409.7347461	69.82836151	443.9719205	447.8919203
478	2/8/2013 12:30	414.5449368	69.5684967	505.2094417	513.5055631
479	2/8/2013 12:31	415.7694273	69.3822403	524.892907	534.4482197
480	2/8/2013 12:32	424.9970186	69.23342896	712.979577	752.2948261
481	2/8/2013 12:33	438.9345734	68.86734772	846.3898714	921.5485537
482	2/8/2013 12:34	447.8667722	68.57449341	890.1309374	978.5825852
483	2/8/2013 12:35	448.5000282	68.33782196	901.0661896	991.1428671

484	2/8/2013 12:36	447.313698	68.18006134	903.2532285	992.038683
485	2/8/2013 12:37	445.9227351	67.9441452	901.0661896	983.9722537
486	2/8/2013 12:38	445.4302203	67.85496521	894.5050727	977.1164856
487	2/8/2013 12:39	441.6812478	67.70539093	793.9005921	849.5752991
488	2/8/2013 12:40	430.9848919	67.60638428	704.2313064	740.1192212
489	2/8/2013 12:41	424.968405	67.59447479	662.6773367	691.7536492
490	2/8/2013 12:42	424.8425524	67.62589264	629.8714655	656.0154143
491	2/8/2013 12:43	419.6135496	67.70316315	443.9719205	448.6285325
492	2/8/2013 12:44	409.9088611	67.98925781	415.540242	418.74249
493	2/8/2013 12:45	412.2769464	68.19455719	474.5906954	481.4845452
494	2/8/2013 12:46	417.0251761	68.44384003	566.4469341	582.0625636
495	2/8/2013 12:47	420.7514852	68.53669739	608.0009611	627.8335699
496	2/8/2013 12:48	430.1396515	68.51165771	765.4688562	822.7371261
497	2/8/2013 12:49	446.2271719	68.42868805	883.5698205	979.6807193
498	2/8/2013 12:50	450.8576148	68.23119354	868.2604331	958.5046791
499	2/8/2013 12:51	449.2920609	68.0863266	863.8862978	952.1348518
500	2/8/2013 12:52	448.2803746	67.8693924	866.0732794	953.6469472
501	2/8/2013 12:53	448.0607211	67.60639191	896.6920543	988.3586084
502	2/8/2013 12:54	443.897194	67.41928101	798.2746127	859.7082342
503	2/8/2013 12:55	435.4153829	67.24526215	752.3465651	802.642823
504	2/8/2013 12:56	431.4503797	67.06482697	704.2313064	744.5512048
505	2/8/2013 12:57	429.1571607	66.96303558	682.3608021	720.6129085
506	2/8/2013 12:58	415.1980795	66.89632416	354.3027208	355.3722898
507	2/8/2013 12:59	408.7330032	66.92080688	395.8567479	398.0816487
508	2/8/2013 13:00	412.4665318	67.01219177	496.4612284	506.8648956
509	2/8/2013 13:01	422.8583451	67.01325226	645.1808529	676.4966995
510	2/8/2013 13:02	435.2563945	66.99224854	811.3969612	885.5471271
511	2/8/2013 13:03	443.899627	66.9903183	842.0157361	920.1466804
512	2/8/2013 13:04	446.3987481	66.98826599	855.1380272	939.9703005
513	2/8/2013 13:05	446.5813256	66.99054718	870.4474147	955.2553296
514	2/8/2013 13:06	446.0639523	66.98756409	870.4474147	953.9687075
515	2/8/2013 13:07	446.156722	66.9832077	866.0732794	951.3156256
516	2/8/2013 13:08	446.6368604	67.00361633	868.2604331	954.4518194
517	2/8/2013 13:09	444.595082	67.05680847	813.5840001	878.1319193
518	2/8/2013 13:10	427.1517972	67.1180191	570.8210694	587.0436667
519	2/8/2013 13:11	412.6905224	67.20583344	443.9719205	448.7915081
520	2/8/2013 13:12	408.8914891	67.51004791	0	0
521	2/8/2013 13:13	408.1910889	67.72534943	48.11518338	48.13708001
522	2/8/2013 13:14	411.5140827	67.95753479	441.7849103	445.8992276
	Stop Run #10	431.2129328	68.52534066	673.0129086	718.1615249
523	2/8/2013 13:15	415.660341	67.98543549	538.0152555	551.2284755
524	2/8/2013 13:16	420.148456	68.13540649	586.1304568	604.3707894
525	2/8/2013 13:17	431.1447001	68.42434692	761.0947209	816.5563107
526	2/8/2013 13:18	438.6593321	68.70681	763.2818172	821.2541055
527	2/8/2013 13:19	440.4855031	68.91579437	767.6558952	830.1995345
528	2/8/2013 13:20	441.5898004	69.09676361	752.3465651	814.4184016
529	2/8/2013 13:21	442.5417735	69.25546265	756.720643	819.9342177
530	2/8/2013 13:22	443.3781283	69.3904953	750.1594688	814.8698718
531	2/8/2013 13:23	444.5105632	69.53430176	743.5982945	809.0094547
532	2/8/2013 13:24	445.9317265	69.7102356	743.5982945	812.2733154

533	2/8/2013 13:25	447.1031416	69.79613495	743.5982945	813.0714297
534	2/8/2013 13:26	448.6438899	69.96573639	737.0371776	809.3739103
535	2/8/2013 13:27	444.6864236	70.14366913	509.5835196	527.0889611
	Start Run #11				
536	2/8/2013 13:28	415.5215568	70.36082458	0	0
537	2/8/2013 13:29	415.9790053	70.7905426	448.3460271	458.891911
538	2/8/2013 13:30	426.2123063	70.94702911	557.6987209	581.9789541
539	2/8/2013 13:31	429.3804108	70.88211823	573.0081083	601.751497
540	2/8/2013 13:32	438.0926915	70.84471893	673.6125889	728.8820751
541	2/8/2013 13:33	454.2316478	70.61736298	809.2098649	909.2260036
542	2/8/2013 13:34	471.380492	70.32809448	874.8215499	1005.80072
543	2/8/2013 13:35	469.938966	69.99066925	896.6920543	1030.262467
544	2/8/2013 13:36	469.1429665	69.64890289	859.5121625	988.1180478
545	2/8/2013 13:37	468.9845599	69.34819794	866.0732794	995.8671173
546	2/8/2013 13:38	468.8241965	69.01609802	874.8215499	1003.622788
547	2/8/2013 13:39	459.4294453	68.63777924	793.9005921	885.8562098
548	2/8/2013 13:40	455.1423664	68.46990967	796.0875737	888.2603492
549	2/8/2013 13:41	436.2719418	68.26816559	605.8139222	639.0556809
550	2/8/2013 13:42	416.3899103	68.22362518	404.6049324	410.3810701
551	2/8/2013 13:43	411.0464528	68.24830627	253.6982403	0
552	2/8/2013 13:44	416.7330892	68.27544403	463.6554146	475.9322153
553	2/8/2013 13:45	420.4435576	68.17253876	503.0224027	519.3757243
554	2/8/2013 13:46	440.5720317	68.11035919	754.5335467	832.7125863
555	2/8/2013 13:47	453.6183315	67.9932251	807.0228833	904.2329038
556	2/8/2013 13:48	458.6581455	67.85198212	817.9581354	922.2844848
557	2/8/2013 13:49	469.0724637	67.83270264	874.8215499	1006.976911
558	2/8/2013 13:50	469.6381258	67.78295898	866.0732794	998.2127929
559	2/8/2013 13:51	468.7124392	67.75934601	874.8215499	1006.929134
560	2/8/2013 13:52	467.9393412	67.80497742	877.0085889	1007.862354
561	2/8/2013 13:53	467.5732343	67.7485733	868.2604331	997.7784008
562	2/8/2013 13:54	456.738914	67.70476532	772.0299731	852.0366973
563	2/8/2013 13:55	447.2212986	67.66120148	730.475946	801.3312123
564	2/8/2013 13:56	438.4277783	67.60317993	605.8139222	638.6864581
565	2/8/2013 13:57	418.8286042	67.57910919	398.0437869	403.505814
566	2/8/2013 13:58	419.6856656	67.62348938	542.3893334	566.6766374
567	2/8/2013 13:59	425.8433697	67.56328583	553.324643	579.1980482
568	2/8/2013 14:00	427.1903279	67.48877716	570.8210694	599.4910549
569	2/8/2013 14:01	430.8215666	67.30992889	653.9290661	705.8399089
570	2/8/2013 14:02	457.7090285	67.12856293	796.0875737	898.3576088
571	2/8/2013 14:03	459.2937816	66.84116364	848.5769103	961.0719513
572	2/8/2013 14:04	463.5112038	66.56550598	872.6344536	999.1440224
573	2/8/2013 14:05	463.5890055	66.28180695	846.3898714	967.5285313
574	2/8/2013 14:06	463.6726251	65.99204254	850.7638919	973.4435356
575	2/8/2013 14:07	463.8134192	65.7625885	866.0732794	991.1763947
576	2/8/2013 14:08	464.0519546	65.58792114	861.6992015	987.0001115
577	2/8/2013 14:09	453.0375956	65.41624451	737.0371776	804.5198978
578	2/8/2013 14:10	441.2180607	65.26358032	684.547841	741.3385785
579	2/8/2013 14:11	427.2507815	65.14876556	443.9719205	455.9047578
580	2/8/2013 14:12	410.9527311	65.05570221	354.3027208	358.5485334
581	2/8/2013 14:13	411.9981879	65.10474396	454.9071727	468.4857326
582	2/8/2013 14:14	421.9729609	65.10888672	520.5188291	542.2643968
583	2/8/2013 14:15	426.4538564	64.95150757	605.8139222	642.1219907

584	2/8/2013 14:16	434.0302908	64.86830902	647.3679493	695.3204109
585	2/8/2013 14:17	452.4796026	64.72939301	787.3393605	881.379121
586	2/8/2013 14:18	452.7434196	64.65055084	793.9005921	885.9421243
587	2/8/2013 14:19	472.5161004	64.56003571	863.8862978	998.1709882
588	2/8/2013 14:20	468.0080986	64.48165894	866.0732794	1002.960617
589	2/8/2013 14:21	468.1757081	64.38448334	863.8862978	1001.458056
590	2/8/2013 14:22	468.5648223	64.33865356	866.0732794	1004.519337
591	2/8/2013 14:23	468.7293641	64.32489777	866.0732794	1003.914059
592	2/8/2013 14:24	455.1298843	64.22156525	712.979577	783.2522329
593	2/8/2013 14:25	442.1267695	64.21650696	695.4830932	757.9089724
594	2/8/2013 14:26	437.6826063	64.21674347	632.0585618	681.1714964
595	2/8/2013 14:27	416.9697734	64.27127075	393.6696803	402.7219489
596	2/8/2013 14:28	412.6883274	64.32077789	349.9286142	355.1328555
597	2/8/2013 14:29	429.8461101	64.44687653	610.1880001	651.3881846
	Stop Run #11	445.3532786	67.04401508	685.7119245	755.5349141
598	2/8/2013 14:30	432.6330605	64.39182281	599.2527479	640.5476597
599	2/8/2013 14:31	433.1139658	64.33201599	614.5621354	658.4562245
600	2/8/2013 14:32	433.2148012	64.28434753	597.065709	639.7707097
601	2/8/2013 14:33	433.9087224	64.28617859	605.8139222	650.4341145
602	2/8/2013 14:34	433.9754965	64.33475494	608.0009611	652.0792725
603	2/8/2013 14:35	433.9080348	64.27150726	610.1880001	654.8071105
604	2/8/2013 14:36	434.3610141	64.33385468	608.0009611	652.7686841
605	2/8/2013 14:37	434.2892948	64.33247375	610.1880001	654.5802229
606	2/8/2013 14:38	434.9051498	64.3553772	605.8139222	651.7190603
607	2/8/2013 14:39	431.2529401	64.27128601	465.8424822	482.2099465
608	2/8/2013 14:40	422.0205887	64.39241791	590.5045347	630.749634
609	2/8/2013 14:41	433.4632536	64.36615753	623.3103486	670.3852443
	Start Run #12				
610	2/8/2013 14:42	438.3027719	64.30680084	656.1161625	713.105395
611	2/8/2013 14:43	443.9286638	64.29122162	730.475946	811.1711475
612	2/8/2013 14:44	452.7220519	64.17847443	774.2170694	873.5178388
613	2/8/2013 14:45	469.4497833	64.05207825	846.3898714	988.6967135
614	2/8/2013 14:46	472.6491725	63.96122742	859.5121625	1005.151647
615	2/8/2013 14:47	472.8105937	63.9159584	850.7638919	995.4395355
616	2/8/2013 14:48	473.3613937	63.89547348	850.7638919	996.8448663
617	2/8/2013 14:49	473.6496989	63.83873367	846.3898714	991.8456897
618	2/8/2013 14:50	467.6990604	63.80335617	774.2170694	878.0092816
619	2/8/2013 14:51	454.8716737	63.73377991	747.9724298	838.5814901
620	2/8/2013 14:52	447.6853584	63.74171448	680.1737057	743.6396729
621	2/8/2013 14:53	436.4604959	63.82442856	618.9362133	664.0660227
622	2/8/2013 14:54	423.0966425	63.93992615	433.0366397	445.8893789
623	2/8/2013 14:55	412.5912208	64.21947479	415.540242	426.0634538
624	2/8/2013 14:56	418.9874074	64.36075592	513.9576549	536.5520774
625	2/8/2013 14:57	432.5772612	64.50824738	662.6773367	721.9531224
626	2/8/2013 14:58	446.9465862	64.7094574	763.2818172	859.7891196
627	2/8/2013 14:59	465.4954905	64.71884918	852.9510456	988.2927057
628	2/8/2013 15:00	469.9134729	64.74590302	868.2604331	1008.073578
629	2/8/2013 15:01	469.1530685	64.70968628	861.6992015	998.5806537
630	2/8/2013 15:02	469.0668573	64.6081543	848.5769103	985.1931827
631	2/8/2013 15:03	469.2548824	64.54033661	868.2604331	1007.52865

632	2/8/2013 15:04	469.5548764	64.58122253	866.0732794	1004.197472
633	2/8/2013 15:05	460.5996439	64.6473465	632.0585618	681.5635599
634	2/8/2013 15:06	431.5880004	64.71060944	610.1880001	650.9861676
635	2/8/2013 15:07	423.5102185	64.84880829	408.9790677	418.1544471
636	2/8/2013 15:08	413.5353132	64.96270752	378.3603215	384.6015839
637	2/8/2013 15:09	409.5019493	65.02184296	0	0
638	2/8/2013 15:10	413.7347891	65.19987488	400.2308545	408.8834074
639	2/8/2013 15:11	415.851566	65.20038605	450.5330948	463.572942
640	2/8/2013 15:12	420.5098292	65.16118622	548.9505077	575.4421698
641	2/8/2013 15:13	428.2142583	65.13529205	590.5045347	626.3589836
642	2/8/2013 15:14	452.7892755	65.11421204	837.6416582	968.759309
643	2/8/2013 15:15	471.8275211	64.91137695	842.0157361	984.8470101
644	2/8/2013 15:16	471.5174251	64.70832062	852.9510456	990.7888365
645	2/8/2013 15:17	470.0525744	64.39949036	846.3898714	981.3073324
646	2/8/2013 15:18	469.4916725	64.26863098	861.6992015	1000.658632
647	2/8/2013 15:19	469.2827556	64.15830994	868.2604331	1008.026744
648	2/8/2013 15:20	462.4224563	64.02916718	706.4184027	774.4934584
649	2/8/2013 15:21	437.5179323	64.0326004	621.1233096	667.4880395
650	2/8/2013 15:22	431.0702305	64.01404572	542.3893334	570.1488932
651	2/8/2013 15:23	419.0555302	63.98217773	435.2237073	447.9808209
652	2/8/2013 15:24	413.4750976	64.10132599	371.7991473	378.9878305
653	2/8/2013 15:25	415.7686604	64.26289368	494.2741321	514.4102848
654	2/8/2013 15:26	424.8136214	64.22423553	608.0009611	648.2950528
655	2/8/2013 15:27	440.1238655	64.11302185	702.0443248	771.6579654
656	2/8/2013 15:28	449.1075265	63.86027527	772.0299731	868.62155
657	2/8/2013 15:29	460.7721721	63.56474304	824.5192523	946.752727
658	2/8/2013 15:30	469.1551842	63.16192627	859.5121625	1002.749393
659	2/8/2013 15:31	469.576297	62.85302734	861.6992015	1002.925937
660	2/8/2013 15:32	469.2782071	62.61406326	852.9510456	994.2796896
661	2/8/2013 15:33	469.5499047	62.38107681	848.5769103	989.8381191
662	2/8/2013 15:34	469.6232636	62.15617371	848.5769103	989.8889344
663	2/8/2013 15:35	467.4008647	61.99856186	817.9581354	938.6239573
664	2/8/2013 15:36	454.7488623	61.93211365	765.4688562	863.543374
665	2/8/2013 15:37	453.8190503	61.85998154	741.4112555	832.4455179
666	2/8/2013 15:38	435.9853291	61.81873703	548.9505077	585.0969697
667	2/8/2013 15:39	416.0150236	61.80911255	404.6049324	416.3357051
668	2/8/2013 15:40	411.6947825	61.92554092	0	0
669	2/8/2013 15:41	416.7135727	62.23429108	443.9719205	458.9673481
	Stop Run #12	447.1653785	63.94271247	673.1751758	754.8277565
670	2/8/2013 15:42	415.1114187	62.22810364	251.5112013	255.1093785
671	2/8/2013 15:43	407.6275688	0	0	0
672	2/8/2013 15:44	413.9291611	62.47539139	0	0
673	2/8/2013 15:45	407.6275688	62.60586548	0	0
674	2/8/2013 15:46	407.6275688	62.75593185	0	0
675	2/8/2013 15:47	407.6275688	62.80312729	0	0
676	2/8/2013 15:48	407.6275688	62.98001099	0	0
677	2/8/2013 15:49	407.6275688	63.03201675	0	0
678	2/8/2013 15:50	407.6275688	63.12572098	0	0

Appendix I

COMM 5-Minute Interval Readings

COMM
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COMM Log: 5 Minute Interval Readings
Date: February 5th - 8th, 2013
Recorded By: Steve Hogg

TEST ONE: 90-100% 2970-3300 SCFH				
Time Stamp	**Cubic Feet Per hour**	**Stack Temp**	**Inches Water Column**	**Notes**
2:00 PM	3250	1815	35	
2:05 PM	3250	1800	35	
2:10 PM	3250	1781	35	
2:15 PM	3250	1827	35	
2:20 PM	3080	1790	35	
2:25 PM	3120	1830	35	**Date:** 2.5.13
2:30 PM	3200	1792	36	**Conditions:** Partly
2:35 PM	3220	1835	36	Cloudy / 70
2:40 PM	3116	1868	36	degrees. **Silonite**
2:45 PM	3010	1820	36	**Canister:** # 0122.
2:50 PM	3080	1815	36	**Fuel:** (2) 1000
2:55 PM	3020	1808	35	gallon propylene
3:00 PM	3240	1819	35	tanks.

TEST TWO: 90-100% 2970-3300 SCFH				
Time Stamp	**Cubic Feet Per hour**	**Stack Temp**	**Inches Water Column**	**Notes**
3:20 PM	3300	1890	41	
3:25 PM	3270	1890	40	
3:30 PM	3230	1925	41	
3:35 PM	3330	1851	42	
3:40 PM	3282	1886	40	
3:45 PM	3370	1850	40	**Date:** 2.5.13
3:50 PM	3400	1890	40	**Conditions:** Partly
3:55 PM	3487	1909	40	Cloudy / 70
4:00 PM	3270	1780	34	degrees. **Silonite**
4:05 PM	3160	1754	33	**Canister:** # 0144.
4:10 PM	3160	1800	35	**Fuel:** (2) 1000
4:15 PM	3220	1778	35	gallon propylene
4:20 PM	3115	1800	35	tanks.

COMM
ENGINEERING

COMM Log: 5 Minute Interval Readings
Date: February 5th - 8th, 2013
Recorded By: Steve Hogg

TEST THREE: 90-100% 2970-3300 SCFH				
Time Stamp	**Cubic Feet Per hour**	**Stack Temp**	**Inches Water Column**	**Notes**
4:35 PM	3060	1821	35	
4:40 PM	3020	1820	36	
4:45 PM	3170	1830	35	
4:50 PM	3055	1787	35	
4:55 PM	3000	1800	36	
5:00 PM	3150	1832	38	**Date:** 2.5.13
5:05 PM	3170	1855	39	**Conditions:** Partly
5:10 PM	3240	1885	39	Cloudy / 68
5:15 PM	3190	1866	38	degrees. **Silonite**
5:20 PM	3131	1859	39	**Canister:** # 0204.
5:25 PM	3100	1823	40	**Fuel:** (2) 1000
5:30 PM	3130	1850	39	gallon propylene
5:35 PM	3130	1836	38	tanks.

TEST FOUR: 70-100% 2300-3300 SCFH				
Time Stamp	**Cubic Feet Per hour**	**Stack Temp**	**Inches Water Column**	**Notes**
3:00 PM	2300	1750	24	
3:05 PM	3292	1897	39	
3:10 PM	3130	1837	31	
3:15 PM	2280	1700	25	
3:20 PM	3100	1900	40	
3:25 PM	3015	1900	37	**Date:** 2.6.13
3:30 PM	2120	1604	19	**Conditions:** Partly
3:35 PM	3170	1866	44	Cloudy / 68
3:40 PM	2800	1737	30	degrees. **Silonite**
3:45 PM	2300	1650	21	**Canister:** # 0179.
3:50 PM	3330	1855	40	**Fuel:** (2) 1000
3:55 PM	3000	1825	39	gallon propylene
4:00 PM	2260	1650	22	tanks.

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COMM Log: 5 Minute Interval Readings
Date: February 5th - 8th, 2013
Recorded By: Steve Hogg

TEST FIVE: 70-100% 2300-3300 SCFH				
Time Stamp	Cubic Feet Per hour	Stack Temp	Inches Water Column	Notes
9:50 AM	2300	1750	20	
9:55 AM	3300	1769	39	
10:00 AM	3300	1865	40	
10:05 AM	2300	1737	21	
10:10 AM	3300	1848	41	
10:15 AM	3300	1850	40	**Date:** 2.7.13
10:20 AM	2300	1759	23	**Conditions:** Partly
10:25 AM	3300	1833	40	Cloudy / 67
10:30 AM	3300	1841	40	degrees. **Silonite**
10:35 AM	2300	1783	22	**Canister:** # 959.
10:40 AM	3300	1850	40	**Fuel:** (2) 1000
10:45 AM	2390	1849	39	gallon propylene
10:50 AM	2300	1800	20	tanks.

TEST SIX: 70-100% 2300-3300 SCFH				
Time Stamp	Cubic Feet Per hour	Stack Temp	Inches Water Column	Notes
2:10 PM	2257	1774	22	
2:15 PM	3269	1836	41	
2:20 PM	3305	1871	40	
2:25 PM	2318	1780	23	
2:30 PM	3304	1815	42	**Date:** 2.7.13
2:35 PM	3238	1850	41	**Conditions:** Fair /
2:40 PM	2289	1825	21	68 degrees.
2:45 PM	3304	1815	40	**Silonite Canister:**
2:50 PM	3295	1825	41	# 952. **Fuel:** (2)
2:55 PM	2313	1810	21	1000 gallon
3:00 PM	3278	1860	40	propylene tanks
3:05 PM	3289	1855	40	and (3) 100 gallon
3:10 PM	2310	1815	20	tanks.

COMM ENGINEERING

COMM Log: 5 Minute Interval Readings
Date: February 5th - 8th, 2013
Recorded By: Steve Hogg

TEST SEVEN: 30-70% 1000-2300 SCFH				
Time Stamp	**Cubic Feet Per hour**	**Stack Temp**	**Inches Water Column**	**Notes**
3:30 PM	1000	1460	5	
3:35 PM	2319	1825	25	
3:40 PM	2310	1860	21	
3:45 PM	1073	1660	10	
3:50 PM	2304	1890	24	**Date:** 2.7.13
3:55 PM	2296	1929	21	**Conditions:** Sunny
4:00 PM	1042	1665	6	& Clear / 70
4:05 PM	2282	1830	23	degrees. **Silonite**
4:10 PM	2289	1880	16	**Canister:** # 0186.
4:15 PM	1048	1743	7	**Fuel:** (2) 1000
4:20 PM	2270	1840	19	gallon propylene
4:25 PM	2282	1850	18	tanks and (3) 100
4:30 PM	1045	1728	7	gallon tanks.

TEST EIGHT: 30-70% 1000-2300 SCFH				
Time Stamp	**Cubic Feet Per hour**	**Stack Temp**	**Inches Water Column**	**Notes**
4:45 PM	1020	1760	12	
4:50 PM	2303	1802	42	
4:55 PM	2311	1794	35	
5:00 PM	1081	1737	13	
5:05 PM	2305	1783	42	**Date:** 2.7.13
5:10 PM	2298	1836	33	**Conditions:** Sunny
5:15 PM	1023	1760	13	& Clear / 70
5:20 PM	2310	1790	44	degrees. **Silonite**
5:25 PM	2304	1818	35	**Canister:** # 0203.
5:30 PM	1015	1731	12	**Fuel:** (2) 1000
5:35 PM	2312	1792	45	gallon propylene
5:40 PM	2316	1780	34	tanks and (5) 100
5:45 PM	1026	1674	12	gallon tanks.

COMM
ENGINEERING

COMM Log: 5 Minute Interval Readings
Date: February 5th - 8th, 2013
Recorded By: Steve Hogg

TEST NINE: 30-70% 100-2300 SCFH				
Time Stamp	Cubic Feet Per hour	Stack Temp	Inches Water Column	Notes
9:25 AM	1036	1750	12	
9:30 AM	2292	1875	47	
9:35 AM	2285	1880	46	
9:40 AM	1018	1695	12	
9:45 AM	2279	1830	48	**Date:** 2.8.13
9:50 AM	2310	1872	48	**Conditions:** Partly
9:55 AM	1065	1755	13	Cloudy / 68
10:00 AM	2309	1876	50	degrees. **Silonite**
10:05 AM	2268	1844	41	**Canister:** # 0146.
10:10 AM	1080	1733	13	**Fuel:** (2) 1000
10:15 AM	2256	1795	47	gallon propylene
10:20 AM	2277	1794	47	tanks and (3) 100
10:25 AM	1048	1838	13	gallon tanks.

TEST TEN: 0-30% 0-1000 SCFH				
Time Stamp	Cubic Feet Per hour	Stack Temp	Inches Water Column	Notes
12:12 PM	0	1300	10	
12:17 PM	952	1863	49	
12:22 PM	1008	1816	483	
12:27 PM	0	1330	4	
12:32 PM	986	1864	45	**Date:** 2.8.13
12:37 PM	990	1730	41	**Conditions:** Partly
12:42 PM	203	1485	7	Cloudy / 68
12:47 PM	979	1770	47	degrees. **Silonite**
12:52 PM	988	1760	41	**Canister:** # 177.
12:57 PM	190	1485	15	**Fuel:** (2) 1000
1:02 PM	970	1718	47	gallon propylene
1:07 PM	951	1780	46	tanks and (3) 100
1:12 PM	0	1195	1	gallon tanks.

COMM
ENGINEERING

COMM Log: 5 Minute Interval Readings
Date: February 5th - 8th, 2013
Recorded By: Steve Hogg

TEST ELEVEN: 0-30% 0-1000 SCFH				
Time Stamp	**Cubic Feet Per hour**	**Stack Temp**	**Inches Water Column**	**Notes**
1:27 PM	0	1500	7	
1:32 PM	999	1745	70	
1:37 PM	1001	1780	60	
1:42 PM	0	1430	12	
1:47 PM	966	1784	69	**Date:** 2.8.13
1:52 PM	997	1753	68	**Conditions:** Partly
1:57 PM	0	1422	27	Cloudy / 70
2:02 PM	998	1670	62	degrees. **Silonite**
2:07 PM	987	1777	59	**Canister:** # 196.
2:12 PM	26	1400	13	**Fuel:** (2) 1000
2:17 PM	1040	1765	68	gallon propylene
2:22 PM	1014	1845	60	tanks and (3) 100
2:27 PM	210	1458	32	gallon tanks.

TEST TWELVE: 0-30% 0-1000 SCFH				
Time Stamp	**Cubic Feet Per hour**	**Stack Temp**	**Inches Water Column**	**Notes**
2:40 PM	58	1560	33	
2:45 PM	1000	1830	70	
2:50 PM	990	1941	60	
2:55 PM	72	1545	13	
3:00 PM	1007	1740	69	**Date:** 2.8.13
3:05 PM	998	1809	60	**Conditions:** Partly
3:10 PM	0	1232	16	Cloudy / 69
3:15 PM	995	1875	67	degrees. **Silonite**
3:20 PM	1001	1817	64	**Canister:** # 905.
3:25 PM	0	1384	17	**Fuel:** (2) 1000
3:30 PM	997	1789	63	gallon propylene
3:35 PM	995	1819	70	tanks and (3) 100
3:40 PM	0	1500	1	gallon tanks.

DATE 2.5.13 | PROPYLENE 1000 GAL TANKS (2) | SILONITE CANISTER 0122

TEST 1 90 - 100% 2970 - 3300 CF HOUR

2:00 pm COMMENCE TEST 70° OUTSIDE PARTLY CLOUDY

STACK TEMP 1815 WATER COLUMN 35 INCHES

2:10 pm	3250 CFPH	1781 TEMP	35" WC
2:15 pm	3250 CFPH	1827 TEMP	35" WC
2:20 pm	3080 CFPH	1790 TEMP	35" WC
2:25 pm	3,120 CFH	1830°F	35" WC
2:30 pm	3,200 CFH	1792°F	36" WC
2:35 pm	3,220 CFH	1835°F	36" WC
2:40 pm	3,116 CFH	1968°F	36" WC
2:45 pm	3010 CFH	1820°F	36" WC
2:50 pm	3,080 CFH	1815°F	36" WC
2:55 pm	3020 CFH	1808°F	35" WC
3:00 pm	3240 CFH	1819°F	35" WC

DATE 2.5.13

PROPYLENE 1000 GAL TANKS

SILONITE CANISTER 0144

TEST 2 90-100% 2970 - 3300 CFM

3:20 PM	3300 CFH	1890°F	41" WC
3:25 PM	3270 CFH	1890°F	40" WC
3:30 PM	3230 CFH	1925°F	41" WC
3:35 PM	3330 CFH	1851°F	42" WC
3:40 PM	3282 CFH	1886°F	40" WC
3:45 PM	3370 CFH	1850°F	40" WC
3:50 PM	3400 CFH	1890°F	40" WC
3:55 PM	3487 CFH	1909°F	40° WC
4:00 PM	3270 CFH	1780°F	34° WC
4:05 PM	3160 CFH	1754°F	33" WC
4:10 PM	3160 CFH	1800°F	35" WC
4:15 PM	3220 CFH	1778°F	35" WC
4:20 PM	3115 CFH	1800°F	35" WC

DATE 2.5.13

PROPYLENE - 4/000 GAL TANKS

SILONITE CANISTER 0204

TEST 3 90 - 100 % 2970 - 3300 CFH

4:35 pm	3060 CFH	1821°F	35" WC
4:40 pm	3020 CFH	1820°F	36" WC
4:45 pm	3170 CFH	1830°F	35" WC
4:50 pm	3,055 CFH	1787°F	35" WC
4:55 pm	3,000 CFH	1800°F	36" WC
5:00 pm	3,150 CFH	1832°F	38" WC
5:05 pm	3,170 CFH	1855°F	39" WC
5:10 pm	3,240 SCFH	1885°F	39" WC
5:15 pm	3,190 CFH	1866°F	38" WC
5:20 pm	3131 CFH	1859°F	39" WC
5:25 pm	3100 CFH	1823°F	40" WC
5:30 pm	3130 CFH	1850°F	39" WC
5:35 pm	3130 CFH	1836°F	38" WC

DART (2) 1000 Gal TANKS

2.6.13

Slow. RV CANISTER 0179

Test 4 90% - 100% 2300 - 3300 CFH

10:45	2360 CFH	1654°F	15" WC
3:00	2300	1750	24" WC
3:05	3292	1897	39" WC
3:10	3130	1837	31" WC
3:15	2280	1700	25" WC
3:20	3100	1900	40" WC
3:25	3015	1900	37" WC
3:30	2120	1604	19" WC
3:35	3170	1866	44" WC
3:40	2800	1737	30" WC
3:45	2300	1650	21" WC
3:50	3330	1855	40" WC
3:55	3000	1825	39" WC
4:00	2260	1650	22" WC

Date
2.6.13

(2) 1000 Gal Tanks

Silonite Canister
959

Test 5 70%-100% 2300 CFH - 3300 CFH

4:20	2290	1700°F	24" Wc
4:25	3230	1900°F	37" Wc
4:30	3050	1838	32" Wc
4:35	2960	1775°	28" Wc

4:38 pm Flare shutdown unexpectedly - Pilot burnt

4:40

4:45 Re-Test Tomorrow 2.7.13

4:50

5:00

5:05

5:10

5:15

5:20

DATE 2.7.13 (2) 1000 GAL TANKS 17 MIN SILONITE CANISTER #959

TEST 5 70% - 100% 2300 - 3300

9:50	2300	1750°	20" WC
9:55	3300	1769°	39" WC
10:00	3300	1865	40" WC
10:07	Hooked up SILONITE CANISTER		
10:05	2300	1737°	21" WC
10:10	3300	1848°	41" WC
10:15	3300	1850°	40" WC
10:20	2300	1759°	23" WC
10:25	3300	1833°	40" WC
10:30	3300	1841°	40" WC
10:35	2300	1783°	22" WC
10:40	3300	1850°	40" WC
10:45	3290	1849°	39" WC
10:50	2300	1900°	20" WC

→ SILONITE CANISTER CONTINUED UNTIL 11:07

DATE
2.7.13

(2) 1000 GAL
(3) 435lb TANKS

SILONITE CANISTER
952

TEST 6 70% - 100% 2300 - 3300

2:10	2257	1774°	22" WC
2:15	3269	1836°	41" WC
2:20	3305	1871°	40" WC
2:25	2318	1780°	23" WC
2:30	3304	1815°	42" WC
2:35	3238	1850°	41" WC
2:40	2289	1825°	21" WC
2:45	3304	1815°	40" WC
2:50	3295	1825°	41" WC
2:55	2313	1810°	21" WC
3:00	3278	1860°	40" WC
3:05	3289	1855°	40" WC
3:10	2310	1815°	20" WC

DATE
2.7.13

(2) 1000 GAL TANKS
(3) 435lb TANKS

CANISTER
0186

TEST 7 30% - 70% 1000 SCFH - 2300 SCFH

	3:30	1000	1460° 5" WC
	3:35	2319	1825° 25" WC
	3:40	2310	1860° 21" WC
	3:45	1073	1600° [redacted] 10" WC
	3:50	2304	1890° 24" WC
	3:55	2296	1929° 21" WC
→	4:00	1042	1665° 6" WC
	4:05	2282	1830° 23" WC
	4:10	2289	1880° 16" WC
	4:15	1048	1743° 7" WC
	4:20	2270	1840° 19" WC
	4:25	2282	1858° 18" WC
	4:30	1045	1728° 7" WC

DATE
2.7.13

(2) 1000 GAL
(5) 43516 TANICS

CANISTER
0203

TEST 8 1000 - 2300 SCFH 30% - 70%

4:45	1020	1760°	12" WC
4:50	2303 ~~2293~~	1802°	42" WC
4:55	2311	1794	35" WC
5:00	1081	1737	13" WC
5:05	2305	1783	42" WC
5:10	2298	1836	33" WC
5:15	1023	1760	13" WC
5:20	2310	1790	44" WC
5:25	2304	1818	35" WC
5:30	1015	1731	12" WC
5:35	2312	1792	45" WC
5:40	2316	1780	34" WC
5:45	1024	1674	12" WC

DATE
2.8.13

(2) 1000 GAL (3) 4350 TANK

CANISTER
0146

TEST 9 302 - 702 1000 SCFM - 2300 SCFM

9:25	1036	1750°	12" WC
9:30	2292	1875	47" WC
9:35	2285	1880	46" WC
9:40	1018	1695	12" WC
9:45	2279	1830	48" WC
9:50	2310	1872	48" WC
9:55	1065	1755	13" WC
10:00	2309	1876	50" WC
10:05	2268	1844	41" WC
10:10	1080	1733	13" WC
10:15	2256	1795	47" WC
10:20	2277	1794	47" WC
10:25	1048	1838	13" WC

2.8.13 (2) 1000 Gal
(3) 4351b TANKS
0-30#

CANISTER
177

TEST 10

0-1000 SCFH

-0-

12:12pm		1300°	10" WC
12:17pm	952	1863°	49" WC
12:22	1008	1816°	48" WC
12:27	0.0	1330°	4" WC
12:32	986	1864°	45" WC
12:37	990	1730°	41" WC
12:42	203	1485°	7" WC
12:47	979	1770	47" WC
12:52	988	1760	41" WC
12:57	190	1485	15" WC
1:02	970	1718	47" WC
1:05	951	1780	46" WC
1:12	0	1195	1" WC

Date
2.8.13

(2) 1000 GAL
(3) 435lb TANKS

CANISTER
196

TEST 11 0-30% 0-1000 SCFH

1:27	0	1500°	9" WC
1:32	999	1745°	70" WC
1:37	1001	1780°	60" WC
1:42	0	1430°	12" WC
1:47	966	1784°	69" WC
1:52	997	1753°	68" WC
1:57	0	1422°	27" WC
2:02	998	1670°	62" WC
2:07	987	1777°	59" WC
2:12	26	1400°	13" WC
2:17	1040	1765	68" WC
2:22	1014	1845	60" WC
2:27	210	1458	32" WC

DATE
2.8.13

(2) 1000 GAL
(3) 435 lb TANKS

CANISTER
905

TEST 12 0-30% 0-1000 SCFM

2:40	58	1560°	33" WC
2:45	1000	1830°	70" WC
2:50	990	1941°	60" WC
2:55	92	1545°	13" WC
3:00	1007	1740°	69" WC
3:05	998	1809°	60" WC
3:10	0	1232°	16" WC
3:15	995	1875°	67" WC
3:20	1001	1817°	64" WC
3:25	0	1384°	17" WC
3:30	997	1789°	63" WC
3:35	995	1819°	70" WC
3:40	0	1500°	1" WC

Appendix J

Independent Lab Analysis / Summaries

Keika Ventures

February 27, 2013

Mr. Steve Hogg
COMM Engineering
1319 W. Pinhook Rd., Suite 401
Lafayette, LA 70503

Dear Steve:

Enclosed are the results for your twelve cylinder samples and twelve Tedlar bag samples collected February 5-8, 2013 and received at the lab February 9, 2013. The canister samples were analyzed for:

- C1-C6 hydrocarbons (methane, ethane, propane, butane, pentane, benzene and fixed gases (hydrogen, carbon monoxide, carbon dioxide, nitrogen, oxygen) and others as Cx by ASTM D9145, carbonyl sulfide, carbon disulfide, and mercaptans (reported as methyl mercaptan) by ASTM D5504
- higher heating value (HHV) by ASTM D3588
- molecular weight determination.

The bags were analyzed for oxygen, carbon dioxide, methane, and nitrogen by GC/TCD.

There were no problems noted during sample receipt.

The bag samples were collected in duplicate and bag was analyzed and one archived per your instruction. The archive bags for samples 3A, 4A, and 5A were analyzed and reported due to results for the 3A and 4A bags not being consistent with the rest of the sample runs and because 5A had a low volume in the bag.

The sample results are reported in ppm (parts per million) and % volume for the fixed gases, hydrocarbons and sulfur compounds, in BTU/lb (British Thermal Unit/pound) for the heating value and g/mole (grams per mole) for the molecular weight.

P.O. Box 4704, Chapel Hill, North Carolina 27515 USA
T: 919.933.9569, F: 919.968.0064
www.keikaventures.com

The can samples were injected in duplicate for the hydrocarbon, fixed gases, and sulfur compounds and the average concentrations were reported. The bag samples were injected in duplicate for the fixed gases and the average concentrations were reported.

Sample Can952-T6 did not meet the lab's reproducibility requirements between injections. Their criteria is +/-5%. Results reported for this sample do not appear to be consistent with the other sample runs. Upon further review of the results, because of the ration of oxygen and nitrogen found in the sample the lab believes there was a small leak with the quick-connect fitting and ambient air was introduced during sampling. The can did have a vacuum when it was shipped and when it was received back at the lab which indicates that can did not leak while not fitted with the quick-connect.

Please let us know if you have any questions.

Sincerely,

Lorri L. White
Director of Analytical Services

P.O. Box 4704, Chapel Hill, North Carolina 27515 USA
T: 919.933.9569, F: 919.968.0064
www.keikaventures.com

KeikaVentures

204 Ridgecrest Drive
Chapel Hill, NC 27515

Comm Engineering

Analytical Report
(0213-39)

ASTM D1945 Canisters

Methane, Ethane, Propane, Butane, Pentane, Benzene, Others as Cx Compounds,
Carbon dioxide, Hydrogen, Oxygen, Nitrogen, Carbon monoxide

ASTM D5504 Canisters

Carbonyl sulfide, Methyl mercaptan, Carbonyl disulfide,
Unknown Mercaptans as Methyl mercaptan

ASTM D1946 Tedlar Bag

Carbon dioxide, Oxygen, Nitrogen, Methane

Mixed MW Determination

ASTM D3588

Higher heating value

Enthalpy Analytical, Inc.
Phone: (919) 850 - 4392 / Fax: (919) 850 - 9012 / www.enthalpy.com
800-1 Capitola Drive Durham, NC 27713-4385

I certify that to the best of my knowledge all analytical data presented in this report:

- Have been checked for completeness
- Are accurate, error-free, and legible
- Have been conducted in accordance with approved protocol, and that all deviations and analytical problems are summarized in the appropriate narrative(s)

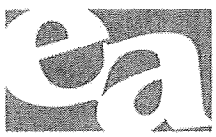
This analytical report was prepared in Portable Document Format (.PDF) and contains 468 pages.

Kristen H Bounds

QA Reviewed by – Kristen H. Bounds

Report Issued: 02/28/2013

Summary of Results



Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

Compound	Sample ID / Sample Concentration (ppm)			
	Can00122-T1	***Can00144-T2***	***Can00204-T3***	***Can00179-T4***
Methane	602 J	1,370	1,273	1,183
Ethane	3,222	2,796	2,146	1,523
C2 as Ethane	67.6 ND	67.4 ND	68.7 ND	64.8 ND
Propane	86.2 ND	85.9 ND	87.6 ND	82.6 ND
C3 as Propane	898,204	923,280	817,472	873,371
Butane	39.6 ND	39.4 ND	40.2 ND	37.9 ND
C4 as Butane	39.6 ND	39.4 ND	40.2 ND	37.9 ND
Pentane	72.7 ND	72.4 ND	73.9 ND	120 J
C5 as Pentane	72.7 ND	72.4 ND	1,156	246 J
Benzene	169 ND	168 ND	172 ND	162 ND
	Can959-T5	***Can952-T6***	***Can00186-T7***	***Can00203-T8***
Methane	3,095	1,623	1,556	1,469
Ethane	1,649 J	352 J	540 J	341 J
C2 as Ethane	173 ND	84.7 ND	83.8 ND	76.6 ND
Propane	221 ND	108 ND	107 ND	97.6 ND
C3 as Propane	793,600	443,831	930,427	974,119
Butane	101 ND	49.5 ND	49.0 ND	44.8 ND
C4 as Butane	101 ND	49.5 ND	49.0 ND	44.8 ND
Pentane	186 ND	91.0 ND	90.1 ND	82.3 ND
C5 as Pentane	186 ND	91.0 ND	90.1 ND	82.3 ND
Benzene	432 ND	212 ND	210 ND	191 ND

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

Compound	Sample ID / Sample Concentration (ppm)			
	Can00146-T9	***Can00177-T10***	***Can00196-T11***	***Can905-T12***
Methane	3,291	303 J	1,281	1,297
Ethane	312 J	324 J	411 J	402 J
C2 as Ethane	71.0 ND	73.3 ND	68.2 ND	68.7 ND
Propane	90.6 ND	93.4 ND	86.9 ND	87.6 ND
C3 as Propane	929,703	926,286	944,637	929,168
Butane	41.6 ND	42.9 ND	39.9 ND	201 J
C4 as Butane	41.6 ND	42.9 ND	39.9 ND	40.2 ND
Pentane	76.4 ND	78.8 ND	73.3 ND	168 J
C5 as Pentane	76.4 ND	78.8 ND	73.3 ND	1,083
Benzene	178 ND	183 ND	170 ND	172 ND

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

Compound	Sample ID / Sample Concentration (%)			
	Can00122-T1	***Can00144-T2***	***Can00204-T3***	***Can00179-T4***
Methane	0.0602 J	0.137	0.127	0.118
Ethane	0.322	0.280	0.215	0.152
C2 as Ethane	0.00676 ND	0.00674 ND	0.00687 ND	0.00648 ND
Propane	0.00862 ND	0.00859 ND	0.00876 ND	0.00826 ND
C3 as Propane	89.8	92.3	81.7	87.3
Butane	0.00396 ND	0.00394 ND	0.00402 ND	0.00379 ND
C4 as Butane	0.00396 ND	0.00394 ND	0.00402 ND	0.00379 ND
Pentane	0.00727 ND	0.00724 ND	0.00739 ND	0.0120 J
C5 as Pentane	0.00727 ND	0.00724 ND	0.116	0.0246 J
Benzene	0.0169 ND	0.0168 ND	0.0172 ND	0.0162 ND
	Can959-T5	***Can952-T6***	***Can00186-T7***	***Can00203-T8***
Methane	0.310	0.162	0.156	0.147
Ethane	0.165 J	0.0352 J	0.0540 J	0.0341 J
C2 as Ethane	0.0173 ND	0.00847 ND	0.00838 ND	0.00766 ND
Propane	0.0221 ND	0.0108 ND	0.0107 ND	0.00976 ND
C3 as Propane	79.4	44.4	93.0	97.4
Butane	0.0101 ND	0.00495 ND	0.00490 ND	0.00448 ND
C4 as Butane	0.0101 ND	0.00495 ND	0.00490 ND	0.00448 ND
Pentane	0.0186 ND	0.00910 ND	0.00901 ND	0.00823 ND
C5 as Pentane	0.0186 ND	0.00910 ND	0.00901 ND	0.00823 ND
Benzene	0.0432 ND	0.0212 ND	0.0210 ND	0.0191 ND

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

Compound	Sample ID / Sample Concentration (%)			
	Can00146-T9	***Can00177-T10***	***Can00196-T11***	***Can905-T12***
Methane	0.329	0.0303 J	0.128	0.130
Ethane	0.0312 J	0.0324 J	0.0411 J	0.0402 J
C2 as Ethane	0.00710 ND	0.00733 ND	0.00682 ND	0.00687 ND
Propane	0.00906 ND	0.00934 ND	0.00869 ND	0.00876 ND
C3 as Propane	93.0	92.6	94.5	92.9
Butane	0.00416 ND	0.00429 ND	0.00399 ND	0.0201 J
C4 as Butane	0.00416 ND	0.00429 ND	0.00399 ND	0.00402 ND
Pentane	0.00764 ND	0.00788 ND	0.00733 ND	0.0168 J
C5 as Pentane	0.00764 ND	0.00788 ND	0.00733 ND	0.108
Benzene	0.0178 ND	0.0183 ND	0.0170 ND	0.0172 ND

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/TCD)

Client #	Comm Emgineering
Job #	0213-39
# Samples	10 canisters

Compound	Sample ID / Sample Concentration (%)			
	Can00122-T1	***Can00144-T2***	***Can00204-T3***	***Can00179-T4***
Carbon dioxide	0.134 ND	0.133 ND	0.136 ND	0.128 ND
Hydrogen	0.148 ND	0.147 ND	3.51	0.141 ND
Oxygen	1.92	0.391 J	0.400 J	0.469 J
Nitrogen	6.76	1.46	1.32 J	1.65
Carbon monoxide	0.134 ND	0.133 ND	0.136 ND	0.128 ND
	Can959-T5	***Can952-T6***	***Can00186-T7***	***Can00146-T9***
Carbon dioxide	0.343 ND	0.168 ND	0.166 ND	0.141 ND
Hydrogen	0.378 ND	14.1	0.183 ND	0.155 ND
Oxygen	0.563 J	8.14	0.586 J	0.903 J
Nitrogen	2.07 J	29.1	1.84	3.23
Carbon monoxide	0.343 ND	0.168 ND	0.166 ND	0.141 ND
	Can00196-T11	***Can905-T12***		
Carbon dioxide	0.135 ND	0.136 ND		
Hydrogen	0.149 ND	0.150 ND		
Oxygen	0.646 J	0.574 J		
Nitrogen	2.14	1.84		
Carbon monoxide	0.135 ND	0.136 ND		

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/TCD)

Client #	Comm Engineering
Job #	0213-39
# Samples	2 canisters

Compound	Sample ID / Sample Concentration (%)	
	Can00203-T8	***Can 00177-T10***
Carbon dioxide	0.152 ND	0.145 ND
Hydrogen	0.152 ND	0.145 ND
Oxygen	0.235 J	0.392 J
Nitrogen	0.760 J	1.19 J
Carbon monoxide	0.152 ND	0.145 ND

Company	KeikaVentures
Analyst	STG
Parameters	ASTM D5504 (GC/SCD)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

Compound	Sample ID / Sample Concentration (ppm)			
	Can 00122-T1	***Can 00144-T2***	***Can 00204-T3***	***Can 00179-T4***
Carbonyl sulfide	0.145 ND	0.144 ND	0.147 ND	0.139 ND
Methyl mercaptan	0.153 ND	0.152 ND	0.155 ND	0.147 ND
Carbon disulfide	0.247 J	0.170 ND	0.174 ND	0.164 ND
Unkown mercaptans as Methyl mercaptan	0.153 ND	0.152 ND	0.155 ND	0.147 ND
	Can 959-T5	***Can 952-T6***	***Can 00186-T7***	***Can 00203-T8***
Carbonyl sulfide	0.370 ND	0.181 ND	0.179 ND	0.164 ND
Methyl mercaptan	0.391 ND	0.192 ND	0.190 ND	0.173 ND
Carbon disulfide	0.438 ND	0.214 ND	0.212 ND	0.194 ND
Unkown mercaptans as Methyl mercaptan	0.391 ND	0.192 ND	0.190 ND	0.173 ND
	Can 00146-T9	***Can 00177-T10***	***Can 00196-T11***	***Can 905-T12***
Carbonyl sulfide	0.152 ND	0.157 ND	0.146 ND	0.147 ND
Methyl mercaptan	0.161 ND	0.166 ND	0.154 ND	0.155 ND
Carbon disulfide	0.180 ND	0.185 ND	0.172 ND	0.174 ND
Unkown mercaptans as Methyl mercaptan	0.161 ND	0.166 ND	0.154 ND	0.155 ND

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1946

Client #	Comm Engineering
Job #	0213-39
# Samples	15 bags

Compound	Sample ID / Sample Concentration (%)			
	Bag-1A	***Bag-2A***	***Bag-3A***	***Bag-3B***
Carbon dioxide	5.61	5.41	0.490	5.45
Oxygen	13.4	13.5	18.9	13.3
Nitrogen	66.3	66.4	63.1	66.6
Methane	0.0320 ND	0.0320 ND	0.0320 ND	0.0320 ND
	Bag-4A	***Bag-4B***	***Bag-5A***	***Bag-5B***
Carbon dioxide	3.96	5.45	0.187 J	5.54
Oxygen	15.2	13.3	18.8	13.1
Nitrogen	66.6	66.2	63.0	68.4
Methane	0.0320 ND	0.0320 ND	0.0320 ND	0.0320 ND
	Bag-6A	***Bag-7A***	***Bag-8A***	***Bag-9A***
Carbon dioxide	5.97	6.53	6.27	6.35
Oxygen	12.9	12.5	12.8	12.0
Nitrogen	67.2	68.1	68.3	65.7
Methane	0.0320 ND	0.0320 ND	0.0320 ND	0.0320 ND
	Bag-10A	***Bag-11A***	***Bag-12A***	
Carbon dioxide	5.82	5.95	6.28	
Oxygen	12.9	12.2	12.4	
Nitrogen	66.8	68.7	67.9	
Methane	0.0320 ND	0.0320 ND	0.0320 ND	

Results



Company	Keika Ventures
Analyst	MTH
Parameters	Higher Heating Values

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

Sample ID	Analyte	MW	Mol. %	Ideal Gross Heating Value Btu/lb	Higher Heating Value Btu/lb
Can00186-T7	Methane	16.0	0.156	23,891	59,623
	Ethane	30.1	0.0540	22,333	36,231
	C2	30.1	0.00	22,333	0.00
	Propane	44.1	0.00	21,653	0.00
	C3	44.1	93.0	21,653	88,787,988
	Butane	58.1	0.00	21,300	0.00
	C4	58.1	0.00	21,300	0.00
	Pentane	72.2	0.00	21,085	0.00
	C5	72.2	0.00	21,085	0.00
	Benzene	78.1	0.00	18,177	0.00
	Carbon dioxide	44.0	0.00	0	0.00
	Hydrogen	2.0	0.00	61,022	0.00
	Oxygen	32.0	0.586	0	0.00
	Nitrogen	28.0	1.84	0	0.00
	Carbon monoxide	28.0	0.00	4,342	0.00
				Total	**21,290**

Sample ID	Analyte	MW	Mol. %	Ideal Gross Heating Value Btu/lb	Higher Heating Value Btu/lb
Can00203-T8	Methane	16.0	0.147	23,891	56,322
	Ethane	30.1	0.0341	22,333	22,875
	C2	30.1	0.00	22,333	0.00
	Propane	44.1	0.00	21,653	0.00
	C3	44.1	97.4	21,653	93,012,064
	Butane	58.1	0.00	21,300	0.00
	C4	58.1	0.00	21,300	0.00
	Pentane	72.2	0.00	21,085	0.00
	C5	72.2	0.00	21,085	0.00
	Benzene	78.1	0.00	18,177	0.00
	Carbon dioxide	44.0	0.00	0	0.00
	Hydrogen	2.0	0.00	61,022	0.00
	Oxygen	32.0	0.235	0	0.00
	Nitrogen	28.0	0.760	0	0.00
	Carbon monoxide	28.0	0.00	4,342	0.00
				Total	**21,510**

Sample ID	Analyte	MW	Mol. %	Ideal Gross Heating Value Btu/lb	Higher Heating Value Btu/lb
Can00146-T9	Methane	16.0	0.329	23,891	126,154
	Ethane	30.1	0.0312	22,333	20,921
	C2	30.1	0.00	22,333	0
	Propane	44.1	0.00	21,653	0
	C3	44.1	93.0	21,653	88,771,087
	Butane	58.1	0.00	21,300	0
	C4	58.1	0.00	21,300	0
	Pentane	72.2	0.00	21,085	0
	C5	72.2	0.00	21,085	0
	Benzene	78.1	0.00	18,177	0
	Carbon dioxide	44.0	0.00	0	0
	Hydrogen	2.0	0.00	61,022	0
	Oxygen	32.0	0.903	0	0
	Nitrogen	28.0	3.23	0	0
	Carbon monoxide	28.0	0.00	4,342	0
				Total	**21,045**

Sample ID	Analyte	MW	Mol. %	Ideal Gross Heating Value Btu/lb	Higher Heating Value Btu/lb
Can00177-T10	Methane	16.0	0.0303	23,891	11,598
	Ethane	30.1	0.0324	22,333	21,740
	C2	30.1	0.00	22,333	0.00
	Propane	44.1	0.00	21,653	0.00
	C3	44.1	92.6	21,653	88,444,787
	Butane	58.1	0.00	21,300	0.00
	C4	58.1	0.00	21,300	0.00
	Pentane	72.2	0.00	21,085	0.00
	C5	72.2	0.00	21,085	0.00
	Benzene	78.1	0.00	18,177	0.00
	Carbon dioxide	44.0	0.00	0	0.00
	Hydrogen	2.0	0.00	61,022	0.00
	Oxygen	32.0	0.392	0	0.00
	Nitrogen	28.0	1.19	0	0.00
	Carbon monoxide	28.0	0.00	4,342	0.00
				Total	**21,413**

Sample ID	Analyte	MW	Mol. %	Ideal Gross Heating Value Btu/lb	Higher Heating Value Btu/lb
Can00196-T11	Methane	16.0	0.128	23,891	49,082
	Ethane	30.1	0.0411	22,333	27,576
	C2	30.1	0.00	22,333	0.00
	Propane	44.1	0.00	21,653	0.00
	C3	44.1	94.5	21,653	90,197,029
	Butane	58.1	0.00	21,300	0.00
	C4	58.1	0.00	21,300	0.00
	Pentane	72.2	0.00	21,085	0.00
	C5	72.2	0.00	21,085	0.00
	Benzene	78.1	0.00	18,177	0.00
	Carbon dioxide	44.0	0.00	0.00	0.00
	Hydrogen	2.02	0.00	61,022	0.00
	Oxygen	32.0	0.646	0.00	0.00
	Nitrogen	28.0	2.14	0.00	0.00
	Carbon monoxide	28.0	0.00	4,342	0.00
				Total	**21,244**

Sample ID	Analyte	MW	Mol. %	Ideal Gross Heating Value Btu/lb	Higher Heating Value Btu/lb
Can905-T12	Methane	16.0	0.130	23,891	49,719
	Ethane	30.1	0.0402	22,333	26,977
	C2	30.1	0.00	22,333	0.00
	Propane	44.1	0.00	21,653	0.00
	C3	44.1	92.9	21,653	88,719,937
	Butane	58.1	0.0201	21,300	24,874
	C4	58.1	0.00	21,300	0.00
	Pentane	72.2	0.0168	21,085	25,541
	C5	72.2	0.108	21,085	164,723
	Benzene	78.1	0.00	18,177	0.00
	Carbon dioxide	44.0	0.00	0.00	0.00
	Hydrogen	2.0	0.00	61,022	0.00
	Oxygen	32.0	0.574	0.00	0.00
	Nitrogen	28.0	1.84	0.00	0.00
	Carbon monoxide	28.0	0.00	4,342	0.00
				Total	**21,291**

Company	Keika Ventures
Analyst	MTH
Parameters	Higher Heating Values

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

Sample ID	Analyte	MW	Mol. %	Ideal Gross Heating Value Btu/lb	Higher Heating Value Btu/lb
Can00122-T1	Methane	16.0	0.0602	23,891	23,092
	Ethane	30.1	0.322	22,333	216,392
	C2	30.1	0.00	22,333	0.00
	Propane	44.1	0.00	21,653	0.00
	C3	44.1	89.8	21,653	85,763,415
	Butane	58.1	0.00	21,300	0.00
	C4	58.1	0.00	21,300	0.00
	Pentane	72.2	0.00	21,085	0.00
	C5	72.2	0.00	21,085	0.00
	Benzene	78.1	0.00	18,177	0.00
	Carbon dioxide	44.0	0.00	0.00	0.00
	Hydrogen	2.02	0.00	61,022	0.00
	Oxygen	32.0	1.92	0.00	0.00
	Nitrogen	28.0	6.76	0.00	0.00
	Carbon monoxide	28.0	0.00	4,342	0.00
				Total	**20,369**

Sample ID	Analyte	MW	Mol. %	Ideal Gross Heating Value Btu/lb	Higher Heating Value Btu/lb
Can00144-T2	Methane	16.0	0.137	23,891	52,515
	Ethane	30.1	0.280	22,333	187,737
	C2	30.1	0.00	22,333	0.00
	Propane	44.1	0.00	21,653	0.00
	C3	44.1	92.3	21,653	88,157,727
	Butane	58.1	0.00	21,300	0.00
	C4	58.1	0.00	21,300	0.00
	Pentane	72.2	0.00	21,085	0.00
	C5	72.2	0.00	21,085	0.00
	Benzene	78.1	0.00	18,177	0.00
	Carbon dioxide	44.0	0.00	0.00	0.00
	Hydrogen	2.02	0.00	61,022	0.00
	Oxygen	32.0	0.391	0.00	0.00
	Nitrogen	28.0	1.46	0.00	0.00
	Carbon monoxide	28.0	0.00	4,342	0.00
				Total	**21,377**

Sample ID	Analyte	MW	Mol. %	Ideal Gross Heating Value Btu/lb	Higher Heating Value Btu/lb
Can00204-T3	Methane	16.0	0.127	23,891	48,787
	Ethane	30.1	0.215	22,333	144,114
	C2	30.1	0.00	22,333	0.00
	Propane	44.1	0.00	21,653	0.00
	C3	44.1	81.7	21,653	78,054,845
	Butane	58.1	0.00	21,300	0.00
	C4	58.1	0.00	21,300	0.00
	Pentane	72.2	0.00	21,085	0.00
	C5	72.2	0.116	21,085	175,905
	Benzene	78.1	0.00	18,177	0.00
	Carbon dioxide	44.0	0.00	0.00	0.00
	Hydrogen	2.02	3.51	61,022	431,883
	Oxygen	32.0	0.400	0.00	0.00
	Nitrogen	28.0	1.32	0.00	0.00
	Carbon monoxide	28.0	0.00	4,342	0.00
				Total	**21,438**

Sample ID	Analyte	MW	Mol. %	Ideal Gross Heating Value Btu/lb	Higher Heating Value Btu/lb
Can00179-T4	Methane	16.0	0.118	23,891	45,340
	Ethane	30.1	0.152	22,333	102,278
	C2	30.1	0.00	22,333	0.00
	Propane	44.1	0.00	21,653	0.00
	C3	44.1	87.3	21,653	83,392,265
	Butane	58.1	0.00	21,300	0.00
	C4	58.1	0.00	21,300	0.00
	Pentane	72.2	0.0120	21,085	18,260
	C5	72.2	0.0246	21,085	37,452
	Benzene	78.1	0.00	18,177	0.00
	Carbon dioxide	44.0	0.00	0.00	0.00
	Hydrogen	2.02	0.00	61,022	0.00
	Oxygen	32.0	0.469	0.00	0.00
	Nitrogen	28.0	1.65	0.00	0.00
	Carbon monoxide	28.0	0.00	4,342	0.00
				Total	**21,316**

Sample ID	Analyte	MW	Mol. %	Ideal Gross Heating Value Btu/lb	Higher Heating Value Btu/lb
Can959-T5	Methane	16.0	0.310	23,891	118,644
	Ethane	30.1	0.165	22,333	110,711
	C2	30.1	0.00	22,333	0.00
	Propane	44.1	0.00	21,653	0.00
	C3	44.1	79.4	21,653	75,775,526
	Butane	58.1	0.00	21,300	0.00
	C4	58.1	0.00	21,300	0.00
	Pentane	72.2	0.00	21,085	0.00
	C5	72.2	0.00	21,085	0.00
	Benzene	78.1	0.00	18,177	0.00
	Carbon dioxide	44.0	0.00	0	0.00
	Hydrogen	2.0	0.00	61,022	0.00
	Oxygen	32.0	0.563	0	0.00
	Nitrogen	28.0	2.07	0	0.00
	Carbon monoxide	28.0	0.00	4,342	0.00
				Total	**21,197**

Sample ID	Analyte	MW	Mol. %	Ideal Gross Heating Value Btu/lb	Higher Heating Value Btu/lb
Can952-T6	Methane	16.0	0.162	23,891	62,211
	Ethane	30.1	0.0352	22,333	23,645
	C2	30.1	0.00	22,333	0.00
	Propane	44.1	0.00	21,653	0.00
	C3	44.1	44.4	21,653	42,378,433
	Butane	58.1	0.00	21,300	0.00
	C4	58.1	0.00	21,300	0.00
	Pentane	72.2	0.00	21,085	0.00
	C5	72.2	0.00	21,085	0.00
	Benzene	78.1	0.00	18,177	0.00
	Carbon dioxide	44.0	0.00	0	0.00
	Hydrogen	2.0	14.1	61,022	1,734,443
	Oxygen	32.0	8.14	0	0.00
	Nitrogen	28.0	29.1	0	0.00
	Carbon monoxide	28.0	0.00	4,342	0.00
				Total	**14,424**

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.383 (ppm)
LOQ 2.00 (ppm)
Compound Methane

Lower Curve Limit 2.00 (ppm)
Upper Curve Limit 10,030 (ppm)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual	Sample Conc (%)
Can00122-T1	009F0401.D	009F0402.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.55	1.55	0.0	1.63	1.93	8.4	1.78	101	3.348	602	J	0.0602
Can00144-T2	010F0501.D	010F0502.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.52	1.52	0.1	3.91	4.22	3.8	4.07	101	3.336	1,370		0.137
Can00204-T3	007F0601.D	007F0602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.52	1.52	0.0	3.71	3.70	0.2	3.71	101	3.401	1,273		0.127
Can00179-T4	008F0701.D	008F0702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.52	1.52	0.0	3.69	3.62	0.9	3.65	101	3.207	1,183		0.118
Can959-T5	012F0801.D	012F0802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.52	1.52	0.0	3.62	3.53	1.3	3.58	101	8.564	3,095		0.310
Can952-T6	013F0901.D	013F0902.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.52	1.52	0.0	3.58	4.09	6.6	3.83	101	4.191	1,623		0.162
Can00186-T7	005F1001.D	005F1002.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.52	1.52	0.0	3.78	3.64	1.9	3.71	101	4.151	1,556		0.156
Can00203-T8	016F1101.D	016F1102.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.52	1.52	0.0	3.88	3.79	1.2	3.84	101	3.790	1,469		0.147
Can00146-T9	014F1201.D	014F1202.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.55	1.55	0.0	9.29	9.24	0.3	9.27	101	3.517	3,291		0.329
Can00177-T10	011F1301.D	011F1302.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.55	1.55	0.1	0.758	0.893	8.2	0.826	101	3.628	302.6	J	0.0303
Can00196-T11	009F1601.D	009F1602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.52	1.52	0.0	3.71	3.80	1.2	3.76	101	3.375	1,281		0.128
Can905-T12	010F1701.D	010F1702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.52	1.52	0.1	3.75	3.80	0.6	3.78	101	3.402	1,297		0.130
Room air blank	006F1801.D	006F1802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.55	1.55	0.0	2.10	2.24	3.1	2.17	101	1.00	219		0.0219

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.200 (ppm)
LOQ 2.00 (ppm)
Compound Ethane

Lower Curve Limit 2.00 (ppm)
Upper Curve Limit 10,000 (ppm)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual	Sample Conc (%)
Can00122-T1	009F0401.D	009F0402.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.69	1.69	0.0	9.40	9.65	1.3	9.53	101	3.348	3,222		0.322
Can00144-T2	010F0501.D	010F0502.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.69	1.69	0.1	8.41	8.18	1.4	8.30	101	3.336	2,796		0.280
Can00204-T3	007F0601.D	007F0602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.69	1.69	0.0	6.27	6.22	0.4	6.25	101	3.401	2,146		0.215
Can00179-T4	008F0701.D	008F0702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.69	1.69	0.0	4.51	4.89	4.1	4.70	101	3.207	1,523		0.152
Can959-T5	012F0801.D	012F0802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.69	1.69	0.0	1.90	1.91	0.1	1.91	101	8.564	1,649	J	0.165
Can952-T6	013F0901.D	013F0902.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.69	1.69	0.1	1.22	0.440	47.1	0.832	101	4.191	352.1	J	0.0352
Can00186-T7	005F1001.D	005F1002.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.69	1.69	0.0	1.20	1.37	6.5	1.29	101	4.151	540	J	0.0540
Can00203-T8	016F1101.D	016F1102.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.69	1.69	0.1	0.893	0.887	0.4	0.890	101	3.790	340.6	J	0.0341
Can00146-T9	014F1201.D	014F1202.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.69	1.69	0.1	0.894	0.860	2.0	0.877	101	3.517	311.5	J	0.0312
Can00177-T10	011F1301.D	011F1302.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.69	1.69	0.0	0.816	0.951	7.6	0.884	101	3.628	323.7	J	0.0324
Can00196-T11	009F1601.D	009F1602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.69	1.69	0.0	1.35	1.06	11.7	1.20	101	3.375	411	J	0.0411
Can905-T12	010F1701.D	010F1702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.69	1.69	0.1	1.45	0.890	23.9	1.17	101	3.402	402	J	0.0402
Room air blank	006F1801.D	006F1802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.200	0.200	0.0	0.200	101	1.00	20.2	ND	0.0020

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.200 (ppm)
LOQ 2.00 (ppm)
Compound C2 as Ethane

Lower Curve Limit 2.00 (ppm)
Upper Curve Limit 10,000 (ppm)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual	Sample Conc (%)
Can00122-T1	009F0401.D	009F0402.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.200	0.200	0.0	0.200	101	3.348	67.6	ND	0.0068
Can00144-T2	010F0501.D	010F0502.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.200	0.200	0.0	0.200	101	3.336	67.4	ND	0.0067
Can00204-T3	007F0601.D	007F0602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.200	0.200	0.0	0.200	101	3.401	68.7	ND	0.0069
Can00179-T4	008F0701.D	008F0702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.200	0.200	0.0	0.200	101	3.207	64.8	ND	0.0065
Can959-T5	012F0801.D	012F0802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.200	0.200	0.0	0.200	101	8.564	173.0	ND	0.0173
Can952-T6	013F0901.D	013F0902.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.200	0.200	0.0	0.200	101	4.191	84.7	ND	0.0085
Can00186-T7	005F1001.D	005F1002.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.200	0.200	0.0	0.200	101	4.151	83.8	ND	0.0084
Can00203-T8	016F1101.D	016F1102.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.200	0.200	0.0	0.200	101	3.790	76.6	ND	0.0077
Can00146-T9	014F1201.D	014F1202.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.200	0.200	0.0	0.200	101	3.517	71.0	ND	0.0071
Can00177-T10	011F1301.D	011F1302.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.200	0.200	0.0	0.200	101	3.628	73.3	ND	0.0073
Can00196-T11	009F1601.D	009F1602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.200	0.200	0.0	0.200	101	3.375	68.2	ND	0.0068
Can905-T12	010F1701.D	010F1702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.200	0.200	0.0	0.200	101	3.402	68.7	ND	0.0069
Room air blank	006F1801.D	006F1802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.200	0.200	0.0	0.200	101	1.00	20.2	ND	0.0020

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.255 (ppm)
LOQ 2.00 (ppm)
Compound Propane

Lower Curve Limit 2.00 (ppm)
Upper Curve Limit 10,000 (ppm)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual	Sample Conc (%)
Can00122-T1	009F0401.D	009F0402.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.255	0.255	0.0	0.255	101	3.348	86.2	ND	0.0086
Can00144-T2	010F0501.D	010F0502.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.255	0.255	0.0	0.255	101	3.336	85.9	ND	0.0086
Can00204-T3	007F0601.D	007F0602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.255	0.255	0.0	0.255	101	3.401	87.6	ND	0.0088
Can00179-T4	008F0701.D	008F0702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.255	0.255	0.0	0.255	101	3.207	82.6	ND	0.0083
Can959-T5	012F0801.D	012F0802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.255	0.255	0.0	0.255	101	8.564	220.6	ND	0.0221
Can952-T6	013F0901.D	013F0902.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.255	0.255	0.0	0.255	101	4.191	107.9	ND	0.0108
Can00186-T7	005F1001.D	005F1002.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.255	0.255	0.0	0.255	101	4.151	106.9	ND	0.0107
Can00203-T8	016F1101.D	016F1102.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.255	0.255	0.0	0.255	101	3.790	97.6	ND	0.0098
Can00146-T9	014F1201.D	014F1202.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.255	0.255	0.0	0.255	101	3.517	90.6	ND	0.0091
Can00177-T10	011F1301.D	011F1302.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.255	0.255	0.0	0.255	101	3.628	93.4	ND	0.0093
Can00196-T11	009F1601.D	009F1602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.255	0.255	0.0	0.255	101	3.375	86.9	ND	0.0087
Can905-T12	010F1701.D	010F1702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.255	0.255	0.0	0.255	101	3.402	87.6	ND	0.0088
Room air blank	006F1801.D	006F1802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.255	0.255	0.0	0.255	101	1.00	25.8	ND	0.0026

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.255 (ppm)
LOQ 2.00 (ppm)
Compound C3 as Propane

Lower Curve Limit 2.00 (ppm)
Upper Curve Limit 10,000 (ppm)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual	Sample Conc (%)
Can00122-T1	009F0401.D	009F0402.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	2,670	2,642	0.5	2,656	101	3.348	898,204		89.8
Can00144-T2	010F0501.D	010F0502.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	2,743	2,737	0.1	2,740	101	3.336	923,280		92.3
Can00204-T3	007F0601.D	007F0602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	2,382	2,377	0.1	2,380	101	3.401	817,472		81.7
Can00179-T4	008F0701.D	008F0702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	2,703	2,690	0.2	2,697	101	3.207	873,371		87.3
Can959-T5	012F0801.D	012F0802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	920	915	0.3	917	101	8.564	793,600		79.4
Can952-T6	013F0901.D	013F0902.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1,044	1,053	0.4	1,049	101	4.191	443,831		44.4
Can00186-T7	005F1001.D	005F1002.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	2,227	2,212	0.3	2,220	101	4.151	930,427		93.0
Can00203-T8	016F1101.D	016F1102.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	2,530	2,560	0.6	2,545	101	3.790	974,119		97.4
Can00146-T9	014F1201.D	014F1202.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	2,620	2,615	0.1	2,618	101	3.517	929,703		93.0
Can00177-T10	011F1301.D	011F1302.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	2,526	2,530	0.1	2,528	101	3.628	926,286		92.6
Can00196-T11	009F1601.D	009F1602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	2,771	2,771	0.0	2,771	101	3.375	944,637		94.5
Can905-T12	010F1701.D	010F1702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	2,710	2,699	0.2	2,705	101	3.402	929,168		92.9
Room air blank	006F1801.D	006F1802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	1.71	1.34	12.0	1.52	101	1.00	154	J	0.0154

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.117 (ppm)
LOQ 2.00 (ppm)
Compound Butane

Lower Curve Limit 2.00 (ppm)
Upper Curve Limit 9,920 (ppm)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual	Sample Conc (%)
Can00122-T1	009F0401.D	009F0402.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.117	0.117	0.0	0.117	101	3.348	39.6	ND	0.0040
Can00144-T2	010F0501.D	010F0502.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.117	0.117	0.0	0.117	101	3.336	39.4	ND	0.0039
Can00204-T3	007F0601.D	007F0602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.117	0.117	0.0	0.117	101	3.401	40.2	ND	0.0040
Can00179-T4	008F0701.D	008F0702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.117	0.117	0.0	0.117	101	3.207	37.9	ND	0.0038
Can959-T5	012F0801.D	012F0802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.117	0.117	0.0	0.117	101	8.564	101.2	ND	0.0101
Can952-T6	013F0901.D	013F0902.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.117	0.117	0.0	0.117	101	4.191	49.5	ND	0.0050
Can00186-T7	005F1001.D	005F1002.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.117	0.117	0.0	0.117	101	4.151	49.0	ND	0.0049
Can00203-T8	016F1101.D	016F1102.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.117	0.117	0.0	0.117	101	3.790	44.8	ND	0.0045
Can00146-T9	014F1201.D	014F1202.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.117	0.117	0.0	0.117	101	3.517	41.6	ND	0.0042
Can00177-T10	011F1301.D	011F1302.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.117	0.117	0.0	0.117	101	3.628	42.9	ND	0.0043
Can00196-T11	009F1601.D	009F1602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.117	0.117	0.0	0.117	101	3.375	39.9	ND	0.0040
Can905-T12	010F1701.D	010F1702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	2.94	2.94	0.1	0.651	0.518	11.4	0.585	101	3.402	201	J	0.0201
Room air blank	006F1801.D	006F1802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.117	0.117	0.0	0.117	101	1.00	11.8	ND	0.0012

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.117 (ppm)
LOQ 2.00 (ppm)
Compound C4 as Butane

Lower Curve Limit 2.00 (ppm)
Upper Curve Limit 9,920 (ppm)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual	Sample Conc (%)
Can00122-T1	009F0401.D	009F0402.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.117	0.117	0.0	0.117	101	3.348	39.6	ND	0.0040
Can00144-T2	010F0501.D	010F0502.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.117	0.117	0.0	0.117	101	3.336	39.4	ND	0.0039
Can00204-T3	007F0601.D	007F0602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.117	0.117	0.0	0.117	101	3.401	40.2	ND	0.0040
Can00179-T4	008F0701.D	008F0702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.117	0.117	0.0	0.117	101	3.207	37.9	ND	0.0038
Can959-T5	012F0801.D	012F0802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.117	0.117	0.0	0.117	101	8.564	101.2	ND	0.0101
Can952-T6	013F0901.D	013F0902.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.117	0.117	0.0	0.117	101	4.191	49.5	ND	0.0050
Can00186-T7	005F1001.D	005F1002.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.117	0.117	0.0	0.117	101	4.151	49.0	ND	0.0049
Can00203-T8	016F1101.D	016F1102.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.117	0.117	0.0	0.117	101	3.790	44.8	ND	0.0045
Can00146-T9	014F1201.D	014F1202.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.117	0.117	0.0	0.117	101	3.517	41.6	ND	0.0042
Can00177-T10	011F1301.D	011F1302.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.117	0.117	0.0	0.117	101	3.628	42.9	ND	0.0043
Can00196-T11	009F1601.D	009F1602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.117	0.117	0.0	0.117	101	3.375	39.9	ND	0.0040
Can905-T12	010F1701.D	010F1702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.117	0.117	0.0	0.117	101	3.402	40.2	ND	0.0040
Room air blank	006F1801.D	006F1802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.117	0.117	0.0	0.117	101	1.00	11.8	ND	0.0012

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.215 (ppm)
LOQ 2.00 (ppm)
Compound Pentane

Lower Curve Limit 2.00 (ppm)
Upper Curve Limit 100 (ppm)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual	Sample Conc (%)
Can00122-T1	009F0401.D	009F0402.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.215	0.215	0.0	0.215	101	3.348	72.7	ND	0.0073
Can00144-T2	010F0501.D	010F0502.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.215	0.215	0.0	0.215	101	3.336	72.4	ND	0.0072
Can00204-T3	007F0601.D	007F0602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.215	0.215	0.0	0.215	101	3.401	73.9	ND	0.0074
Can00179-T4	008F0701.D	008F0702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	4.498	4.495	0.067	0.364	0.378	1.9	0.371	101	3.207	120.0	J	0.0120
Can959-T5	012F0801.D	012F0802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.215	0.215	0.0	0.215	101	8.564	186.0	ND	0.0186
Can952-T6	013F0901.D	013F0902.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.215	0.215	0.0	0.215	101	4.191	91.0	ND	0.0091
Can00186-T7	005F1001.D	005F1002.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.215	0.215	0.0	0.215	101	4.151	90.1	ND	0.0090
Can00203-T8	016F1101.D	016F1102.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.215	0.215	0.0	0.215	101	3.790	82.3	ND	0.0082
Can00146-T9	014F1201.D	014F1202.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.215	0.215	0.0	0.215	101	3.517	76.4	ND	0.0076
Can00177-T10	011F1301.D	011F1302.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.215	0.215	0.0	0.215	101	3.628	78.8	ND	0.0079
Can00196-T11	009F1601.D	009F1602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.215	0.215	0.0	0.215	101	3.375	73.3	ND	0.0073
Can905-T12	010F1701.D	010F1702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	4.50	4.50	0.0	0.464	0.513	5.0	0.489	101	3.402	168	J	0.0168
Room air blank	006F1801.D	006F1802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.215	0.215	0.0	0.215	101	1.00	21.7	ND	0.0022

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.215 (ppm)
LOQ 2.00 (ppm)
Compound C5 as Pentane

Lower Curve Limit 2.00 (ppm)
Upper Curve Limit 100 (ppm)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual	Sample Conc (%)
Can00122-T1	009F0401.D	009F0402.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.215	0.215	0.0	0.215	101	3.348	72.7	ND	0.0073
Can00144-T2	010F0501.D	010F0502.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.215	0.215	0.0	0.215	101	3.336	72.4	ND	0.0072
Can00204-T3	007F0601.D	007F0602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	3.12	3.61	7.2	3.37	101	3.401	1,156		0.116
Can00179-T4	008F0701.D	008F0702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.750	0.771	1.4	0.760	101	3.207	246	J	0.0246
Can959-T5	012F0801.D	012F0802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.215	0.215	0.0	0.215	101	8.564	186	ND	0.0186
Can952-T6	013F0901.D	013F0902.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.215	0.215	0.0	0.215	101	4.191	91.0	ND	0.0091
Can00186-T7	005F1001.D	005F1002.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.215	0.215	0.0	0.215	101	4.151	90.1	ND	0.0090
Can00203-T8	016F1101.D	016F1102.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.215	0.215	0.0	0.215	101	3.790	82.3	ND	0.0082
Can00146-T9	014F1201.D	014F1202.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.215	0.215	0.0	0.215	101	3.517	76.4	ND	0.0076
Can00177-T10	011F1301.D	011F1302.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.215	0.215	0.0	0.215	101	3.628	78.8	ND	0.0079
Can00196-T11	009F1601.D	009F1602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.215	0.215	0.0	0.215	101	3.375	73.3	ND	0.0073
Can905-T12	010F1701.D	010F1702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	3.11	3.19	1.2	3.15	101	3.402	1,083		0.108
Room air blank	006F1801.D	006F1802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	0.215	0.215	0.0	0.215	101	1.00	21.7	ND	0.0022

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/FID)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.500 (ppm)
LOQ 5.00 (ppm)
Compound Benzene

Lower Curve Limit 5.00 (ppm)
Upper Curve Limit 300 (ppm)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual	Sample Conc (%)
Can00122-T1	009F0401.D	009F0402.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.500	0.500	0.0	0.500	101	3.348	169	ND	0.0169
Can00144-T2	010F0501.D	010F0502.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.500	0.500	0.0	0.500	101	3.336	168	ND	0.0168
Can00204-T3	007F0601.D	007F0602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.500	0.500	0.0	0.500	101	3.401	172	ND	0.0172
Can00179-T4	008F0701.D	008F0702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.500	0.500	0.0	0.500	101	3.207	162	ND	0.0162
Can959-T5	012F0801.D	012F0802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.500	0.500	0.0	0.500	101	8.564	432	ND	0.0432
Can952-T6	013F0901.D	013F0902.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.500	0.500	0.0	0.500	101	4.191	212	ND	0.0212
Can00186-T7	005F1001.D	005F1002.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.500	0.500	0.0	0.500	101	4.151	210	ND	0.0210
Can00203-T8	016F1101.D	016F1102.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.500	0.500	0.0	0.500	101	3.790	191	ND	0.0191
Can00146-T9	014F1201.D	014F1202.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.500	0.500	0.0	0.500	101	3.517	178	ND	0.0178
Can00177-T10	011F1301.D	011F1302.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.500	0.500	0.0	0.500	101	3.628	183	ND	0.0183
Can00196-T11	009F1601.D	009F1602.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.500	0.500	0.0	0.500	101	3.375	170	ND	0.0170
Can905-T12	010F1701.D	010F1702.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.500	0.500	0.0	0.500	101	3.402	172	ND	0.0172
Room air blank	006F1801.D	006F1802.D	GC135P096FRONT_C1-C5&BEN_0213-39.M	NA	NA	NA	0.500	0.500	0.0	0.500	101	1.00	50.5	ND	0.0051

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/TCD)

Client #	Comm Emgineering
Job #	0213-39
# Samples	10 canisters

MDL 0.0400 (%)
LOQ 0.400 (%)
Compound Carbon dioxide

Lower Curve Limit 0.400 (%)
Upper Curve Limit 10.0 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Tank Dilution	Sample Conc (%)	Qual
Can00122-T1	003F0801.D	003F0802.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.348	0.134	ND
Can00144-T2	011F0901.D	011F0902.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.336	0.133	ND
Can00204-T3	014F1001.D	014F1002.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.401	0.136	ND
Can00179-T4	003F1501.D	003F1502.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.207	0.128	ND
Can959-T5	011F1601.D	011F1602.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	8.564	0.343	ND
Can952-T6	014F1701.D	014F1702.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	4.191	0.168	ND
Can00186-T7	008F1801.D	008F1802.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	4.151	0.166	ND
Can00146-T9	012F2101.D	012F2102.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.517	0.141	ND
Can00196-T11	006F2201.D	006F2202.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.375	0.135	ND
Can905-T12	007F2301.D	007F2302.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.402	0.136	ND
He blank	001F1401.D	001F1402.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	1.00	0.0400	ND

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/TCD)

Client #	Comm Emgineering
Job #	0213-39
# Samples	10 canisters

MDL 0.0441 (%)
LOQ 0.340 (%)
Compound Hydrogen

Lower Curve Limit 0.340 (%)
Upper Curve Limit 8.10 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Tank Dilution	Sample Conc (%)	Qual
Can00122-T1	003F0801.D	003F0802.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0441	0.0441	0.0	0.0441	1	3.348	0.148	ND
Can00144-T2	011F0901.D	011F0902.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0441	0.0441	0.0	0.0441	1	3.336	0.147	ND
Can00204-T3	014F1001.D	014F1002.D	GC130P188F_LOW H2.M	3.68	3.69	0.4	1.00	1.06	2.7	1.03	1	3.401	3.51	
Can00179-T4	003F1501.D	003F1502.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0441	0.0441	0.0	0.0441	1	3.207	0.141	ND
Can959-T5	011F1601.D	011F1602.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0441	0.0441	0.0	0.0441	1	8.564	0.378	ND
Can952-T6	014F1701.D	014F1702.D	GC130P188F_LOW H2.M	3.74	3.74	0.1	2.91	3.82	13.6	3.36	1	4.191	14.1	
Can00186-T7	008F1801.D	008F1802.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0441	0.0441	0.0	0.0441	1	4.151	0.183	ND
Can00146-T9	012F2101.D	012F2102.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0441	0.0441	0.0	0.0441	1	3.517	0.155	ND
Can00196-T11	006F2201.D	006F2202.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0441	0.0441	0.0	0.0441	1	3.375	0.149	ND
Can905-T12	007F2301.D	007F2302.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0441	0.0441	0.0	0.0441	1	3.402	0.150	ND
He blank	001F1401.D	001F1402.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0441	0.0441	0.0	0.0441	1	1.00	0.0441	ND

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/TCD)

Client #	Comm Emgineering
Job #	0213-39
# Samples	10 canisters

MDL 0.0404 (%)
LOQ 0.400 (%)
Compound Oxygen

Lower Curve Limit 0.400 (%)
Upper Curve Limit 10.0 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Tank Dilution	Sample Conc (%)	Qual
Can00122-T1	003F0801.D	003F0802.D	GC130P188F_LOW H2.M	3.94	3.94	0.1	0.586	0.560	2.3	0.573	1	3.348	1.92	
Can00144-T2	011F0901.D	011F0902.D	GC130P188F_LOW H2.M	3.93	3.93	0.2	0.129	0.105	10.5	0.117	1	3.336	0.391	J
Can00204-T3	014F1001.D	014F1002.D	GC130P188F_LOW H2.M	3.94	3.96	0.4	0.125	0.111	5.9	0.118	1	3.401	0.400	J
Can00179-T4	003F1501.D	003F1502.D	GC130P188F_LOW H2.M	3.98	3.99	0.5	0.152	0.140	4.1	0.146	1	3.207	0.469	J
Can959-T5	011F1601.D	011F1602.D	GC130P188F_LOW H2.M	4.01	4.02	0.2	0.0705	0.0610	7.2	0.0658	1	8.564	0.563	J
Can952-T6	014F1701.D	014F1702.D	GC130P188F_LOW H2.M	4.01	4.01	0.1	1.24	2.64	36.2	1.94	1	4.191	8.14	
Can00186-T7	008F1801.D	008F1802.D	GC130P188F_LOW H2.M	4.01	4.01	0.0	0.157	0.125	11.5	0.141	1	4.151	0.586	J
Can00146-T9	012F2101.D	012F2102.D	GC130P188F_LOW H2.M	4.00	4.00	0.1	0.264	0.249	2.8	0.257	1	3.517	0.903	J
Can00196-T11	006F2201.D	006F2202.D	GC130P188F_LOW H2.M	3.99	4.00	0.1	0.205	0.178	6.9	0.191	1	3.375	0.646	J
Can905-T12	007F2301.D	007F2302.D	GC130P188F_LOW H2.M	4.00	4.01	0.4	0.175	0.162	3.7	0.169	1	3.402	0.574	J
He blank	001F1401.D	001F1402.D	GC130P188F_LOW H2.M	3.98	4.00	0.5	0.0865	0.0968	5.6	0.0916	1	1.00	0.0916	J

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/TCD)

Client #	Comm Emgineering
Job #	0213-39
# Samples	10 canisters

MDL 0.0400 (%)
LOQ 0.400 (%)
Compound Nitrogen

Lower Curve Limit 0.400 (%)
Upper Curve Limit 99.0 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Tank Dilution	Sample Conc (%)	Qual
Can00122-T1	003F0801.D	003F0802.D	GC130P188F_LOW H2.M	4.54	4.54	0.1	2.04	2.00	1.2	2.02	1	3.348	6.76	
Can00144-T2	011F0901.D	011F0902.D	GC130P188F_LOW H2.M	4.54	4.53	0.2	0.450	0.422	3.2	0.436	1	3.336	1.46	
Can00204-T3	014F1001.D	014F1002.D	GC130P188F_LOW H2.M	4.55	4.57	0.4	0.397	0.377	2.5	0.387	1	3.401	1.32	J
Can00179-T4	003F1501.D	003F1502.D	GC130P188F_LOW H2.M	4.59	4.61	0.5	0.535	0.494	3.9	0.515	1	3.207	1.65	
Can959-T5	011F1601.D	011F1602.D	GC130P188F_LOW H2.M	4.63	4.64	0.2	0.254	0.230	4.9	0.242	1	8.564	2.07	J
Can952-T6	014F1701.D	014F1702.D	GC130P188F_LOW H2.M	4.62	4.60	0.3	4.28	9.60	38.3	6.94	1	4.191	29.1	
Can00186-T7	008F1801.D	008F1802.D	GC130P188F_LOW H2.M	4.63	4.63	0.0	0.459	0.427	3.7	0.443	1	4.151	1.84	
Can00146-T9	012F2101.D	012F2102.D	GC130P188F_LOW H2.M	4.62	4.62	0.1	0.941	0.894	2.6	0.918	1	3.517	3.23	
Can00196-T11	006F2201.D	006F2202.D	GC130P188F_LOW H2.M	4.61	4.61	0.1	0.659	0.608	4.0	0.633	1	3.375	2.14	
Can905-T12	007F2301.D	007F2302.D	GC130P188F_LOW H2.M	4.62	4.63	0.4	0.554	0.526	2.6	0.540	1	3.402	1.84	
He blank	001F1401.D	001F1402.D	GC130P188F_LOW H2.M	4.60	4.62	0.5	0.330	0.340	1.4	0.335	1	1.00	0.335	J

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/TCD)

Client #	Comm Emgineering
Job #	0213-39
# Samples	10 canisters

MDL 0.0400 (%)
LOQ 0.400 (%)
Compound Carbon monoxide

Lower Curve Limit 0.400 (%)
Upper Curve Limit 10.0 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Tank Dilution	Sample Conc (%)	Qual
Can00122-T1	003F0801.D	003F0802.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.348	0.134	ND
Can00144-T2	011F0901.D	011F0902.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.336	0.133	ND
Can00204-T3	014F1001.D	014F1002.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.401	0.136	ND
Can00179-T4	003F1501.D	003F1502.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.207	0.128	ND
Can959-T5	011F1601.D	011F1602.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	8.564	0.343	ND
Can952-T6	014F1701.D	014F1702.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	4.191	0.168	ND
Can00186-T7	008F1801.D	008F1802.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	4.151	0.166	ND
Can00146-T9	012F2101.D	012F2102.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.517	0.141	ND
Can00196-T11	006F2201.D	006F2202.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.375	0.135	ND
Can905-T12	007F2301.D	007F2302.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.402	0.136	ND
He blank	001F1401.D	001F1402.D	GC130P188F_LOW H2.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	1.00	0.0400	ND

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/TCD)

Client #	Comm Engineering
Job #	0213-39
# Samples	2 canisters

MDL 0.0400 (%)
LOQ 0.400 (%)
Compound Carbon dioxide

Lower Curve Limit 0.400 (%)
Upper Curve Limit 10.0 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Tank Dilution	Sample Conc (%)	Qual
Can 00177-T10	011F1901.D	011F1902.D	GC130P190F.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.628	0.145	ND
Can00203-T8	003F0901.D	003F0902.D	GC130P190F.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.790	0.152	ND
He Blank	001F1801.D	001F1802.D	GC130P190F.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	1.00	0.0400	ND

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/TCD)

Client #	Comm Engineering
Job #	0213-39
# Samples	2 canisters

MDL 0.0400 (%)
LOQ 0.340 (%)
Compound Hydrogen

Lower Curve Limit 0.340 (%)
Upper Curve Limit 8.10 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Tank Dilution	Sample Conc (%)	Qual
Can 00177-T10	011F1901.D	011F1902.D	GC130P190F.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.628	0.145	ND
Can00203-T8	003F0901.D	003F0902.D	GC130P190F.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.790	0.152	ND
He Blank	001F1801.D	001F1802.D	GC130P190F.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	1.00	0.0400	ND

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/TCD)

Client #	Comm Engineering
Job #	0213-39
# Samples	2 canisters

MDL 0.0400 (%)
LOQ 0.400 (%)
Compound Oxygen

Lower Curve Limit 0.400 (%)
Upper Curve Limit 99.9 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Tank Dilution	Sample Conc (%)	Qual
Can 00177-T10	011F1901.D	011F1902.D	GC130P190F.M	3.96	3.96	0.1	0.114	0.102	5.3	0.108	1	3.628	0.392	J
Can00203-T8	003F0901.D	003F0902.D	GC130P190F.M	3.93	3.92	0.3	0.0557	0.0681	10.0	0.0619	1	3.790	0.235	J
He Blank	001F1801.D	001F1802.D	GC130P190F.M	3.98	3.97	0.2	0.0819	0.0873	3.2	0.0846	1	1.00	0.0846	J

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/TCD)

Client #	Comm Engineering
Job #	0213-39
# Samples	2 canisters

MDL 0.0400 (%)
LOQ 0.400 (%)
Compound Nitrogen

Lower Curve Limit 0.400 (%)
Upper Curve Limit 99.0 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Tank Dilution	Sample Conc (%)	Qual
Can 00177-T10	011F1901.D	011F1902.D	GC130P190F.M	4.57	4.57	0.1	0.343	0.312	4.8	0.327	1	3.628	1.19	J
Can00203-T8	003F0901.D	003F0902.D	GC130P190F.M	4.53	4.52	0.3	0.187	0.214	6.5	0.201	1	3.790	0.760	J
He Blank	001F1801.D	001F1802.D	GC130P190F.M	4.59	4.58	0.2	0.304	0.308	0.7	0.306	1	1.00	0.306	J

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945 (GC/TCD)

Client #	Comm Engineering
Job #	0213-39
# Samples	2 canisters

MDL 0.0400 (%)
LOQ 0.400 (%)
Compound Carbon monoxide

Lower Curve Limit 0.400 (%)
Upper Curve Limit 99.0 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Tank Dilution	Sample Conc (%)	Qual
Can 00177-T10	011F1901.D	011F1902.D	GC130P190F.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.628	0.145	ND
Can00203-T8	003F0901.D	003F0902.D	GC130P190F.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	3.790	0.152	ND
He Blank	001F1801.D	001F1802.D	GC130P190F.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	1.00	0.0400	ND

Company	KeikaVentures
Analyst	STG
Parameters	ASTM D5504 (GC/SCD)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.0432 (ppm)
LOQ 0.392 (ppm)
Compound Carbonyl sulfide

Lower Curve Limit 0.392 (ppm)
Upper Curve Limit 4.88 (ppm)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual
Can 00122-T1	026B1001.D	026B1002.D	GC130P186R 0213-39.M	NA	NA	NA	0.0432	0.0432	0.0	0.0432	1	3.348	0.145	ND
Can 00144-T2	024B1101.D	024B1102.D	GC130P186R 0213-39.M	NA	NA	NA	0.0432	0.0432	0.0	0.0432	1	3.336	0.144	ND
Can 00204-T3	027B1201.D	027B1202.D	GC130P186R 0213-39.M	NA	NA	NA	0.0432	0.0432	0.0	0.0432	1	3.401	0.147	ND
Can 00179-T4	023B1401.D	023B1402.D	GC130P186R 0213-39.M	NA	NA	NA	0.0432	0.0432	0.0	0.0432	1	3.207	0.139	ND
Can 959-T5	028B1501.D	028B1502.D	GC130P186R 0213-39.M	NA	NA	NA	0.0432	0.0432	0.0	0.0432	1	8.564	0.370	ND
Can 952-T6	031B1601.D	031B1602.D	GC130P186R 0213-39.M	NA	NA	NA	0.0432	0.0432	0.0	0.0432	1	4.191	0.181	ND
Can 00186-T7	032B1701.D	032B1702.D	GC130P186R 0213-39.M	NA	NA	NA	0.0432	0.0432	0.0	0.0432	1	4.151	0.179	ND
Can 00203-T8	032B1801.D	032B1802.D	GC130P186R 0213-39.M	NA	NA	NA	0.0432	0.0432	0.0	0.0432	1	3.790	0.164	ND
Can 00146-T9	032B1901.D	032B1902.D	GC130P186R 0213-39.M	NA	NA	NA	0.0432	0.0432	0.0	0.0432	1	3.517	0.152	ND
Can 00177-T10	026B2001.D	026B2002.D	GC130P186R 0213-39.M	NA	NA	NA	0.0432	0.0432	0.0	0.0432	1	3.628	0.157	ND
Can 00196-T11	024B2101.D	024B2102.D	GC130P186R 0213-39.M	NA	NA	NA	0.0432	0.0432	0.0	0.0432	1	3.375	0.146	ND
Can 905-T12	027B2201.D	027B2202.D	GC130P186R 0213-39.M	NA	NA	NA	0.0432	0.0432	0.0	0.0432	1	3.402	0.147	ND
Air Blank	022B2301.D	022B2302.D	GC130P186R 0213-39.M	NA	NA	NA	0.0432	0.0432	0.0	0.0432	1	1.00	0.0432	ND

Company	KeikaVentures
Analyst	STG
Parameters	ASTM D5504 (GC/SCD)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.0457 (ppm)
LOQ 0.457 (ppm)
Compound Methyl mercaptan

Lower Curve Limit 0.457 (ppm)
Upper Curve Limit 5.69 (ppm)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual
Can 00122-T1	026B1001.D	026B1002.D	GC130P186R 0213-39.M	NA	NA	NA	0.0457	0.0457	0.0	0.0457	1	3.348	0.153	ND
Can 00144-T2	024B1101.D	024B1102.D	GC130P186R 0213-39.M	NA	NA	NA	0.0457	0.0457	0.0	0.0457	1	3.336	0.152	ND
Can 00204-T3	027B1201.D	027B1202.D	GC130P186R 0213-39.M	NA	NA	NA	0.0457	0.0457	0.0	0.0457	1	3.401	0.155	ND
Can 00179-T4	023B1401.D	023B1402.D	GC130P186R 0213-39.M	NA	NA	NA	0.0457	0.0457	0.0	0.0457	1	3.207	0.147	ND
Can 959-T5	028B1501.D	028B1502.D	GC130P186R 0213-39.M	NA	NA	NA	0.0457	0.0457	0.0	0.0457	1	8.564	0.391	ND
Can 952-T6	031B1601.D	031B1602.D	GC130P186R 0213-39.M	NA	NA	NA	0.0457	0.0457	0.0	0.0457	1	4.191	0.192	ND
Can 00186-T7	032B1701.D	032B1702.D	GC130P186R 0213-39.M	NA	NA	NA	0.0457	0.0457	0.0	0.0457	1	4.151	0.190	ND
Can 00203-T8	032B1801.D	032B1802.D	GC130P186R 0213-39.M	NA	NA	NA	0.0457	0.0457	0.0	0.0457	1	3.790	0.173	ND
Can 00146-T9	032B1901.D	032B1902.D	GC130P186R 0213-39.M	NA	NA	NA	0.0457	0.0457	0.0	0.0457	1	3.517	0.161	ND
Can 00177-T10	026B2001.D	026B2002.D	GC130P186R 0213-39.M	NA	NA	NA	0.0457	0.0457	0.0	0.0457	1	3.628	0.166	ND
Can 00196-T11	024B2101.D	024B2102.D	GC130P186R 0213-39.M	NA	NA	NA	0.0457	0.0457	0.0	0.0457	1	3.375	0.154	ND
Can 905-T12	027B2201.D	027B2202.D	GC130P186R 0213-39.M	NA	NA	NA	0.0457	0.0457	0.0	0.0457	1	3.402	0.155	ND
Air Blank	022B2301.D	022B2302.D	GC130P186R 0213-39.M	NA	NA	NA	0.0457	0.0457	0.0	0.0457	1	1.00	0.0457	ND

Company	KeikaVentures
Analyst	STG
Parameters	ASTM D5504 (GC/SCD)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.0511 (ppm)
LOQ 0.511 (ppm)
Compound Carbon disulfide

Lower Curve Limit 0.511 (ppm)
Upper Curve Limit 5.97 (ppm)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual
Can 00122-T1	026B1001.D	026B1002.D	GC130P186R 0213-39.M	9.80	9.81	0.1	0.0939	0.0535	27.4	0.0737	1	3.348	0.247	J
Can 00144-T2	024B1101.D	024B1102.D	GC130P186R 0213-39.M	NA	NA	NA	0.0511	0.0511	0.0	0.0511	1	3.336	0.170	ND
Can 00204-T3	027B1201.D	027B1202.D	GC130P186R 0213-39.M	NA	NA	NA	0.0511	0.0511	0.0	0.0511	1	3.401	0.174	ND
Can 00179-T4	023B1401.D	023B1402.D	GC130P186R 0213-39.M	NA	NA	NA	0.0511	0.0511	0.0	0.0511	1	3.207	0.164	ND
Can 959-T5	028B1501.D	028B1502.D	GC130P186R 0213-39.M	NA	NA	NA	0.0511	0.0511	0.0	0.0511	1	8.564	0.438	ND
Can 952-T6	031B1601.D	031B1602.D	GC130P186R 0213-39.M	NA	NA	NA	0.0511	0.0511	0.0	0.0511	1	4.191	0.214	ND
Can 00186-T7	032B1701.D	032B1702.D	GC130P186R 0213-39.M	NA	NA	NA	0.0511	0.0511	0.0	0.0511	1	4.151	0.212	ND
Can 00203-T8	032B1801.D	032B1802.D	GC130P186R 0213-39.M	NA	NA	NA	0.0511	0.0511	0.0	0.0511	1	3.790	0.194	ND
Can 00146-T9	032B1901.D	032B1902.D	GC130P186R 0213-39.M	NA	NA	NA	0.0511	0.0511	0.0	0.0511	1	3.517	0.180	ND
Can 00177-T10	026B2001.D	026B2002.D	GC130P186R 0213-39.M	NA	NA	NA	0.0511	0.0511	0.0	0.0511	1	3.628	0.185	ND
Can 00196-T11	024B2101.D	024B2102.D	GC130P186R 0213-39.M	NA	NA	NA	0.0511	0.0511	0.0	0.0511	1	3.375	0.172	ND
Can 905-T12	027B2201.D	027B2202.D	GC130P186R 0213-39.M	NA	NA	NA	0.0511	0.0511	0.0	0.0511	1	3.402	0.174	ND
Air Blank	022B2301.D	022B2302.D	GC130P186R 0213-39.M	9.81	9.82	0.1	0.103	0.113	4.5	0.108	1	1.00	0.108	J

Company	KeikaVentures
Analyst	STG
Parameters	ASTM D5504 (GC/SCD)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

MDL 0.0457 (ppm)
LOQ 0.457 (ppm)
Compound Unkown mercaptans as Methyl mercaptan

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Conc # 1 (ppm)	Conc # 2 (ppm)	% Diff Conc	Avg Conc (ppm)	DF	Tank Dilution	Sample Conc (ppm)	Qual
Can 00122-T1	026B1001.D	026B1002.D	GC130P186R 0213-39.M	0.0457	0.0457	0.0	0.0457	1	3.348	0.153	ND
Can 00144-T2	024B1101.D	024B1102.D	GC130P186R 0213-39.M	0.0457	0.0457	0.0	0.0457	1	3.336	0.152	ND
Can 00204-T3	027B1201.D	027B1202.D	GC130P186R 0213-39.M	0.0457	0.0457	0.0	0.0457	1	3.401	0.155	ND
Can 00179-T4	023B1401.D	023B1402.D	GC130P186R 0213-39.M	0.0457	0.0457	0.0	0.0457	1	3.207	0.147	ND
Can 959-T5	028B1501.D	028B1502.D	GC130P186R 0213-39.M	0.0457	0.0457	0.0	0.0457	1	8.564	0.391	ND
Can 952-T6	031B1601.D	031B1602.D	GC130P186R 0213-39.M	0.0457	0.0457	0.0	0.0457	1	4.191	0.192	ND
Can 00186-T7	032B1701.D	032B1702.D	GC130P186R 0213-39.M	0.0457	0.0457	0.0	0.0457	1	4.151	0.190	ND
Can 00203-T8	032B1801.D	032B1802.D	GC130P186R 0213-39.M	0.0457	0.0457	0.0	0.0457	1	3.790	0.173	ND
Can 00146-T9	032B1901.D	032B1902.D	GC130P186R 0213-39.M	0.0457	0.0457	0.0	0.0457	1	3.517	0.161	ND
Can 00177-T10	026B2001.D	026B2002.D	GC130P186R 0213-39.M	0.0457	0.0457	0.0	0.0457	1	3.628	0.166	ND
Can 00196-T11	024B2101.D	024B2102.D	GC130P186R 0213-39.M	0.0457	0.0457	0.0	0.0457	1	3.375	0.154	ND
Can 905-T12	027B2201.D	027B2202.D	GC130P186R 0213-39.M	0.0457	0.0457	0.0	0.0457	1	3.402	0.155	ND
Air Blank	022B2301.D	022B2302.D	GC130P186R 0213-39.M	0.0457	0.0457	0.0	0.0457	1	1.00	0.0457	ND

Company	Keika Ventures
Analyst	STG
Parameters	Tank Dilutions

Client #	Comm Engineering
Job #	0213-39
# Samples	10

					Pre-sample			Post-sample			Final		
Sample ID	Tank ID	Tank Dilution	Canister Size	Sample Vol (L) at STP	Temp Field (F)	P_{bar} Field (mmHg)	Gauge Field (mmHg)	Temp Lab/Field (F)	P_{bar} Lab/Field (mmHg)	Gauge Lab/Field (mmHg)	Temp Lab (F)	P_{bar} Lab (mmHg)	Gauge Lab (mmHg)
Can00122-T1	00122	3.348	1.40	1.15	71.5	752	-752	70.5	754	-126	70.5	754	1,350
Can00144-T2	00144	3.336	1.40	1.15	71.5	752	-752	70.5	754	-127	70.5	754	1,340
Can00204-T3	00204	3.401	1.40	1.15	71.5	752	-752	70.5	754	-128	70.5	754	1,378
Can00179-T4	00179	3.207	1.40	1.22	71.5	752	-752	71.0	754	-90	71.0	754	1,374
Can959-T5	959	8.564	1.40	0.46	71.5	752	-752	71.0	754	-505	71.0	754	1,378
Can952-T6	952	4.191	1.40	0.92	71.5	752	-752	71.0	754	-249	71.0	754	1,362
Can00186-T7	00186	4.151	1.40	0.93	71.5	751	-751	71.0	754	-244	71.0	754	1,362
Can00203-T8	00203	3.790	1.40	1.01	71.5	751	-751	70.5	754	-201	71.0	754	1,345
Can00146-T9	00146	3.517	1.40	1.10	71.5	751	-751	70.5	754	-154	70.5	754	1,355
Can00177-T10	00177	3.628	1.40	1.07	71.5	751	-751	71.0	754	-172	71.0	754	1,359
Can00196-T11	00196	3.375	1.40	1.15	71.5	751	-751	71.0	754	-128	71.0	754	1,358
Can905-T12	905	3.402	1.40	1.14	71.5	751	-751	71.0	754	-134	71.0	754	1,355

The tank dilution factors are calculated using the following formula:

$$\frac{\frac{GaugeLab + PbarLab}{TempLab + 460}}{\frac{GaugeLab\ /\ Field + PbarLab\ /\ Field}{TempLab\ /\ Field + 460} - \frac{GaugeField + PbarField}{TempField + 460}}$$

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1946

Client #	Comm Engineering
Job #	0213-39
# Samples	15 bags

MDL 0.0400 (%)
LOQ 0.400 (%)
Compound Carbon dioxide

Lower Curve Limit 0.400 (%)
Upper Curve Limit 10.0 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Sample Conc (%)	Qual
Bag-1A	003F0601.D	003F0602.D	GC130P185F_HIGHN2O2_0213-39.M	2.08	2.08	0.0	5.65	5.57	0.7	5.61	1	5.61	
Bag-2A	012F0801.D	012F0802.D	GC130P185F_HIGHN2O2_0213-39.M	2.08	2.08	0.0	5.31	5.51	1.9	5.41	1	5.41	
Bag-3A	006F1001.D	006F1002.D	GC130P185F_HIGHN2O2_0213-39.M	2.11	2.10	0.3	0.441	0.539	10.1	0.490	1	0.490	
Bag-3B	010F1101.D	010F1102.D	GC130P185F_HIGHN2O2_0213-39.M	2.06	2.06	0.2	5.47	5.43	0.3	5.45	1	5.45	
Bag-4A	008F1201.D	008F1202.D	GC130P185F_HIGHN2O2_0213-39.M	2.07	2.07	0.0	4.02	3.89	1.6	3.96	1	3.96	
Bag-4B	011F1301.D	011F1302.D	GC130P185F_HIGHN2O2_0213-39.M	2.05	2.06	0.3	5.46	5.44	0.2	5.45	1	5.45	
Bag-5A	004F0501.D	004F0502.D	GC130P185F_HIGHN2O2_0213-39.M	2.10	2.12	0.9	0.309	0.0646	65.4	0.187	1	0.187	J
Bag-5B	008F1801.D	008F1802.D	GC130P185F_HIGHN2O2_0213-39.M	2.06	2.07	0.6	5.43	5.66	2.0	5.54	1	5.54	
Bag-6A	010F1901.D	010F1902.D	GC130P185F_HIGHN2O2_0213-39.M	2.06	2.06	0.1	6.01	5.94	0.7	5.97	1	5.97	
Bag-7A	011F2101.D	011F2102.D	GC130P185F_HIGHN2O2_0213-39.M	2.05	2.06	0.4	6.47	6.59	0.9	6.53	1	6.53	
Bag-8A	003F2301.D	003F2302.D	GC130P185F_HIGHN2O2_0213-39.M	2.05	2.05	0.1	6.18	6.35	1.4	6.27	1	6.27	
Bag-9A	007F3101.D	007F3102.D	GC130P185F_HIGHN2O2_0213-39.M	2.05	2.05	0.0	6.38	6.33	0.4	6.35	1	6.35	
Bag-10A	006F3301.D	006F3302.D	GC130P185F_HIGHN2O2_0213-39.M	2.04	2.04	0.1	5.81	5.84	0.3	5.82	1	5.82	
Bag-11A	008F3501.D	008F3502.D	GC130P185F_HIGHN2O2_0213-39.M	2.01	2.02	0.4	5.86	6.04	1.5	5.95	1	5.95	
Bag-12A	011F3701.D	011F3702.D	GC130P185F_HIGHN2O2_0213-39.M	2.03	2.02	0.3	6.20	6.35	1.2	6.28	1	6.28	
He Blank	001F0401.D	001F0402.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0400	0.0400	0.0	0.0400	1	0.0400	ND

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1946

Client #	Comm Engineering
Job #	0213-39
# Samples	15 bags

MDL 0.0404 (%)
LOQ 3.48 (%)
Compound Oxygen

Lower Curve Limit 3.48 (%)
Upper Curve Limit 100 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Sample Conc (%)	Qual
Bag-1A	003F0601.D	003F0602.D	GC130P185F_HIGHN2O2_0213-39.M	4.14	4.14	0.0	13.4	13.3	0.4	13.4	1	13.4	
Bag-2A	012F0801.D	012F0802.D	GC130P185F_HIGHN2O2_0213-39.M	4.14	4.14	0.1	13.5	13.5	0.3	13.5	1	13.5	
Bag-3A	006F1001.D	006F1002.D	GC130P185F_HIGHN2O2_0213-39.M	4.11	4.10	0.3	18.8	18.9	0.4	18.9	1	18.9	
Bag-3B	010F1101.D	010F1102.D	GC130P185F_HIGHN2O2_0213-39.M	4.11	4.10	0.2	13.3	13.2	0.3	13.3	1	13.3	
Bag-4A	008F1201.D	008F1202.D	GC130P185F_HIGHN2O2_0213-39.M	4.11	4.11	0.0	15.1	15.2	0.2	15.2	1	15.2	
Bag-4B	011F1301.D	011F1302.D	GC130P185F_HIGHN2O2_0213-39.M	4.09	4.10	0.2	13.3	13.3	0.2	13.3	1	13.3	
Bag-5A	004F0501.D	004F0502.D	GC130P185F_HIGHN2O2_0213-39.M	4.11	4.13	0.6	18.6	18.9	0.7	18.8	1	18.8	
Bag-5B	008F1801.D	008F1802.D	GC130P185F_HIGHN2O2_0213-39.M	4.10	4.13	0.7	13.0	13.2	0.9	13.1	1	13.1	
Bag-6A	010F1901.D	010F1902.D	GC130P185F_HIGHN2O2_0213-39.M	4.10	4.10	0.0	12.9	12.9	0.0	12.9	1	12.9	
Bag-7A	011F2101.D	011F2102.D	GC130P185F_HIGHN2O2_0213-39.M	4.09	4.11	0.4	12.5	12.5	0.1	12.5	1	12.5	
Bag-8A	003F2301.D	003F2302.D	GC130P185F_HIGHN2O2_0213-39.M	4.10	4.09	0.2	12.8	12.8	0.0	12.8	1	12.8	
Bag-9A	007F3101.D	007F3102.D	GC130P185F_HIGHN2O2_0213-39.M	4.10	4.10	0.1	12.0	12.0	0.1	12.0	1	12.0	
Bag-10A	006F3301.D	006F3302.D	GC130P185F_HIGHN2O2_0213-39.M	4.06	4.07	0.1	12.9	12.8	0.1	12.9	1	12.9	
Bag-11A	008F3501.D	008F3502.D	GC130P185F_HIGHN2O2_0213-39.M	4.02	4.04	0.5	11.6	12.8	4.8	12.2	1	12.2	
Bag-12A	011F3701.D	011F3702.D	GC130P185F_HIGHN2O2_0213-39.M	4.04	4.03	0.3	12.4	12.3	0.4	12.4	1	12.4	
He Blank	001F0401.D	001F0402.D	GC130P185F_HIGHN2O2_0213-39.M	4.17	4.15	0.4	0.0404	0.0404	0.0	0.0404	1	0.0404	ND

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1946

Client #	Comm Engineering
Job #	0213-39
# Samples	15 bags

MDL 0.0400 (%)
LOQ 3.74 (%)
Compound Nitrogen

Lower Curve Limit 3.74 (%)
Upper Curve Limit 99.0 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Sample Conc (%)	Qual
Bag-1A	003F0601.D	003F0602.D	GC130P185F_HIGHN2O2_0213-39.M	4.65	4.65	0.0	66.6	66.1	0.4	66.3	1	66.3	
Bag-2A	012F0801.D	012F0802.D	GC130P185F_HIGHN2O2_0213-39.M	4.66	4.66	0.1	66.5	66.2	0.3	66.4	1	66.4	
Bag-3A	006F1001.D	006F1002.D	GC130P185F_HIGHN2O2_0213-39.M	4.64	4.62	0.3	63.0	63.3	0.3	63.1	1	63.1	
Bag-3B	010F1101.D	010F1102.D	GC130P185F_HIGHN2O2_0213-39.M	4.62	4.61	0.2	66.8	66.4	0.3	66.6	1	66.6	
Bag-4A	008F1201.D	008F1202.D	GC130P185F_HIGHN2O2_0213-39.M	4.62	4.62	0.0	66.4	66.8	0.3	66.6	1	66.6	
Bag-4B	011F1301.D	011F1302.D	GC130P185F_HIGHN2O2_0213-39.M	4.60	4.61	0.2	66.1	66.4	0.2	66.2	1	66.2	
Bag-5A	004F0501.D	004F0502.D	GC130P185F_HIGHN2O2_0213-39.M	4.63	4.66	0.7	63.2	62.9	0.2	63.0	1	63.0	
Bag-5B	008F1801.D	008F1802.D	GC130P185F_HIGHN2O2_0213-39.M	4.61	4.64	0.7	68.3	68.5	0.1	68.4	1	68.4	
Bag-6A	010F1901.D	010F1902.D	GC130P185F_HIGHN2O2_0213-39.M	4.61	4.61	0.0	67.3	67.2	0.1	67.2	1	67.2	
Bag-7A	011F2101.D	011F2102.D	GC130P185F_HIGHN2O2_0213-39.M	4.59	4.62	0.5	68.0	68.1	0.1	68.1	1	68.1	
Bag-8A	003F2301.D	003F2302.D	GC130P185F_HIGHN2O2_0213-39.M	4.60	4.59	0.2	68.3	68.3	0.0	68.3	1	68.3	
Bag-9A	007F3101.D	007F3102.D	GC130P185F_HIGHN2O2_0213-39.M	4.61	4.60	0.1	65.7	65.7	0.0	65.7	1	65.7	
Bag-10A	006F3301.D	006F3302.D	GC130P185F_HIGHN2O2_0213-39.M	4.56	4.57	0.1	66.9	66.7	0.1	66.8	1	66.8	
Bag-11A	008F3501.D	008F3502.D	GC130P185F_HIGHN2O2_0213-39.M	4.51	4.53	0.5	68.5	68.8	0.2	68.7	1	68.7	
Bag-12A	011F3701.D	011F3702.D	GC130P185F_HIGHN2O2_0213-39.M	4.54	4.53	0.3	68.1	67.8	0.2	67.9	1	67.9	
He Blank	001F0401.D	001F0402.D	GC130P185F_HIGHN2O2_0213-39.M	4.81	4.79	0.4	0.0547	0.0539	0.8	0.0543	1	0.0543	J

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1946

Client #	Comm Engineering
Job #	0213-39
# Samples	15 bags

MDL 0.0320 (%)
LOQ 0.320 (%)
Compound Methane

Lower Curve Limit 0.320 (%)
Upper Curve Limit 8.00 (%)

Sample ID	Lab ID # 1	Lab ID # 2	Analysis Method	Ret Time (min)	Ret Time (min)	% Diff Ret	Conc # 1 (%)	Conc # 2 (%)	% Diff Conc	Avg Conc (%)	DF	Sample Conc (%)	Qual
Bag-1A	003F0601.D	003F0602.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-2A	012F0801.D	012F0802.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-3A	006F1001.D	006F1002.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-3B	010F1101.D	010F1102.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-4A	008F1201.D	008F1202.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-4B	011F1301.D	011F1302.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-5A	004F0501.D	004F0502.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-5B	008F1801.D	008F1802.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-6A	010F1901.D	010F1902.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-7A	011F2101.D	011F2102.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-8A	003F2301.D	003F2302.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-9A	007F3101.D	007F3102.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-10A	006F3301.D	006F3302.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-11A	008F3501.D	008F3502.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
Bag-12A	011F3701.D	011F3702.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND
He Blank	001F0401.D	001F0402.D	GC130P185F_HIGHN2O2_0213-39.M	NA	NA	NA	0.0320	0.0320	0.0	0.0320	1	0.0320	ND

Narrative Summary



Enthalpy Analytical Narrative Summary

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1945

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

Custody

Chester Burnett received canisters for T1 – T8 on 2/8/13 and Jon Escobedo received the canisters for T9 – T12 on 2/9/13 all after being relinquished by KeikaVentures. The samples were received at ambient temperature in good condition without chain of custody documentation. Prior to, during, and after analysis, the samples were kept under lock with access only to authorized personnel by Enthalpy Analytical, Inc.

Analysis

The samples were analyzed for Methane, Ethane, Propane, Butane, Pentane, Benzene, Others as Cx Compounds, Carbon dioxide, Hydrogen, Oxygen, Nitrogen, and Carbon monoxide using the analytical procedures in ASTM D1945, Standard Test Method for Analysis of Natural Gas by Gas Chromatography.

All samples and standards were introduced directly to the column using an automated multi-port Valco gas sampling valve equipped with a stainless steel loop. All target analytes were referenced to certified gas phase standards. Upon receipt, the tank pressures were measured and recorded. The tanks were then pressurized and a dilution ratio was calculated for each tank (see Tank Dilution Sheet).

For the C_1-C_5 alkanes, Benzene and Cx as compounds, the Agilent Technologies Model 7890A Gas Chromatograph ("Edith" CN10722006) was equipped with a Flame Ionization Detector and a Restek Rtx-1 30m x 0.32mm x 4.0um (S/N 806941) capillary column.

For the remaining compounds the Agilent Technologies Model 6890N, Gas Chromatograph ("Betty" S/N US10430048) was equipped with a Thermal Conductivity Detector and Restek RT-S-BOND 30m x 0.53mm x 20um (S/N 976413) and Restek RT-MSieve5A PLOT 15m x 0.53mm x 50um (S/N 1065817) capillary columns.

Calibration

The calibration curves are located in the back of this report and referenced in the Analysis Method column on the Detailed Results page.

For each calibration curve used, the first page of the curve contains all method specific parameters (i.e., curve type, origin, weight, etc.) used to quantify the samples. The calibration curve section also includes a table with the Retention Time (RetTime), Level (Lvl), Amount (corresponding units), Area, Response Factor (Amt/Area) and the analyte Name. The calibration table is used to identify (by retention time) and quantify each target compound.

Enthalpy Analytical Narrative Summary
(continued)

Chromatographic Conditions	The acquisition methods GC135P105_HRVOC.M and GC130P177_FGA.M are included in the Calibration Curve Chromatograms section of this report.
QC Notes	The analysis of the room air blank contained methane at a concentration above the LOQ. No other target compounds were detected at concentrations greater than the detection limit.
Reporting Notes	***Can 952-T6*** did not meet our internal reproducibility requirements between injections. In addition the data set for this sample seemed anomalous compared to the other samples. It is believed that the sampling canister's quick-connect fitting had a small leak and allowed ambient air to enter when engaged, while at the same time holding vacuum when not being used. These analytical results are reported on a wet basis. The user of this report should determine the percent moisture in the sample and correct the reported value to ppmvd as appropriate. The results presented in this report are representative of the samples as provided to the laboratory.

Enthalpy Analytical Narrative Summary

Company	KeikaVentures
Analyst	STG
Parameters	ASTM D5504 (GC/SCD)

Client #	Comm Engineering
Job #	0213-39
# Samples	12 canisters

Custody

Chester Burnett received canisters for T1 – T8 on 2/8/13 and Jon Escobedo received the canisters for T9 – T12 on 2/9/13 all after being relinquished by KeikaVentures. The samples were received at ambient temperature in good condition. Prior to, during, and after analysis, the samples were kept under lock with access only to authorized personnel by Enthalpy Analytical, Inc.

Analysis

The samples were analyzed for Carbonyl sulfide, Methyl mercaptan, Carbon disulfide, and unknown Mercaptans as Methyl mercaptan using the analytical procedures in ASTM D5504, Standard Test Method for Determination of Sulfur Compounds in Natural Gas and Gaseous Fuels by Gas Chromatography and Chemiluminescence.

The samples were analyzed following the procedures in Section 9, Procedure.

All samples and standards were introduced directly to the column using an automated multi-port Valco gas sampling valve equipped with a stainless steel loop. All target analytes were referenced to certified gas phase standards.

Upon receipt, the tank pressures were measured and recorded. The tanks were then pressurized and a dilution ratio was calculated for each tank (see Tank Dilution Sheet).

The Agilent Technologies Model 6890N, Gas Chromatograph ("Betty" S/N US10430048) was equipped with a Sulfur Chemiluminescence Detector (SCD) and a Restek Rtx-1 60m x 0.32mm x 5um (S/N 1065772) capillary column.

Calibration

For each calibration curve used, the first page of the curve contains all method specific parameters (i.e., curve type, origin, weight, etc.) used to quantify the samples. The calibration curve section also includes a table with the Retention Time (RetTime), Level (Lvl), Amount (corresponding units), Area, Response Factor (Amt/Area) and the analyte Name. The calibration table is used to identify (by retention time) and quantify each target compound.

Enthalpy Analytical Narrative Summary
(continued)

Calibration (continued)	The calibration curves are located in the back of this report and referenced in the Analysis Method column on the Detailed Results page. In accordance with the method, a three-point calibration curve was analyzed on the day of sample analysis. Two additional continuing calibration checks were analyzed with the sequence, though not required by the method. The continuing calibration standards were higher than our usual in-house criteria of ±10% of tag value. The samples are all ND or J-flagged and the continuing calibration standard values were higher than their tag values. For these reasons, we do not believe the quality of the data was affected negatively.
Chromatographic Conditions	The acquisition method TCD_SCD_2.M is included in the Calibration Curve Chromatograms section of this report.
QC Notes	Carbon disulfide was detected in the laboratory Air Blank at a concentration above the detection limit, but below the LOQ. No other analytes were detected in the Air Blank at concentrations above the detection limit.
Reporting Notes	The results presented in this report are representative of the samples as provided to the laboratory.

Enthalpy Analytical Narrative Summary

Company	KeikaVentures
Analyst	MTH
Parameters	ASTM D1946

Client #	Comm Engineering
Job #	0213-39
# Samples	12 bags

Custody

Chester Burnett received the samples on 2/8/13 after being relinquished by KeikaVentures. The samples were received at ambient temperature in good condition. Prior to, during, and after analysis, the samples were kept under lock with access only to authorized personnel by Enthalpy Analytical, Inc.

Analysis

The samples were analyzed for Carbon dioxide, Oxygen, Nitrogen, and Methane using the analytical procedures in ASTM D1946 – 90 (Reapproved 2000), Standard Practice for Analysis of Reformed Gas by Gas Chromatography.
The samples were analyzed following the procedures in Section 8.0, Procedure.

All samples and standards were introduced directly to the column using an automated multi-port Valco gas sampling valve equipped with a stainless steel loop. All target analytes were referenced to certified gas phase standards.

Sample ***Bag-5A*** was had low volume so the sample ***Bag-5B*** was also analyzed.

The Agilent Technologies Model 6890N, Gas Chromatograph ("Betty" S/N US10430048) was equipped with a Thermal Conductivity Detector and Restek RT-S-BOND 30m x 0.53mm x 20um (S/N976413) and Restek RT-MSieve5A PLOT 15m x 0.53mm x 50um (S/N 1065817) columns.

Calibration

The calibration curves are located in the back of this report and referenced in the Analysis Method column on the Detailed Results page.

For each calibration curve used, the first page of the curve contains all method specific parameters (i.e., curve type, origin, weight, etc.) used to quantify the samples. The calibration curve section also includes a table with the Retention Time (RetTime), Level (Lvl), Amount (corresponding units), Area, Response Factor (Amt/Area) and the analyte Name. The calibration table is used to identify (by retention time) and quantify each target compound.

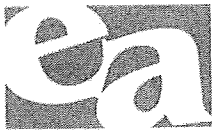
Enthalpy Analytical Narrative Summary
(continued)

Chromatographic Conditions	The acquisition method GC130P177_FGA.M is included in the Calibration Curve Chromatograms section of this report.
QC Notes	Nitrogen was detected in the He Blank at a concentration above the detection limit, but below the LOQ. No other analytes were detected at concentrations above the detection limit.
Reporting Notes	Due to the low volume of sample ***Bag-5A***, the back-up sample ***Bag-5B*** was also analyzed. Per the client's request both bags have been reported. Upon reviewing the preliminary data, the client requested that the retained bags ***Bag-3B*** and ***Bag-4B*** be analyzed. The "A" bags and "B" bags were made of different materials. All four bags have been reported at the client's request. These analyses met the requirements of the NELAC Standard. Any deviations from the requirements of the reference method or NELAC Standard have been previously noted in the report narrative. The results presented in this report are representative of the samples as provided to the laboratory.

General Reporting Notes

The following are general reporting notes that are applicable to all Enthalpy Analytical, Inc. data reports, unless specifically noted otherwise.

- Any analysis which referrs to the method as ***"Type"*** represents a planned deviation from the reference method. For instance a Hydrogen Sulfide assay from a Tedlar bag would be labeled as "EPA Method 16-Type" because Tedlar bags are not mentioned as one of the collection options in EPA Method 16.
- The acronym ***MDL*** represents the Minimum Detection Limit. Below this value the laboratory cannot determine the presence of the analyte of interest reliably.
- The acronym ***LOQ*** represents the Limit of Quantification. Below this value the laboratory cannot quantitate the analyte of interest within the criteria of the method.
- The acronym ***ND*** following a value indicates a non-detect or analytical result below the MDL.
- The letter ***J*** in the Qualifier or Flag column in the results indicates that the value is between the MDL and the LOQ. The laboratory can positively identify the analyte of interest as present, but the value should be considered an estimate.
- The letter ***E*** in the Qualifier or Flag column indicates an analytical result exceeding 100% of the highest calibration point. The associated value should be considered as an estimate.
- The acronym ***DF*** represents Dilution Factor. This number represents dilution of the sample during the preparation and/or analysis process. The analytical result taken from a laboratory instrument is multiplied by the DF to determine the final undiluted sample results.
- The addition of ***MS*** to the Sample ID represents a Matrix Spike. An aliquot of an actual sample is spiked with a known amount of analyte so that a percent recovery value can be determined. The MS analysis indicates what effect the sample matrix may have on the target analyte, i.e. whether or not anything in the sample matrix interferes with the analysis of the analyte(s).
- The addition of ***MSD*** to the Sample ID represents a Matrix Spike Duplicate. Prepared in the same manner as an MS, the use of duplicate matrix spikes allows further confirmation of laboratory quality by showing the consistency of results gained by performing the same steps multiple times.
- The addition of ***LD*** to the Sample ID represents a Laboratory Duplicate. The analyst prepares an additional aliquot of sample for testing and the results of the duplicate analysis are compared to the initial result. The result should have a difference value of within 10% of the initial result (if the results of the original analysis are greater than the LOQ).
- The addition of ***AD*** to the Sample ID represents an Alternate Dilution. The analyst prepares an additional aliquot at a different dilution factor (usually double the initial factor). This analysis helps confirm that no additional compound is present and coeluting or sharing absorbance with the analyte of interest, as they would have a different response/absorbance than the analyte of interest.
- The Sample ID ***LCS*** represents a Laboratory Control Sample. Clean matrix, similar to the client sample matrix, prepared and analyzed by the laboratory using the same reagents, spiking standards and procedures used for the client samples. The LCS is used to assess the control of the laboratory's analytical system. Whenever spikes are prepared for our client projects, two spikes are retained as LCSs. The LCSs are labeled with the associated project number and kept in-house at the appropriate temperature conditions. When the project samples are received for analysis, the LCSs are analyzed to confirm that the analyte could be recovered from the media, separate from the samples which were used on the project and which may have been affected by source matrix, sample collection and/or sample transport.



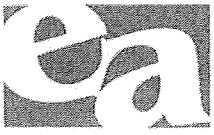
General Reporting Notes

(continued)

- **Significant Figures**: Where the reported value is much greater than unity (1.00) in the units expressed, the number is rounded to a whole number of units, rather than to 3 significant figures. For example, a value of 10,456.45 ug catch is rounded to 10,456 ug. There are five significant digits displayed, but no confidence should be placed on more than two significant digits.
- **Manual Integration**: The data systems used for processing will flag manually integrated peaks with an "M". There are several reasons a peak may be manually integrated. These reasons will be identified by the following two letter designations. The peak was ***not integrated*** by the software **"NI"**, the peak was ***integrated incorrectly*** by the software **"II"** or the ***wrong peak*** was integrated by the software **"WP"**. These codes will accompany the analyst's manual integration stamp placed next to the compound name on the chromatogram.



Sample Custody



Company	Keika Ventures
Analyst	
Parameters	Tank Dilutions

Client #	
Job #	0113-55
# Samples	12

	Sample ID	Tank ID	Tank Dilution	Canister Size	Sample Vol (L) at STP	Pre-sample Temp Field (F)	Pre-sample P_{bar} Field (mmHg)	Pre-sample Gauge Field (mmHg)	Post-sample Temp Lab/Field (F)	Post-sample P_{bar} Lab/Field (mmHg)	Post-sample Gauge Lab/Field (mmHg) (inches water column)	Final Temp Lab (F)	Final P_{bar} Lab (mmHg)	Final Gauge Lab (mmHg)
FEB 5	SCD CLEAN 01-30-13	00122	1.398	1.40	1.40	71.5	751	-752	71°		35" WC			
FEB 5	SCD CLEAN 01-30-13	00144	1.398	1.40	1.40	71.5	751	-752	70°		35" WC			
FEB 5	SCD CLEAN 01-30-13	00204	1.398	1.40	1.40	71.5	751	-752	68°		35" WC			
FEB 6	SCD CLEAN 01-30-13	00179	1.398	1.40	1.40	71.5	751	-752	66°		20"-40" WC			
FEB 7	SCD CLEAN 01-30-13	959	1.398	1.40	1.40	71.5	751	-752	59°		20"-40" WC			
FEB 7	SCD CLEAN 01-30-13	952	1.398	1.40	1.40	71.5	751	-752	68°		20"-40" WC			
FEB 7	SCD CLEAN 01-30-13	00186	1.401	1.40	1.40	71.5	751	-751	69°		5"-24" WC			
FEB 7	SCD CLEAN 01-30-13	00203	1.401	1.40	1.40	71.5	751	-751	69°		5"-24" WC			
	SCD CLEAN 01-30-13	00146	1.401	1.40	1.40	71.5	751	-751						
	SCD CLEAN 01-30-13	00177	1.401	1.40	1.40	71.5	751	-751						
	SCD CLEAN 01-30-13	00196	1.401	1.40	1.40	71.5	751	-751						
	SCD CLEAN 01-30-13	905	1.401	1.40	1.40	71.5	751	-751						

Page 8 of 741

The tank dilution factors are calculated using the following formula:

$$\frac{\frac{GaugeLab + PbarLab}{TempLab + 460}}{\frac{GaugeLab\ /\ Field + PbarLab\ /\ Field}{TempLab\ /\ Field + 460} - \frac{GaugeField + PbarField}{TempField + 460}}$$

Received by: Chester Burnett 2-8-15 9:15AM

Temp = Ambient

Company	Keika Ventures
Analyst	
Parameters	Tank Dilutions

Client #	
Job #	0113-55
# Samples	12

	Sample ID TEST #	Tank ID	Tank Dilution	Canister Size	Sample Vol (L) at STP	Pre-sample Temp Field (F)	Pre-sample P_{bar} Field (mmHg)	Pre-sample Gauge Field (mmHg)	Post-sample Temp Lab/Field (F)	Post-sample P_{bar} Lab/Field (mmHg)	Post-sample Gauge Lab/Field (mmHg) (inches water column)	Final Temp Lab (F)	Final P_{bar} Lab (mmHg)	Final Gauge Lab (mmHg)
FEB 5	SCD CLEAN 01-30-13 1	00122	1.398	1.40	1.40	71.5	751	-752	71°		35" WC			
FEB 5	SCD CLEAN 01-30-13 2	00144	1.398	1.40	1.40	71.5	751	-752	70°		35" WC			
FEB 5	SCD CLEAN 01-30-13 3	00204	1.398	1.40	1.40	71.5	751	-752	68°		35" WC			
FEB 6	SCD CLEAN 01-30-13 4	00179	1.398	1.40	1.40	71.5	751	-752	66°		20"-40" WC			
FEB 7	SCD CLEAN 01-30-13 5	959	1.398	1.40	1.40	71.5	751	-752	59°		20"-40" WC			
FEB 7	SCD CLEAN 01-30-13 6	952	1.398	1.40	1.40	71.5	751	-752	68°		20"-40" WC			
FEB 7	SCD CLEAN 01-30-13 7	00186	1.401	1.40	1.40	71.5	751	-751	69°		5"-24" WC			
FEB 7	SCD CLEAN 01-30-13 8	00203	1.401	1.40	1.40	71.5	751	-751	69°		5"-24" WC			
FEB 8	SCD CLEAN 01-30-13 *9	00146	1.401	1.40	1.40	71.5	751	-751	62°		12"-50" WC	70.5	29.7	
FEB 8	SCD CLEAN 01-30-13 *10	00177	1.401	1.40	1.40	71.5	751	-751	66°		1"-49" WC			
FEB 8	SCD CLEAN 01-30-13 *11	00196	1.401	1.40	1.40	71.5	751	-751	66°		7"-68" WC			
FEB 8	SCD CLEAN 01-30-13 *12	905	1.401	1.40	1.40	71.5	751	-751	65°		13"-70" WC			

*Received canisters for test #'s 9, 10, 11, 12

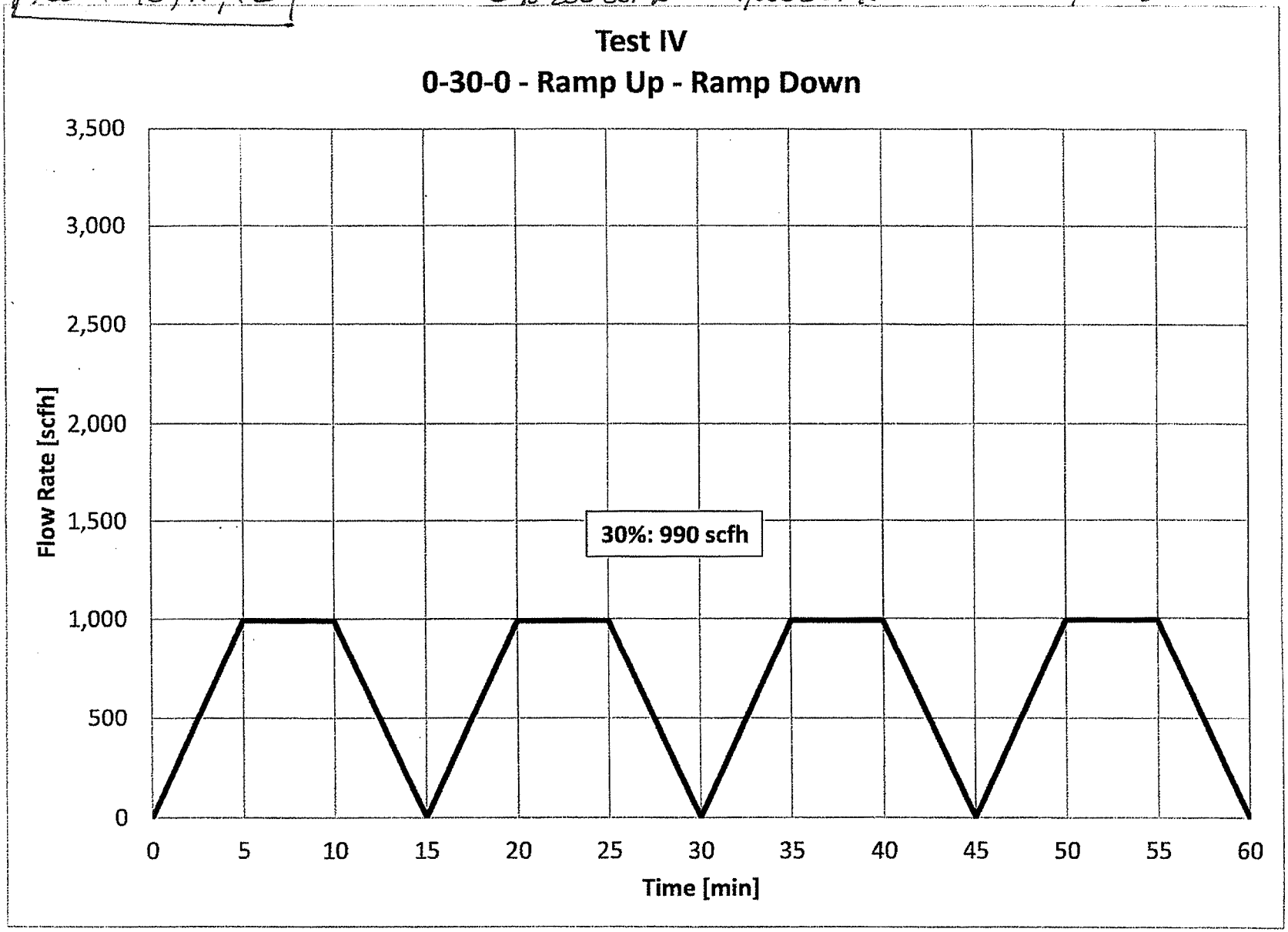
Received by: Jonen Pscheid
2/9/13
0915
TEMP = Ambient

The tank dilution factors are calculated using the following formula:

$$\frac{\frac{GaugeLab + PbarLab}{TempLab + 460}}{\frac{GaugeLab\ /\ Field + PbarLab\ /\ Field}{TempLab\ /\ Field + 460}} - \frac{GaugeField + PbarField}{TempField + 460}$$

FEB 8TH CANISTER 0177, 0196, 905 GRAB BAGS R-10A, 10B
R-11A, 11B
R-12A, 12B

TEST # 10, 11, 12 0 TO 200 SCFH — 1,000 SCFH

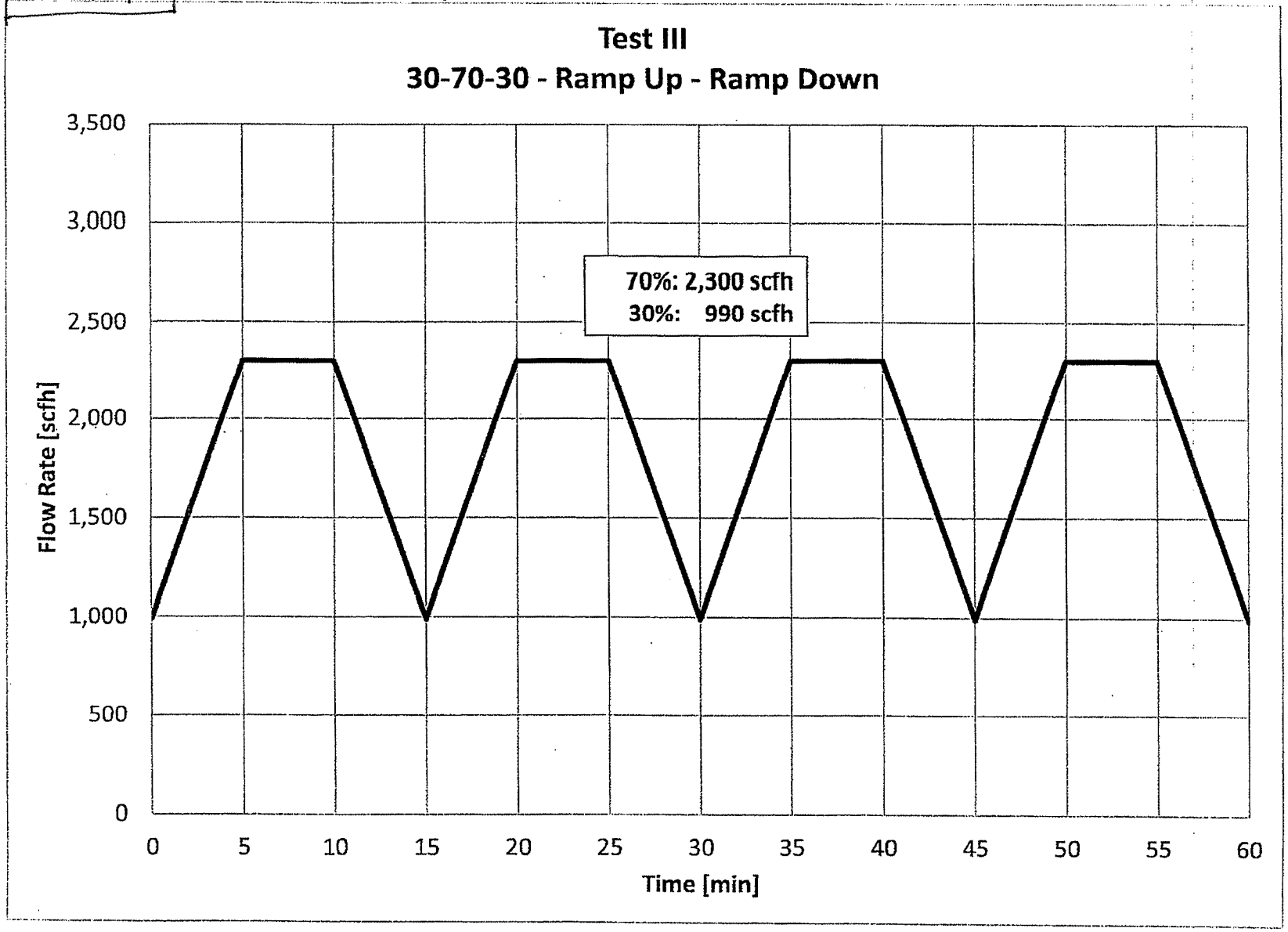


FEB 8TH CANISTER 0146

GRAB BAGS R9A, R9B

TEST #9

1000 SCFH - 2300 SCFH



Silonite Canisters

Chain of Custody Record

ENTHALPY analytical, inc.

Page____of____

Special Handling:
- ☐ Standard Turn Around Time (10 business days)
- ☐ Rush Turn Around Time -- Date Needed_____
- All TAT's Subject to Approval by Enthalpy Analytical, Inc.
- All Bag/Can Samples Disposed of 1 Month from Receipt.
- All Other Samples Disposed of 4 Months from Receipt.

Client Name: Comm Engineering
Project Manager: Steve Hogg
Report To: Steve Hogg

Project Number: 112607
Site Name: Lafayette, LA
Location: OAR Inc.

PO#: KV-112607
Telephone#: 337-237 4373
Email: SWHogg@CommEngineering.com

For spiked or duplicate samples: please provide sample volumes for recovery calculations.
For Particulates: please provide tare weights and/or condensed water volumes.

Special Instructions:
Silonite Canisters

A=Air 1=H2SO4 2=NaOH 3=_____ 4=_____
X=XAD C=Charcoal SG=Silica Gel
G=Grab C=Composite Q=Quality Control

Sample ID	Date	Time	Sample Volume	Type	Matrix	# of VOA Vials	# of Glass	# of Plastic	# of Bags	# of Canisters	# of Tubes	# Other	Analyses	Notes:
122	2.5.13	2pm	1HR											
144	2.5.13	3:20pm	1HR											
204	2.5.13	4:35pm	1HR											
179	2.6.13	10:45AM	1HR											
959	2.7.13	9:50 AM	1HR											
952	2.7.13	2:10pm	1HR											
186	2.7.13	3:30pm	1HR											
203	2.7.13	4:45pm	1HR											
146	2.8.13	9:25 AM	1HR											
177	2.8.13	12:12PM	1HR											
196	2.8.13	1:27pm	1HR											
905	2.8.13	2:40pm	1HR											

Relinquished By:	Date	Received By:	Date	Time	Sample Condition Upon Receipt
Test 1-8 Steve Hogg	2.7.13	CCB + JEE per BTT	2/8+9/13		☐ Iced ☑ Ambient ☐ °C_____
Test 9-12 Steve Hogg	2.8.13				☐ Iced ☐ Ambient ☐ °C_____
					☐ Iced ☐ Ambient ☐ °C_____

800-1 Capitola Drive • Durham, NC 27713 • (919) 850-4392 • FAX (919) 850-9012 • www.enthalpy.com

COC received electronically on 2/28/13, BTT

GRAB BAGS

ENTHALPY analytical, inc.

Chain of Custody Record

Page 1 of 1

Special Handling:
- ☐ Standard Turn Around Time (10 business days)
- ☐ Rush Turn Around Time – Date Needed_____
- All TATs Subject to Approval by Enthalpy Analytical, Inc.
- All Bag/Can Samples Disposed of 1 Month from Receipt.
- All Other Samples Disposed of 4 Months from Receipt.

Client Name: COMM ENGINEERING
Project Manager: STEVE HOGG
Report To: STEVE HOGG

Project Number: 11267
Site Name: LAFAYETTE, LA
Location: OAR, INC

PO#: KV-11267
Telephone#: 337-237 4373
Email: SWHOGG@COMMENGINEERING.COM

For spiked or duplicate samples: please provide sample volumes for recovery calculations.
For Particulates: please provide tare weights and/or condensed water volumes.

Special Instructions:
GRAB BAGS

A=Air 1=H2SO4 2=NaOH 3=_____ 4=_____
X=XAD C=Charcoal SG=Silica Gel
G=Grab C=Composite Q=Quality Control

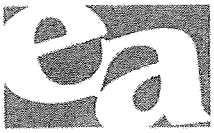
Sample ID	Date	Time	Sample Volume	Type	Matrix	# of VOA Vials	# of Glass	# of Plastic	# of Bags	# of Canisters	# of Tubes	# Other	Analyses								Notes:
1A/1B	2.5.13	2pm	1 HR																		
2A/2B	2.5.13	3.20pm	1 HR																		
3A/3B	2.5.13	4:35pm	1 HR																		
4A/4B	2.6.13	10:45AM	1 HR																		
5A/5B	2.7.13	9:50AM	1 HR																		
6A/6B	2.7.13	2:10pm	1 HR																		
7A/7B	2.7.13	3:30pm	1 HR																		
8A/8B	2.7.13	4:45pm	1 HR																		
9A/9B	2.8.13	9:25AM	1 HR																		
10A/10B	2.8.13	12:12pm	1 HR																		
11A/11B	2.8.13	1:27pm	1 HR																		
12A/12B	2.8.13	2:40pm	1 HR																		

Relinquished By:	Date:	Received By:	Date:	Time:	Sample Condition Upon Receipt:
TEST 1-8 STEVE HOGG	2.7.13	CCB + JEE per BDT 2/8/13	2/8/13		☐ Iced ☑ Ambient ☐ °C_____
TEST 9-12 STEVE HOGG	2.8.13				☐ Iced ☐ Ambient ☐ °C_____
					☐ Iced ☐ Ambient ☐ °C_____

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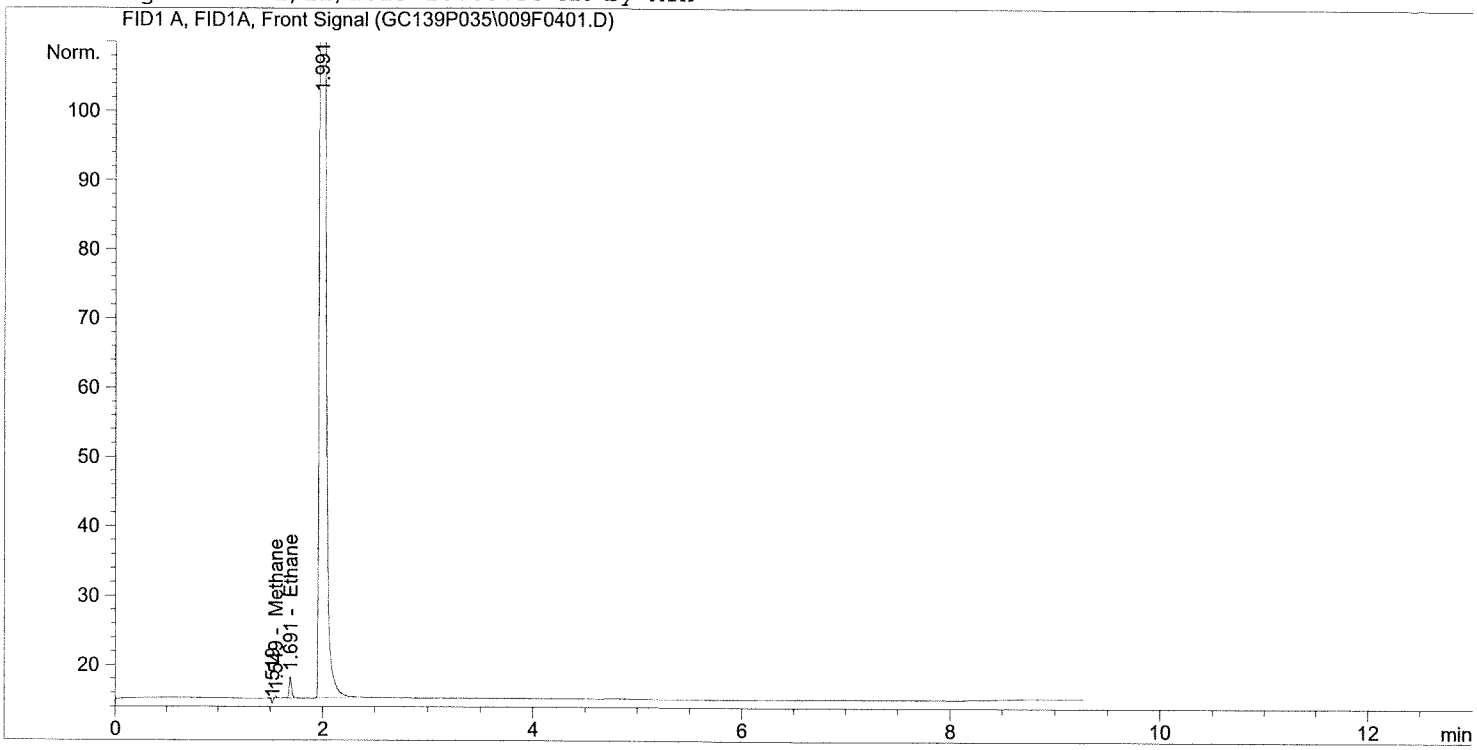
COC received electronically on 2/28/13, BDT

Sample Chromatograms



Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\009F0401.D
Sample Name: Can00122-T1*101 0213-39

```
==========================================================================
Acq. Operator   : MTH                              Seq. Line :   4
Acq. Instrument : Edith                             Location : Vial 9
Injection Date  : 2/20/2013 2:13:45 PM                   Inj :   1
                                                  Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.549	PB	3.49266e-1	4.67173	1.63167		Methane
1.691	BP	4.67492	2.01108	9.40161		Ethane
2.020		-	-	-		Propane
2.919		-	-	-		Butane
4.478		-	-	-		Pentane
6.794		-	-	-		Benzene

Totals : 11.03329

1 Warnings or Errors :

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\009F0401.D
Sample Name: Can00122-T1*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1995.25952	2.670e3

Totals : 2669.6572

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

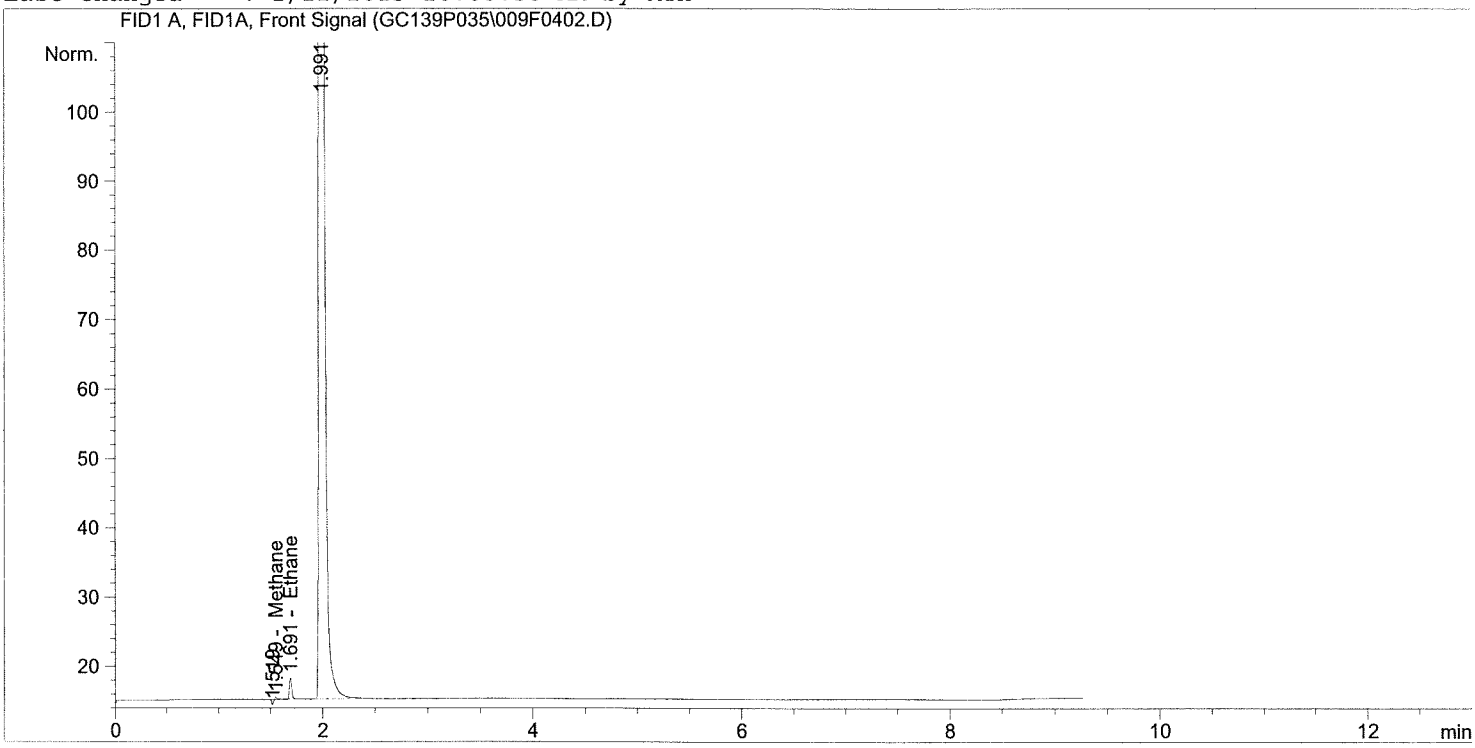
Name	Total Area [pA*s]	Amount [ppm]
as Propane	1995.25952	2.670e3
Methane	3.49266e-1	1.6317
Ethane	4.67492	9.4016
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2680.6905

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\009F0402.D
Sample Name: Can00122-T1*101 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   4
Acq. Instrument  : Edith                             Location : Vial 9
Injection Date   : 2/20/2013 2:27:58 PM                   Inj :   2
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.549 PV     4.13407e-1    4.67173    1.93133     Methane
  1.691 VB        4.80138    2.01087    9.65496     Ethane
  2.020              -          -          -         Propane
  2.919              -          -          -         Butane
  4.478              -          -          -         Pentane
  6.794              -          -          -         Benzene

Totals :                                 11.58629


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\009F0402.D
Sample Name: Can00122-T1*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1974.66296	2.642e3

Totals : 2642.0990

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

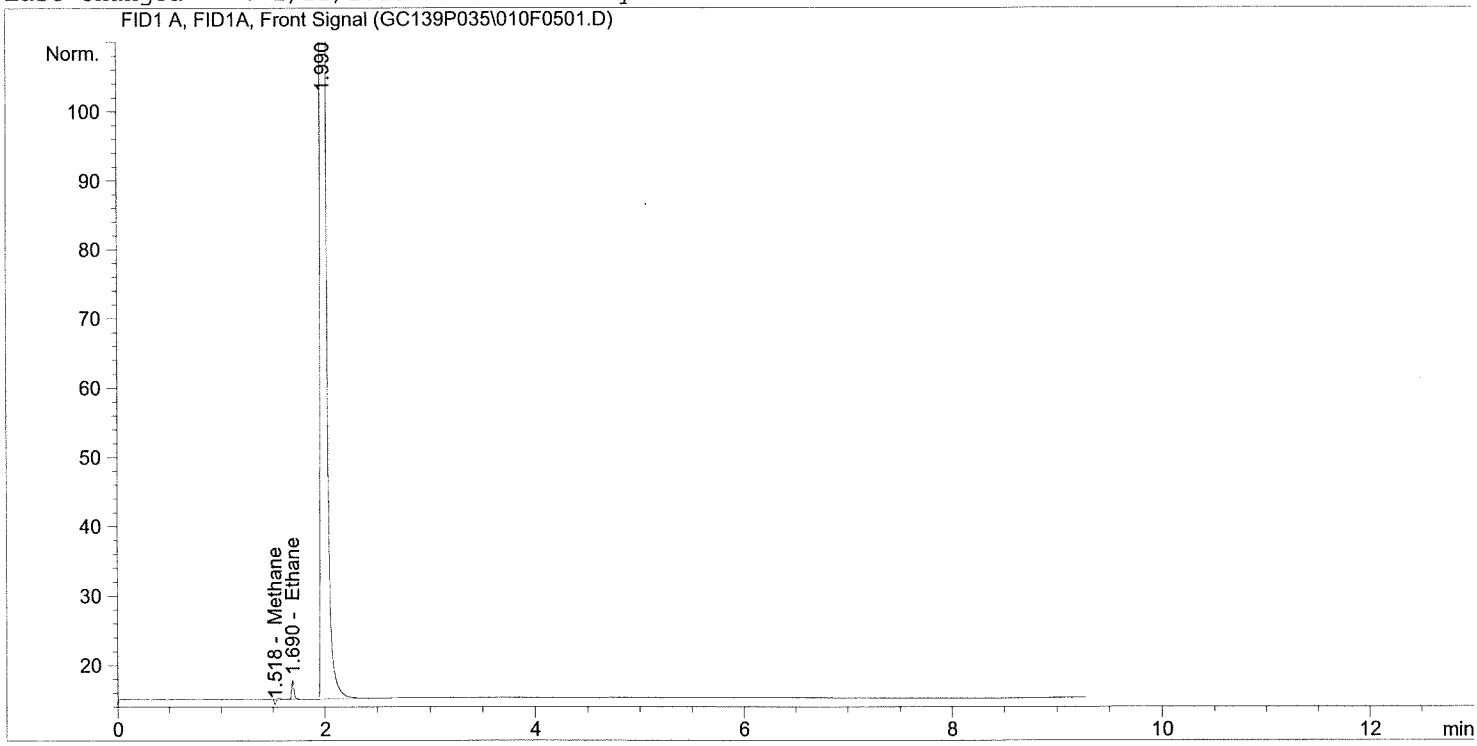
Name	Total Area [pA*s]	Amount [ppm]
as Propane	1974.66296	2.642e3
Methane	4.13407e-1	1.9313
Ethane	4.80138	9.6550
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2653.6853

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\010F0501.D
Sample Name: Can00144-T2*101 0213-39

```
==========================================================================
Acq. Operator   : MTH                          Seq. Line :   5
Acq. Instrument : Edith                         Location : Vial 10
Injection Date  : 2/20/2013 2:56:43 PM               Inj :   1
                                               Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  1.518 PP N   9.26680e-1    4.22081    3.91134     Methane
  1.690 BB       4.18027    2.01199    8.41067     Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794            -          -          -         Benzene

Totals :                                 12.32201


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\010F0501.D
Sample Name: Can00144-T2*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	2050.17798	2.743e3

Totals : 2743.1381

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

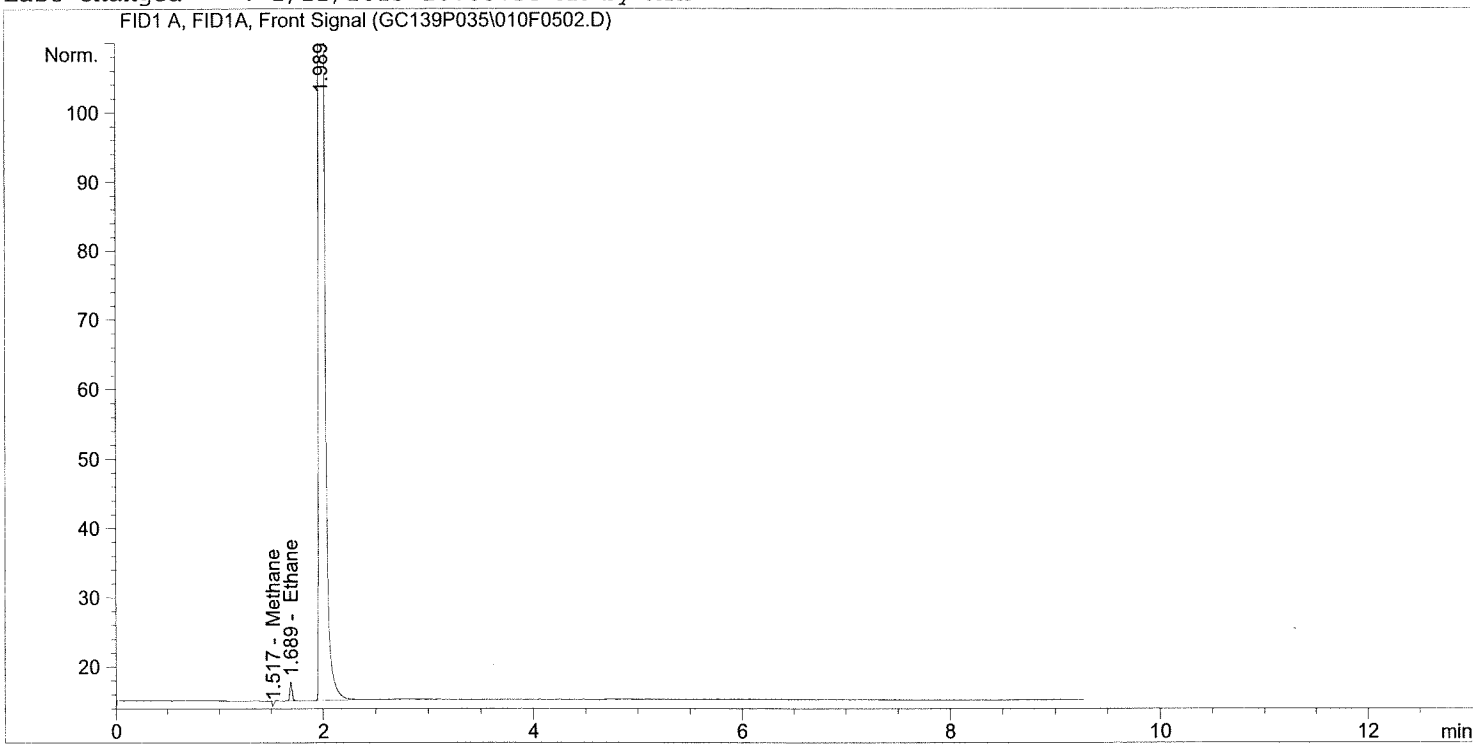
Name	Total Area [pA*s]	Amount [ppm]
as Propane	2050.17798	2.743e3
Methane	9.26680e-1	3.9113
Ethane	4.18027	8.4107
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2755.4601

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\010F0502.D
Sample Name: Can00144-T2*101 0213-39

```
==========================================================================
Acq. Operator   : MTH                              Seq. Line :   5
Acq. Instrument : Edith                             Location : Vial 10
Injection Date  : 2/20/2013 3:11:06 PM                   Inj :   2
                                                  Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 PP N      1.00741    4.18979    4.22084     Methane
  1.689 BP        4.06612    2.01224    8.18199     Ethane
  2.020            -          -          -          Propane
  2.919            -          -          -          Butane
  4.478            -          -          -          Pentane
  6.794            -          -          -          Benzene

Totals :                                 12.40283


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\010F0502.D
Sample Name: Can00144-T2*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	2045.73865	2.737e3

Totals : 2737.1983

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

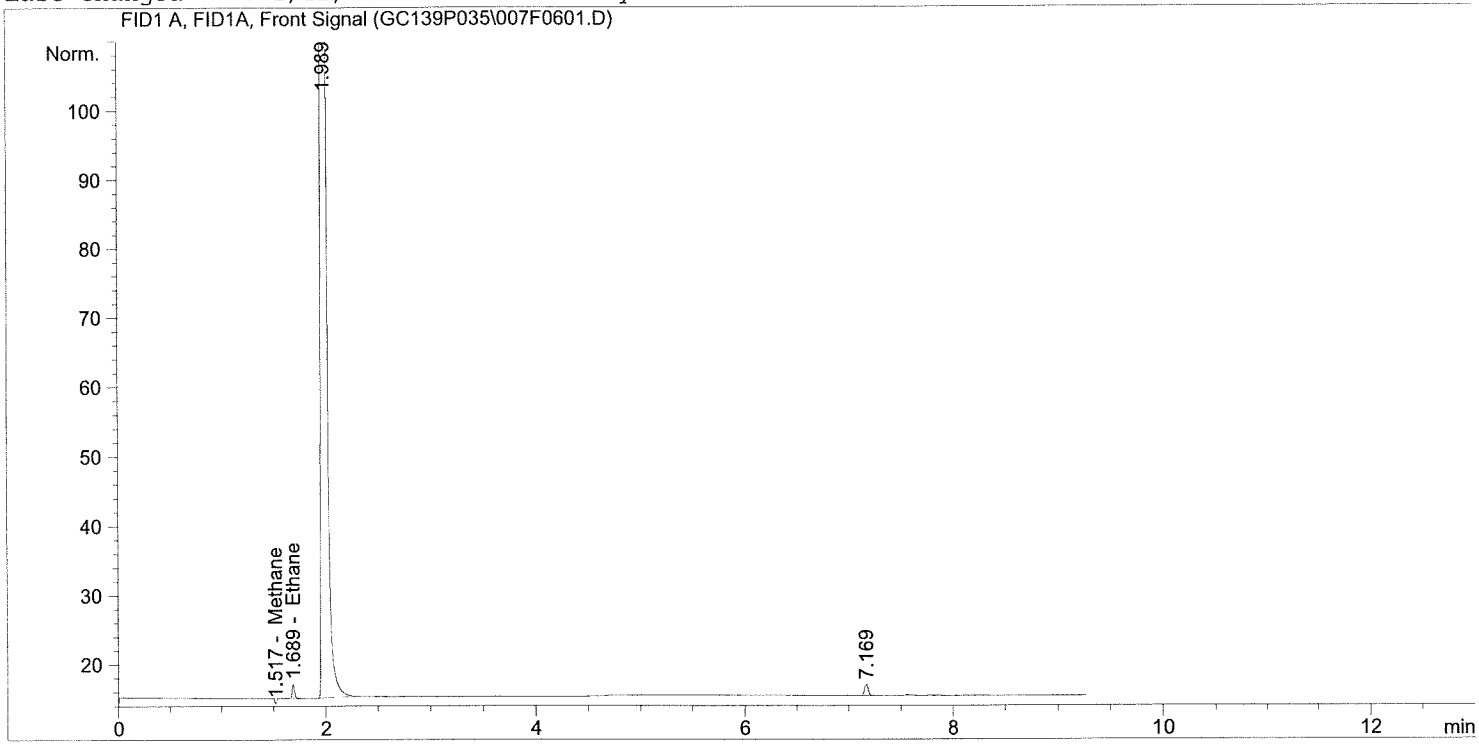
Name	Total Area [pA*s]	Amount [ppm]
as Propane	2045.73865	2.737e3
Methane	1.00741	4.2208
Ethane	4.06612	8.1820
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2749.6011

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\007F0601.D
Sample Name: Can00204-T3*101 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   6
Acq. Instrument  : Edith                             Location : Vial 7
Injection Date   : 2/20/2013 3:39:56 PM                  Inj :   1
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 BP N   8.74539e-1    4.24390    3.71145     Methane
  1.689 PB       3.11277    2.01497    6.27214     Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794            -          -          -         Benzene

Totals :                                 9.98360


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\007F0601.D
Sample Name: Can00204-T3*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1780.39294	2.382e3
as Pentane	3.700	14.000	3.93231	3.1223

Totals : 2385.2880

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

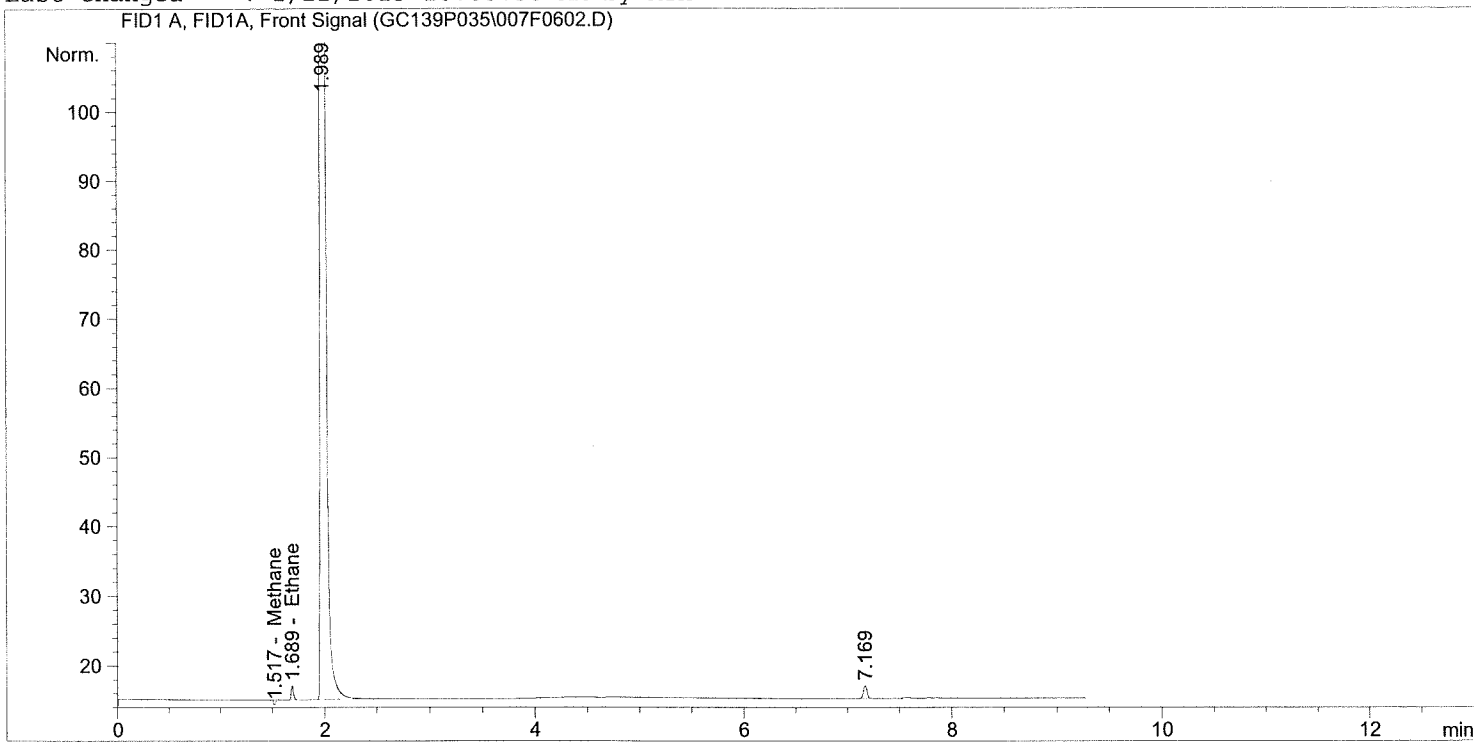
Name	Total Area [pA*s]	Amount [ppm]
as Propane	1780.39294	2.382e3
as Pentane	3.93231	3.1223
Methane	8.74539e-1	3.7115
Ethane	3.11277	6.2721
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2395.2716

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\007F0602.D
Sample Name: Can00204-T3*101 0213-39

```
==========================================================================
Acq. Operator   : MTH                              Seq. Line :   6
Acq. Instrument : Edith                             Location : Vial 7
Injection Date  : 2/20/2013 3:54:22 PM                   Inj :   2
                                                  Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 BP N   8.71217e-1    4.24546    3.69872    Methane
  1.689 BB       3.08718    2.01507    6.22088    Ethane
  2.020            -          -          -        Propane
  2.919            -          -          -        Butane
  4.478            -          -          -        Pentane
  6.794            -          -          -        Benzene

Totals :                                 9.91960


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\007F0602.D
Sample Name: Can00204-T3*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1776.72705	2.377e3
as Pentane	3.700	14.000	4.54564	3.6092

Totals : 2380.8700

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

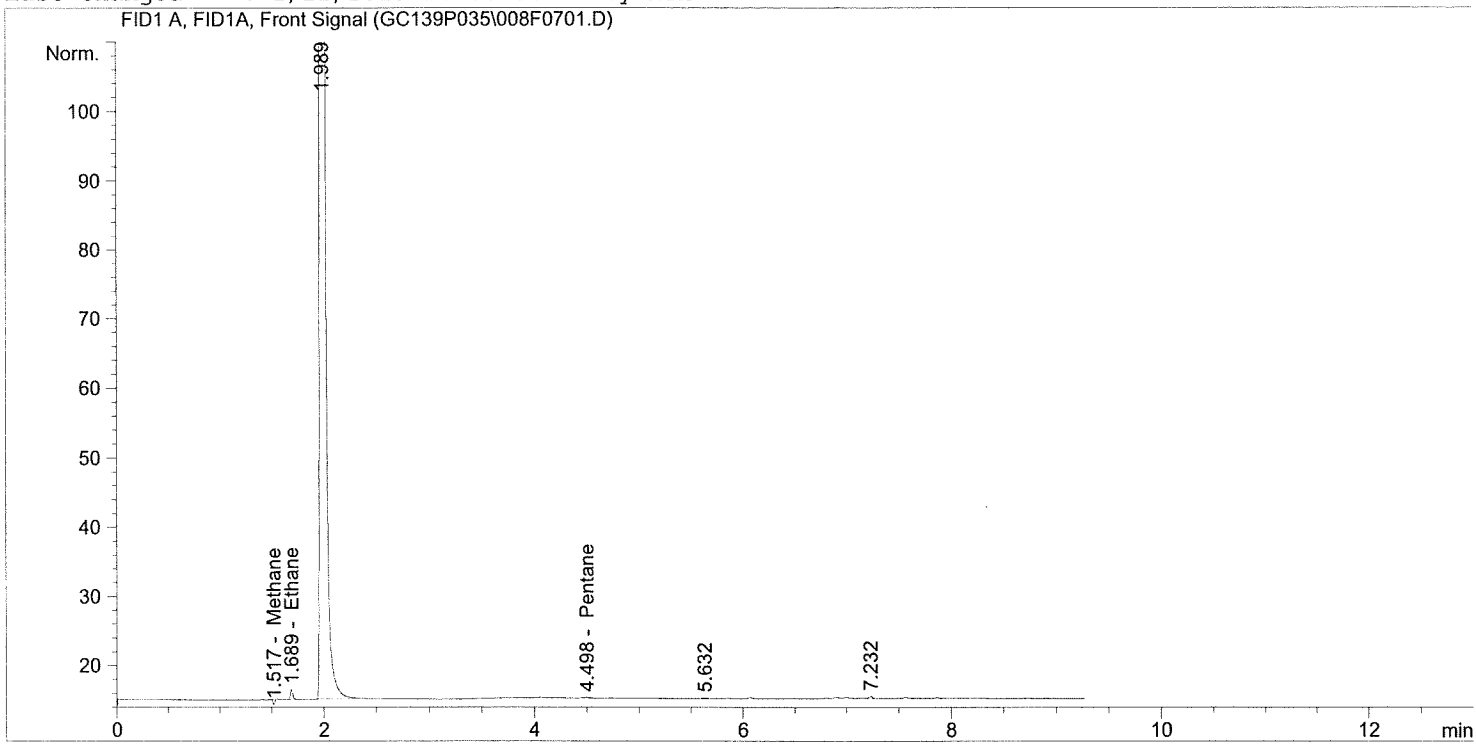
Name	Total Area [pA*s]	Amount [ppm]
as Propane	1776.72705	2.377e3
as Pentane	4.54564	3.6092
Methane	8.71217e-1	3.6987
Ethane	3.08718	6.2209
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2390.7896

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\008F0701.D
Sample Name: Can00179-T4*101 0213-39

```
==========================================================================
Acq. Operator   : MTH                              Seq. Line :   7
Acq. Instrument : Edith                             Location : Vial 8
Injection Date  : 2/20/2013 4:23:26 PM                   Inj :   1
                                                  Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 BP N   8.68036e-1    4.24697    3.68652    Methane
  1.689 BB       2.23335    2.01956    4.51038    Ethane
  2.020            -          -          -        Propane
  2.919            -          -          -        Butane
  4.498 BB     4.85612e-1 7.48664e-1 3.63560e-1    Pentane
  6.794            -          -          -        Benzene

Totals :                                 8.56046


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\008F0701.D
Sample Name: Can00179-T4*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	2020.41724	2.703e3
as Pentane	3.700	14.000	9.44238e-1	0.7497

Totals : 2704.0680

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

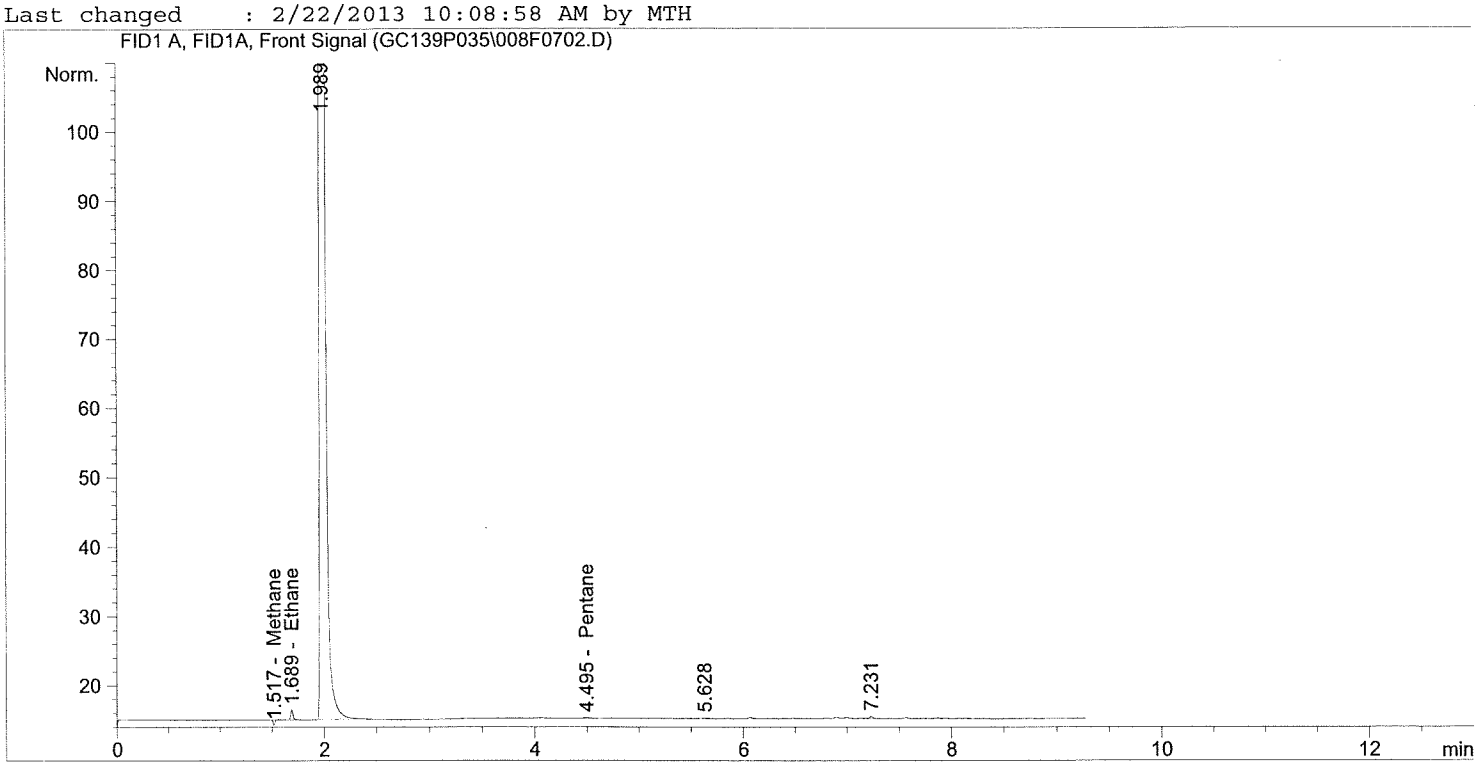
Name	Total Area [pA*s]	Amount [ppm]
as Propane	2020.41724	2.703e3
as Pentane	9.44238e-1	0.7497
Methane	8.68036e-1	3.6865
Ethane	2.23335	4.5104
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	4.85612e-1	0.3636
Benzene	0.00000	0.0000

Totals : 2712.6284

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\008F0702.D
Sample Name: Can00179-T4*101 0213-39

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :   7
Acq. Instrument  : Edith                               Location : Vial 8
Injection Date   : 2/20/2013 4:37:51 PM                     Inj :   2
                                                      Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]           [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 BP N   8.50183e-1    4.25565    3.61808     Methane
  1.689 PB       2.42488    2.01828    4.89408     Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.495 BB     5.04415e-1 7.48664e-1 3.77637e-1    Pentane
  6.794            -          -          -         Benzene

Totals :                                 8.88980


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\008F0702.D
Sample Name: Can00179-T4*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	2010.65710	2.690e3
as Pentane	3.700	14.000	9.70446e-1	0.7705

Totals : 2691.0297

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

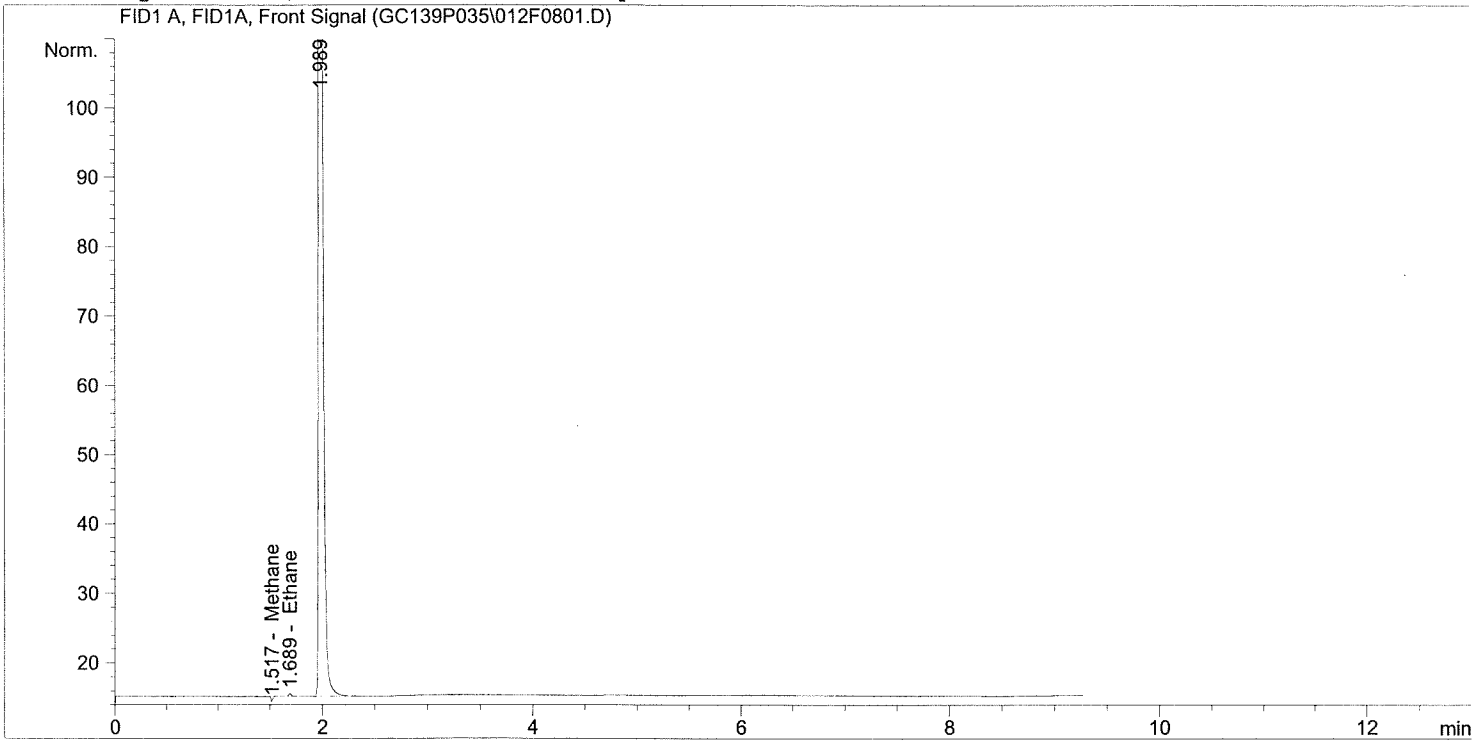
Name	Total Area [pA*s]	Amount [ppm]
as Propane	2010.65710	2.690e3
as Pentane	9.70446e-1	0.7705
Methane	8.50183e-1	3.6181
Ethane	2.42488	4.8941
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	5.04415e-1	0.3776
Benzene	0.00000	0.0000

Totals : 2699.9195

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\012F0801.D
Sample Name: Can959-T5*101 0213-39

```
==========================================================================
Acq. Operator   : MTH                              Seq. Line :   8
Acq. Instrument : Edith                             Location : Vial 12
Injection Date  : 2/20/2013 5:06:38 PM                   Inj :   1
                                                  Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 BP N   8.51773e-1    4.25486    3.62418    Methane
  1.689 PB     9.32777e-1    2.04033    1.90317    Ethane
  2.020            -            -          -       Propane
  2.919            -            -          -       Butane
  4.478            -            -          -       Pentane
  6.794            -            -          -       Benzene

Totals :                                  5.52735


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\012F0801.D
Sample Name: Can959-T5*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	687.55817	919.9528

Totals : 919.9528

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

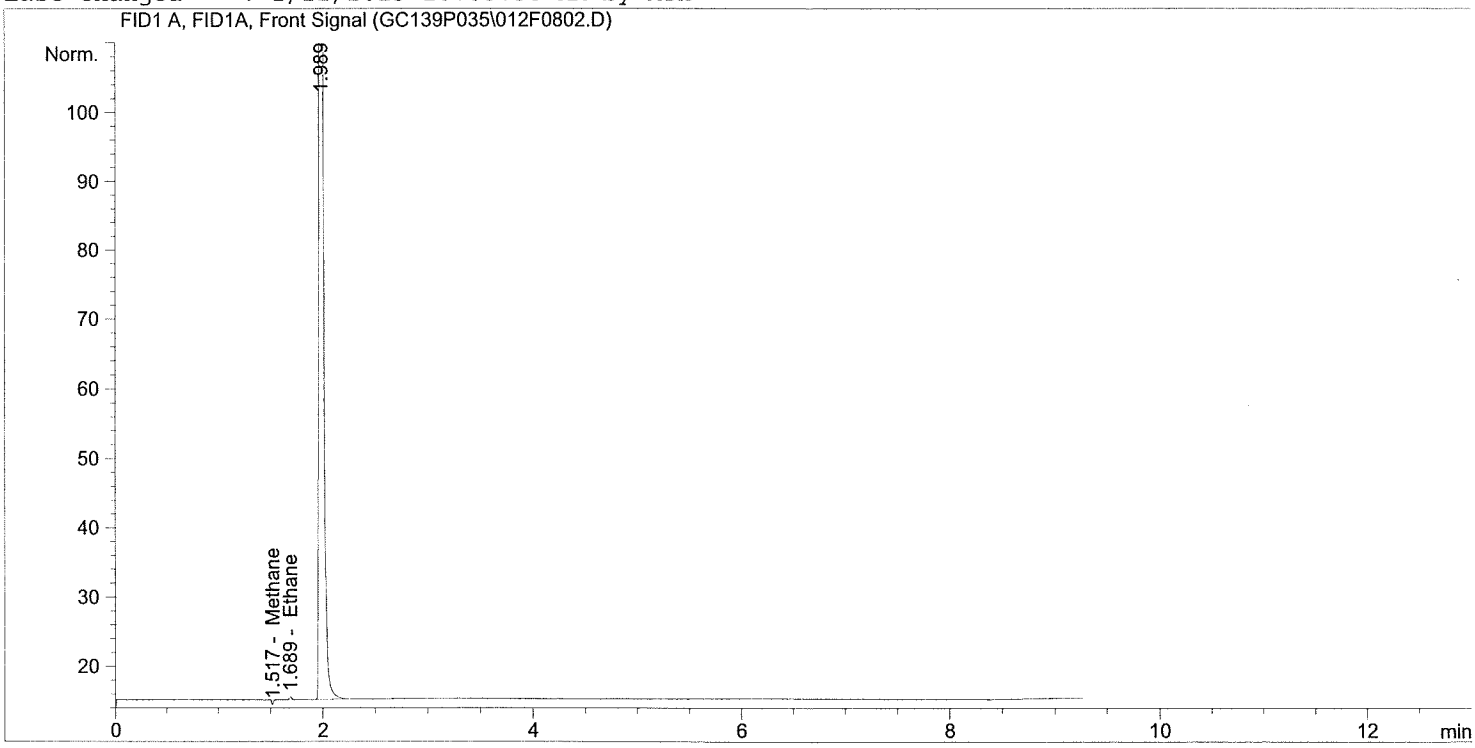
Name	Total Area [pA*s]	Amount [ppm]
as Propane	687.55817	919.9528
Methane	8.51773e-1	3.6242
Ethane	9.32777e-1	1.9032
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 925.4802

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\012F0802.D
Sample Name: Can959-T5*101 0213-39

```
==========================================================================
Acq. Operator   : MTH                          Seq. Line :   8
Acq. Instrument : Edith                         Location : Vial 12
Injection Date  : 2/20/2013 5:21:07 PM               Inj :   2
                                               Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 BP N   8.28063e-1    4.26693    3.53328    Methane
  1.689 PB     9.35509e-1    2.04033    1.90875    Ethane
  2.020            -             -          -      Propane
  2.919            -             -          -      Butane
  4.478            -             -          -      Pentane
  6.794            -             -          -      Benzene

Totals :                                  5.44203


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\012F0802.D
Sample Name: Can959-T5*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	683.89069	915.0457

Totals : 915.0457

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

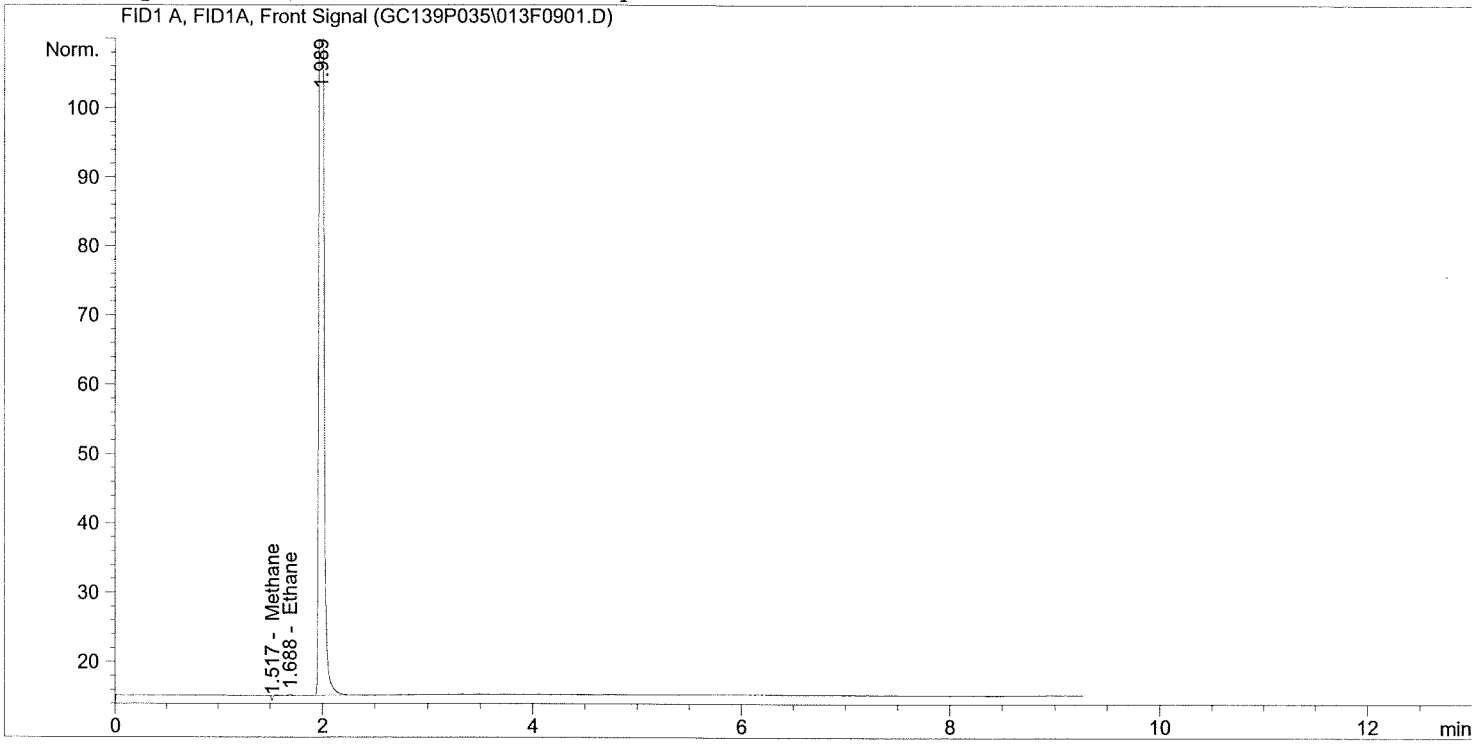
Name	Total Area [pA*s]	Amount [ppm]
as Propane	683.89069	915.0457
Methane	8.28063e-1	3.5333
Ethane	9.35509e-1	1.9087
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 920.4878

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\013F0901.D
Sample Name: Can952-T6*101 0213-39

```
==========================================================================
Acq. Operator   : MTH                          Seq. Line :   9
Acq. Instrument : Edith                         Location : Vial 13
Injection Date  : 2/20/2013 5:49:43 PM               Inj :   1
                                               Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 BP N   8.40223e-1    4.26065    3.57990    Methane
  1.688 PB     5.99594e-1    2.04033    1.22337    Ethane
  2.020            -           -          -        Propane
  2.919            -           -          -        Butane
  4.478            -           -          -        Pentane
  6.794            -           -          -        Benzene

Totals :                                 4.80327


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\013F0901.D
Sample Name: Can952-T6*101 0213-39

Warning : Calibrated compound(s) not found

Summed Peaks Report

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	780.27155	1.044e3

Totals : 1044.0033

Final Summed Peaks Report

Signal 1: FID1 A, FID1A, Front Signal

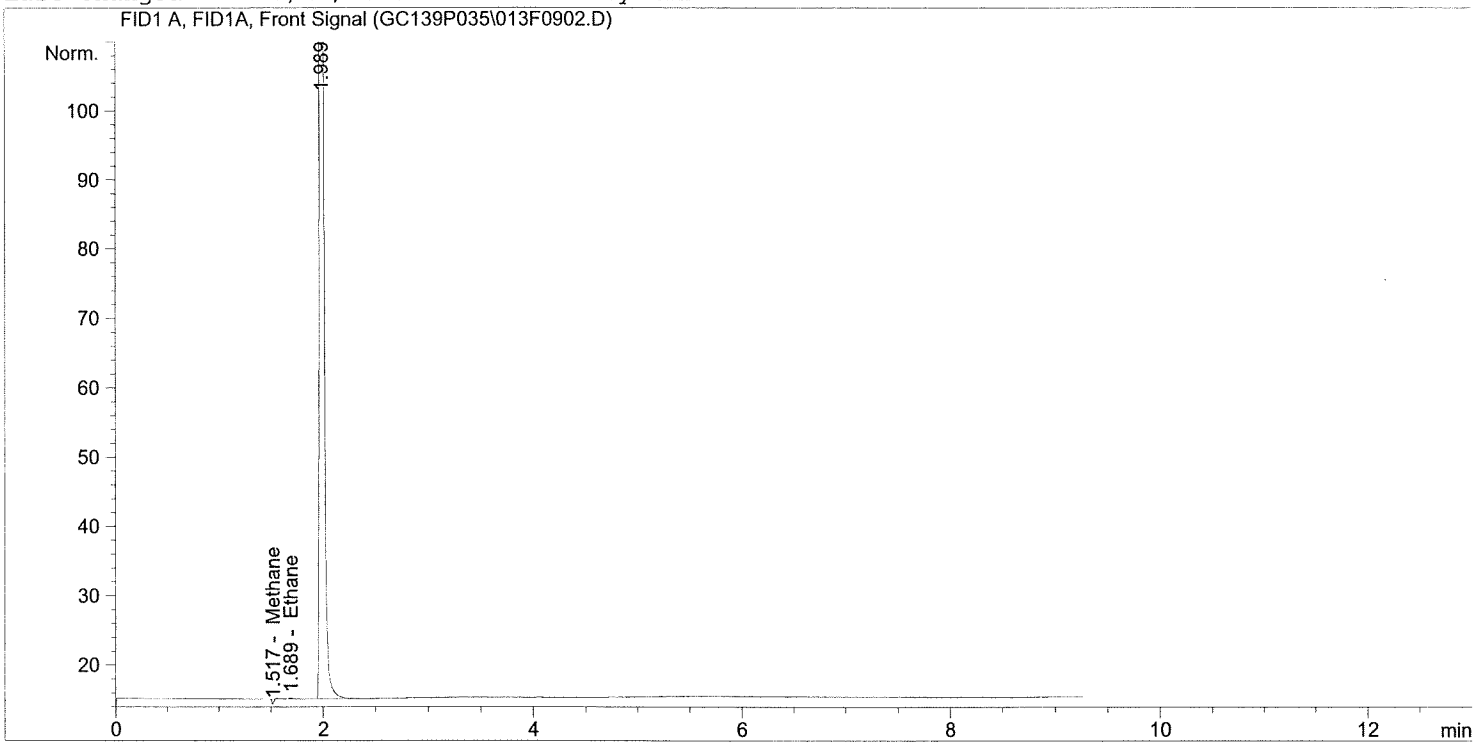
Name	Total Area [pA*s]	Amount [ppm]
as Propane	780.27155	1.044e3
Methane	8.40223e-1	3.5799
Ethane	5.99594e-1	1.2234
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 1048.8066

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\013F0902.D
Sample Name: Can952-T6*101 0213-39

```
==========================================================================
Acq. Operator   : MTH                              Seq. Line :   9
Acq. Instrument : Edith                             Location : Vial 13
Injection Date  : 2/20/2013 6:03:50 PM                   Inj :   2
                                                  Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 BP N   9.72987e-1    4.20239    4.08887    Methane
  1.689 BP     2.15734e-1    2.04033 4.40169e-1    Ethane
  2.020            -           -          -        Propane
  2.919            -           -          -        Butane
  4.478            -           -          -        Pentane
  6.794            -           -          -        Benzene

Totals :                                 4.52904


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\013F0902.D
Sample Name: Can952-T6*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	786.89941	1.053e3

Totals : 1052.8714

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

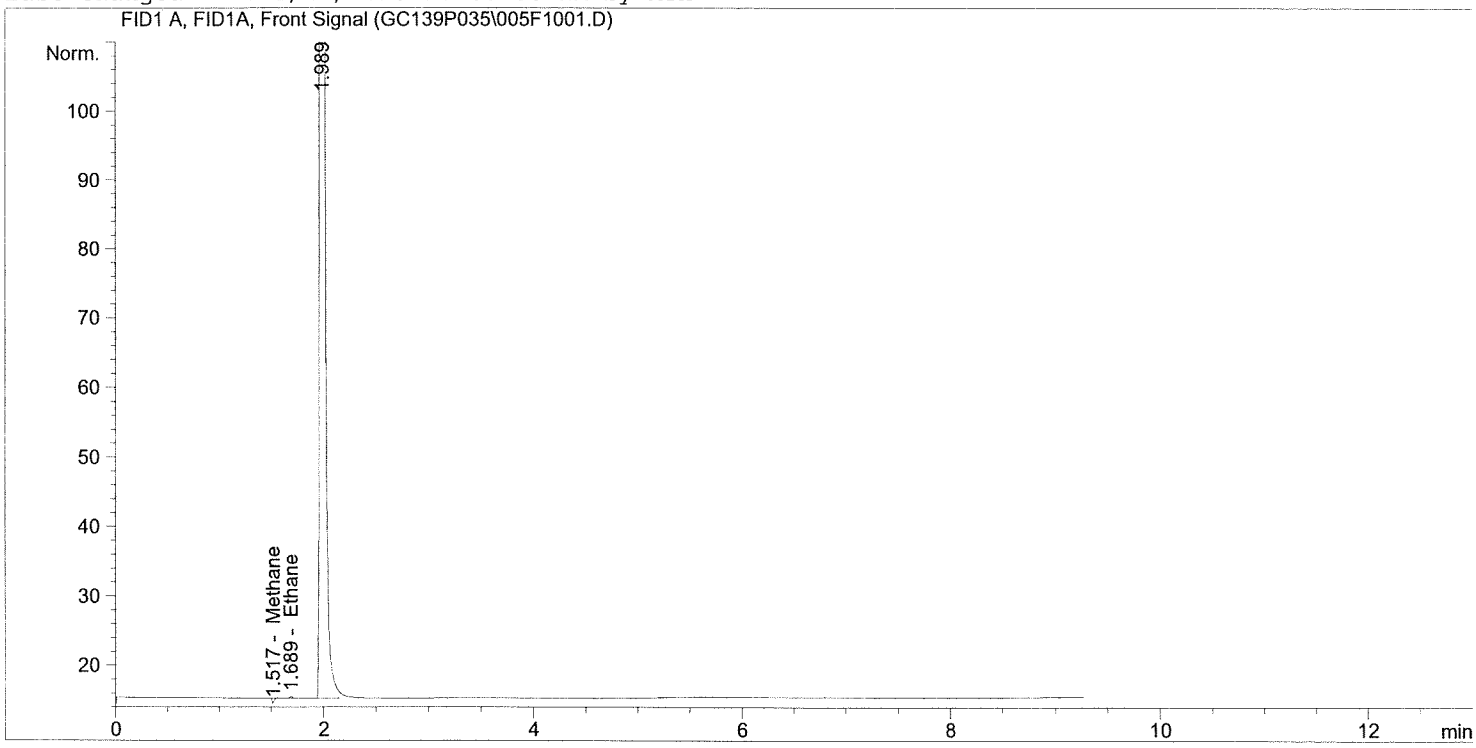
Name	Total Area [pA*s]	Amount [ppm]
as Propane	786.89941	1.053e3
Methane	9.72987e-1	4.0889
Ethane	2.15734e-1	0.4402
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 1057.4005

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\005F1001.D
Sample Name: Can00186-T7*101 0213-39

```
==========================================================================
Acq. Operator   : MTH                              Seq. Line :  10
Acq. Instrument : Edith                             Location : Vial 5
Injection Date  : 2/20/2013 6:32:07 PM                   Inj :  1
                                                  Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 BP N   8.92988e-1    4.23542    3.78218    Methane
  1.689 PB     5.89867e-1    2.04033    1.20352    Ethane
  2.020            -           -          -        Propane
  2.919            -           -          -        Butane
  4.478            -           -          -        Pentane
  6.794            -           -          -        Benzene

Totals :                                 4.98570


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\005F1001.D
Sample Name: Can00186-T7*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1664.71973	2.227e3

Totals : 2227.3950

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

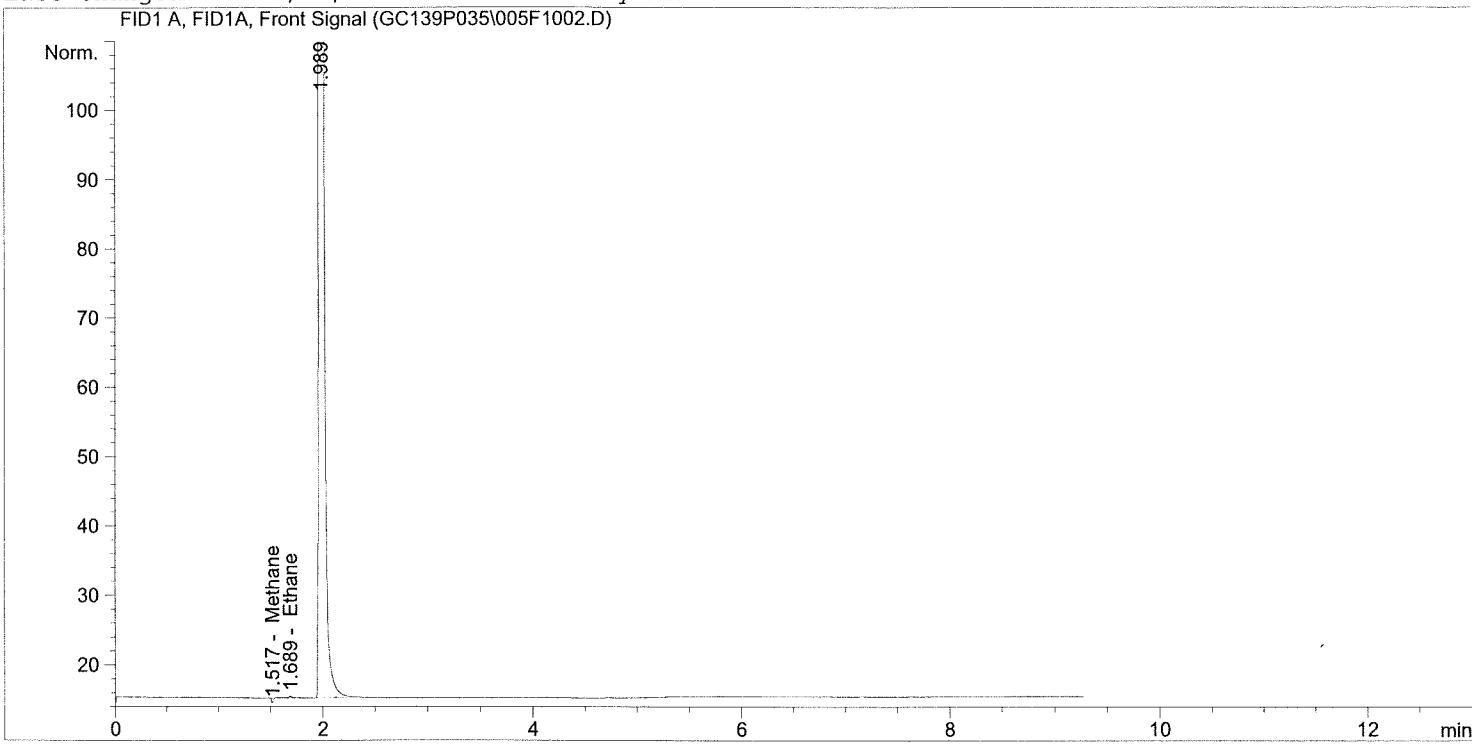
Name	Total Area [pA*s]	Amount [ppm]
as Propane	1664.71973	2.227e3
Methane	8.92988e-1	3.7822
Ethane	5.89867e-1	1.2035
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2232.3807

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\005F1002.D
Sample Name: Can00186-T7*101 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  10
Acq. Instrument  : Edith                             Location : Vial 5
Injection Date   : 2/20/2013 6:46:29 PM                   Inj :   2
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 BP N   8.56867e-1    4.25236    3.64371     Methane
  1.689 PB     6.72424e-1    2.04033    1.37197     Ethane
  2.020            -             -          -       Propane
  2.919            -             -          -       Butane
  4.478            -             -          -       Pentane
  6.794            -             -          -       Benzene

Totals :                                  5.01567


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\005F1002.D
Sample Name: Can00186-T7*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1653.38403	2.212e3

Totals : 2212.2278

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

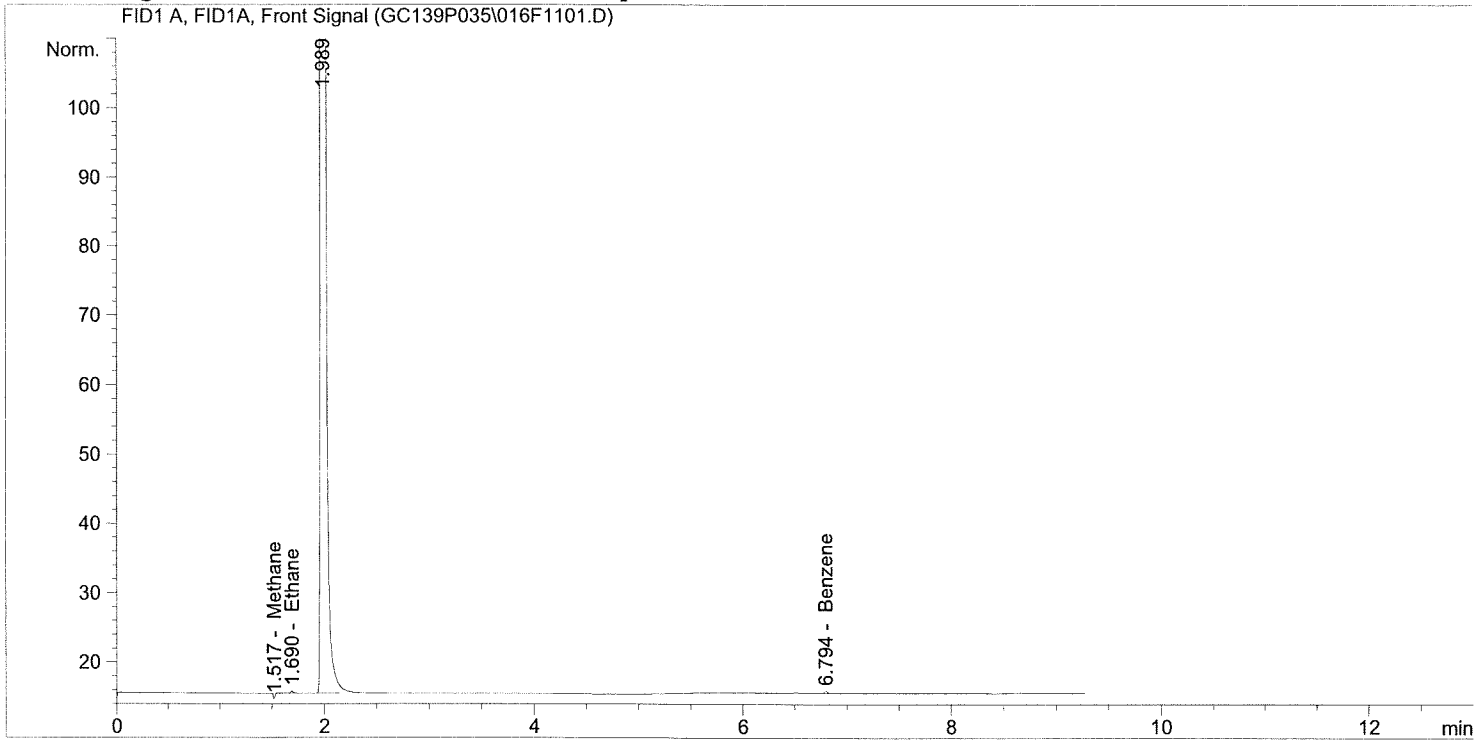
Name	Total Area [pA*s]	Amount [ppm]
as Propane	1653.38403	2.212e3
Methane	8.56867e-1	3.6437
Ethane	6.72424e-1	1.3720
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2217.2435

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\016F1101.D
Sample Name: Can00203-T8*101 0213-39

```
==========================================================================
Acq. Operator   : MTH                          Seq. Line :  11
Acq. Instrument : Edith                         Location : Vial 16
Injection Date  : 2/20/2013 7:14:53 PM               Inj :  1
                                               Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 BP N   9.19483e-1    4.22384    3.88375    Methane
  1.690 BP     4.37750e-1    2.04033 8.93154e-1    Ethane
  2.020            -           -          -        Propane
  2.919            -           -          -        Butane
  4.478            -           -          -        Pentane
  6.794 BB     6.13392e-1 6.54404e-1 4.01406e-1    Benzene

Totals :                                 5.17831


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\016F1101.D
Sample Name: Can00203-T8*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1890.83655	2.530e3

Totals : 2529.9393

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

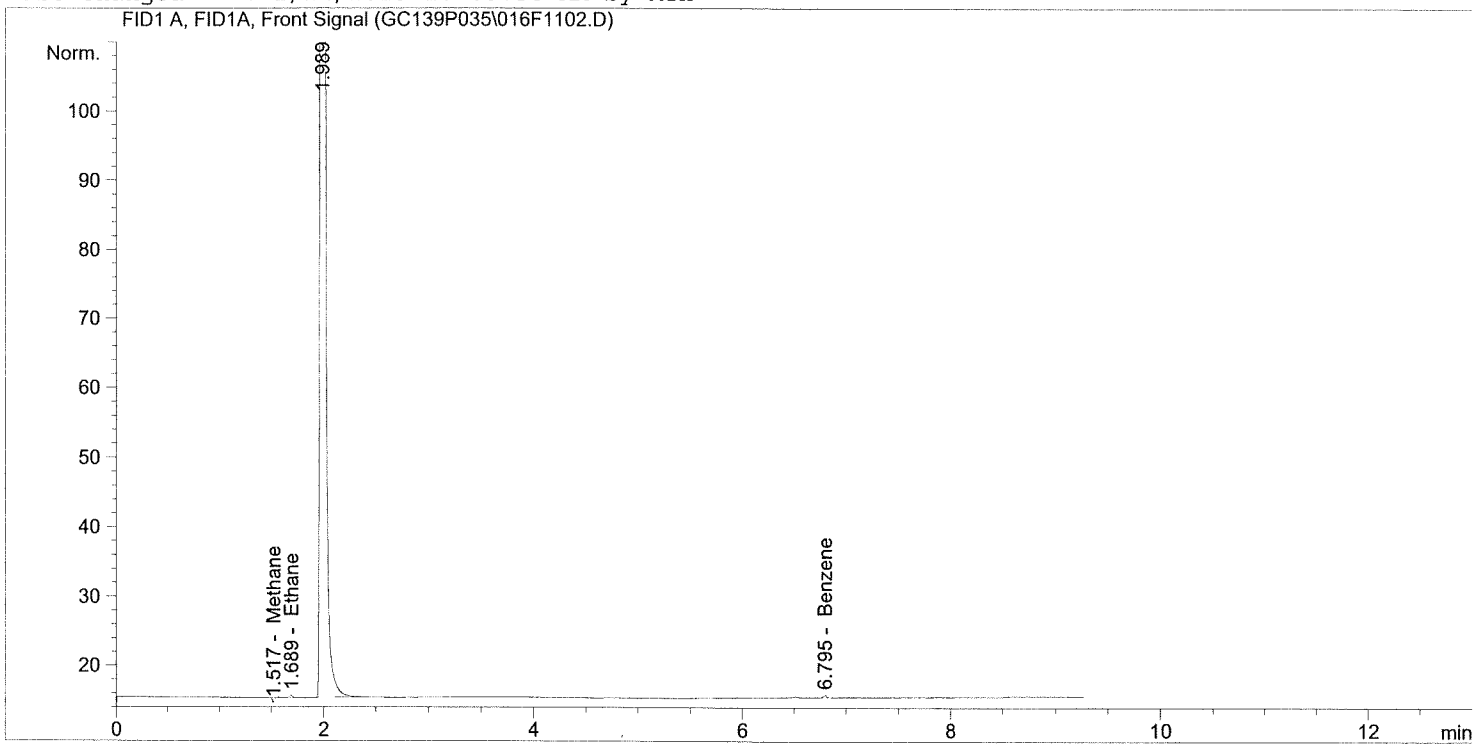
Name	Total Area [pA*s]	Amount [ppm]
as Propane	1890.83655	2.530e3
Methane	9.19483e-1	3.8838
Ethane	4.37750e-1	0.8932
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	6.13392e-1	0.4014

Totals : 2535.1176

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\016F1102.D
Sample Name: Can00203-T8*101 0213-39

```
==========================================================================
Acq. Operator   : MTH                              Seq. Line :  11
Acq. Instrument : Edith                             Location : Vial 16
Injection Date  : 2/20/2013 7:28:55 PM                   Inj :   2
                                                  Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 BP N   8.96195e-1    4.23398    3.79447    Methane
  1.689 BP     4.34593e-1    2.04033 8.86713e-1    Ethane
  2.020            -           -          -        Propane
  2.919            -           -          -        Butane
  4.478            -           -          -        Pentane
  6.795 BB     6.54940e-1 6.54404e-1 4.28596e-1    Benzene

Totals :                                 5.10978


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\016F1102.D
Sample Name: Can00203-T8*101 0213-39

Warning : Calibrated compound(s) not found

Summed Peaks Report

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1913.24841	2.560e3

Totals : 2559.9264

Final Summed Peaks Report

Signal 1: FID1 A, FID1A, Front Signal

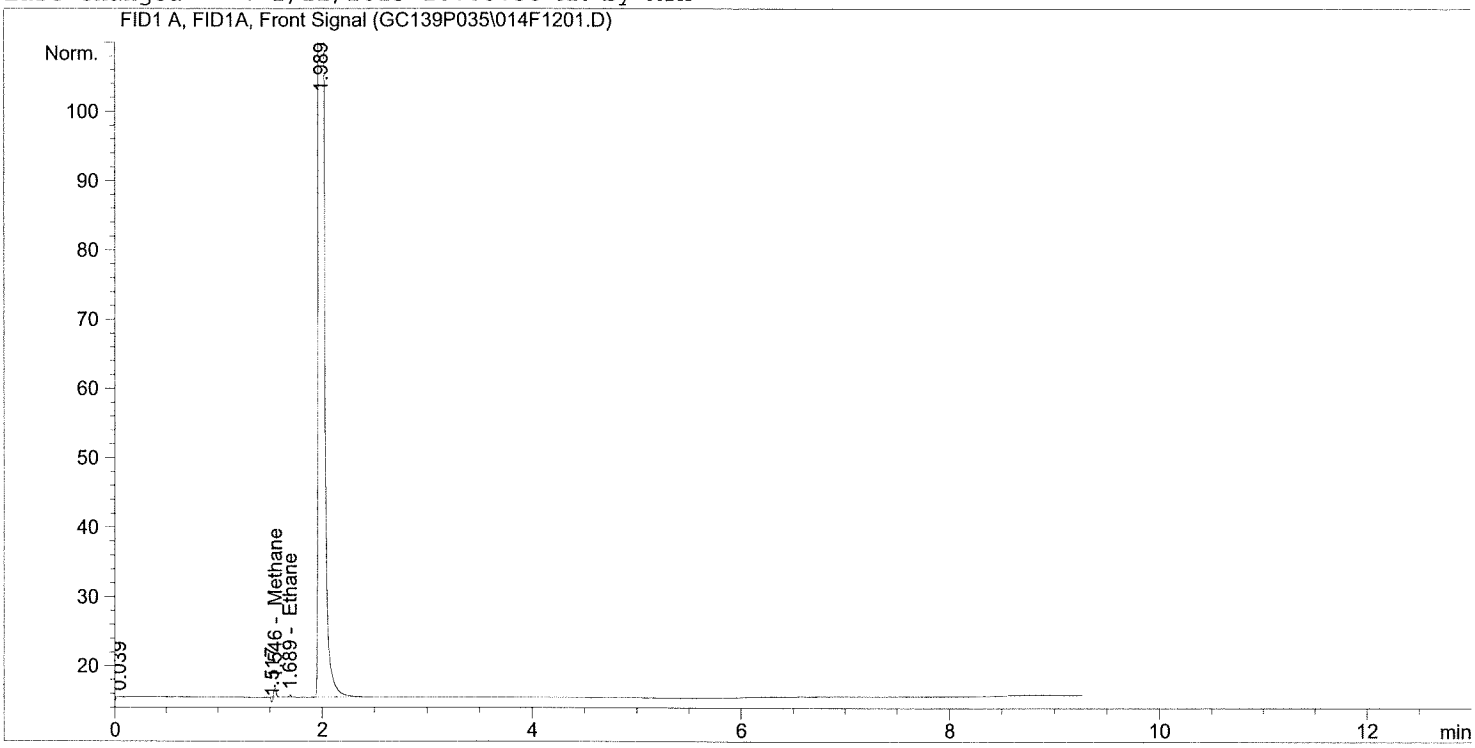
Name	Total Area [pA*s]	Amount [ppm]
as Propane	1913.24841	2.560e3
Methane	8.96195e-1	3.7945
Ethane	4.34593e-1	0.8867
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	6.54940e-1	0.4286

Totals : 2565.0362

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\014F1201.D
Sample Name: Can00146-T9*101 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  12
Acq. Instrument  : Edith                             Location : Vial 14
Injection Date   : 2/20/2013 7:57:20 PM                   Inj :   1
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.546 PB        2.33053    3.98758    9.29320    Methane
  1.689 BP     4.38344e-1    2.04033 8.94366e-1    Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794            -          -          -         Benzene

Totals :                                10.18756


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\014F1201.D
Sample Name: Can00146-T9*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1958.18384	2.620e3

Totals : 2620.0500

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

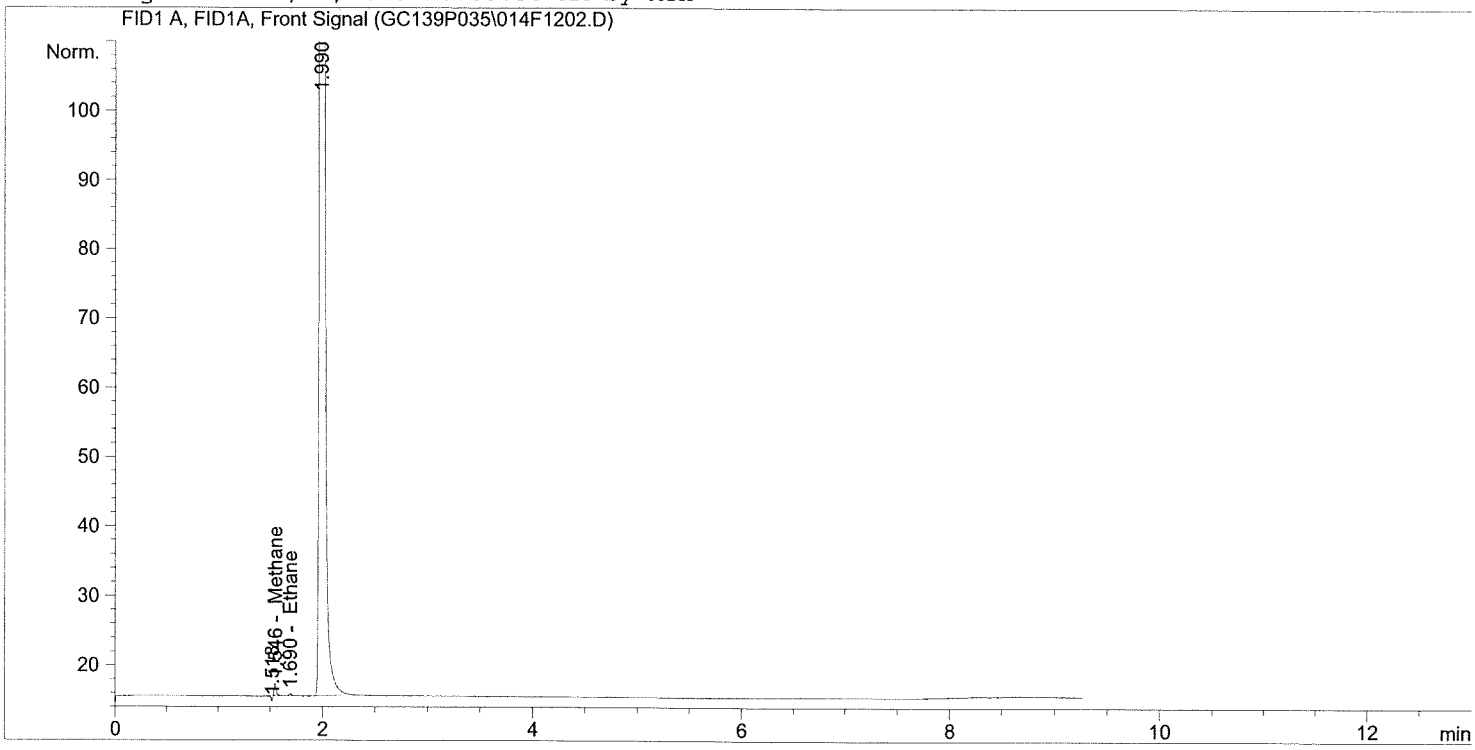
Name	Total Area [pA*s]	Amount [ppm]
as Propane	1958.18384	2.620e3
Methane	2.33053	9.2932
Ethane	4.38344e-1	0.8944
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2630.2375

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\014F1202.D
Sample Name: Can00146-T9*101 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  12
Acq. Instrument  : Edith                             Location : Vial 14
Injection Date   : 2/20/2013 8:11:41 PM                   Inj :   2
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.546 PB        2.31669    3.98850    9.24012    Methane
  1.690 BP     4.21427e-1    2.04033 8.59848e-1    Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794            -          -          -         Benzene

Totals :                                10.09997


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\014F1202.D
Sample Name: Can00146-T9*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1954.26794	2.615e3

Totals : 2614.8105

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

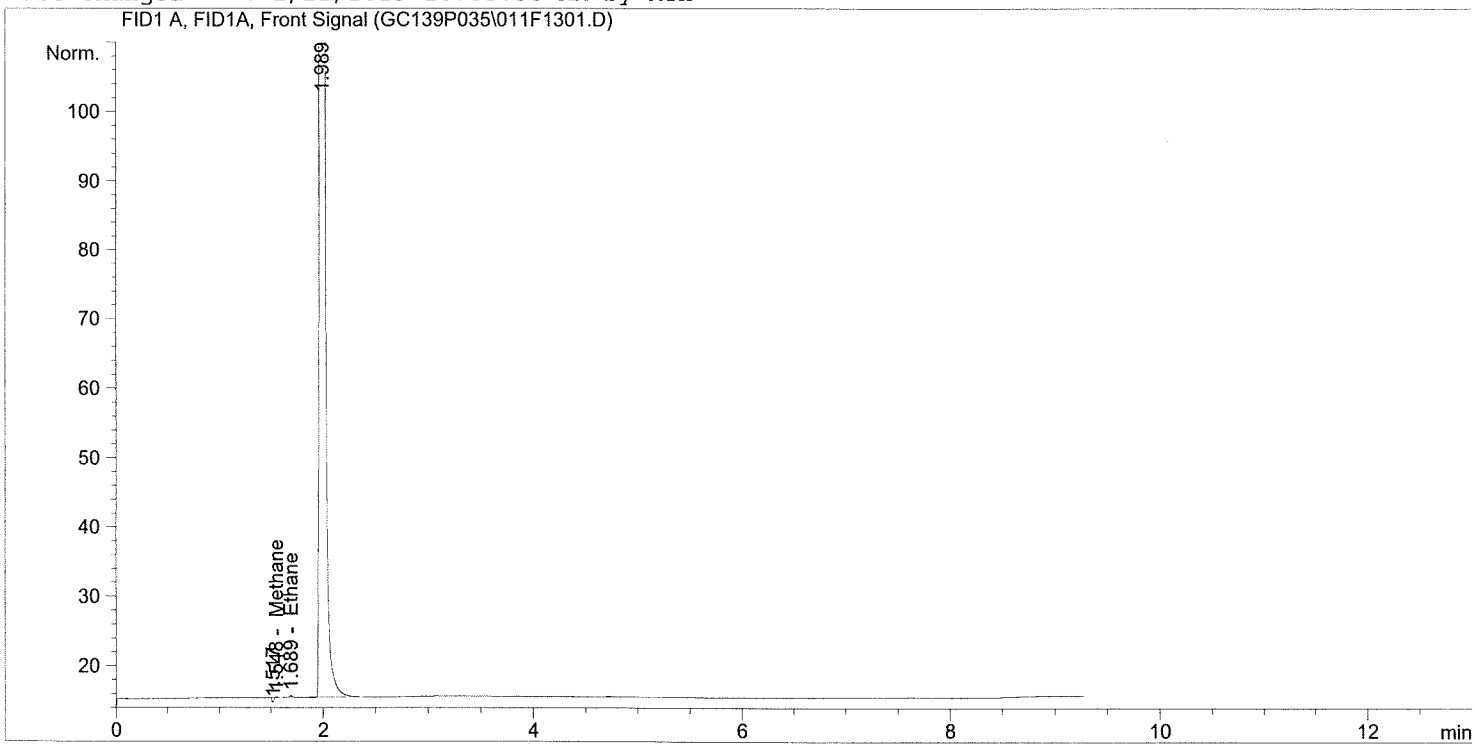
Name	Total Area [pA*s]	Amount [ppm]
as Propane	1954.26794	2.615e3
Methane	2.31669	9.2401
Ethane	4.21427e-1	0.8598
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2624.9105

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\011F1301.D
Sample Name: Can00177-T10*101 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  13
Acq. Instrument  : Edith                             Location : Vial 11
Injection Date   : 2/20/2013 8:39:50 PM                   Inj :   1
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.548 PB     1.62295e-1    4.67173 7.58197e-1    Methane
  1.689 BP     4.00025e-1    2.04033 8.16182e-1    Ethane
  2.020            -             -         -       Propane
  2.919            -             -         -       Butane
  4.478            -             -         -       Pentane
  6.794            -             -         -       Benzene

Totals :                                 1.57438


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\011F1301.D
Sample Name: Can00177-T10*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1887.86853	2.526e3

Totals : 2525.9681

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

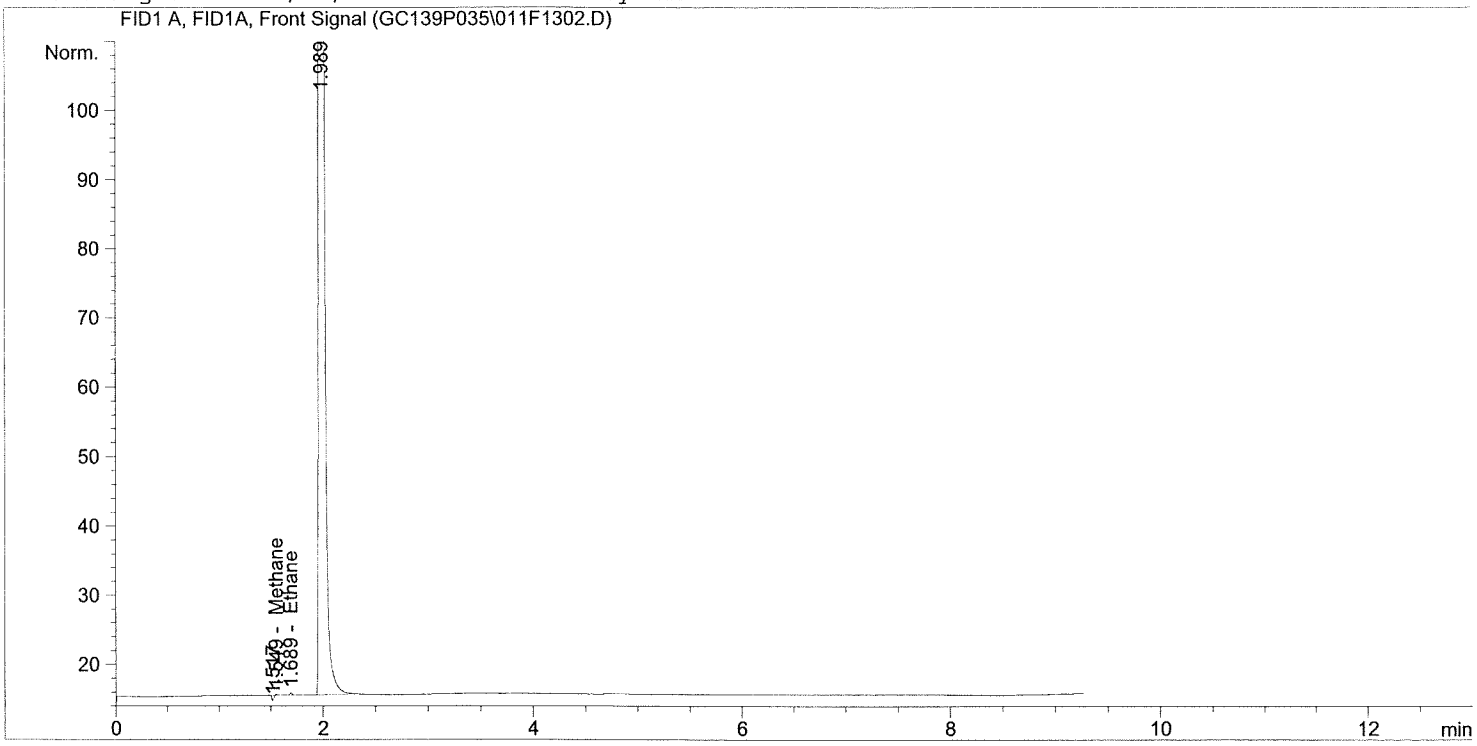
Name	Total Area [pA*s]	Amount [ppm]
as Propane	1887.86853	2.526e3
Methane	1.62295e-1	0.7582
Ethane	4.00025e-1	0.8162
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2527.5425

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\011F1302.D
Sample Name: Can00177-T10*101 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  13
Acq. Instrument  : Edith                             Location : Vial 11
Injection Date   : 2/20/2013 8:53:51 PM                   Inj :   2
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.549 PB     1.91249e-1    4.67173 8.93465e-1    Methane
  1.689 BB     4.66024e-1    2.04033 9.50842e-1    Ethane
  2.020            -             -          -      Propane
  2.919            -             -          -      Butane
  4.478            -             -          -      Pentane
  6.794            -             -          -      Benzene

Totals :                                 1.84431


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\011F1302.D
Sample Name: Can00177-T10*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1890.81873	2.530e3

Totals : 2529.9155

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

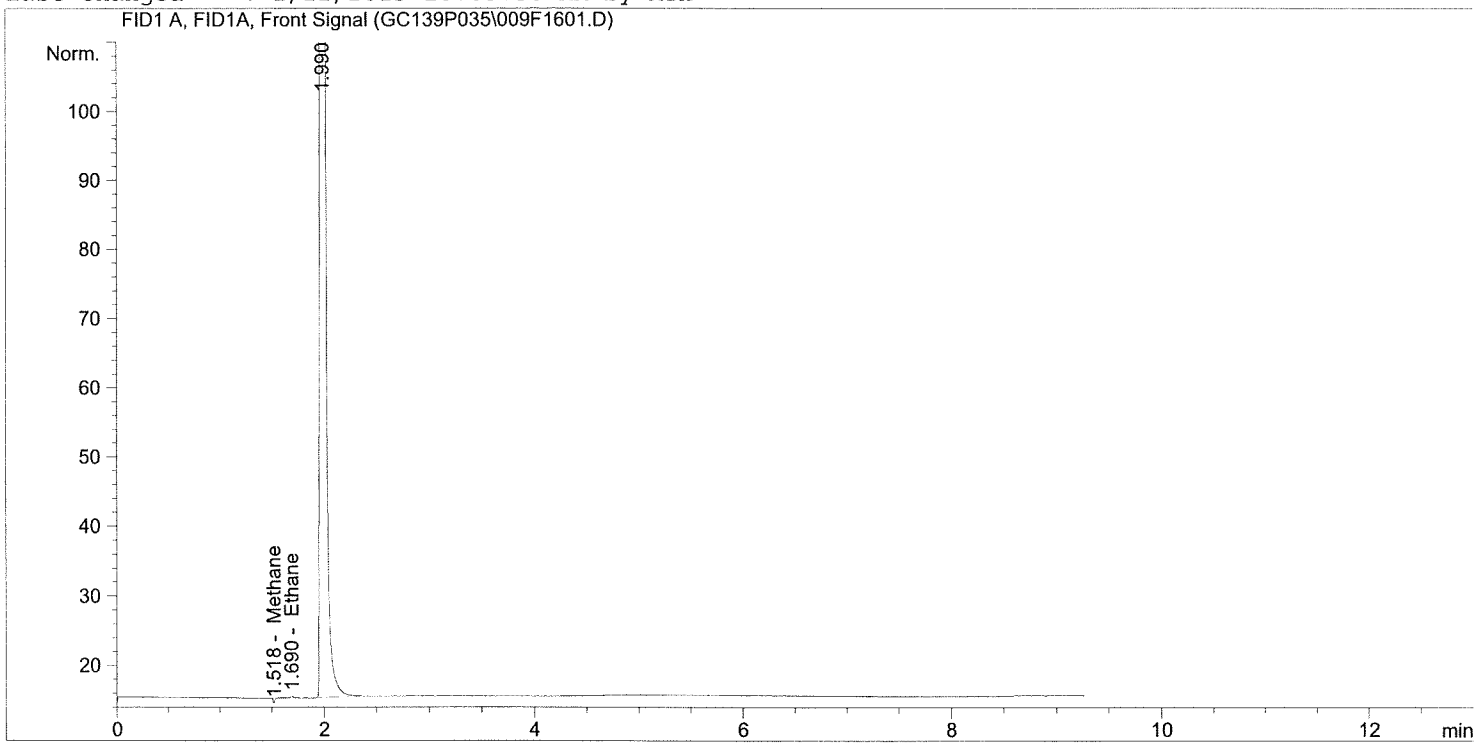
Name	Total Area [pA*s]	Amount [ppm]
as Propane	1890.81873	2.530e3
Methane	1.91249e-1	0.8935
Ethane	4.66024e-1	0.9508
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2531.7598

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\009F1601.D
Sample Name: Can00196-T11*101 0213-39

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  16
Acq. Instrument  : Edith                                 Location : Vial 9
Injection Date   : 2/20/2013 11:11:53 PM                      Inj :   1
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.518 BP N   8.74709e-1    4.24382    3.71211     Methane
  1.690 PB     6.59482e-1    2.04033    1.34556     Ethane
  2.020             -            -          -       Propane
  2.919             -            -          -       Butane
  4.478             -            -          -       Pentane
  6.794             -            -          -       Benzene

Totals :                                  5.05767


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\009F1601.D
Sample Name: Can00196-T11*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	2071.24414	2.771e3

Totals : 2771.3247

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

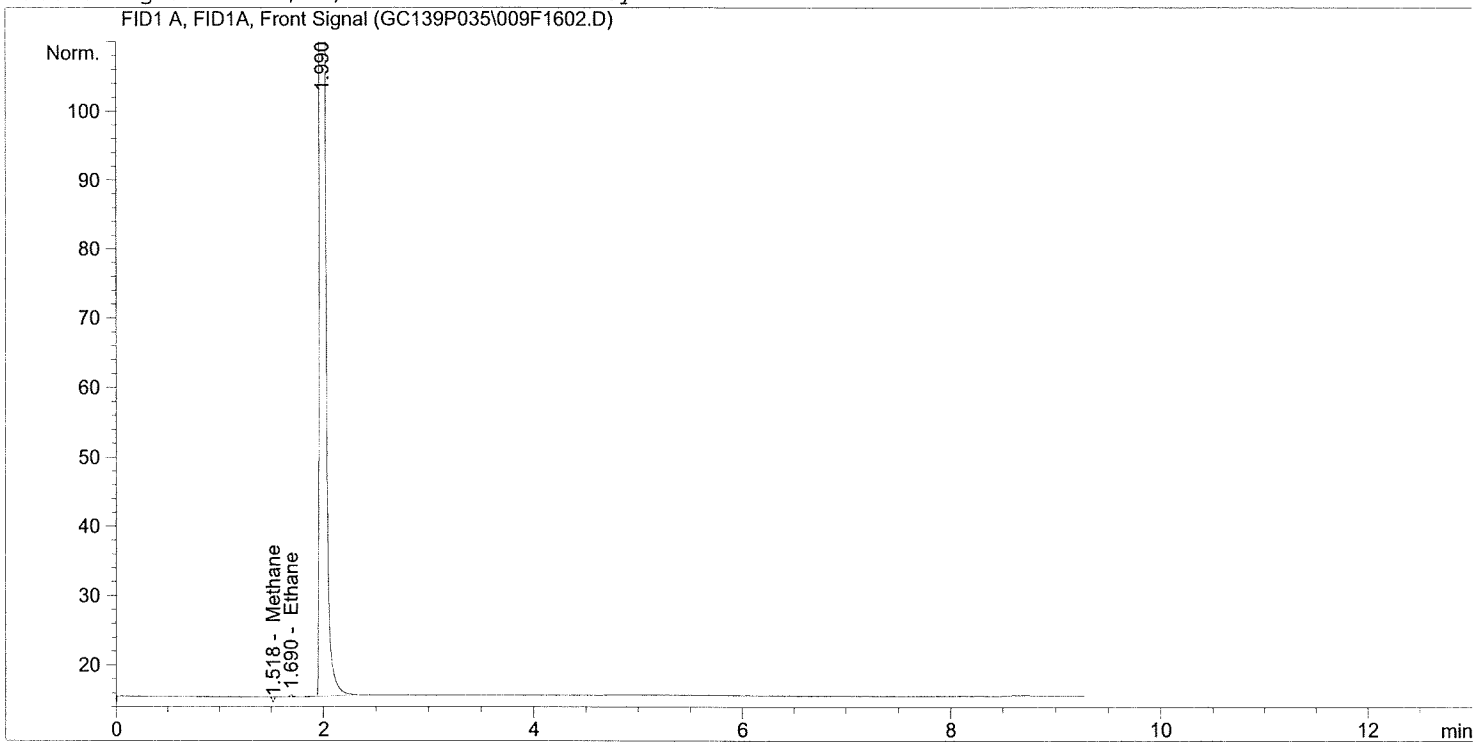
Name	Total Area [pA*s]	Amount [ppm]
as Propane	2071.24414	2.771e3
Methane	8.74709e-1	3.7121
Ethane	6.59482e-1	1.3456
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2776.3823

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\009F1602.D
Sample Name: Can00196-T11*101 0213-39

```
==========================================================================
Acq. Operator   : MTH                          Seq. Line :  16
Acq. Instrument : Edith                         Location : Vial 9
Injection Date  : 2/20/2013 11:26:16 PM              Inj :   2
                                               Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.518 BP N   8.97835e-1    4.23325    3.80076    Methane
  1.690 PB     5.21234e-1    2.04033    1.06349    Ethane
  2.020            -           -          -        Propane
  2.919            -           -          -        Butane
  4.478            -           -          -        Pentane
  6.794            -           -          -        Benzene

Totals :                                 4.86425


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\009F1602.D
Sample Name: Can00196-T11*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	2071.27734	2.771e3

Totals : 2771.3691

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

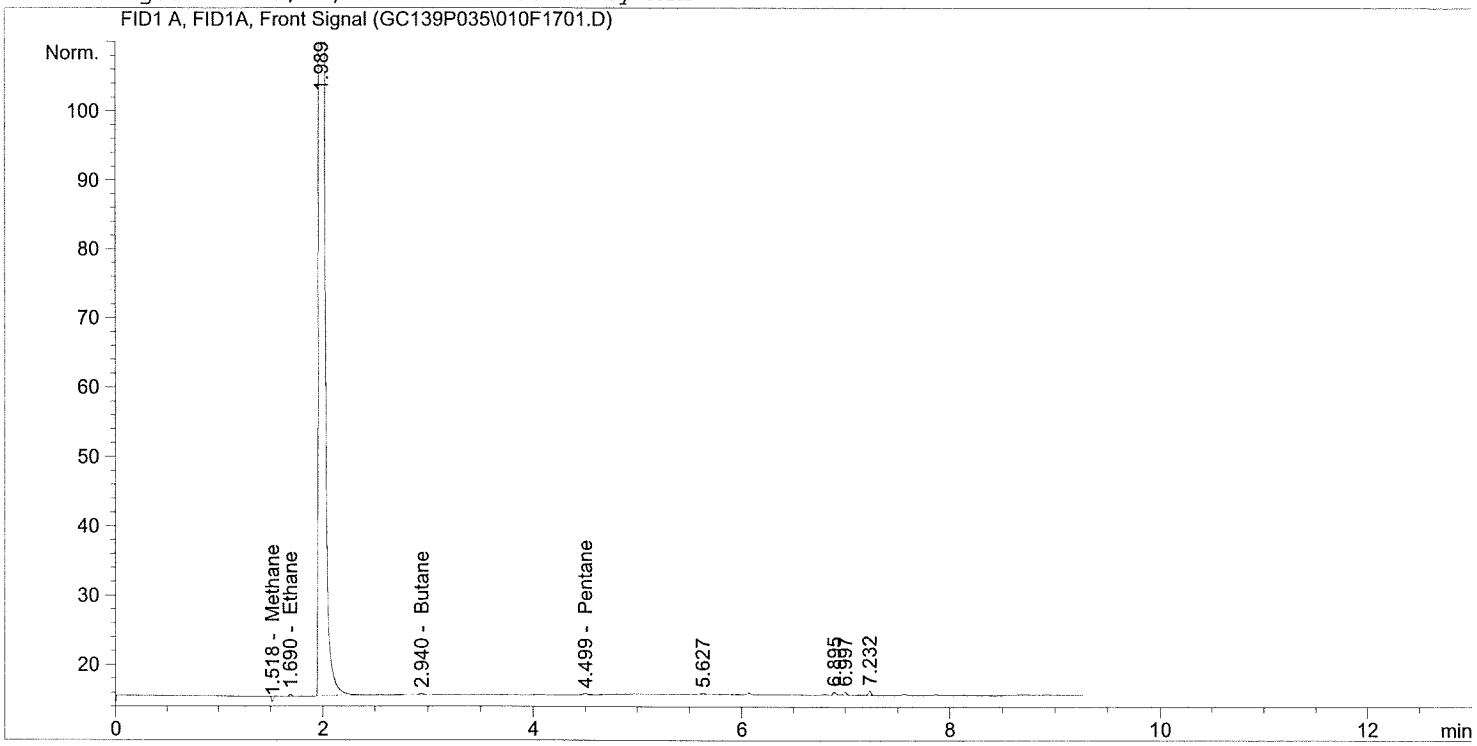
Name	Total Area [pA*s]	Amount [ppm]
as Propane	2071.27734	2.771e3
Methane	8.97835e-1	3.8008
Ethane	5.21234e-1	1.0635
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000

Totals : 2776.2333

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\010F1701.D
Sample Name: Can905-T12*101 0213-39

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  17
Acq. Instrument  : Edith                               Location : Vial 10
Injection Date   : 2/20/2013 11:54:31 PM                    Inj :   1
                                                     Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  1.518 BP N   8.85064e-1    4.23902    3.75180    Methane
  1.690 PB     7.10067e-1    2.04033    1.44877    Ethane
  2.020            -             -          -      Propane
  2.940 BB     6.51862e-1 9.99168e-1 6.51320e-1    Butane
  4.499 BB     6.20008e-1 7.48664e-1 4.64177e-1    Pentane
  6.794            -             -          -      Benzene

Totals :                                 6.31607


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\010F1701.D
Sample Name: Can905-T12*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	2025.05054	2.710e3
as Pentane	3.700	14.000	3.92110	3.1134

Totals : 2712.6310

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

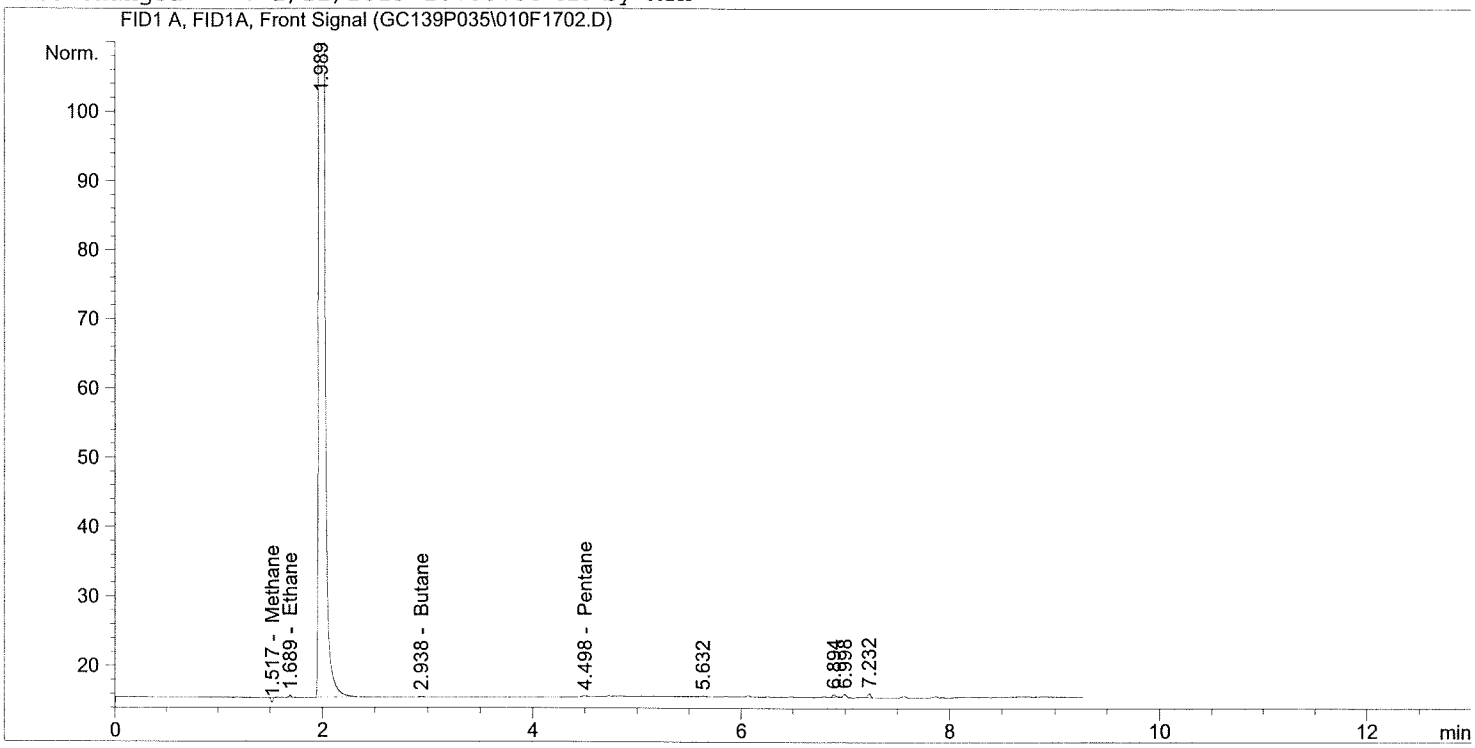
Name	Total Area [pA*s]	Amount [ppm]
as Propane	2025.05054	2.710e3
as Pentane	3.92110	3.1134
Methane	8.85064e-1	3.7518
Ethane	7.10067e-1	1.4488
Propane	0.00000	0.0000
Butane	6.51862e-1	0.6513
Pentane	6.20008e-1	0.4642
Benzene	0.00000	0.0000

Totals : 2718.9470

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\010F1702.D
Sample Name: Can905-T12*101 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  17
Acq. Instrument  : Edith                             Location : Vial 10
Injection Date   : 2/21/2013 12:08:50 AM                  Inj :   2
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.517 BP N   8.97508e-1    4.23340    3.79951     Methane
  1.689 BP     4.36066e-1    2.04033 8.89718e-1     Ethane
  2.020            -            -          -        Propane
  2.938 BB     5.18723e-1 9.99168e-1 5.18291e-1     Butane
  4.498 BB     6.85465e-1 7.48664e-1 5.13183e-1     Pentane
  6.794            -            -          -        Benzene

Totals :                                 5.72070


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\010F1702.D
Sample Name: Can905-T12*101 0213-39

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	2017.55298	2.699e3
as Pentane	3.700	14.000	4.01755	3.1899

Totals : 2702.6758

==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

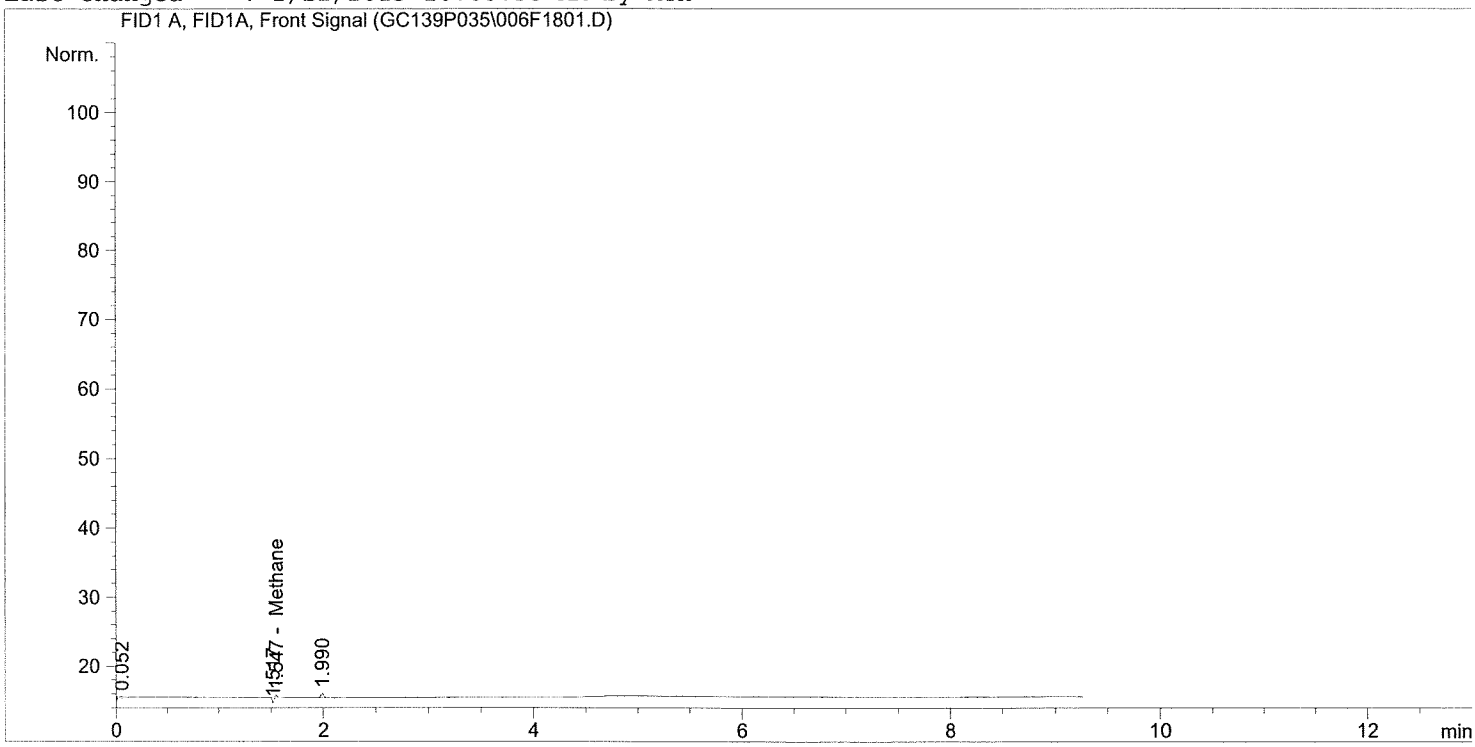
Name	Total Area [pA*s]	Amount [ppm]
as Propane	2017.55298	2.699e3
as Pentane	4.01755	3.1899
Methane	8.97508e-1	3.7995
Ethane	4.36066e-1	0.8897
Propane	0.00000	0.0000
Butane	5.18723e-1	0.5183
Pentane	6.85465e-1	0.5132
Benzene	0.00000	0.0000

Totals : 2708.3965

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\006F1801.D
Sample Name: Room air blank

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  18
Acq. Instrument  : Edith                             Location : Vial 6
Injection Date   : 2/21/2013 12:37:09 AM                  Inj :   1
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.547 PB     4.54704e-1    4.62271    2.10196     Methane
  1.675           -             -          -        Ethane
  2.020           -             -          -        Propane
  2.919           -             -          -        Butane
  4.478           -             -          -        Pentane
  6.794           -             -          -        Benzene

Totals :                                 2.10196


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\006F1801.D
Sample Name: Room air blank

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1.27619	1.7075
Totals :				1.7075

==========
Final Summed Peaks Report
==========

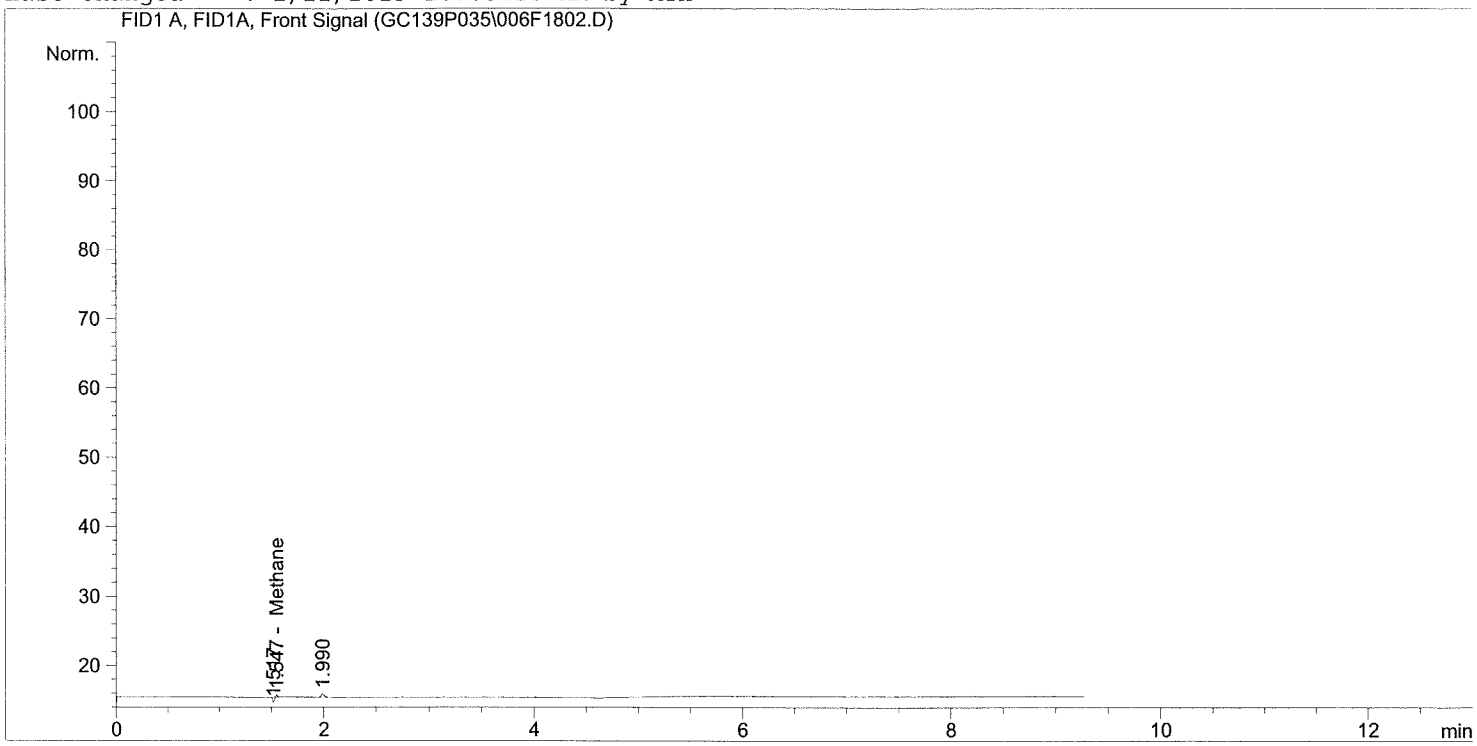
Signal 1: FID1 A, FID1A, Front Signal

Name	Total Area [pA*s]	Amount [ppm]
as Propane	1.27619	1.7075
Methane	4.54704e-1	2.1020
Ethane	0.00000	0.0000
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000
Totals :		3.8095

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\006F1802.D
Sample Name: Room air blank

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  18
Acq. Instrument  : Edith                                 Location : Vial 6
Injection Date   : 2/21/2013 12:51:10 AM                      Inj :   2
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  1.547 PB     4.89796e-1    4.56617    2.23649     Methane
  1.675           -             -          -        Ethane
  2.020           -             -          -        Propane
  2.919           -             -          -        Butane
  4.478           -             -          -        Pentane
  6.794           -             -          -        Benzene

Totals :                                 2.23649


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\006F1802.D
Sample Name: Room air blank

Warning : Calibrated compound(s) not found

Summed Peaks Report

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1.00279	1.3417
Totals :				1.3417

Final Summed Peaks Report

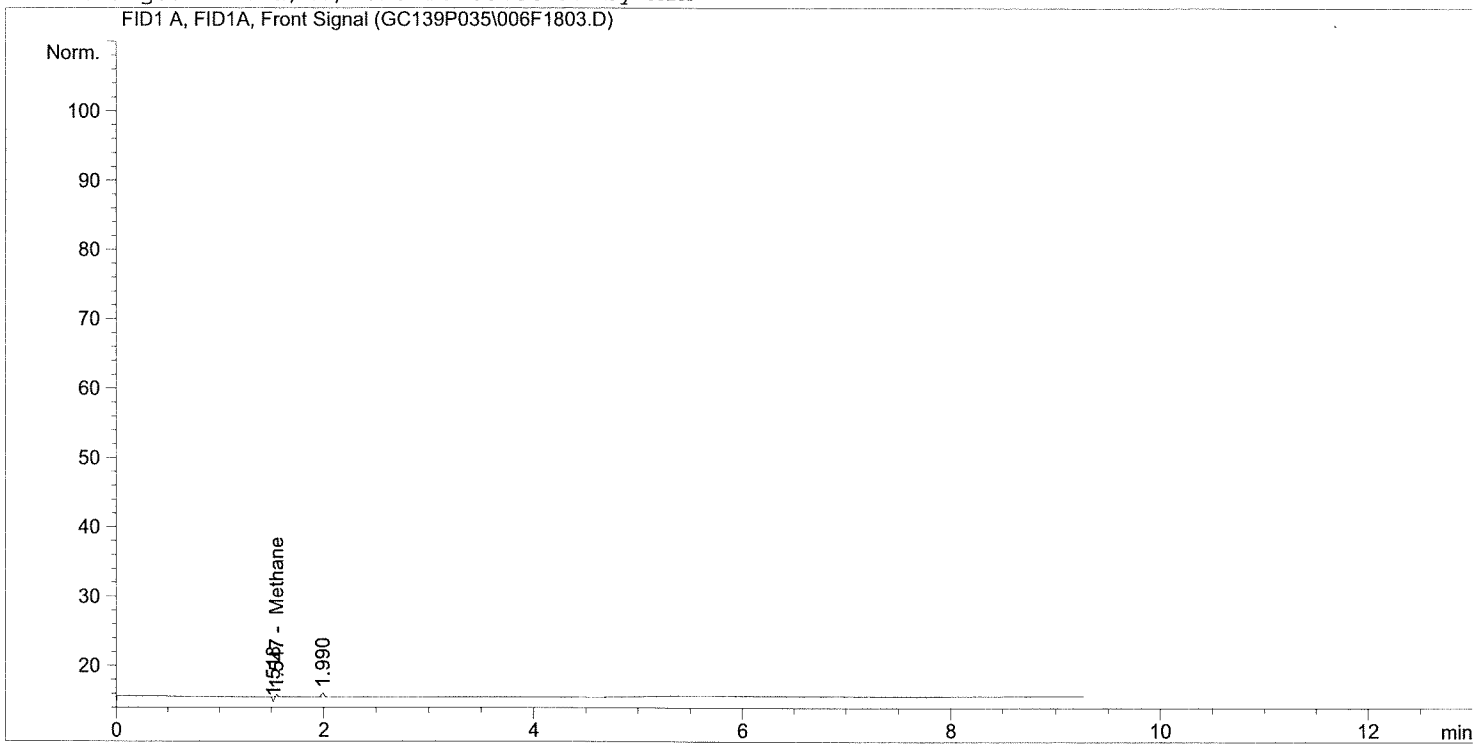
Signal 1: FID1 A, FID1A, Front Signal

Name	Total Area [pA*s]	Amount [ppm]
as Propane	1.00279	1.3417
Methane	4.89796e-1	2.2365
Ethane	0.00000	0.0000
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000
Totals :		3.5782

*** End of Report ***

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\006F1803.D
Sample Name: Room air blank

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  18
Acq. Instrument  : Edith                                 Location : Vial 6
Injection Date   : 2/21/2013 1:05:22 AM                      Inj :   3
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.547 PB     4.72070e-1    4.59368    2.16854     Methane
  1.675           -             -          -        Ethane
  2.020           -             -          -        Propane
  2.919           -             -          -        Butane
  4.478           -             -          -        Pentane
  6.794           -             -          -        Benzene

Totals :                                 2.16854


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\006F1803.D
Sample Name: Room air blank

Warning : Calibrated compound(s) not found

==========
Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Start Time [min]	End Time [min]	Total Area [pA*s]	Amount [ppm]
as Propane	1.850	2.400	1.05654	1.4136
Totals :				1.4136

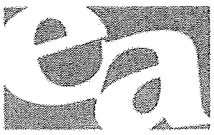
==========
Final Summed Peaks Report
==========

Signal 1: FID1 A, FID1A, Front Signal

Name	Total Area [pA*s]	Amount [ppm]
as Propane	1.05654	1.4136
Methane	4.72070e-1	2.1685
Ethane	0.00000	0.0000
Propane	0.00000	0.0000
Butane	0.00000	0.0000
Pentane	0.00000	0.0000
Benzene	0.00000	0.0000
Totals :		3.5822

*** End of Report ***

Calibration Curve Chromatograms



Calibration Table

Calib. Data Modified : 2/22/2013 9:54:40 AM

Rel. Reference Window : 0.000 %
Abs. Reference Window : 0.100 min
Rel. Non-ref. Window : 0.000 %
Abs. Non-ref. Window : 0.050 min
Uncalibrated Peaks : not reported
Partial Calibration : Yes, identified peaks are recalibrated
Correct All Ret. Times: No, only for identified peaks

Curve Type : Linear
Origin : Connected
Weight : Quadratic (Amnt)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Signal 1: FID1 A, FID1A, Front Signal
Signal 2: FID3 B, FID3B, Back Signal

RetTime [min]	Sig	Lvl	Amount [ppm]	Area	Amt/Area	Ref	Grp	Name
1.540	1	1	2.00000	4.37757e-1	4.56874			Methane
		2	5.00000	1.16765	4.28209			
		3	10.00000	2.44619	4.08798			
		4	40.00000	10.28226	3.89020			
		5	100.00000	26.22889	3.81259			
		6	1003.00000	268.53153	3.73513			
		7	3009.00000	783.04028	3.84271			
		8	1.00300e4	2649.70231	3.78533			
1.675	1	1	2.00000	9.97718e-1	2.00457			Ethane
		2	5.00000	2.40481	2.07917			
		3	10.00000	4.83425	2.06857			
		4	40.00000	19.79965	2.02024			
		5	100.00000	50.08695	1.99653			
		6	1000.00000	513.47753	1.94750			
		7	3000.00000	1497.39612	2.00348			
		8	1.00000e4	5065.17952	1.97426			
2.020	1	1	2.00000	1.49449	1.33825			Propane
		2	5.00000	3.68075	1.35842			
		3	10.00000	7.26176	1.37708			
		4	40.00000	29.75707	1.34422			
		5	100.00000	74.91546	1.33484			
		6	1000.00000	768.88849	1.30058			
		7	3000.00000	2245.87280	1.33578			
		8	1.00000e4	7598.40137	1.31607			
2.919	1	1	2.00000	2.02348	9.88395e-1			Butane
		2	5.00000	4.91373	1.01756			
		3	10.00000	9.74995	1.02565			

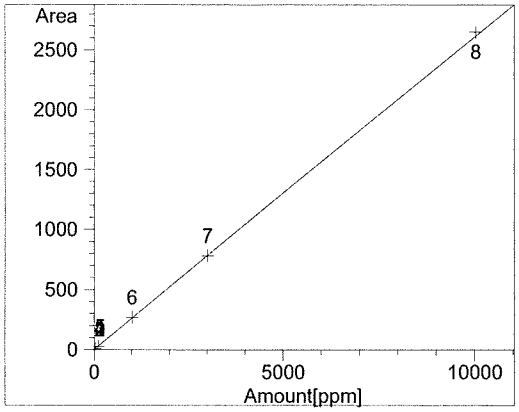
Method G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M

RetTime [min]	Sig	Lvl	Amount [ppm]	Area	Amt/Area	Ref Grp	Name
		4	40.00000	39.59717	1.01017		
		5	100.00000	99.49693	1.00506		
		6	992.00000	1014.26544	9.78048e-1		
		7	2976.00000	2958.55501	1.00590		
		8	9920.00000	9991.57552	9.92836e-1		
4.478	1	1	2.00000	2.68427	7.45082e-1		Pentane
		2	5.00000	6.28756	7.95221e-1		
		3	10.00000	12.30534	8.12655e-1		
		4	40.00000	49.32075	8.11018e-1		
		5	100.00000	123.75704	8.08035e-1		
6.794	1	71	5.00000	7.64371	6.54132e-1		Benzene
		72	30.00000	44.94586	6.67470e-1		
		73	120.00000	182.05964	6.59125e-1		
		74	300.00000	447.38390	6.70565e-1		

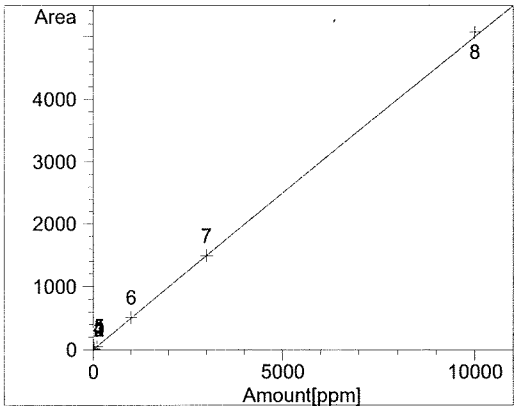
Peak Sum Table

Name	StartTime [min]	EndTime [min]	Use Reference	Response factor	Multiplier	ISTD Peak
as Ethane	1.550	1.850	None	2.0118	1.0000	None
as Propane	1.850	2.400	None	1.3380	1.0000	None
as Butane	2.400	3.700	None	1.0000	1.0000	None
as Pentane	3.700	14.000	None	7.9400e-1	1.0000	None

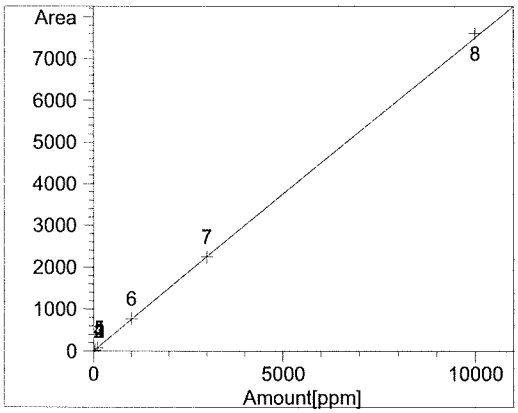
Calibration Curves



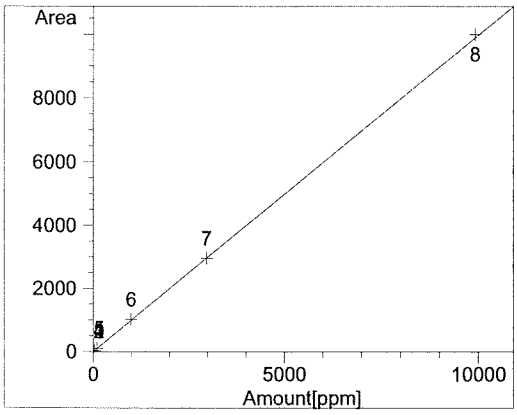
Methane at exp. RT: 1.540
FID1 A, FID1A, Front Signal
Correlation: 0.99973
Residual Std. Dev.: 13.97994
Formula: y = mx + b
m: 2.60850e-1
b: -9.35923e-2
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.04
Level 4 : 0.0025
Level 5 : 0.0004
Level 6 : 3.97611e-006
Level 7 : 4.4179e-007
Level 8 : 3.97611e-008



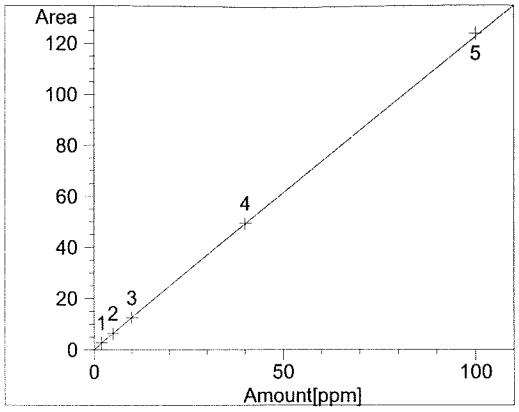
Ethane at exp. RT: 1.675
FID1 A, FID1A, Front Signal
Correlation: 0.99973
Residual Std. Dev.: 30.55901
Formula: y = mx + b
m: 4.99173e-1
b: -1.81110e-2
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.04
Level 4 : 0.0025
Level 5 : 0.0004
Level 6 : 4e-006
Level 7 : 4.44444e-007
Level 8 : 4e-008



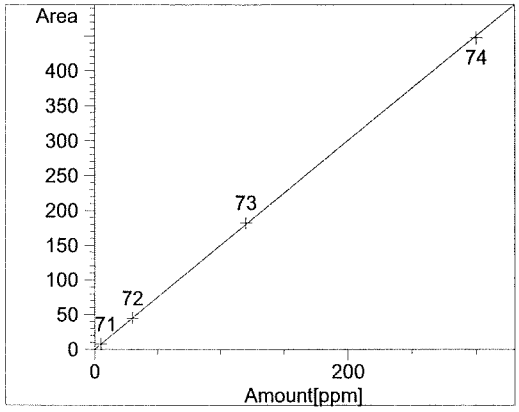
Propane at exp. RT: 2.020
FID1 A, FID1A, Front Signal
Correlation: 0.99983
Residual Std. Dev.: 41.97536
Formula: y = mx + b
m: 7.49746e-1
b: -2.14768e-2
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.04
Level 4 : 0.0025
Level 5 : 0.0004
Level 6 : 4e-006
Level 7 : 4.44444e-007
Level 8 : 4e-008



Butane at exp. RT: 2.919
FID1 A, FID1A, Front Signal
Correlation: 0.99985
Residual Std. Dev.: 45.40458
Formula: y = mx + b
m: 9.96331e-1
b: 9.00351e-3
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.04
Level 4 : 0.0025
Level 5 : 0.0004
Level 6 : 4.06478e-006
Level 7 : 4.51642e-007
Level 8 : 4.06478e-008



Pentane at exp. RT: 4.478
FID1 A, FID1A, Front Signal
Correlation: 0.99993
Residual Std. Dev.: 0.76715
Formula: y = mx + b
m: 1.22226
b: 2.26906e-1
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.04
Level 4 : 0.0025
Level 5 : 0.0004

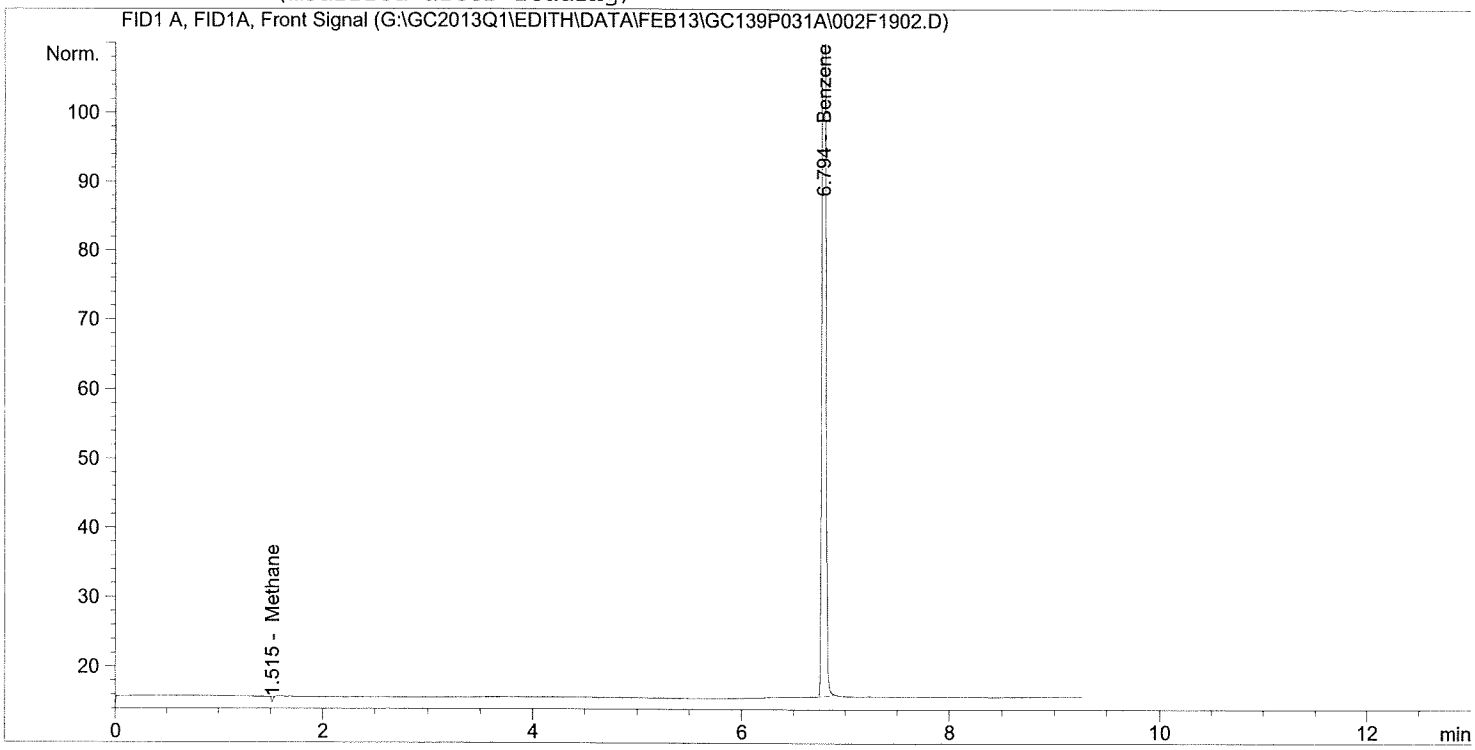


Benzene at exp. RT: 6.794
FID1 A, FID1A, Front Signal
Correlation: 0.99997
Residual Std. Dev.: 2.42287
Formula: y = mx + b
m: 1.50034
b: 1.38827e-1
x: Amount
y: Area
Calibration Level Weights:
Level 71 : 1
Level 72 : 0.027778
Level 73 : 0.001736
Level 74 : 0.000278

==========

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P031A\002F1902.D
Sample Name: gc139p033 #B4 ENV(1=0,6=450)

```
==========================================================================
Acq. Operator    : KAM                              Seq. Line :  19
Acq. Instrument  : Edith                             Location : Vial 2
Injection Date   : 2/18/2013 8:22:09 PM                  Inj :   2
                                                   Inj Volume : 250 µl
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 9:59:49 AM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 9:54:40 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

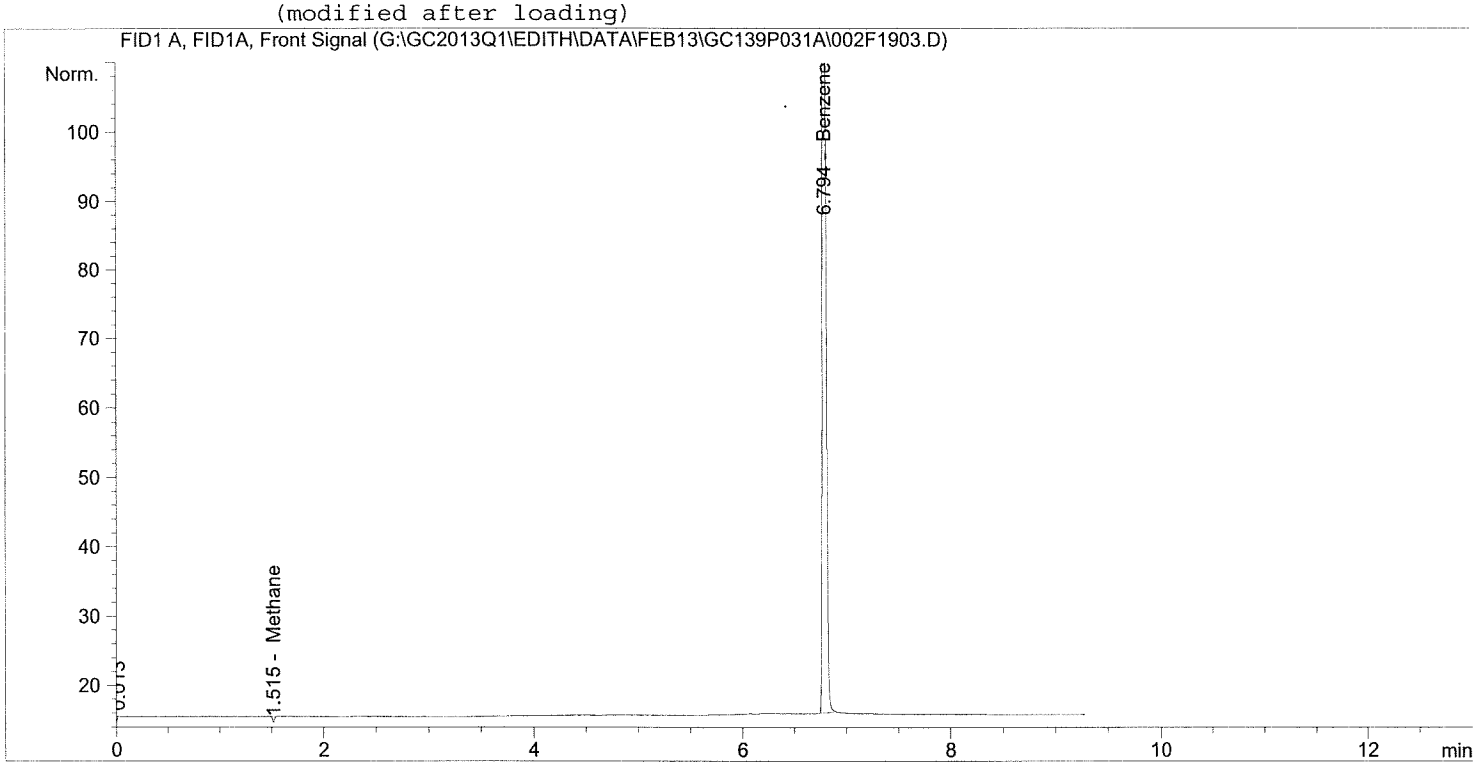
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.515 BP N      1.02669    4.18310    4.29474    Methane
  1.675            -          -          -         Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794 BB      446.07623 6.66307e-1  297.22379    Benzene

Totals :                              301.51853


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P031A\002F1903.D
Sample Name: gc139p033 #B4 ENV(1=0,6=450)

```
======================================================================
Acq. Operator    : KAM                          Seq. Line :  19
Acq. Instrument  : Edith                         Location : Vial 2
Injection Date   : 2/18/2013 8:39:23 PM               Inj :   3
                                                Inj Volume : 250 µl
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 9:59:49 AM by MTH
                   (modified after loading)
```




```
======================================================================
                      External Standard Report
======================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 9:54:40 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

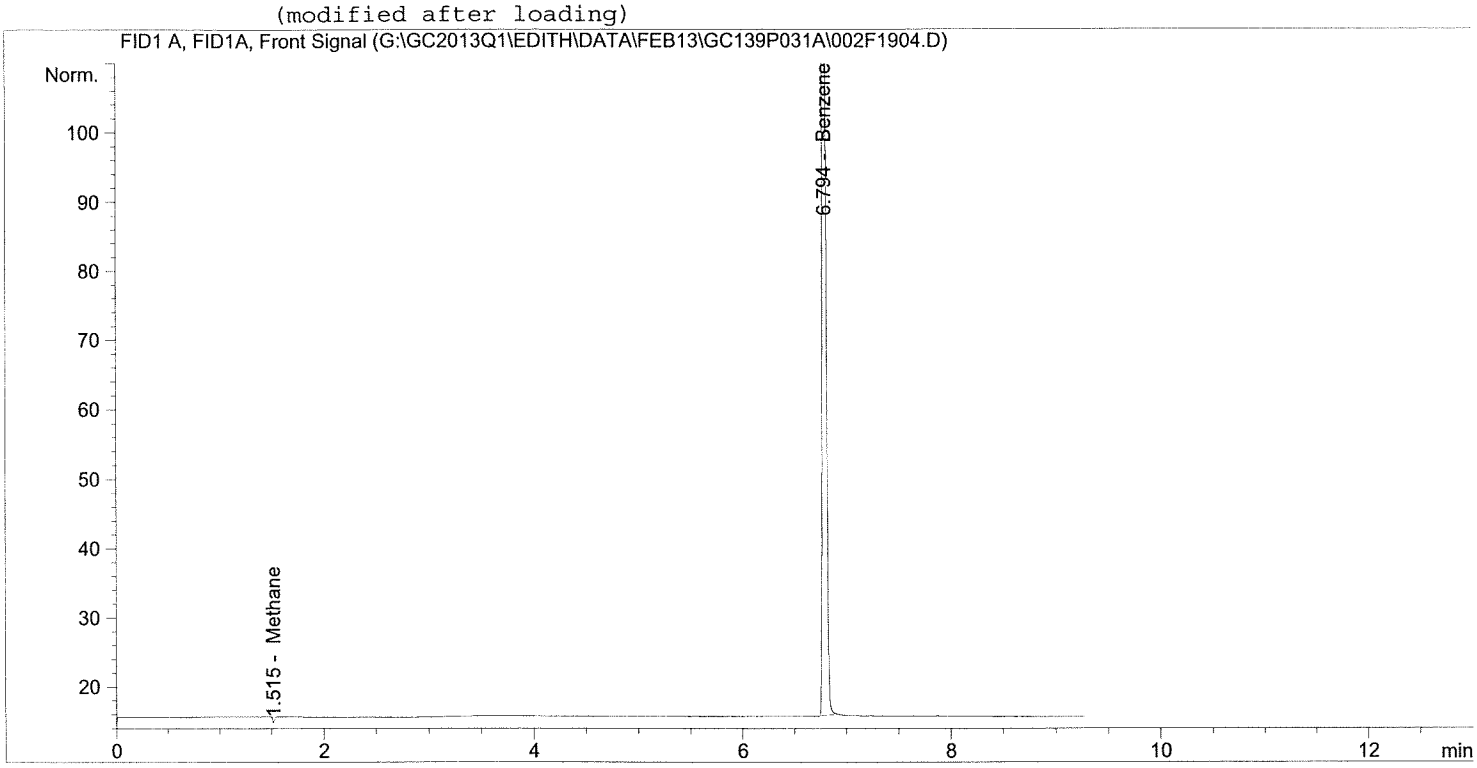
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.515 BP N      1.01875    4.18582    4.26432    Methane
  1.675            -          -          -         Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794 BB      448.62961 6.66308e-1  298.92565    Benzene

Totals :                               303.18997


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P031A\002F1904.D
Sample Name: gc139p033 #B4 ENV(1=0,6=450)

```
==========================================================================
Acq. Operator    : KAM                                Seq. Line :  19
Acq. Instrument  : Edith                               Location : Vial 2
Injection Date   : 2/18/2013 8:56:40 PM                     Inj :   4
                                                      Inj Volume : 250 µl
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 9:59:49 AM by MTH
                   (modified after loading)
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 9:54:40 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

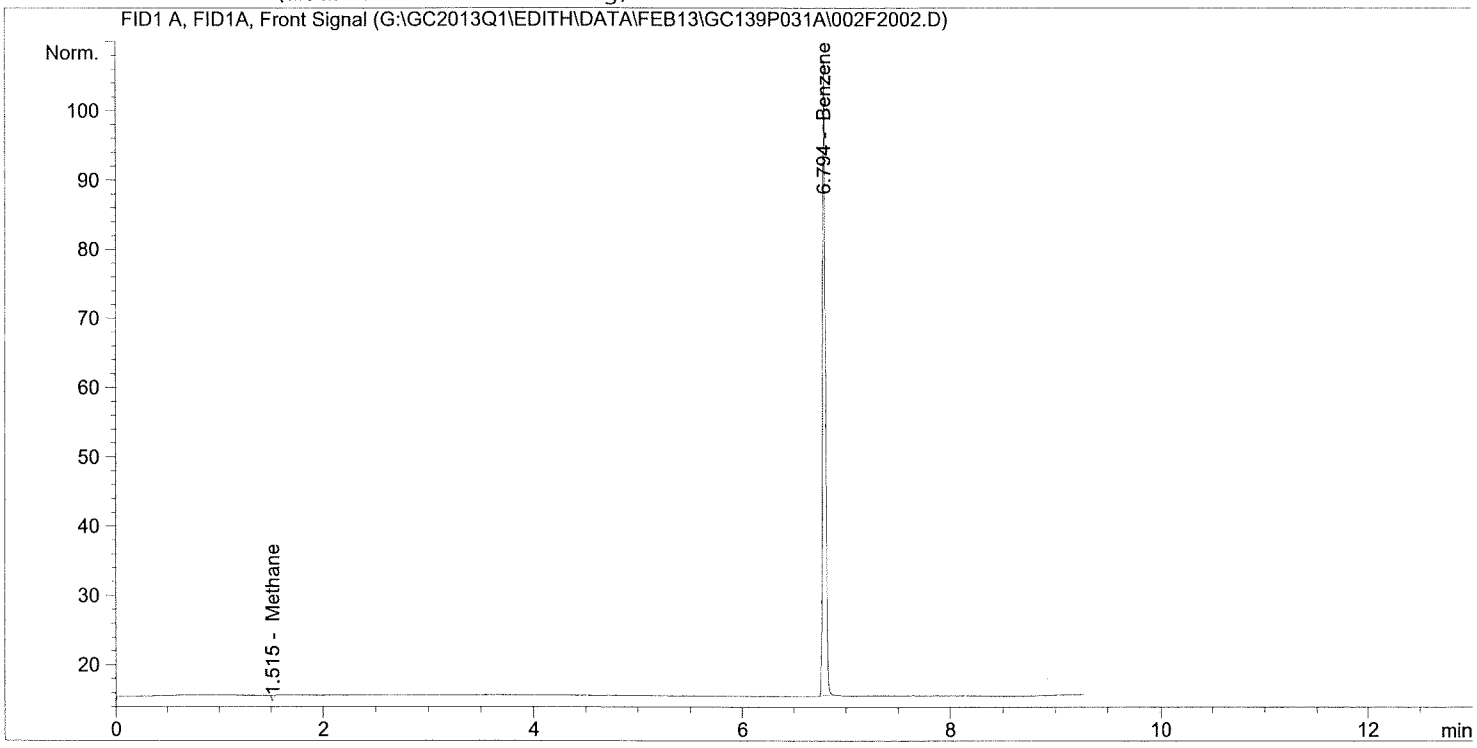
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.515 BP N      1.00438    4.19086    4.20921     Methane
  1.675            -          -          -         Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794 BB       447.44586 6.66308e-1  298.13667    Benzene

Totals :                                302.34588


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P031A\002F2002.D
Sample Name: gc139p033 #B3 ENV(1=600,6=400)

```
==========================================================================
Acq. Operator    : KAM                              Seq. Line :  20
Acq. Instrument  : Edith                             Location : Vial 2
Injection Date   : 2/18/2013 9:30:46 PM                   Inj :   2
                                                   Inj Volume : 250 µl
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 9:59:49 AM by MTH
                   (modified after loading)
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 9:54:40 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

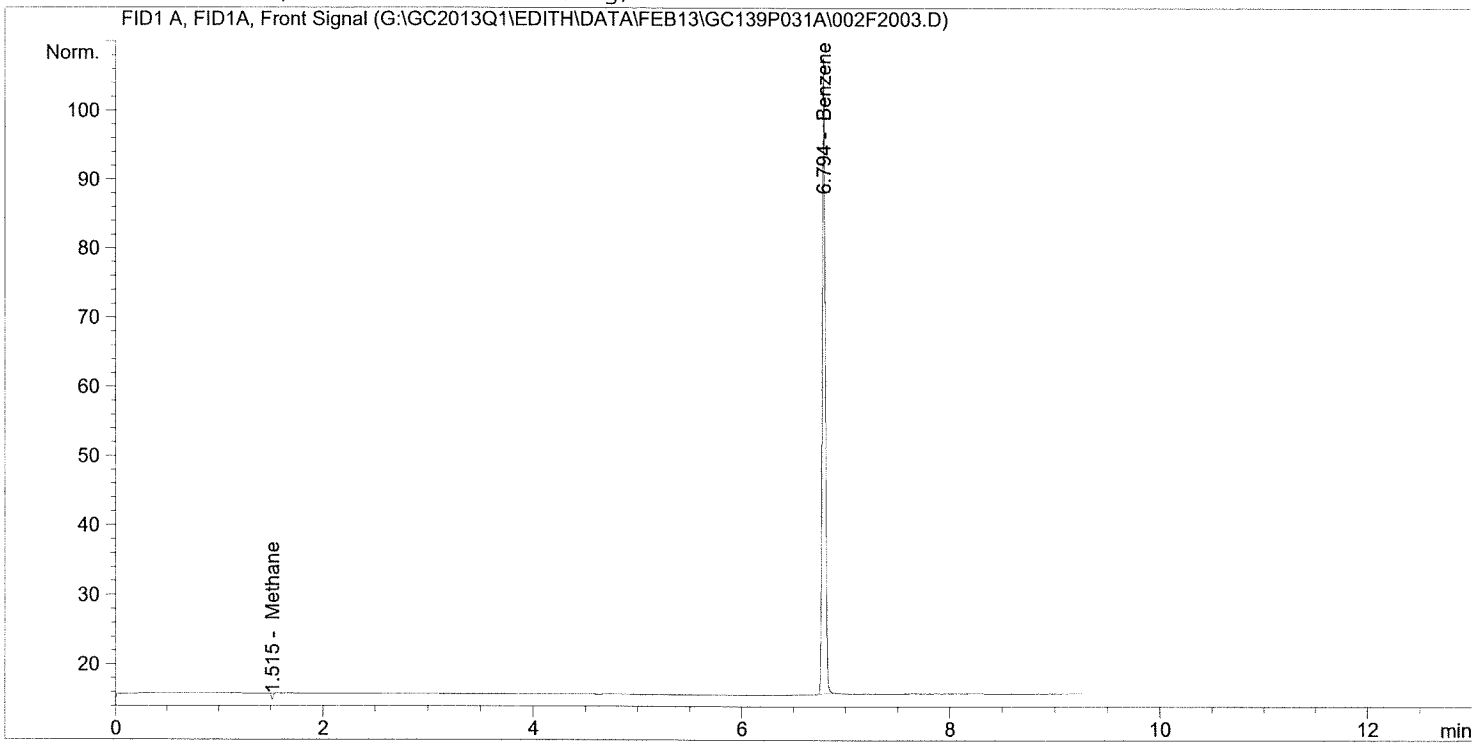
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]           [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  1.515 BP N      1.03011    4.18194    4.30787    Methane
  1.675            -          -          -         Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794 BB      181.08205 6.66004e-1  120.60130    Benzene

Totals :                               124.90917


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P031A\002F2003.D
Sample Name: gc139p033 #B3 ENV(1=600,6=400)

```
==========================================================================
Acq. Operator    : KAM                              Seq. Line :  20
Acq. Instrument  : Edith                             Location : Vial 2
Injection Date   : 2/18/2013 9:47:49 PM                  Inj :   3
                                                   Inj Volume : 250 µl
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 9:59:49 AM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 9:54:40 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

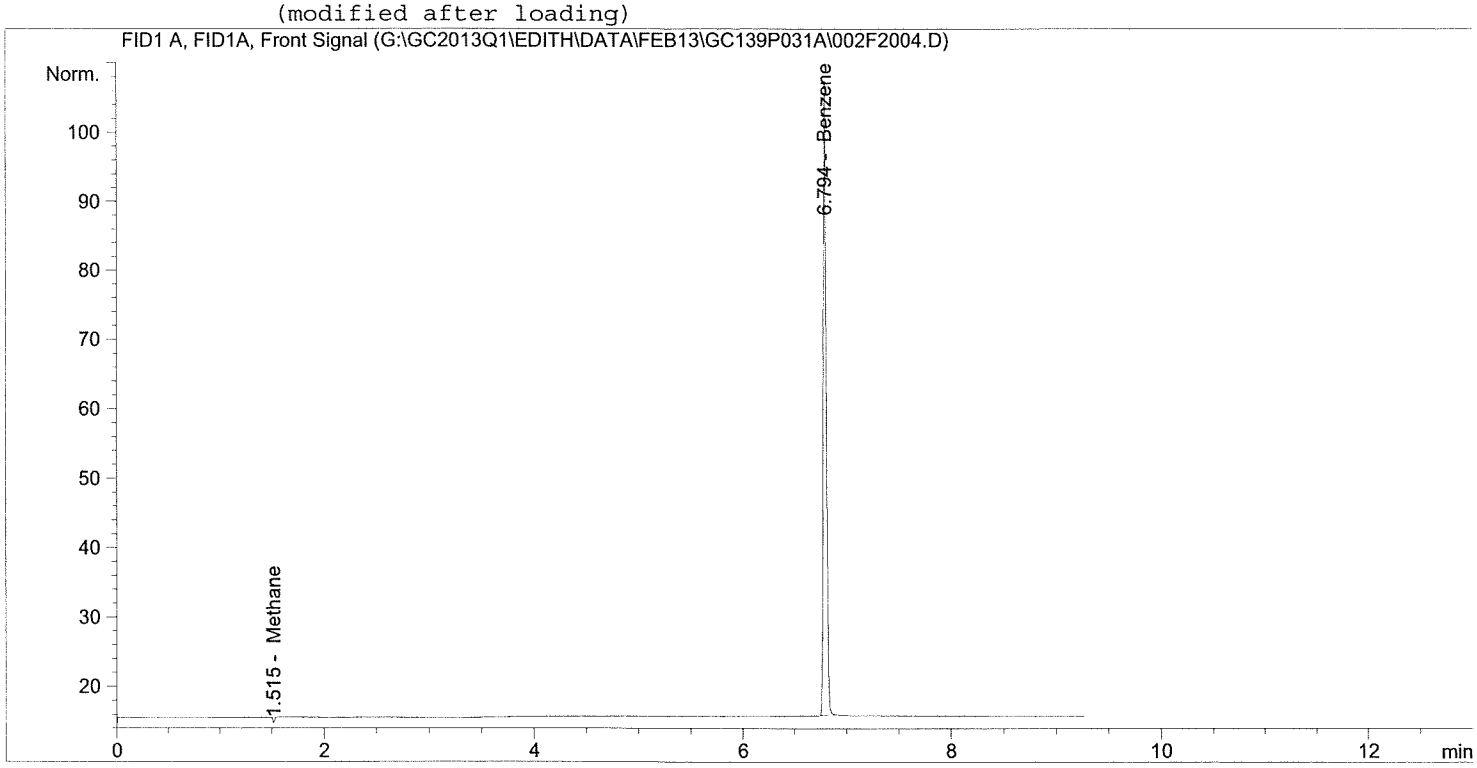
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.515 BP N      1.04917    4.17561    4.38093    Methane
  1.675            -          -          -         Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794 BB      182.36560 6.66007e-1  121.45680    Benzene

Totals :                              125.83773


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P031A\002F2004.D
Sample Name: gc139p033 #B3 ENV(1=600,6=400)

```
==========================================================================
Acq. Operator    : KAM                              Seq. Line :  20
Acq. Instrument  : Edith                             Location : Vial 2
Injection Date   : 2/18/2013 10:04:49 PM                  Inj :  4
                                                   Inj Volume : 250 µl
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 9:59:49 AM by MTH
                   (modified after loading)
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 9:54:40 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

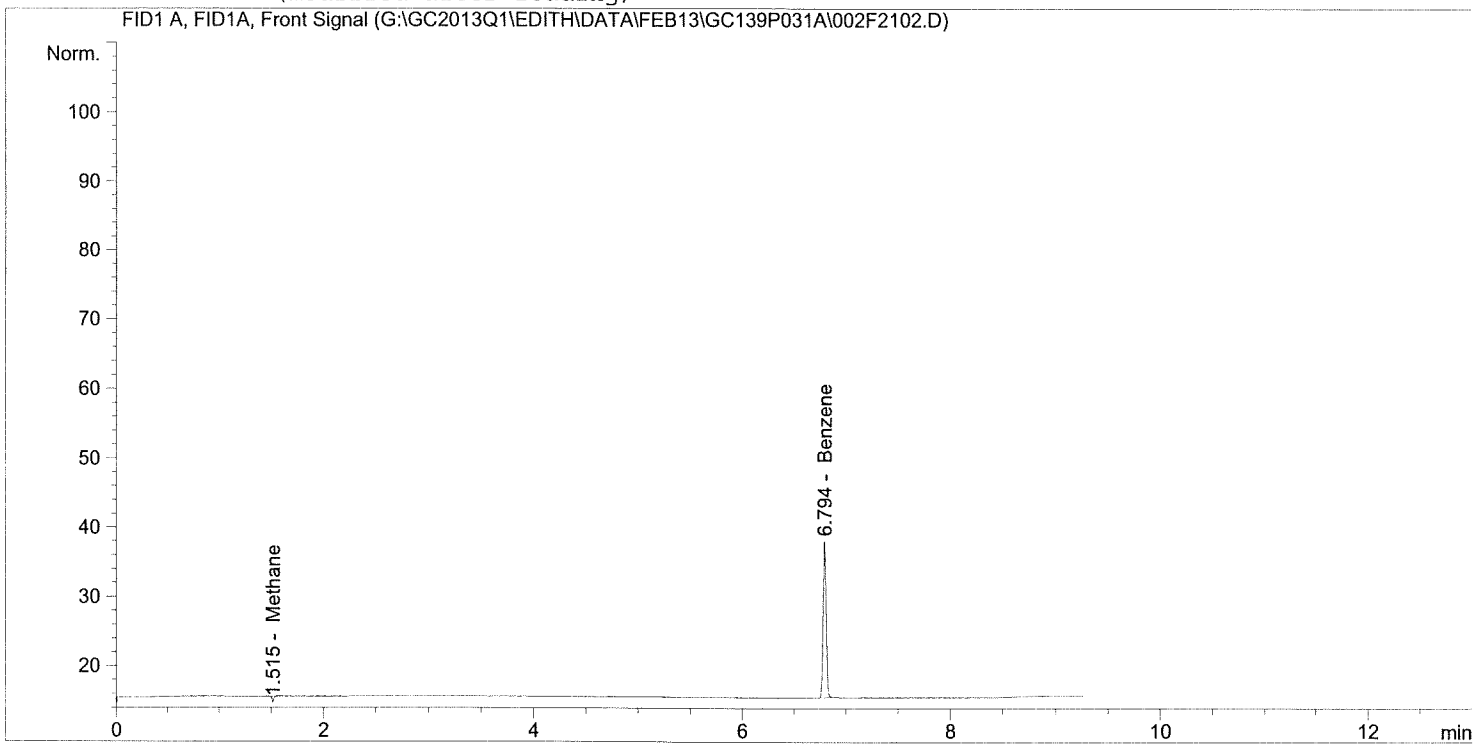
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.515	BP N	9.88172e-1	4.19672	4.14708		Methane
1.675		-	-	-		Ethane
2.020		-	-	-		Propane
2.919		-	-	-		Butane
4.478		-	-	-		Pentane
6.794	BB	182.73128	6.66008e-1	121.70053		Benzene

Totals : 125.84761

1 Warnings or Errors :

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P031A\002F2102.D
Sample Name: gc139p033 #B2 ENV(1=900,6=100)

```
==========================================================================
Acq. Operator    : KAM                              Seq. Line :  21
Acq. Instrument  : Edith                             Location : Vial 2
Injection Date   : 2/18/2013 10:39:13 PM                  Inj :   2
                                                   Inj Volume : 250 µl
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 9:59:49 AM by MTH
                   (modified after loading)
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 9:54:40 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

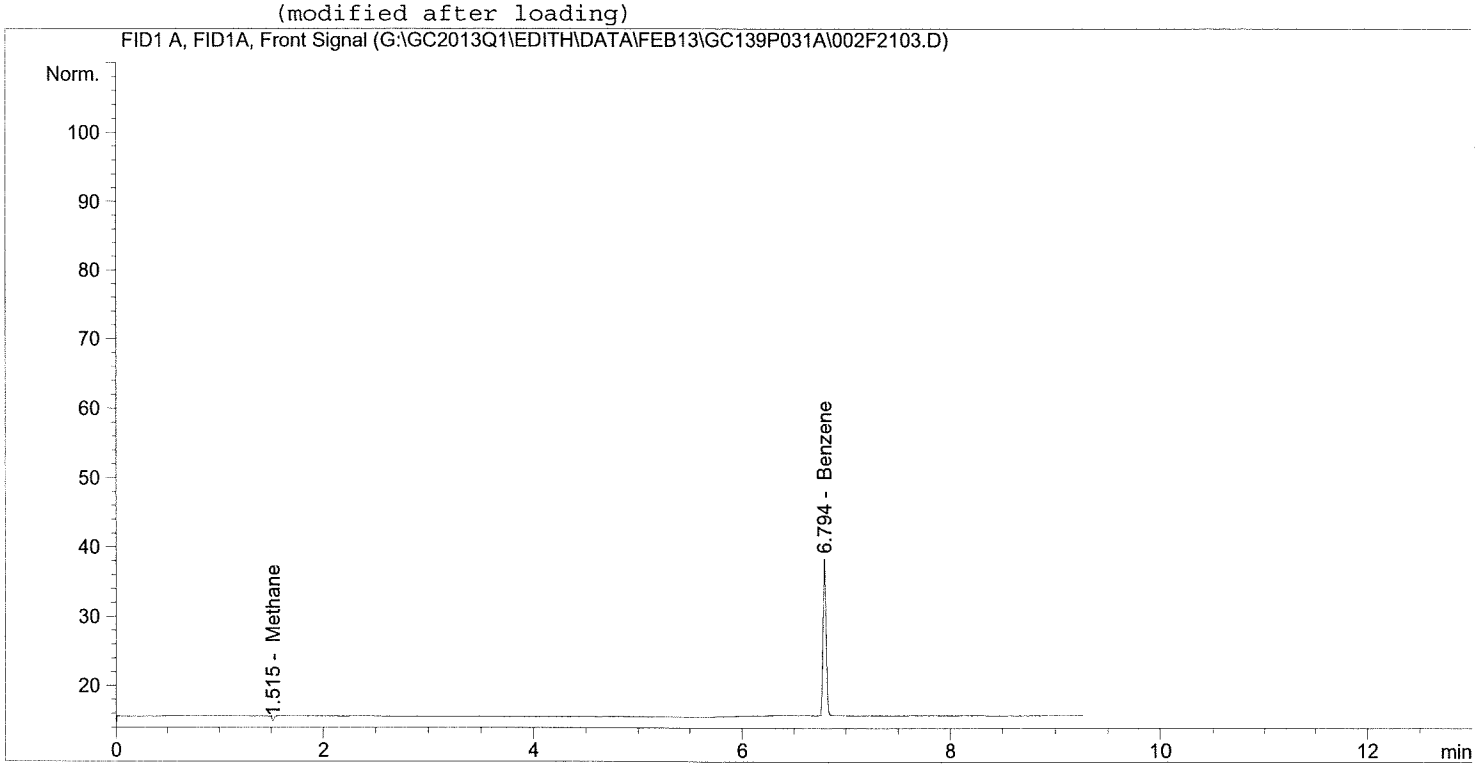
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.515 BP N      1.03095    4.18165    4.31107    Methane
  1.675            -          -          -         Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794 BB       44.79617 6.64449e-1   29.76477    Benzene

Totals :                                34.07584


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P031A\002F2103.D
Sample Name: gc139p033 #B2 ENV(1=900,6=100)

```
==========================================================================
Acq. Operator    : KAM                                  Seq. Line :  21
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 2/18/2013 10:56:06 PM                      Inj :   3
                                                       Inj Volume : 250 µl
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 9:59:49 AM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 9:54:40 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

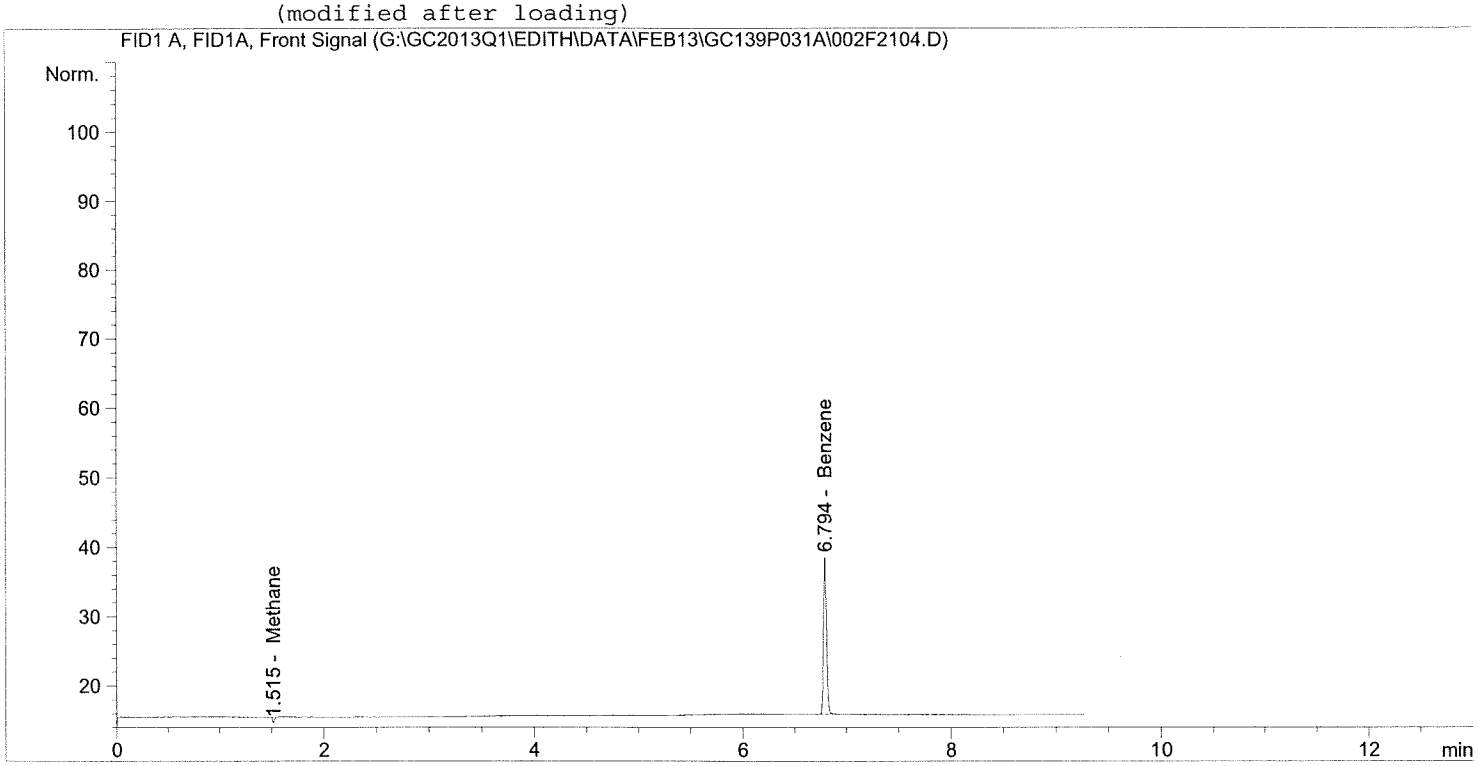
Signal 1: FID1 A, FID1A, Front Signal
```

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.515	BP N	1.04118	4.17823	4.35031		Methane
1.675		-	-	-		Ethane
2.020		-	-	-		Propane
2.919		-	-	-		Butane
4.478		-	-	-		Pentane
6.794	BB	45.01205	6.64459e-1	29.90866		Benzene
Totals :				34.25897		

```
1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P031A\002F2104.D
Sample Name: gc139p033 #B2 ENV(1=900,6=100)

```
==========================================================================
Acq. Operator    : KAM                              Seq. Line :  21
Acq. Instrument  : Edith                             Location : Vial 2
Injection Date   : 2/18/2013 11:13:18 PM                  Inj :   4
                                                   Inj Volume : 250 µl
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 9:59:49 AM by MTH
                   (modified after loading)
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 9:54:40 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

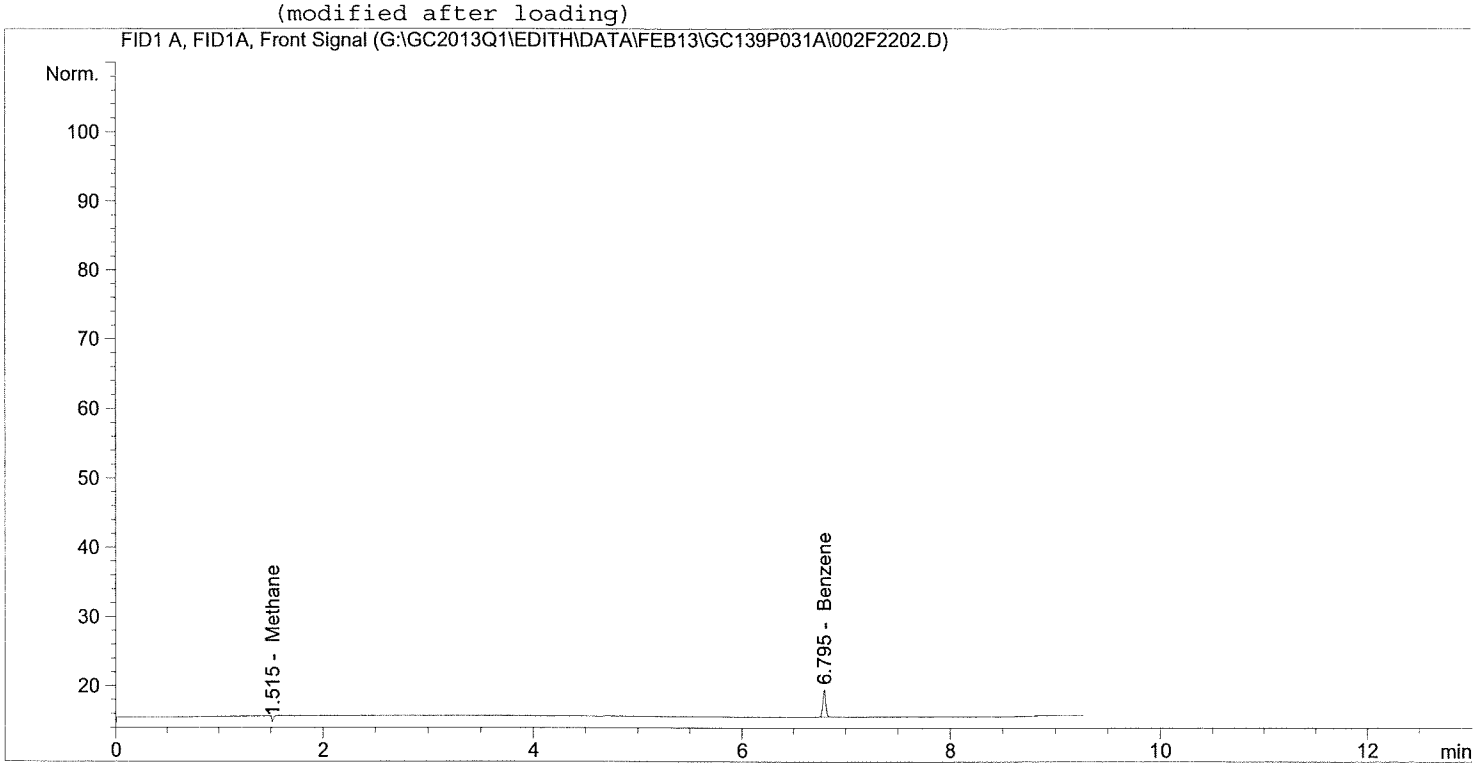
Signal 1: FID1 A, FID1A, Front Signal
```

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.515	BP N	1.01464	4.18725	4.24856		Methane
1.675		-	-	-		Ethane
2.020		-	-	-		Propane
2.919		-	-	-		Butane
4.478		-	-	-		Pentane
6.794	BB	45.02937	6.64460e-1	29.92020		Benzene
Totals :				34.16876		

```
1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P031A\002F2202.D
Sample Name: gc139p033 #B1 ENV(1=2950,6=50)

```
======================================================================
Acq. Operator    : KAM                          Seq. Line :  22
Acq. Instrument  : Edith                         Location : Vial 2
Injection Date   : 2/18/2013 11:47:17 PM              Inj :   2
                                                Inj Volume : 250 µl
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 9:59:49 AM by MTH
                   (modified after loading)
```




```
======================================================================
                    External Standard Report
======================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 9:54:40 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

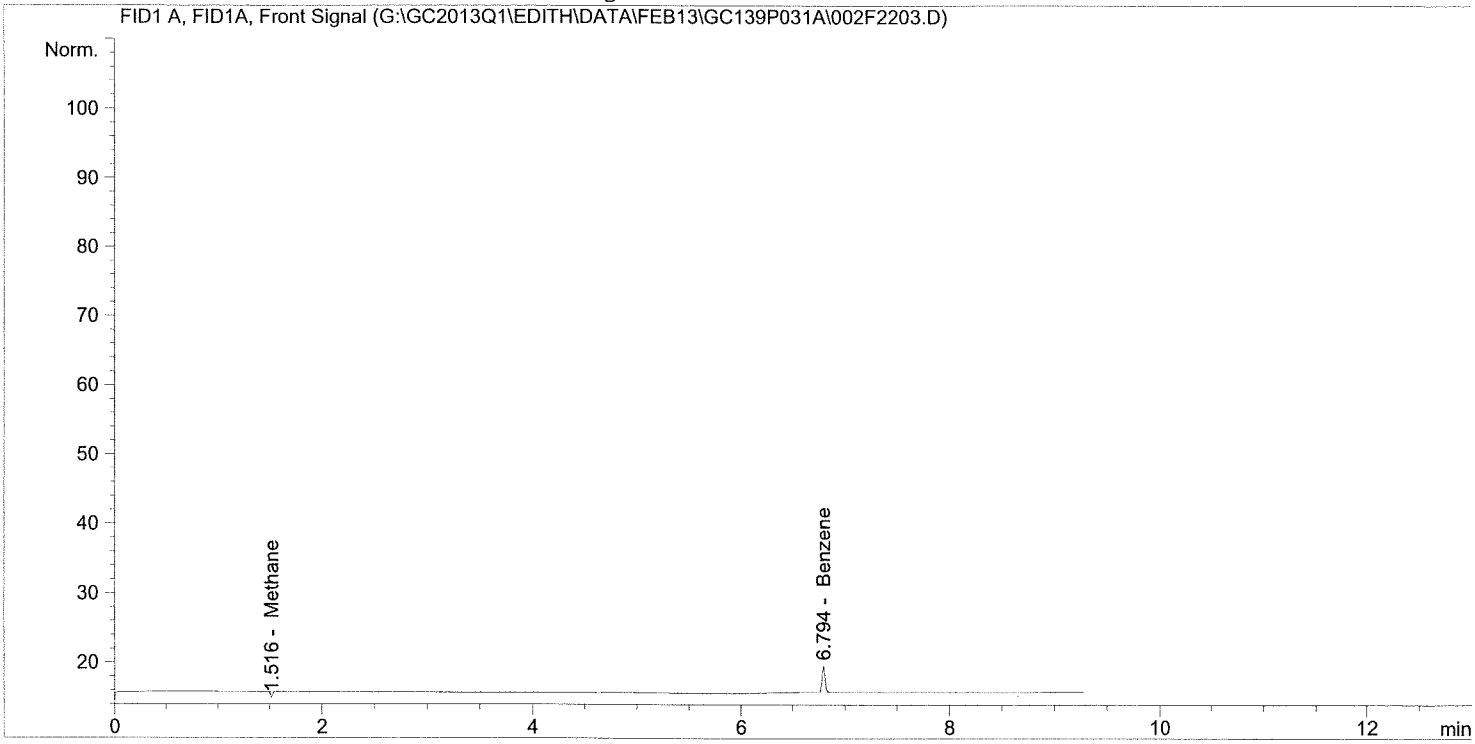
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.515	BP N	1.03146	4.18148	4.31301		Methane
1.675		-	-	-		Ethane
2.020		-	-	-		Propane
2.919		-	-	-		Butane
4.478		-	-	-		Pentane
6.795	BB	7.75041	6.54576e-1	5.07323		Benzene

Totals : 9.38624

1 Warnings or Errors :

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P031A\002F2203.D
Sample Name: gc139p033 #B1 ENV(1=2950,6=50)

```
======================================================================
Acq. Operator    : KAM                          Seq. Line :  22
Acq. Instrument  : Edith                         Location : Vial 2
Injection Date   : 2/19/2013 12:04:29 AM              Inj :   3
                                                Inj Volume : 250 µl
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 9:59:49 AM by MTH
                   (modified after loading)
```




```
======================================================================
                      External Standard Report
======================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 9:54:40 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

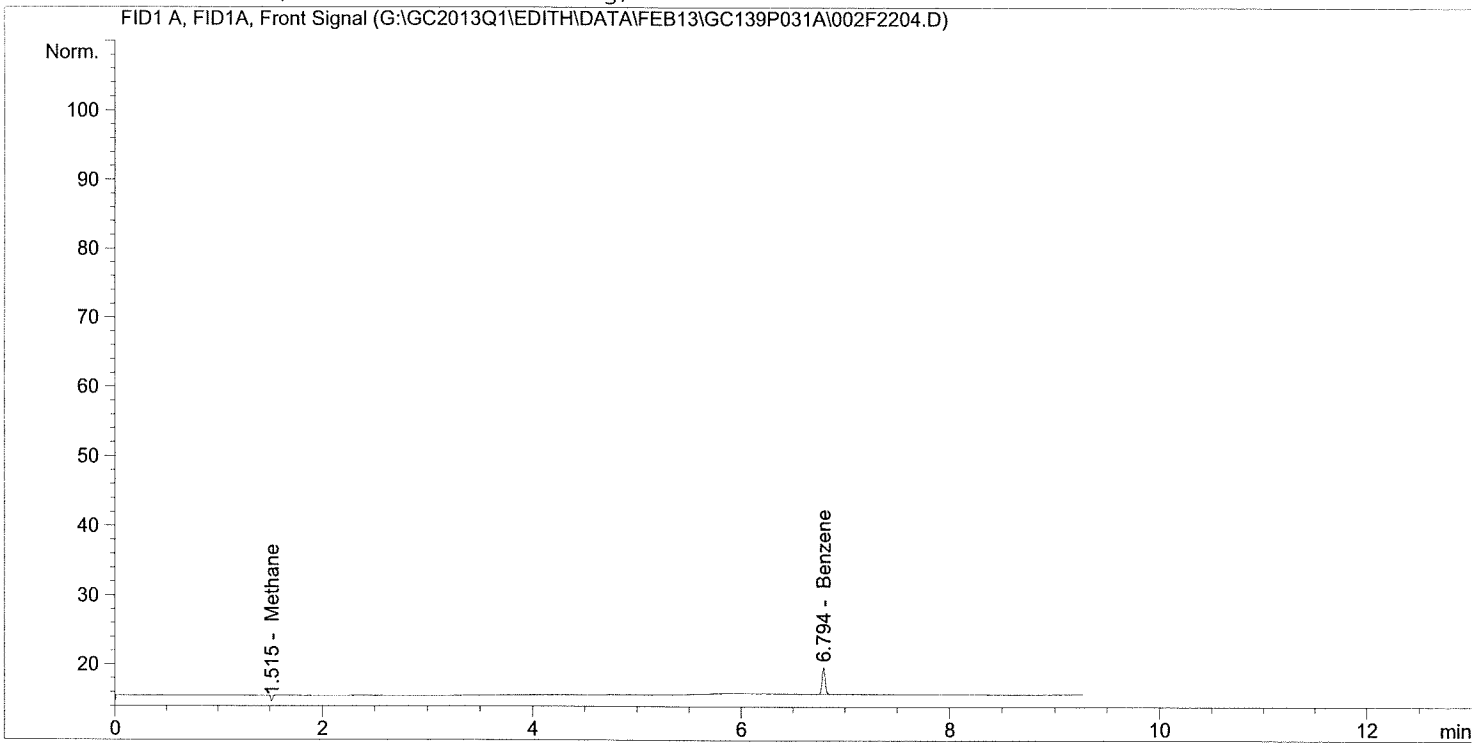
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.516	BP N	1.04582	4.17671	4.36808		Methane
1.675		-	-	-		Ethane
2.020		-	-	-		Propane
2.919		-	-	-		Butane
4.478		-	-	-		Pentane
6.794	BB	7.57233	6.54404e-1	4.95536		Benzene

```
Totals :                                  9.32344


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P031A\002F2204.D
Sample Name: gc139p033 #B1 ENV(1=2950,6=50)

```
==========================================================================
Acq. Operator    : KAM                              Seq. Line :  22
Acq. Instrument  : Edith                             Location : Vial 2
Injection Date   : 2/19/2013 12:21:44 AM                  Inj :  4
                                                   Inj Volume : 250 µl
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 9:59:49 AM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 9:54:40 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.515 BP N      1.03365    4.18074    4.32142    Methane
  1.675            -          -          -         Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794 BB        7.60841 6.54404e-1    4.97898    Benzene

Totals :                                 9.30040


1 Warnings or Errors :
```

Calibration Table

Calib. Data Modified : Thursday, August 23, 2012 9:07:25 AM

Rel. Reference Window : 0.000 %
Abs. Reference Window : 0.100 min
Rel. Non-ref. Window : 0.000 %
Abs. Non-ref. Window : 0.050 min
Uncalibrated Peaks : not reported
Partial Calibration : Yes, identified peaks are recalibrated
Correct All Ret. Times: No, only for identified peaks

Curve Type : Linear
Origin : Connected
Weight : Quadratic (Amnt)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Signal 1: FID1 A, FID1A, Front Signal
Signal 2: FID3 B, FID3B, Back Signal

RetTime [min]	Sig	Lvl	Amount [ppm]	Area	Amt/Area	Ref	Grp	Name
1.534	1	1	2.00000	4.37757e-1	4.56874			Methane
		2	5.00000	1.16765	4.28209			
		3	10.00000	2.44619	4.08798			
		4	40.00000	10.28226	3.89020			
		5	100.00000	26.22889	3.81259			
		6	1003.00000	268.53153	3.73513			
		7	3009.00000	783.04028	3.84271			
		8	1.00300e4	2649.70231	3.78533			
1.675	1	1	2.00000	9.97718e-1	2.00457			Ethane
		2	5.00000	2.40481	2.07917			
		3	10.00000	4.83425	2.06857			
		4	40.00000	19.79965	2.02024			
		5	100.00000	50.08695	1.99653			
		6	1000.00000	513.47753	1.94750			
		7	3000.00000	1497.39612	2.00348			
		8	1.00000e4	5065.17952	1.97426			
2.011	1	1	2.00000	1.49449	1.33825			Propane
		2	5.00000	3.68075	1.35842			
		3	10.00000	7.26176	1.37708			
		4	40.00000	29.75707	1.34422			
		5	100.00000	74.91546	1.33484			
		6	1000.00000	768.88849	1.30058			
		7	3000.00000	2245.87280	1.33578			
		8	1.00000e4	7598.40137	1.31607			
2.919	1	1	2.00000	2.02348	9.88395e-1			Butane
		2	5.00000	4.91373	1.01756			
		3	10.00000	9.74995	1.02565			

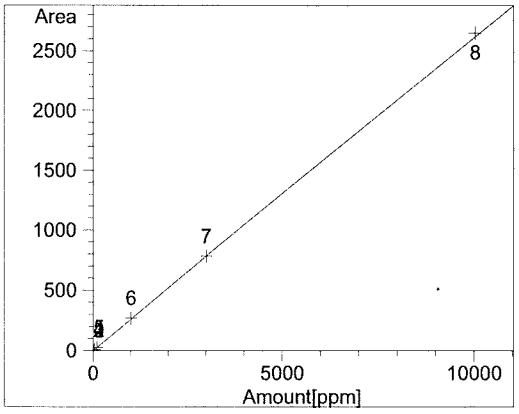
Method G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M

RetTime [min]	Sig	Lvl	Amount [ppm]	Area	Amt/Area	Ref Grp	Name
		4	40.00000	39.59717	1.01017		
		5	100.00000	99.49693	1.00506		
		6	992.00000	1014.26544	9.78048e-1		
		7	2976.00000	2958.55501	1.00590		
		8	9920.00000	9991.57552	9.92836e-1		
4.478	1	1	2.00000	2.68427	7.45082e-1		Pentane
		2	5.00000	6.28756	7.95221e-1		
		3	10.00000	12.30534	8.12655e-1		
		4	40.00000	49.32075	8.11018e-1		
		5	100.00000	123.75704	8.08035e-1		
6.054	1	1	2.00000	3.05117	6.55486e-1		Hexane
		2	5.00000	7.35888	6.79452e-1		
		3	10.00000	14.55290	6.87148e-1		
		4	40.00000	59.00398	6.77920e-1		
		5	100.00000	148.03998	6.75493e-1		
7.233	1	1	2.00000	3.52746	5.66980e-1		Heptane
		2	5.00000	8.59850	5.81497e-1		
		3	10.00000	16.90204	5.91644e-1		
		4	40.00000	68.74511	5.81860e-1		
		5	100.00000	171.89347	5.81756e-1		

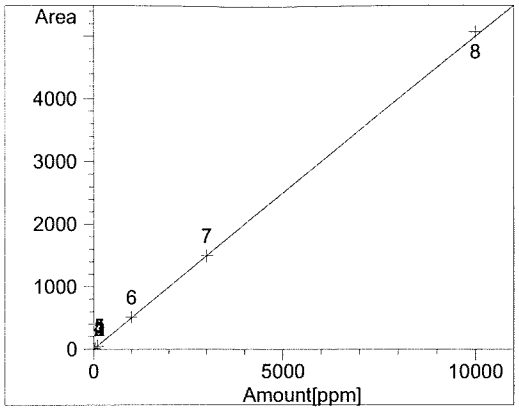
Peak Sum Table

Name	StartTime [min]	EndTime [min]	Use Reference	Response factor	Multiplier	ISTD Peak
as Ethane	1.550	1.850	None	2.0255	1.0000	None
as Propane	1.850	2.400	None	1.3640	1.0000	None
as Butane	2.400	3.700	None	1.0153	1.0000	None
as Pentane	3.700	5.300	None	7.9167e-1	1.0000	None
as Hexane	5.300	6.600	None	6.7105e-1	1.0000	None
as Heptane	6.600	8.000	None	5.8733e-1	1.0000	None

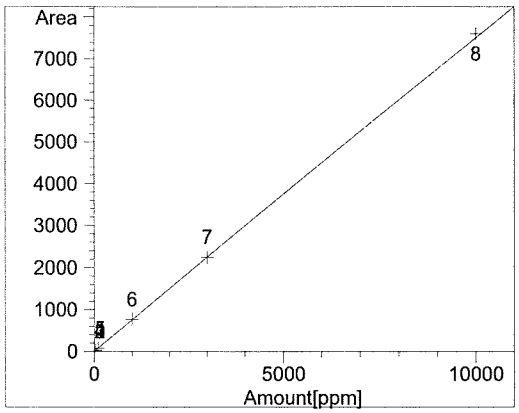
Calibration Curves



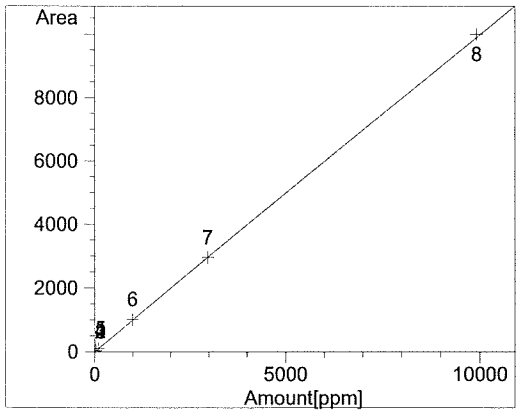
Methane at exp. RT: 1.534
FID1 A, FID1A, Front Signal
Correlation: 0.99973
Residual Std. Dev.: 13.97994
Formula: y = mx + b
m: 2.60850e-1
b: -9.35923e-2
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.04
Level 4 : 0.0025
Level 5 : 0.0004
Level 6 : 3.97611e-006
Level 7 : 4.4179e-007
Level 8 : 3.97611e-008



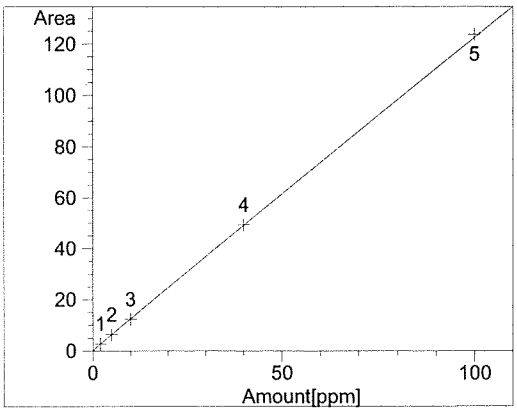
Ethane at exp. RT: 1.675
FID1 A, FID1A, Front Signal
Correlation: 0.99973
Residual Std. Dev.: 30.55901
Formula: y = mx + b
m: 4.99173e-1
b: -1.81110e-2
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.04
Level 4 : 0.0025
Level 5 : 0.0004
Level 6 : 4e-006
Level 7 : 4.44444e-007
Level 8 : 4e-008



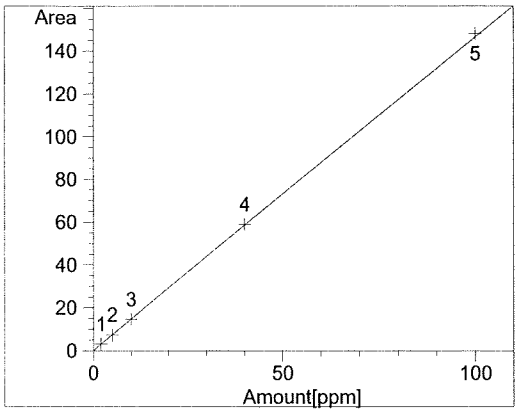
Propane at exp. RT: 2.011
FID1 A, FID1A, Front Signal
Correlation: 0.99983
Residual Std. Dev.: 41.97536
Formula: y = mx + b
m: 7.49746e-1
b: -2.14768e-2
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.04
Level 4 : 0.0025
Level 5 : 0.0004
Level 6 : 4e-006
Level 7 : 4.44444e-007
Level 8 : 4e-008



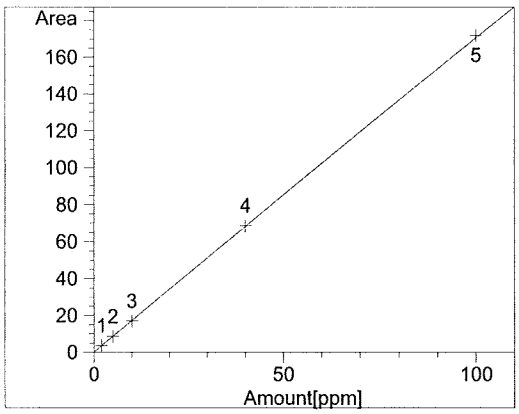
Butane at exp. RT: 2.919
FID1 A, FID1A, Front Signal
Correlation: 0.99985
Residual Std. Dev.: 45.40458
Formula: y = mx + b
m: 9.96331e-1
b: 9.00351e-3
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.04
Level 4 : 0.0025
Level 5 : 0.0004
Level 6 : 4.06478e-006
Level 7 : 4.51642e-007
Level 8 : 4.06478e-008



Pentane at exp. RT: 4.478
FID1 A, FID1A, Front Signal
Correlation: 0.99993
Residual Std. Dev.: 0.76715
Formula: y = mx + b
m: 1.22226
b: 2.26906e-1
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.04
Level 4 : 0.0025
Level 5 : 0.0004



Hexane at exp. RT: 6.054
FID1 A, FID1A, Front Signal
Correlation: 0.99992
Residual Std. Dev.: 0.92484
Formula: y = mx + b
m: 1.46382
b: 1.06628e-1
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.04
Level 4 : 0.0025
Level 5 : 0.0004

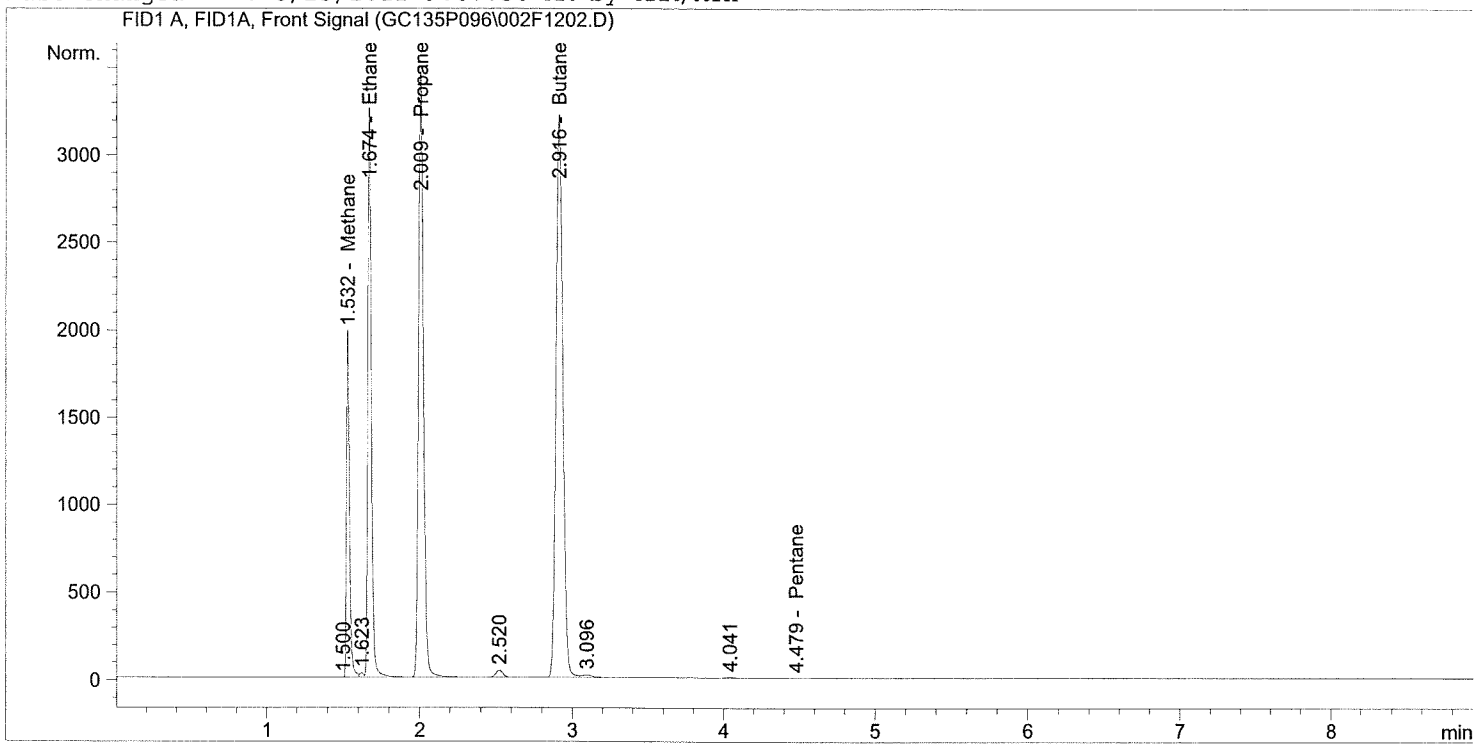


Heptane at exp. RT: 7.233
FID1 A, FID1A, Front Signal
Correlation: 0.99994
Residual Std. Dev.: 0.81614
Formula: y = mx + b
m: 1.70473
b: 1.04851e-1
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.04
Level 4 : 0.0025
Level 5 : 0.0004

==========

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F1202.D
Sample Name: gc135p096 #C9 ENV(1=0,2=472.79)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  12
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 10:10:51 PM                      Inj :   2
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

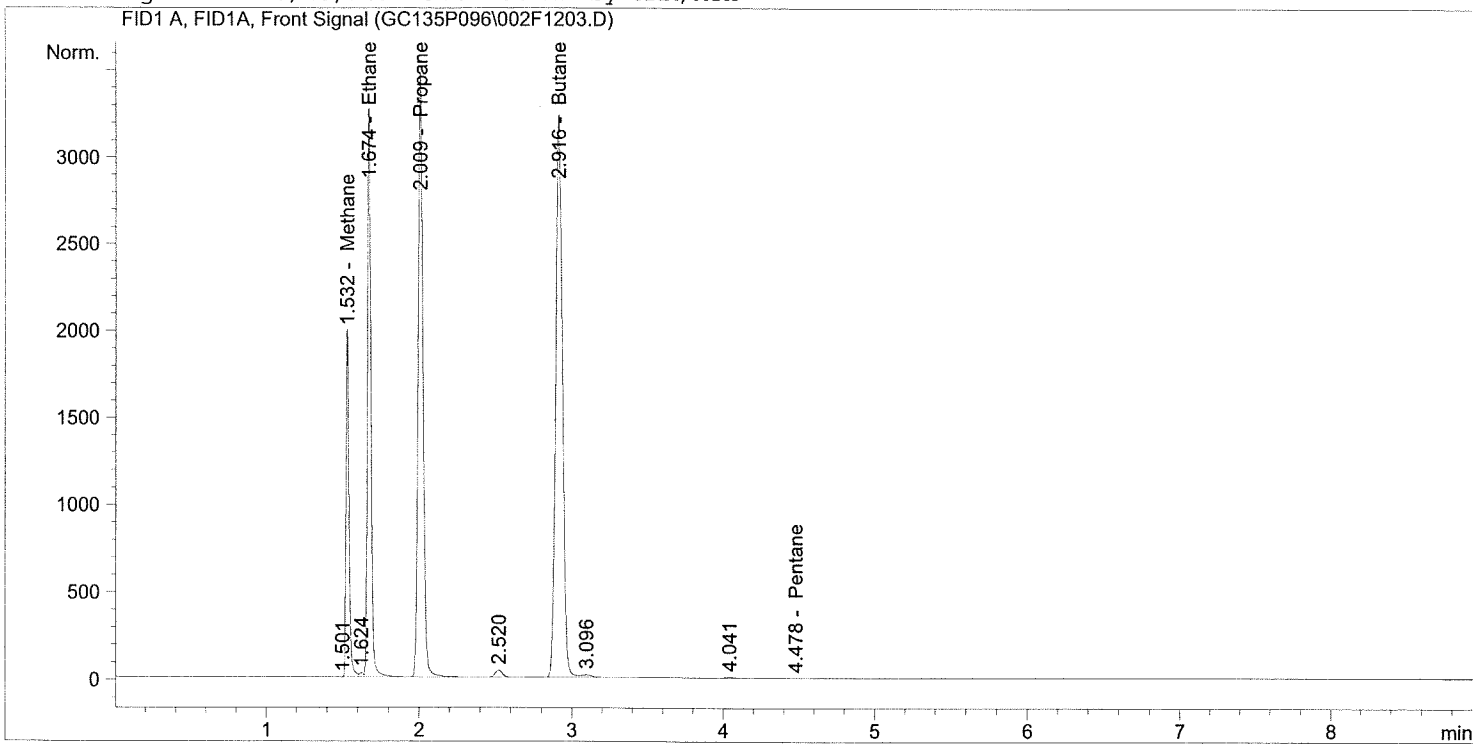
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.532 PV     2646.96460    3.83376 1.01478e4     Methane
  1.674 VV     5060.80615    2.00332 1.01384e4     Ethane
  2.009 VV     7593.14697    1.33379 1.01277e4     Propane
  2.916 BV     9986.54199    1.00368 1.00233e4     Butane
  4.479 BB     6.43477e-1 7.48664e-1 4.81747e-1     Pentane
  6.054           -          -          -          Hexane
  7.233           -          -          -          Heptane

Totals :                              4.04377e4


1 Warnings or Errors :
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F1203.D
Sample Name: gc135p096 #C9 ENV(1=0,2=472.79)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  12
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 10:28:17 PM                      Inj :   3
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

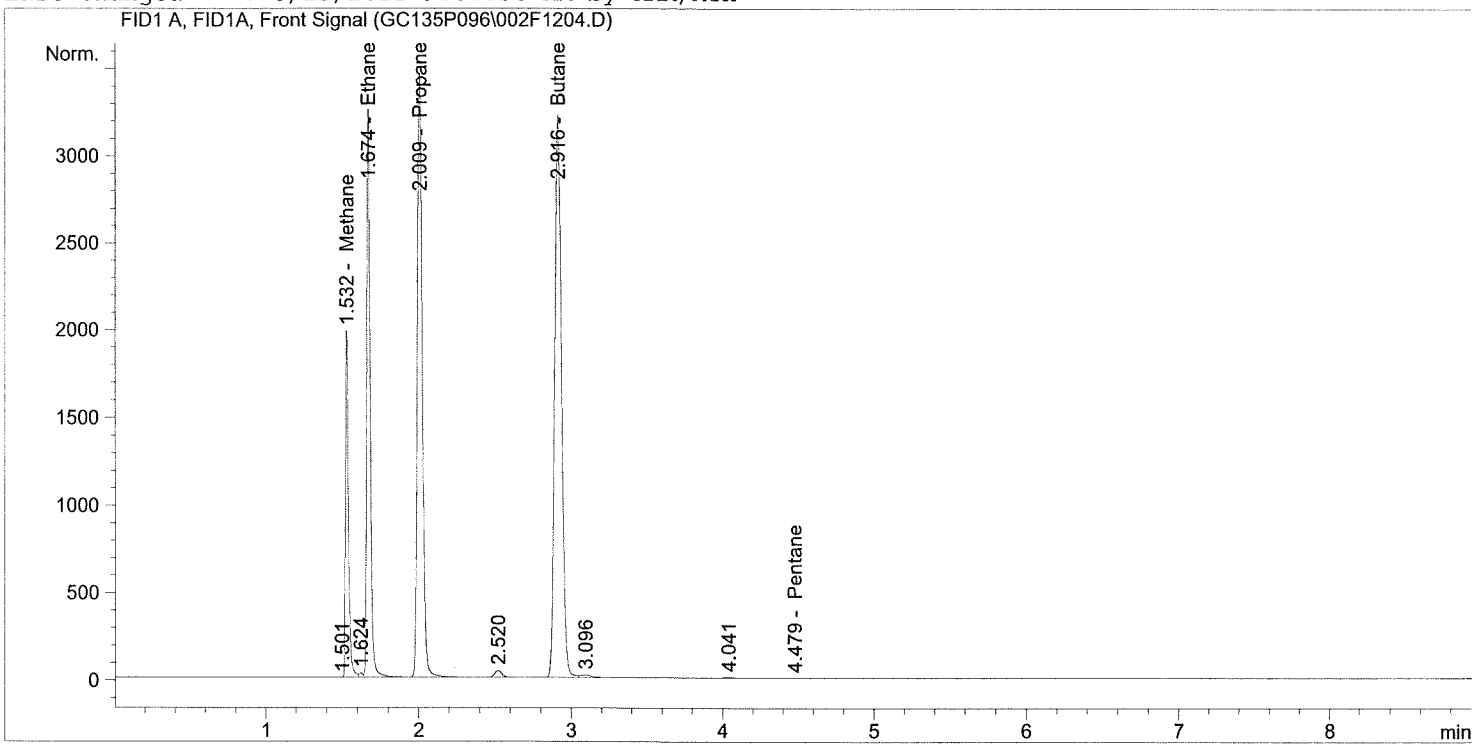
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]           [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  1.532 PV     2656.59399    3.83376 1.01847e4     Methane
  1.674 VV     5076.94482    2.00332 1.01708e4     Ethane
  2.009 VV     7613.15430    1.33379 1.01543e4     Propane
  2.916 BV     1.00066e4     1.00368 1.00435e4     Butane
  4.478 BB     6.23593e-1 7.48664e-1 4.66861e-1    Pentane
  6.054           -          -          -         Hexane
  7.233           -          -          -         Heptane

Totals :                              4.05538e4


1 Warnings or Errors :
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F1204.D
Sample Name: gc135p096 #C9 ENV(1=0,2=472.79)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  12
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 10:45:41 PM                      Inj :   4
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

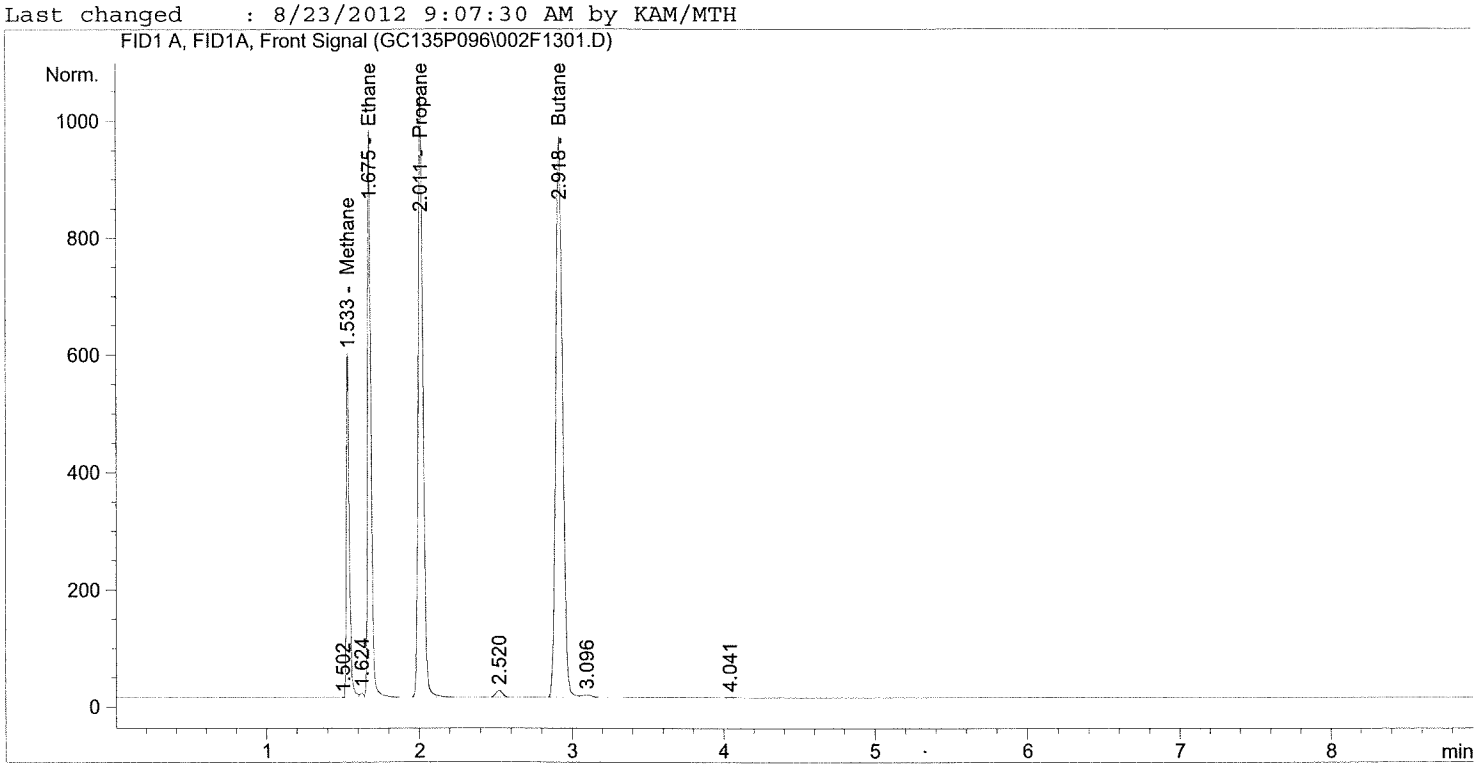
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.532 PV     2645.54834    3.83376 1.01424e4     Methane
  1.674 VV     5057.78760    2.00332 1.01324e4     Ethane
  2.009 VV     7588.90283    1.33379 1.01220e4     Propane
  2.916 BV     9981.57031    1.00368 1.00183e4     Butane
  4.479 BB     6.40256e-1 7.48664e-1 4.79336e-1    Pentane
  6.054           -          -          -         Hexane
  7.233           -          -          -         Heptane

Totals :                              4.04156e4


1 Warnings or Errors :
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F1301.D
Sample Name: gc135p096 #C8 ENV(1=700,2=315.19)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  13
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 11:03:04 PM                      Inj :   1
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

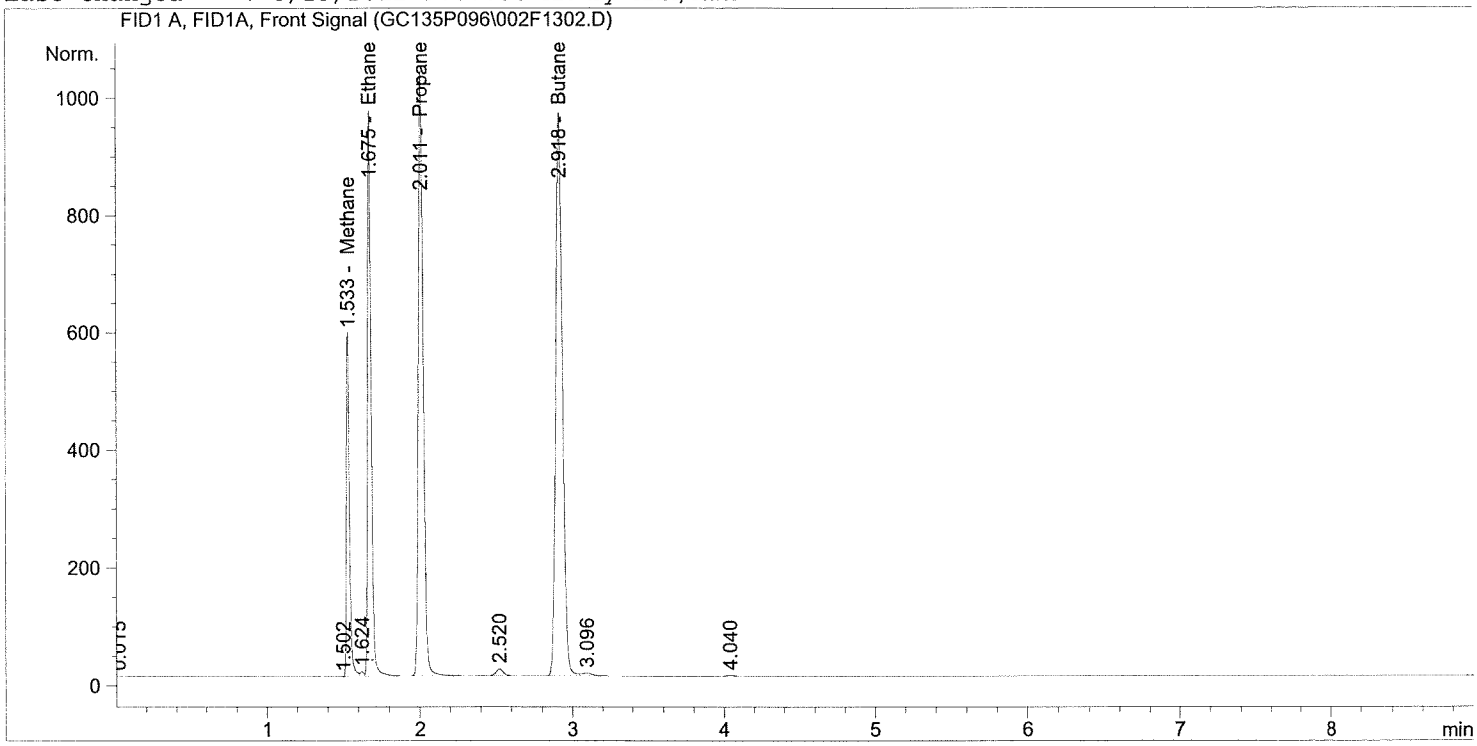
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.533	PV	785.56934	3.83408	3011.93877		Methane
1.675	VV	1502.52222	2.00334	3010.06088		Ethane
2.011	VB	2252.66797	1.33380	3004.60262		Propane
2.918	BV	2960.61182	1.00368	2971.50525		Butane
4.478		-	-	-		Pentane
6.054		-	-	-		Hexane
7.233		-	-	-		Heptane

```
Totals :                          1.19981e4

1 Warnings or Errors :
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F1302.D
Sample Name: gc135p096 #C8 ENV(1=700,2=315.19)

```
==========================================================================
Acq. Operator   : MTH                                  Seq. Line :  13
Acq. Instrument : Edith                               Location : Vial 2
Injection Date  : 8/22/2012 11:20:36 PM                    Inj :   2
                                                     Inj Volume : 250 µl
Sequence File   : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method     : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed    : 7/12/2012 8:08:37 AM by MTH
Analysis Method : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed    : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

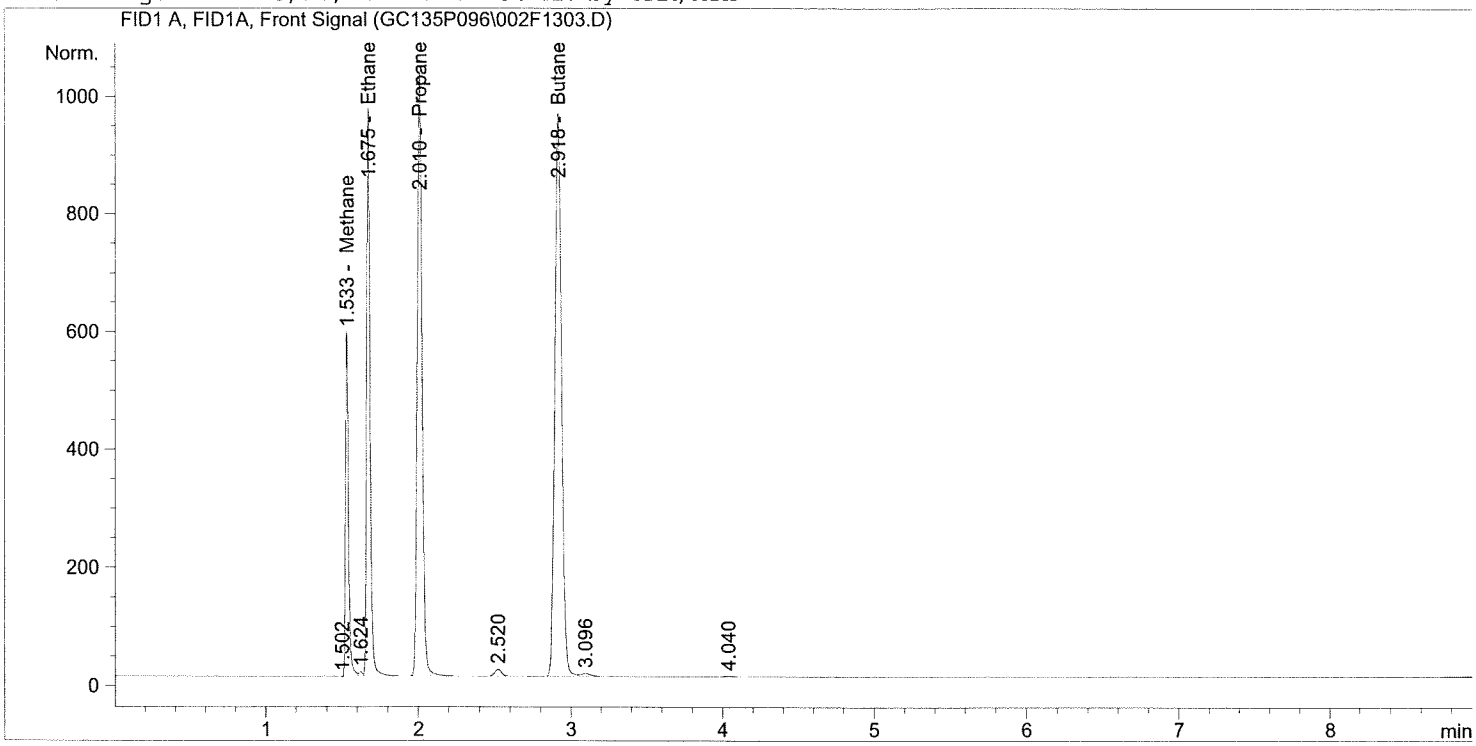
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]           [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  1.533 PV      781.50269    3.83409 2996.34875    Methane
  1.675 VV     1494.02344    2.00334 2993.03516    Ethane
  2.011 VB     2242.46655    1.33380 2990.99613    Propane
  2.918 BV     2963.61841    1.00368 2974.52291    Butane
  4.478            -           -          -        Pentane
  6.054            -           -          -        Hexane
  7.233            -           -          -        Heptane

Totals :                              1.19549e4


1 Warnings or Errors :
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F1303.D
Sample Name: gc135p096 #C8 ENV(1=700,2=315.19)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  13
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 11:38:09 PM                      Inj :   3
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

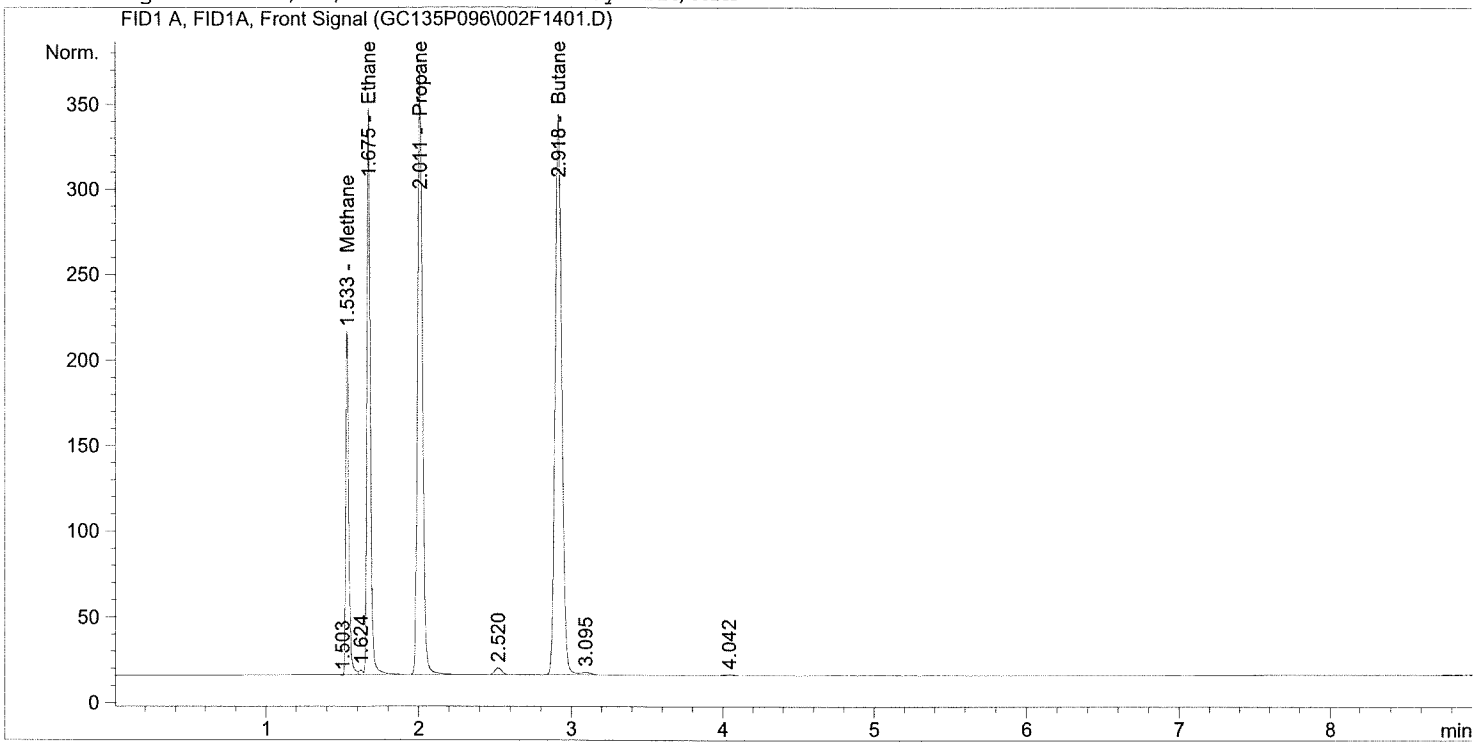
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]           [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  1.533 PV      782.04883    3.83409 2998.44246     Methane
  1.675 VV     1495.64270    2.00334 2996.27905     Ethane
  2.010 VB     2242.48389    1.33380 2991.01925     Propane
  2.918 BV     2951.43481    1.00368 2962.29445     Butane
  4.478            -           -          -         Pentane
  6.054            -           -          -         Hexane
  7.233            -           -          -         Heptane

Totals :                              1.19480e4


1 Warnings or Errors :
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F1401.D
Sample Name: gc135p096 #C7 ENV(1=900,2=105.06)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  14
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 11:55:47 PM                      Inj :   1
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

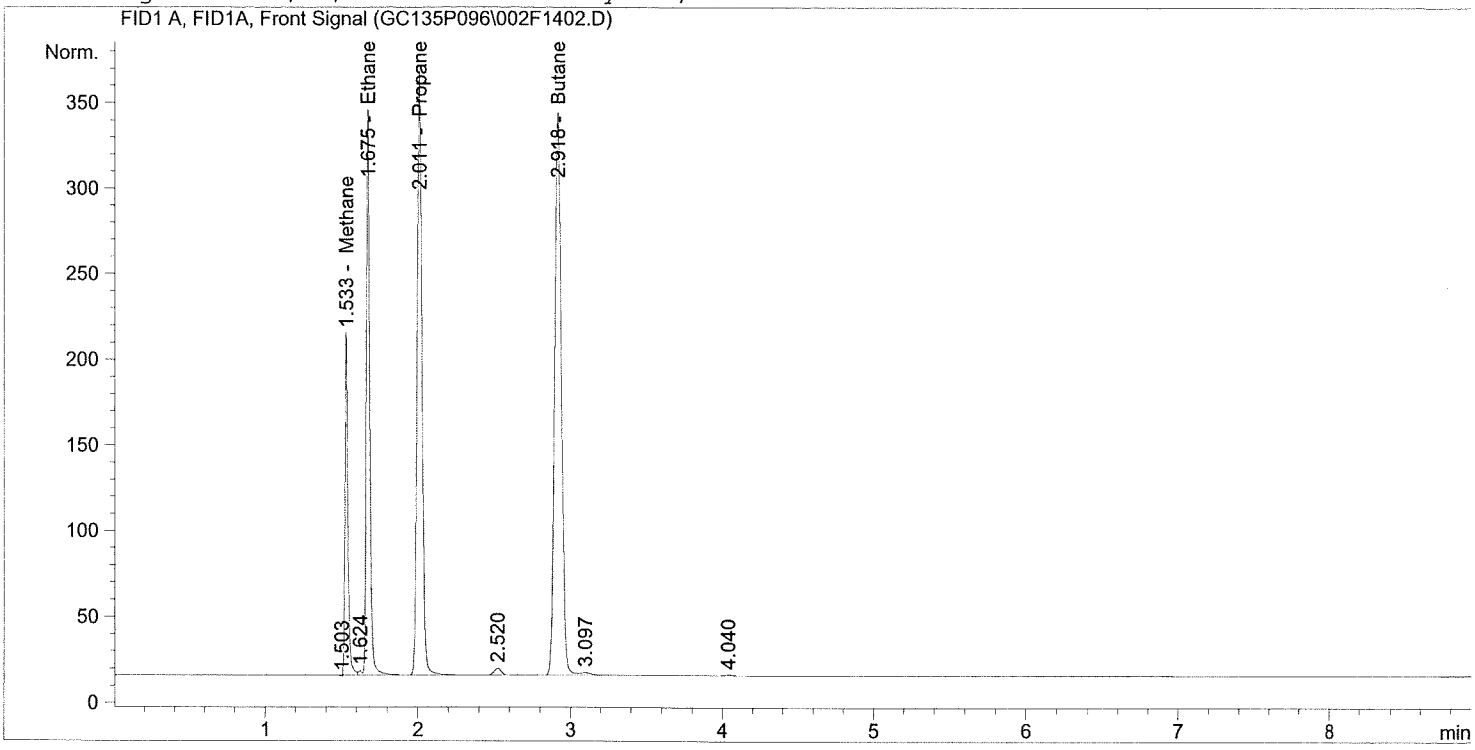
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.533	PV	268.79132	3.83496	1030.80452		Methane
1.675	VV	513.90979	2.00339	1029.55924		Ethane
2.011	VB	768.89771	1.33382	1025.57261		Propane
2.918	BV	1011.83429	1.00367	1015.55134		Butane
4.478		-	-	-		Pentane
6.054		-	-	-		Hexane
7.233		-	-	-		Heptane

```
Totals :                                4101.48770


1 Warnings or Errors :
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F1402.D
Sample Name: gc135p096 #C7 ENV(1=900,2=105.06)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  14
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/23/2012 12:13:14 AM                      Inj :   2
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

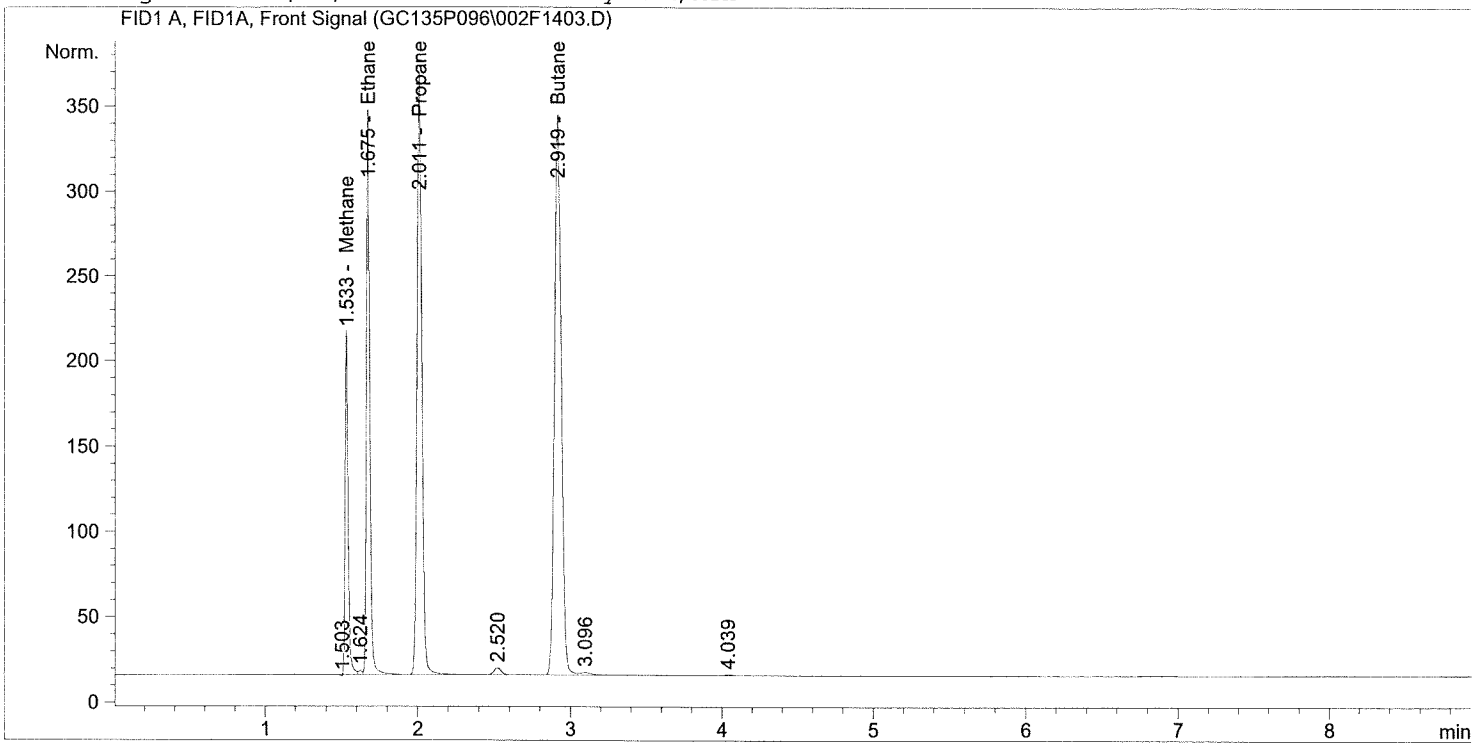
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.533 PV      267.67920    3.83497 1026.54106    Methane
  1.675 VV      511.95895    2.00339 1025.65110    Ethane
  2.011 VB      766.77362    1.33382 1022.73954    Propane
  2.918 BV     1014.40210    1.00367 1018.12860    Butane
  4.478            -            -          -      Pentane
  6.054            -            -          -      Hexane
  7.233            -            -          -      Heptane

Totals :                              4093.06029


1 Warnings or Errors :
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F1403.D
Sample Name: gc135p096 #C7 ENV(1=900,2=105.06)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  14
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/23/2012 12:30:48 AM                      Inj :   3
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

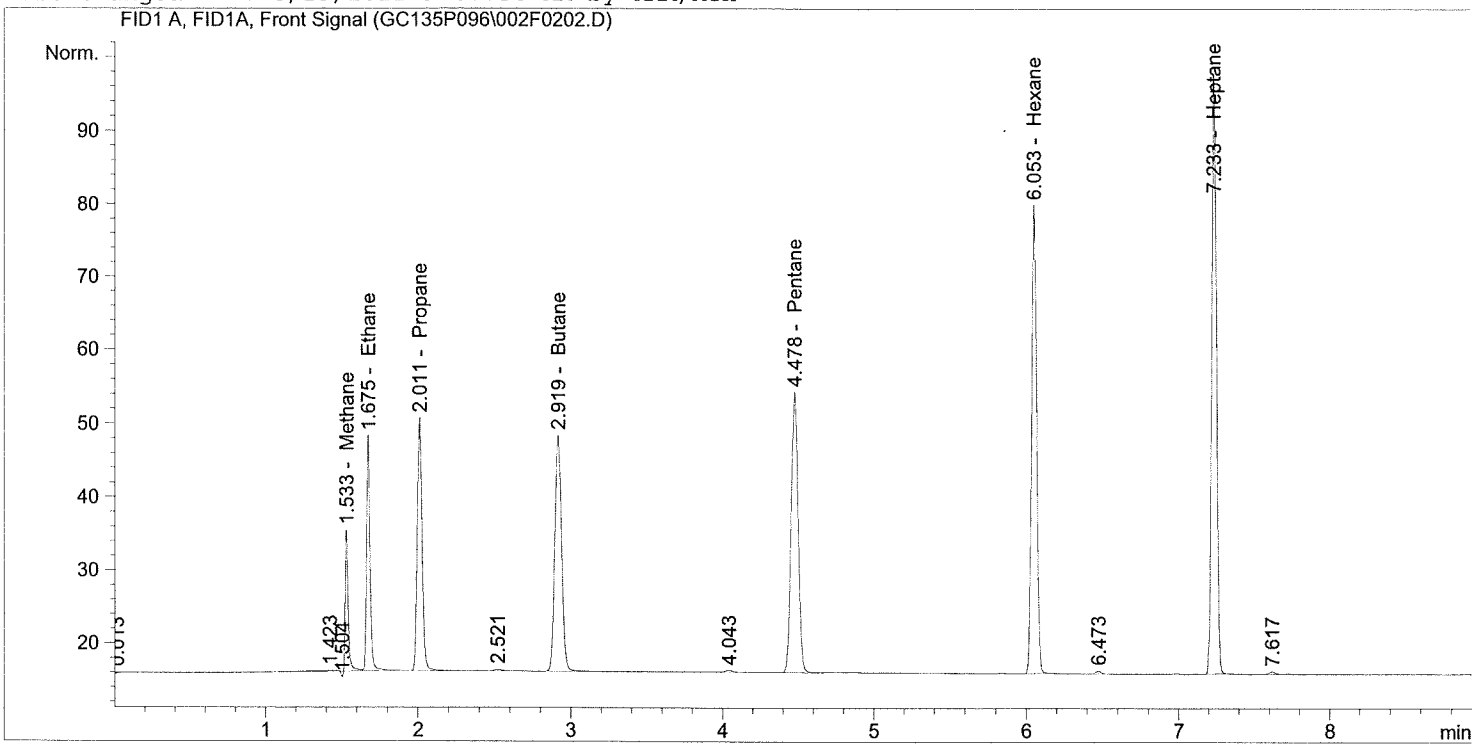
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.533	PV	269.12408	3.83496	1032.08021		Methane
1.675	VV	514.56384	2.00339	1030.86951		Ethane
2.011	VB	770.99414	1.33382	1028.36880		Propane
2.919	BV	1016.55994	1.00367	1020.29439		Butane
4.478		-	-	-		Pentane
6.054		-	-	-		Hexane
7.233		-	-	-		Heptane

```
Totals :                              4111.61291


1 Warnings or Errors :
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0202.D
Sample Name: gc135p096 #C6 ENV(1=0,3=450)

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :   2
Acq. Instrument  : Edith                               Location : Vial 2
Injection Date   : 8/22/2012 11:11:00 AM                    Inj :   2
                                                     Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

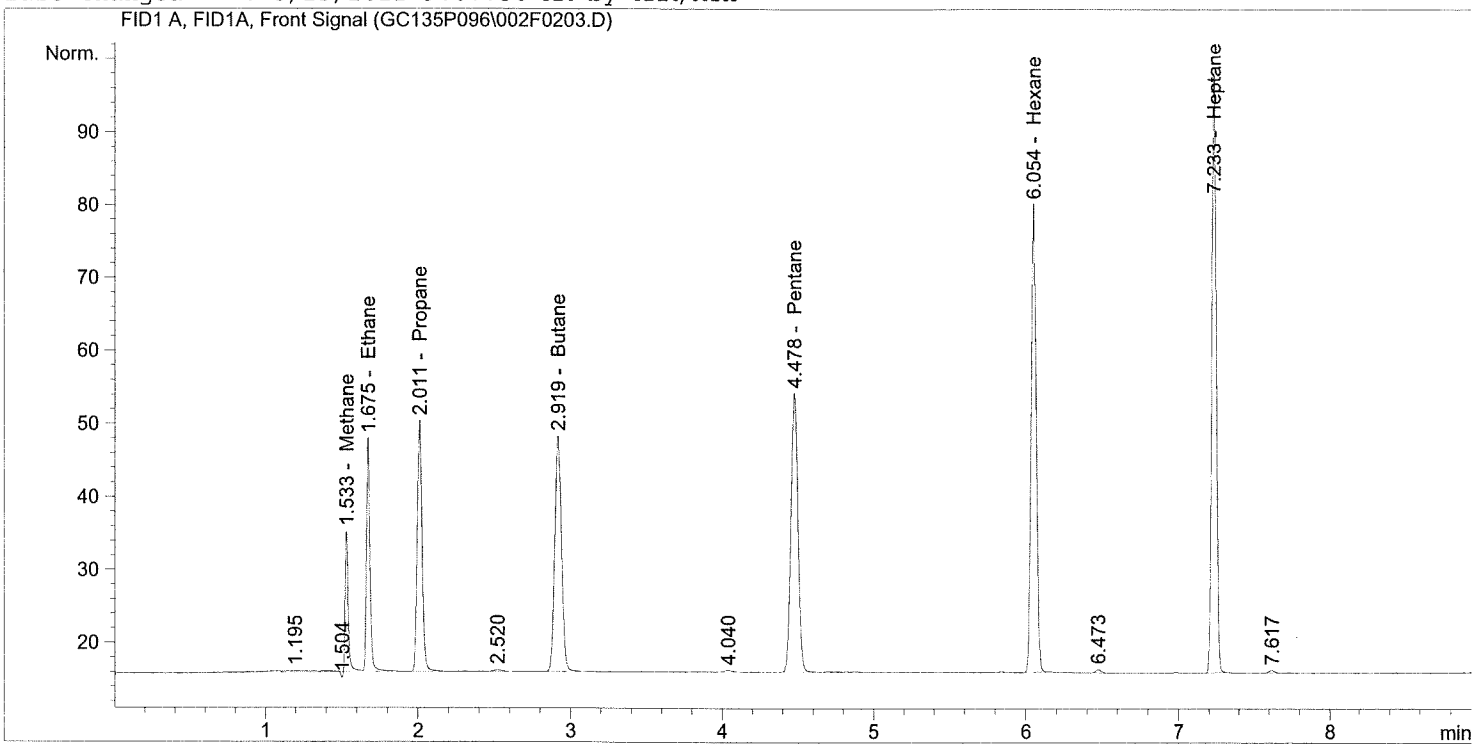
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.533	PV	26.49287	3.84717	101.92260		Methane
1.675	VB	50.30319	2.00404	100.80939		Ethane
2.011	BB	75.12805	1.33417	100.23329		Propane
2.919	BB	99.56296	1.00359	99.92056		Butane
4.478	BB	123.72887	8.16656e-1	101.04390		Pentane
6.053	BB	147.82115	6.82650e-1	100.91009		Hexane
7.233	BB	171.55591	5.86245e-1	100.57379		Heptane

Totals : 705.41363

==

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0203.D
Sample Name: gc135p096 #C6 ENV(1=0,3=450)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   2
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 11:28:32 AM                      Inj :   3
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

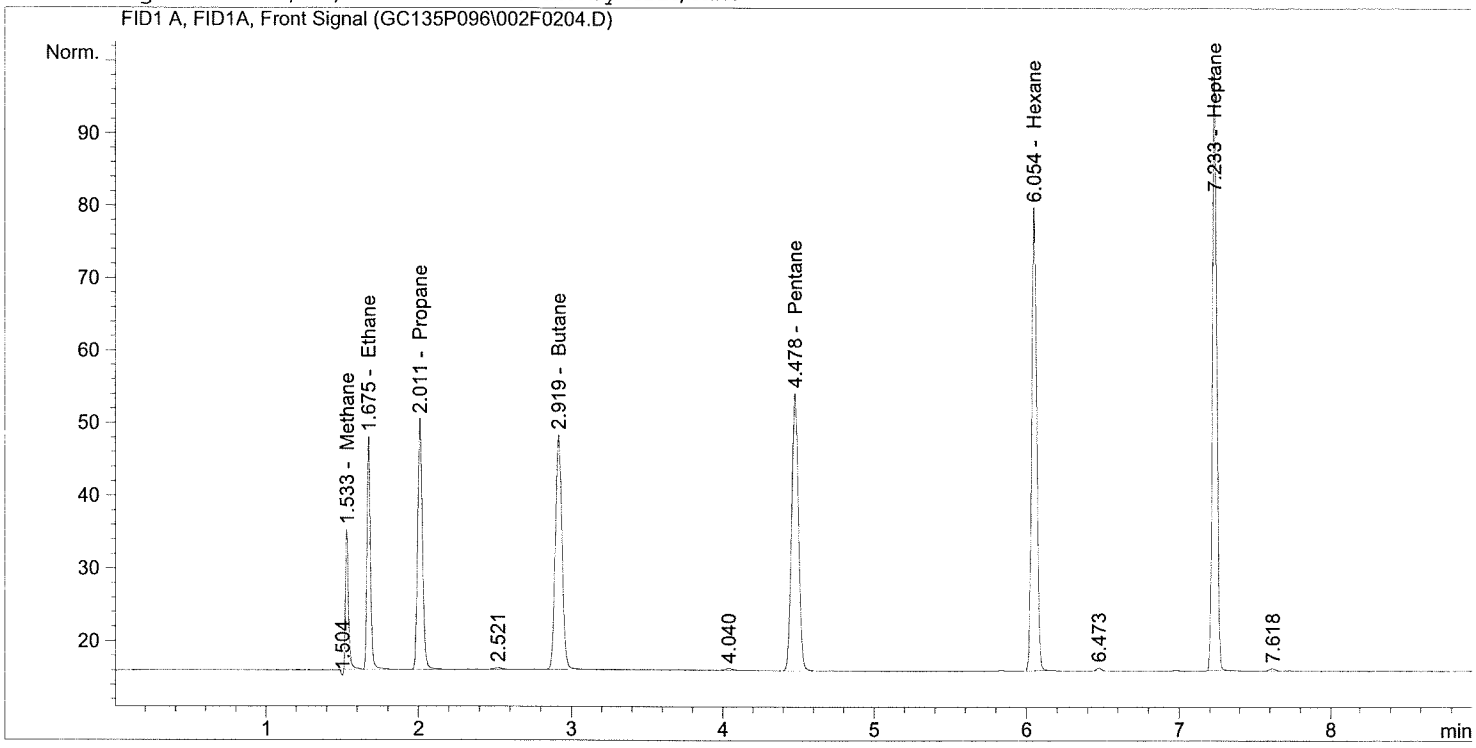
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.533	PV	26.24513	3.84730	100.97284		Methane
1.675	VB	49.98239	2.00404	100.16673		Ethane
2.011	BB	74.70051	1.33417	99.66304		Propane
2.919	BB	99.30491	1.00359	99.66156		Butane
4.478	BV	123.70683	8.16656e-1	101.02587		Pentane
6.054	BB	148.05078	6.82651e-1	101.06696		Hexane
7.233	BB	171.78619	5.86245e-1	100.70888		Heptane

Totals : 703.26587

==

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0204.D
Sample Name: gc135p096 #C6 ENV(1=0,3=450)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   2
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 11:46:06 AM                      Inj :   4
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

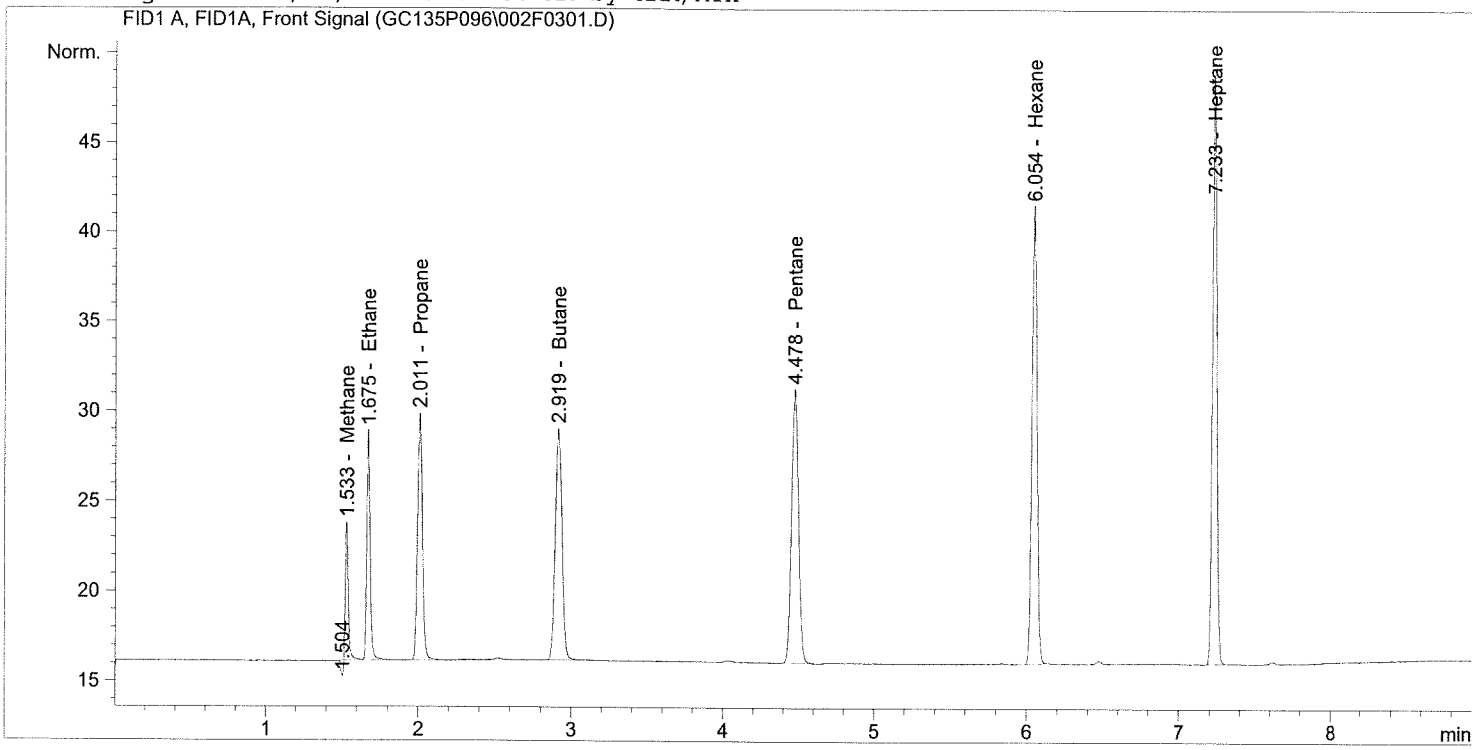
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.533 PV       25.94867    3.84745   99.83633    Methane
  1.675 VB       49.97527    2.00404  100.15247    Ethane
  2.011 PB       74.91782    1.33417   99.95289    Propane
  2.919 BB       99.62291    1.00359   99.98073    Butane
  4.478 BB      123.83542 8.16657e-1  101.13107    Pentane
  6.054 BB      148.24802 6.82651e-1  101.20170    Hexane
  7.233 BB      172.33832 5.86247e-1  101.03276    Heptane

Totals :                              703.28796

==========================================================================
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0301.D
Sample Name: gc135p096 #C5 ENV(1=600,3=400)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   3
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 12:03:48 PM                      Inj :   1
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

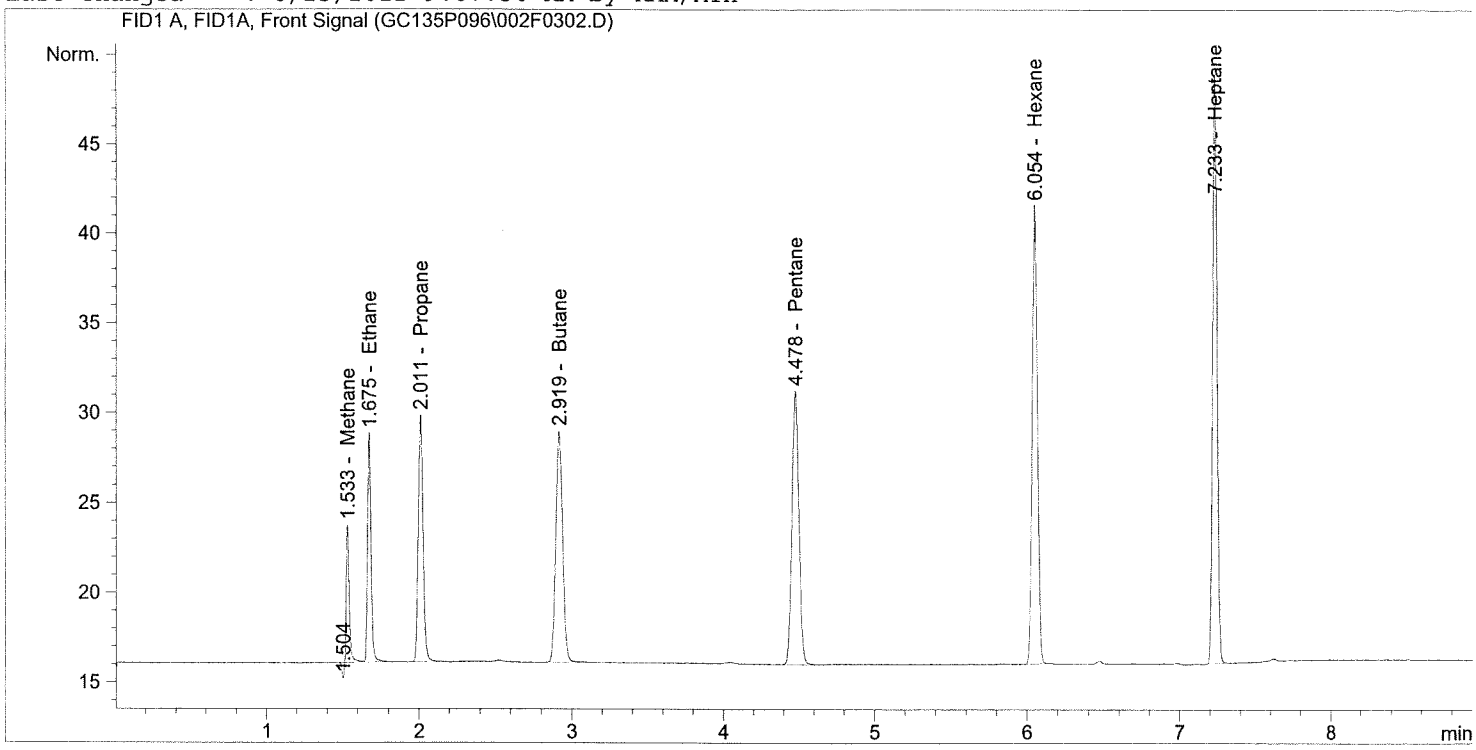
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.533	PV	10.23970	3.86867	39.61400		Methane
1.675	VB	19.72584	2.00515	39.55334		Ethane
2.011	BB	29.72858	1.33475	39.68016		Propane
2.919	BB	39.65114	1.00345	39.78812		Butane
4.478	BB	49.26813	8.14388e-1	40.12338		Pentane
6.054	VB	58.99194	6.81908e-1	40.22707		Hexane
7.233	BB	68.63174	5.85707e-1	40.19811		Heptane

Totals : 279.18419

```
================================================================================
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0302.D
Sample Name: gc135p096 #C5 ENV(1=600,3=400)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   3
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 12:21:18 PM                      Inj :   2
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

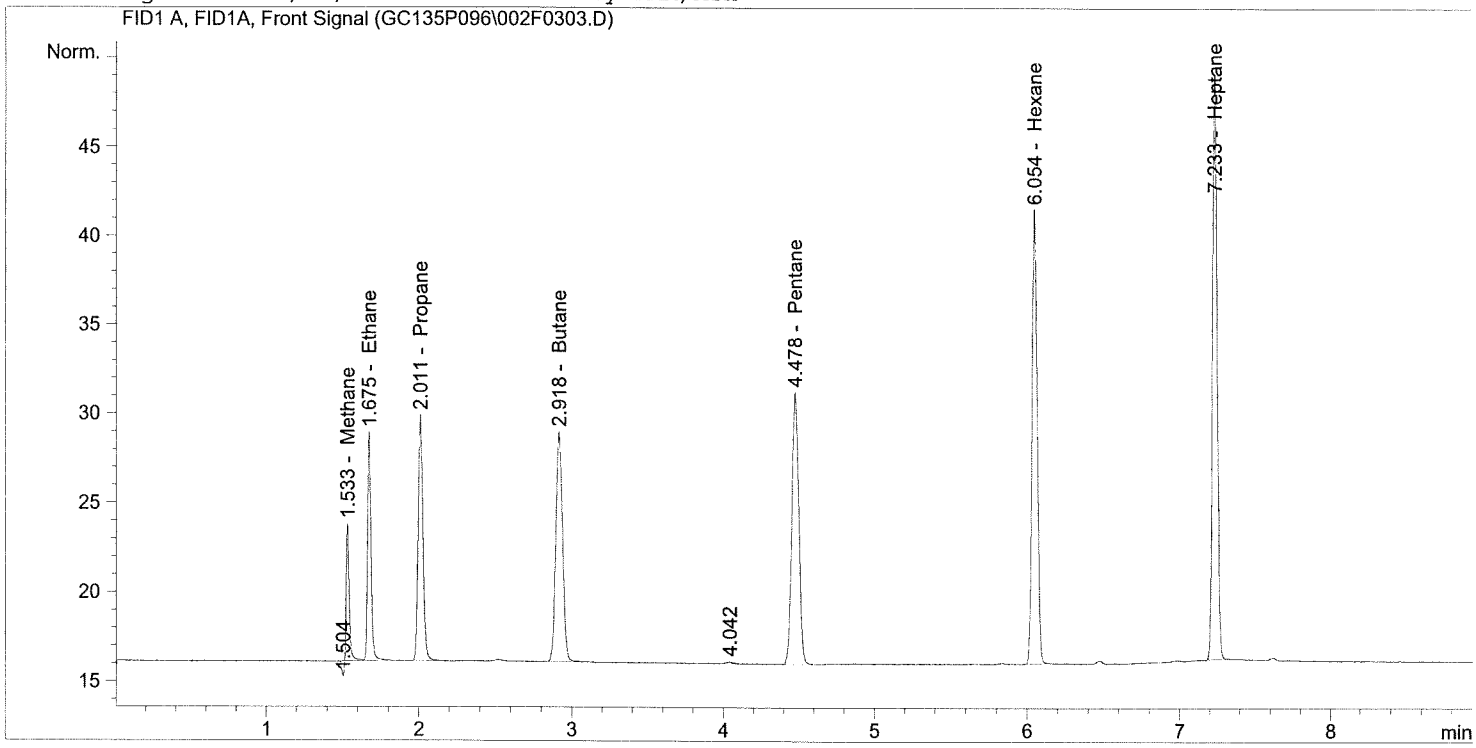
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.533	PB	10.28903	3.86850	39.80310		Methane
1.675	BB	19.78135	2.00515	39.66455		Ethane
2.011	BB	29.75148	1.33475	39.71071		Propane
2.919	BB	39.58684	1.00345	39.72358		Butane
4.478	BB	49.31758	8.14392e-1	40.16384		Pentane
6.054	BB	59.01057	6.81908e-1	40.23979		Hexane
7.233	BB	68.58656	5.85707e-1	40.17161		Heptane

Totals : 279.47719

==

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0303.D
Sample Name: gc135p096 #C5 ENV(1=600,3=400)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   3
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 12:38:51 PM                      Inj :   3
                                                      Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

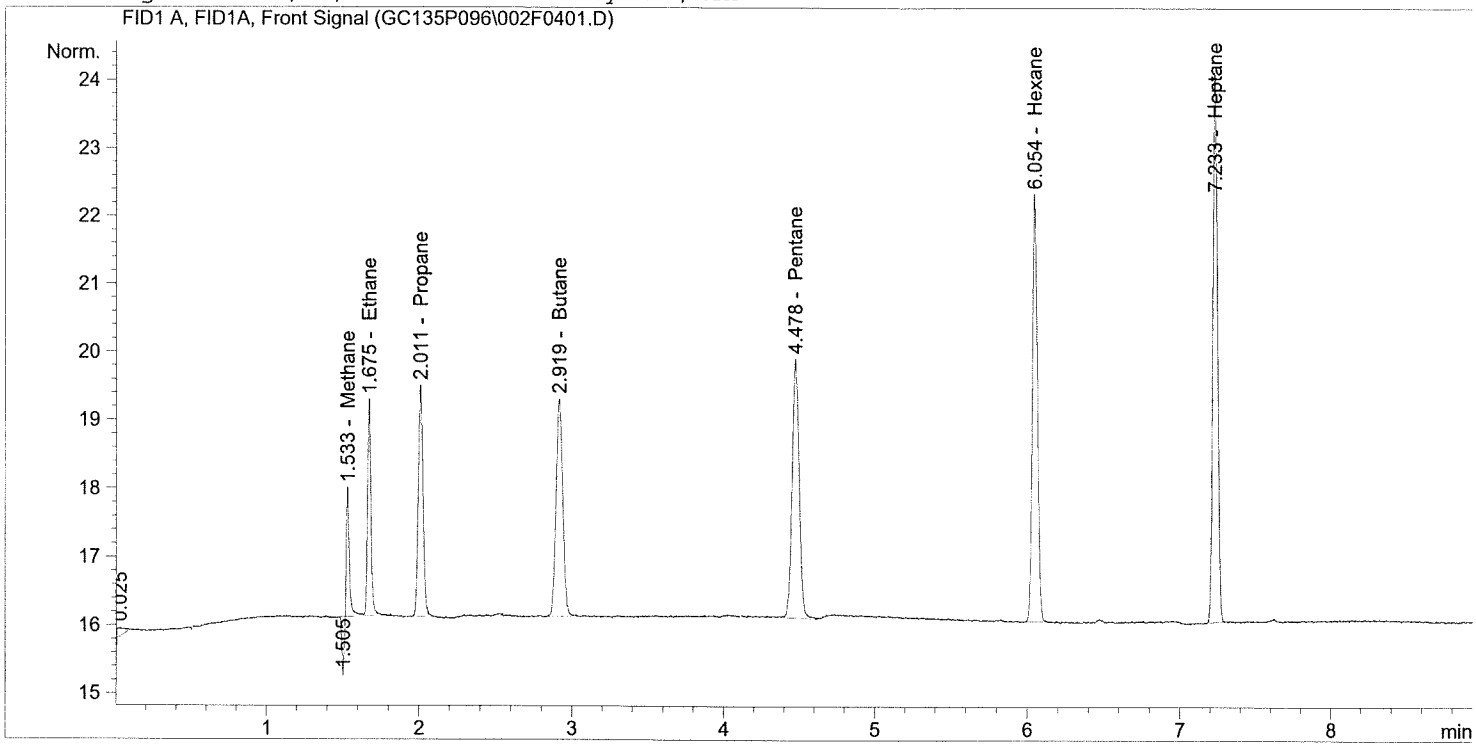
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.533 PV       10.31804    3.86840   39.91432    Methane
  1.675 VB       19.89175    2.00514   39.88572    Ethane
  2.011 PB       29.79116    1.33475   39.76363    Propane
  2.918 BB       39.55352    1.00345   39.69014    Butane
  4.478 BB       49.37654 8.14396e-1   40.21208    Pentane
  6.054 BB       59.00945 6.81908e-1   40.23903    Hexane
  7.233 BB       69.01703 5.85712e-1   40.42413    Heptane

Totals :                              280.12904

==========================================================================
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0401.D
Sample Name: gc135p096 #C4 ENV(1=900,3=100)

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :   4
Acq. Instrument  : Edith                               Location : Vial 2
Injection Date   : 8/22/2012 12:56:22 PM                    Inj :   1
                                                     Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

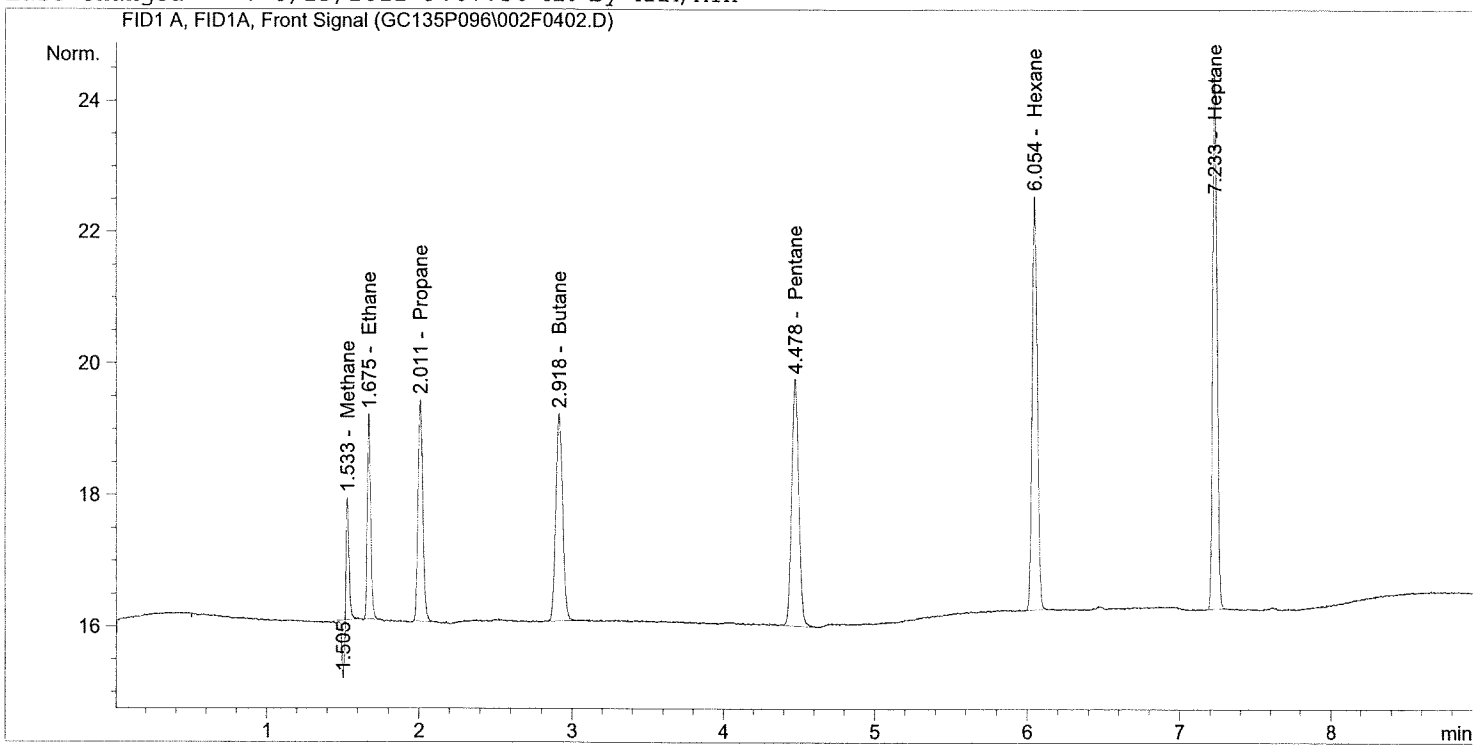
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.533	PB	2.50548	3.97683	9.96388		Methane
1.675	BB	4.90014	2.01072	9.85281		Ethane
2.011	PB	7.28612	1.33772	9.74676		Propane
2.919	BB	9.81239	1.00276	9.83949		Butane
4.478	BB	12.40981	8.03197e-1	9.96752		Pentane
6.054	BB	14.53497	6.78131e-1	9.85662		Hexane
7.233	BB	16.86655	5.82957e-1	9.83247		Heptane

Totals : 69.05955

==

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0402.D
Sample Name: gc135p096 #C4 ENV(1=900,3=100)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   4
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 1:14:01 PM                      Inj :   2
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

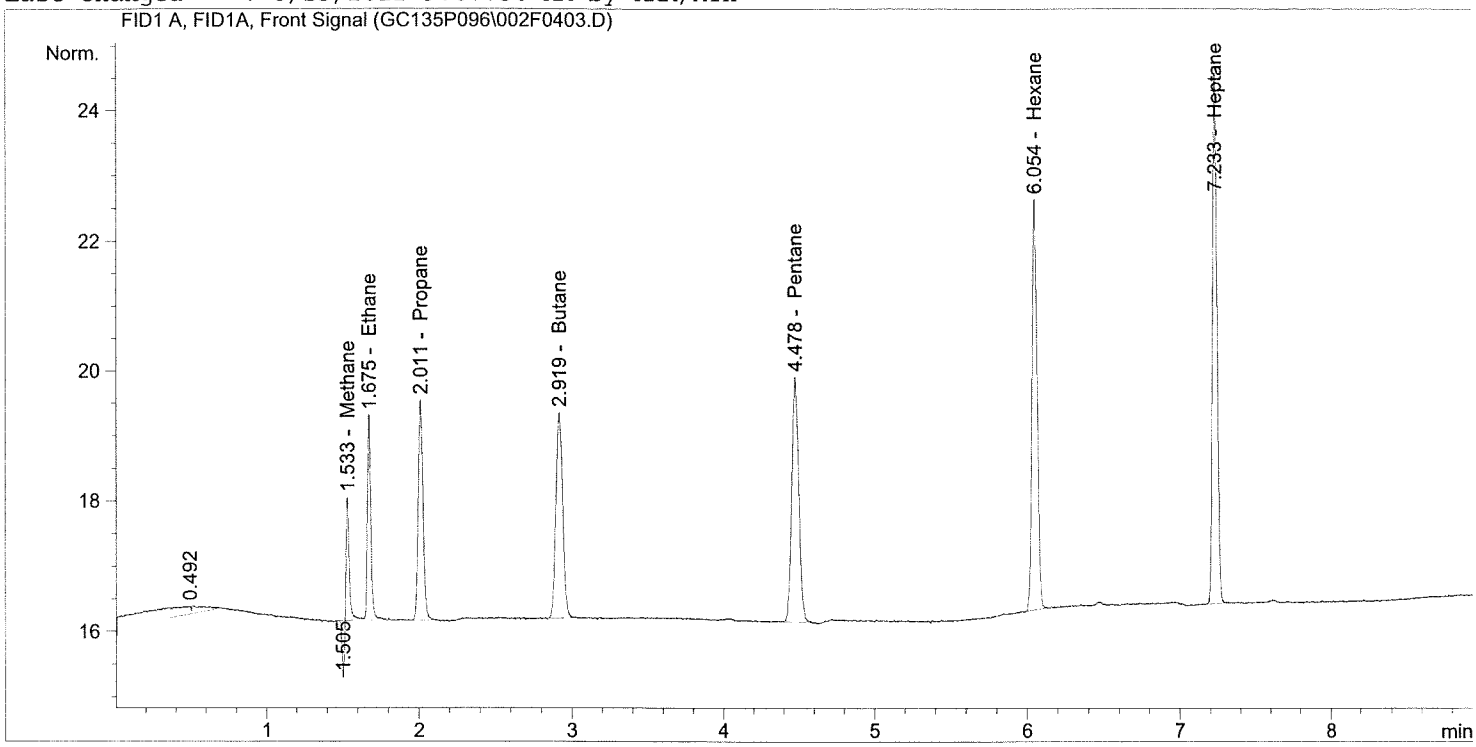
Signal 1: FID1 A, FID1A, Front Signal
```

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.533	PB	2.32270	3.98810	9.26316		Methane
1.675	BP	4.69724	2.01104	9.44633		Ethane
2.011	PB	7.20741	1.33776	9.64178		Propane
2.918	BB	9.70014	1.00275	9.72683		Butane
4.478	BB	12.24665	8.02997e-1	9.83403		Pentane
6.054	BB	14.50450	6.78121e-1	9.83580		Hexane
7.233	BB	16.88444	5.82961e-1	9.84296		Heptane
Totals :				67.59091		

```
==========================================================================
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0403.D
Sample Name: gc135p096 #C4 ENV(1=900,3=100)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   4
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 1:31:23 PM                      Inj :   3
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

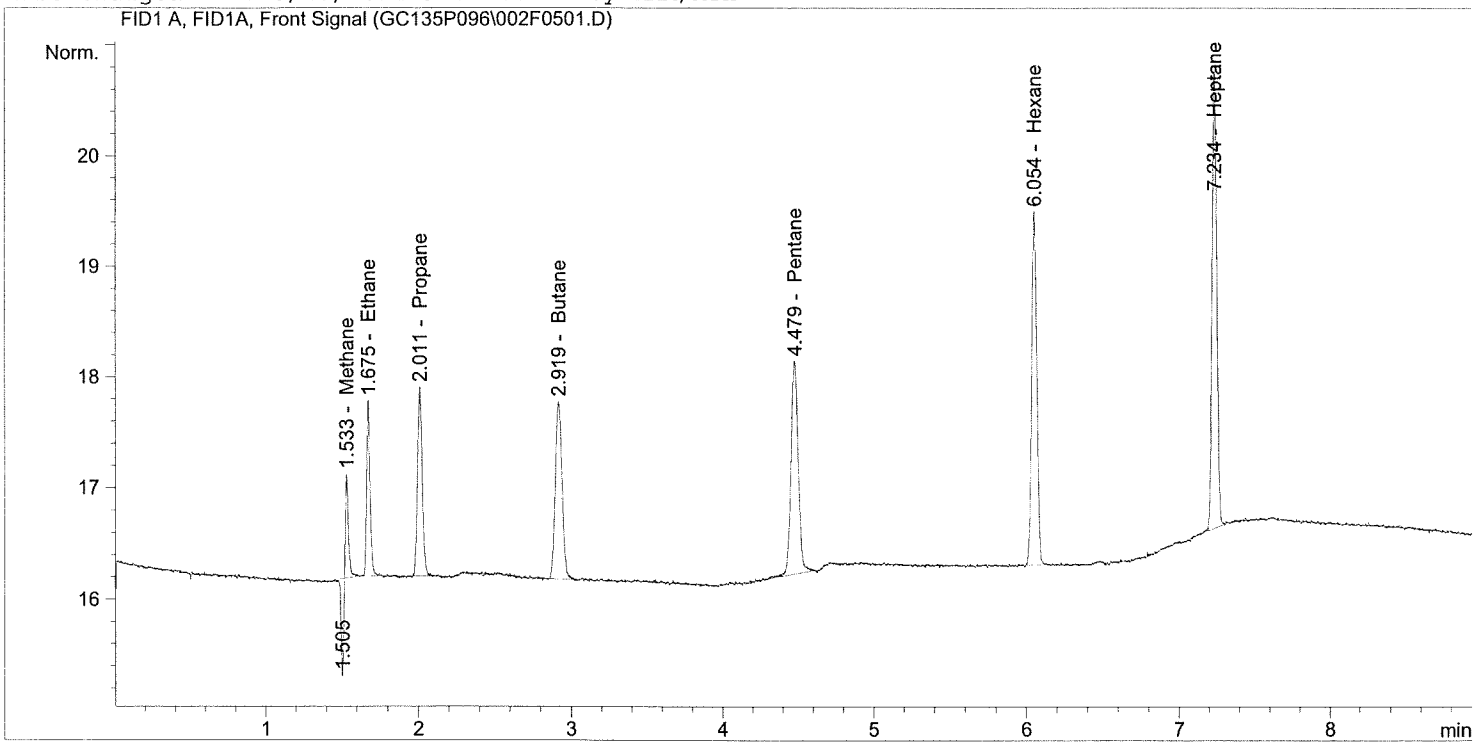
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.533 PB        2.51040    3.97655    9.98275    Methane
  1.675 BB        4.90536    2.01071    9.86325    Ethane
  2.011 PB        7.29175    1.33771    9.75428    Propane
  2.919 BB        9.73732    1.00275    9.76414    Butane
  4.478 BB       12.25955 8.03013e-1    9.84458    Pentane
  6.054 BB       14.61923 6.78160e-1    9.91418    Hexane
  7.233 BB       16.95514 5.82976e-1    9.88444    Heptane

Totals :                                69.00762

==========================================================================
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0501.D
Sample Name: gc135p096 #C3 ENV(1=1900,3=100)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   5
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 1:48:56 PM                      Inj :   1
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

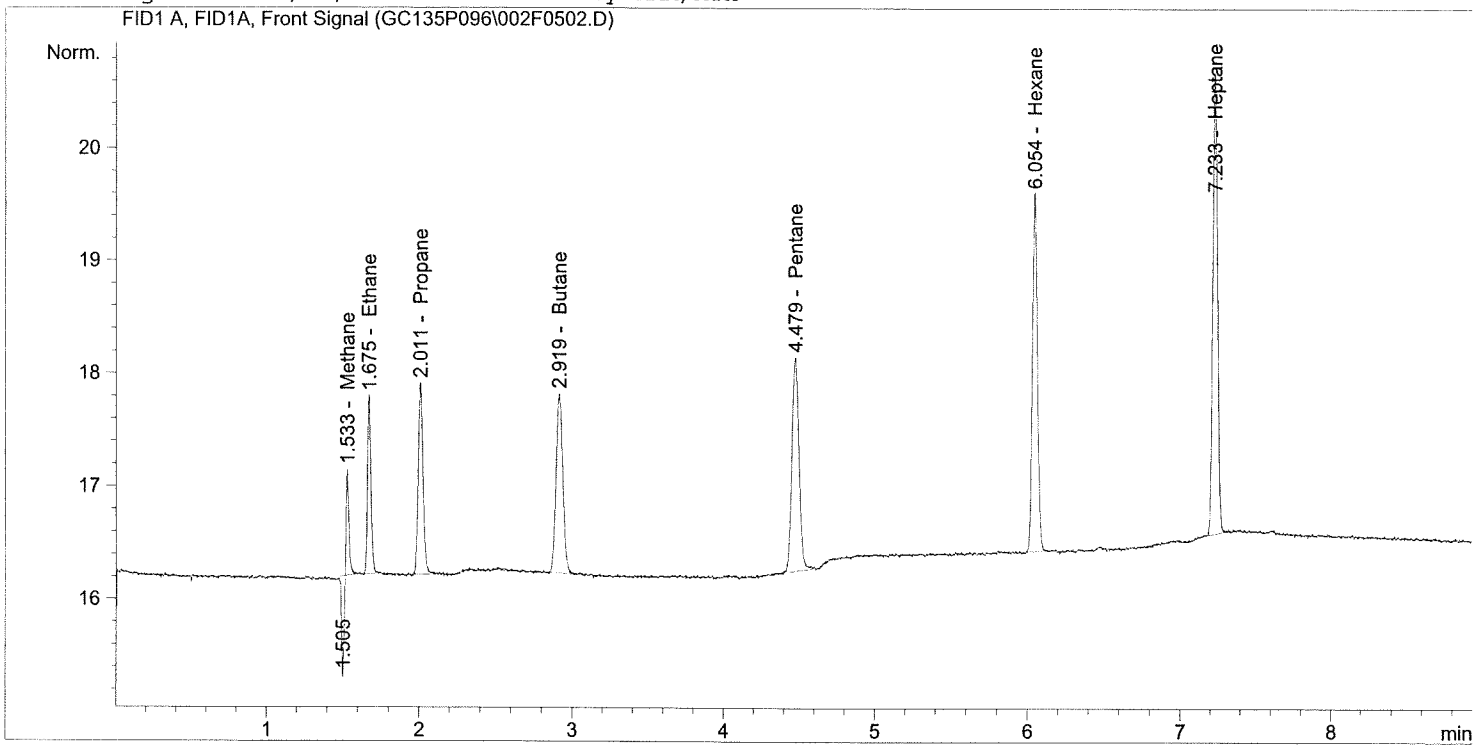
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.533	PB	1.18096	4.13744	4.88617		Methane
1.675	BB	2.42530	2.01827	4.89492		Ethane
2.011	BB	3.64409	1.34165	4.88907		Propane
2.919	BB	4.89172	1.00184	4.90070		Butane
4.479	BB	6.40044	7.89151e-1	5.05091		Pentane
6.054	BB	7.34159	6.73221e-1	4.94251		Hexane
7.234	BB	8.61352	5.79463e-1	4.99122		Heptane

Totals : 34.55551

==

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0502.D
Sample Name: gc135p096 #C3 ENV(1=1900,3=100)

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :   5
Acq. Instrument  : Edith                               Location : Vial 2
Injection Date   : 8/22/2012 2:06:25 PM                    Inj :   2
                                                     Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

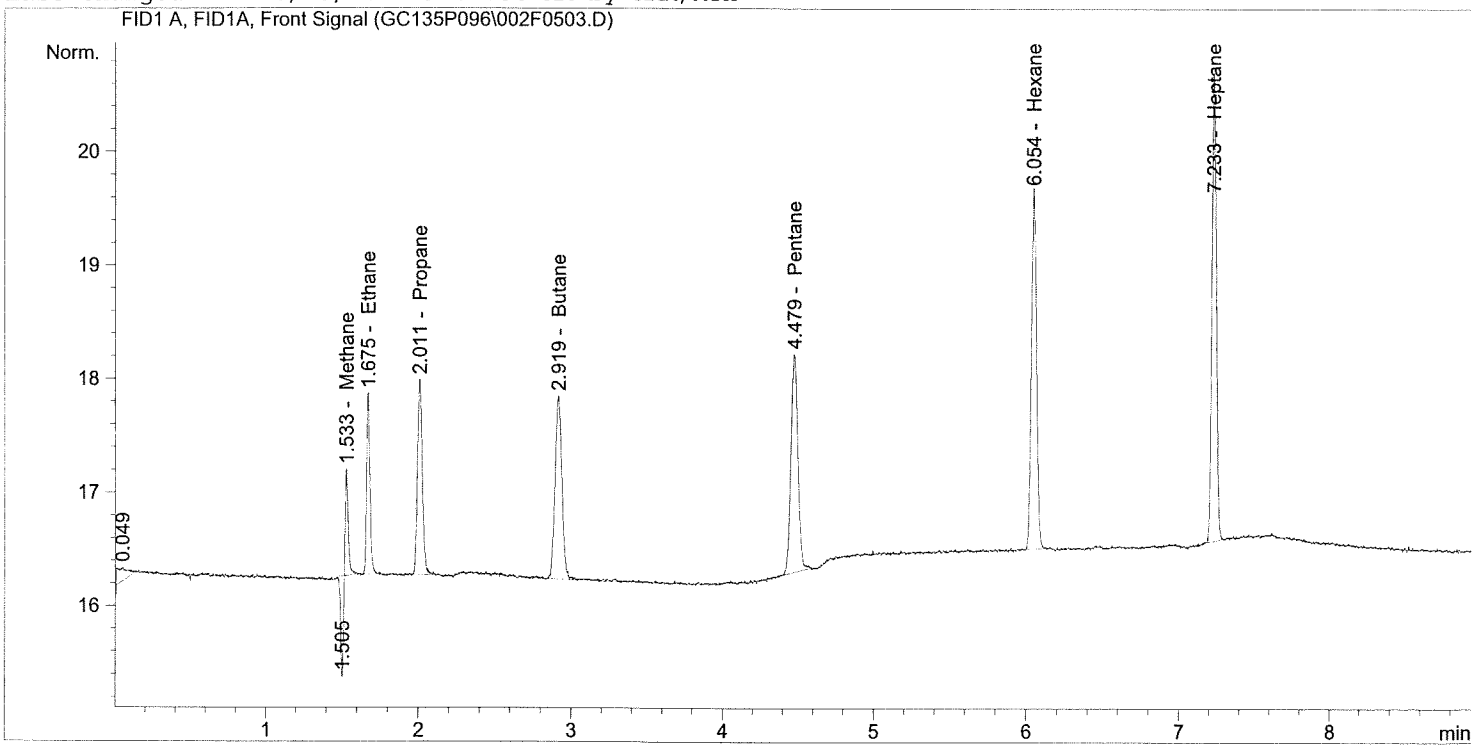
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.533 PB        1.15340    4.14470    4.78052    Methane
  1.675 BB        2.38516    2.01853    4.81451    Ethane
  2.011 BB        3.67005    1.34159    4.92370    Propane
  2.919 BB        4.87762    1.00183    4.88655    Butane
  4.479 BB        6.23872 7.88399e-1    4.91861    Pentane
  6.054 BB        7.35054 6.73233e-1    4.94862    Hexane
  7.233 BB        8.59101 5.79444e-1    4.97801    Heptane

Totals :                               34.25051

==========================================================================
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0503.D
Sample Name: gc135p096 #C3 ENV(1=1900,3=100)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   5
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 2:23:39 PM                      Inj :   3
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

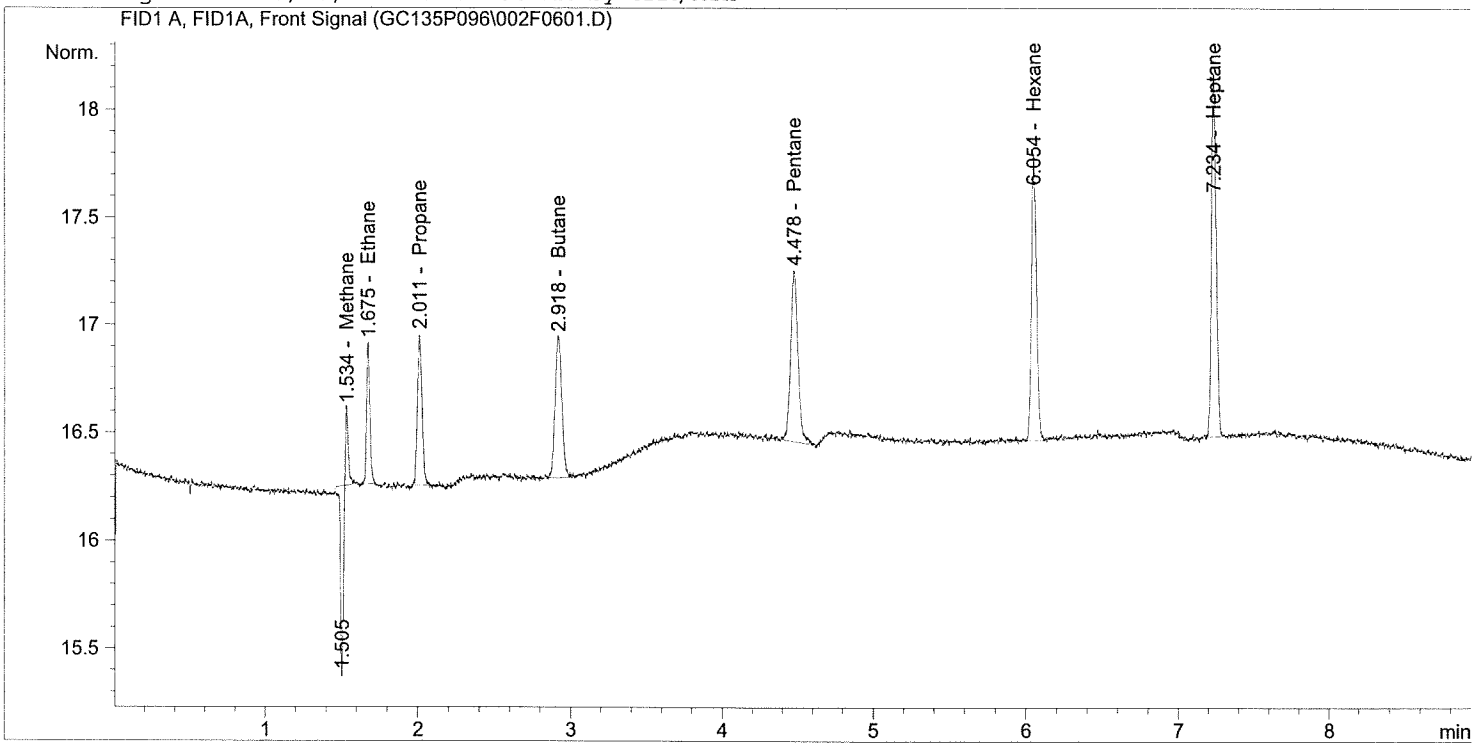
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.533	PB	1.16860	4.14066	4.83876		Methane
1.675	BB	2.40396	2.01841	4.85217		Ethane
2.011	BB	3.72813	1.34147	5.00117		Propane
2.919	BB	4.97183	1.00186	4.98111		Butane
4.479	BB	6.22352	7.88327e-1	4.90617		Pentane
6.054	BB	7.38450	6.73279e-1	4.97182		Hexane
7.233	BB	8.59096	5.79444e-1	4.97798		Heptane

Totals : 34.52918

```
==========================================================================
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0601.D
Sample Name: gc135p096 #C2 ENV(1=1960,4=40)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   6
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 2:40:57 PM                      Inj :   1
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

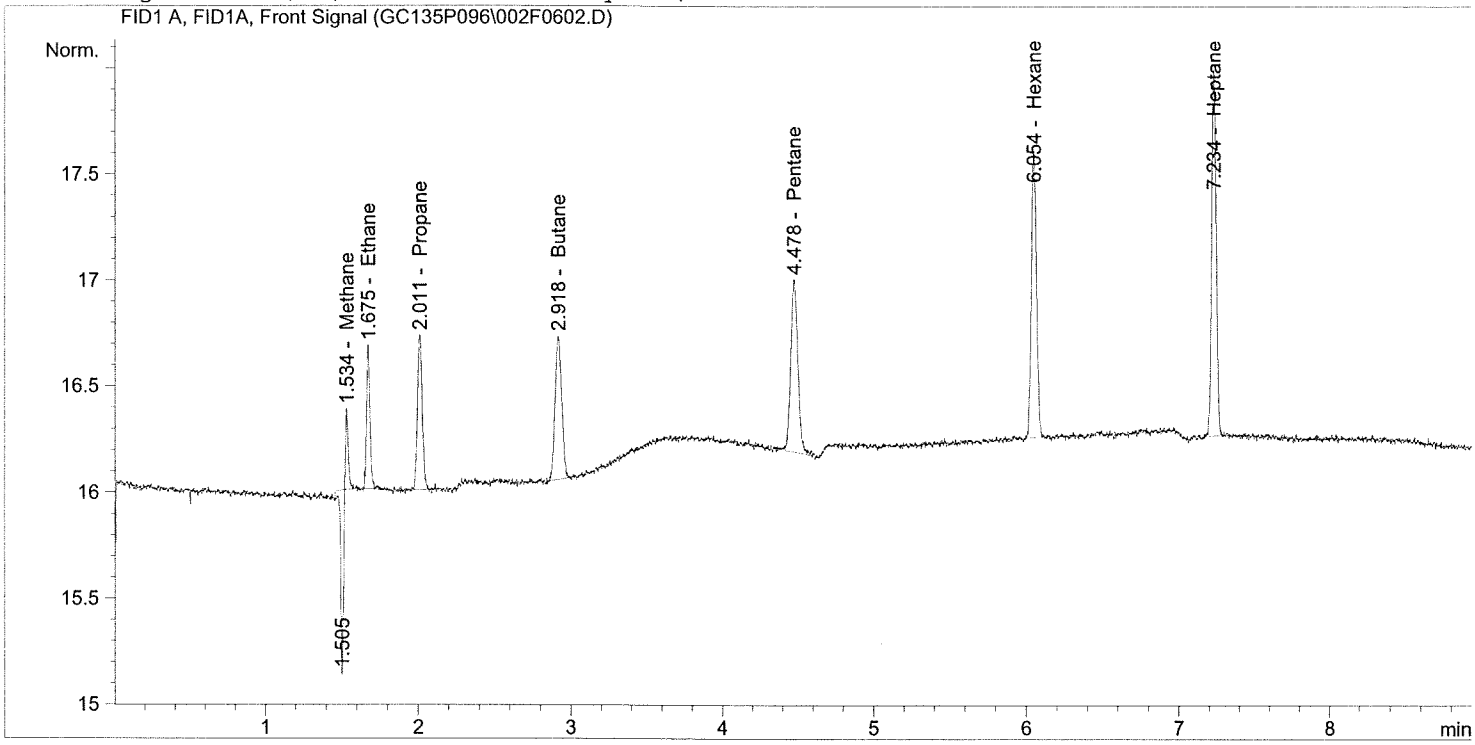
Signal 1: FID1 A, FID1A, Front Signal
```

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.534	PB	4.28272e-1	4.67141	2.00063		Methane
1.675	BP	9.71390e-1	2.04033	1.98195		Ethane
2.011	PB	1.45390	1.35317	1.96736		Propane
2.918	BB	2.02338	9.99216e-1	2.02179		Butane
4.478	BB	2.70026	7.49405e-1	2.02359		Pentane
6.054	BB	3.04427	6.59215e-1	2.00683		Hexane
7.234	BB	3.49577	5.69102e-1	1.98945		Heptane
Totals :				13.99161		

```
==========================================================================
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0602.D
Sample Name: gc135p096 #C2 ENV(1=1960,4=40)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   6
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 2:58:17 PM                      Inj :   2
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

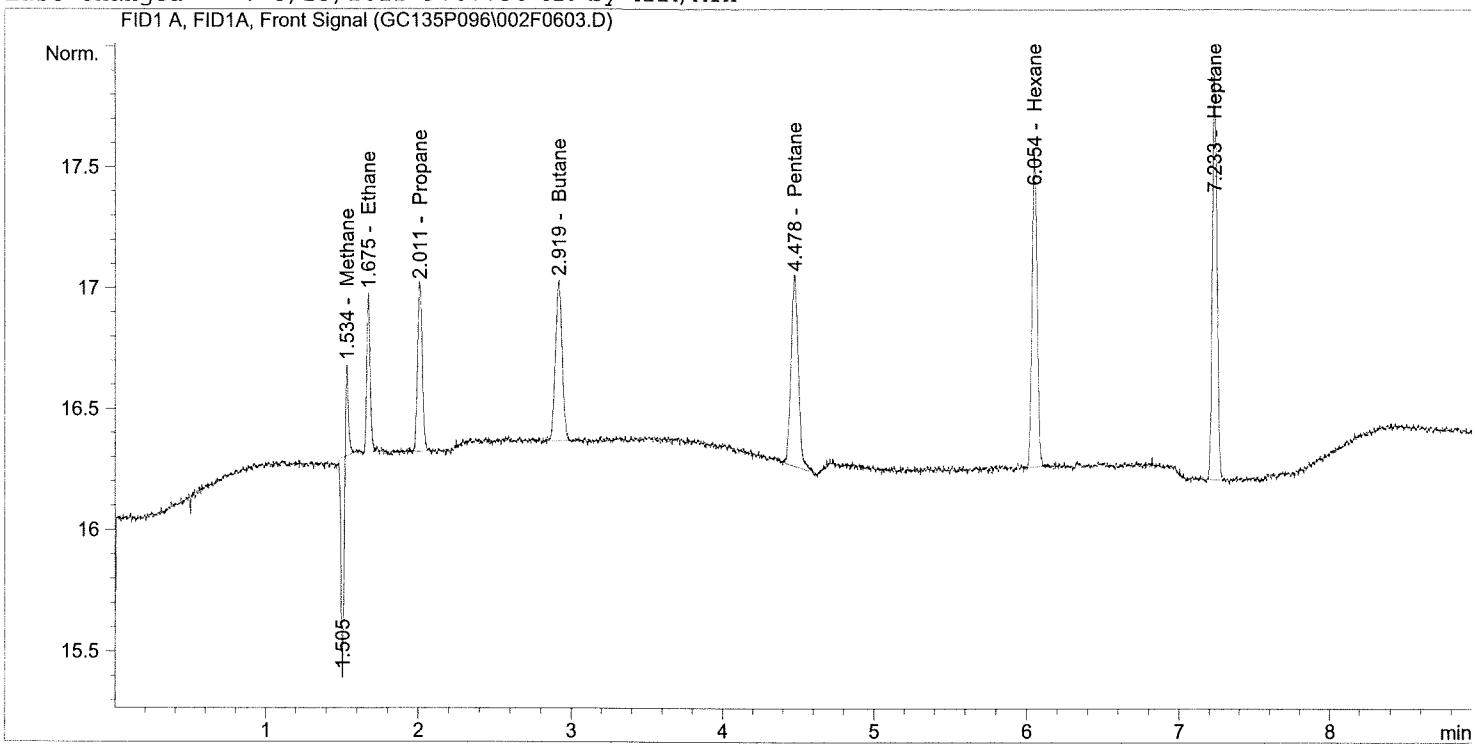
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.534	PB	4.39200e-1	4.65056	2.04253		Methane
1.675	BB	1.02458	2.03873	2.08883		Ethane
2.011	BB	1.56354	1.35211	2.11407		Propane
2.918	BB	2.04041	9.99254e-1	2.03889		Butane
4.478	BB	2.72531	7.50037e-1	2.04408		Pentane
6.054	BB	3.09933	6.59640e-1	2.04444		Hexane
7.234	BB	3.59139	5.69478e-1	2.04522		Heptane

```
Totals :                                  14.41806

==========================================================================
```

Data File G:\GC2012Q3\EDITH\DATA\AUG12\GC135P096\002F0603.D
Sample Name: gc135p096 #C2 ENV(1=1960,4=40)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   6
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 8/22/2012 3:15:38 PM                      Inj :   3
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2012Q3\EDITH\SEQUENCE\GC135P096.S
Acq. Method      : G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Last changed     : 7/12/2012 8:08:37 AM by MTH
Analysis Method  : G:\GC2012Q3\EDITH\METHODS\GC135P096FRONT_C1-C7.M
Last changed     : 8/23/2012 9:07:30 AM by KAM/MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, August 23, 2012 9:07:25 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.534	PB	4.45800e-1	4.63847	2.06783		Methane
1.675	BP	9.97188e-1	2.03970	2.03396		Ethane
2.011	VB	1.46603	1.35317	1.98378		Propane
2.919	BB	2.00666	9.99179e-1	2.00502		Butane
4.478	BB	2.62724	7.48664e-1	1.96692		Pentane
6.054	BB	3.00990	6.59136e-1	1.98394		Hexane
7.233	BB	3.49521	5.69102e-1	1.98913		Heptane

Totals : 14.03057

==

method: G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Modified on: 7/12/2012 at 8:08:37 AM

==========

Agilent Agilent 7890A

==========

Oven	
Equilibration Time	0.3 min
Oven Program	On
35 °C for 2.2 min then 15 °C/min to 70 °C for 0.07 min then 30 °C/min to 140 °C for 2 min	
Run Time	8.9367 min

Front SS Inlet H2	
Mode	Split
Heater	On 200 °C
Pressure	On 5.1931 psi
Total Flow	On 15.6 mL/min
Septum Purge Flow	On 3 mL/min
Gas Saver	Off
Split Ratio	5 :1
Split Flow	10.5 mL/min

Back SS Inlet H2	
Mode	Split
Heater	On 200 °C
Pressure	On 6.1868 psi
Total Flow	On 9.6 mL/min
Septum Purge Flow	On 3 mL/min
Gas Saver	Off
Split Ratio	2 :1
Split Flow	4.4 mL/min

Column #1
Rtx-1 30m x 0.32mm x 4um: 1189.81991
Rtx-1 30m x 0.32mm x 4um
280 °C: 30 m x 320 µm x 4 µm
In: Front SS Inlet H2
Out: Front Detector FID

(Initial)	35 °C
Pressure	5.1931 psi
Flow	2.1 mL/min
Average Velocity	39.91 cm/sec
Holdup Time	1.2528 min
Flow Program	On
2.1 mL/min for 0 min	
Run Time	8.9367 min

Column #2
Rt-Qbond 30m x 0.32mm x 10um: 905448
Rt-Qbond 30m x 0.32mm x 10um
280 °C: 30 m x 320 µm x 10 µm
In: Back SS Inlet H2
Out: Back Detector FID

(Initial)	35 °C
Pressure	6.1868 psi
Flow	2.2 mL/min

method: G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Modified on: 7/12/2012 at 8:08:37 AM

Average Velocity	43.848 cm/sec
Holdup Time	1.1403 min
Flow Program	On
2.2 mL/min for 0 min	
Run Time	8.9367 min

Front Detector FID		
Heater	On	300 °C
H2 Flow	On	50 mL/min
Air Flow	On	450 mL/min
Makeup Flow	On	35 mL/min
Const Col + Makeup	Off	
Flame	On	
Electrometer	On	

Back Detector FID		
Heater	On	300 °C
H2 Flow	On	50 mL/min
Air Flow	On	450 mL/min
Makeup Flow	On	35 mL/min
Const Col + Makeup	Off	
Flame	On	
Electrometer	On	

Valve 1	
Gas Sampling Valve	Off
GSV Loop Volume	0.25 mL
Load Time	1.5 min
Inject Time	0.5 min

Valve 2	
Gas Sampling Valve	Off
GSV Loop Volume	0.25 mL
Load Time	1.5 min
Inject Time	0.5 min

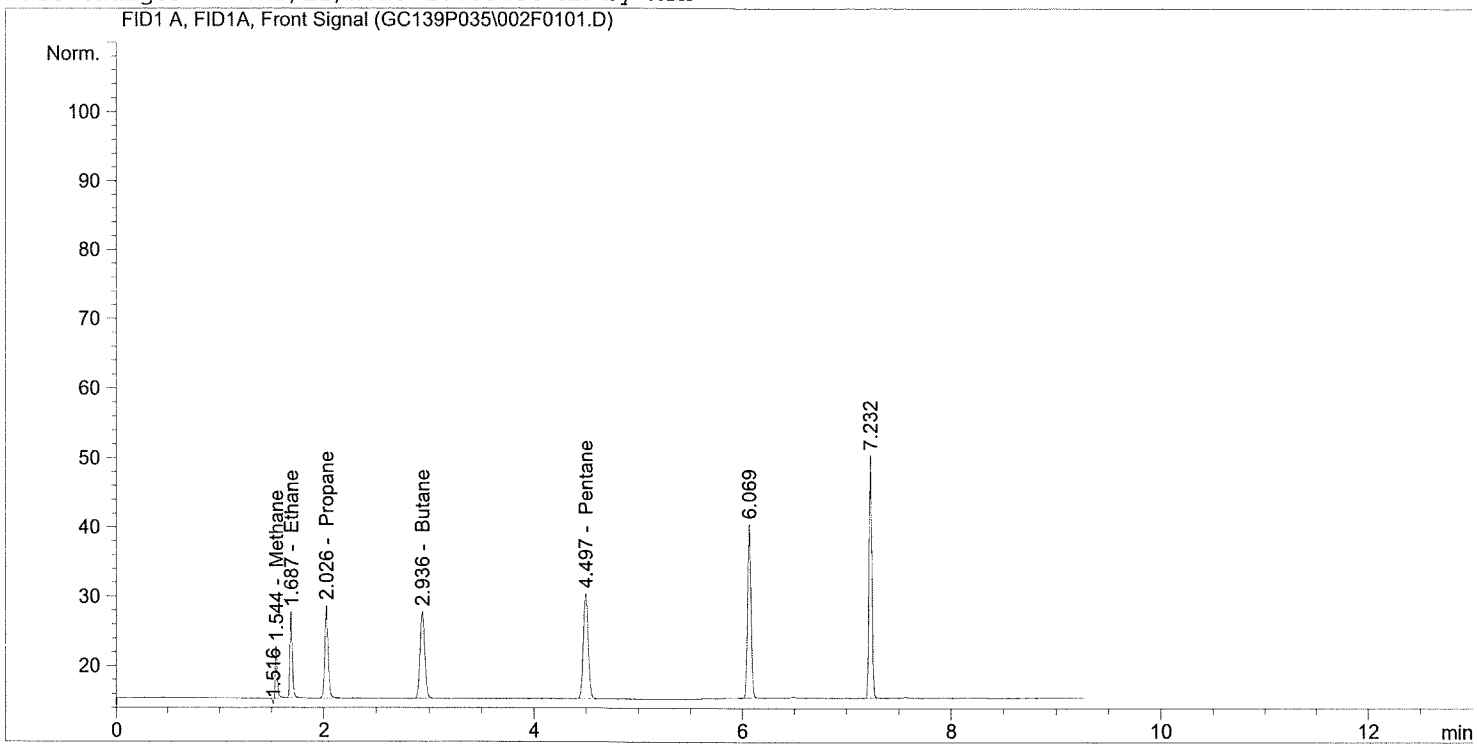
Valve Box		
Heater	On	150 °C

Signals	
Front Signal	Save On
	20 Hz
Test Plot	Save Off
	50 Hz
Back Signal	Save On
	20 Hz
Test Plot	Save Off
	50 Hz

method: G:\GC2012Q3\EDITH\METHODS\GC128P027_Q-BOND.M
Modified on: 7/12/2012 at 8:08:37 AM

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F0101.D
Sample Name: gc135p153 #C4 ENV(1=600,2=400)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   1
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 2/20/2013 10:43:29 AM                      Inj :   1
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

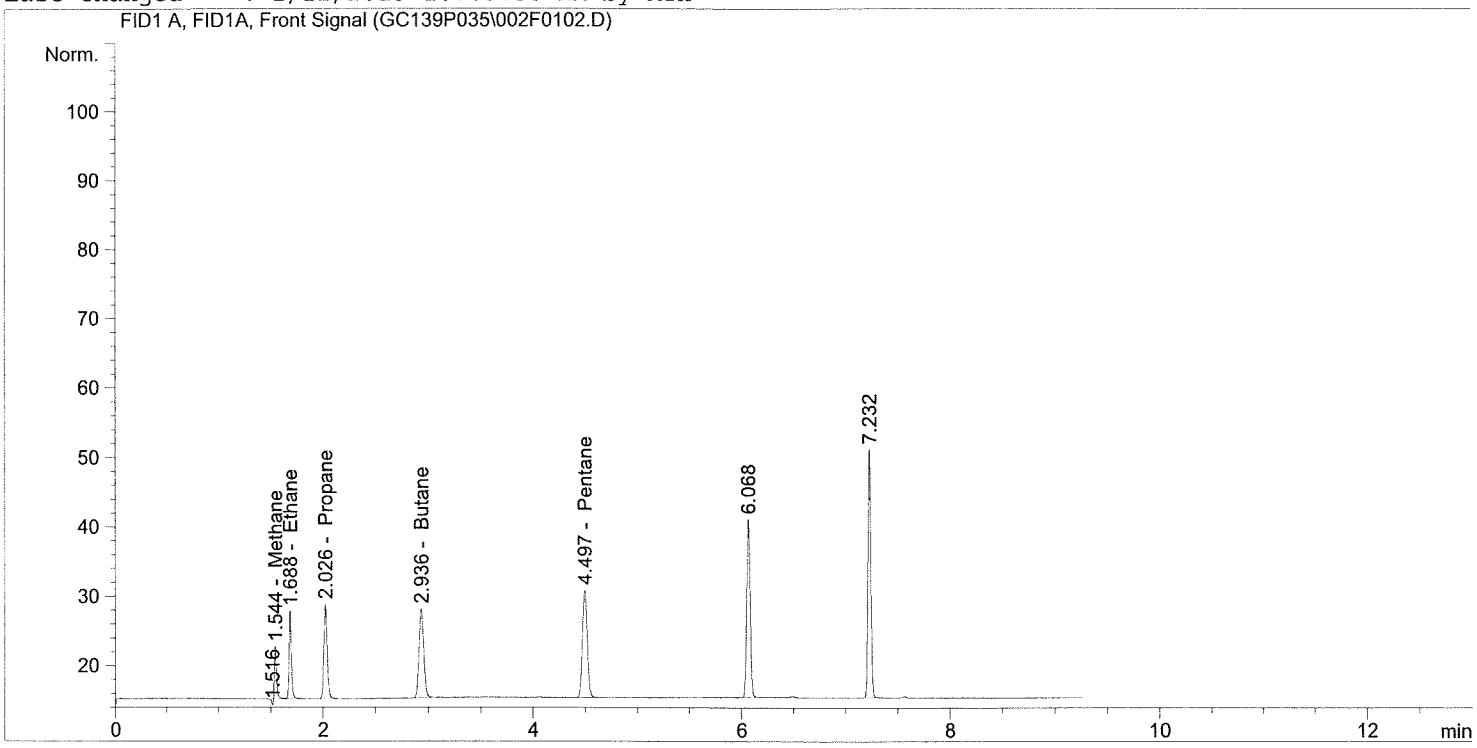
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.544	PB	10.02272	3.86943	38.78219		Methane
1.687	PB	19.31708	2.00519	38.73447		Ethane
2.026	BB	29.49475	1.33476	39.36829		Propane
2.936	BB	38.28293	1.00345	38.41487		Butane
4.497	BB	48.91760	8.14361e-1	39.83659		Pentane
6.794		-	-	-		Benzene

```
Totals :                                  195.13641


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F0102.D
Sample Name: gc135p153 #C4 ENV(1=600,2=400)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   1
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 2/20/2013 11:00:53 AM                      Inj :   2
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

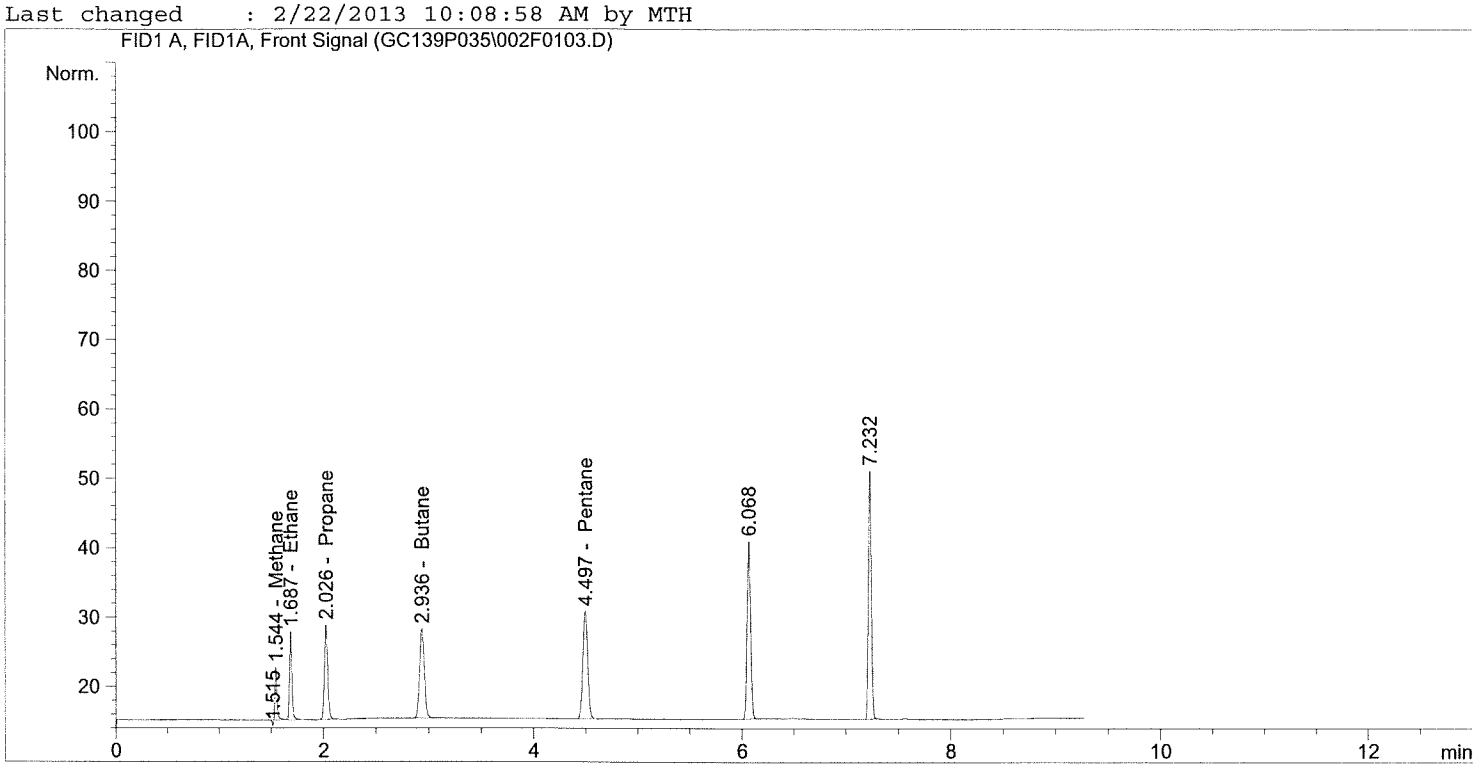
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.544	PV	10.36340	3.86825	40.08820		Methane
1.688	VB	19.83978	2.00514	39.78159		Ethane
2.026	PB	30.03567	1.33474	40.08977		Propane
2.936	BB	39.42222	1.00345	39.55835		Butane
4.497	BV	50.26155	8.14463e-1	40.93615		Pentane
6.794		-	-	-		Benzene

```
Totals :                                200.45406


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F0103.D
Sample Name: gc135p153 #C4 ENV(1=600,2=400)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   1
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 2/20/2013 11:17:52 AM                      Inj :   3
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

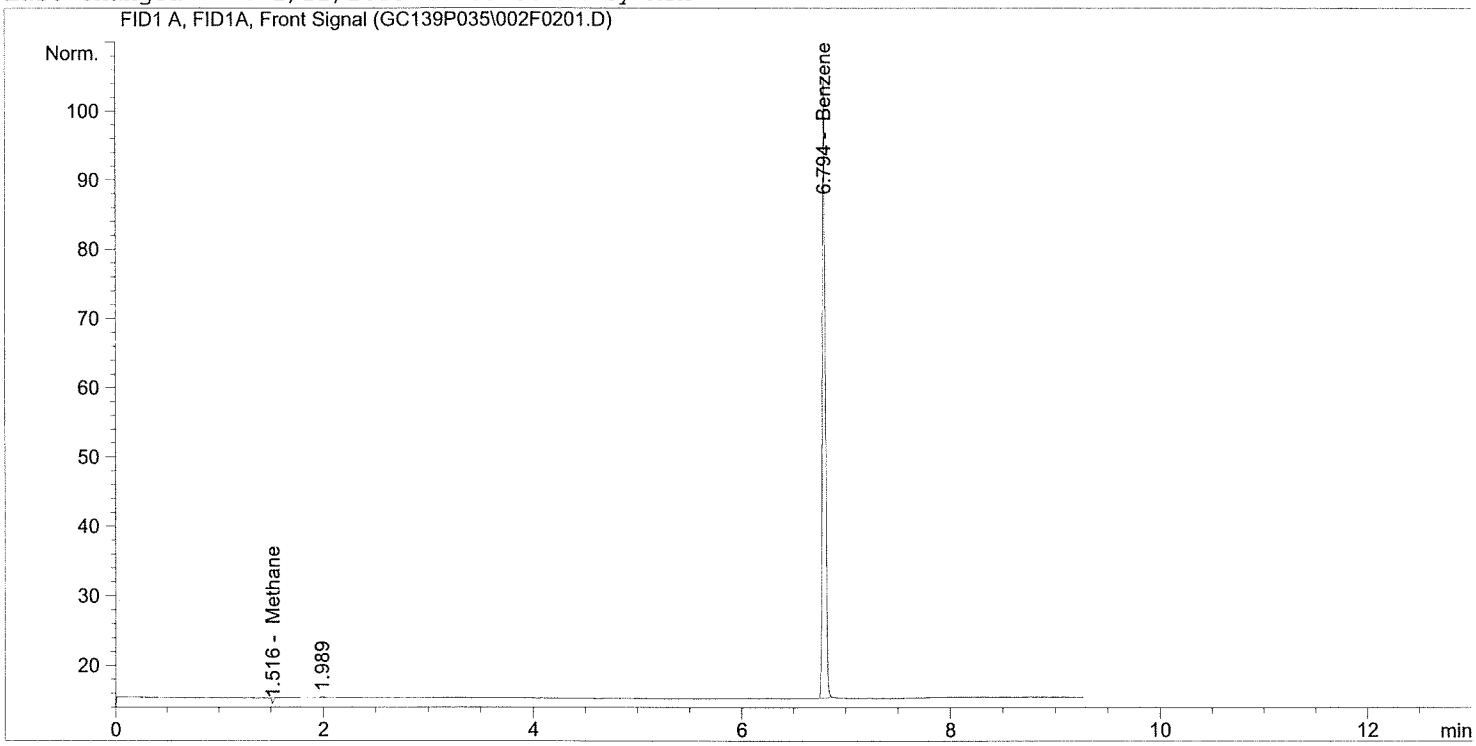
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.544 PV       10.38753    3.86817   40.18071    Methane
  1.687 VB       19.87179    2.00514   39.84573    Ethane
  2.026 BB       30.04159    1.33474   40.09765    Propane
  2.936 BB       39.64604    1.00345   39.78300    Butane
  4.497 BB       50.04709 8.14447e-1   40.76069    Pentane
  6.794            -          -         -         Benzene

Totals :                              200.66779


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F0201.D
Sample Name: gc139p033 #B3 ENV(1=600,6=400)

```
==========================================================================
Acq. Operator   : MTH                              Seq. Line :   2
Acq. Instrument : Edith                           Location : Vial 2
Injection Date  : 2/20/2013 11:35:17 AM                Inj :   1
                                                 Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

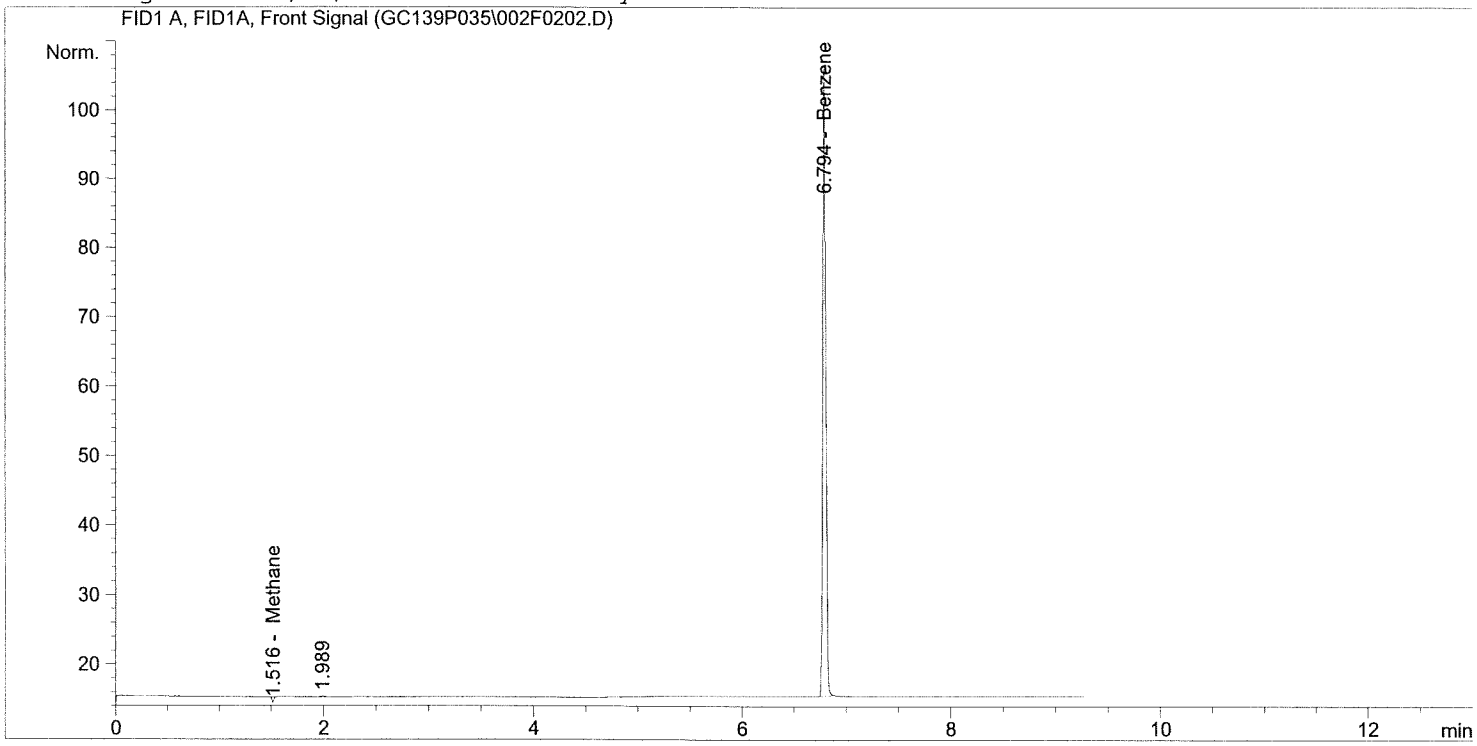
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  1.516 BP N      1.02012    4.18535    4.26955    Methane
  1.675            -          -          -         Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794 BB       178.43585 6.65996e-1  118.83757    Benzene

Totals :                                123.10712


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F0202.D
Sample Name: gc139p033 #B3 ENV(1=600,6=400)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   2
Acq. Instrument  : Edith                             Location : Vial 2
Injection Date   : 2/20/2013 11:52:28 AM                  Inj :   2
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

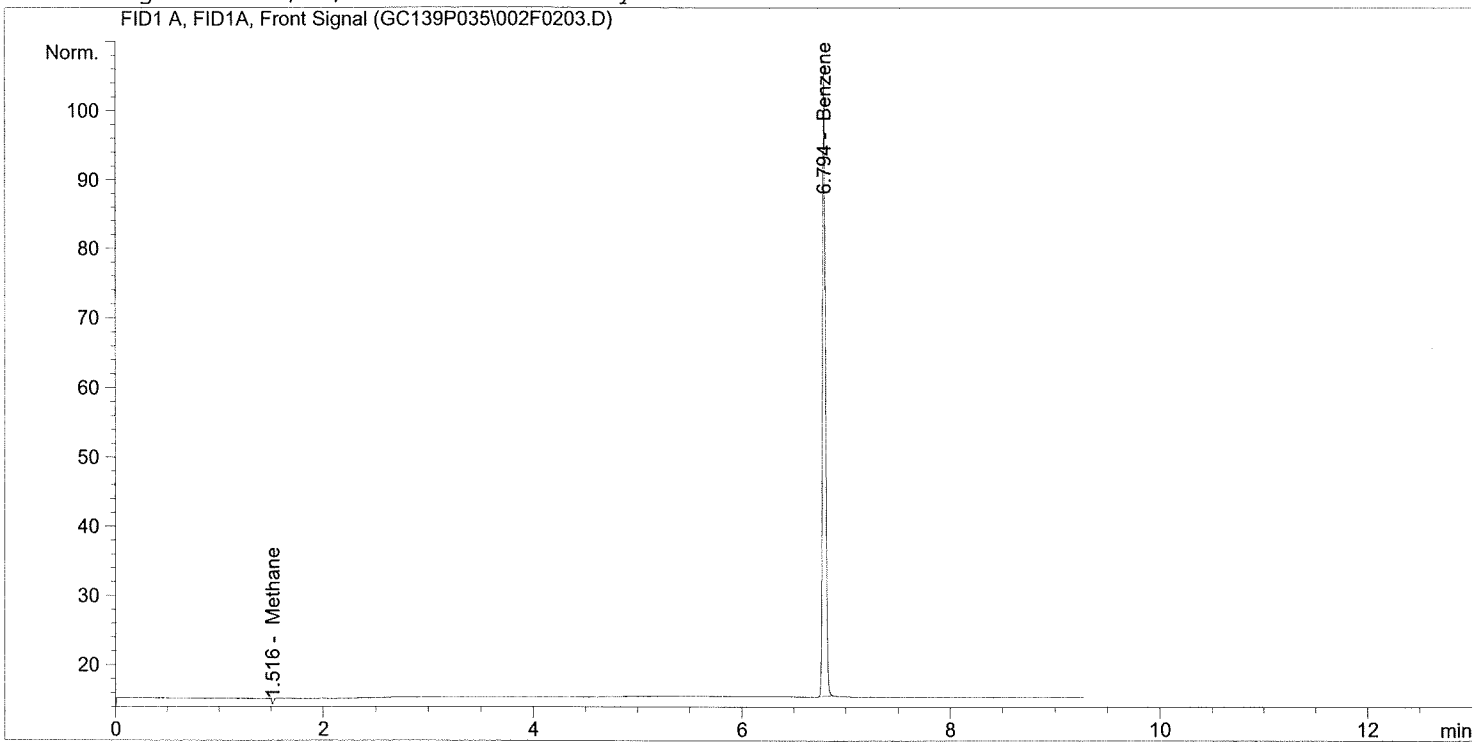
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  1.516 BP N      1.01542    4.18697    4.25156    Methane
  1.675            -          -          -         Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794 BB      180.47215 6.66002e-1  120.19479    Benzene

Totals :                               124.44635


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F0203.D
Sample Name: gc139p033 #B3 ENV(1=600,6=400)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   2
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 2/20/2013 12:09:41 PM                      Inj :   3
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

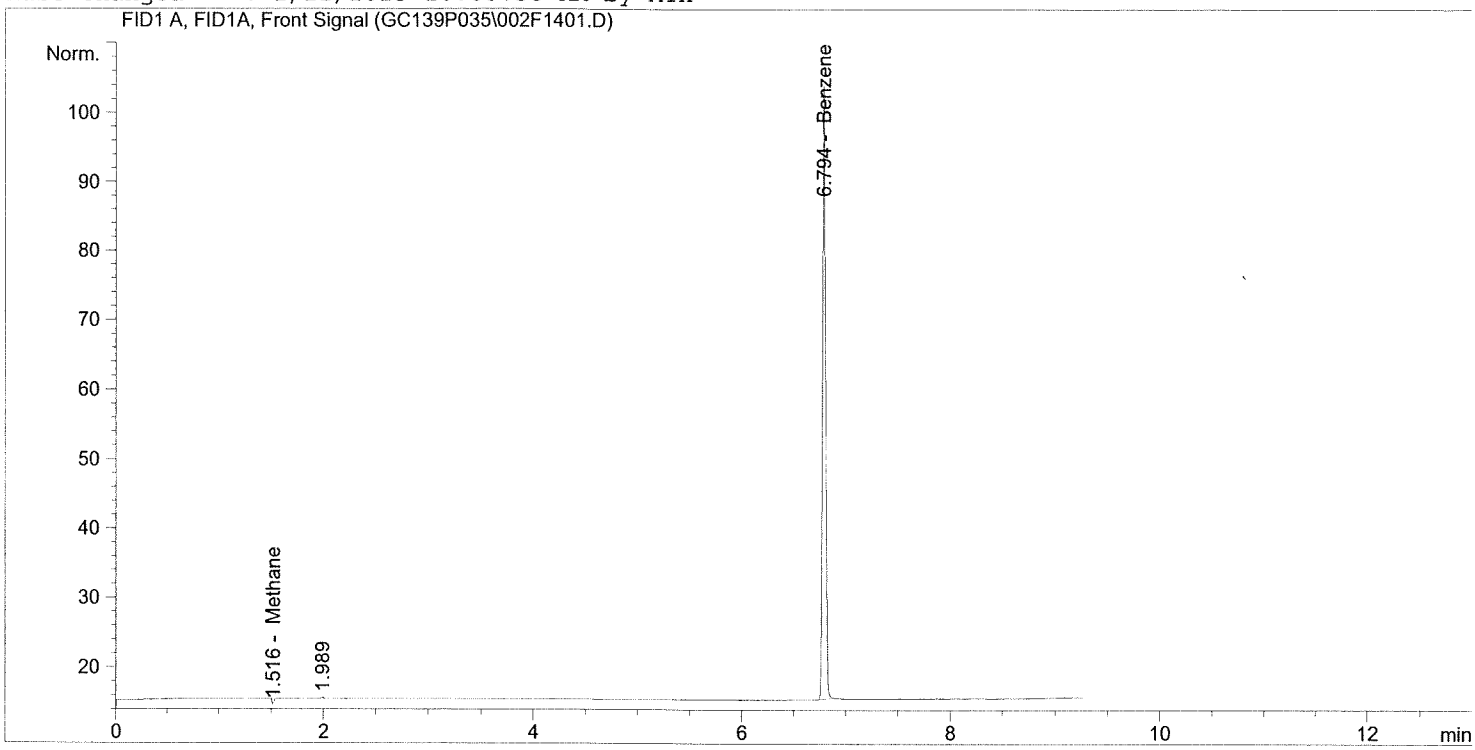
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.516 VP N      1.19109    4.13486    4.92498    Methane
  1.675            -          -          -        Ethane
  2.020            -          -          -        Propane
  2.919            -          -          -        Butane
  4.478            -          -          -        Pentane
  6.794 BB      180.40891 6.66002e-1  120.15264    Benzene

Totals :                               125.07762


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F1401.D
Sample Name: gc139p033 #B3 ENV(1=600,6=400)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  14
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 2/20/2013 9:25:11 PM                      Inj :   1
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

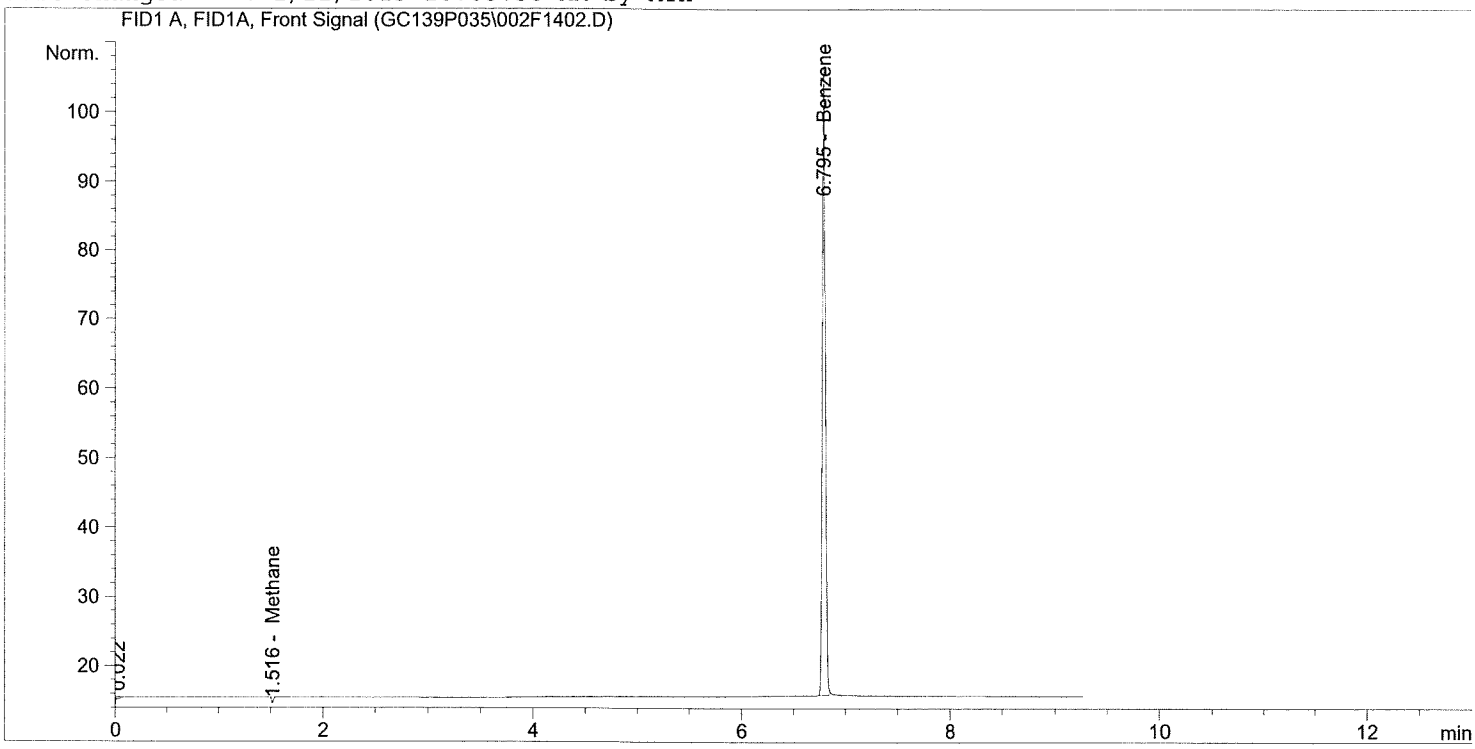
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.516 BP N      1.02405    4.18400    4.28462    Methane
  1.675            -          -          -         Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794 BB       175.10272 6.65986e-1  116.61599    Benzene

Totals :                                120.90061


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F1402.D
Sample Name: gc139p033 #B3 ENV(1=600,6=400)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  14
Acq. Instrument  : Edith                             Location : Vial 2
Injection Date   : 2/20/2013 9:42:13 PM                   Inj :   2
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

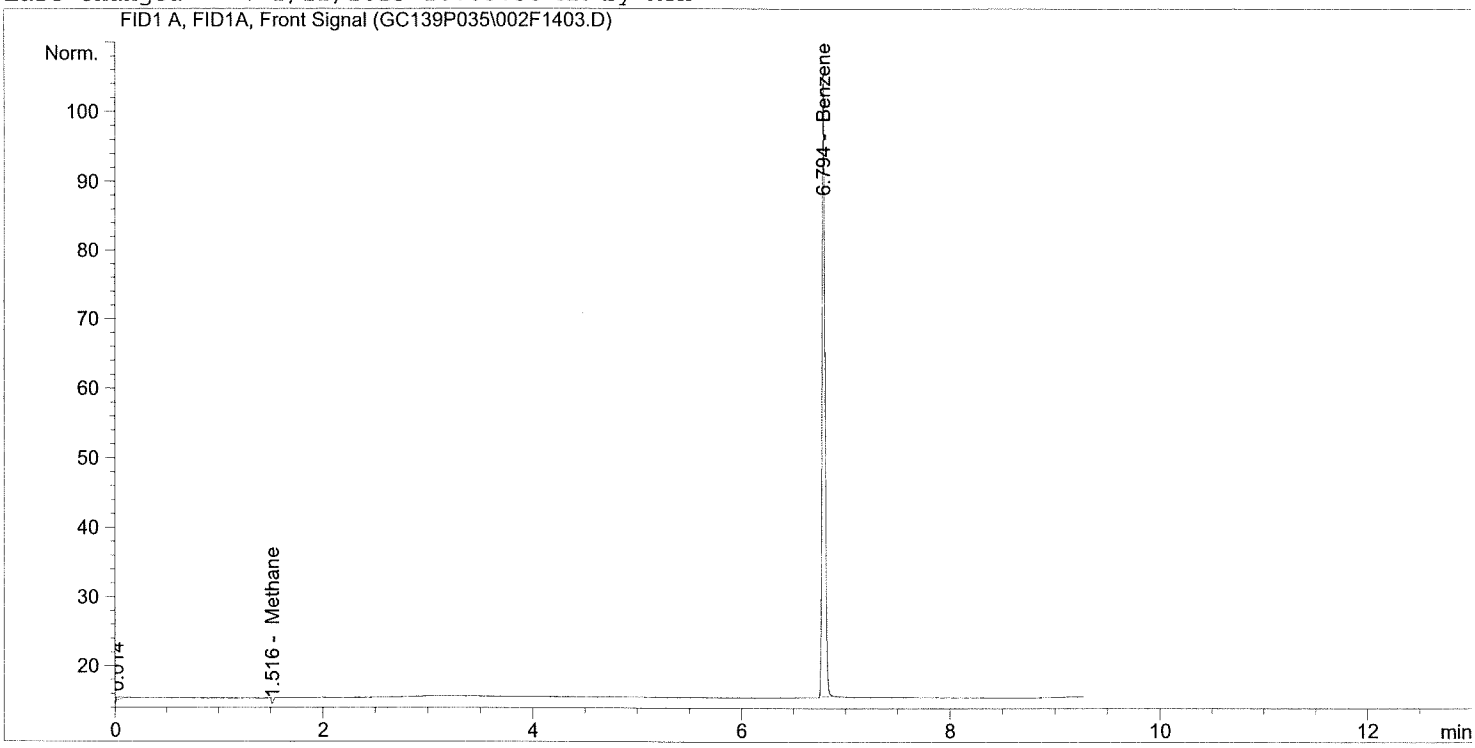
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.516 PP N      1.07630    4.16699    4.48494     Methane
  1.675            -          -          -         Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.795 BB       180.19273 6.66001e-1  120.00856    Benzene

Totals :                                124.49349


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F1403.D
Sample Name: gc139p033 #B3 ENV(1=600,6=400)

```
======================================================================
Acq. Operator    : MTH                          Seq. Line :  14
Acq. Instrument  : Edith                         Location : Vial 2
Injection Date   : 2/20/2013 9:59:24 PM               Inj :   3
                                                Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
======================================================================
                    External Standard Report
======================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

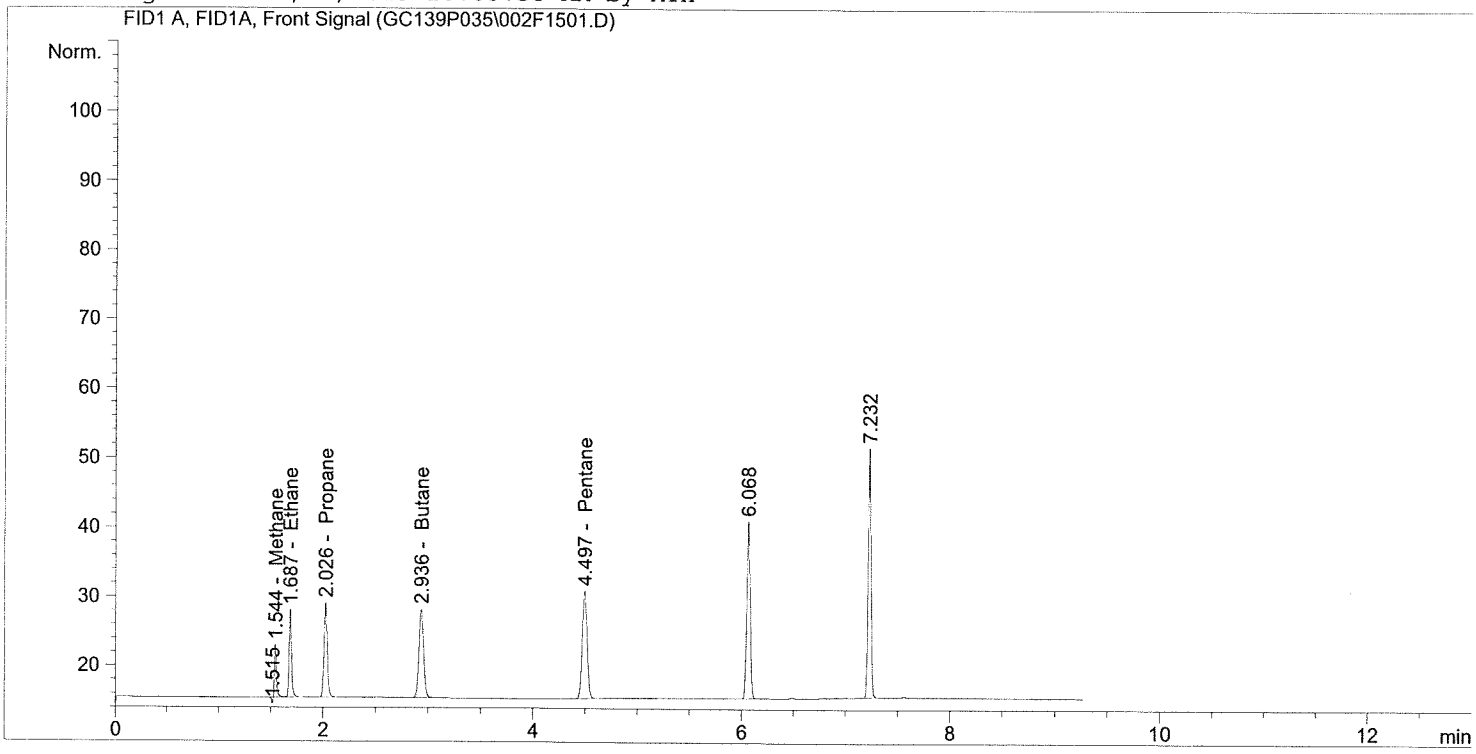
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.516 BP N      1.02963    4.18210    4.30602    Methane
  1.675            -          -          -         Ethane
  2.020            -          -          -         Propane
  2.919            -          -          -         Butane
  4.478            -          -          -         Pentane
  6.794 BB      179.32350 6.65999e-1  119.42920    Benzene

Totals :                               123.73522


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F1501.D
Sample Name: gc135p153 #C4 ENV(1=600,2=400)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  15
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 2/20/2013 10:18:22 PM                      Inj :   1
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

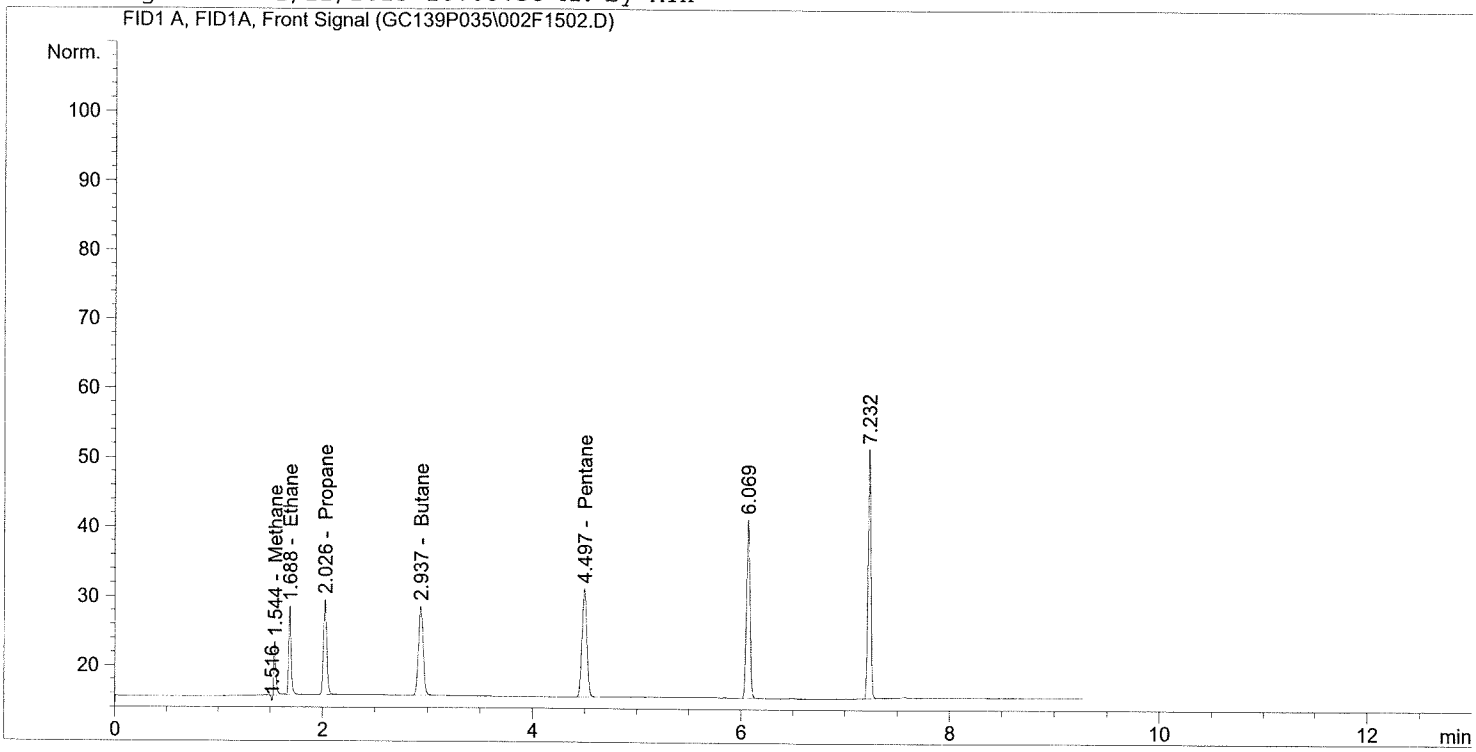
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.544	PV	10.31003	3.86843	39.88361		Methane
1.687	VB	19.67643	2.00516	39.45436		Ethane
2.026	BB	29.68893	1.33475	39.62729		Propane
2.936	BB	39.24426	1.00345	39.37974		Butane
4.497	BV	50.22766	8.14460e-1	40.90843		Pentane
6.794		-	-	-		Benzene

Totals : 199.25343

1 Warnings or Errors :

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F1502.D
Sample Name: gc135p153 #C4 ENV(1=600,2=400)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  15
Acq. Instrument  : Edith                             Location : Vial 2
Injection Date   : 2/20/2013 10:38:07 PM                  Inj :   2
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

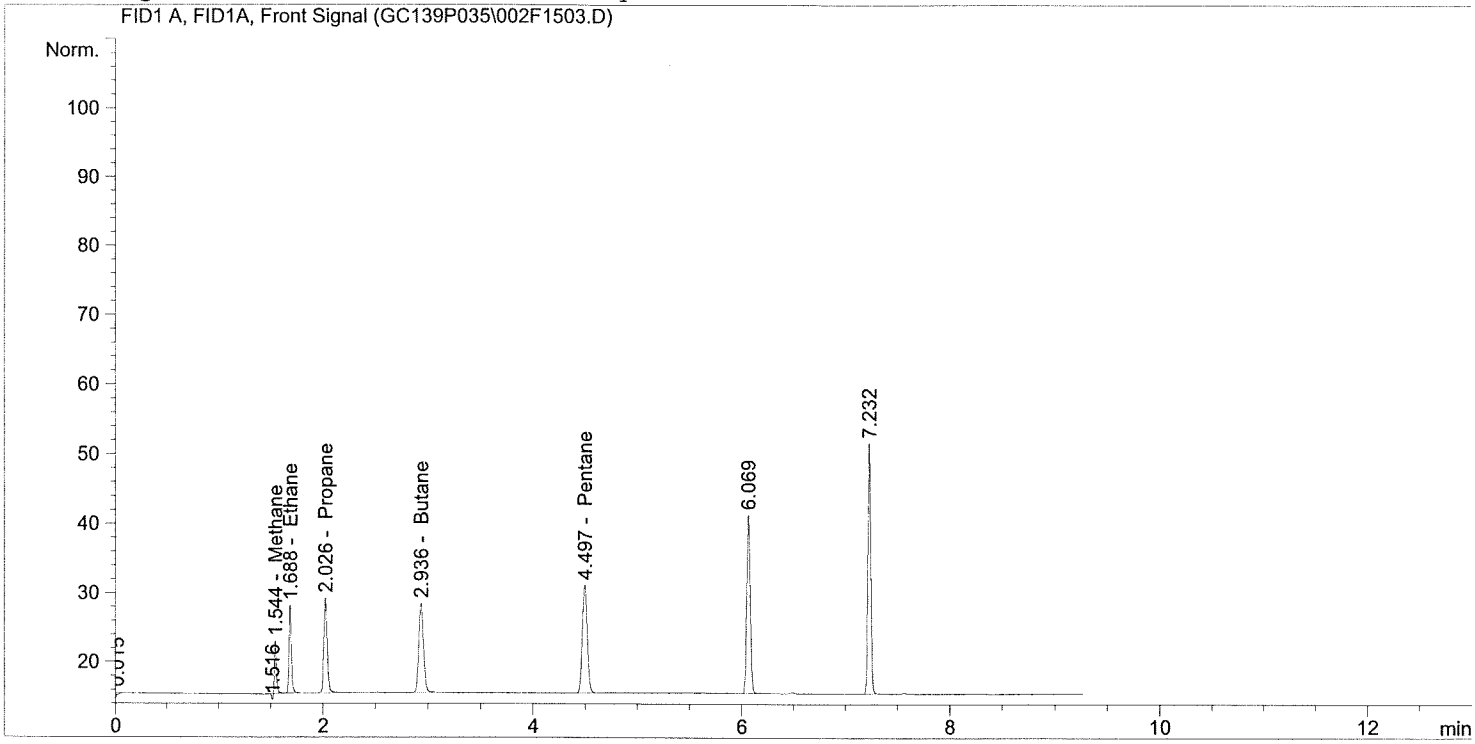
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.544 PV       10.74407    3.86702   41.54757    Methane
  1.688 VB       20.48436    2.00509   41.07289    Ethane
  2.026 PB       30.49265    1.33472   40.69927    Propane
  2.937 BB       39.62649    1.00345   39.76338    Butane
  4.497 BB       50.39048 8.14472e-1   41.04164    Pentane
  6.794            -          -         -         Benzene

Totals :                              204.12475


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F1503.D
Sample Name: gc135p153 #C4 ENV(1=600,2=400)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  15
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 2/20/2013 10:57:50 PM                      Inj :   3
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

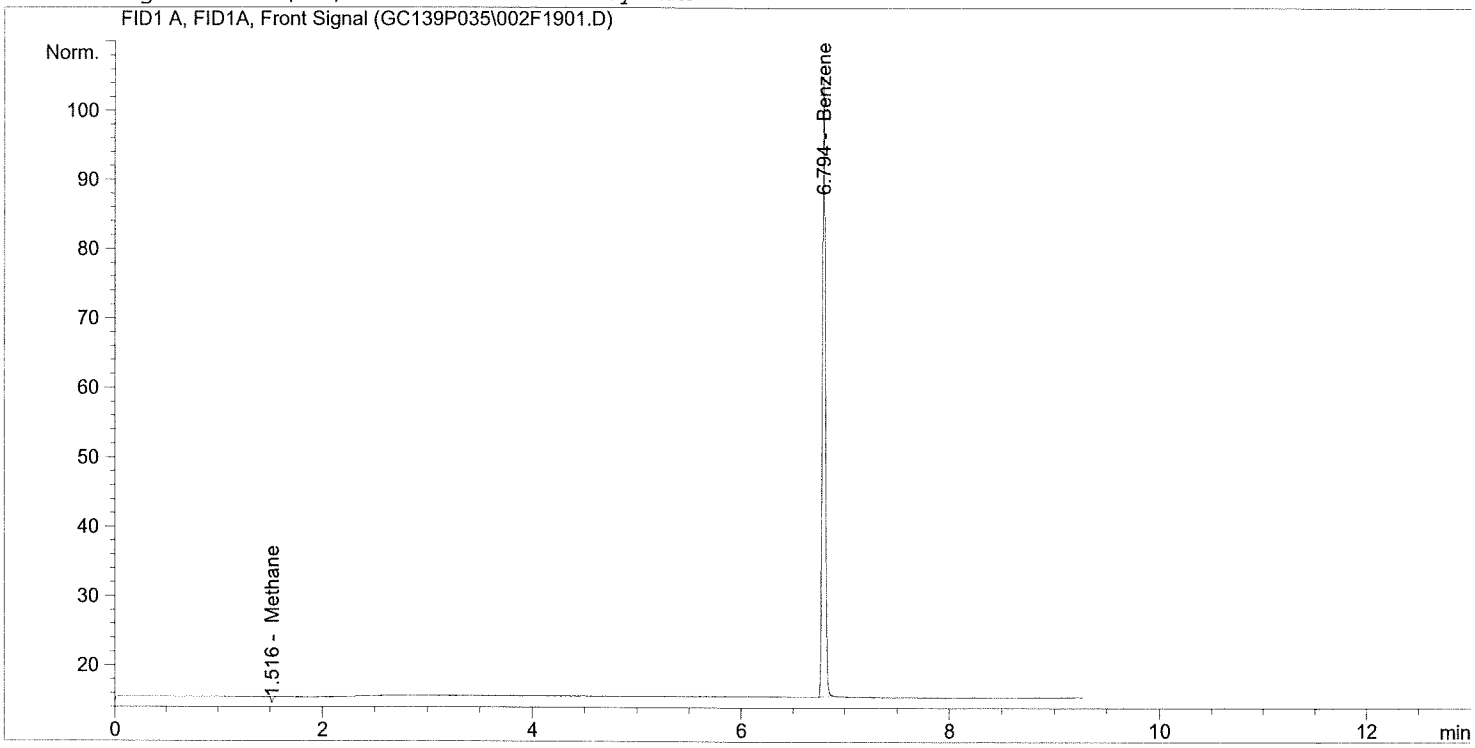
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.544 PV       10.10341    3.86914   39.09149    Methane
  1.688 VB       19.88980    2.00514   39.88180    Ethane
  2.026 BB       30.19370    1.33473   40.30053    Propane
  2.936 BB       39.62397    1.00345   39.76085    Butane
  4.497 BB       50.43305 8.14475e-1   41.07647    Pentane
  6.794            -          -          -        Benzene

Totals :                              200.11114


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F1901.D
Sample Name: gc139p033 #B3 ENV(1=600,6=400)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  19
Acq. Instrument  : Edith                             Location : Vial 2
Injection Date   : 2/21/2013 1:50:55 AM                   Inj :   1
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

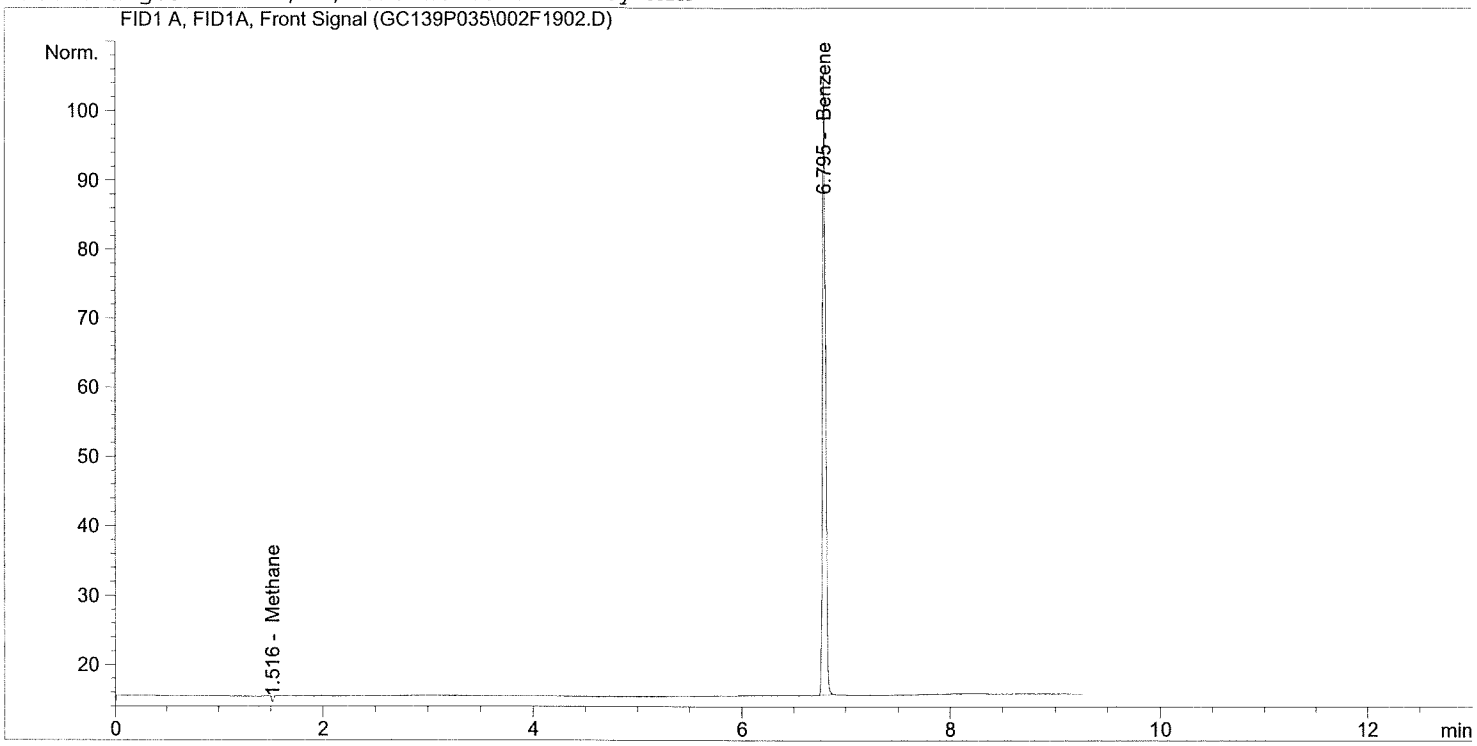
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.516 BP N      1.05947    4.17229    4.42039    Methane
  1.675            -          -          -        Ethane
  2.020            -          -          -        Propane
  2.919            -          -          -        Butane
  4.478            -          -          -        Pentane
  6.794 BB      178.34708 6.65996e-1  118.77840    Benzene

Totals :                               123.19879


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F1902.D
Sample Name: gc139p033 #B3 ENV(1=600,6=400)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  19
Acq. Instrument  : Edith                             Location : Vial 2
Injection Date   : 2/21/2013 2:08:07 AM                   Inj :   2
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

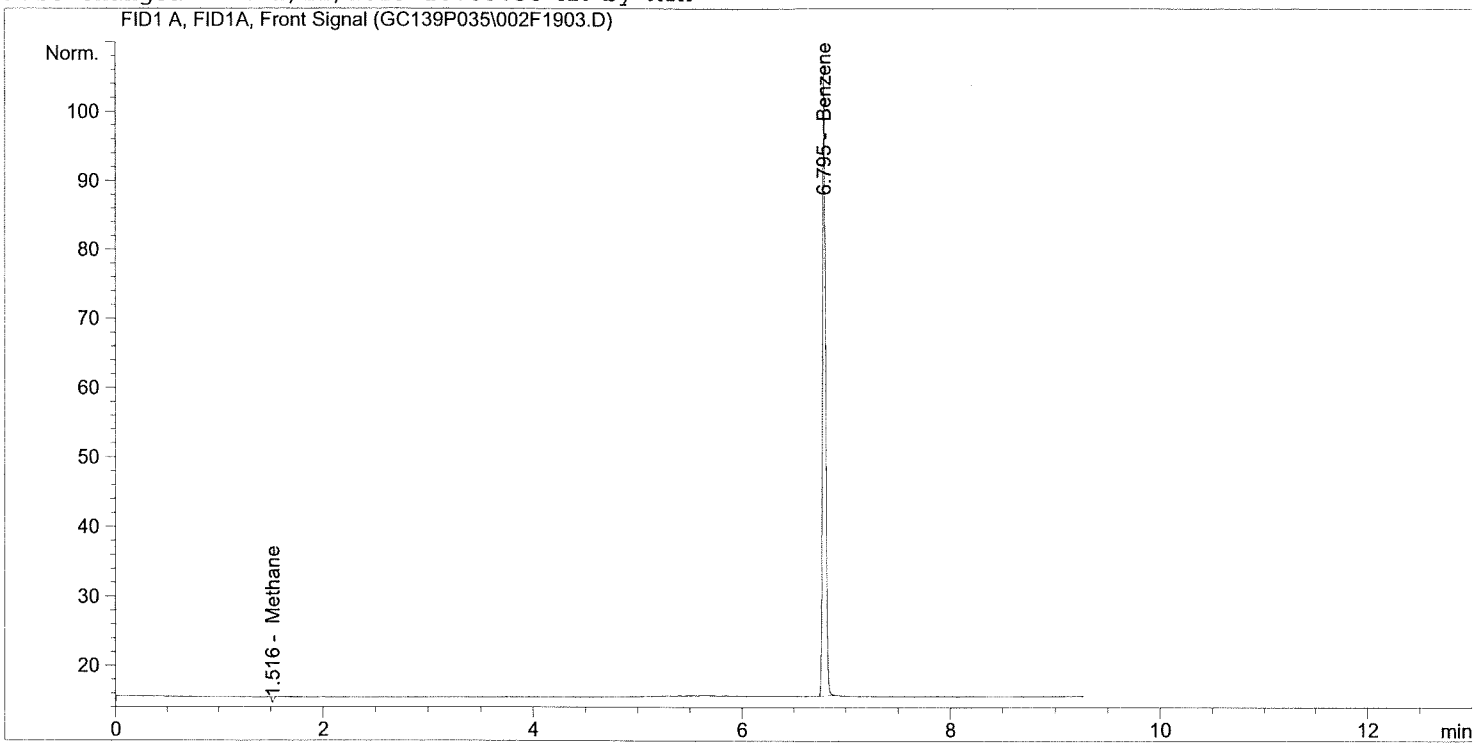
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.516	BP N	1.03078	4.18171	4.31042		Methane
1.675		-	-	-		Ethane
2.020		-	-	-		Propane
2.919		-	-	-		Butane
4.478		-	-	-		Pentane
6.795	BB	179.91985	6.66000e-1	119.82667		Benzene

Totals : 124.13709

1 Warnings or Errors :

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F1903.D
Sample Name: gc139p033 #B3 ENV(1=600,6=400)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  19
Acq. Instrument  : Edith                             Location : Vial 2
Injection Date   : 2/21/2013 2:24:54 AM                   Inj :   3
                                                   Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

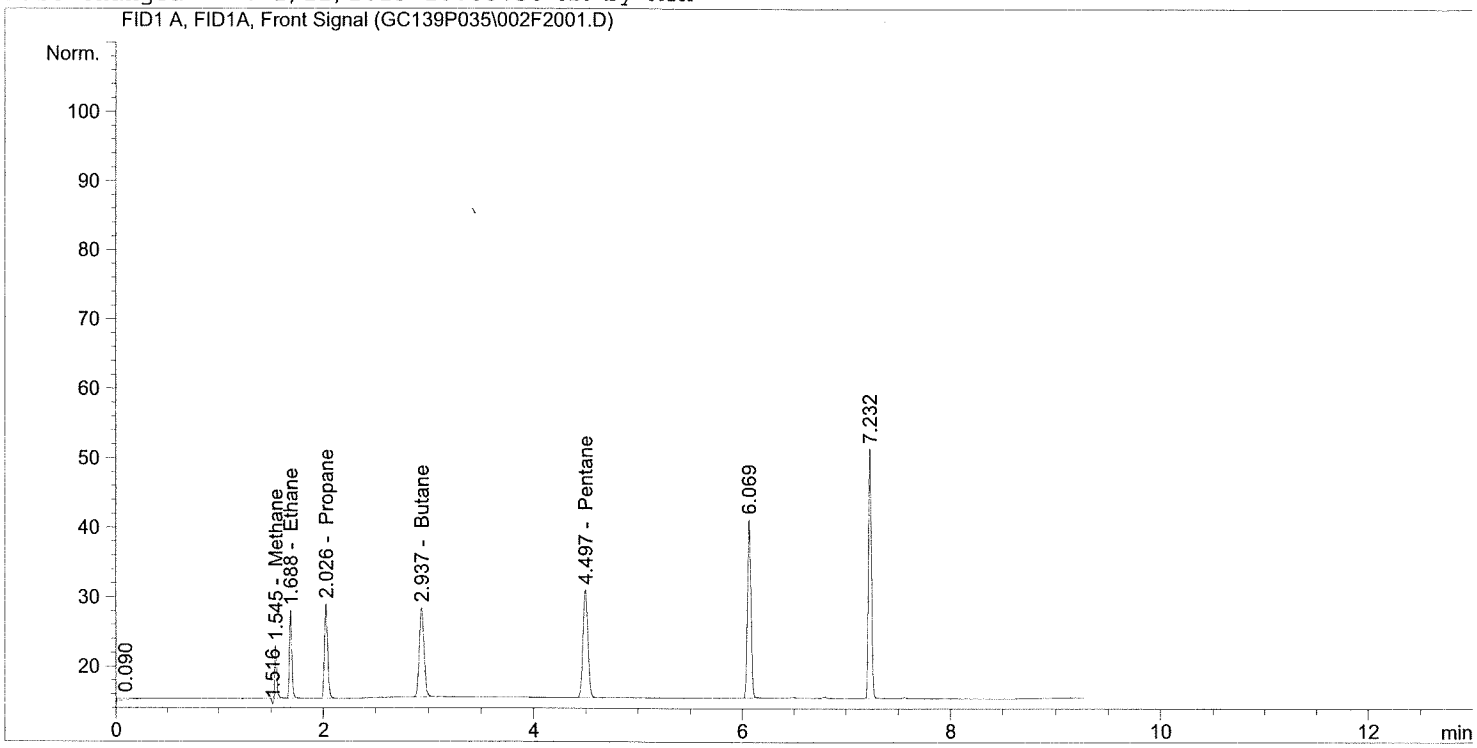
RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.516	BP N	1.03474	4.18038	4.32562		Methane
1.675		-	-	-		Ethane
2.020		-	-	-		Propane
2.919		-	-	-		Butane
4.478		-	-	-		Pentane
6.795	BB	180.59068	6.66002e-1	120.27380		Benzene

Totals : 124.59942

1 Warnings or Errors :

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F2001.D
Sample Name: gc135p153 #C4 ENV(1=600,2=400)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  20
Acq. Instrument  : Edith                                 Location : Vial 2
Injection Date   : 2/21/2013 2:41:52 AM                      Inj :   1
                                                       Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

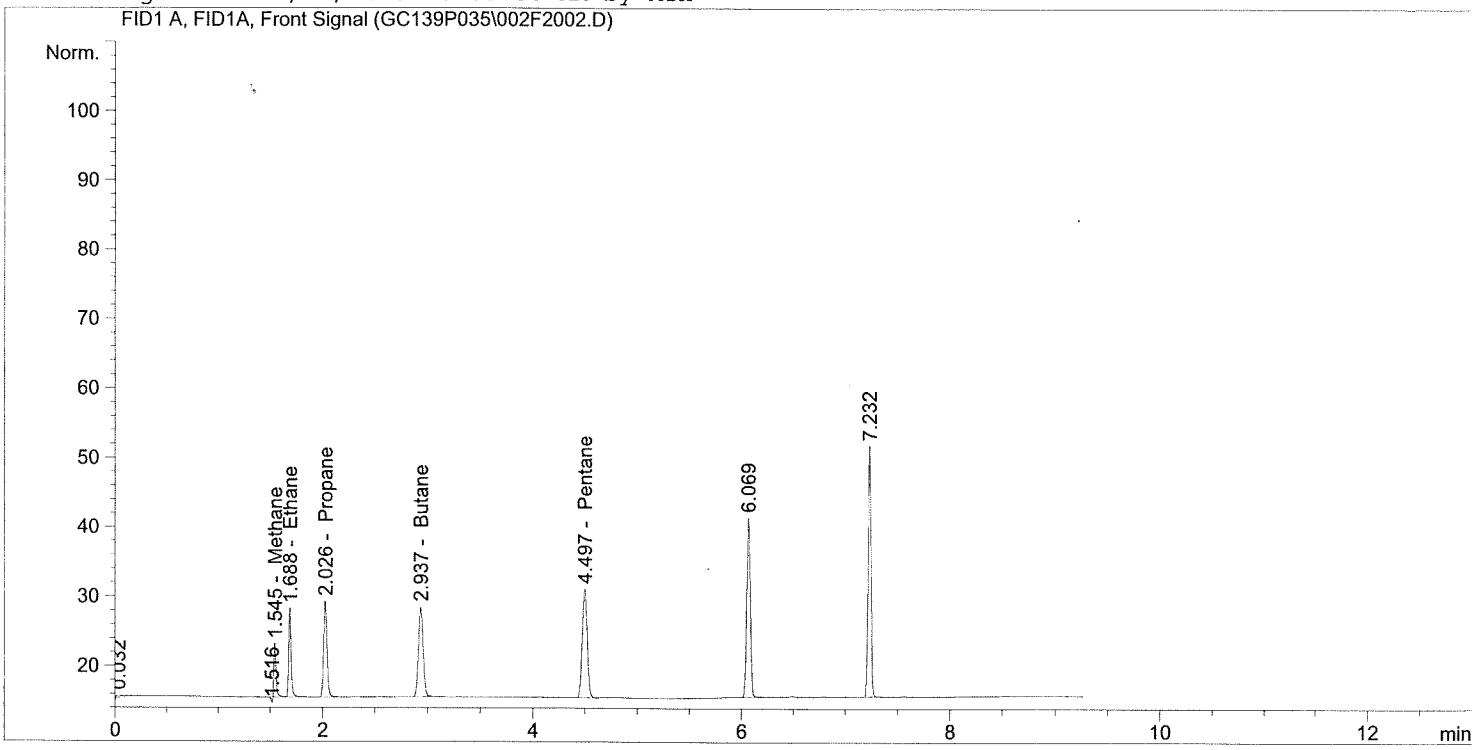
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.545 PB       10.33469    3.86835   39.97813    Methane
  1.688 PB       20.06522    2.00512   40.23322    Ethane
  2.026 BB       29.74328    1.33475   39.69977    Propane
  2.937 BB       39.65998    1.00345   39.79699    Butane
  4.497 BB       50.37009 8.14471e-1   41.02495    Pentane
  6.794            -           -         -         Benzene

Totals :                              200.73307


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F2002.D
Sample Name: gc135p153 #C4 ENV(1=600,2=400)

```
==========================================================================
Acq. Operator    : MTH                          Seq. Line :  20
Acq. Instrument  : Edith                         Location : Vial 2
Injection Date   : 2/21/2013 2:59:13 AM               Inj :   2
                                                Inj Volume : 250 µl
Sequence File    : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method      : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed     : 1/24/2013 1:34:00 PM by KLM
Analysis Method  : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed     : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal

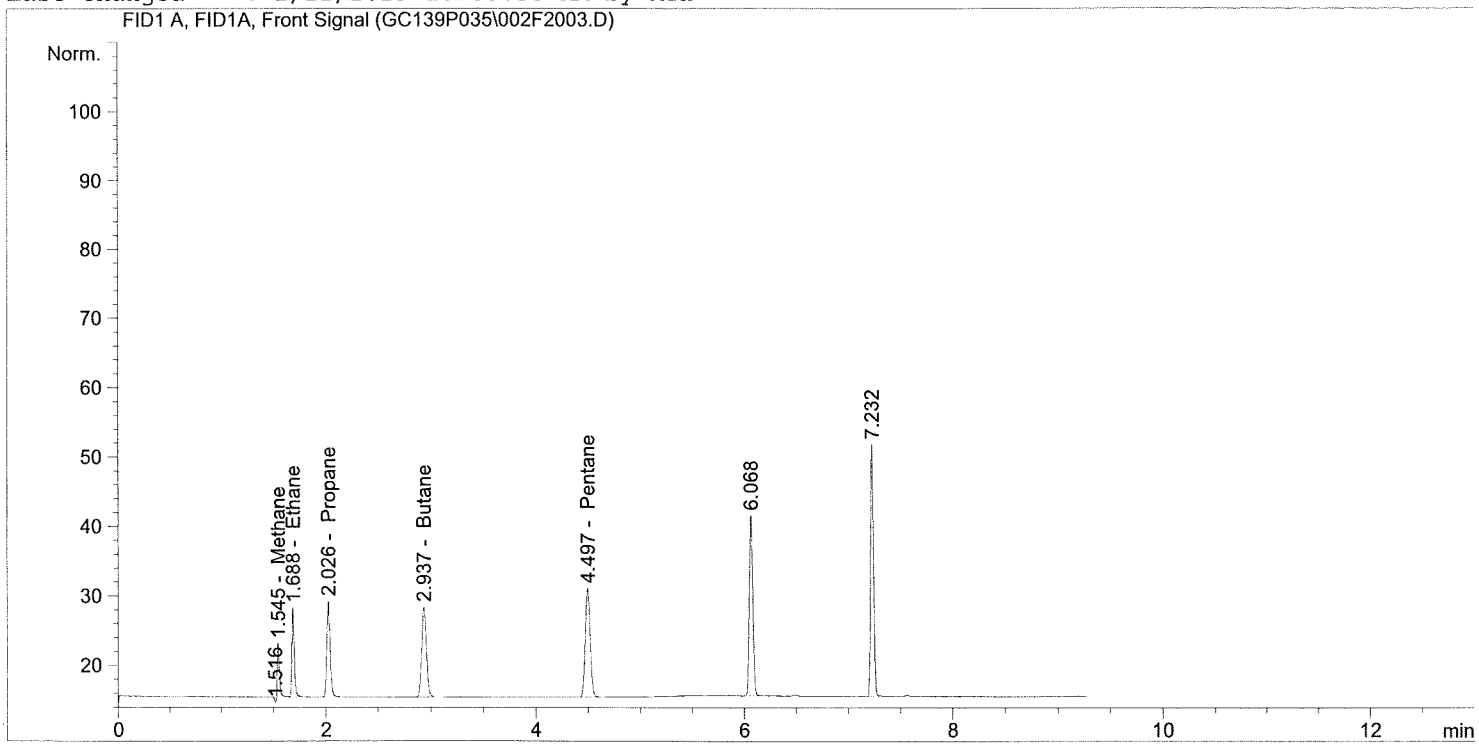
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [pA*s]                  [ppm]
-------|------|----------|----------|----------|--|------------------
  1.545 PB       10.29211    3.86849   39.81491    Methane
  1.688 PB       20.06011    2.00512   40.22300    Ethane
  2.026 BB       29.98759    1.33474   40.02564    Propane
  2.937 BB       39.59562    1.00345   39.73240    Butane
  4.497 BB       50.44193 8.14476e-1   41.08373    Pentane
  6.794            -          -         -         Benzene

Totals :                              200.87967


1 Warnings or Errors :
```

Data File G:\GC2013Q1\EDITH\DATA\FEB13\GC139P035\002F2003.D
Sample Name: gc135p153 #C4 ENV(1=600,2=400)

```
==========================================================================
Acq. Operator   : MTH                              Seq. Line :  20
Acq. Instrument : Edith                           Location : Vial 2
Injection Date  : 2/21/2013 3:16:03 AM                 Inj :   3
                                                  Inj Volume : 250 µl
Sequence File   : G:\GC2013Q1\EDITH\SEQUENCE\GC139P035.S
Acq. Method     : G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Last changed    : 1/24/2013 1:34:00 PM by KLM
Analysis Method : G:\GC2013Q1\EDITH\METHODS\GC135P096FRONT_C1-C5&BEN_0213-39.M
Last changed    : 2/22/2013 10:08:58 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/22/2013 10:08:49 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID1 A, FID1A, Front Signal
```

RetTime [min]	Type	Area [pA*s]	Amt/Area	Amount [ppm]	Grp	Name
1.545	PB	10.29472	3.86848	39.82490		Methane
1.688	PB	19.97766	2.00513	40.05781		Ethane
2.026	BB	30.07871	1.33474	40.14716		Propane
2.937	BB	39.68163	1.00345	39.81872		Butane
4.497	BB	50.48126	8.14479e-1	41.11591		Pentane
6.794		-	-	-		Benzene

```
Totals :                                  200.96451


1 Warnings or Errors :
```

AIR LIQUIDE Air Liquide America Specialty Gases LLC | Scott™

CERTIFIED MASTER CLASS

Single-Certified Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard

Product Information
Document # : 40863889-001
Item No.: MN802890-P-44
P.O. No.: 40860793/ENTHALPY

Cylinder Number: 1C1592
Cylinder Size: 44
Certification Date: 15Mar2011
Expiration Date: 14Mar2013

Customer

ENTHALPY ANALYTICAL INC.
2202 ELLIS RD.
STE A
DURHAM, NC 27704
US

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
N-BUTANE	100.	PPM	2
ETHANE	100.	PPM	2
N-HEPTANE	100.	PPM	2
N-HEXANE	100.	PPM	2
METHANE	100.	PPM	2
N-PENTANE	100.	PPM	2
PROPANE	100.	PPM	2
NITROGEN		BALANCE	

TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: Walter Sabitus
WALTER SABITUS

DATE: 3/15/11

SPECIFICATIONS

Component Name	Requested Concentration (Moles)		Certified Concentration (Moles)		Blend Tolerance Result (+/- %)	Certified Accuracy Result (+/- %)
N-BUTANE	100.	PPM	100.	PPM	.0	2.00
ETHANE	100.	PPM	100.	PPM	.0	2.00
N-HEPTANE	100.	PPM	100.	PPM	.0	2.00
N-HEXANE	100.	PPM	100.	PPM	.0	2.00
METHANE	100.	PPM	100.	PPM	.0	2.00
N-PENTANE	100.	PPM	100.	PPM	.0	2.00
PROPANE	100.	PPM	100.	PPM	.0	2.00
NITROGEN		BAL		BAL		

TRACEABILITY

Traceable To
Scott Reference Standard

PHYSICAL PROPERTIES

Cylinder Size: 44

Pressure: 2000 PSIG
Expiration Date: 14Mar2013

SPECIAL HANDLING INSTRUCTIONS

Do not use or store cylinder at or below the stated dew point temperature. Possible condensation of heavier components could result. In the event the cylinder has been exposed to temperatures at or below the dew point, place cylinder in heated area for 24 hours and then roll cylinder for 15 minutes to re-mix.

Use of calibration standards at or below dew point temperature may result in calibration error.

CUSTOMGAS
SOLUTIONS

1750 East Club Boulevard
Durham, NC 27704
Phone: (919) 220-2570
Fax: (919) 220-4540

Certificate of Analysis

Customer:

Enthalpy Analytical, Inc. .
800-1 Capitola Drive
Durham, NC 27713

Tel: (919) 850-4392

Cylinder Number: CC40270
Cylinder Size/CGA: AL150/350
Fill Pressure: 1515 PSIA
Gas Volume: 2775 liters
Date of Mfg: 03/02/12
Expiration Date: 03/02/13

Customer Number	Ship VIA	Job No.	Customer PO	Mixture Type
00127703NC	Pick up	030112-001	02101206	Gravimetric

Component	Nominal Concentration	Actual Concentration*	Mixture Type
Methane	1 %	1.003 % +/- 0.020 %	Gravimetric Master Gas
Ethane	1 %	1.000 % +/- 0.020 %	
Propane	1 %	1.000 % +/- 0.020 %	
Butane	1 %	0.992 % +/- 0.020 %	
Nitrogen	balance	balance	

NOTES:

Blend Tolerance: +/- 2%
Analytical Tolerance: +/- 2%
Traceability: NIST by weight set / Internal Standards by analysis
Reactive Mixtures: Analyzed twice with required agreement between analyses of 2%. Required wait time between analyses of >7 days.
Caution: Do not use below 150 PSIG.

Authorized Signature:

Joseph A. Ernst

*Every effort has been made to establish the actual concentration of the components using master gas blending technology however, Custom Gas Solutions shall have no liability in excess of the established charge for this material.

method: G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Modified on: 1/24/2013 at 1:34:00 PM

Agilent Agilent 7890A

Oven	
Equilibration Time	0.3 min
Oven Program	On
35 °C for 2.2 min	
then 15 °C/min to 70 °C for 0.07 min	
then 30 °C/min to 180 °C for 1 min	
Run Time	9.27 min

Front SS Inlet H2	
Mode	Split
Heater	On 200 °C
Pressure	On 6.1868 psi
Total Flow	On 16.2 mL/min
Septum Purge Flow	On 3 mL/min
Gas Saver	Off
Split Ratio	5 :1
Split Flow	10.5 mL/min

Back SS Inlet H2	
Mode	Split
Heater	On 200 °C
Pressure	On 4.9511 psi
Total Flow	On 9.6 mL/min
Septum Purge Flow	On 3 mL/min
Gas Saver	Off
Split Ratio	2 :1
Split Flow	0 mL/min

Column #1
Rtx-1 30m x 0.32mm x 4um: 1189.81991
Rtx-1 30m x 0.32mm x 4um
280 °C: 30 m x 320 µm x 4 µm
In: Front SS Inlet H2
Out: Front Detector FID

(Initial)	35 °C
Pressure	5.1931 psi
Flow	2.1 mL/min
Average Velocity	39.91 cm/sec
Holdup Time	1.2528 min
Flow Program	On
2.1 mL/min for 0 min	
Run Time	9.27 min

Column #2
Rt-Qbond 30m x 0.32mm x 10um: 960939
Rt-Qbond 30m x 0.32mm x 10um
280 °C: 30 m x 320 µm x 10 µm
In: Front SS Inlet H2
Out: Back Detector FID

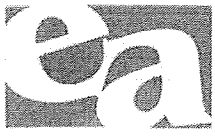
(Initial)	35 °C
Pressure	6.1868 psi
Flow	2.2 mL/min

method: G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Modified on: 1/24/2013 at 1:34:00 PM

Average Velocity	43.848 cm/sec		
Holdup Time	1.1403 min		
Flow Program	On		
2.2 mL/min for 0 min			
Run Time	9.27 min		
Front Detector FID			
Heater	On	300 °C	
H2 Flow	On	50 mL/min	
Air Flow	On	450 mL/min	
Makeup Flow	On	35 mL/min	
Const Col + Makeup	Off		
Flame	On		
Electrometer	On		
Back Detector FID			
Heater	On	200 °C	
H2 Flow	On	50 mL/min	
Air Flow	On	450 mL/min	
Makeup Flow	On	35 mL/min	
Const Col + Makeup	Off		
Flame	On		
Electrometer	On		
Valve 1			
Gas Sampling Valve	Off		
GSV Loop Volume	0.25 mL		
Load Time	1.5 min		
Inject Time	0.5 min		
Valve 2			
Gas Sampling Valve	Off		
GSV Loop Volume	0.25 mL		
Load Time	1.5 min		
Inject Time	0.5 min		
Valve Box			
Heater	On	150 °C	
Signals			
Front Signal	Save On		
	20 Hz		
Test Plot	Save Off		
	50 Hz		
Back Signal	Save On		
	20 Hz		
Test Plot	Save Off		
	50 Hz		

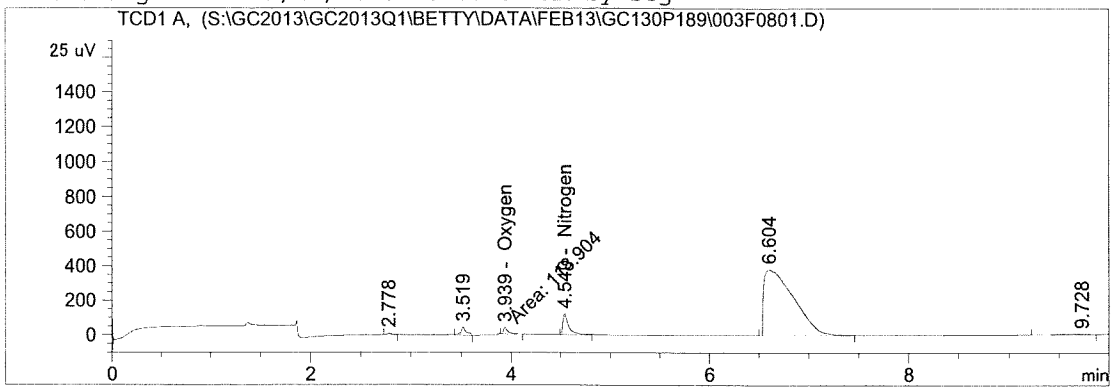
method: G:\GC2013Q1\EDITH\METHODS\GC135P105_HRVOC.M
Modified on: 1/24/2013 at 1:34:00 PM

Sample Chromatograms



Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\003F0801.D
Sample Name: Can 00122 0213-39

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :   8
Acq. Instrument  : Betty                               Location : Vial 3
Injection Date   : 14-Feb-13, 18:35:27                     Inj :   1
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
3.939	MM	118.90439	4.93051e-3	5.86260e-1		Oxygen
4.540	BB	469.91632	4.34649e-3	2.04249		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide
Totals :				2.62875		

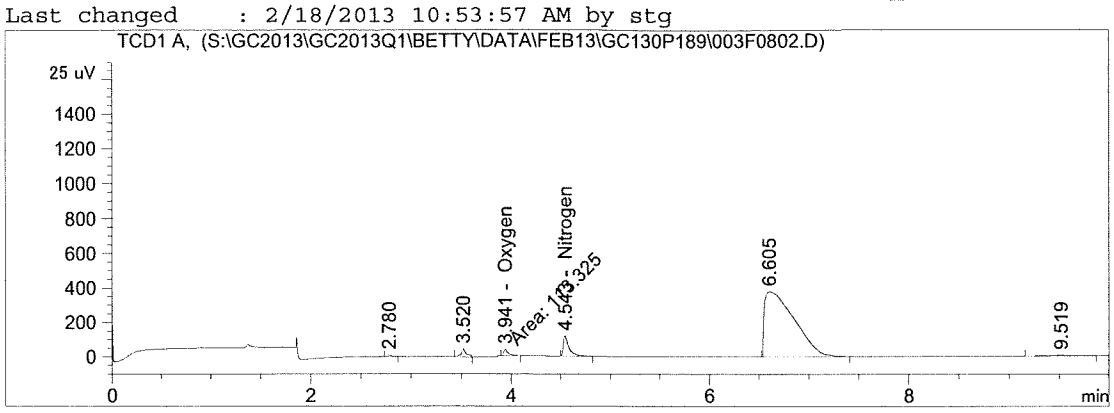
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                         *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\003F0802.D
Sample Name: Can 00122 0213-39

```
==========================================================================
Acq. Operator    : stg                              Seq. Line :   8
Acq. Instrument  : Betty                             Location : Vial 3
Injection Date   : 14-Feb-13, 18:51:02                   Inj :   2
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
3.941	MM	113.32527	4.94374e-3	5.60251e-1		Oxygen
4.543	BB	459.25470	4.34546e-3	1.99567		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide

Totals : 2.55592

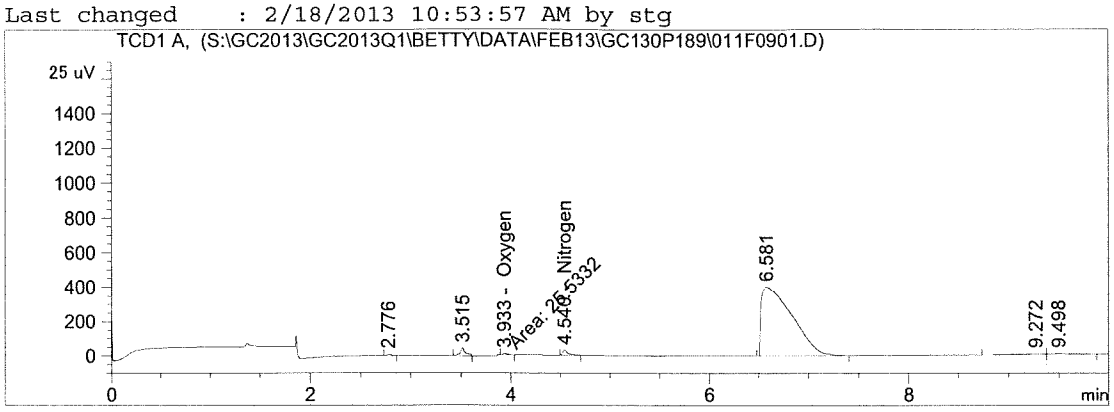
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\011F0901.D
Sample Name: Can 00144 0213-39

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :   9
Acq. Instrument  : Betty                               Location : Vial 11
Injection Date   : 14-Feb-13, 19:06:35                     Inj :   1
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
3.933	MM	25.53317	5.06650e-3	1.29364e-1		Oxygen
4.540	BB	107.25974	4.19703e-3	4.50173e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide
Totals :				5.79536e-1		

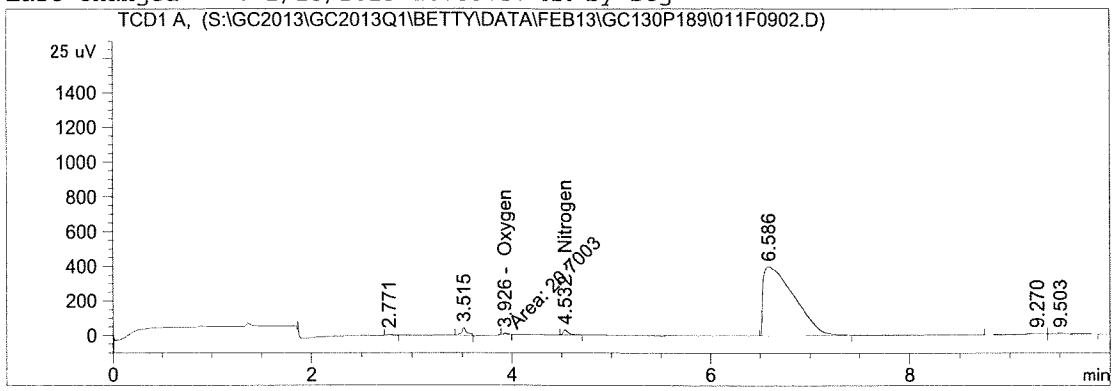
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\011F0902.D
Sample Name: Can 00144 0213-39

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :   9
Acq. Instrument  : Betty                               Location : Vial 11
Injection Date   : 14-Feb-13, 19:22:06                     Inj :   2
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name          Manual Integration
 [min]          [25 uV*s]                 [%]                      "II" (MTH)
-------|------|----------|----------|----------|--|------------------
  1.990            -          -          -         Carbon dioxide
  3.677            -          -          -         Hydrogen
  3.926 MM      20.70030 5.06650e-3 1.04878e-1    Oxygen
  4.532 BB     100.87233 4.18477e-3 4.22127e-1    Nitrogen
  5.203            -          -          -         Methane
  7.679            -          -          -         Carbon monoxide

Totals :                             5.27005e-1

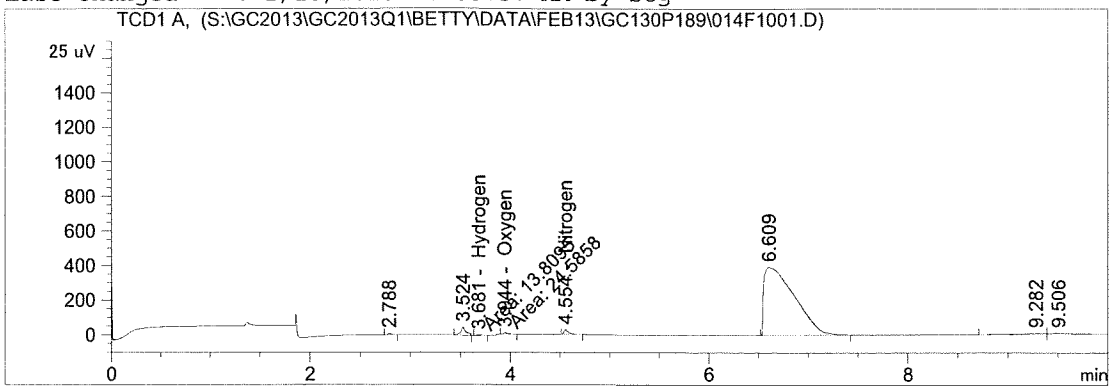

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                         *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\014F1001.D
Sample Name: Can 00204 0213-39

```
================================================================================
Acq. Operator   : stg                                 Seq. Line :  10
Acq. Instrument : Betty                               Location : Vial 14
Injection Date  : 14-Feb-13, 19:37:36                     Inj :   1
                                                    Inj Volume : External
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed    : 2/14/2013 10:36:21 AM by stg
Analysis Method : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed    : 2/18/2013 10:53:57 AM by stg
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.681	MM	13.80953	7.26953e-2	1.00389		Hydrogen
3.944	MM	24.58581	5.06650e-3	1.24564e-1		Oxygen
4.554	BB	95.00849	4.17394e-3	3.96560e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide

Totals : 1.52501

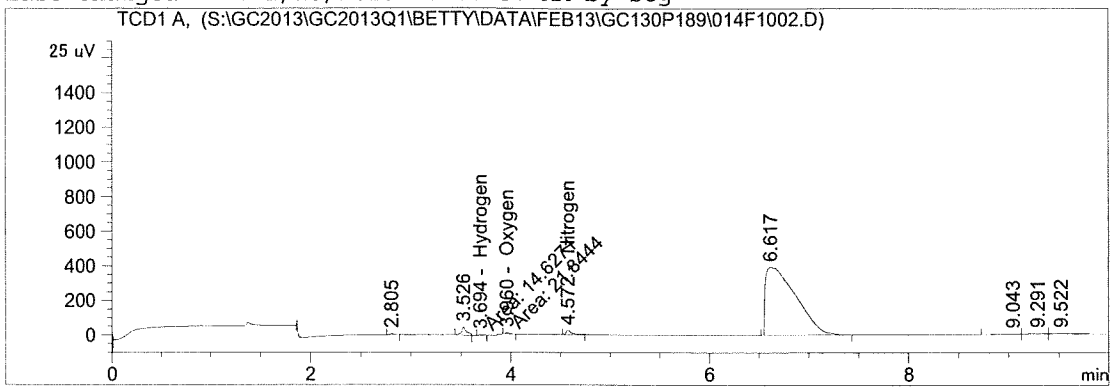
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

```
================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\014F1002.D
Sample Name: Can 00204 0213-39

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :  10
Acq. Instrument  : Betty                               Location : Vial 14
Injection Date   : 14-Feb-13, 19:53:04                     Inj :   2
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.694	MM	14.62707	7.24972e-2	1.06042		Hydrogen
3.960	MM	21.84439	5.06650e-3	1.10675e-1		Oxygen
4.572	BB	90.31819	4.17394e-3	3.76983e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide

Totals : 1.54808

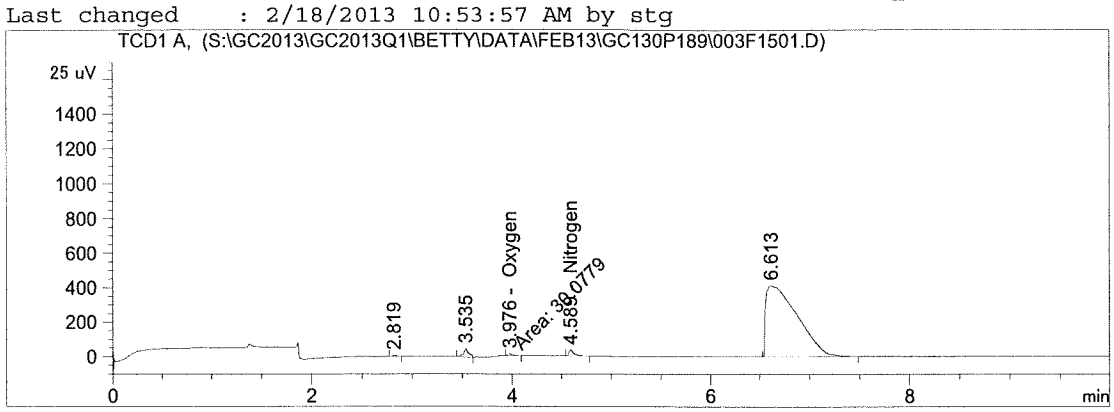
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\003F1501.D
Sample Name: Can 00179 0213-39

```
==========================================================================
Acq. Operator    : stg                              Seq. Line :  15
Acq. Instrument : Betty                              Location : Vial 3
Injection Date  : 14-Feb-13, 23:34:53                    Inj :   1
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
3.976	MM	30.07792	5.06650e-3	1.52390e-1		Oxygen
4.589	BB	126.49572	4.22648e-3	5.34632e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide
Totals :				6.87021e-1		

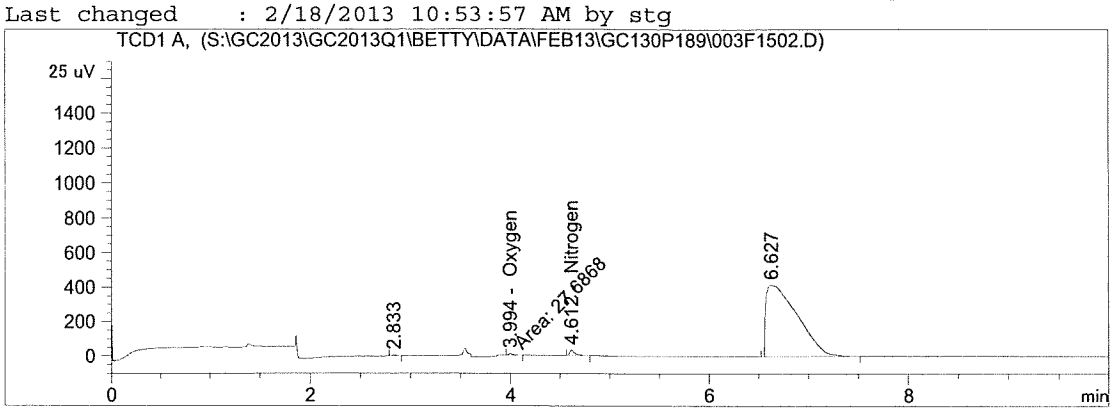
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\003F1502.D
Sample Name: Can 00179 0213-39

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :  15
Acq. Instrument  : Betty                               Location : Vial 3
Injection Date   : 14-Feb-13, 23:50:23                     Inj :   2
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
3.994	MM	27.68678	5.06650e-3	1.40275e-1		Oxygen
4.612	BB	117.33031	4.21365e-3	4.94389e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide

```
Totals :                              6.34664e-1

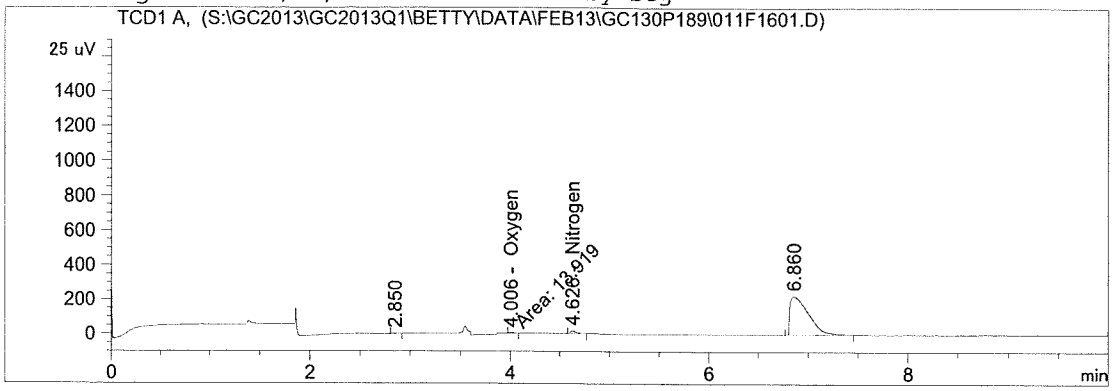

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                         *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\011F1601.D
Sample Name: Can 959 0213-39

```
======================================================================
Acq. Operator    : stg                          Seq. Line :  16
Acq. Instrument  : Betty                         Location : Vial 11
Injection Date   : 15-Feb-13, 00:05:54               Inj :   1
                                                Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
======================================================================
                      External Standard Report
======================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
4.006	MM	13.91902	5.06650e-3	7.05207e-2		Oxygen
4.626	BB	60.85492	4.17394e-3	2.54005e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide
Totals :				3.24525e-1		

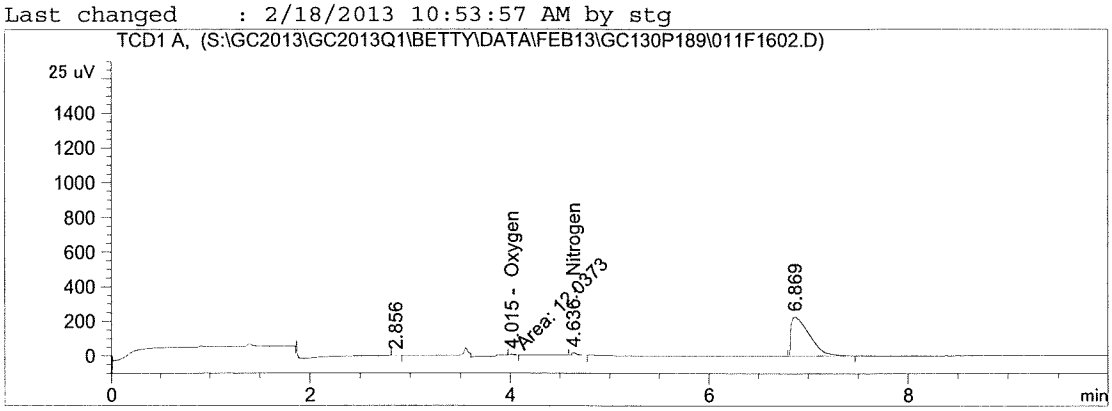
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

======================================================================
                        *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\011F1602.D
Sample Name: Can 959 0213-39

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :  16
Acq. Instrument  : Betty                               Location : Vial 11
Injection Date   : 15-Feb-13, 00:21:24                     Inj :   2
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
4.015	MM	12.03726	5.06650e-3	6.09867e-2		Oxygen
4.636	BB	55.16123	4.17394e-3	2.30240e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide

```
Totals :                              2.91226e-1

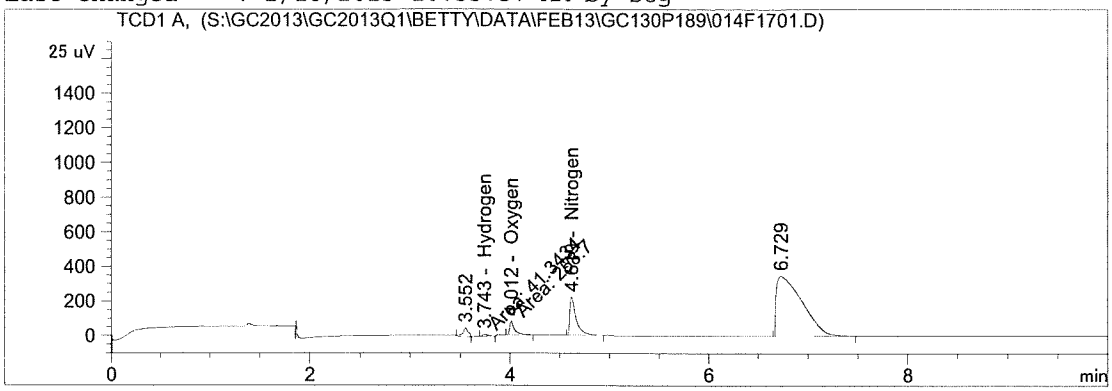

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\014F1701.D
Sample Name: Can 952 0213-39

```
==========================================================================
Acq. Operator    : stg                              Seq. Line :  17
Acq. Instrument  : Betty                             Location : Vial 14
Injection Date   : 15-Feb-13, 00:36:33                   Inj :   1
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.743	MM	41.34340	7.03351e-2	2.90789		Hydrogen
4.012	MM	258.70007	4.78531e-3	1.23796		Oxygen
4.619	BB	979.98303	4.36950e-3	4.28203		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide
Totals :				8.42788		

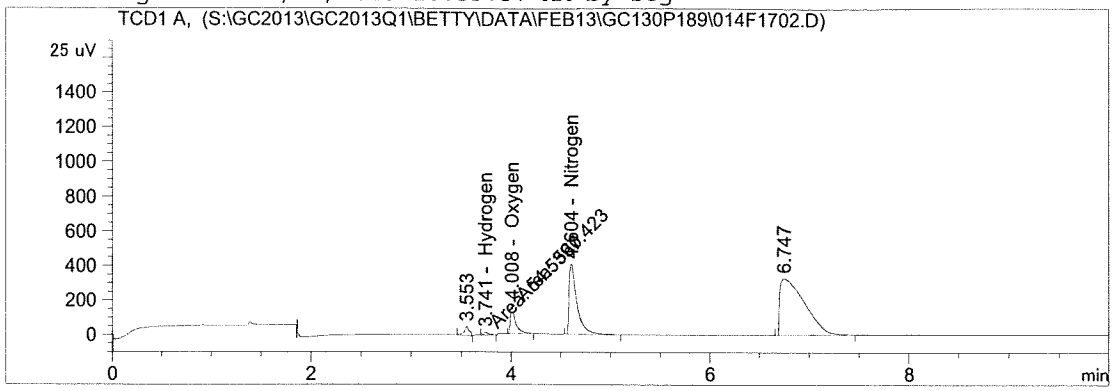
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                         *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\014F1702.D
Sample Name: Can 952 0213-39

```
================================================================================
Acq. Operator    : stg                                  Seq. Line :  17
Acq. Instrument  : Betty                                 Location : Vial 14
Injection Date   : 15-Feb-13, 00:51:41                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.741	MM	54.53965	7.00486e-2	3.82043		Hydrogen
4.008	MM	560.42273	4.71882e-3	2.64454		Oxygen
4.604	BB	2190.42236	4.38121e-3	9.59670		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide
Totals :				16.06166		

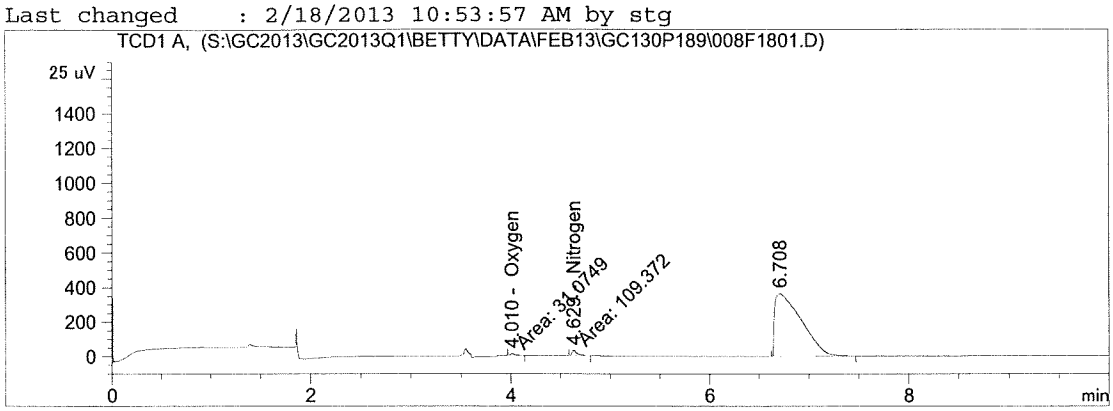
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\008F1801.D
Sample Name: Can 00186 0213-39

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :  18
Acq. Instrument  : Betty                               Location : Vial 8
Injection Date   : 15-Feb-13, 01:07:08                     Inj :   1
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
4.010	MM	31.07492	5.06650e-3	1.57441e-1		Oxygen
4.629	MM	109.37229	4.20077e-3	4.59448e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide

```
Totals :                                6.16889e-1

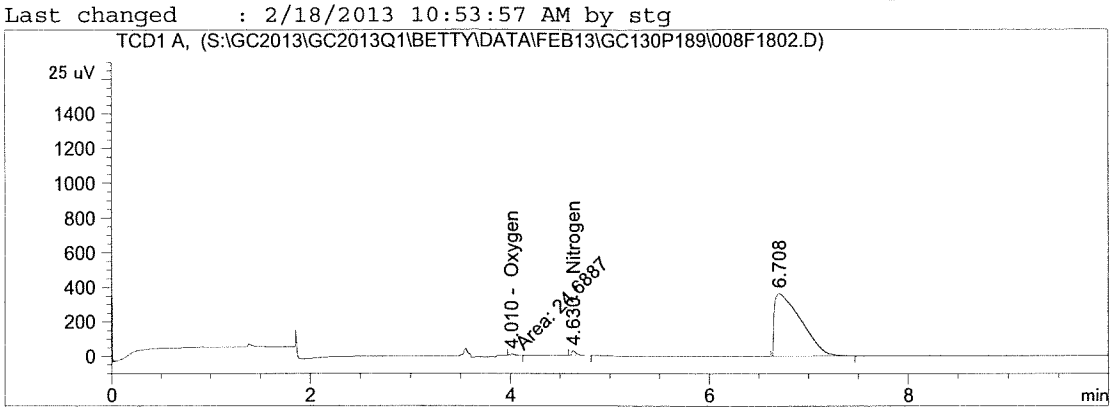

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\008F1802.D
Sample Name: Can 00186 0213-39

```
==========================================================================
Acq. Operator    : stg                              Seq. Line :  18
Acq. Instrument  : Betty                             Location : Vial 8
Injection Date   : 15-Feb-13, 01:22:34                   Inj :   2
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
4.010	MM	24.68868	5.06650e-3	1.25085e-1		Oxygen
4.630	BB	101.87617	4.18680e-3	4.26535e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide

```
Totals :                              5.51620e-1

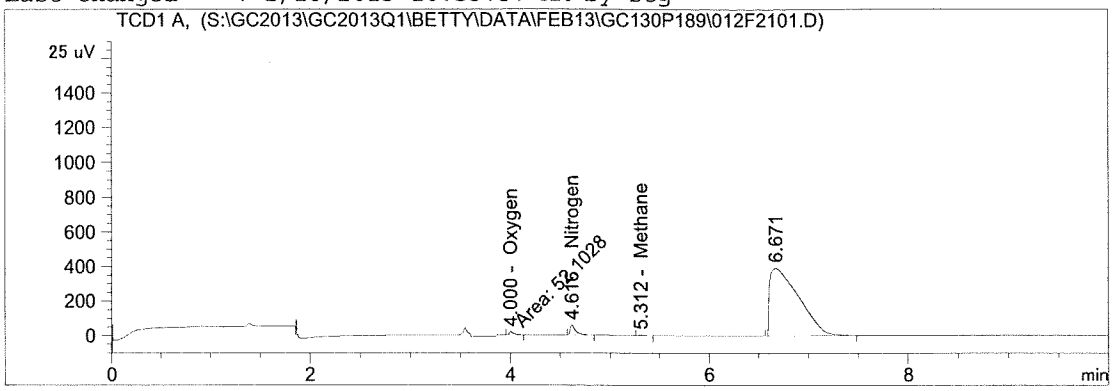

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                         *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\012F2101.D
Sample Name: Can 00146 0213-39

```
==========================================================================
Acq. Operator    : stg                              Seq. Line :  21
Acq. Instrument  : Betty                             Location : Vial 12
Injection Date   : 15-Feb-13, 02:39:34                   Inj :   1
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
4.000	MM	52.10276	5.06650e-3	2.63978e-1		Oxygen
4.616	BB	219.12273	4.29590e-3	9.41328e-1		Nitrogen
5.312	BB	13.27114	6.56943e-3	8.71838e-2		Methane
7.679		-	-	-		Carbon monoxide

```
Totals :                                  1.29249

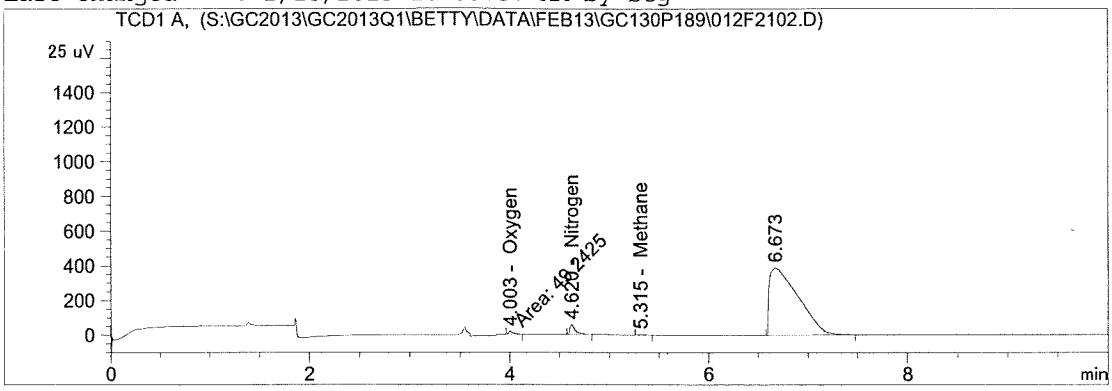

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\012F2102.D
Sample Name: Can 00146 0213-39

```
================================================================================
Acq. Operator    : stg                                  Seq. Line :  21
Acq. Instrument  : Betty                                 Location : Vial 12
Injection Date   : 15-Feb-13, 02:54:56                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
                                                                  Manual Integration
RetTime  Type     Area      Amt/Area    Amount    Grp   Name      "II" (MTH)
 [min]          [25 uV*s]                [%]
-------|------|----------|----------|----------|--|------------------
  1.990            -          -          -         Carbon dioxide
  3.677            -          -          -         Hydrogen
  4.003 MM       49.24253 5.06650e-3 2.49487e-1    Oxygen
  4.620 BB      208.38985 4.29101e-3 8.94204e-1    Nitrogen
  5.315 BB       13.00825 6.56943e-3 8.54568e-2    Methane
  7.679            -          -          -         Carbon monoxide

Totals :                                1.22915

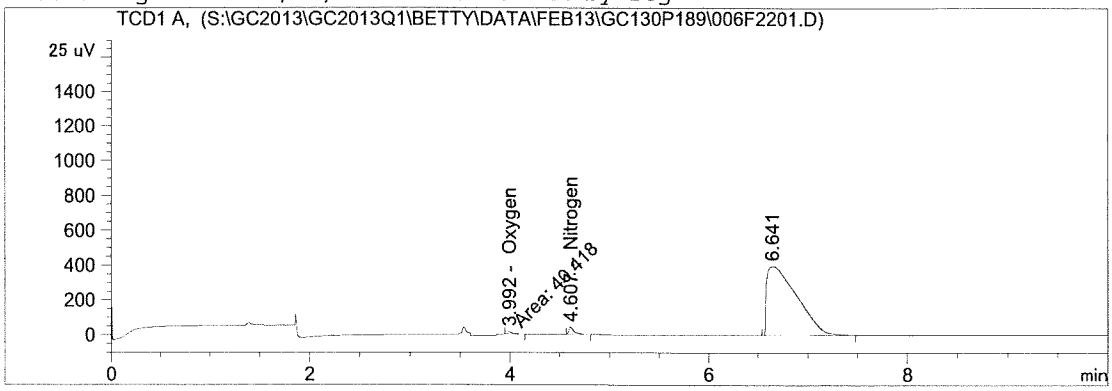

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\006F2201.D
Sample Name: Can 00196 0213-39

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :  22
Acq. Instrument  : Betty                               Location : Vial 6
Injection Date   : 15-Feb-13, 03:10:17                     Inj :   1
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
3.992	MM	40.41797	5.06650e-3	2.04777e-1		Oxygen
4.607	BB	154.71675	4.25643e-3	6.58542e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide
Totals :				8.63319e-1		

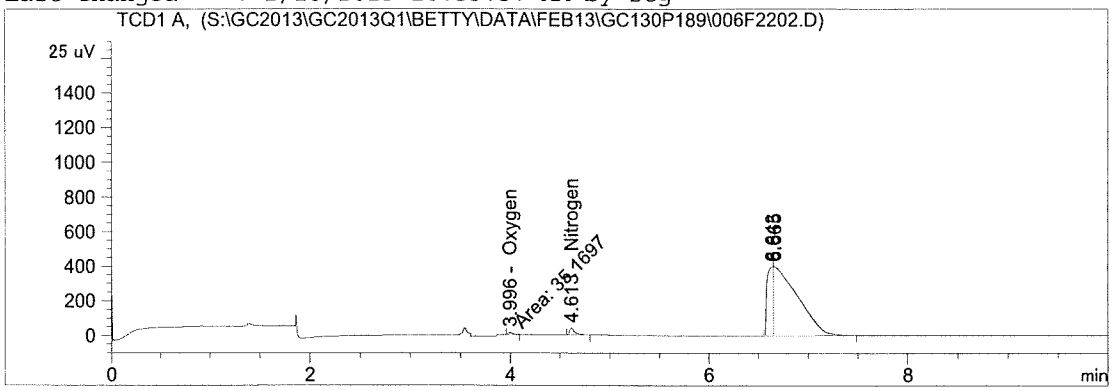
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                        *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\006F2202.D
Sample Name: Can 00196 0213-39

```
================================================================================
Acq. Operator    : stg                                  Seq. Line :  22
Acq. Instrument  : Betty                                 Location : Vial 6
Injection Date   : 15-Feb-13, 03:25:39                       Inj :   2
                                                       Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
3.996	MM	35.16970	5.06650e-3	1.78187e-1		Oxygen
4.613	BB	143.18518	4.24562e-3	6.07910e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide

```
Totals :                              7.86097e-1

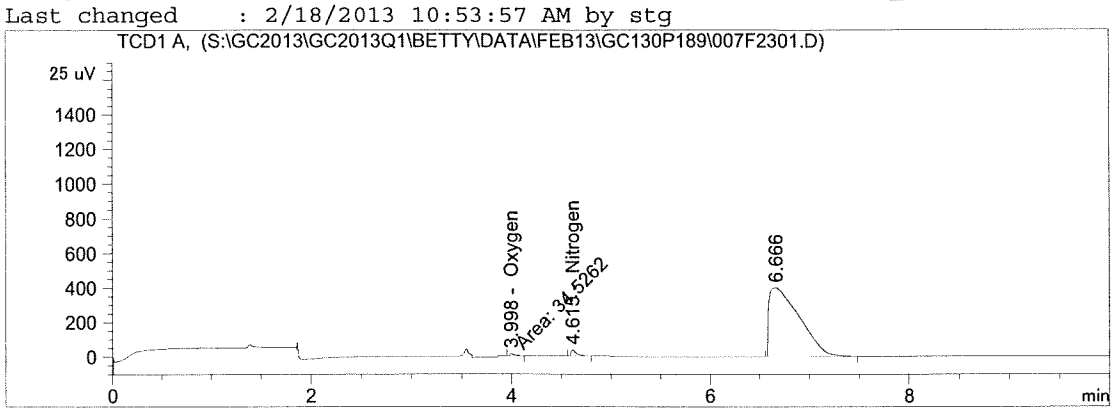

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\007F2301.D
Sample Name: Can 905 0213-39

```
==========================================================================
Acq. Operator   : stg                              Seq. Line :  23
Acq. Instrument : Betty                             Location : Vial 7
Injection Date  : 15-Feb-13, 03:41:01                    Inj :   1
                                                  Inj Volume : External
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed    : 2/14/2013 10:36:21 AM by stg
Analysis Method : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed    : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
3.998	MM	34.52622	5.06650e-3	1.74927e-1		Oxygen
4.615	BB	130.91806	4.23203e-3	5.54049e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide
Totals :				7.28976e-1		

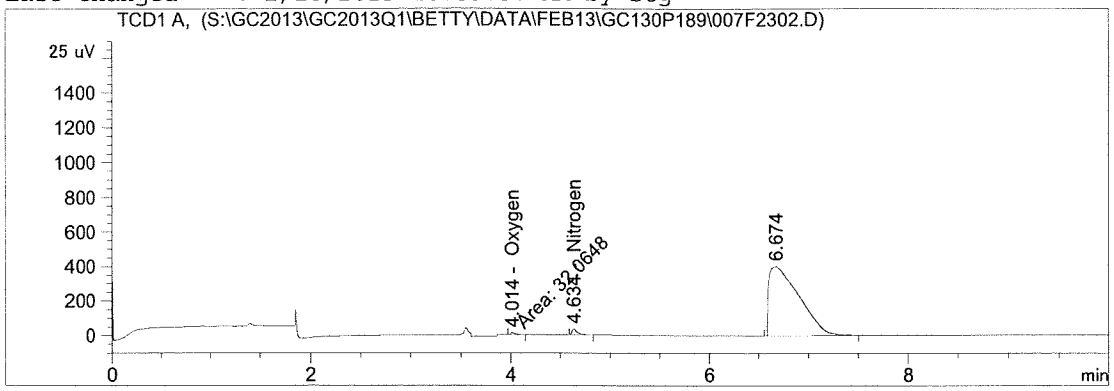
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\007F2302.D
Sample Name: Can 905 0213-39

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :  23
Acq. Instrument  : Betty                               Location : Vial 7
Injection Date   : 15-Feb-13, 03:56:20                     Inj :   2
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
4.014	MM	32.06483	5.06650e-3	1.62456e-1		Oxygen
4.634	BB	124.63737	4.22403e-3	5.26472e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide

Manual Integration
"II" (MTH)

```
Totals :                              6.88929e-1

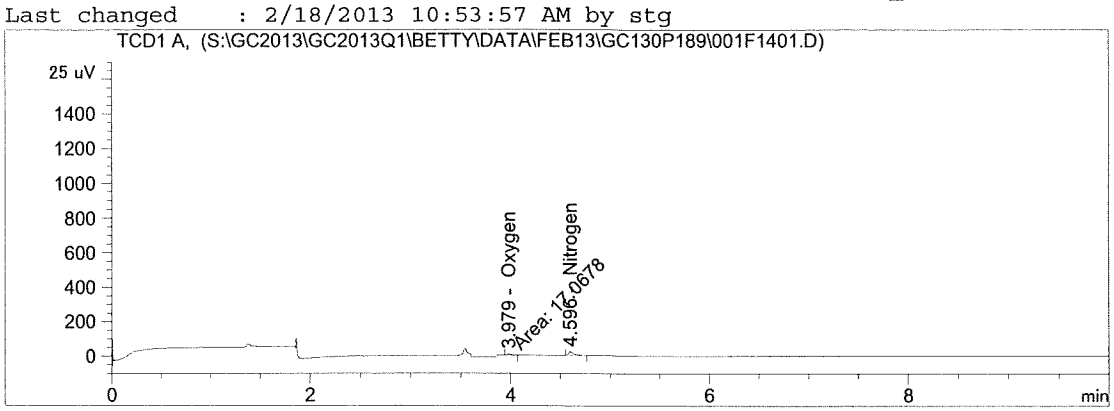

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\001F1401.D
Sample Name: He blank

```
==========================================================================
Acq. Operator    : stg                              Seq. Line :  14
Acq. Instrument  : Betty                             Location : Vial 1
Injection Date   : 14-Feb-13, 23:03:52                   Inj :   1
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
3.979	MM	17.06778	5.06650e-3	8.64738e-2		Oxygen
4.596	BB	79.13455	4.17394e-3	3.30303e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide
Totals :				4.16777e-1		

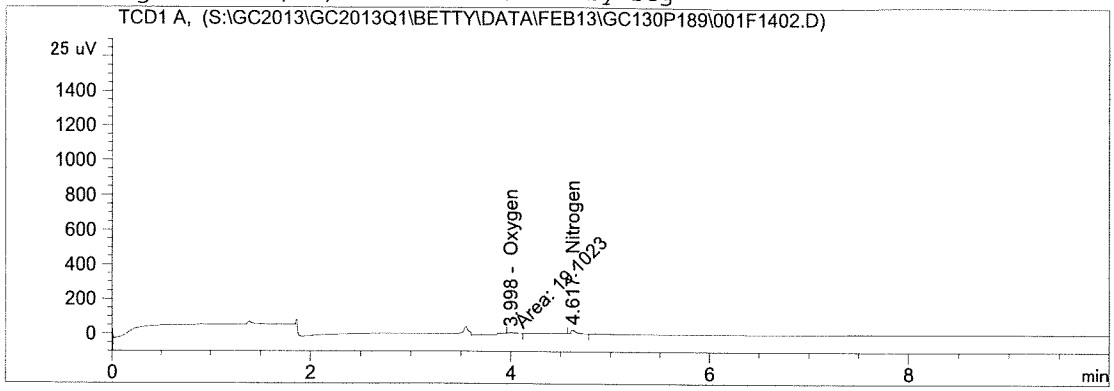
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\001F1402.D
Sample Name: He blank

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  14
Acq. Instrument  : Betty                                 Location : Vial 1
Injection Date   : 14-Feb-13, 23:19:22                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.677		-	-	-		Hydrogen
3.998	MM	19.10234	5.06650e-3	9.67819e-2		Oxygen
4.617	BB	81.38873	4.17394e-3	3.39712e-1		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide

Totals : 4.36494e-1

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

Calibration Curve Chromatograms



Calibration Table

Calib. Data Modified : Monday, February 18, 2013 10:52:36 AM

Rel. Reference Window : 2.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 2.000 %
Abs. Non-ref. Window : 0.200 min
Uncalibrated Peaks : not reported
Partial Calibration : Yes, identified peaks are recalibrated
Correct All Ret. Times: No, only for identified peaks

Curve Type : Linear
Origin : Connected
Weight : Quadratic (Amnt)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Signal 1: TCD1 A,
Signal 2: FID2 B,

RetTime [min]	Sig	Lvl	Amount [%]	Area	Amt/Area	Ref	Grp	Name
1.990	1	5	4.00000e-1	101.68351	3.93377e-3			Carbon dioxide
		6	1.00000	267.39966	3.73972e-3			
		7	3.48000	943.51700	3.68833e-3			
		8	10.00000	2745.98254	3.64168e-3			
3.677	1	1	3.40000e-1	4.25480	7.99098e-2			Hydrogen
		2	8.50000e-1	11.38366	7.46684e-2			
		3	3.19000	43.22296	7.38034e-2			
		4	8.10000	122.83288	6.59433e-2			
3.961	1	5	4.00000e-1	78.68076	5.08384e-3			Oxygen
		6	1.00000	210.29227	4.75529e-3			
		7	3.48000	725.56506	4.79626e-3			
		8	10.00000	2159.03357	4.63170e-3			
4.520	1	1	4.00000e-1	94.61860	4.22750e-3			Nitrogen
		2	1.00000	238.34307	4.19563e-3			
		3	3.74000	880.57700	4.24722e-3			
		4	10.10000	2316.98352	4.35912e-3			
		21	99.00000	2.15196e4	4.60046e-3			
5.203	1	1	3.20000e-1	48.83276	6.55298e-3			Methane
		2	8.00000e-1	124.71403	6.41468e-3			
		3	3.00000	479.37463	6.25815e-3			
		4	8.00000	1276.69598	6.26617e-3			
		41	99.00000	1.58902e4	6.23025e-3			
7.679	1	1	4.00000e-1	87.91066	4.55007e-3			Carbon monoxide
		2	1.01000	224.25749	4.50375e-3			
		3	3.79000	846.50830	4.47722e-3			
		4	10.00000	2235.58167	4.47311e-3			

More compound-specific settings:

Compound: Carbon dioxide
  Time Window : From 1.866 min To 2.190 min

Compound: Hydrogen
  Time Window : From 3.537 min To 3.777 min

Compound: Oxygen
  Time Window : From 3.851 min To 4.151 min

Compound: Nitrogen
  Time Window : From 4.400 min To 4.900 min

Compound: Methane
  Time Window : From 5.103 min To 5.553 min

==========

Peak Sum Table

==========

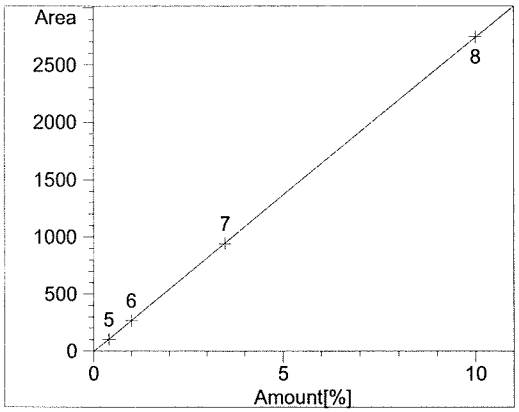
No Entries in table

==========

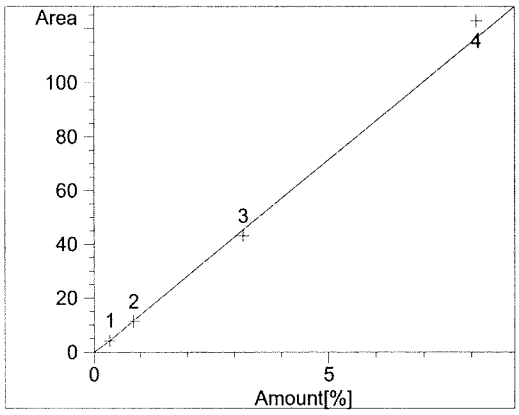
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Calibration Curves

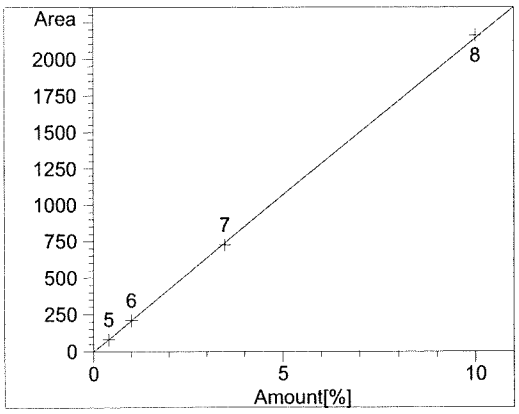
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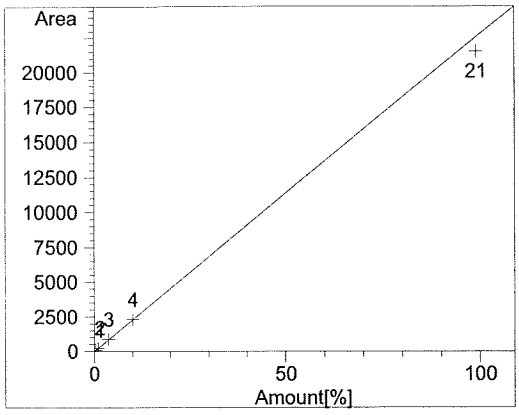
Carbon dioxide at exp. RT: 1.990
TCD1 A,
Correlation: 0.99999
Residual Std. Dev.: 5.74492
Formula: y = mx + b
m: 274.73499
b: -8.13090
x: Amount
y: Area
Calibration Level Weights:
Level 5 : 1
Level 6 : 0.16
Level 7 : 0.013212
Level 8 : 0.0016



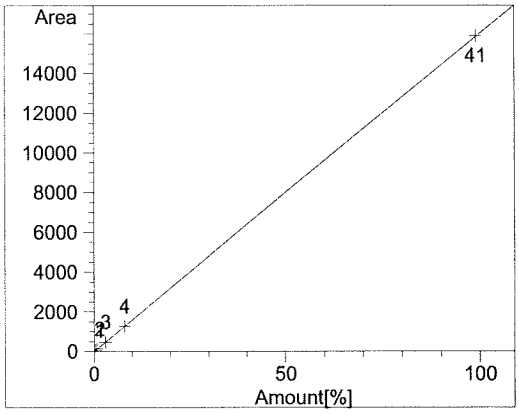
Hydrogen at exp. RT: 3.677
TCD1 A,
Correlation: 0.99857
Residual Std. Dev.: 4.79171
Formula: y = mx + b
m: 14.46105
b: -7.07745e-1
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.01136
Level 4 : 0.001762



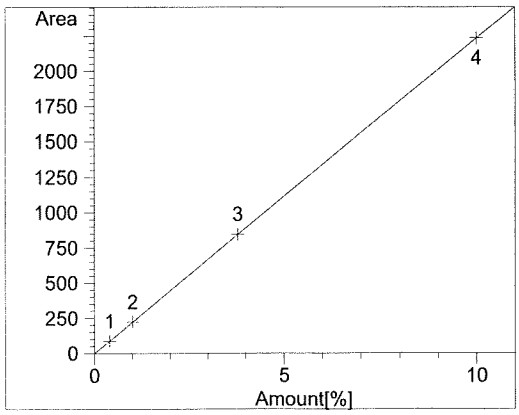
Oxygen at exp. RT: 3.961
TCD1 A,
Correlation: 0.99984
Residual Std. Dev.: 17.85572
Formula: y = mx + b
m: 214.50879
b: -6.85348
x: Amount
y: Area
Calibration Level Weights:
Level 5 : 1
Level 6 : 0.16
Level 7 : 0.013212
Level 8 : 0.0016



Nitrogen at exp. RT: 4.520
TCD1 A,
Correlation: 0.99936
Residual Std. Dev.: 596.51654
Formula: y = mx + b
m: 227.75454
b: 4.73089
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.011439
Level 4 : 0.001568
Level 21 : 0.000016



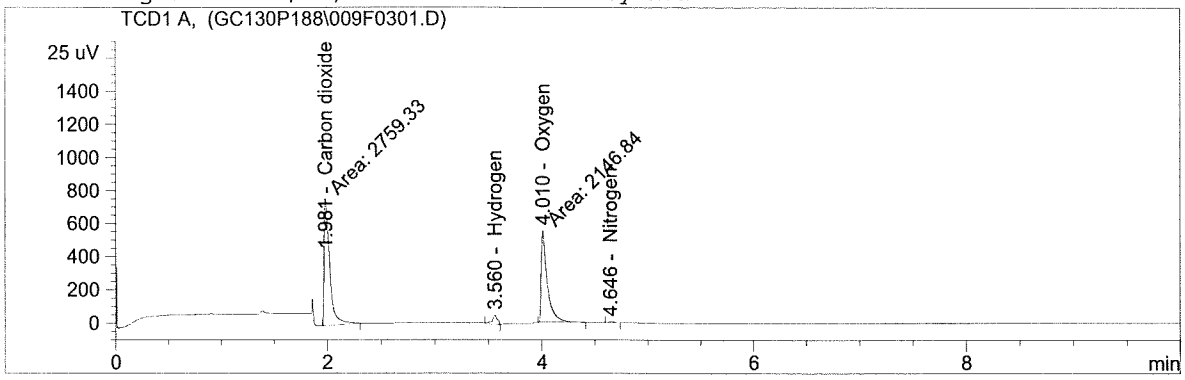
Methane at exp. RT: 5.203
TCD1 A,
Correlation: 0.99999
Residual Std. Dev.: 23.23319
Formula: y = mx + b
m: 160.12715
b: -2.53023
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.011378
Level 4 : 0.0016
Level 41 : 0.00001



Carbon monoxide at exp. RT: 7.679
TCD1 A,
Correlation: 1.00000
Residual Std. Dev.: 0.18684
Formula: y = mx + b
m: 223.71017
b: -1.58684
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.156847
Level 3 : 0.011139
Level 4 : 0.0016

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0301.D
Sample Name: gc130p177 #FG8 ENV(1=0,3=358.97)

```
==========================================================================
Acq. Operator   : stg                                Seq. Line :   3
Acq. Instrument : Betty                               Location : Vial 9
Injection Date  : 13-Feb-13, 13:19:59                      Inj :   1
                                                   Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed    : 2/13/2013 12:56:45 PM by stg
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed    : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.981 MM     2759.33081 3.65060e-3   10.07320    Carbon dioxide
  3.560 BV      187.38870 6.59343e-2   12.35534    Hydrogen
  4.010 MM     2146.83936 4.67670e-3   10.04011    Oxygen
  4.646 BB       18.39903 4.17394e-3 7.67964e-2    Nitrogen
  5.210            -          -          -        Methane
  7.742            -          -          -        Carbon monoxide

Totals :                                32.54545

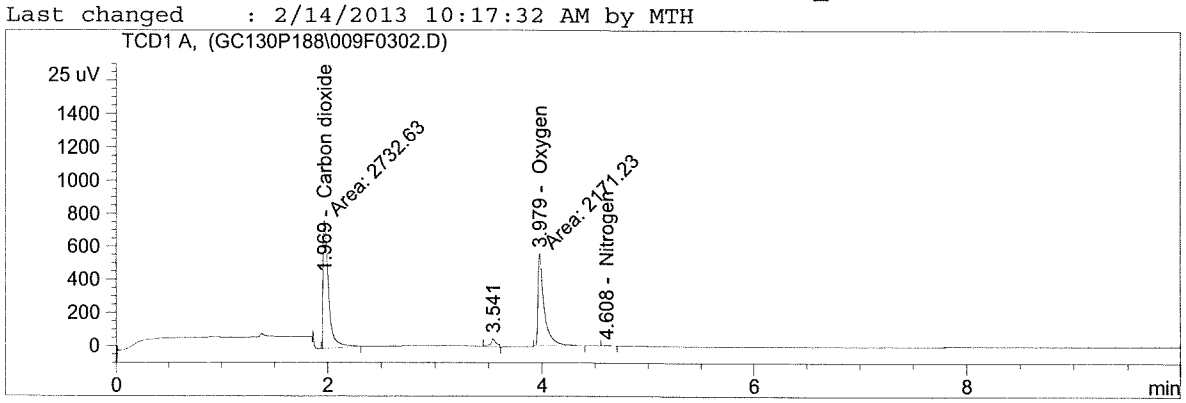

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0302.D
Sample Name: gc130p177 #FG8 ENV(1=0,3=358.97)

```
==========================================================================
Acq. Operator    : stg                              Seq. Line :   3
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 13-Feb-13, 13:37:33                    Inj :   2
                                                   Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.969 MM     2732.63428 3.65070e-3    9.97603     Carbon dioxide
  3.697           -          -           -          Hydrogen
  3.979 MM     2171.22778 4.67653e-3   10.15381     Oxygen
  4.608 BB       18.30635 4.17394e-3 7.64096e-2     Nitrogen
  5.210           -          -           -          Methane
  7.742           -          -           -          Carbon monoxide

Totals :                                20.20625

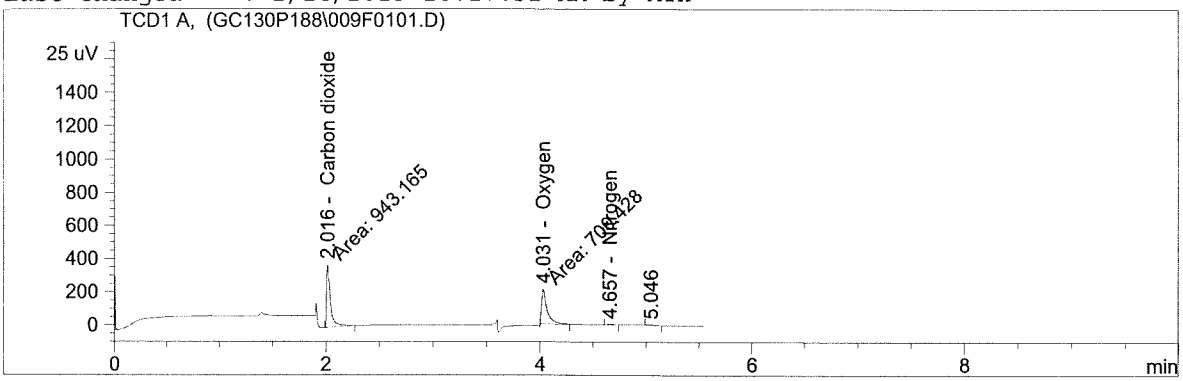

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0101.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :   1
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 13-Feb-13, 12:20:40                      Inj :   1
                                                    Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.016 MM      943.16528 3.67125e-3    3.46260     Carbon dioxide
  3.697           -           -           -         Hydrogen
  4.031 MM      700.42810 4.70743e-3    3.29721     Oxygen
  4.657 BB       13.72275 4.17394e-3 5.72779e-2     Nitrogen
  5.210            -          -           -         Methane
  7.742            -          -           -         Carbon monoxide

Totals :                                6.81709

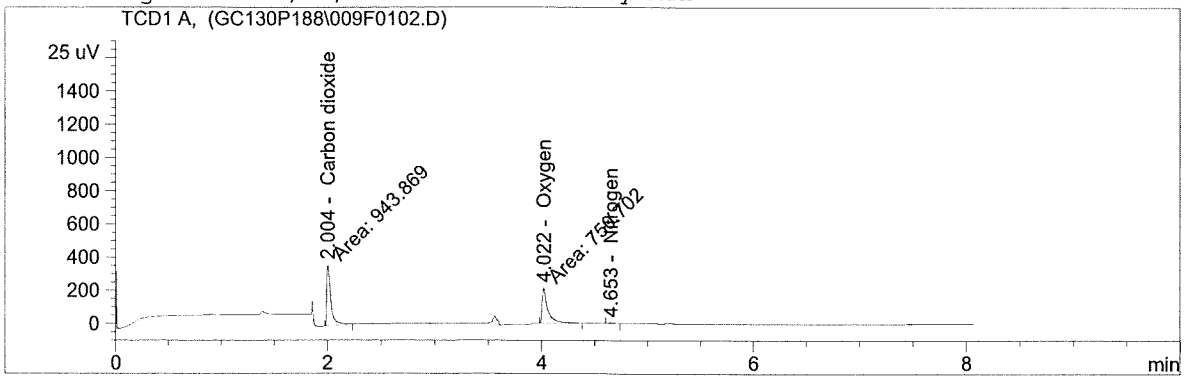

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0102.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :   1
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 13-Feb-13, 12:31:48                      Inj :   2
                                                    Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:27:10 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.004 MM      943.86871 3.67123e-3    3.46516     Carbon dioxide
  3.697           -           -           -         Hydrogen
  4.022 MM      750.70203 4.70437e-3    3.53158     Oxygen
  4.653 BB       12.52066 4.17394e-3 5.22605e-2     Nitrogen
  5.210           -           -           -         Methane
  7.742           -           -           -         Carbon monoxide

Totals :                                7.04900

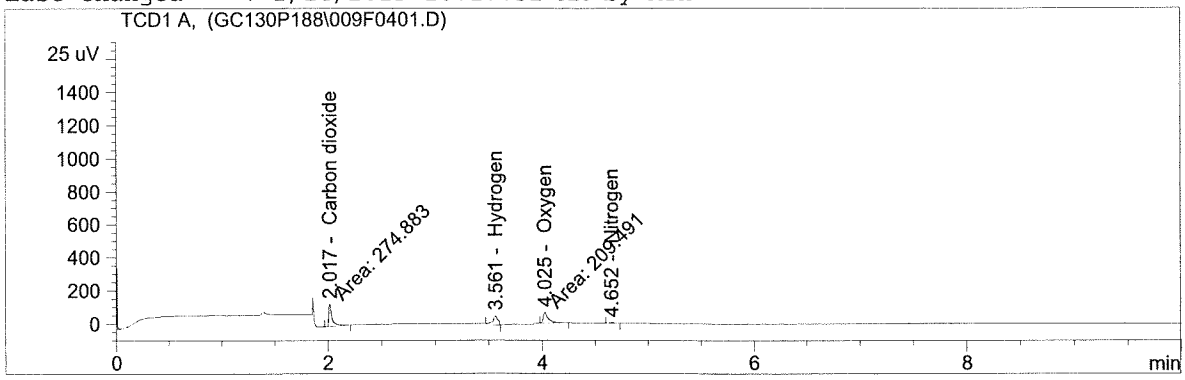

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0401.D
Sample Name: gc130p177 #FG6 ENV(1=1271.99,3=159.54)

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :   4
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 13-Feb-13, 13:55:07                       Inj :   1
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.017 MM      274.88327 3.74754e-3    1.03014     Carbon dioxide
  3.561 BV      188.51151 6.59320e-2   12.42895     Hydrogen
  4.025 MM      209.49051 4.81432e-3    1.00856     Oxygen
  4.652 BB       10.58416 4.17394e-3 4.41776e-2     Nitrogen
  5.210             -          -          -         Methane
  7.742             -          -          -         Carbon monoxide

Totals :                                14.51182

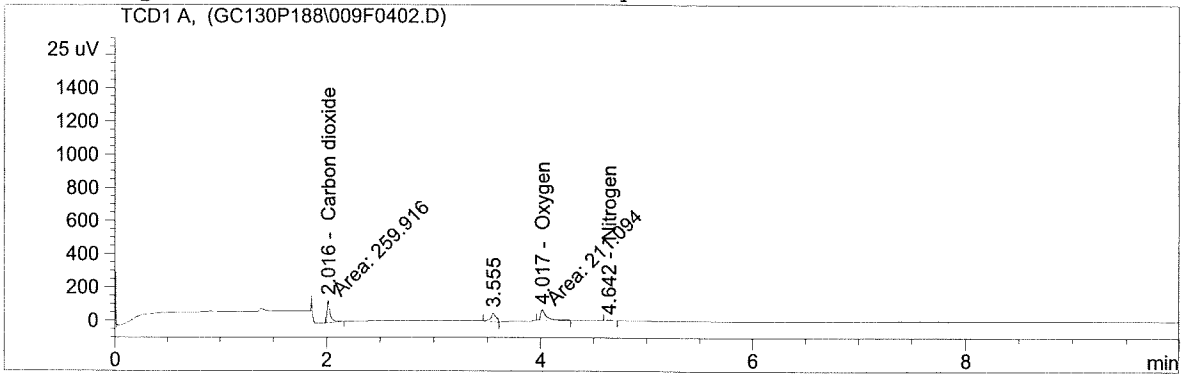

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0402.D
Sample Name: gc130p177 #FG6 ENV(1=1271.99,3=159.54)

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :   4
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 13-Feb-13, 14:12:44                       Inj :   2
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.016 MM      259.91605 3.75374e-3 9.75656e-1    Carbon dioxide
  3.697           -           -          -         Hydrogen
  4.017 MM      211.09404 4.81317e-3    1.01603    Oxygen
  4.642 BB       10.43292 4.17394e-3 4.35464e-2    Nitrogen
  5.210           -           -          -         Methane
  7.742           -           -          -         Carbon monoxide

Totals :                                 2.03523

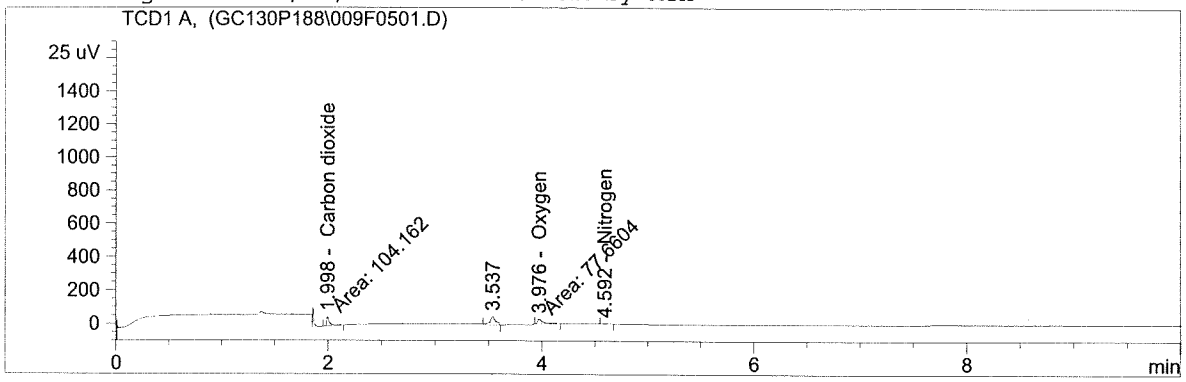

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0501.D
Sample Name: gc130p177 #FG5 ENV(1=3391.99,3=159.54)

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :   5
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 13-Feb-13, 14:30:19                      Inj :   1
                                                    Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.998	MM	104.16187	3.92400e-3	4.08731e-1		Carbon dioxide
3.697		-	-	-		Hydrogen
3.976	MM	77.66037	5.06650e-3	3.93466e-1		Oxygen
4.592	BB	10.08818	4.17394e-3	4.21075e-2		Nitrogen
5.210		-	-	-		Methane
7.742		-	-	-		Carbon monoxide

Totals : 8.44305e-1

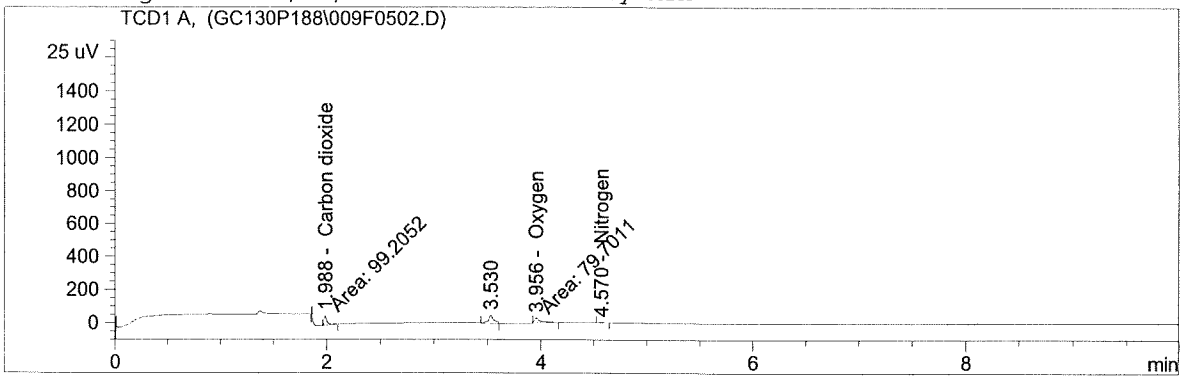
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0502.D
Sample Name: gc130p177 #FG5 ENV(1=3391.99,3=159.54)

```
================================================================================
Acq. Operator    : stg                                  Seq. Line :   5
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 13-Feb-13, 14:47:57                       Inj :   2
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.988 MM       99.20515 3.93070e-3 3.89945e-1    Carbon dioxide
  3.697            -          -          -         Hydrogen
  3.956 MM       79.70115 5.06268e-3 4.03502e-1    Oxygen
  4.570 BB        9.71568 4.17394e-3 4.05527e-2    Nitrogen
  5.210            -          -          -         Methane
  7.742            -          -          -         Carbon monoxide

Totals :                              8.34000e-1

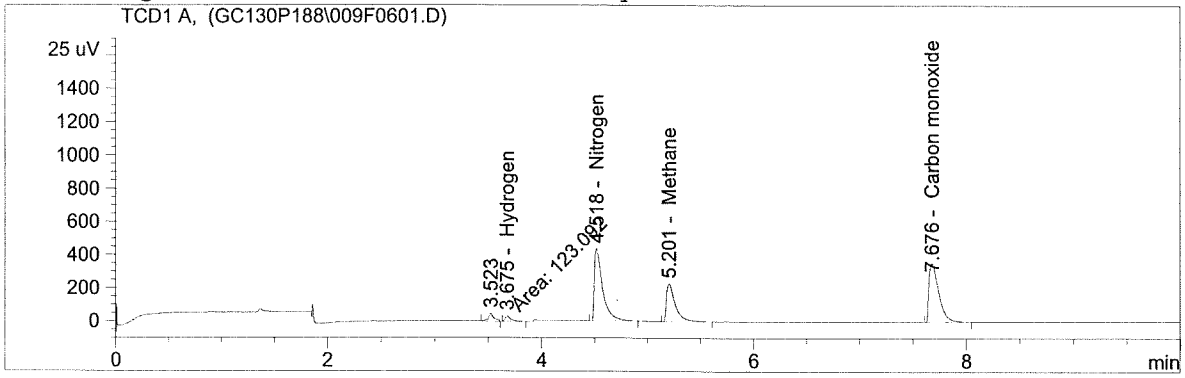

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0601.D
Sample Name: gc130p177 #FG4 ENV(1=0,2=376.73)

```
================================================================================
Acq. Operator    : stg                                  Seq. Line :   6
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 13-Feb-13, 15:05:34                       Inj :   1
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.675	MM	123.09186	6.61282e-2	8.13985		Hydrogen
3.961		-	-	-		Oxygen
4.518	BB	2314.92480	4.38172e-3	10.14335		Nitrogen
5.201	BB	1278.22815	6.25512e-3	7.99546		Methane
7.676	BB	2237.03906	4.47324e-3	10.00681		Carbon monoxide

```
Totals :                                  36.28548

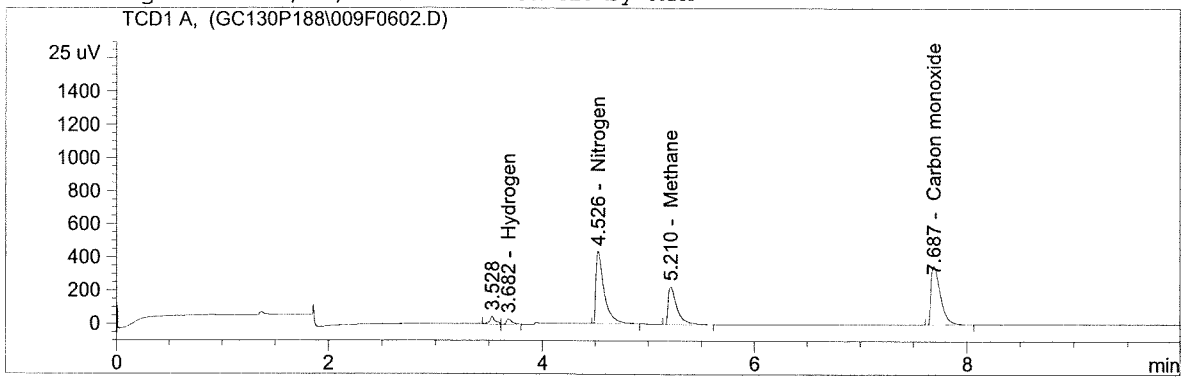

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0602.D
Sample Name: gc130p177 #FG4 ENV(1=0,2=376.73)

```
==========================================================================
Acq. Operator   : stg                                Seq. Line :   6
Acq. Instrument : Betty                             Location : Vial 9
Injection Date  : 13-Feb-13, 15:23:10                    Inj :   2
                                                  Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed    : 2/13/2013 12:56:45 PM by stg
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed    : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.990            -           -          -         Carbon dioxide
  3.682 VBA     122.57391 6.61306e-2    8.10589    Hydrogen
  3.961            -           -          -         Oxygen
  4.526 BB     2319.04224 4.38173e-3   10.16143    Nitrogen
  5.210 BB     1275.16382 6.25515e-3    7.97634    Methane
  7.687 BB     2234.12427 4.47324e-3    9.99378    Carbon monoxide

Totals :                               36.23744

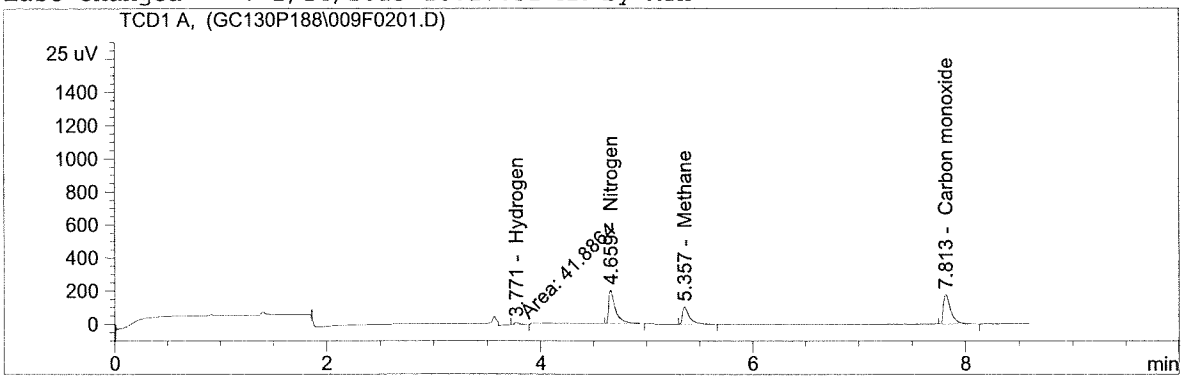

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0201.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :   2
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 13-Feb-13, 12:46:42                       Inj :   1
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:27:10 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.990           -           -          -          Carbon dioxide
  3.771 MM       41.88642 6.72243e-2    2.81579    Hydrogen
  3.961           -           -          -          Oxygen
  4.659 BB      879.74847 4.36708e-3    3.84193    Nitrogen
  5.357 BB      479.91998 6.27586e-3    3.01191    Methane
  7.813 BB      847.76801 4.47844e-3    3.79668    Carbon monoxide

Totals :                                13.46631

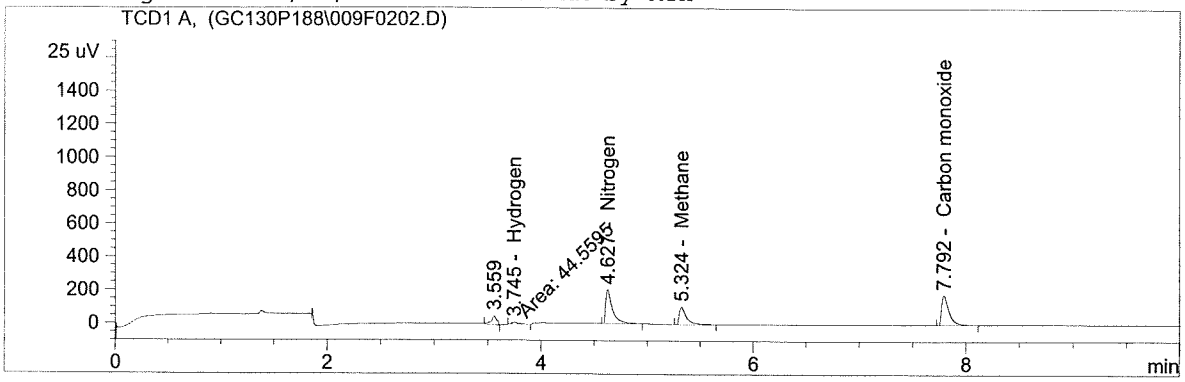

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0202.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : stg                                  Seq. Line :   2
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 13-Feb-13, 13:02:26                       Inj :   2
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.745	MM	44.55950	6.71246e-2	2.99104		Hydrogen
3.961		-	-	-		Oxygen
4.627	BB	881.40552	4.36713e-3	3.84921		Nitrogen
5.324	BB	478.82928	6.27594e-3	3.00510		Methane
7.792	BB	845.24860	4.47846e-3	3.78541		Carbon monoxide

```
Totals :                                    13.63077

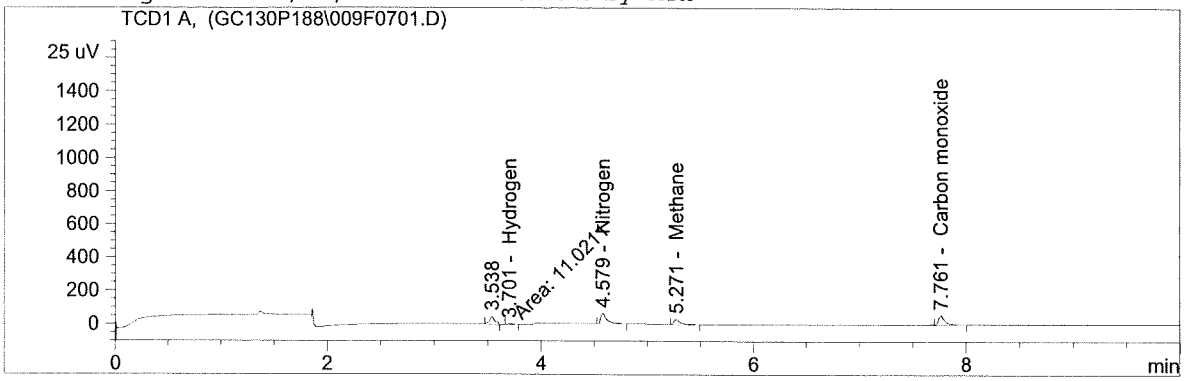

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0701.D
Sample Name: gc130p177 #FG2 ENV(1=1271.99,2=167.43)

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :   7
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 13-Feb-13, 15:40:46                      Inj :   1
                                                    Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.990            -           -          -          Carbon dioxide
  3.701 MM       11.02105 7.18772e-2 7.92163e-1    Hydrogen
  3.961            -           -          -          Oxygen
  4.579 BB      238.10471 4.30345e-3    1.02467    Nitrogen
  5.271 BB      123.92885 6.37130e-3 7.89588e-1    Methane
  7.761 BB      225.30377 4.50155e-3    1.01422    Carbon monoxide

Totals :                                3.62064

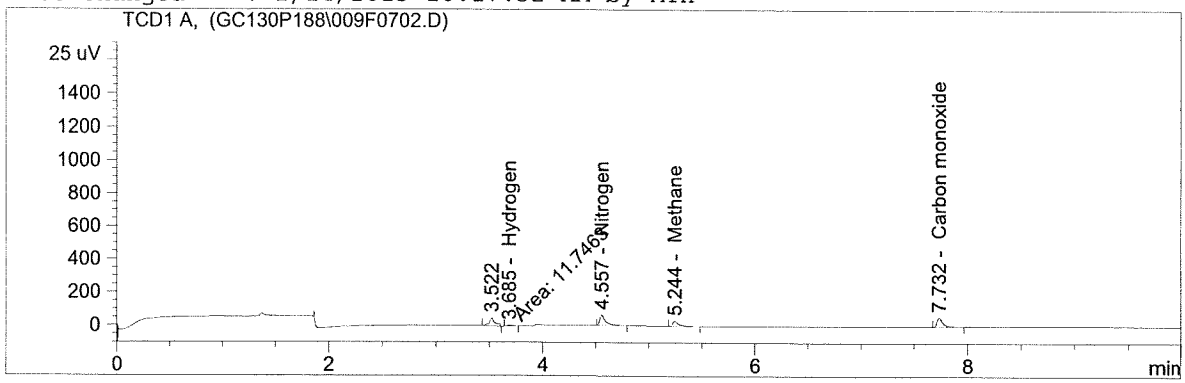

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0702.D
Sample Name: gc130p177 #FG2 ENV(1=1271.99,2=167.43)

```
==========================================================================
Acq. Operator   : stg                                Seq. Line :   7
Acq. Instrument : Betty                             Location : Vial 9
Injection Date  : 13-Feb-13, 15:58:24                    Inj :   2
                                                  Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed    : 2/13/2013 12:56:45 PM by stg
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed    : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.685	MM	11.74627	7.14874e-2	8.39710e-1		Hydrogen
3.961		-	-	-		Oxygen
4.557	BB	238.58144	4.30363e-3	1.02677		Nitrogen
5.244	BB	125.49921	6.36969e-3	7.99391e-1		Methane
7.732	BB	223.21121	4.50185e-3	1.00486		Carbon monoxide

```
Totals :                                    3.67073

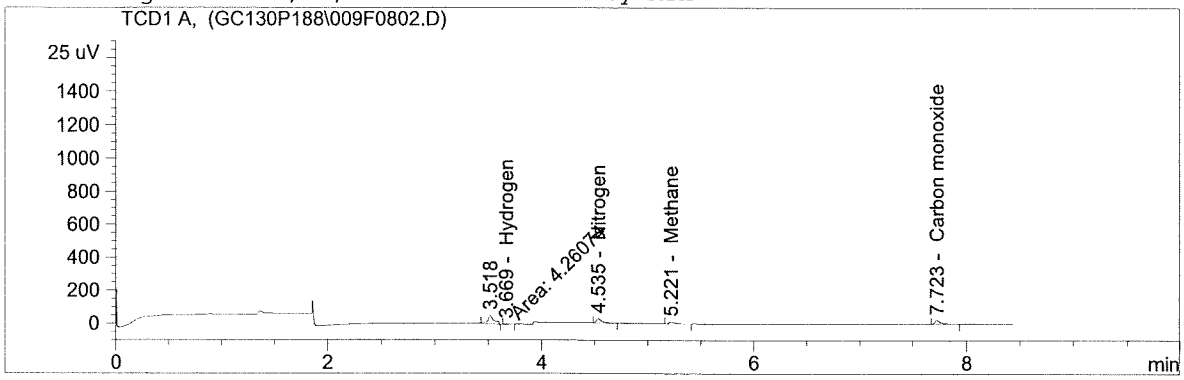

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0802.D
Sample Name: gc130p177 #FG1 ENV(1=3391.99,2=167.43)

```
================================================================================
Acq. Operator    : stg                                  Seq. Line :   8
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 13-Feb-13, 17:16:37                       Inj :   2
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.669	MM	4.26074	8.18959e-2	3.48937e-1		Hydrogen
3.961		-	-	-		Oxygen
4.535	BB	94.06856	4.17394e-3	3.92637e-1		Nitrogen
5.221	BB	49.41687	6.56529e-3	3.24436e-1		Methane
7.723	BB	88.11459	4.55057e-3	4.00972e-1		Carbon monoxide

```
Totals :                                  1.46698

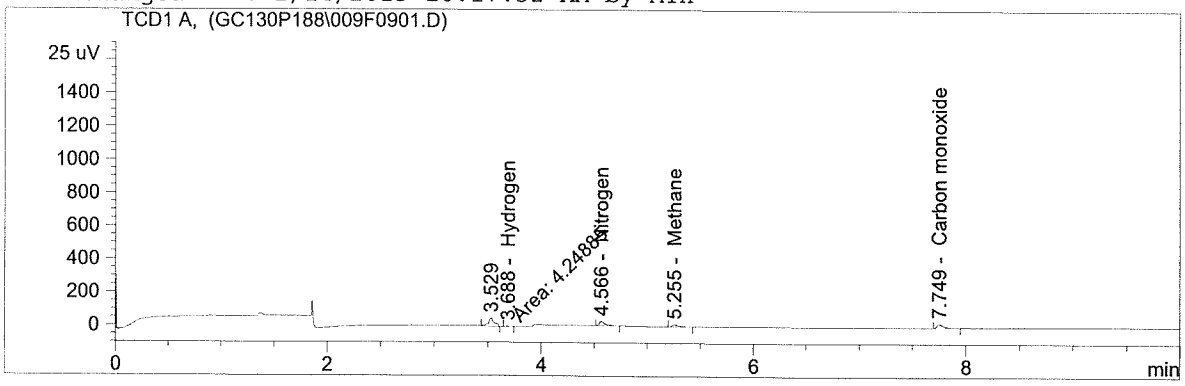

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F0901.D
Sample Name: gc130p177 #FG1 ENV(1=3391.99,2=167.43)

```
================================================================================
Acq. Operator   : stg                                  Seq. Line :   9
Acq. Instrument : Betty                                 Location : Vial 9
Injection Date  : 13-Feb-13, 17:32:10                       Inj :   1
                                                      Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed    : 2/13/2013 12:56:45 PM by stg
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed    : 2/14/2013 10:17:32 AM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.990            -           -          -          Carbon dioxide
  3.688 MM       4.24885 8.19416e-2 3.48158e-1      Hydrogen
  3.961            -           -          -          Oxygen
  4.566 BB      95.16864 4.17394e-3 3.97228e-1      Nitrogen
  5.255 BB      48.24866 6.57000e-3 3.16994e-1      Methane
  7.749 BB      87.70673 4.55077e-3 3.99133e-1      Carbon monoxide

Totals :                              1.46151

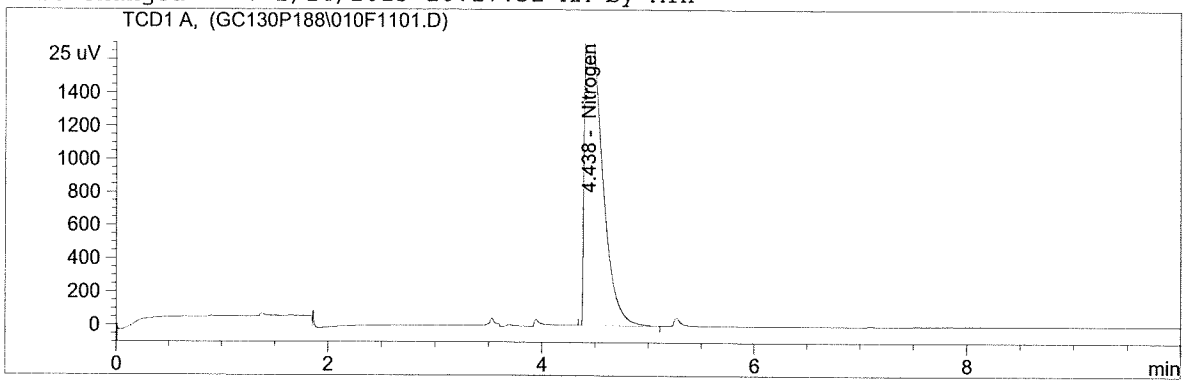

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\010F1101.D
Sample Name: 99.0% N2 Std

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  11
Acq. Instrument  : Betty                                 Location : Vial 10
Injection Date   : 13-Feb-13, 18:13:14                       Inj :   1
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.990            -           -          -         Carbon dioxide
  3.697            -           -          -         Hydrogen
  3.961            -           -          -         Oxygen
  4.438 BB     2.15591e4   4.38973e-3   94.63871    Nitrogen
  5.210            -           -          -         Methane
  7.742            -           -          -         Carbon monoxide

Totals :                                 94.63871

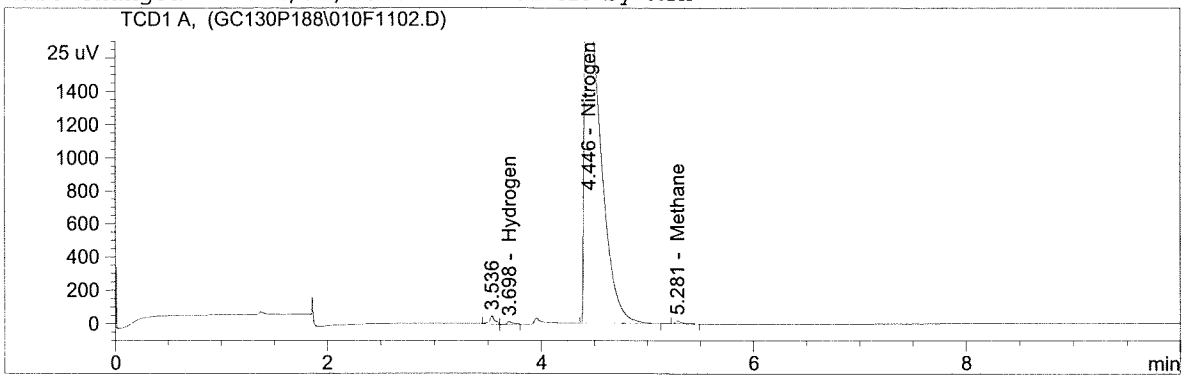

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\010F1102.D
Sample Name: 99.0% N2 Std

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  11
Acq. Instrument  : Betty                                 Location : Vial 10
Injection Date   : 13-Feb-13, 18:28:49                       Inj :   2
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.990            -           -          -          Carbon dioxide
  3.698 VBA      54.34367 6.68435e-2    3.63252      Hydrogen
  3.961            -           -          -          Oxygen
  4.446 BB     2.14801e4  4.38972e-3   94.29161      Nitrogen
  5.281 BB       73.80586 6.45867e-3 4.76688e-1      Methane
  7.742            -           -          -          Carbon monoxide

Totals :                                 98.40081

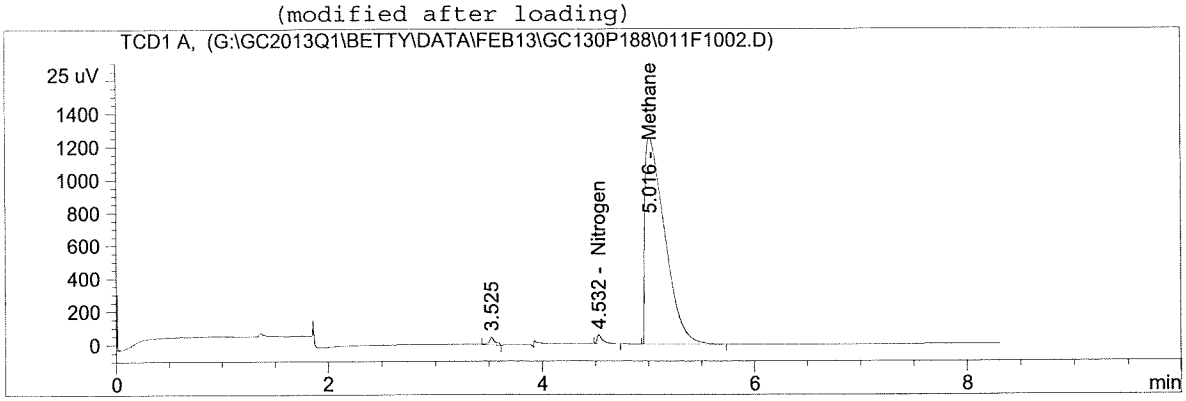

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\011F1002.D
Sample Name: 99.0% methane Std

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  10
Acq. Instrument  : Betty                                 Location : Vial 11
Injection Date   : 13-Feb-13, 17:59:51                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 5:10:40 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 5:10:40 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type      Area      Amt/Area     Amount    Grp   Name
 [min]          [25 uV*s]                  [%]
-------|------|----------|----------|----------|--|------------------
  1.990            -           -          -          Carbon dioxide
  3.697            -           -          -          Hydrogen
  3.961            -           -          -          Oxygen
  4.532 BB      196.05548 4.28474e-3 8.40047e-1     Nitrogen
  5.016 BB     1.59063e4  6.24364e-3   99.31354     Methane
  7.742            -           -          -          Carbon monoxide

Totals :                                 100.15359

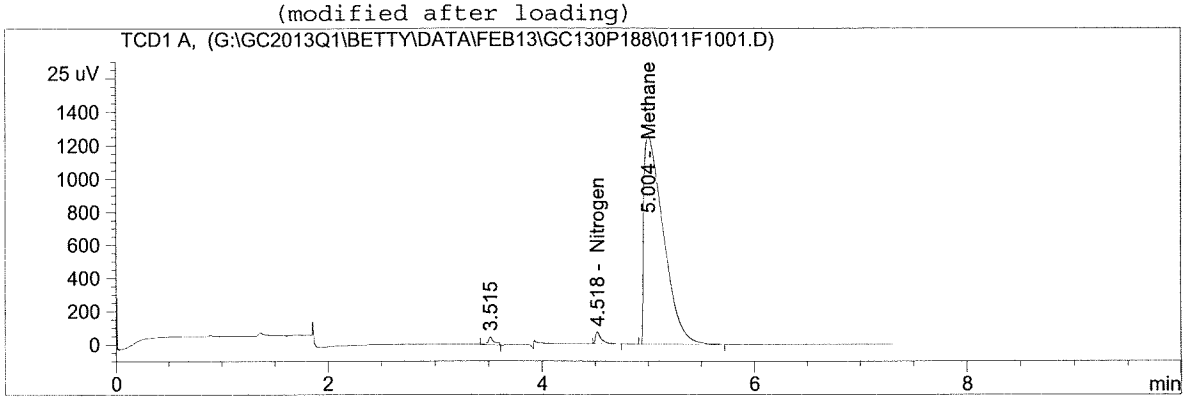

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\011F1001.D
Sample Name: 99.0% methane Std

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  10
Acq. Instrument  : Betty                                 Location : Vial 11
Injection Date   : 13-Feb-13, 17:47:46                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 5:10:40 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 5:10:40 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type      Area      Amt/Area     Amount    Grp   Name
 [min]          [25 uV*s]                  [%]
-------|------|----------|----------|----------|--|------------------
  1.990            -           -          -          Carbon dioxide
  3.697            -           -          -          Hydrogen
  3.961            -           -          -          Oxygen
  4.518 BB      258.52661 4.31034e-3    1.11434     Nitrogen
  5.004 BB     1.58741e4  6.24365e-3   99.11225     Methane
  7.742            -           -          -          Carbon monoxide

Totals :                                100.22659

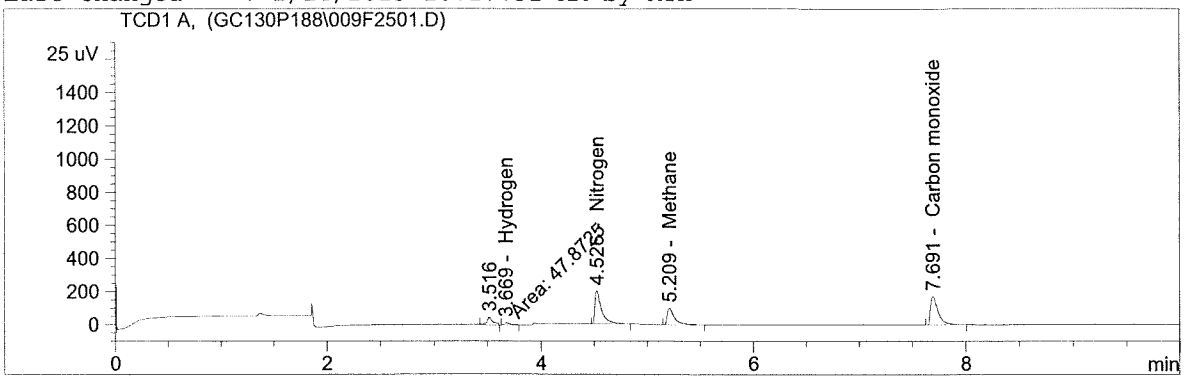

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F2501.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
======================================================================
Acq. Operator    : stg                                Seq. Line :  25
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 14-Feb-13, 01:33:51                      Inj :   1
                                                    Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
======================================================================
                      External Standard Report
======================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.669	MM	47.87245	6.70166e-2	3.20825		Hydrogen
3.961		-	-	-		Oxygen
4.526	BB	860.79364	4.36656e-3	3.75871		Nitrogen
5.209	BB	468.06570	6.27671e-3	2.93791		Methane
7.691	BB	826.95837	4.47865e-3	3.70365		Carbon monoxide

```
Totals :                                  13.60852

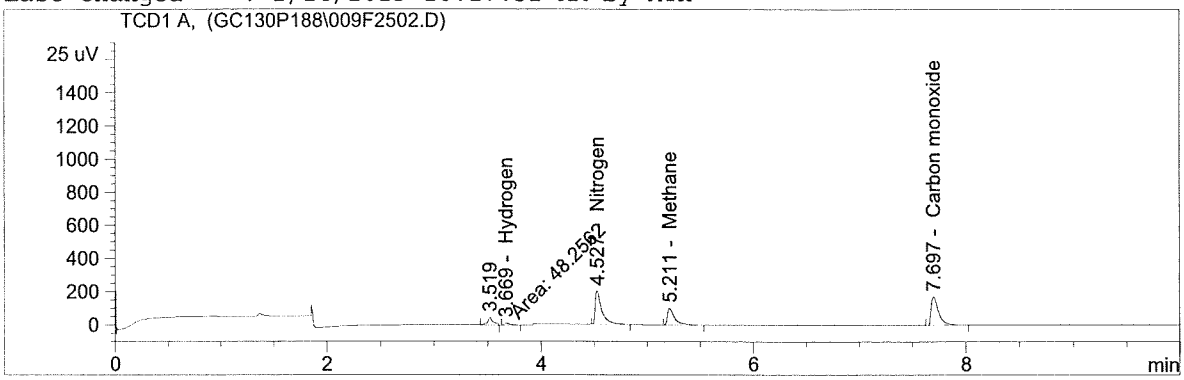

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

======================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F2502.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :  25
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 14-Feb-13, 01:51:31                     Inj :   2
                                                    Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/13/2013 12:56:45 PM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.990           -           -          -          Carbon dioxide
  3.669 MM       48.25621 6.70050e-2    3.23341    Hydrogen
  3.961           -           -          -          Oxygen
  4.527 BB      862.55573 4.36661e-3    3.76644    Nitrogen
  5.211 BB      466.80023 6.27680e-3    2.93001    Methane
  7.697 BB      826.47858 4.47865e-3    3.70151    Carbon monoxide

Totals :                                13.63137

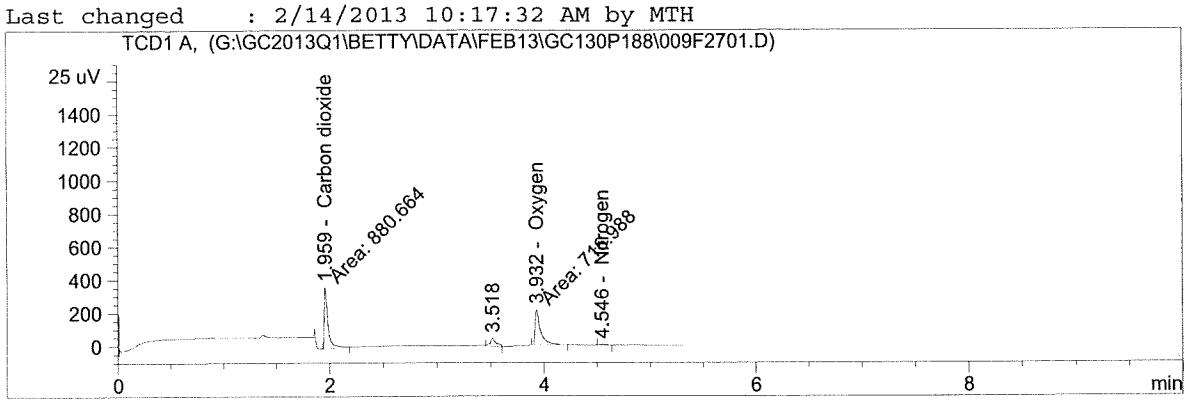

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F2701.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
======================================================================
Acq. Operator    : stg                                Seq. Line :  27
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 14-Feb-13, 10:40:58                     Inj :   1
                                                    Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
======================================================================
                        External Standard Report
======================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.959 MM      880.66388 3.67348e-3    3.23510    Carbon dioxide
  3.697           -          -          -          Hydrogen
  3.932 MM      716.98804 4.70637e-3    3.37441    Oxygen
  4.546 BB       13.89985 4.17394e-3 5.80172e-2    Nitrogen
  5.210           -          -          -          Methane
  7.742           -          -          -          Carbon monoxide

Totals :                                6.66753


1 Warnings or Errors :

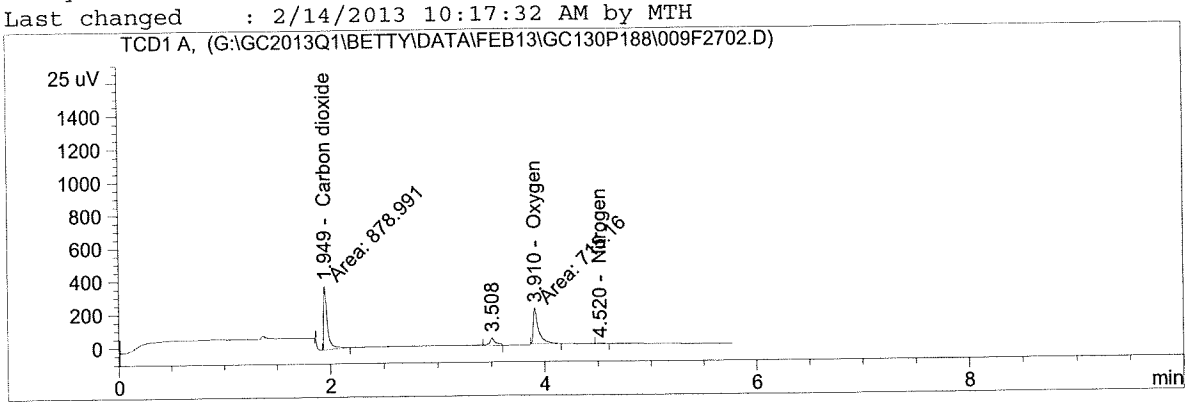
Warning : Calibrated compound(s) not found

======================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F2702.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
Acq. Operator    : stg                                  Seq. Line :  27
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 14-Feb-13, 10:51:22                       Inj :   2
                                                      Inj Volume : External

Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
                        External Standard Report

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.949	MM	878.99146	3.67354e-3	3.22901		Carbon dioxide
3.697		-	-	-		Hydrogen
3.910	MM	715.16016	4.70649e-3	3.36589		Oxygen
4.520	BB	13.53181	4.17394e-3	5.64810e-2		Nitrogen
5.210		-	-	-		Methane
7.742		-	-	-		Carbon monoxide
Totals :				6.65139		

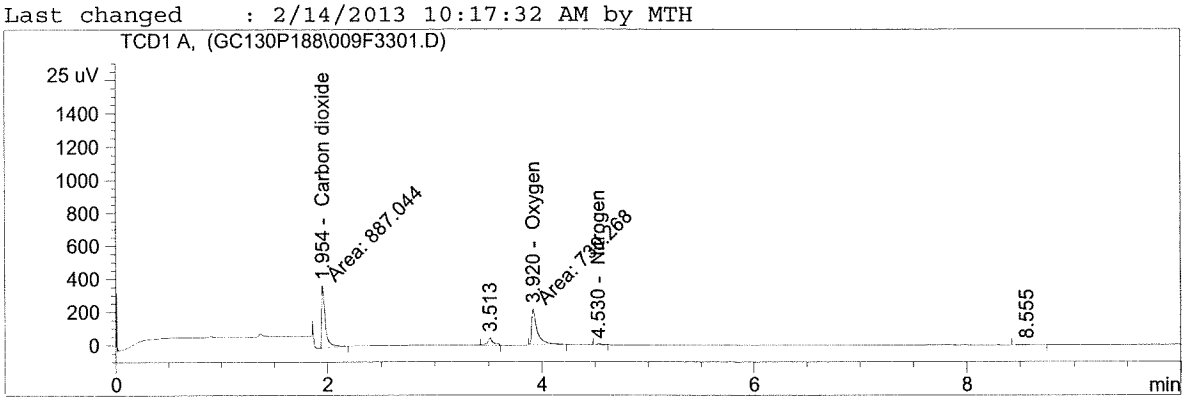
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F3301.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  33
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 14-Feb-13, 13:37:50                       Inj :   1
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area     Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.954 MM      887.04437 3.67324e-3    3.25832     Carbon dioxide
  3.697           -          -            -         Hydrogen
  3.920 MM      730.26794 4.70556e-3    3.43632     Oxygen
  4.530 BB       13.67192 4.17394e-3 5.70658e-2     Nitrogen
  5.210           -          -            -         Methane
  7.742           -          -            -         Carbon monoxide

Totals :                                 6.75171

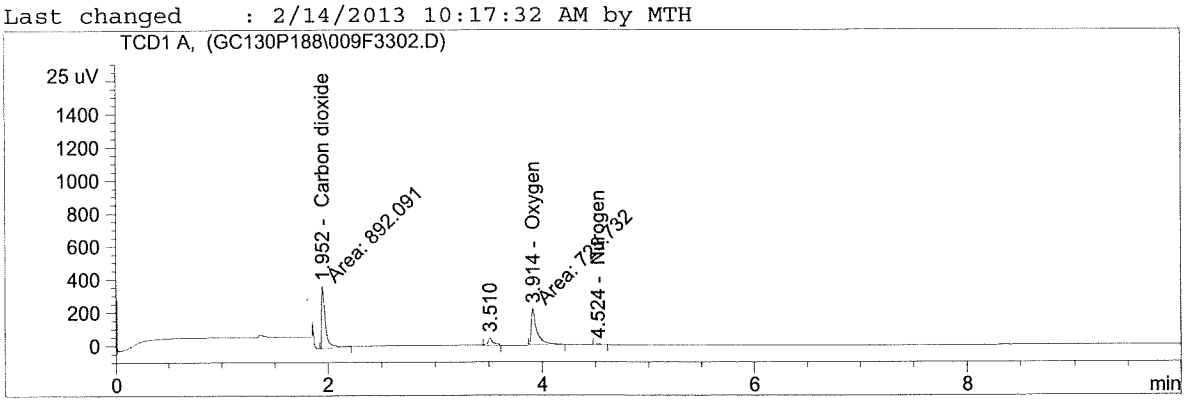

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F3302.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  33
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 14-Feb-13, 13:55:29                       Inj :   2
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|-------------------
  1.952 MM      892.09143 3.67305e-3    3.27669    Carbon dioxide
  3.697           -           -           -        Hydrogen
  3.914 MM      723.73230 4.70596e-3    3.40585    Oxygen
  4.524 BB       13.97386 4.17394e-3 5.83261e-2    Nitrogen
  5.210           -           -           -        Methane
  7.742           -           -           -        Carbon monoxide

Totals :                                 6.74087

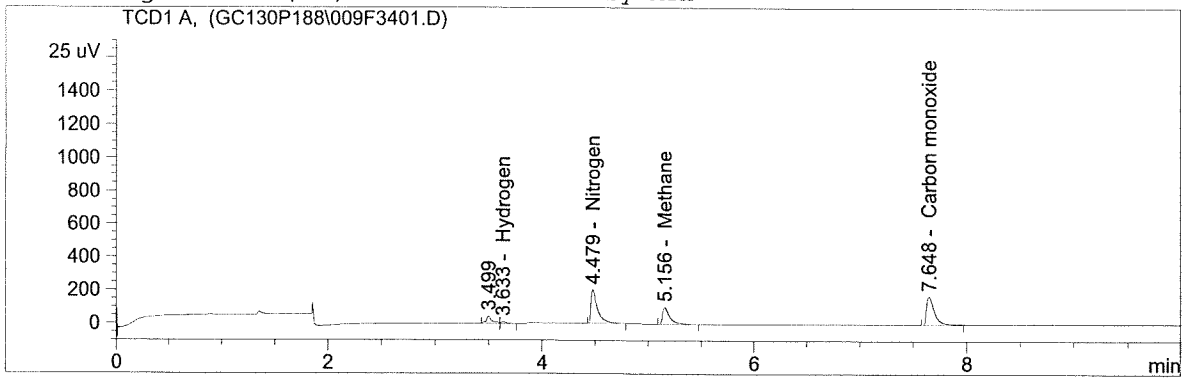

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F3401.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : stg                                  Seq. Line :  34
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 14-Feb-13, 14:13:07                       Inj :   1
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.633	VB	37.72636	6.74075e-2	2.54304		Hydrogen
3.961		-	-	-		Oxygen
4.479	BB	859.84662	4.36653e-3	3.75455		Nitrogen
5.156	BB	469.68729	6.27659e-3	2.94803		Methane
7.648	BB	822.72363	4.47869e-3	3.68473		Carbon monoxide
Totals :				12.93035		

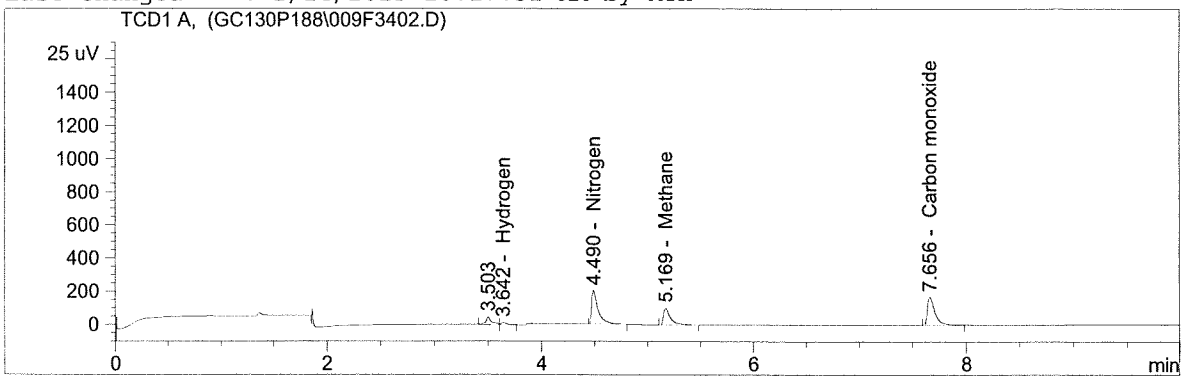
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F3402.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  34
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 14-Feb-13, 14:30:45                       Inj :   2
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P188.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/14/2013 10:17:32 AM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/14/2013 10:17:23 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.990           -           -          -          Carbon dioxide
  3.642 VB       45.62475 6.70882e-2    3.06088    Hydrogen
  3.961           -           -          -          Oxygen
  4.490 BB      859.83038 4.36653e-3    3.75448    Nitrogen
  5.169 BB      468.72495 6.27666e-3    2.94203    Methane
  7.656 BB      821.34692 4.47871e-3    3.67857    Carbon monoxide

Totals :                                13.43596

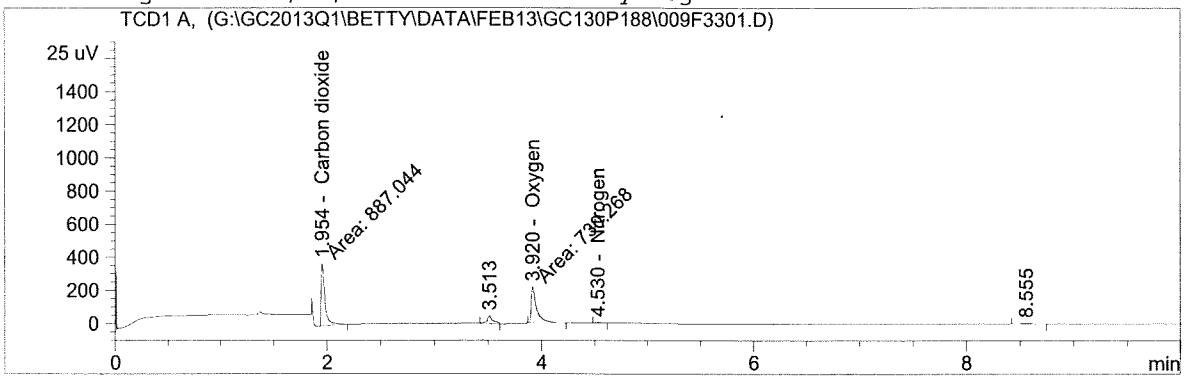

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F3301.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  33
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 14-Feb-13, 13:37:50                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.954 MM      887.04437 3.67324e-3    3.25832    Carbon dioxide
  3.677           -          -          -         Hydrogen
  3.920 MM      730.26794 4.70556e-3    3.43632    Oxygen
  4.530 BB       13.67192 4.17394e-3 5.70658e-2    Nitrogen
  5.203           -          -          -         Methane
  7.679           -          -          -         Carbon monoxide

Totals :                                6.75171

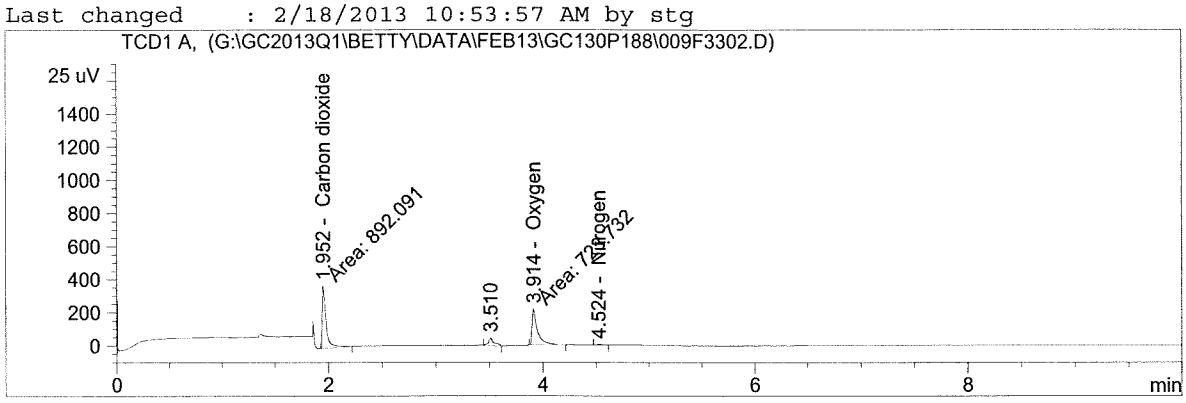

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F3302.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  33
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 14-Feb-13, 13:55:29                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.952 MM      892.09143 3.67305e-3    3.27669    Carbon dioxide
  3.677           -           -           -        Hydrogen
  3.914 MM      723.73230 4.70596e-3    3.40585    Oxygen
  4.524 BB       13.97386 4.17394e-3 5.83261e-2    Nitrogen
  5.203           -           -           -        Methane
  7.679           -           -           -        Carbon monoxide

Totals :                                6.74087

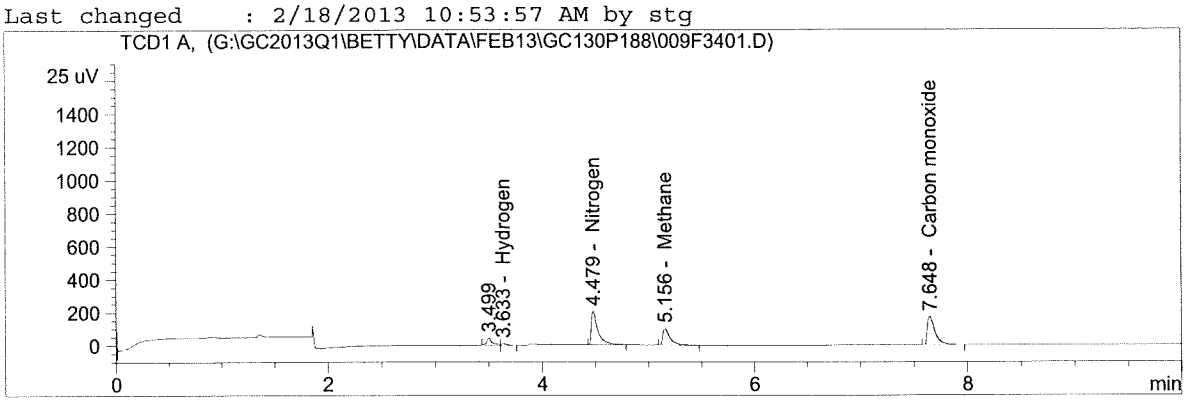

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F3401.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :  34
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 14-Feb-13, 14:13:07                      Inj :   1
                                                    Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.990           -           -          -          Carbon dioxide
  3.633 VB      37.72636 7.04486e-2    2.65777     Hydrogen
  3.961           -           -          -          Oxygen
  4.479 BB     859.84662 4.36653e-3    3.75455     Nitrogen
  5.156 BB     469.68729 6.27868e-3    2.94902     Methane
  7.648 BB     822.72363 4.47869e-3    3.68473     Carbon monoxide

Totals :                               13.04606

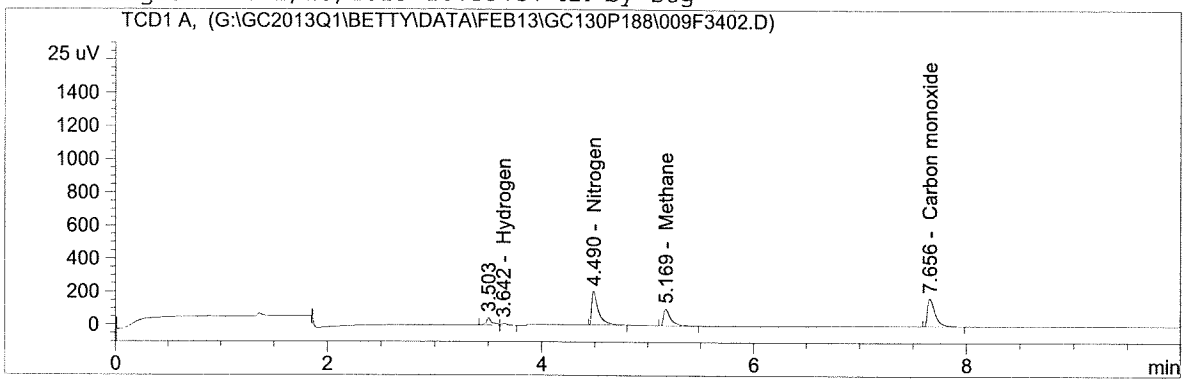

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P188\009F3402.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  34
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 14-Feb-13, 14:30:45                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [25 uV*s]                  [%]
-------|------|----------|----------|----------|--|------------------
  1.990           -           -          -          Carbon dioxide
  3.642 VB       45.62475 7.02240e-2    3.20395    Hydrogen
  3.961           -           -          -          Oxygen
  4.490 BB      859.83038 4.36653e-3    3.75448    Nitrogen
  5.169 BB      468.72495 6.27875e-3    2.94301    Methane
  7.656 BB      821.34692 4.47871e-3    3.67857    Carbon monoxide

Totals :                                13.58001

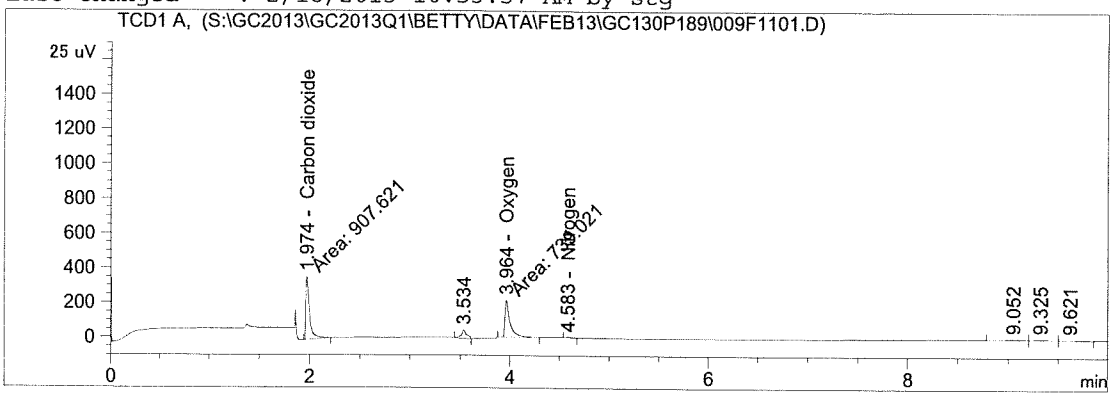

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\009F1101.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
Acq. Operator    : stg                                  Seq. Line :  11
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 14-Feb-13, 20:10:29                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```



External Standard Report

```
Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs
```

Manual Integration
"II" (MTH)

Signal 1: TCD1 A,

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.974	MM	907.62054	3.67248e-3	3.33322		Carbon dioxide
3.677		-	-	-		Hydrogen
3.964	MM	739.02136	4.70505e-3	3.47713		Oxygen
4.583	BB	14.24690	4.17394e-3	5.94657e-2		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide
Totals :				6.86981		

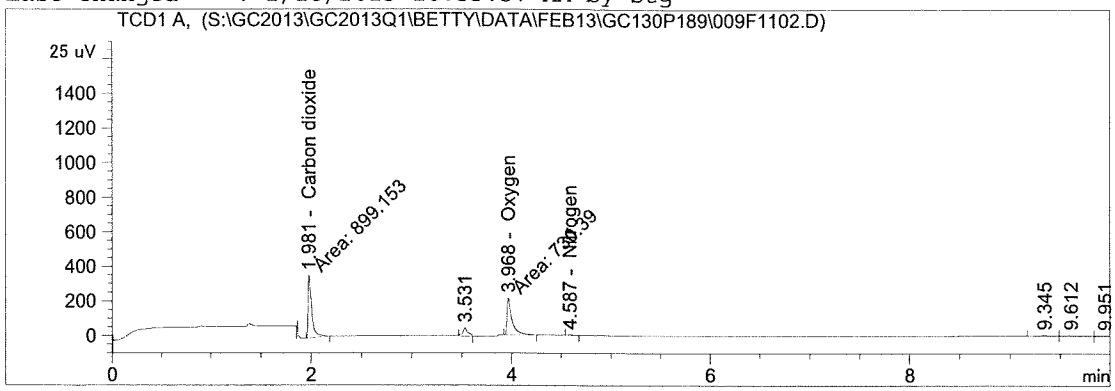
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\009F1102.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
================================================================================
Acq. Operator    : stg                                  Seq. Line :  11
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 14-Feb-13, 20:27:54                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,                                                Manual Integration
                                                                 "II" (MTH)
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                [%]
-------|------|----------|----------|----------|--|-------------------
  1.981 MM      899.15308 3.67279e-3    3.30240    Carbon dioxide
  3.677           -          -          -          Hydrogen
  3.968 MM      730.38995 4.70556e-3    3.43689    Oxygen
  4.587 BB       14.21920 4.17394e-3 5.93501e-2    Nitrogen
  5.203           -          -          -          Methane
  7.679           -          -          -          Carbon monoxide

Totals :                                 6.79864

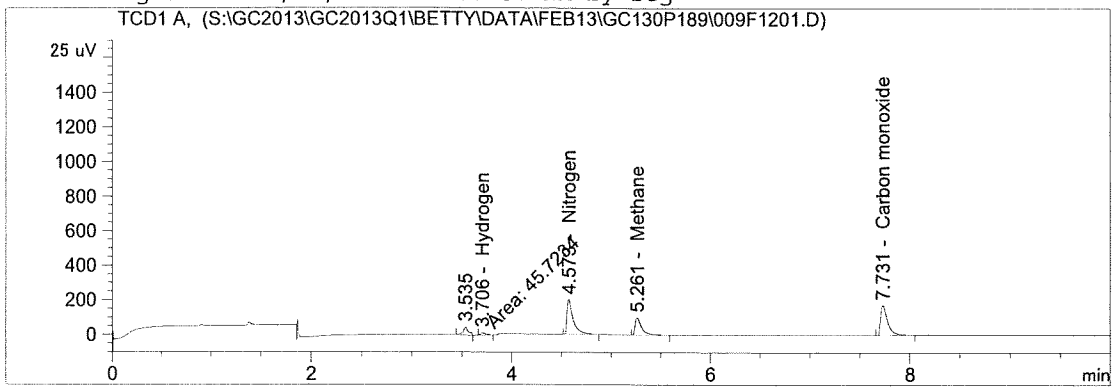

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\009F1201.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : stg                                  Seq. Line :  12
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 14-Feb-13, 20:45:17                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.706	MM	45.72343	7.02217e-2	3.21078		Hydrogen
3.961		-	-	-		Oxygen
4.573	BB	863.97424	4.36665e-3	3.77267		Nitrogen
5.261	BB	464.60330	6.27905e-3	2.91727		Methane
7.731	BB	827.38269	4.47864e-3	3.70555		Carbon monoxide
Totals :				13.60627		

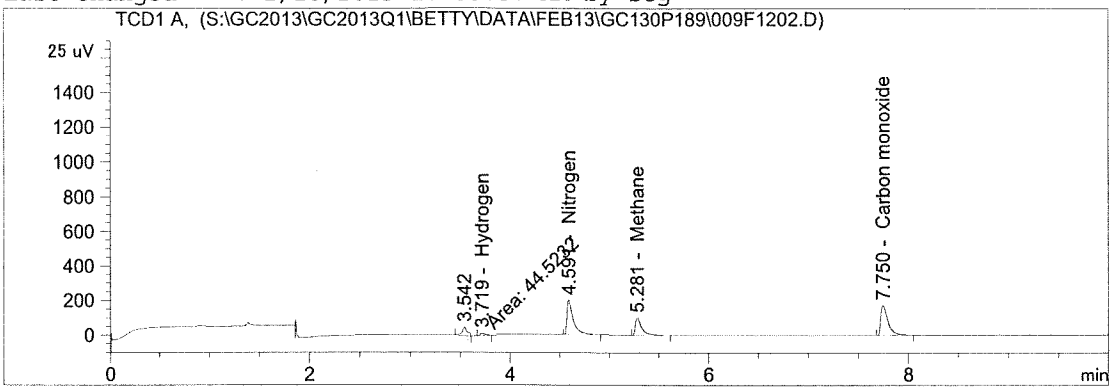
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\009F1202.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator   : stg                                Seq. Line :  12
Acq. Instrument : Betty                             Location : Vial 9
Injection Date  : 14-Feb-13, 21:02:37                    Inj :   2
                                                   Inj Volume : External
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed    : 2/14/2013 10:36:21 AM by stg
Analysis Method : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed    : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.719	MM	44.52319	7.02505e-2	3.12778		Hydrogen
3.961		-	-	-		Oxygen
4.591	BB	863.28986	4.36663e-3	3.76967		Nitrogen
5.281	BB	462.88559	6.27917e-3	2.90654		Methane
7.750	BB	823.28473	4.47869e-3	3.68723		Carbon monoxide
Totals :				13.49122		

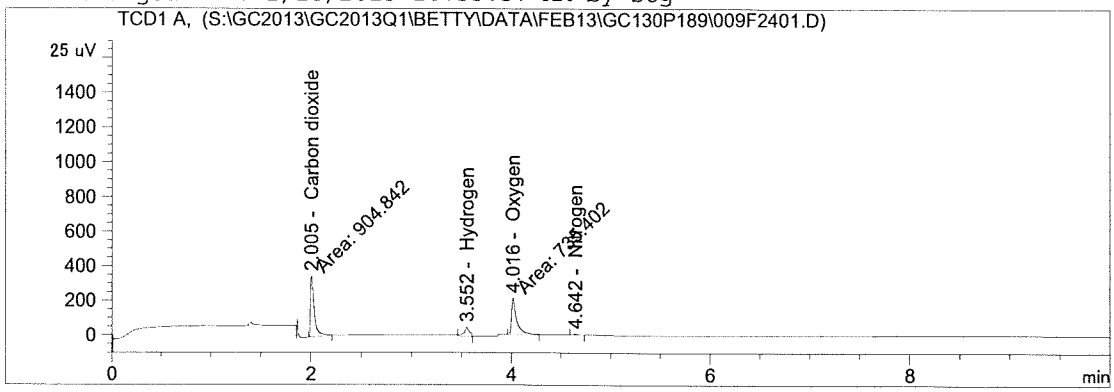
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                         *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\009F2401.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : stg                              Seq. Line :  24
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 15-Feb-13, 04:13:38                   Inj :   1
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.005	MM	904.84216	3.67258e-3	3.32310		Carbon dioxide
3.552	BV	184.64352	6.94163e-2	12.81728		Hydrogen
4.016	MM	735.40173	4.70526e-3	3.46026		Oxygen
4.642	BB	14.78783	4.17394e-3	6.17235e-2		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide

```
Totals :                                  19.66236

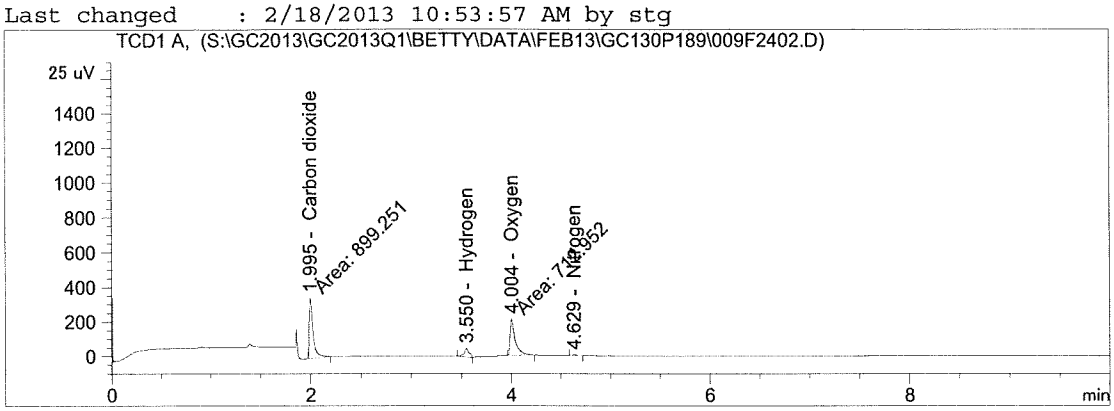

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\009F2402.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : stg                              Seq. Line :  24
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 15-Feb-13, 04:30:56                    Inj :   2
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.995	MM	899.25116	3.67278e-3	3.30275		Carbon dioxide
3.550	BV	182.30060	6.94197e-2	12.65526		Hydrogen
4.004	MM	712.95184	4.70663e-3	3.35560		Oxygen
4.629	BB	14.69667	4.17394e-3	6.13430e-2		Nitrogen
5.203		-	-	-		Methane
7.679		-	-	-		Carbon monoxide
Totals :				19.37496		

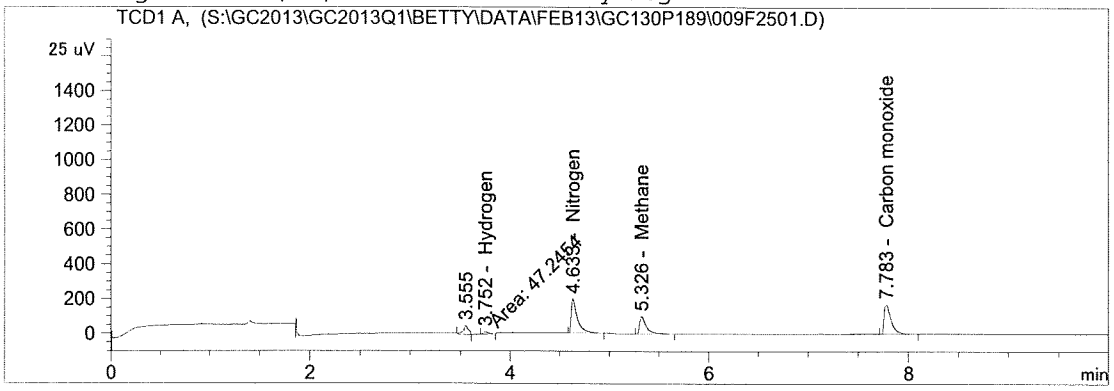
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\009F2501.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  25
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 04:48:14                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.752	MM	47.24543	7.01872e-2	3.31602		Hydrogen
3.961		-	-	-		Oxygen
4.633	BB	859.49890	4.36652e-3	3.75302		Nitrogen
5.326	BB	460.32712	6.27936e-3	2.89056		Methane
7.783	BB	822.34930	4.47870e-3	3.68305		Carbon monoxide
Totals :				13.64266		

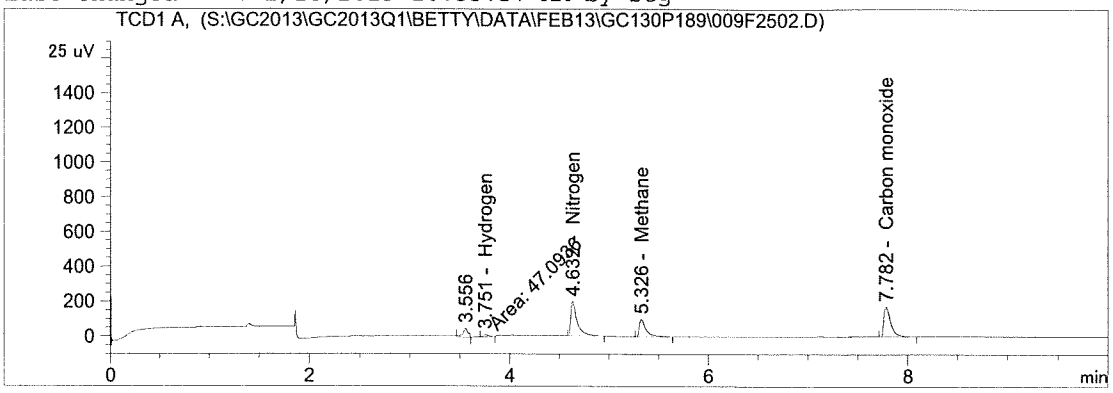
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P189\009F2502.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  25
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 05:05:32                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P188F_LOW H2.M
Last changed     : 2/18/2013 10:53:57 AM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Monday, February 18, 2013 10:52:36 AM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.990		-	-	-		Carbon dioxide
3.751	MM	47.09360	7.01905e-2	3.30552		Hydrogen
3.961		-	-	-		Oxygen
4.632	BB	855.41461	4.36641e-3	3.73509		Nitrogen
5.326	BB	458.23846	6.27952e-3	2.87752		Methane
7.782	BB	819.89215	4.47872e-3	3.67207		Carbon monoxide
Totals :				13.59020		

```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

method: G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Modified on: 1/31/2013 at 3:41:52 PM

==========

6890 GC METHOD

==========

OVEN
- Initial temp: 40 'C (On)
- Initial time: 5.10 min
- Ramps:

#	Rate	Final temp	Final time
1	30.00	150	1.30
2	0.0(Off)		

- Post temp: 50 'C
- Post time: 0.00 min
- Run time: 10.07 min
- Maximum temp: 250 'C
- Equilibration time: 0.20 min

CRYO (N2)
- Cryo: Off
- Cryo fault: On
- Cryo timeout: 40.00 min (On)
- Quick cryo cool: Off
- Ambient temp: 30 'C

FRONT INLET (SPLIT/SPLITLESS)
- Mode: Splitless
- Initial temp: 200 'C (On)
- Pressure: 11.66 psi (On)
- Purge flow: 10.0 mL/min
- Purge time: 0.00 min
- Total flow: 18.8 mL/min
- Gas saver: Off
- Gas type: Helium

BACK INLET (SPLIT/SPLITLESS)
- Mode: Split
- Initial temp: 200 'C (On)
- Pressure: 9.99 psi (On)
- Split ratio: 7:1
- Split flow: 10.7 mL/min
- Total flow: 15.2 mL/min
- Gas saver: Off
- Gas type: Helium

COLUMN 1
- Capillary Column
- Model Number: Restek ???
- 15m x0.53mmMS&30m x0.53mmRt-S-BON
- Max temperature: 250 'C
- Nominal length: 45.0 m
- Nominal diameter: 530.00 um
- Nominal film thickness: 50.00 um
- Mode: constant flow
- Initial flow: 5.9 mL/min
- Nominal init pressure: 11.66 psi
- Average velocity: 50 cm/sec
- Inlet: Front Inlet
- Outlet: Front Detector
- Outlet pressure: ambient

COLUMN 2
- Capillary Column
- Model Number: Restek 10180
- 60m x 0.32mm x 5um Rtx-1
- Max temperature: 280 'C
- Nominal length: 60.0 m
- Nominal diameter: 320.00 um
- Nominal film thickness: 5.00 um
- Mode: constant flow
- Initial flow: 1.5 mL/min
- Nominal init pressure: 10.00 psi
- Average velocity: 32 cm/sec
- Inlet: Back Inlet
- Outlet: (unspecified)
- Outlet pressure: vacuum

FRONT DETECTOR (TCD)
- Temperature: 275 'C (On)
- Reference flow: 20.0 mL/min (On)
- Mode: Constant makeup flow
- Makeup flow: 7.0 mL/min (On)
- Makeup Gas Type: Helium
- Filament: On
- Negative polarity: Off

BACK DETECTOR (AIB)
- Electrometer: Off

SIGNAL 1
- Data rate: 20 Hz
- Type: front detector
- Save Data: On
- Zero: 0.0 (Off)
- Range: 0
- Fast Peaks: Off
- Attenuation: 0

SIGNAL 2
- Data rate: 20 Hz
- Type: test plot
- Save Data: Off
- Zero: 0.0 (Off)
- Range: 0
- Fast Peaks: Off
- Attenuation: 0

COLUMN COMP 1
- Derive from front detector

COLUMN COMP 2
- (No Detectors Installed)

method: G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Modified on: 1/31/2013 at 3:41:52 PM
THERMAL AUX 1
Use: Valve Box Heater
Description:
Initial temp: 130 'C (On)
Initial time: 0.00 min

#	Rate	Final temp	Final time
1	0.0	(Off)	

VALVES
Valve 2 Gas Sampling
Description:
Loop Volume: 1.000 mL
Load Time: 0.10 min
Inject Time: 1.90 min
Inlet: Front Inlet

POST RUN
Post Time: 0.00 min

TIME TABLE

Time	Specifier	Parameter & Setpoint	
3.70		Front Detector Polarity:	On
4.19		Front Detector Polarity:	Off

GC Injector

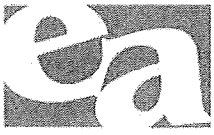
Front Injector:
Injector not configured, use these parameters if it becomes configured

Sample Washes	0
Sample Pumps	0
Injection Volume	1.00 microliters
Syringe Size	10.0 microliters
PostInj Solvent A Washes	0
PostInj Solvent B Washes	0
Viscosity Delay	0 seconds
Plunger Speed	Fast

Back Injector:
Injector not configured, use these parameters if it becomes configured

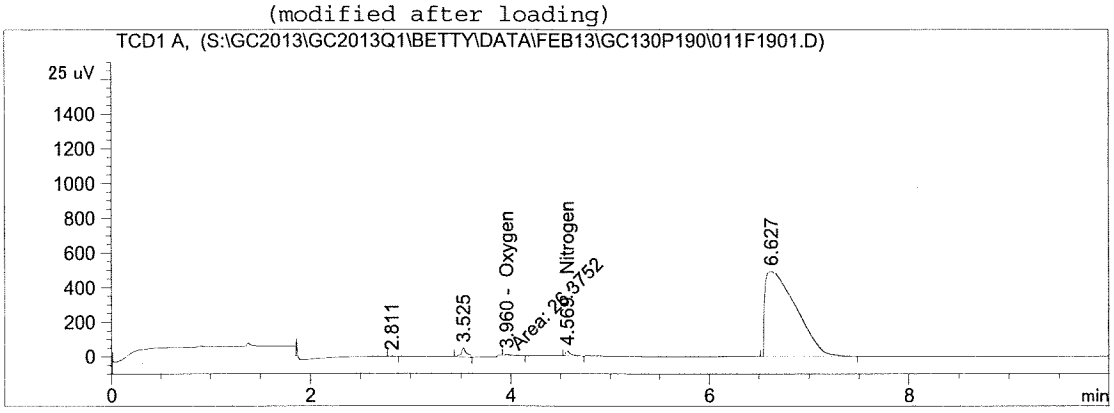
Sample Washes	0
Sample Pumps	0
Injection Volume	1.00 microliters
Syringe Size	10.0 microliters
PostInj Solvent A Washes	0
PostInj Solvent B Washes	0
Viscosity Delay	0 seconds
Plunger Speed	Fast

Sample Chromatograms



Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\011F1901.D
Sample Name: Can 00177 0213-39

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  19
Acq. Instrument  : Betty                                 Location : Vial 11
Injection Date   : 17-Feb-13, 21:11:08                       Inj :   1
                                                       Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
================================================================================
                          External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:24:39 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.700		-	-	-		Hydrogen
3.960	MM	26.37523	4.31052e-3	1.13691e-1		Oxygen
4.569	BB	104.25400	3.28905e-3	3.42897e-1		Nitrogen
5.000		-	-	-		Methane
7.500		-	-	-		Carbon monoxide

Totals : 4.56588e-1

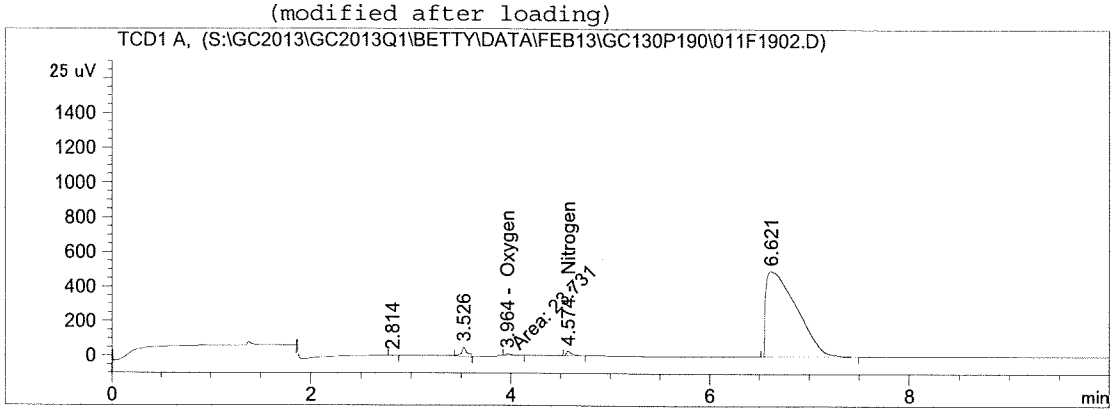
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

```
================================================================================
                           *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\011F1902.D
Sample Name: Can 00177 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  19
Acq. Instrument  : Betty                             Location : Vial 11
Injection Date   : 17-Feb-13, 21:26:26                   Inj :   2
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:24:39 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.700		-	-	-		Hydrogen
3.964	MM	23.73104	4.31052e-3	1.02293e-1		Oxygen
4.574	BB	94.79592	3.28905e-3	3.11788e-1		Nitrogen
5.000		-	-	-		Methane
7.500		-	-	-		Carbon monoxide

```
Totals :                                4.14082e-1

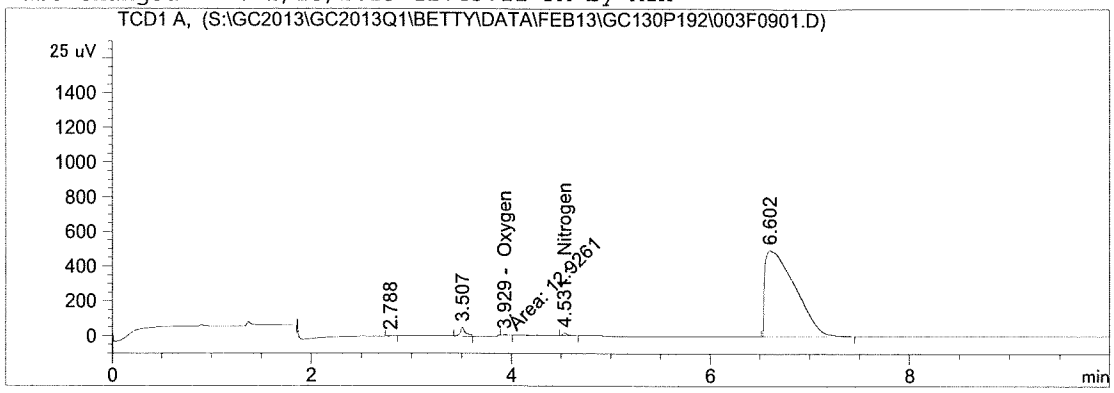

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P192\003F0901.D
Sample Name: Can00203-T8 0213-39

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   9
Acq. Instrument  : Betty                                 Location : Vial 3
Injection Date   : 21-Feb-13, 12:52:00                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,                                                  Manual Integration
                                                                   "II" (MTH)
RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.997            -           -          -          Carbon dioxide
  3.700            -           -          -          Hydrogen
  3.929 MM     12.92606 4.31052e-3 5.57181e-2        Oxygen
  4.531 BB     56.99556 3.28905e-3 1.87461e-1        Nitrogen
  5.257            -           -          -          Methane
  7.737            -           -          -          Carbon monoxide

Totals :                              2.43179e-1

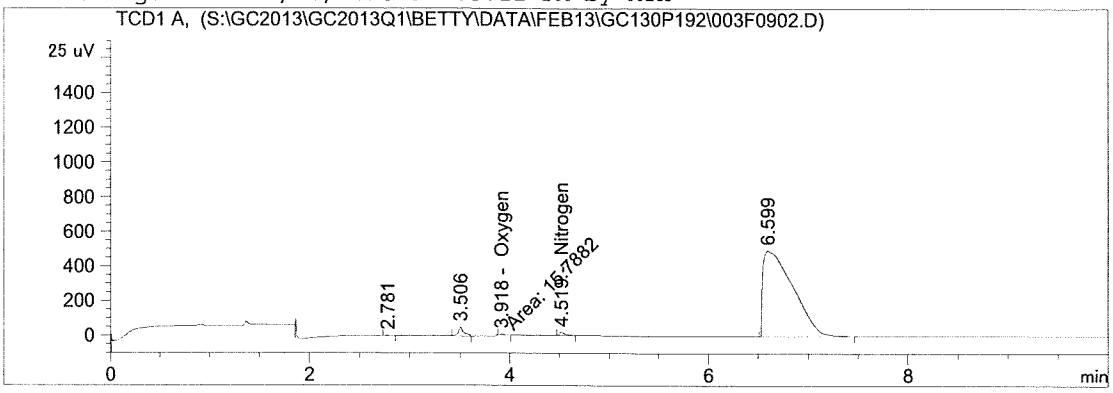

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P192\003F0902.D
Sample Name: Can00203-T8 0213-39

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   9
Acq. Instrument  : Betty                                 Location : Vial 3
Injection Date   : 21-Feb-13, 13:07:41                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.700		-	-	-		Hydrogen
3.918	MM	15.78817	4.31052e-3	6.80553e-2		Oxygen
4.519	BB	64.96523	3.28905e-3	2.13674e-1		Nitrogen
5.257		-	-	-		Methane
7.737		-	-	-		Carbon monoxide
Totals :				2.81729e-1		

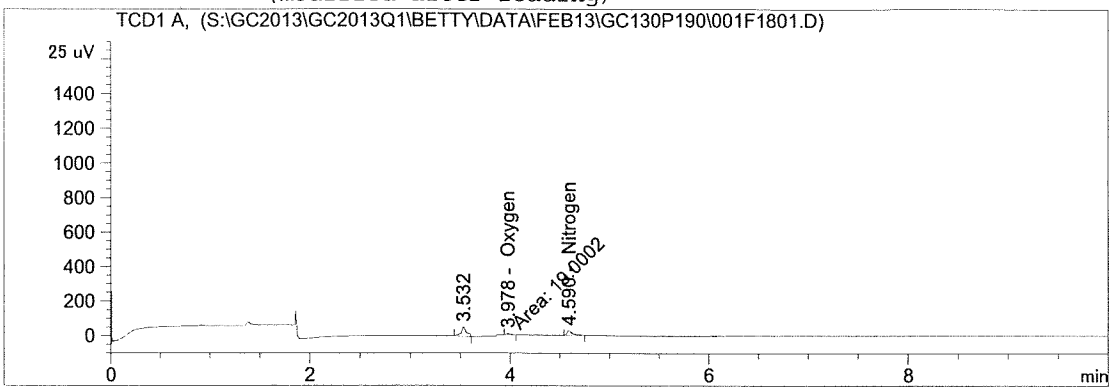
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\001F1801.D
Sample Name: He Blank

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  18
Acq. Instrument  : Betty                                 Location : Vial 1
Injection Date   : 17-Feb-13, 20:40:29                       Inj :   1
                                                       Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:24:39 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.700		-	-	-		Hydrogen
3.978	MM	19.00021	4.31052e-3	8.19009e-2		Oxygen
4.590	BB	92.37816	3.28905e-3	3.03836e-1		Nitrogen
5.000		-	-	-		Methane
7.500		-	-	-		Carbon monoxide

Totals : 3.85737e-1

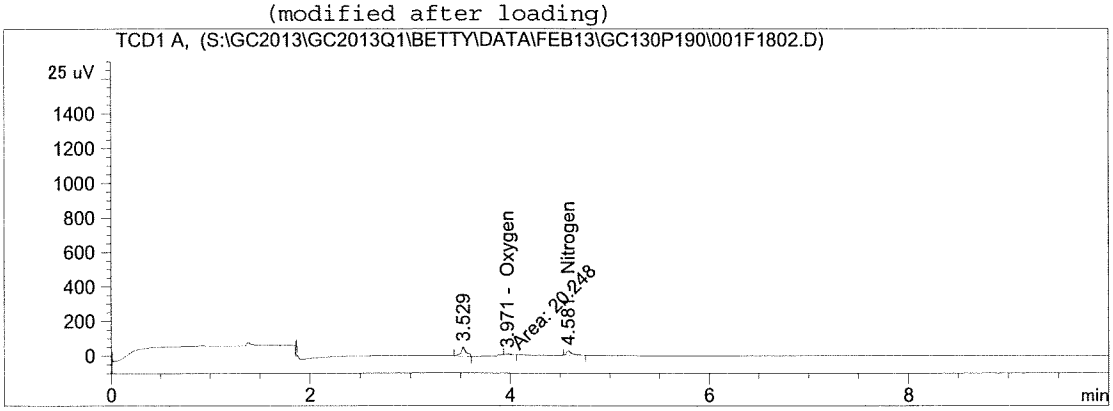
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\001F1802.D
Sample Name: He Blank

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  18
Acq. Instrument  : Betty                             Location : Vial 1
Injection Date   : 17-Feb-13, 20:55:50                   Inj :   2
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:24:39 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.700		-	-	-		Hydrogen
3.971	MM	20.24798	4.31052e-3	8.72794e-2		Oxygen
4.581	BB	93.66687	3.28905e-3	3.08075e-1		Nitrogen
5.000		-	-	-		Methane
7.500		-	-	-		Carbon monoxide

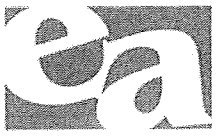
```
Totals :                                3.95354e-1


1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Calibration Curve Chromatograms



Calibration Table

Calib. Data Modified : 2/18/2013 12:42:17 PM

Rel. Reference Window : 2.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 2.000 %
Abs. Non-ref. Window : 0.200 min
Uncalibrated Peaks : not reported
Partial Calibration : Yes, identified peaks are recalibrated
Correct All Ret. Times: No, only for identified peaks

Curve Type : Linear
Origin : Connected
Weight : Quadratic (Amnt)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Signal 1: TCD1 A,
Signal 2: FID2 B,

RetTime [min]	Sig	Lvl	Amount [%]	Area	Amt/Area	Ref	Grp	Name
1.997	1	5	4.00000e-1	108.15130	3.69852e-3			Carbon dioxide
		6	1.00000	296.25148	3.37551e-3			
		7	3.48000	1121.21179	3.10378e-3			
		8	10.00000	3240.21948	3.08621e-3			
3.700	1	1	3.40000e-1	2.90823	1.16909e-1			Hydrogen
		2	8.50000e-1	9.99570	8.50365e-2			
		3	3.19000	35.28793	9.03992e-2			
		4	8.10000	95.71125	8.46295e-2			
3.968	1	5	4.00000e-1	94.89193	4.21532e-3			Oxygen
		6	1.00000	229.84197	4.35082e-3			
		7	3.48000	862.49908	4.03479e-3			
		8	10.00000	2551.36975	3.91946e-3			
		23	99.99000	2.54540e4	3.92826e-3			
4.500	1	1	4.00000e-1	121.32081	3.29704e-3			Nitrogen
		2	1.00000	291.65878	3.42866e-3			
		3	3.74000	1055.24268	3.54421e-3			
		4	10.10000	2861.93884	3.52908e-3			
		24	99.00000	2.75136e4	3.59822e-3			
5.257	1	1	3.20000e-1	62.41616	5.12688e-3			Methane
		2	8.00000e-1	157.65774	5.07428e-3			
		3	3.00000	591.23044	5.07416e-3			
		4	8.00000	1602.71783	4.99152e-3			
		25	99.00000	1.98394e4	4.99007e-3			
7.737	1	1	4.00000e-1	107.13446	3.73363e-3			Carbon monoxide
		2	1.01000	274.39520	3.68082e-3			
		3	3.79000	1020.28308	3.71466e-3			
		4	10.00000	2736.80518	3.65390e-3			
		26	99.00000	2.67083e4	3.70671e-3			

More compound-specific settings:

Compound: Carbon dioxide
Time Window : From 1.873 min To 2.197 min

Compound: Hydrogen
Time Window : From 3.560 min To 3.800 min

Compound: Oxygen
Time Window : From 3.858 min To 4.158 min

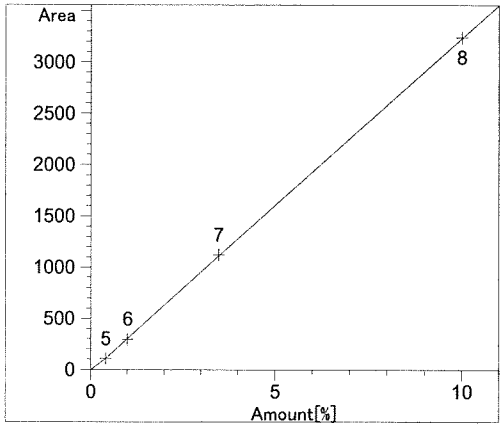
Compound: Nitrogen
Time Window : From 4.380 min To 4.880 min

Compound: Methane
Time Window : From 5.157 min To 5.607 min

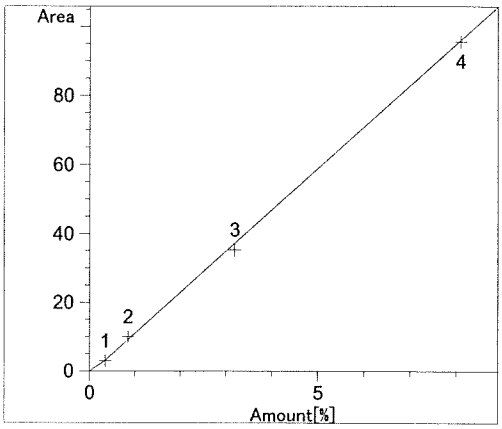
Peak Sum Table

No Entries in table

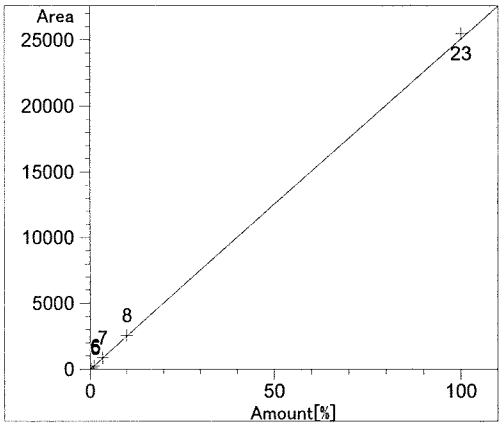
Calibration Curves



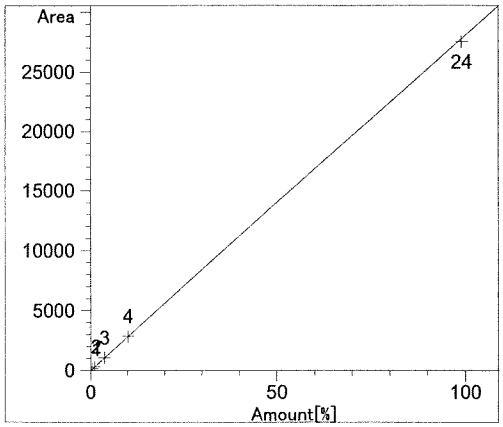
Carbon dioxide at exp. RT: 1.997
TCD1 A,
Correlation: 0.99986
Residual Std. Dev.: 11.22234
Formula: y = mx + b
m: 325.42971
b: -22.86383
x: Amount
y: Area
Calibration Level Weights:
Level 5 : 1
Level 6 : 0.16
Level 7 : 0.013212
Level 8 : 0.0016



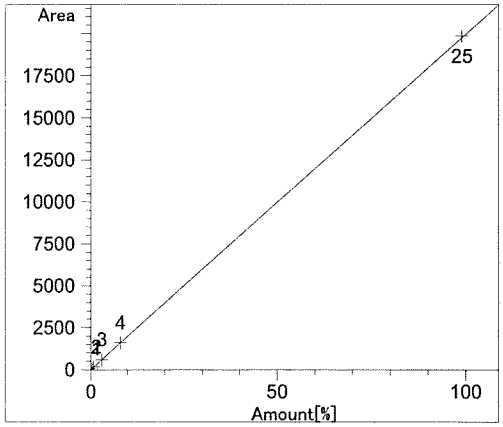
Hydrogen at exp. RT: 3.700
TCD1 A,
Correlation: 0.99737
Residual Std. Dev.: 1.54165
Formula: y = mx + b
m: 12.00506
b: -1.06019
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.01136
Level 4 : 0.001762



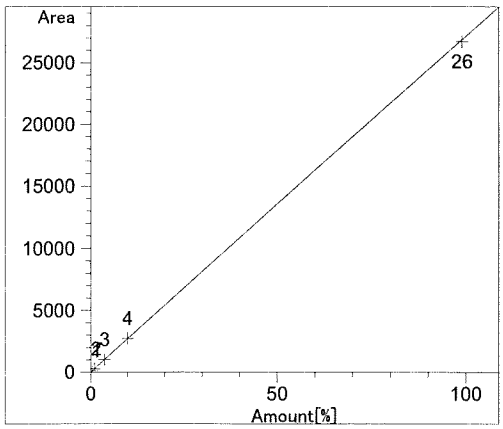
Oxygen at exp. RT: 3.968
TCD1 A,
Correlation: 0.99932
Residual Std. Dev.: 224.78395
Formula: y = mx + b
m: 250.78319
b: -7.51713
x: Amount
y: Area
Calibration Level Weights:
Level 5 : 1
Level 6 : 0.16
Level 7 : 0.013212
Level 8 : 0.0016
Level 23 : 0.000016



Nitrogen at exp. RT: 4.500
TCD1 A,
Correlation: 0.99997
Residual Std. Dev.: 143.60799
Formula: y = mx + b
m: 280.32218
b: 9.48681
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.011439
Level 4 : 0.001568
Level 24 : 0.000016



Methane at exp. RT: 5.257
TCD1 A,
Correlation: 0.99997
Residual Std. Dev.: 54.60787
Formula: y = mx + b
m: 199.46379
b: -1.52403
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.011378
Level 4 : 0.0016
Level 25 : 0.00001

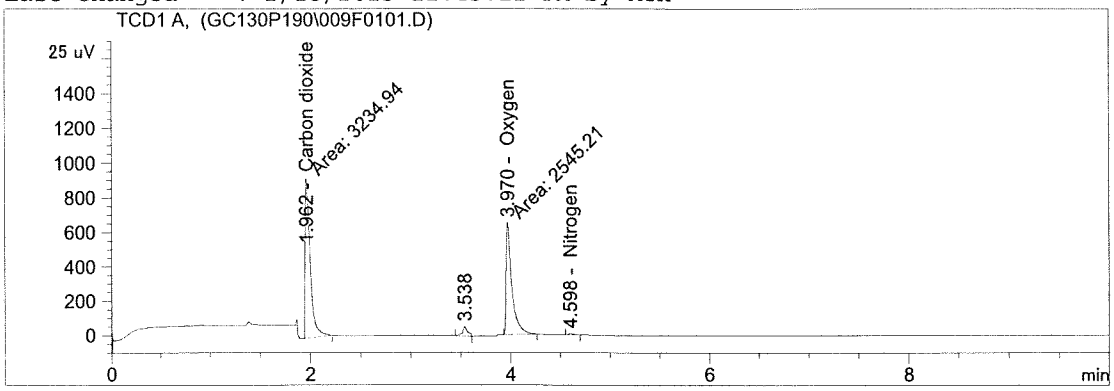


Carbon monoxide at exp. RT: 7.737
TCD1 A,
Correlation: 0.99997
Residual Std. Dev.: 91.80543
Formula: y = mx + b
m: 271.37918
b: -1.22042
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.156847
Level 3 : 0.011139
Level 4 : 0.0016
Level 26 : 0.000016

==========

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0101.D
Sample Name: gc130p177 #FG8 ENV(1=0,3=358.97)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   1
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 18:07:43                       Inj :   1
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.962	MM	3234.93774	3.09458e-3	10.01077		Carbon dioxide
3.700		-	-	-		Hydrogen
3.970	MM	2545.21460	3.99928e-3	10.17904		Oxygen
4.598	BB	23.27349	3.28905e-3	7.65476e-2		Nitrogen
5.257		-	-	-		Methane
7.737		-	-	-		Carbon monoxide

Totals : 20.26635

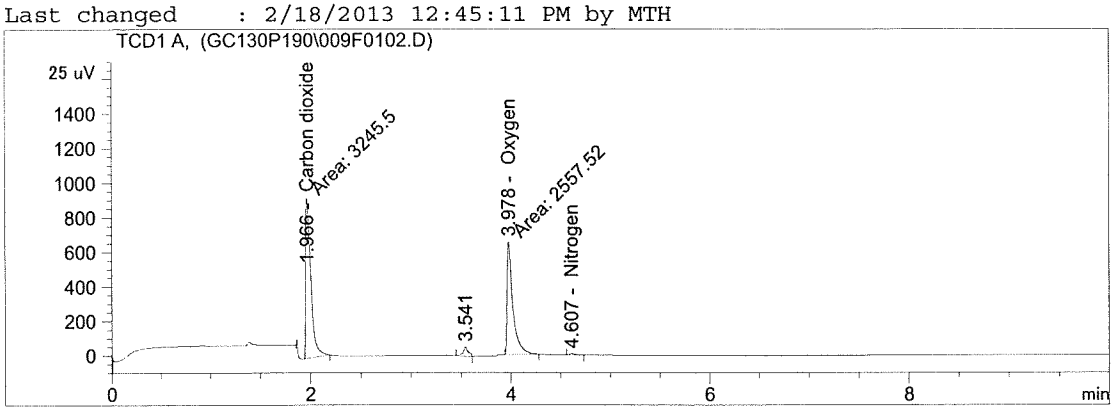
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

```
================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0102.D
Sample Name: gc130p177 #FG8 ENV(1=0,3=358.97)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   1
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 18:25:32                       Inj :   2
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.966	MM	3245.50122	3.09451e-3	10.04323		Carbon dioxide
3.700		-	-	-		Hydrogen
3.978	MM	2557.52490	3.99923e-3	10.22813		Oxygen
4.607	BB	23.64620	3.28905e-3	7.77735e-2		Nitrogen
5.257		-	-	-		Methane
7.737		-	-	-		Carbon monoxide

Totals : 20.34913

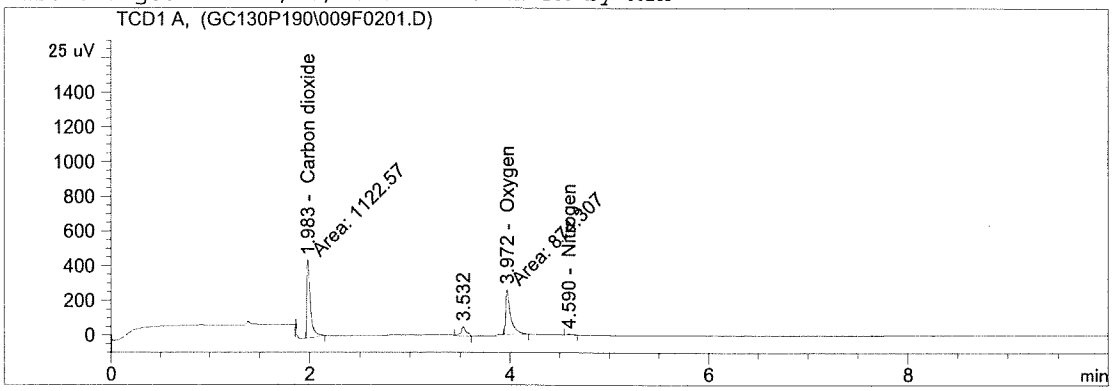
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0201.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   2
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 15-Feb-13, 19:01:04                   Inj :   1
                                                   Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.983	MM	1122.56689	3.13545e-3	3.51975		Carbon dioxide
3.700		-	-	-		Hydrogen
3.972	MM	874.30682	4.02179e-3	3.51628		Oxygen
4.590	BB	16.11088	3.28905e-3	5.29895e-2		Nitrogen
5.257		-	-	-		Methane
7.737		-	-	-		Carbon monoxide

Totals : 7.08902

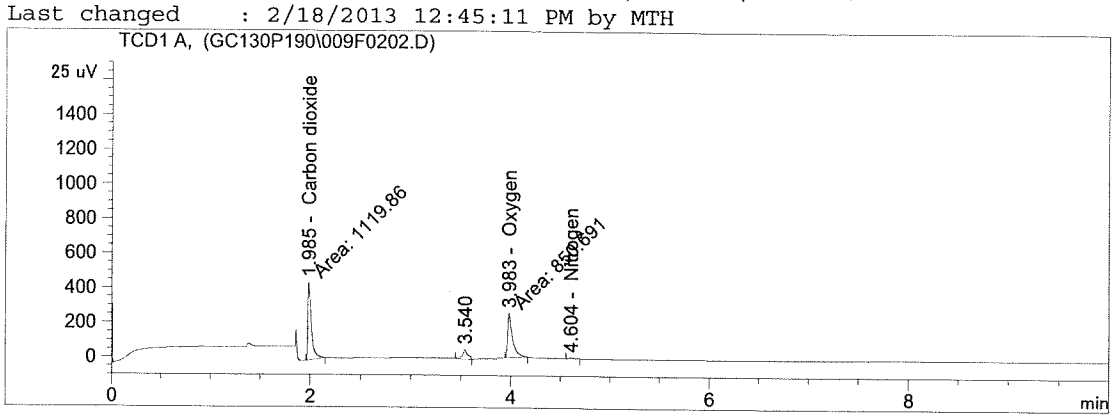
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0202.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   2
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 19:18:44                       Inj :   2
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.985	MM	1119.85669	3.13560e-3	3.51142		Carbon dioxide
3.700		-	-	-		Hydrogen
3.983	MM	850.69135	4.02274e-3	3.42211		Oxygen
4.604	BB	16.42610	3.28905e-3	5.40263e-2		Nitrogen
5.257		-	-	-		Methane
7.737		-	-	-		Carbon monoxide
Totals :				6.98756		

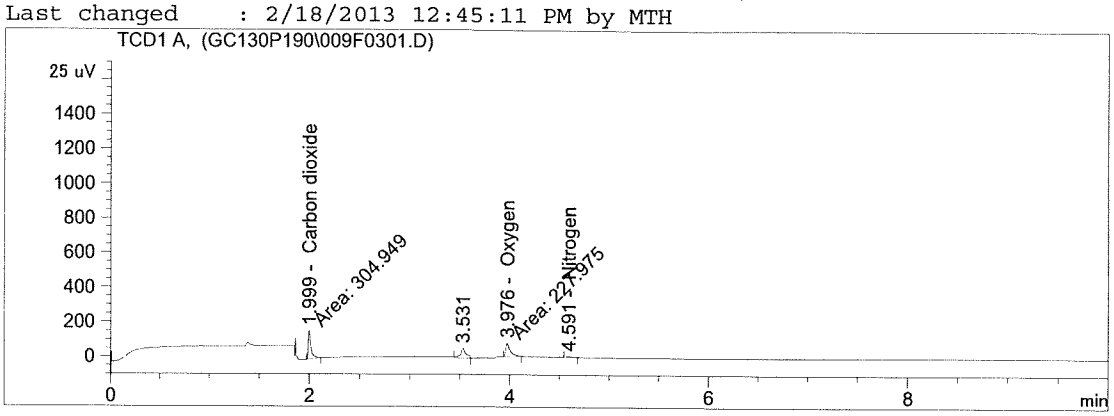
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0301.D
Sample Name: gc130p177 #FG6 ENV(1=1271.99,3=159.54)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   3
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 19:53:59                       Inj :   1
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.999	MM	304.94913	3.30325e-3	1.00732		Carbon dioxide
3.700		-	-	-		Hydrogen
3.976	MM	227.97501	4.11899e-3	9.39027e-1		Oxygen
4.591	BB	14.27404	3.28905e-3	4.69480e-2		Nitrogen
5.257		-	-	-		Methane
7.737		-	-	-		Carbon monoxide

Totals : 1.99330

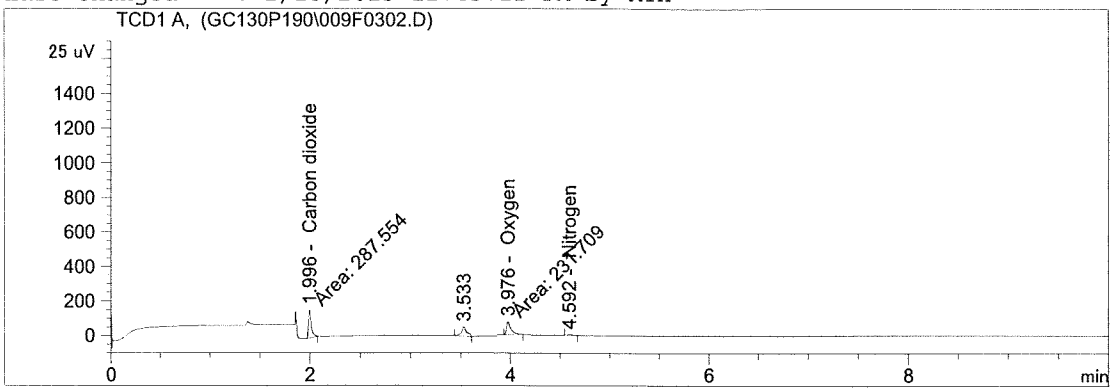
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

```
================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0302.D
Sample Name: gc130p177 #FG6 ENV(1=1271.99,3=159.54)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   3
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 20:11:33                       Inj :   2
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.996	MM	287.55383	3.31719e-3	9.53870e-1		Carbon dioxide
3.700		-	-	-		Hydrogen
3.976	MM	231.70894	4.11687e-3	9.53916e-1		Oxygen
4.592	BB	14.00357	3.28905e-3	4.60584e-2		Nitrogen
5.257		-	-	-		Methane
7.737		-	-	-		Carbon monoxide
Totals :				1.95384		

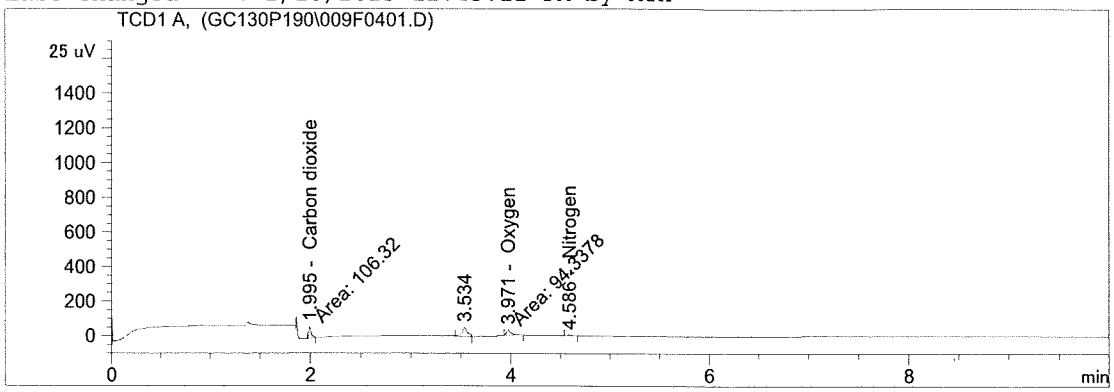
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0401.D
Sample Name: gc130p177 #FG5 ENV(1=3391.99,3=159.54)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   4
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 20:46:37                       Inj :   1
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.995	MM	106.31967	3.72759e-3	3.96316e-1		Carbon dioxide
3.700		-	-	-		Hydrogen
3.971	MM	94.33778	4.30525e-3	4.06147e-1		Oxygen
4.586	BB	13.28041	3.28905e-3	4.36799e-2		Nitrogen
5.257		-	-	-		Methane
7.737		-	-	-		Carbon monoxide
Totals :				8.46143e-1		

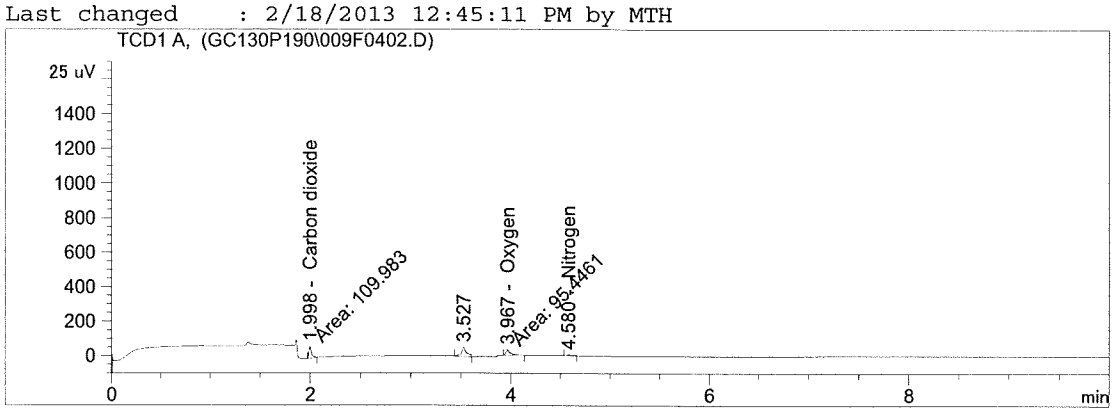
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0402.D
Sample Name: gc130p177 #FG5 ENV(1=3391.99,3=159.54)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   4
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 21:04:07                       Inj :   2
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.998	MM	109.98293	3.71166e-3	4.08220e-1		Carbon dioxide
3.700		-	-	-		Hydrogen
3.967	MM	95.44608	4.30156e-3	4.10567e-1		Oxygen
4.580	BB	13.33672	3.28905e-3	4.38651e-2		Nitrogen
5.257		-	-	-		Methane
7.737		-	-	-		Carbon monoxide

Totals : 8.62651e-1

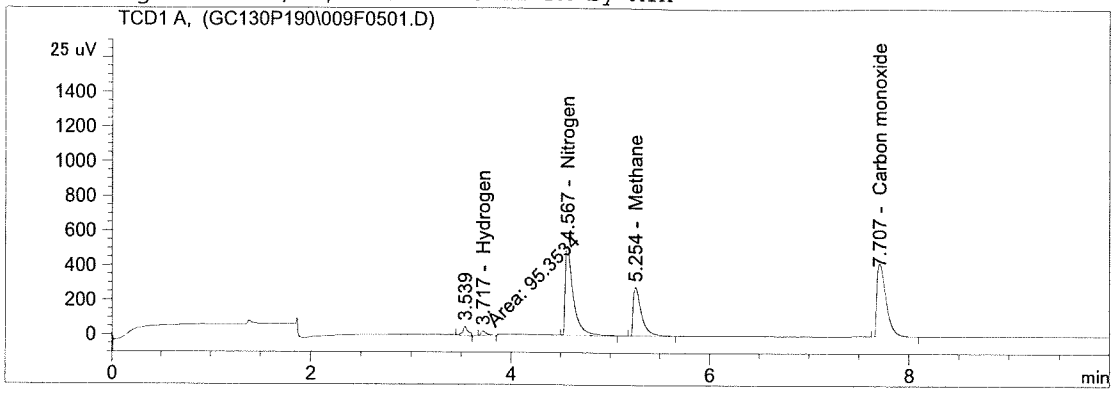
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0501.D
Sample Name: gc130p177 #FG4 ENV(1=0,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   5
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 21:39:00                       Inj :   1
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.717	MM	95.35341	8.42243e-2	8.03108		Hydrogen
3.968		-	-	-		Oxygen
4.567	BB	2870.69019	3.55553e-3	10.20684		Nitrogen
5.254	BB	1602.68835	5.01821e-3	8.04262		Methane
7.707	BB	2738.07642	3.68652e-3	10.09398		Carbon monoxide
Totals :				36.37452		

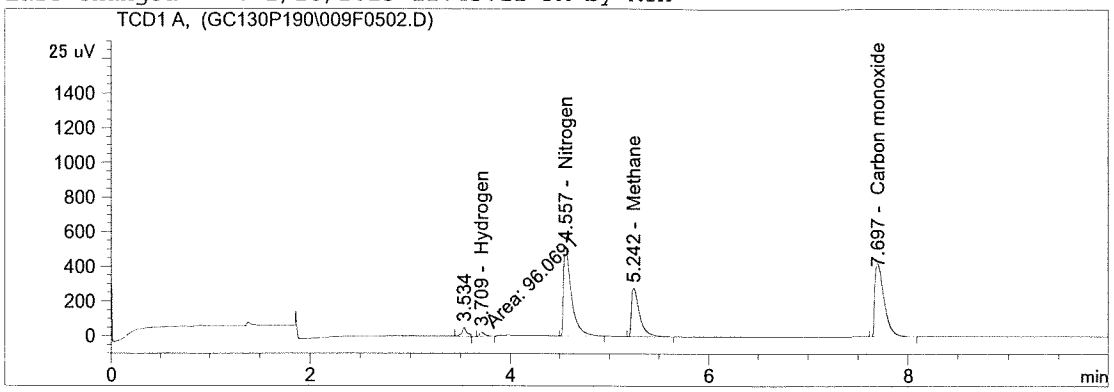
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0502.D
Sample Name: gc130p177 #FG4 ENV(1=0,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   5
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 21:56:24                       Inj :   2
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.709	MM	96.06909	8.42174e-2	8.09069		Hydrogen
3.968		-	-	-		Oxygen
4.557	BB	2853.18750	3.55546e-3	10.14440		Nitrogen
5.242	BB	1602.74731	5.01821e-3	8.04292		Methane
7.697	BB	2735.53394	3.68652e-3	10.08461		Carbon monoxide

Totals : 36.36263

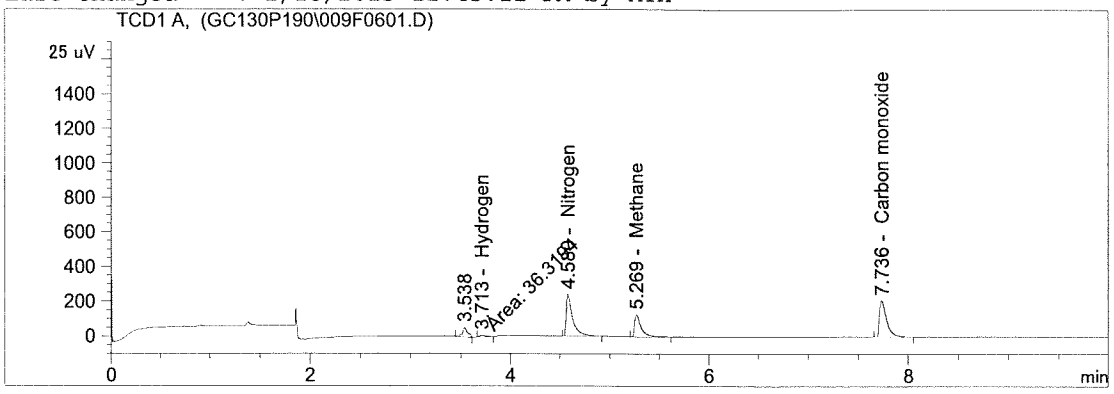
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0601.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   6
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 22:31:10                       Inj :   1
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.713	MM	36.31943	8.57297e-2	3.11365		Hydrogen
3.968		-	-	-		Oxygen
4.580	BB	1054.23950	3.53522e-3	3.72697		Nitrogen
5.269	BB	591.14673	5.02637e-3	2.97132		Methane
7.736	BB	1018.42407	3.68930e-3	3.75727		Carbon monoxide
Totals :				13.56921		

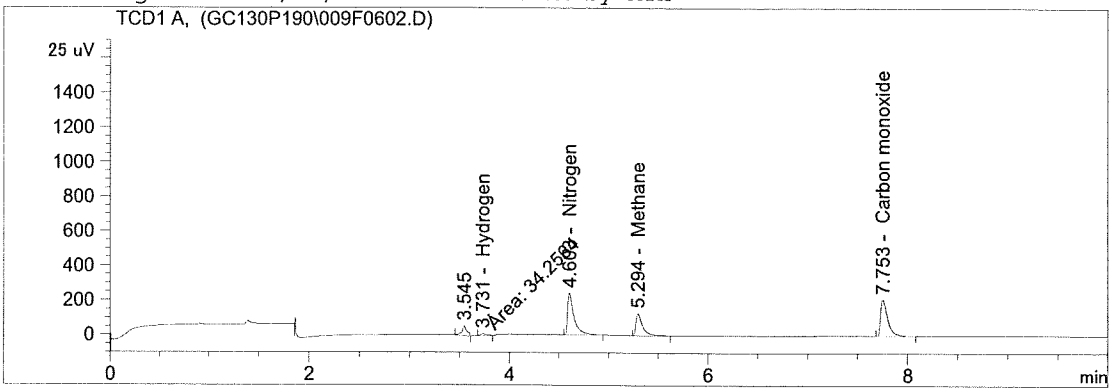
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0602.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   6
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 22:48:32                       Inj :   2
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.731	MM	34.25642	8.58762e-2	2.94181		Hydrogen
3.968		-	-	-		Oxygen
4.603	BB	1056.24585	3.53528e-3	3.73413		Nitrogen
5.294	BB	591.31415	5.02636e-3	2.97216		Methane
7.753	BB	1022.14209	3.68928e-3	3.77097		Carbon monoxide
Totals :				13.41907		

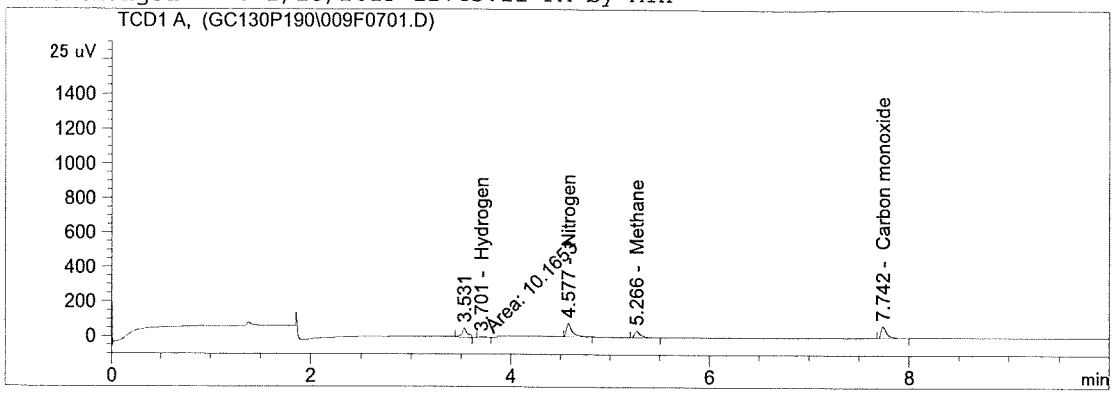
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0701.D
Sample Name: gc130p177 #FG2 ENV(1=1271.99,2=167.43)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   7
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 15-Feb-13, 23:23:19                       Inj :   1
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.701	MM	10.16526	9.19858e-2	9.35060e-1		Hydrogen
3.968		-	-	-		Oxygen
4.577	BB	292.01282	3.45143e-3	1.00786		Nitrogen
5.266	BB	157.40910	5.06198e-3	7.96802e-1		Methane
7.742	BB	275.30423	3.70122e-3	1.01896		Carbon monoxide

Totals : 3.75868

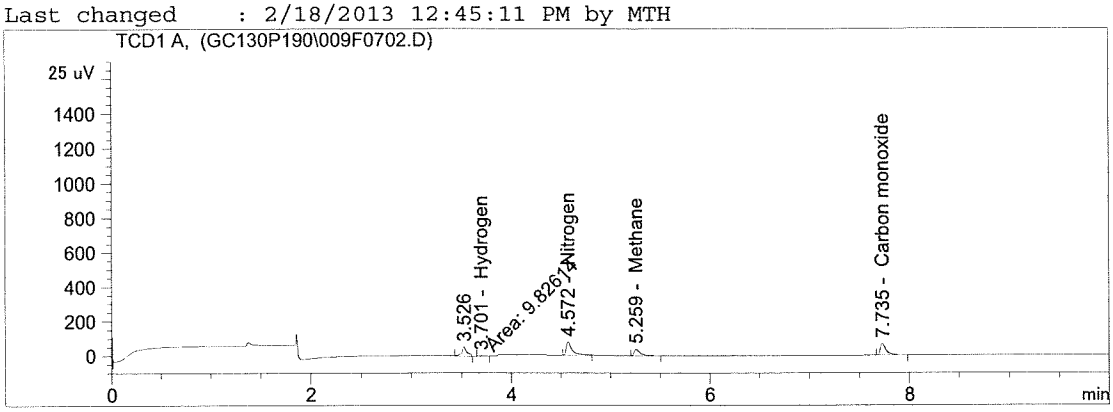
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

```
================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0702.D
Sample Name: gc130p177 #FG2 ENV(1=1271.99,2=167.43)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   7
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 15-Feb-13, 23:40:43                   Inj :   2
                                                   Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.701	MM	9.82614	9.22856e-2	9.06812e-1		Hydrogen
3.968		-	-	-		Oxygen
4.572	BB	291.30475	3.45115e-3	1.00534		Nitrogen
5.259	BB	157.90637	5.06183e-3	7.99295e-1		Methane
7.735	BB	273.48618	3.70132e-3	1.01226		Carbon monoxide
Totals :				3.72370		

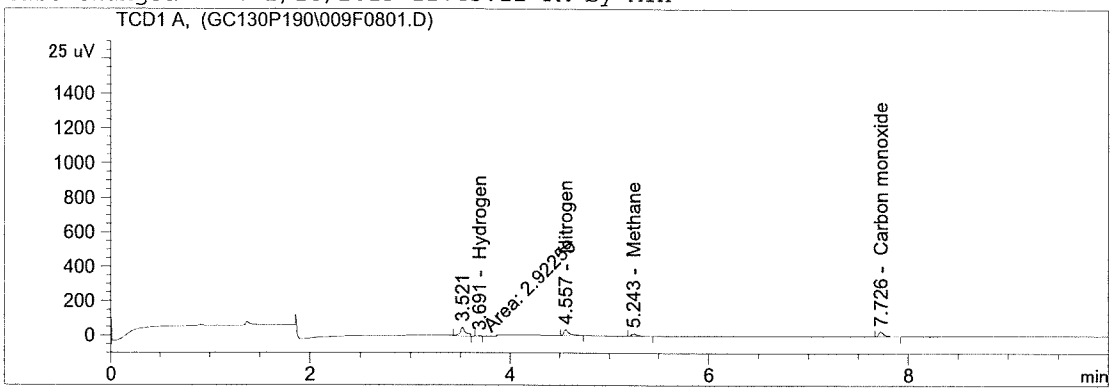
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0801.D
Sample Name: gc130p177 #FG1 ENV(1=3391.99,2=167.43)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   8
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 16-Feb-13, 00:15:36                   Inj :   1
                                                   Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.691	MM	2.92259	1.12526e-1	3.28866e-1		Hydrogen
3.968		-	-	-		Oxygen
4.557	BB	120.97256	3.28905e-3	3.97885e-1		Nitrogen
5.243	BB	62.56404	5.13557e-3	3.21302e-1		Methane
7.726	BB	107.69621	3.72664e-3	4.01345e-1		Carbon monoxide

Totals : 1.44940

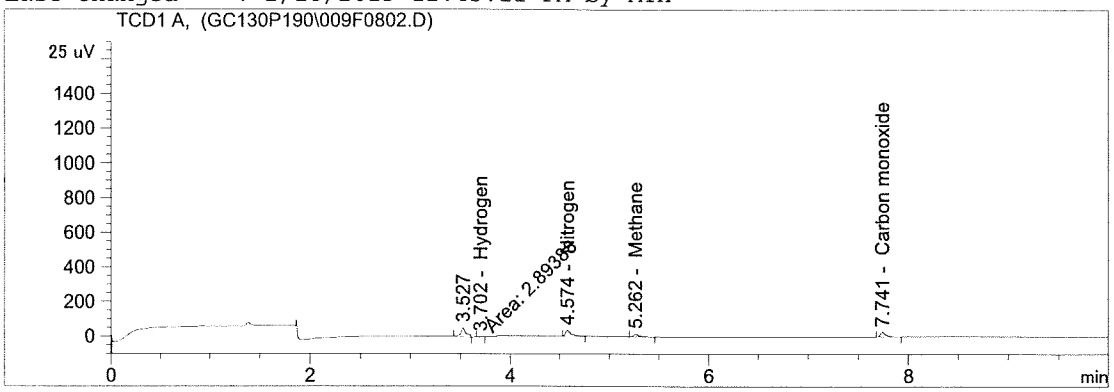
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F0802.D
Sample Name: gc130p177 #FG1 ENV(1=3391.99,2=167.43)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   8
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 16-Feb-13, 00:33:02                       Inj :   2
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.702	MM	2.89388	1.12526e-1	3.25636e-1		Hydrogen
3.968		-	-	-		Oxygen
4.574	BB	121.66905	3.28917e-3	4.00190e-1		Nitrogen
5.262	BB	62.26829	5.13608e-3	3.19815e-1		Methane
7.741	BB	106.57270	3.72678e-3	3.97173e-1		Carbon monoxide

Totals : 1.44281

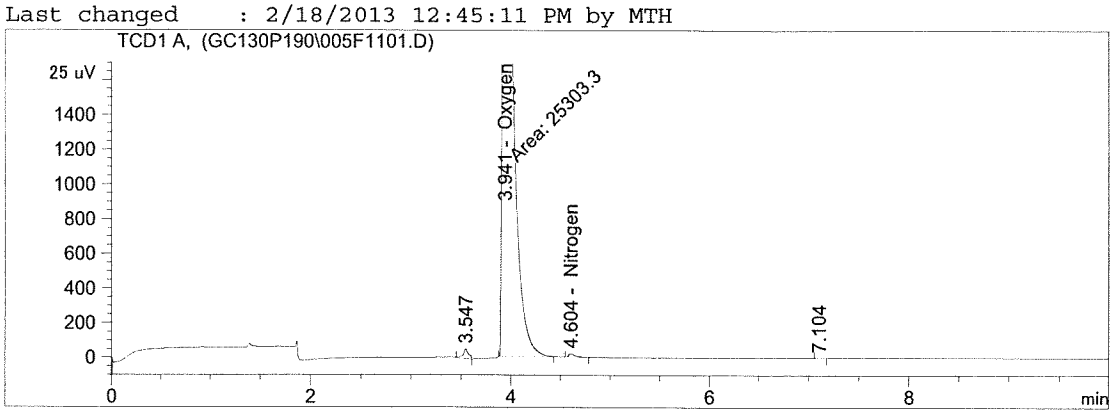
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\005F1101.D
Sample Name: 99.9% Oxygen standard

```
================================================================================
Acq. Operator   : MTH                                 Seq. Line :  11
Acq. Instrument : Betty                               Location : Vial 5
Injection Date  : 17-Feb-13, 15:04:46                      Inj :   1
                                                    Inj Volume : External
Sequence File   : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed    : 2/14/2013 10:36:21 AM by stg
Analysis Method : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed    : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.700		-	-	-		Hydrogen
3.941	MM	2.53033e4	3.98869e-3	100.92715		Oxygen
4.604	BB	83.00634	3.28905e-3	2.73012e-1		Nitrogen
5.257		-	-	-		Methane
7.737		-	-	-		Carbon monoxide

Totals : 101.20017

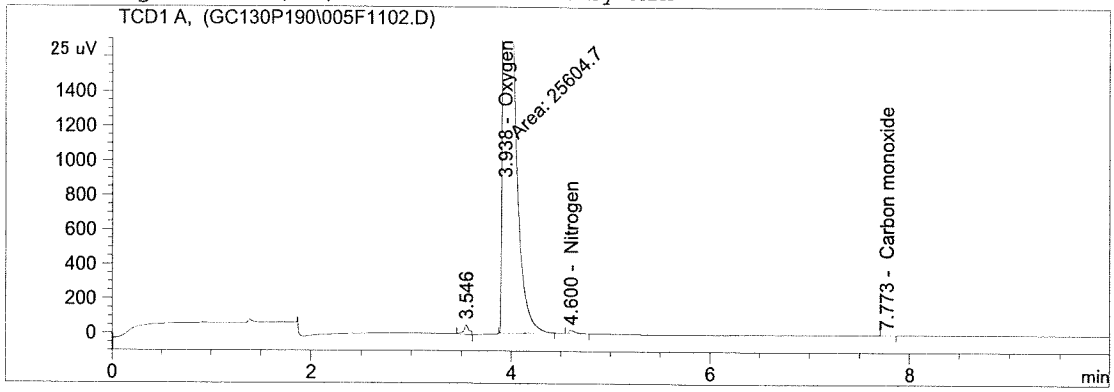
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

```
================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\005F1102.D
Sample Name: 99.9% Oxygen standard

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  11
Acq. Instrument  : Betty                               Location : Vial 5
Injection Date   : 17-Feb-13, 15:20:11                     Inj :   2
                                                    Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P190.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.700		-	-	-		Hydrogen
3.938	MM	2.56047e4	3.98868e-3	102.12902		Oxygen
4.600	BB	83.39632	3.28905e-3	2.74295e-1		Nitrogen
5.257		-	-	-		Methane
7.773	BB	4.63933	3.72678e-3	1.72897e-2		Carbon monoxide

Totals : 102.42061

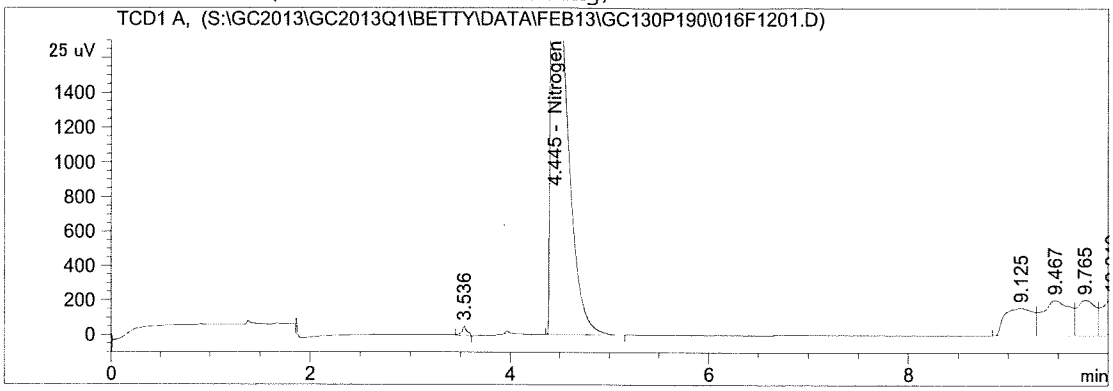
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\016F1201.D
Sample Name: 99.9% Nitrogen standard

```
==========================================================================
Acq. Operator   : MTH                              Seq. Line :  12
Acq. Instrument : Betty                            Location : Vial 16
Injection Date  : 17-Feb-13, 15:51:09                   Inj :   1
                                                  Inj Volume : External
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed    : 2/14/2013 10:36:21 AM by stg
Analysis Method : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed    : 2/18/2013 1:17:17 PM by MTH
                  (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:16:54 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [25 uV*s]                  [%]
-------|------|----------|----------|----------|--|------------------
  1.997            -          -          -          Carbon dioxide
  3.700            -          -          -          Hydrogen
  3.968            -          -          -          Oxygen
  4.445 BB     2.75236e4  3.56609e-3   98.15192     Nitrogen
  5.000            -          -          -          Methane
  7.500            -          -          -          Carbon monoxide

Totals :                                 98.15192

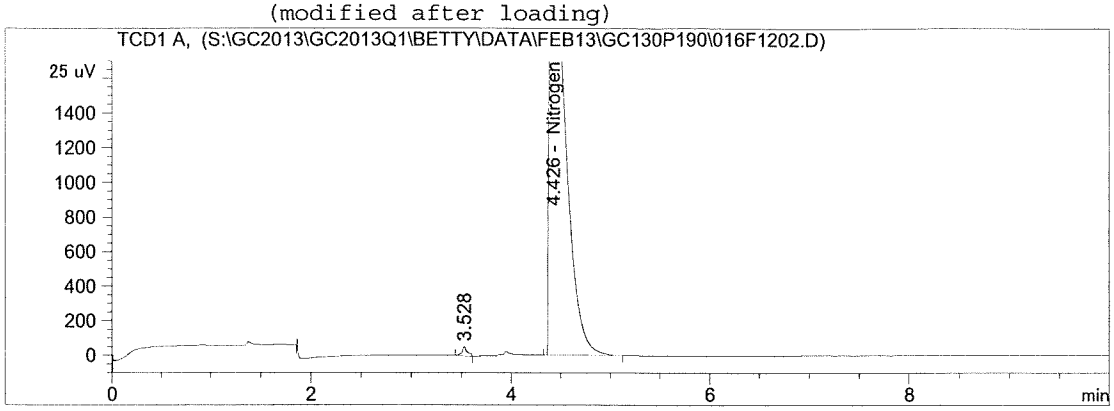

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\016F1202.D
Sample Name: 99.9% Nitrogen standard

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  12
Acq. Instrument  : Betty                                 Location : Vial 16
Injection Date   : 17-Feb-13, 16:06:36                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:16:54 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.997            -          -          -          Carbon dioxide
  3.700            -          -          -          Hydrogen
  3.968            -          -          -          Oxygen
  4.426 BB     2.75035e4  3.56609e-3   98.08004    Nitrogen
  5.000            -          -          -          Methane
  7.500            -          -          -          Carbon monoxide

Totals :                                 98.08004

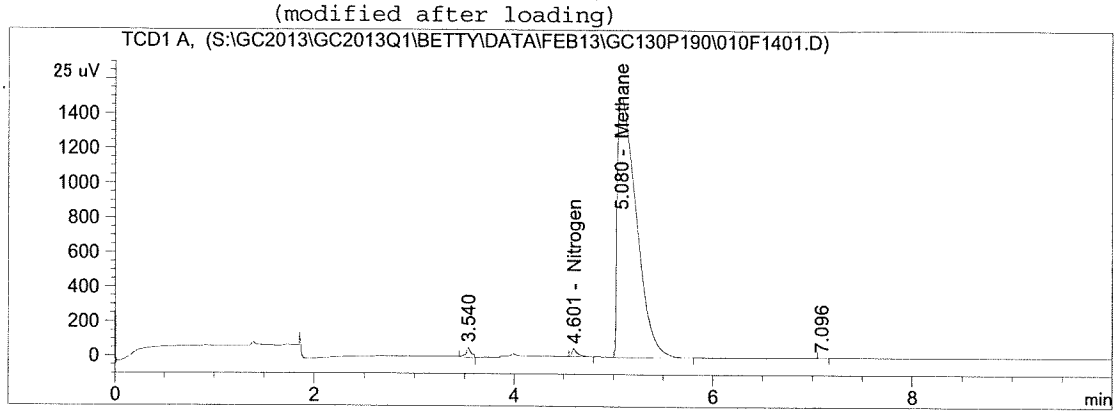

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\010F1401.D
Sample Name: 99.0% Methane standard

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  14
Acq. Instrument  : Betty                                 Location : Vial 10
Injection Date   : 17-Feb-13, 17:23:44                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:16:55 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:16:54 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                [%]
-------|------|----------|----------|----------|--|------------------
  1.997            -          -          -          Carbon dioxide
  3.700            -          -          -          Hydrogen
  3.968            -          -          -          Oxygen
  4.601 BB      165.93456 3.36337e-3 5.58100e-1     Nitrogen
  5.080 BB     1.97937e4  5.01383e-3   99.24224     Methane
  7.737            -          -          -          Carbon monoxide

Totals :                                 99.80034

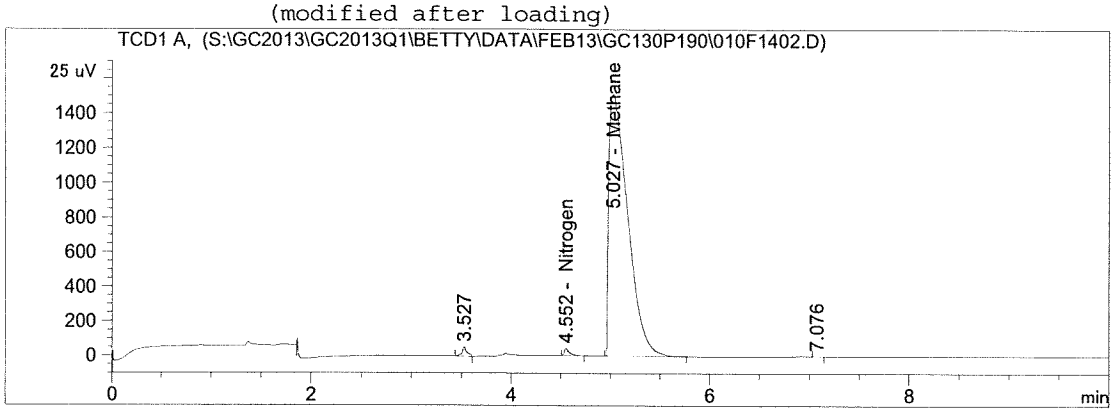

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\010F1402.D
Sample Name: 99.0% Methane standard

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  14
Acq. Instrument  : Betty                                 Location : Vial 10
Injection Date   : 17-Feb-13, 17:39:12                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:16:55 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:16:54 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.997            -          -          -          Carbon dioxide
  3.700            -          -          -          Hydrogen
  3.968            -          -          -          Oxygen
  4.552 BB      148.61577 3.33961e-3 4.96318e-1    Nitrogen
  5.027 BB     1.98851e4  5.01383e-3   99.70057    Methane
  7.737            -          -          -          Carbon monoxide

Totals :                                100.19689

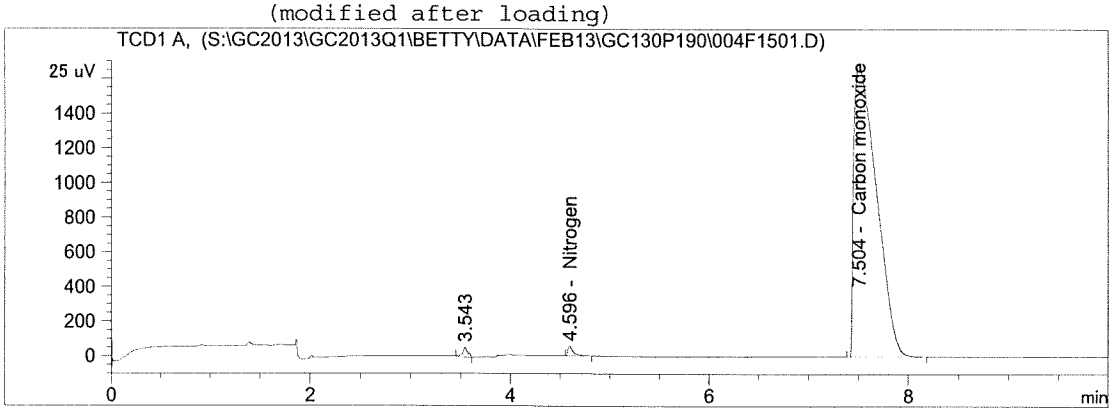

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\004F1501.D
Sample Name: 99.0% Carbon Monoxide standard

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  15
Acq. Instrument  : Betty                               Location : Vial 4
Injection Date   : 17-Feb-13, 18:10:05                     Inj :   1
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:16:54 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.997            -          -          -          Carbon dioxide
  3.700            -          -          -          Hydrogen
  3.968            -          -          -          Oxygen
  4.596 BB      203.18799 3.40077e-3 6.90995e-1     Nitrogen
  5.000            -          -          -          Methane
  7.504 BB     2.66809e4  3.68505e-3   98.32053     Carbon monoxide

Totals :                                 99.01153

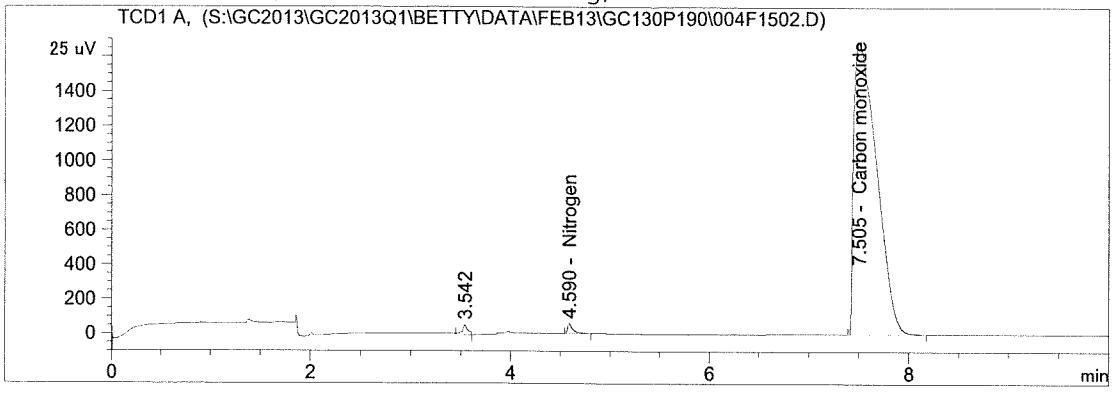

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\004F1502.D
Sample Name: 99.0% Carbon Monoxide standard

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  15
Acq. Instrument  : Betty                               Location : Vial 4
Injection Date   : 17-Feb-13, 18:25:30                     Inj :   2
                                                    Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:16:54 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.997            -          -          -          Carbon dioxide
  3.700            -          -          -          Hydrogen
  3.968            -          -          -          Oxygen
  4.590 BB      205.05907 3.40229e-3 6.97670e-1    Nitrogen
  5.000            -          -          -          Methane
  7.505 BB     2.67357e4  3.68505e-3   98.52249    Carbon monoxide

Totals :                                 99.22016

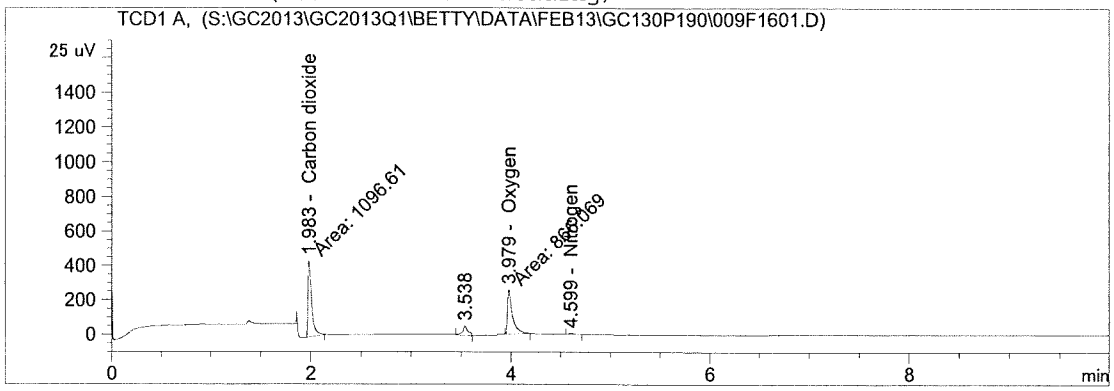

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F1601.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  16
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 17-Feb-13, 18:58:19                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:24:39 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.983	MM	1096.60754	3.13693e-3	3.43998		Carbon dioxide
3.700		-	-	-		Hydrogen
3.979	MM	866.06921	4.02212e-3	3.48343		Oxygen
4.599	BB	18.88312	3.28905e-3	6.21075e-2		Nitrogen
5.000		-	-	-		Methane
7.500		-	-	-		Carbon monoxide

Totals : 6.98552

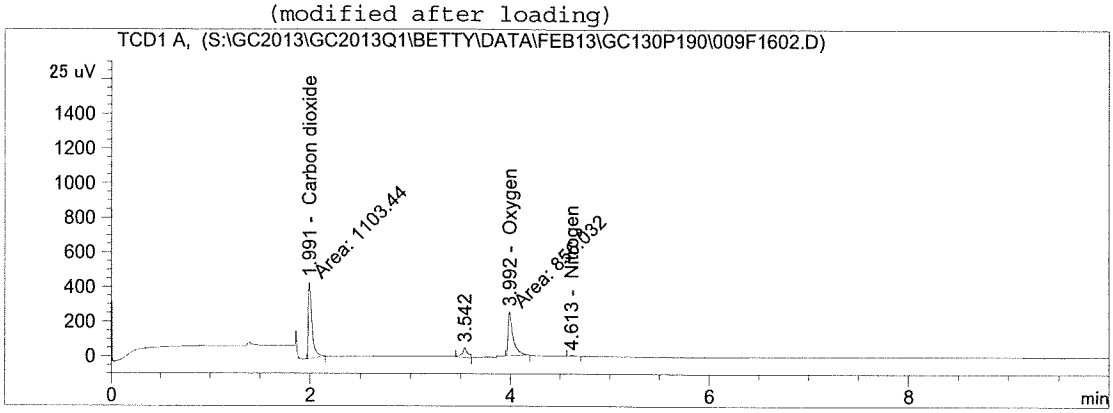
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

```
================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F1602.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  16
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 17-Feb-13, 19:15:41                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:24:39 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,                                                Manual Integration
                                                                 "II" (MTH)
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.991 MM     1103.43604 3.13653e-3    3.46096    Carbon dioxide
  3.700            -          -          -         Hydrogen
  3.992 MM      856.03229 4.02252e-3    3.44341    Oxygen
  4.613 BB       16.87705 3.28905e-3 5.55094e-2    Nitrogen
  5.000            -          -          -         Methane
  7.500            -          -          -         Carbon monoxide

Totals :                                 6.95988

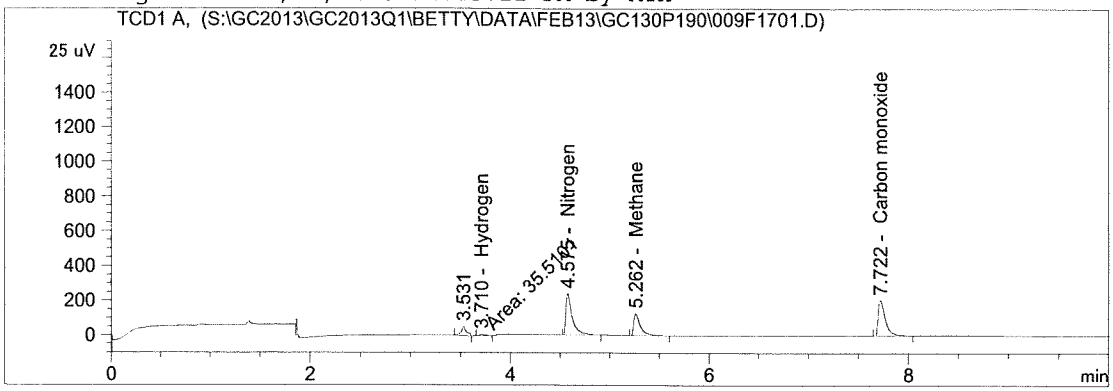

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F1701.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  17
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 17-Feb-13, 19:50:26                   Inj :   1
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.710	MM	35.51015	8.57851e-2	3.04624		Hydrogen
3.968		-	-	-		Oxygen
4.575	BB	1042.02600	3.53485e-3	3.68340		Nitrogen
5.262	BB	587.21960	5.02645e-3	2.95163		Methane
7.722	BB	999.84351	3.68938e-3	3.68880		Carbon monoxide

```
Totals :                                  13.37008

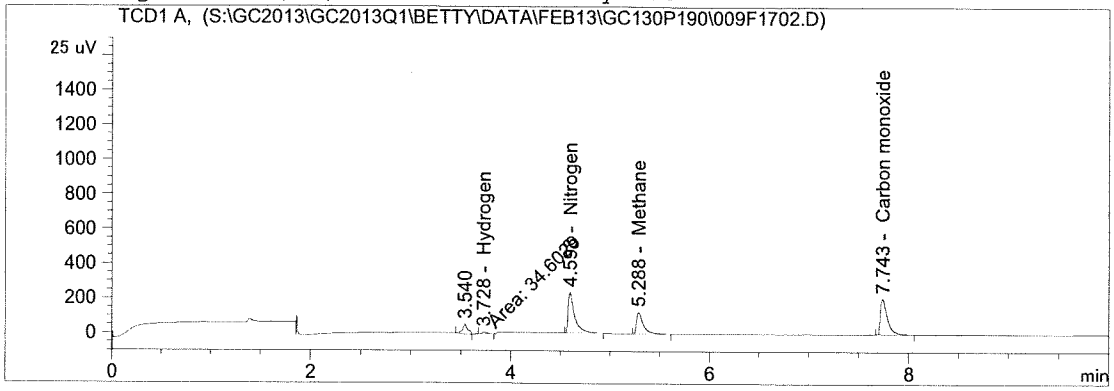

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F1702.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  17
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 17-Feb-13, 20:07:49                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.728	MM	34.60291	8.58503e-2	2.97067		Hydrogen
3.968		-	-	-		Oxygen
4.598	BB	1030.70569	3.53449e-3	3.64302		Nitrogen
5.288	BB	584.26294	5.02652e-3	2.93681		Methane
7.743	BB	1000.15265	3.68938e-3	3.68994		Carbon monoxide

Totals : 13.24044

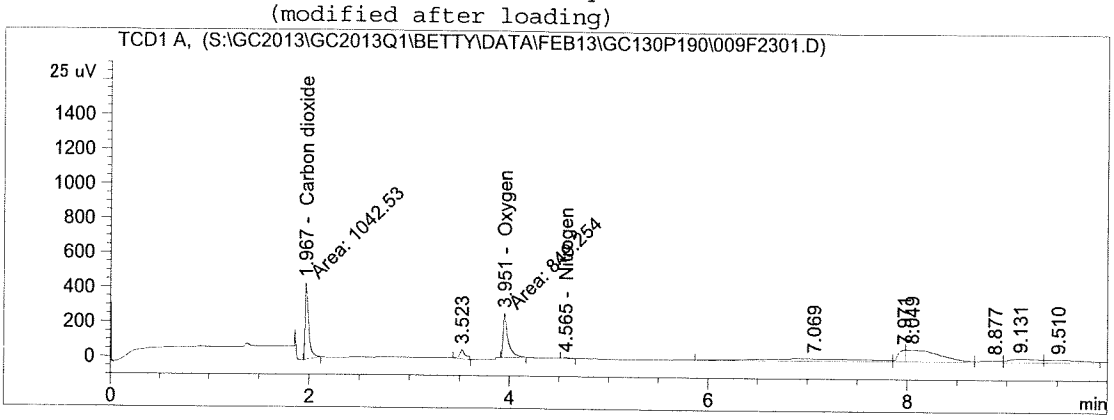
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F2301.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  23
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 17-Feb-13, 23:15:16                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:24:39 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,                                                  Manual Integration
                                                                   "II" (MTH)
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                [%]
-------|------|----------|----------|----------|--|-------------------
  1.967 MM     1042.52771 3.14025e-3    3.27380     Carbon dioxide
  3.700            -          -           -         Hydrogen
  3.951 MM      849.25366 4.02280e-3    3.41638     Oxygen
  4.565 BB       17.37024 3.28905e-3 5.71316e-2     Nitrogen
  5.000            -          -           -         Methane
  7.500            -          -           -         Carbon monoxide

Totals :                                 6.74731

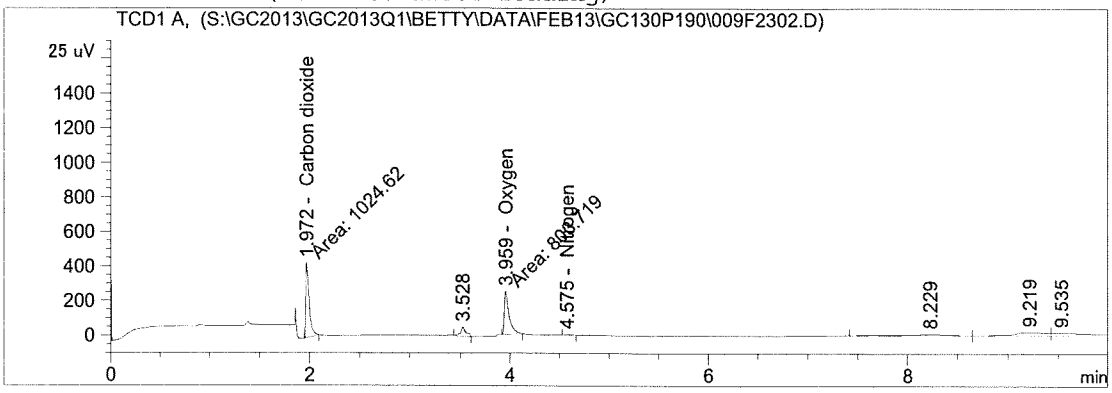

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F2302.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  23
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 17-Feb-13, 23:32:28                   Inj :   2
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:24:39 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.972	MM	1024.61633	3.14143e-3	3.21876		Carbon dioxide
3.700		-	-	-		Hydrogen
3.959	MM	803.71893	4.02480e-3	3.23481		Oxygen
4.575	BB	17.20259	3.28905e-3	5.65802e-2		Nitrogen
5.000		-	-	-		Methane
7.500		-	-	-		Carbon monoxide

Totals : 6.51015

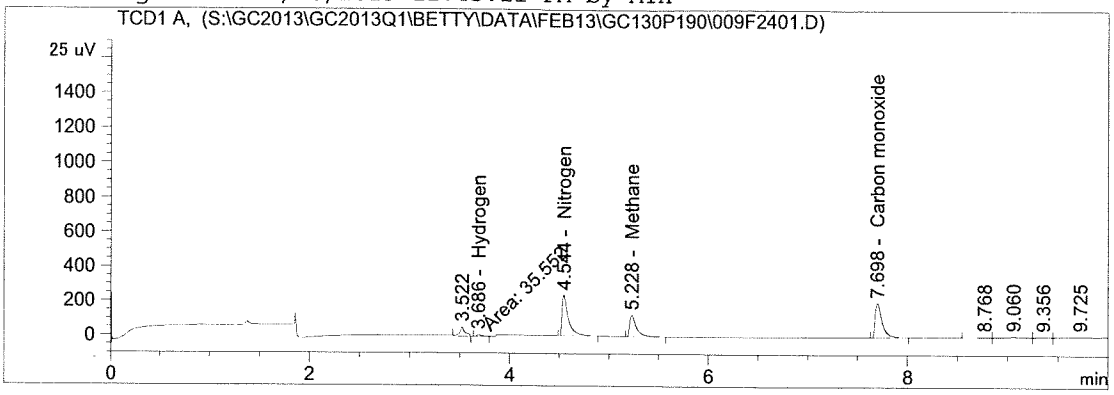
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F2401.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  24
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 18-Feb-13, 00:06:51                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.686	MM	35.55197	8.57822e-2	3.04973		Hydrogen
3.968		-	-	-		Oxygen
4.544	BB	1024.75610	3.53430e-3	3.62179		Nitrogen
5.228	BB	577.06152	5.02668e-3	2.90070		Methane
7.698	BB	981.43719	3.68946e-3	3.62098		Carbon monoxide

Totals : 13.19320

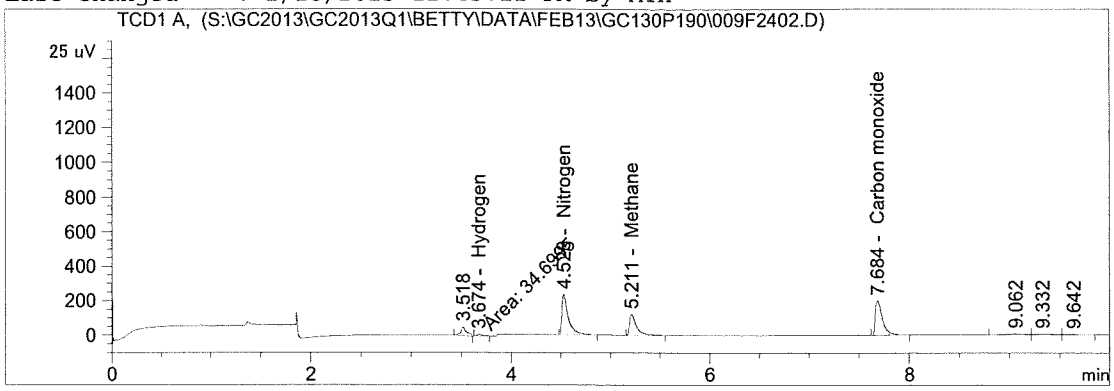
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F2402.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  24
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 18-Feb-13, 00:24:04                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.674	MM	34.69952	8.58432e-2	2.97872		Hydrogen
3.968		-	-	-		Oxygen
4.528	BB	1014.32593	3.53396e-3	3.58459		Nitrogen
5.211	BB	570.05591	5.02684e-3	2.86558		Methane
7.684	BB	982.21381	3.68946e-3	3.62384		Carbon monoxide
Totals :				13.05273		

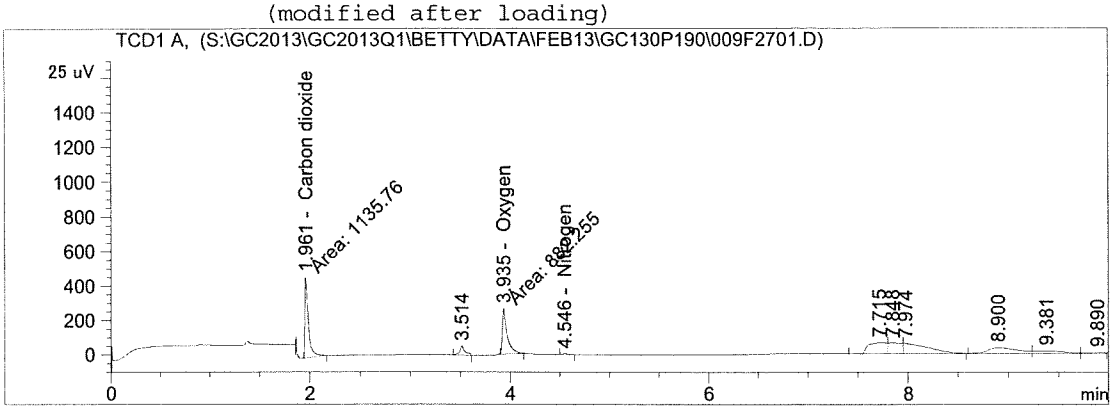
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F2701.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  27
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 18-Feb-13, 16:08:45                     Inj :   1
                                                    Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:24:39 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.961	MM	1135.75708	3.13472e-3	3.56028		Carbon dioxide
3.700		-	-	-		Hydrogen
3.935	MM	882.25525	4.02148e-3	3.54797		Oxygen
4.546	BB	17.32594	3.28905e-3	5.69859e-2		Nitrogen
5.000		-	-	-		Methane
7.500		-	-	-		Carbon monoxide
Totals :				7.16524		

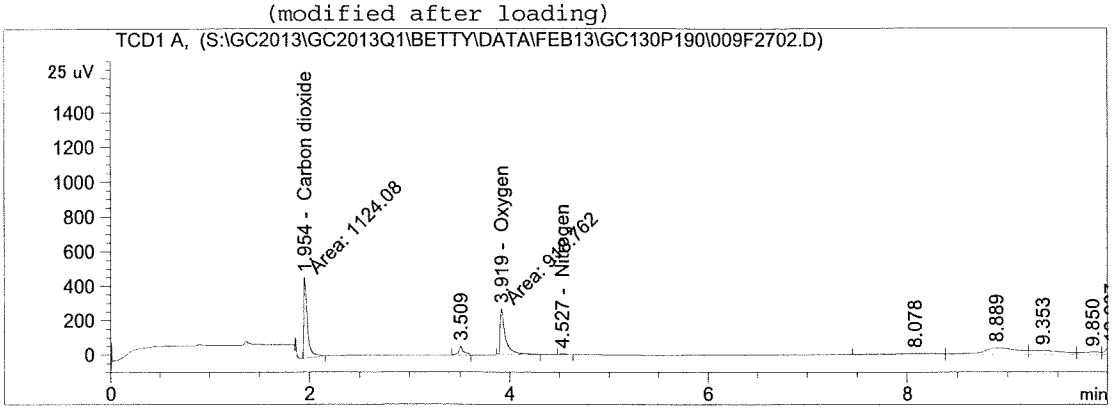
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F2702.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  27
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 18-Feb-13, 16:26:23                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:24:39 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.954	MM	1124.07825	3.13536e-3	3.52439		Carbon dioxide
3.700		-	-	-		Hydrogen
3.919	MM	918.76233	4.02013e-3	3.69355		Oxygen
4.527	BB	17.30892	3.28905e-3	5.69299e-2		Nitrogen
5.000		-	-	-		Methane
7.500		-	-	-		Carbon monoxide

Totals : 7.27487

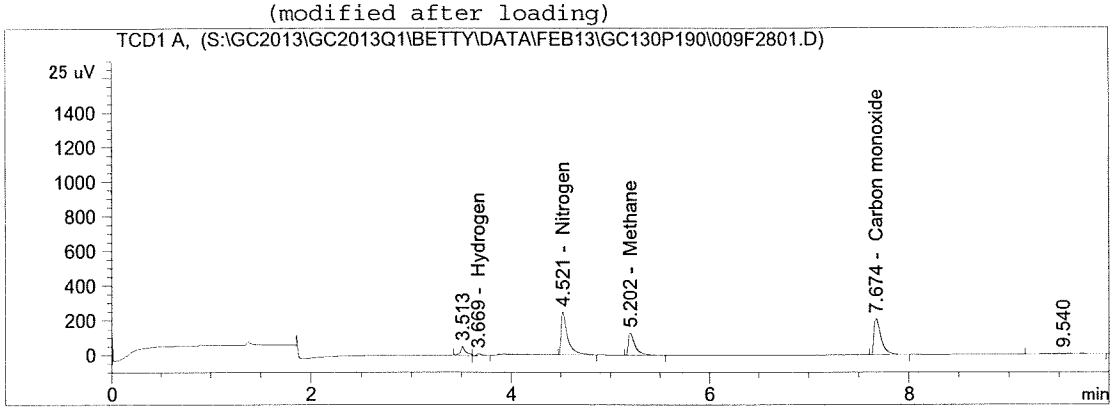
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F2801.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  28
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 18-Feb-13, 17:01:40                    Inj :   1
                                                  Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:24:39 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [25 uV*s]                  [%]
-------|------|----------|----------|----------|--|------------------
  1.997            -          -          -          Carbon dioxide
  3.669 VB       40.44726 8.54816e-2    3.45750     Hydrogen
  3.968            -          -          -          Oxygen
  4.521 BB     1065.41663 3.53556e-3    3.76684     Nitrogen
  5.202 BB      603.63544 5.02610e-3    3.03393     Methane
  7.674 BB     1030.00903 3.68925e-3    3.79996     Carbon monoxide

Totals :                                14.05823

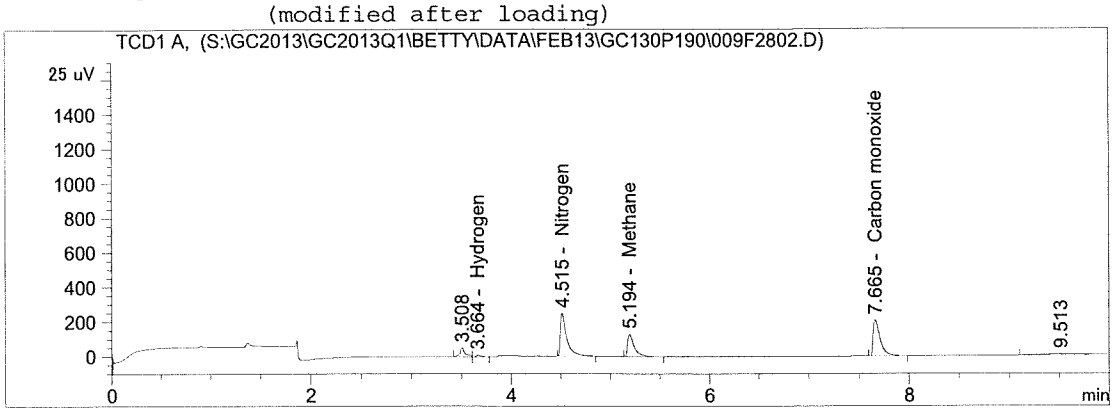

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P190\009F2802.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  28
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 18-Feb-13, 17:19:20                     Inj :   2
                                                    Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 1:17:17 PM by MTH
                   (modified after loading)
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 1:24:39 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.997            -          -          -          Carbon dioxide
  3.664 VB       39.54300 8.55315e-2    3.38217    Hydrogen
  3.968            -          -          -          Oxygen
  4.515 BB     1066.08289 3.53558e-3    3.76922    Nitrogen
  5.194 BB      604.38617 5.02608e-3    3.03770    Methane
  7.665 BB     1027.08472 3.68926e-3    3.78918    Carbon monoxide

Totals :                                13.97827

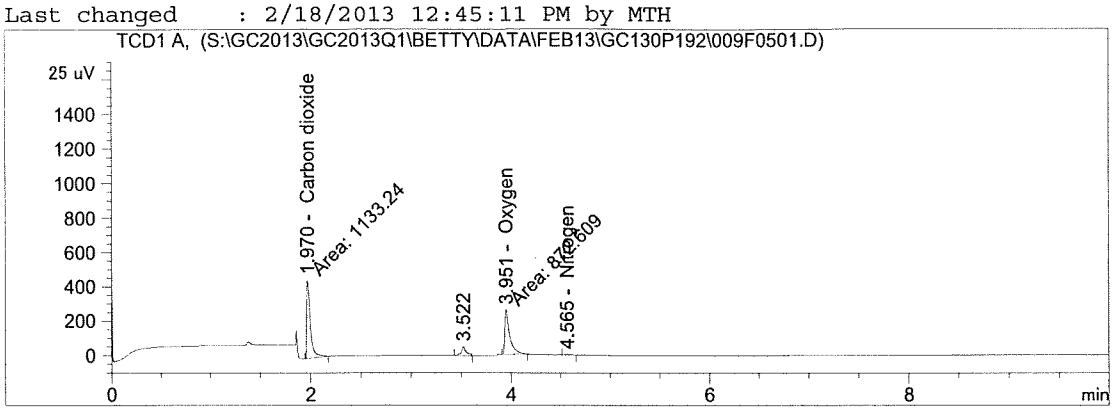

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P192\009F0501.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   5
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 21-Feb-13, 07:50:39                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,                                                Manual Integration
                                                                 "II" (MTH)
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.970 MM     1133.24500 3.13486e-3    3.55256    Carbon dioxide
  3.700            -          -          -         Hydrogen
  3.951 MM      872.60919 4.02186e-3    3.50951    Oxygen
  4.565 BB       13.88096 3.28905e-3 4.56552e-2    Nitrogen
  5.257            -          -          -         Methane
  7.737            -          -          -         Carbon monoxide

Totals :                                 7.10773

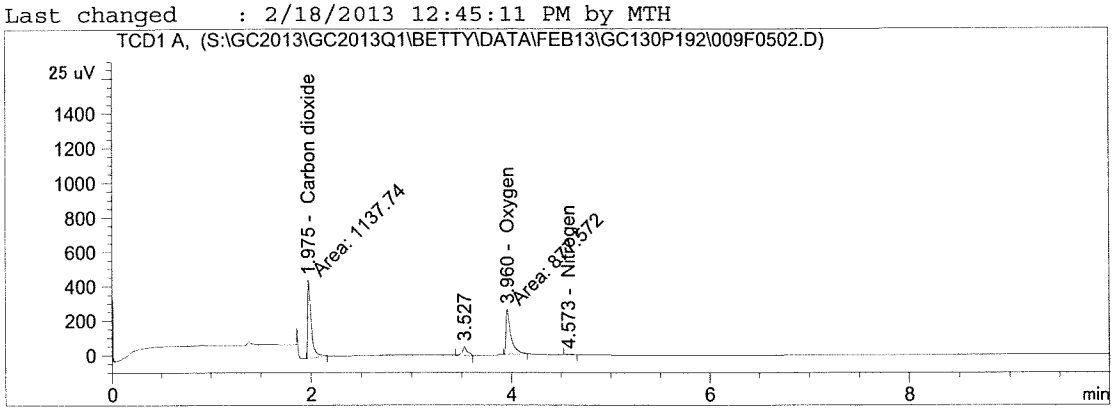

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P192\009F0502.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   5
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 21-Feb-13, 08:08:10                   Inj :   2
                                                  Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,                                          Manual Integration
                                                           "II" (MTH)
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.975 MM     1137.73914 3.13461e-3    3.56637    Carbon dioxide
  3.700            -          -          -         Hydrogen
  3.960 MM      877.57245 4.02166e-3    3.52930    Oxygen
  4.573 BB       13.04881 3.28905e-3 4.29182e-2    Nitrogen
  5.257            -          -          -         Methane
  7.737            -          -          -         Carbon monoxide

Totals :                                 7.13859

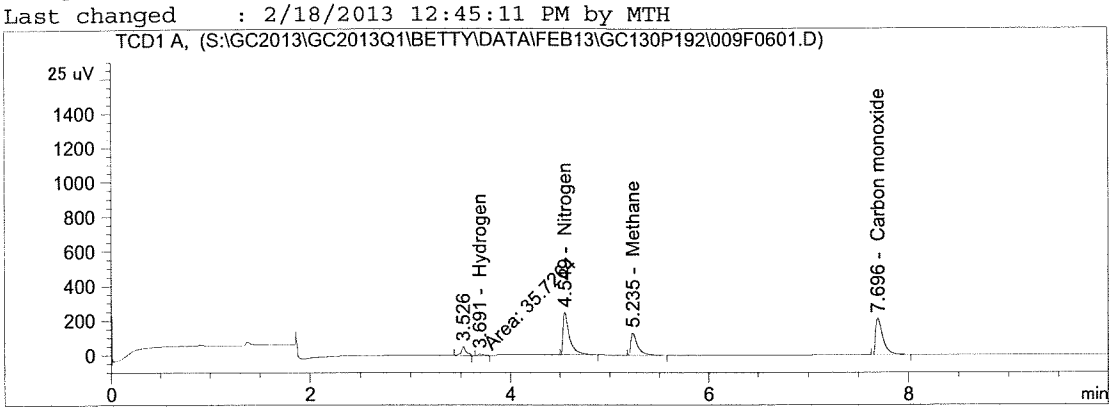

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P192\009F0601.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   6
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 21-Feb-13, 08:43:26                   Inj :   1
                                                  Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.691	MM	35.72639	8.57701e-2	3.06426		Hydrogen
3.968		-	-	-		Oxygen
4.549	BB	1070.57397	3.53571e-3	3.78524		Nitrogen
5.235	BB	605.29999	5.02606e-3	3.04228		Methane
7.696	BB	1037.13855	3.68922e-3	3.82623		Carbon monoxide
Totals :				13.71800		

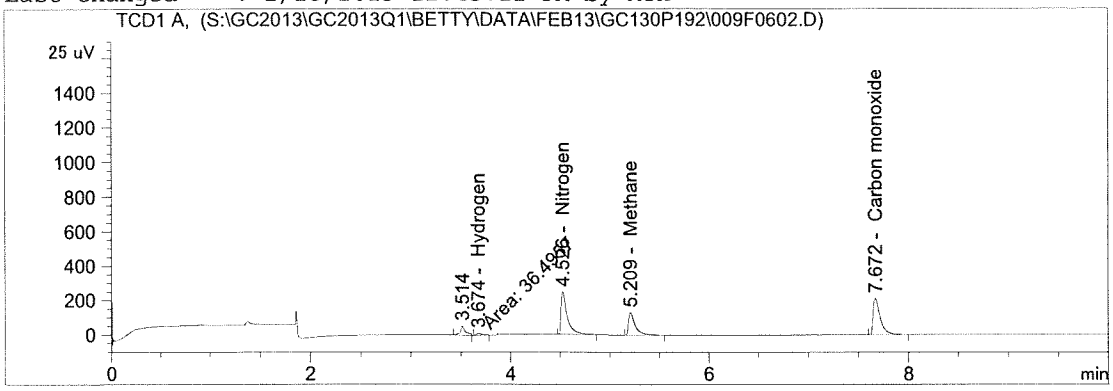
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P192\009F0602.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   6
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 21-Feb-13, 09:01:02                    Inj :   2
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.674	MM	36.49570	8.57180e-2	3.12834		Hydrogen
3.968		-	-	-		Oxygen
4.526	BB	1069.21460	3.53567e-3	3.78039		Nitrogen
5.209	BB	607.03882	5.02603e-3	3.05099		Methane
7.672	BB	1034.72974	3.68923e-3	3.81735		Carbon monoxide
Totals :				13.77708		

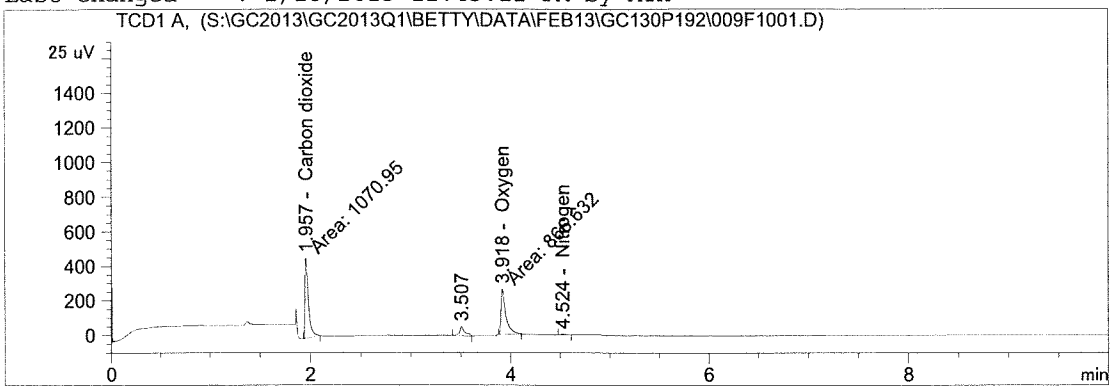
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P192\009F1001.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  10
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 21-Feb-13, 13:25:22                      Inj :   1
                                                    Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,                                                Manual Integration
                                                                 "II" (MTH)
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  1.957 MM     1070.94812 3.13846e-3    3.36113    Carbon dioxide
  3.700            -          -           -        Hydrogen
  3.918 MM      866.63226 4.02210e-3    3.48568    Oxygen
  4.524 BB       12.88057 3.28905e-3 4.23648e-2    Nitrogen
  5.257            -          -           -        Methane
  7.737            -          -           -        Carbon monoxide

Totals :                                 6.88917

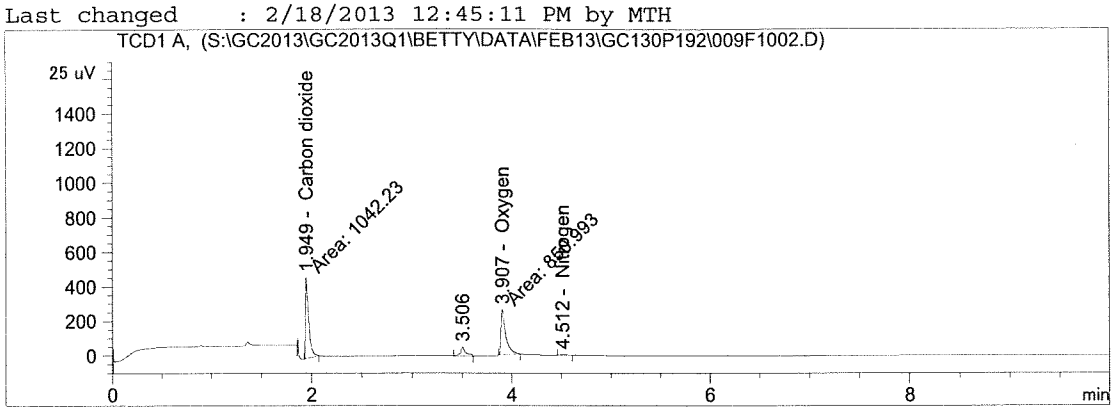

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P192\009F1002.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
======================================================================
Acq. Operator    : MTH                          Seq. Line :  10
Acq. Instrument  : Betty                         Location : Vial 9
Injection Date   : 21-Feb-13, 13:43:05               Inj :   2
                                                Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
======================================================================
                    External Standard Report
======================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.949	MM	1042.23425	3.14027e-3	3.27290		Carbon dioxide
3.700		-	-	-		Hydrogen
3.907	MM	850.99304	4.02273e-3	3.42332		Oxygen
4.512	BB	12.95248	3.28905e-3	4.26013e-2		Nitrogen
5.257		-	-	-		Methane
7.737		-	-	-		Carbon monoxide

```
Totals :                                  6.73882

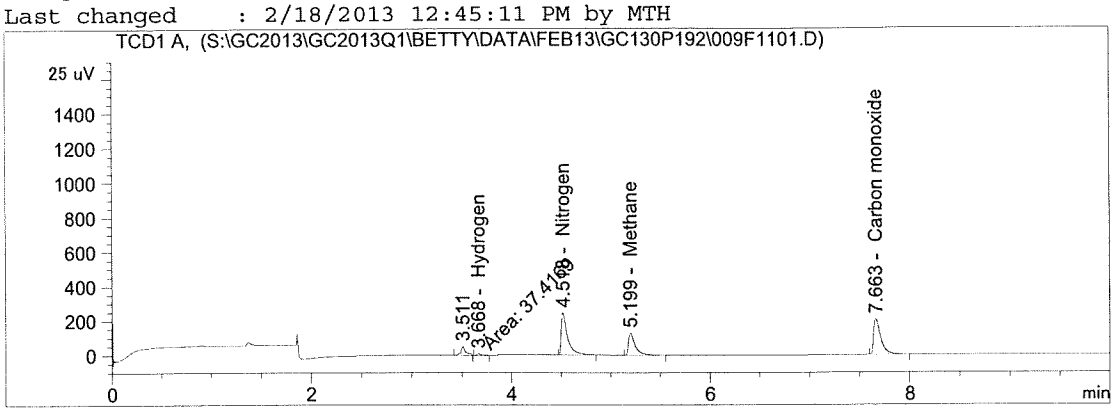

1 Warnings or Errors :

Warning : Calibrated compound(s) not found

======================================================================
                        *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P192\009F1101.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  11
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 21-Feb-13, 14:00:47                     Inj :   1
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.668	MM	37.41687	8.56584e-2	3.20507		Hydrogen
3.968		-	-	-		Oxygen
4.518	BB	1055.52405	3.53526e-3	3.73155		Nitrogen
5.199	BB	600.86975	5.02616e-3	3.02007		Methane
7.663	BB	1025.14380	3.68927e-3	3.78203		Carbon monoxide
Totals :				13.73872		

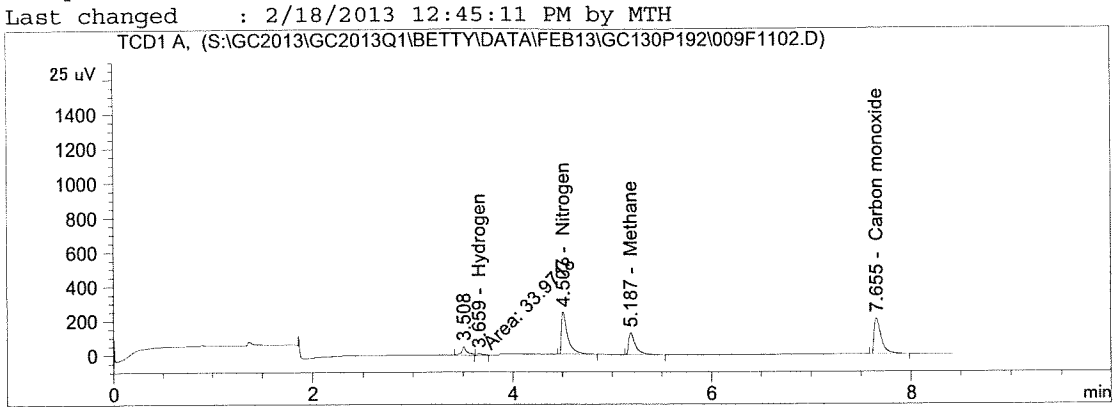
```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P192\009F1102.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  11
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 21-Feb-13, 14:18:30                   Inj :   2
                                                  Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/14/2013 10:36:21 AM by stg
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P190F.M
Last changed     : 2/18/2013 12:45:11 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/18/2013 12:42:17 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
1.997		-	-	-		Carbon dioxide
3.659	MM	33.97178	8.58978e-2	2.91810		Hydrogen
3.968		-	-	-		Oxygen
4.507	BB	1057.07019	3.53531e-3	3.73707		Nitrogen
5.187	BB	601.00610	5.02615e-3	3.02075		Methane
7.655	BB	1026.24084	3.68926e-3	3.78607		Carbon monoxide
Totals :				13.46199		

```
1 Warnings or Errors :

Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

method: G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Modified on: 2/14/2013 at 10:36:21 AM

==========

6890 GC METHOD

==========

OVEN
- Initial temp: 40 'C (On)
- Initial time: 5.10 min
- Ramps:

#	Rate	Final temp	Final time
1	30.00	150	1.30
2	0.0(Off)		

- Post temp: 50 'C
- Post time: 0.00 min
- Run time: 10.07 min
- Maximum temp: 250 'C
- Equilibration time: 0.20 min

CRYO (N2)
- Cryo: Off
- Cryo fault: On
- Cryo timeout: 40.00 min (On)
- Quick cryo cool: Off
- Ambient temp: 30 'C

FRONT INLET (SPLIT/SPLITLESS)
- Mode: Splitless
- Initial temp: 200 'C (On)
- Pressure: 11.66 psi (On)
- Purge flow: 10.0 mL/min
- Purge time: 0.00 min
- Total flow: 18.8 mL/min
- Gas saver: Off
- Gas type: Helium

BACK INLET (SPLIT/SPLITLESS)
- Mode: Split
- Initial temp: 200 'C (On)
- Pressure: 9.99 psi (On)
- Split ratio: 7:1
- Split flow: 10.7 mL/min
- Total flow: 15.2 mL/min
- Gas saver: Off
- Gas type: Helium

COLUMN 1
- Capillary Column
- Model Number: Restek ???
- 15m x0.53mmMS&30m x0.53mmRt-S-BON
- Max temperature: 250 'C
- Nominal length: 45.0 m
- Nominal diameter: 530.00 um
- Nominal film thickness: 50.00 um
- Mode: constant flow
- Initial flow: 5.9 mL/min
- Nominal init pressure: 11.66 psi
- Average velocity: 50 cm/sec
- Inlet: Front Inlet
- Outlet: Front Detector
- Outlet pressure: ambient

COLUMN 2
- Capillary Column
- Model Number: Restek 10180
- 60m x 0.32mm x 5um Rtx-1
- Max temperature: 280 'C
- Nominal length: 60.0 m
- Nominal diameter: 320.00 um
- Nominal film thickness: 5.00 um
- Mode: constant flow
- Initial flow: 1.5 mL/min
- Nominal init pressure: 10.00 psi
- Average velocity: 32 cm/sec
- Inlet: Back Inlet
- Outlet: (unspecified)
- Outlet pressure: vacuum

FRONT DETECTOR (TCD)
- Temperature: 275 'C (On)
- Reference flow: 20.0 mL/min (On)
- Mode: Constant makeup flow
- Makeup flow: 7.0 mL/min (On)
- Makeup Gas Type: Helium
- Filament: On
- Negative polarity: Off

BACK DETECTOR (AIB)
- Electrometer: Off

SIGNAL 1
- Data rate: 20 Hz
- Type: front detector
- Save Data: On
- Zero: 0.0 (Off)
- Range: 0
- Fast Peaks: Off
- Attenuation: 0

SIGNAL 2
- Data rate: 20 Hz
- Type: test plot
- Save Data: Off
- Zero: 0.0 (Off)
- Range: 0
- Fast Peaks: Off
- Attenuation: 0

COLUMN COMP 1
- Derive from front detector

COLUMN COMP 2
- (No Detectors Installed)

method: G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Modified on: 2/14/2013 at 10:36:21 AM
THERMAL AUX 1
Use: Valve Box Heater
Description:
Initial temp: 130 'C (On)
Initial time: 0.00 min

#	Rate	Final temp	Final time
1	0.0(Off)		

VALVES
Valve 2 Gas Sampling
Description:
Loop Volume: 1.000 mL
Load Time: 0.10 min
Inject Time: 1.85 min
Inlet: Front Inlet

POST RUN
Post Time: 0.00 min

TIME TABLE

Time	Specifier	Parameter & Setpoint	
3.60		Front Detector Polarity:	On
3.86		Front Detector Polarity:	Off

GC Injector

Front Injector:
Injector not configured, use these parameters if it becomes configured

Sample Washes	0
Sample Pumps	0
Injection Volume	1.00 microliters
Syringe Size	10.0 microliters
PostInj Solvent A Washes	0
PostInj Solvent B Washes	0
Viscosity Delay	0 seconds
Plunger Speed	Fast

Back Injector:
Injector not configured, use these parameters if it becomes configured

Sample Washes	0
Sample Pumps	0
Injection Volume	1.00 microliters
Syringe Size	10.0 microliters
PostInj Solvent A Washes	0
PostInj Solvent B Washes	0
Viscosity Delay	0 seconds
Plunger Speed	Fast

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Durham, NC 27703

PHONE:
FAX:

TO AVOID BACKFILL, CYLINDER PRESSURE MUST BE GREATER THAN PROCESS PRESSURE

SALES ORDER NUMBER: 556494
P.O. NUMBER: C02011105GAT
LOT NUMBER: 1051618386

PRODUCT:

CYLINDER NUMBER: 79850
SIZE: 1A
CGA/DISS OUTLET: 590
CONTENT: 210.1 cu. ft.
PRESSURE: 2000 psig

FILL DATE: Feb 7, 2011
CERTIFICATION DATE: Feb 7, 2011
EXPIRATION DATE: Feb 7, 2014

COMPONENT	REQUESTED CONCENTRATION	BLEND TOLERANCE (+/-)	CERTIFIED CONCENTRATION	CERTIFICATION ACCURACY
Oxygen	10 %	5 %	10.0 %	+/- 2%
Carbon Dioxide	10 %	5 %	10.0 %	+/- 2%
Helium, Balance				

TRACEABLE TO REFERENCE STANDARD SOURCE/NUMBER:
TRACEABLE TO NIST TRACEABLE WEIGHT CERTIFICATE: 513987

SPECIAL INFORMATION / ADDITIONAL COMMENTS

The product listed above and furnished under the referenced purchase order has been tested and found to contain the component concentration listed above. All values in mole/mole basis gas phase unless otherwise indicated. Matheson Tri-Gas Inc. warrants that the above product(s) conform at the time of shipment to the above description. Matheson Tri-Gas Inc. liability does not exceed the value of the product purchased.

Derek Stuck
ANALYST

SIGNATURE

Feb 7, 2011
DATE SIGNED

AIR LIQUIDE | Air Liquide America Specialty Gases LLC | Scott™

CERTIFIED MASTER CLASS

Single-Certified Calibration Standard

6141 EASTON ROAD, BLDG 1, PLUMSTEADVILLE, PA 18949-0310 Phone: 800-331-4953 Fax: 215-766-7226

CERTIFICATE OF ACCURACY: Certified Master Class Calibration Standard

Product Information
Document # : 46221952-001
Item No.: MC500418-P-44
P.O. No.: 05041203

Cylinder Number: 1A023738
Cylinder Size: 44
Certification Date: 29May2012
Expiration Date: 29May2014
Lot Number: PLU0105816

Customer

ENTHALPY ANAYTICAL, INC.
05041203
800 CAPITOLA RD
DURHAM, NC 27703
US

CERTIFIED CONCENTRATION

Component Name	Concentration (Moles)		Accuracy (+/-%)
CARBON MONOXIDE	10.0	%	2
NITROGEN	10.1	%	2
METHANE	8.0	%	2
HYDROGEN	8.1	%	2
HELIUM		BALANCE	

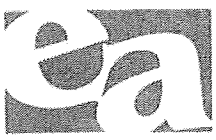
TRACEABILITY

Traceable To

Scott Reference Standard

APPROVED BY: _____ DATE: 5/29/2012
GLENN GUNN

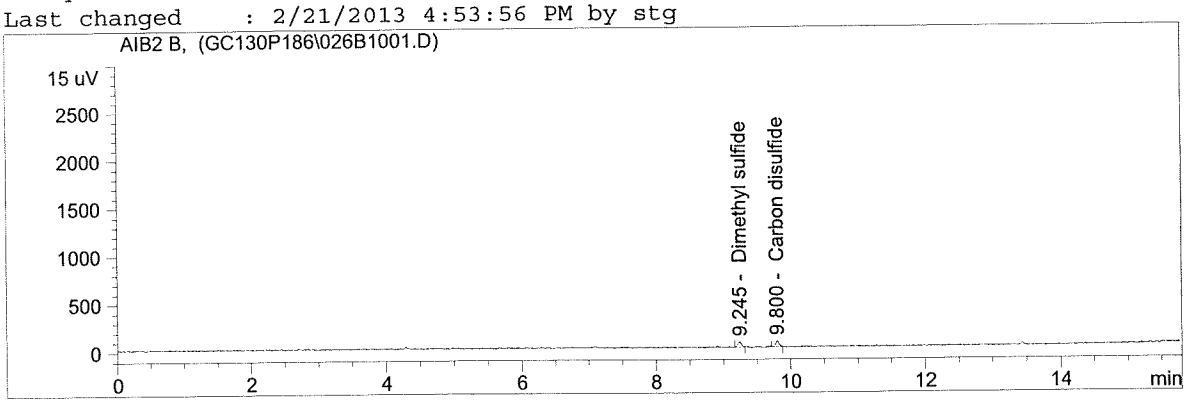
Sample Chromatograms



Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\026B1001.D
Sample Name: Can 00122 0213-39

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  10
Acq. Instrument  : Betty                                 Location : Vial 26
Injection Date   : 12-Feb-13, 20:11:56                       Inj :   1
                                                      Inj Volume : External

Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819           -           -          -          Carbonyl sulfide
  7.078           -           -          -          Methyl mercaptan
  9.245 BV      207.68672    0.00000    0.00000     Dimethyl sulfide
  9.800 VB      218.09944 4.30493e-4 9.38903e-2     Carbon disulfide
 13.426           -           -          -          Dimethyl disulfide

Totals :                                 9.38903e-2

Uncalibrated Peaks    :      using compound Methyl mercaptan

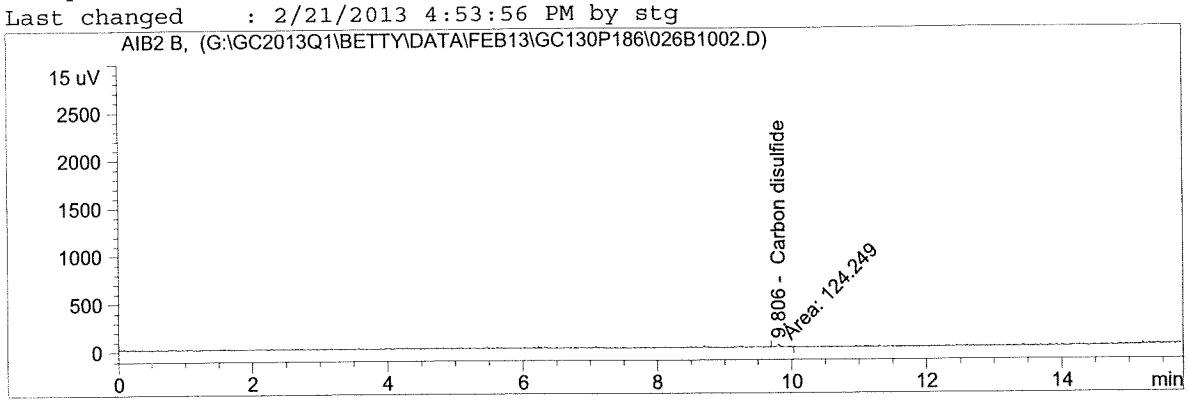
3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found
Warning : Invalid calibration curve, (Dimethyl sulfide)

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\026B1002.D
Sample Name: Can 00122 0213-39

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  10
Acq. Instrument  : Betty                                 Location : Vial 26
Injection Date   : 12-Feb-13, 20:35:04                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819           -           -          -          Carbonyl sulfide
  7.078           -           -          -          Methyl mercaptan
  9.246           -           -          -          Dimethyl sulfide
  9.806 MM    124.24854 4.30493e-4 5.34881e-2       Carbon disulfide
 13.426           -           -          -          Dimethyl disulfide

Totals :                               5.34881e-2

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

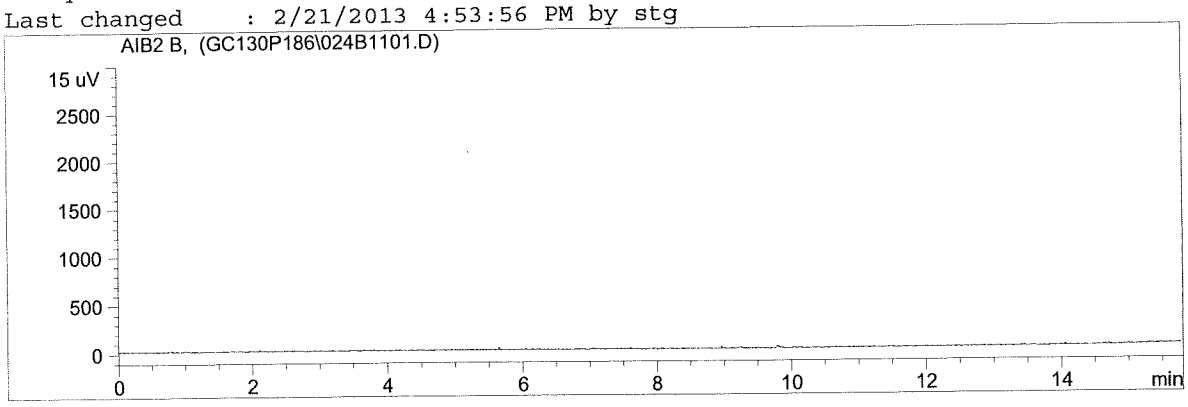
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\024B1101.D
Sample Name: Can 00144 0213-39

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  11
Acq. Instrument  : Betty                                 Location : Vial 24
Injection Date   : 12-Feb-13, 20:58:10                       Inj :   1
                                                      Inj Volume : External

Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type      Area      Amt/Area     Amount    Grp   Name
 [min]          [15 uV*s]                 [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -           -          -          Carbonyl sulfide
  7.078            -           -          -          Methyl mercaptan
  9.246            -           -          -          Dimethyl sulfide
  9.805            -           -          -          Carbon disulfide
 13.426            -           -          -          Dimethyl disulfide

Totals :                                  0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\024B1101.D
Sample Name: Can 00144 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

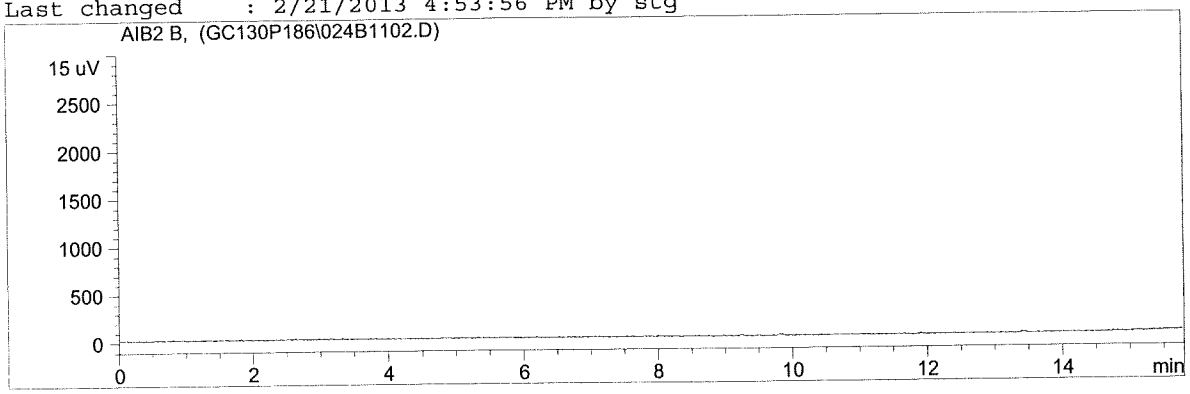
==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\024B1102.D
Sample Name: Can 00144 0213-39

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  11
Acq. Instrument  : Betty                                 Location : Vial 24
Injection Date   : 12-Feb-13, 21:21:15                       Inj :   2
                                                      Inj Volume : External

Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819           -           -          -          Carbonyl sulfide
  7.078           -           -          -          Methyl mercaptan
  9.246           -           -          -          Dimethyl sulfide
  9.805           -           -          -          Carbon disulfide
 13.426           -           -          -          Dimethyl disulfide

Totals :                                  0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\024B1102.D
Sample Name: Can 00144 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide
Totals :				0.00000	0.0000	

Uncalibrated Peaks: n.a.

2 Warnings or Errors :

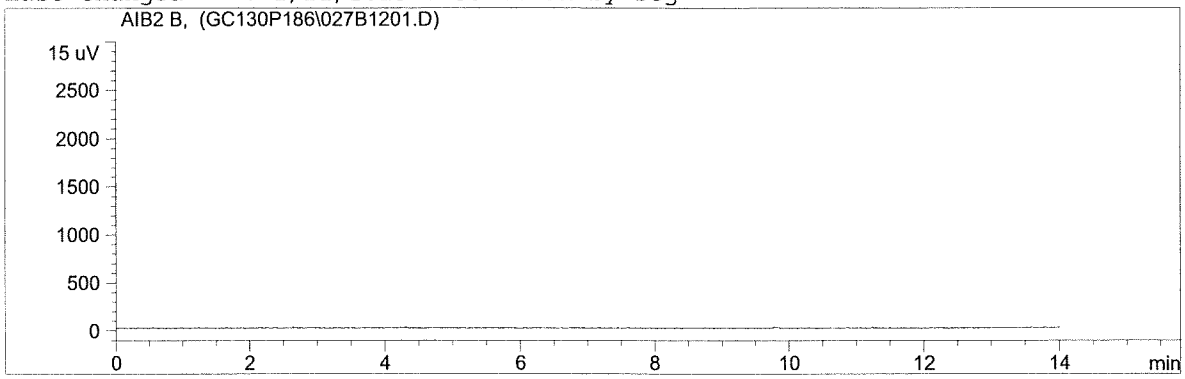
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\027B1201.D
Sample Name: Can 00204 0213-39

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  12
Acq. Instrument  : Betty                                 Location : Vial 27
Injection Date   : 12-Feb-13, 21:44:21                       Inj :   1
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                 0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\027B1201.D
Sample Name: Can 00204 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

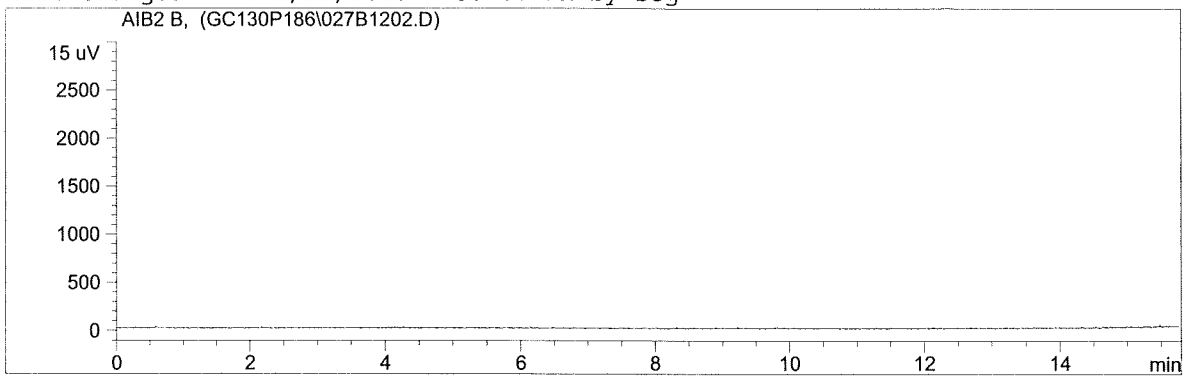
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\027B1202.D
Sample Name: Can 00204 0213-39

```
==========================================================================
Acq. Operator   : stg                                 Seq. Line :  12
Acq. Instrument : Betty                               Location : Vial 27
Injection Date  : 12-Feb-13, 22:05:08                      Inj :   2
                                                    Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\027B1202.D
Sample Name: Can 00204 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

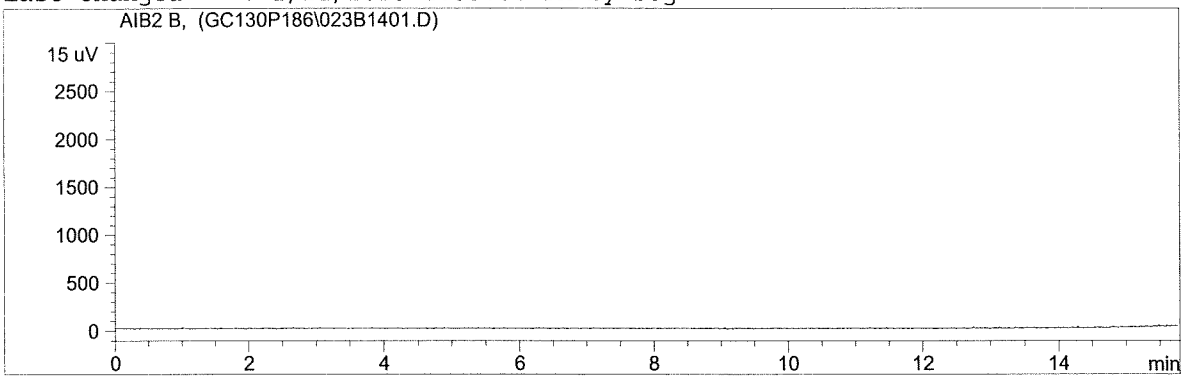
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\023B1401.D
Sample Name: Can 00179 0213-39

```
==========================================================================
Acq. Operator   : stg                                 Seq. Line :  14
Acq. Instrument : Betty                               Location : Vial 23
Injection Date  : 12-Feb-13, 23:11:34                      Inj :   1
                                                    Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -         Carbonyl sulfide
  7.078            -          -          -         Methyl mercaptan
  9.246            -          -          -         Dimethyl sulfide
  9.805            -          -          -         Carbon disulfide
 13.426            -          -          -         Dimethyl disulfide

Totals :                                0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\023B1401.D
Sample Name: Can 00179 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

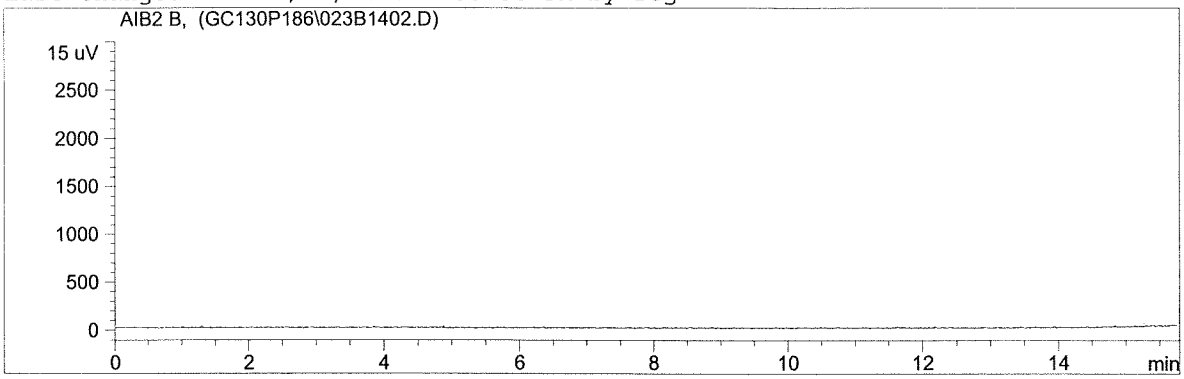
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\023B1402.D
Sample Name: Can 00179 0213-39

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  14
Acq. Instrument : Betty                                  Location : Vial 23
Injection Date   : 12-Feb-13, 23:34:37                       Inj :   2
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\023B1402.D
Sample Name: Can 00179 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

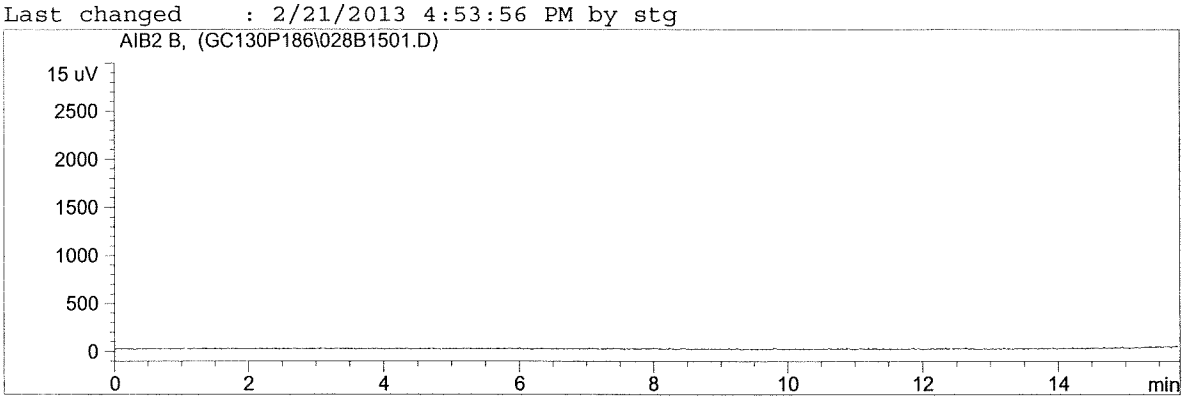
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\028B1501.D
Sample Name: Can 959 0213-39

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :  15
Acq. Instrument  : Betty                               Location : Vial 28
Injection Date   : 12-Feb-13, 23:57:41                      Inj :   1
                                                     Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                 0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\028B1501.D
Sample Name: Can 959 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

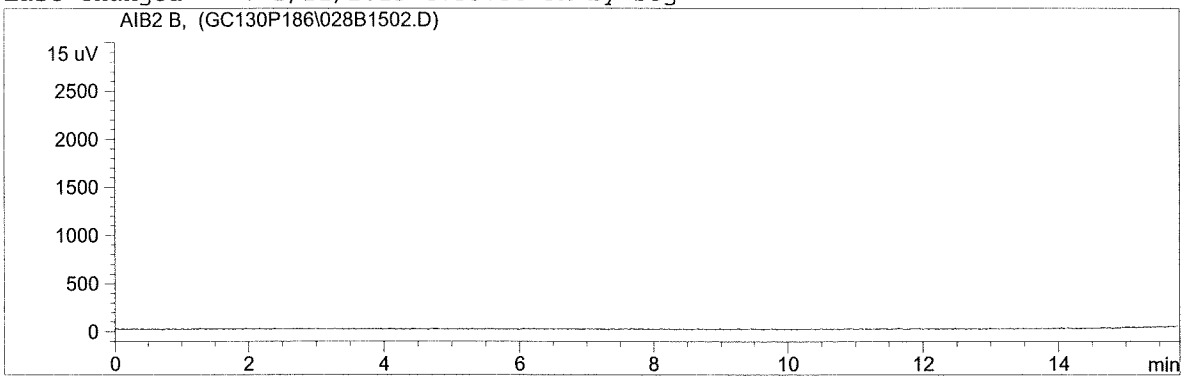
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\028B1502.D
Sample Name: Can 959 0213-39

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :  15
Acq. Instrument  : Betty                               Location : Vial 28
Injection Date   : 13-Feb-13, 00:20:40                      Inj :   2
                                                    Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -           -          -         Carbonyl sulfide
  7.078            -           -          -         Methyl mercaptan
  9.246            -           -          -         Dimethyl sulfide
  9.805            -           -          -         Carbon disulfide
 13.426            -           -          -         Dimethyl disulfide

Totals :                                 0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\028B1502.D
Sample Name: Can 959 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

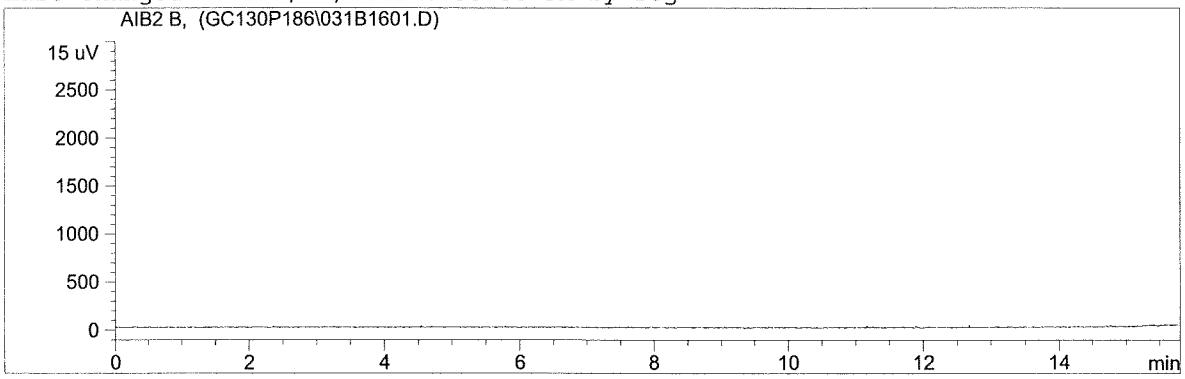
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\031B1601.D
Sample Name: Can 952 0213-39

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  16
Acq. Instrument  : Betty                                 Location : Vial 31
Injection Date   : 13-Feb-13, 00:43:39                       Inj :   1
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\031B1601.D
Sample Name: Can 952 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

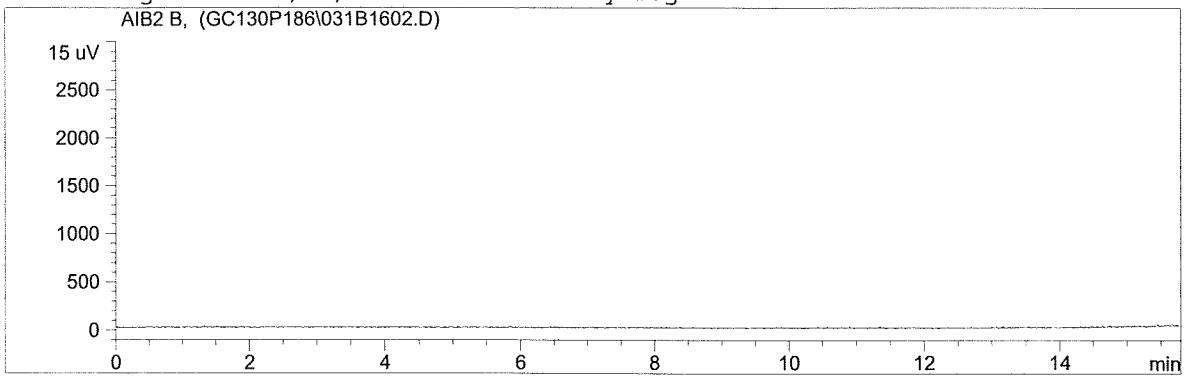
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\031B1602.D
Sample Name: Can 952 0213-39

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  16
Acq. Instrument  : Betty                                 Location : Vial 31
Injection Date   : 13-Feb-13, 01:06:36                       Inj :   2
                                                       Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\031B1602.D
Sample Name: Can 952 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

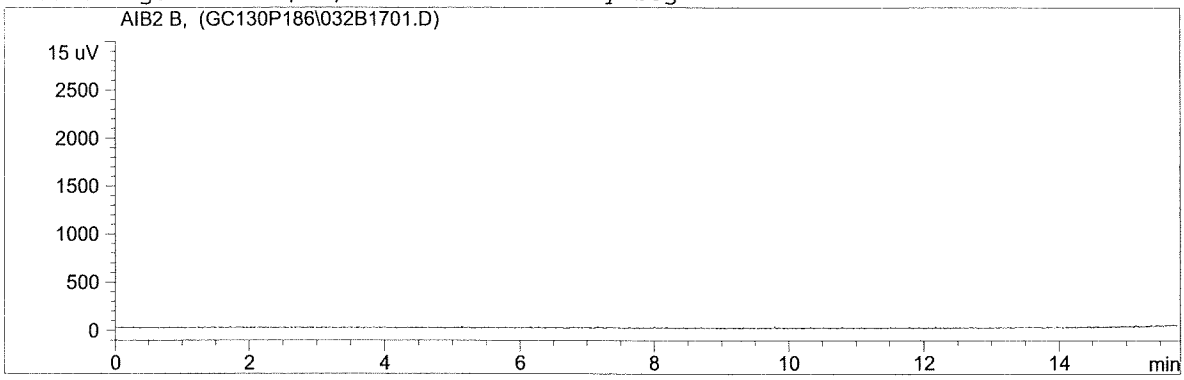
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\032B1701.D
Sample Name: Can 00186 0213-39

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  17
Acq. Instrument  : Betty                                 Location : Vial 32
Injection Date   : 13-Feb-13, 01:29:34                       Inj :   1
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\032B1701.D
Sample Name: Can 00186 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

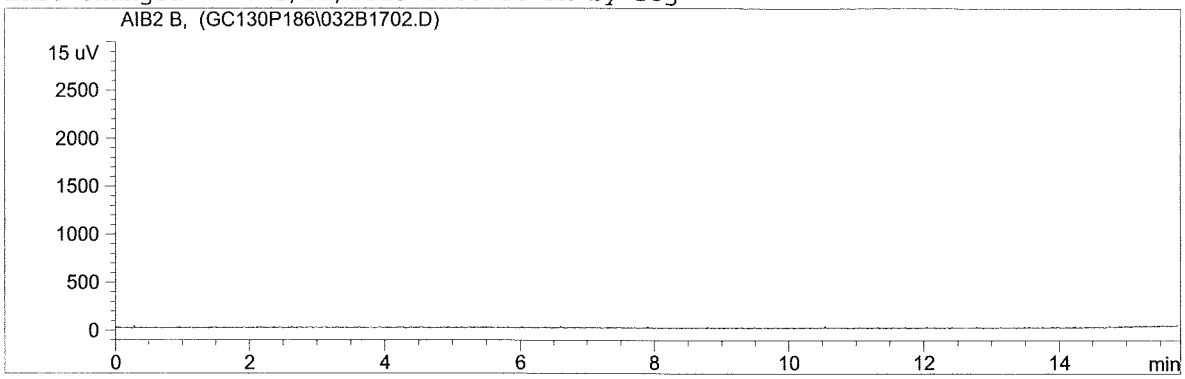
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\032B1702.D
Sample Name: Can 00186 0213-39

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  17
Acq. Instrument  : Betty                                 Location : Vial 32
Injection Date   : 13-Feb-13, 01:52:30                       Inj :   2
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -           -          -         Carbonyl sulfide
  7.078            -           -          -         Methyl mercaptan
  9.246            -           -          -         Dimethyl sulfide
  9.805            -           -          -         Carbon disulfide
 13.426            -           -          -         Dimethyl disulfide

Totals :                                 0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\032B1702.D
Sample Name: Can 00186 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

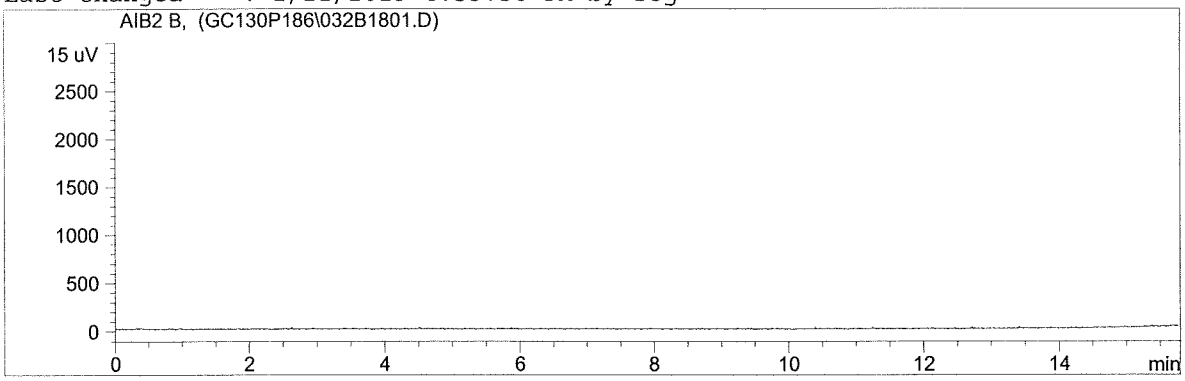
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\032B1801.D
Sample Name: Can 00203 0213-39

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  18
Acq. Instrument  : Betty                                 Location : Vial 32
Injection Date   : 13-Feb-13, 02:15:26                       Inj :   1
                                                       Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                 0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\032B1801.D
Sample Name: Can 00203 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

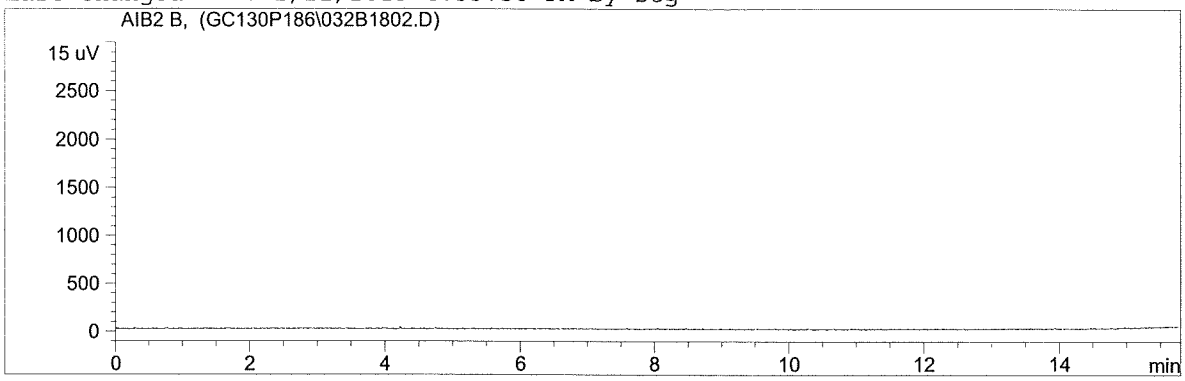
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\032B1802.D
Sample Name: Can 00203 0213-39

```
==========================================================================
Acq. Operator   : stg                              Seq. Line :  18
Acq. Instrument : Betty                             Location : Vial 32
Injection Date  : 13-Feb-13, 02:38:20                    Inj :   2
                                                  Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                 0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\032B1802.D
Sample Name: Can 00203 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

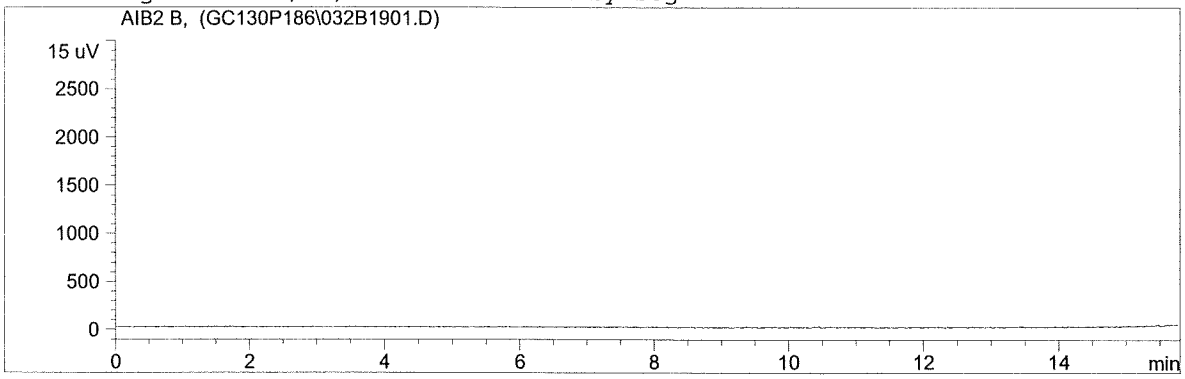
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\032B1901.D
Sample Name: Can 00146 0213-39

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :  19
Acq. Instrument  : Betty                               Location : Vial 32
Injection Date   : 13-Feb-13, 03:01:16                      Inj :   1
                                                    Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                 0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\032B1901.D
Sample Name: Can 00146 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

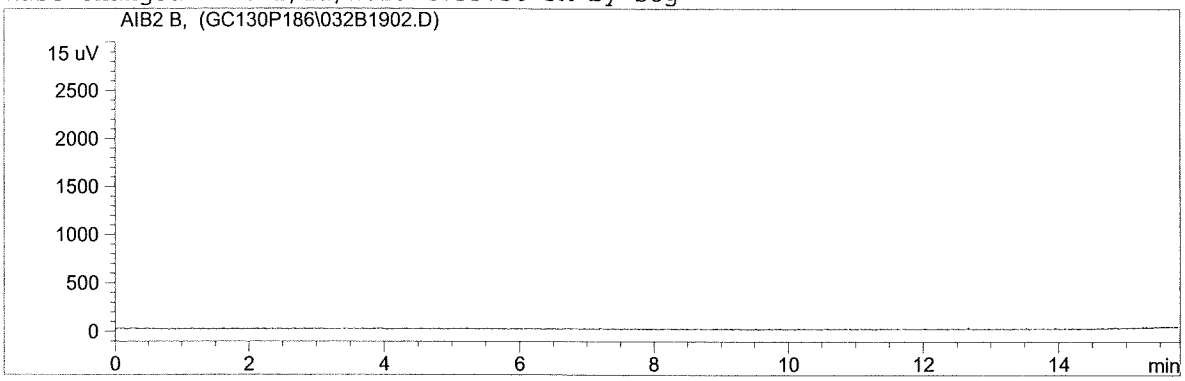
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\032B1902.D
Sample Name: Can 00146 0213-39

```
==========================================================================
Acq. Operator   : stg                              Seq. Line :  19
Acq. Instrument : Betty                             Location : Vial 32
Injection Date  : 13-Feb-13, 03:24:09                    Inj :   2
                                                  Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                 0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\032B1902.D
Sample Name: Can 00146 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

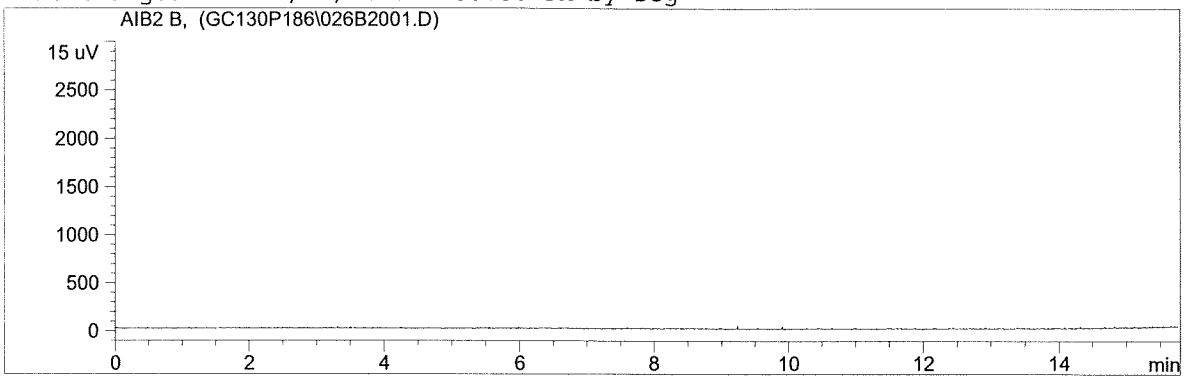
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\026B2001.D
Sample Name: Can 00177 0213-39

```
==========================================================================
Acq. Operator   : stg                              Seq. Line :  20
Acq. Instrument : Betty                             Location : Vial 26
Injection Date  : 13-Feb-13, 03:47:02                    Inj :   1
                                                  Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\026B2001.D
Sample Name: Can 00177 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

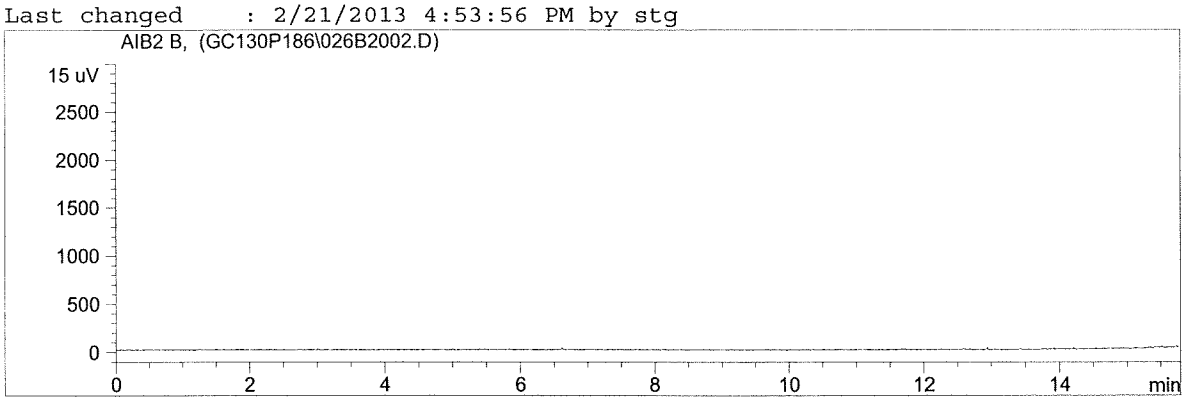
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\026B2002.D
Sample Name: Can 00177 0213-39

```
==========================================================================
Acq. Operator   : stg                              Seq. Line :  20
Acq. Instrument : Betty                             Location : Vial 26
Injection Date  : 13-Feb-13, 04:09:52                    Inj :   2
                                                  Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -         Carbonyl sulfide
  7.078            -          -          -         Methyl mercaptan
  9.246            -          -          -         Dimethyl sulfide
  9.805            -          -          -         Carbon disulfide
 13.426            -          -          -         Dimethyl disulfide

Totals :                                0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\026B2002.D
Sample Name: Can 00177 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

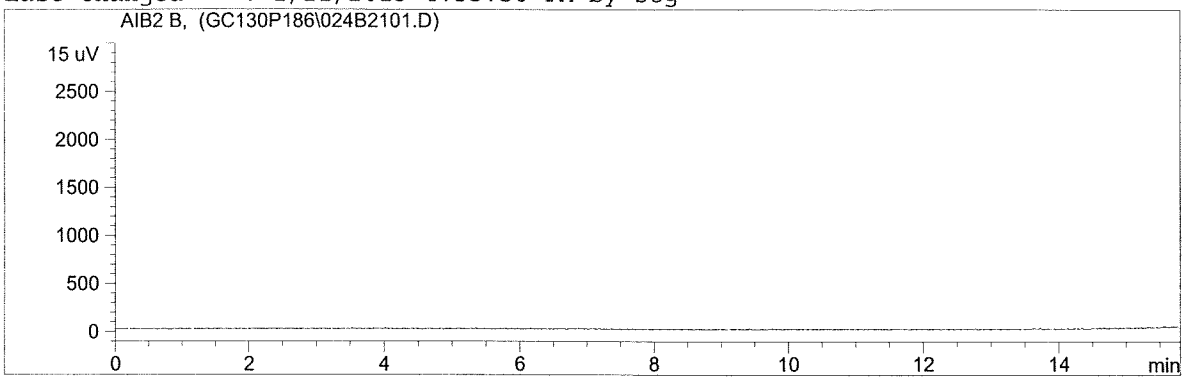
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\024B2101.D
Sample Name: Can 00196 0213-39

```
==========================================================================
Acq. Operator   : stg                              Seq. Line :  21
Acq. Instrument : Betty                             Location : Vial 24
Injection Date  : 13-Feb-13, 04:32:42                    Inj :   1
                                                  Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\024B2101.D
Sample Name: Can 00196 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

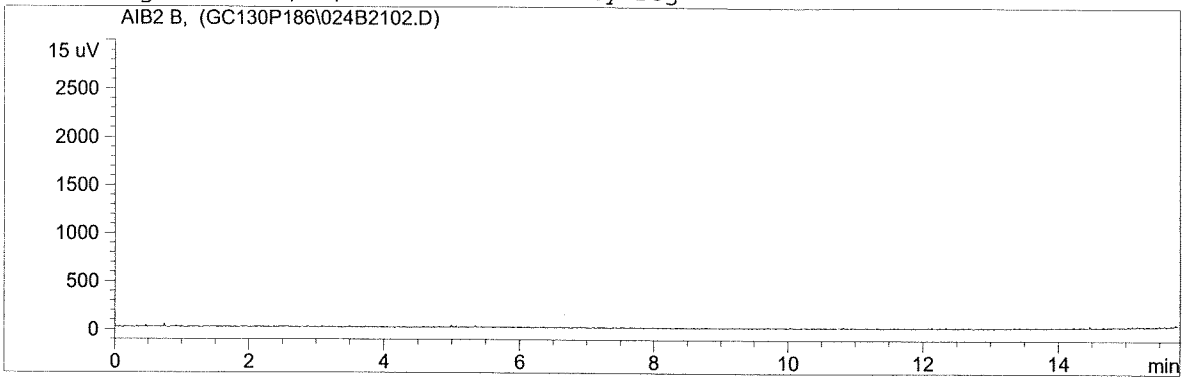
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\024B2102.D
Sample Name: Can 00196 0213-39

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  21
Acq. Instrument  : Betty                                 Location : Vial 24
Injection Date   : 13-Feb-13, 04:55:31                       Inj :   2
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.805            -          -          -          Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                                 0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\024B2102.D
Sample Name: Can 00196 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

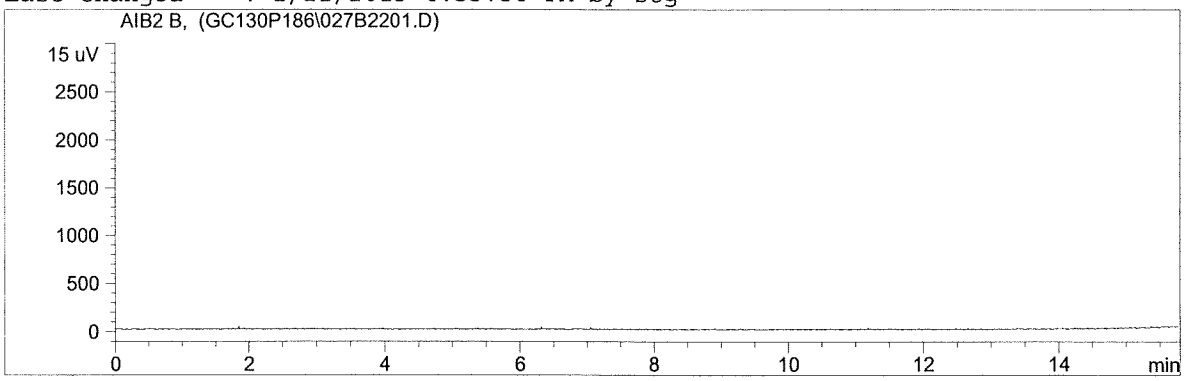
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\027B2201.D
Sample Name: Can 905 0213-39

```
==========================================================================
Acq. Operator    : stg                              Seq. Line :  22
Acq. Instrument  : Betty                             Location : Vial 27
Injection Date   : 13-Feb-13, 05:18:15                    Inj :   1
                                                   Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819           -           -          -          Carbonyl sulfide
  7.078           -           -          -          Methyl mercaptan
  9.246           -           -          -          Dimethyl sulfide
  9.805           -           -          -          Carbon disulfide
 13.426           -           -          -          Dimethyl disulfide

Totals :                                 0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\027B2201.D
Sample Name: Can 905 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

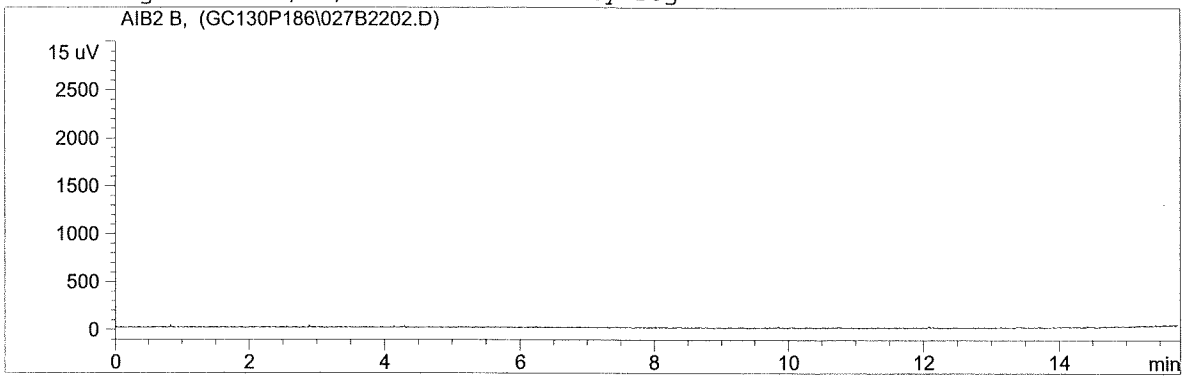
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\027B2202.D
Sample Name: Can 905 0213-39

```
==========================================================================
Acq. Operator   : stg                              Seq. Line :  22
Acq. Instrument : Betty                             Location : Vial 27
Injection Date  : 13-Feb-13, 05:41:02                    Inj :   2
                                                  Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -         Carbonyl sulfide
  7.078            -          -          -         Methyl mercaptan
  9.246            -          -          -         Dimethyl sulfide
  9.805            -          -          -         Carbon disulfide
 13.426            -          -          -         Dimethyl disulfide

Totals :                                 0.00000

Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\027B2202.D
Sample Name: Can 905 0213-39

==========

Area Percent Report

==========

Sorted By : Signal
Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM
Multiplier: : 1.0000
Dilution: : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

Peak #	RetTime [min]	Type	Width [min]	Area [15 uV*s]	Area %	Name
1	4.819		0.0000	0.00000	0.00000	Carbonyl sulfide
2	7.078		0.0000	0.00000	0.00000	Methyl mercaptan
3	9.246		0.0000	0.00000	0.00000	Dimethyl sulfide
4	9.805		0.0000	0.00000	0.00000	Carbon disulfide
5	13.426		0.0000	0.00000	0.00000	Dimethyl disulfide

Totals : 0.00000 0.0000
Uncalibrated Peaks: n.a.

2 Warnings or Errors :

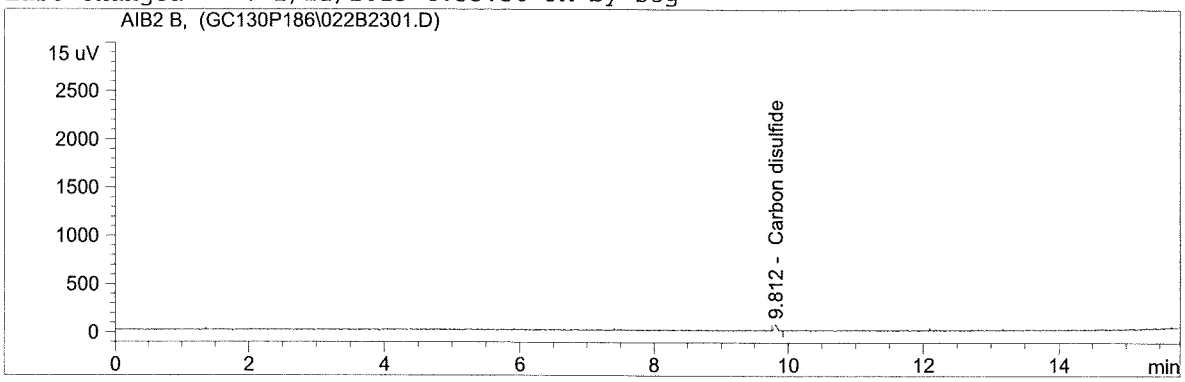
Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========

*** End of Report ***

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\022B2301.D
Sample Name: Air Blank

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  23
Acq. Instrument  : Betty                                 Location : Vial 22
Injection Date   : 13-Feb-13, 06:03:48                       Inj :   1
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819           -          -          -         Carbonyl sulfide
  7.078           -          -          -         Methyl mercaptan
  9.246           -          -          -         Dimethyl sulfide
  9.812 VV    239.23705 4.30493e-4 1.02990e-1    Carbon disulfide
 13.426           -          -          -         Dimethyl disulfide

Totals :                              1.02990e-1

Uncalibrated Peaks    :      using compound Methyl mercaptan

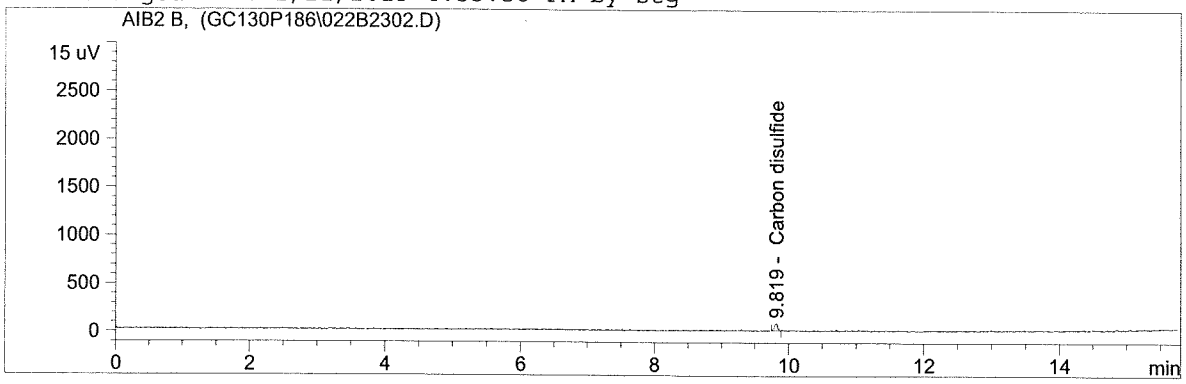
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\022B2302.D
Sample Name: Air Blank

```
==========================================================================
Acq. Operator    : stg                                Seq. Line :  23
Acq. Instrument  : Betty                               Location : Vial 22
Injection Date   : 13-Feb-13, 06:26:32                      Inj :   2
                                                    Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]         [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.819            -          -          -          Carbonyl sulfide
  7.078            -          -          -          Methyl mercaptan
  9.246            -          -          -          Dimethyl sulfide
  9.819 BV    261.90155 4.30493e-4 1.12747e-1       Carbon disulfide
 13.426            -          -          -          Dimethyl disulfide

Totals :                               1.12747e-1

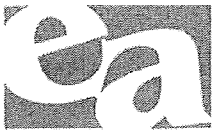
Uncalibrated Peaks    :      using compound Methyl mercaptan

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Calibration Curve Chromatograms



Calibration Table

Calib. Data Modified : Thursday, February 21, 2013 4:53:46 PM

Rel. Reference Window : 2.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 2.000 %
Abs. Non-ref. Window : 0.200 min
Uncalibrated Peaks : Separately calculated (see below)
Partial Calibration : Yes, identified peaks are recalibrated
Correct All Ret. Times: No, only for identified peaks

Curve Type : Linear
Origin : Connected
Weight : Quadratic (Resp)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Signal 1: TCD1 A,
Uncalibrated Peaks : compound name not specified
Signal 2: FID2 B,
Uncalibrated Peaks : not reported
Signal 3: AIB2 B,
Uncalibrated Peaks : using compound Methyl mercaptan

RetTime [min]	Sig	Lvl	Amount [ppm]	Area	Amt/Area	Ref	Grp	Name
4.819	3	1	3.92200e-1	417.17502	9.40133e-4			Carbonyl sulfide
		3	8.09000e-1	728.41016	1.11064e-3			
		6	4.87700	3860.65918	1.26326e-3			
7.078	3	1	4.57000e-1	612.44377	7.46191e-4			Methyl mercaptan
		3	9.44000e-1	1051.39504	8.97855e-4			
		6	5.68800	4735.51383	1.20114e-3			
9.246	3	1	0.00000	1743.80367	0.00000			Dimethyl sulfide
9.805	3	1	5.11100e-1	1210.00521	4.22395e-4			Carbon disulfide
		3	1.05500	2013.83114	5.23877e-4			
		6	5.97300	1.03762e4	5.75643e-4			
13.426	3	1	0.00000	303.69901	0.00000			Dimethyl disulfide

1 Warnings or Errors :

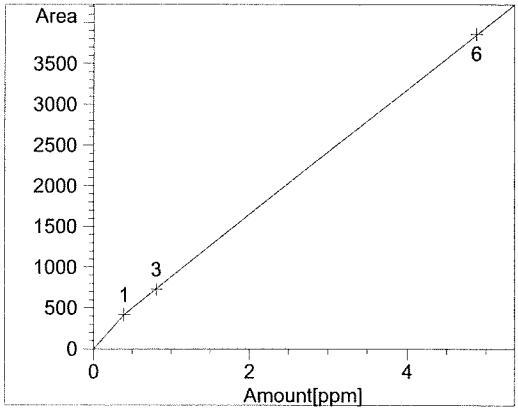
Warning : Curve requires more calibration points., (Dimethyl sulfide)

Peak Sum Table

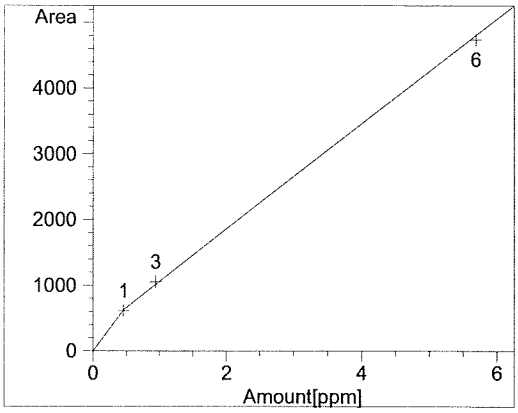
Method G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M

Name	StartTime [min]	EndTime [min]	Use Reference	Response factor	Multiplier	ISTD Peak
as Ethane	2.500	3.650	None	2.5410e-3	1.0000	None
as Propane	6.100	7.900	None	1.9720e-3	1.0000	None
as Butane	8.400	10.550	None	1.7340e-3	1.0000	None
as Pentane	10.550	12.500	None	1.5240e-3	1.0000	None
as Hexane	12.500	14.250	None	1.3300e-3	1.0000	None
as Heptane	14.250	17.000	None	1.1070e-3	1.0000	None

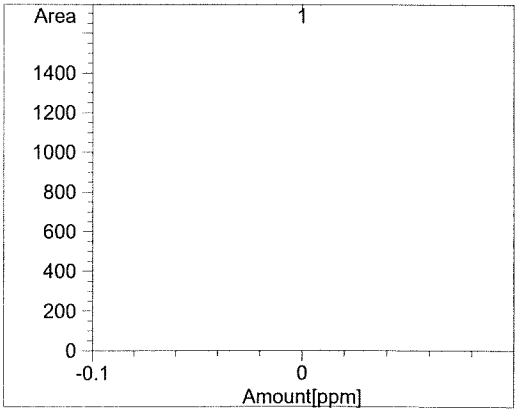
Calibration Curves



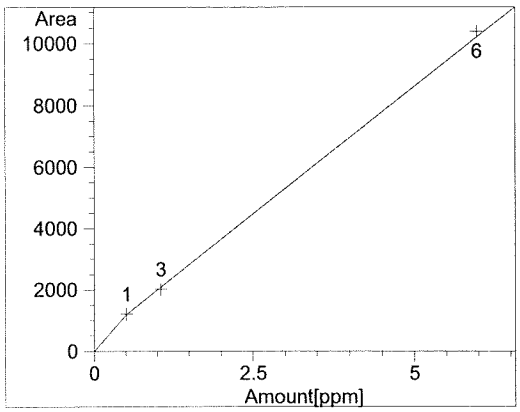
Carbonyl sulfide at exp. RT: 4.819
AIB2 B,
Correlation: 0.99995
Residual Std. Dev.: 16.33702
Formula: y = mx + b
m: 764.81506
b: 115.48567
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 3 : 0.328008
Level 6 : 0.011677



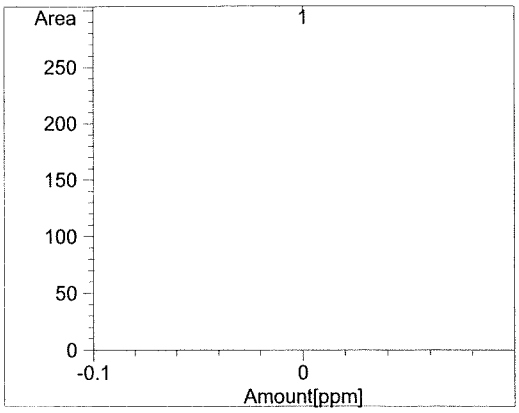
Methyl mercaptan at exp. RT: 7.078
AIB2 B,
Correlation: 0.99887
Residual Std. Dev.: 81.76579
Formula: y = mx + b
m: 799.64445
b: 258.65996
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 3 : 0.339313
Level 6 : 0.016726



Dimethyl sulfide at exp. RT: 9.246
AIB2 B,
Correlation: 1.00000
Residual Std. Dev.: 0.00000
Formula: y = mx + b
m: 0.00000
b: 0.00000
x: Amount
y: Area



Carbon disulfide at exp. RT: 9.805
AIB2 B,
Correlation: 0.99890
Residual Std. Dev.: 199.22385
Formula: y = mx + b
m: 1648.48551
b: 344.70205
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 3 : 0.361018
Level 6 : 0.013599

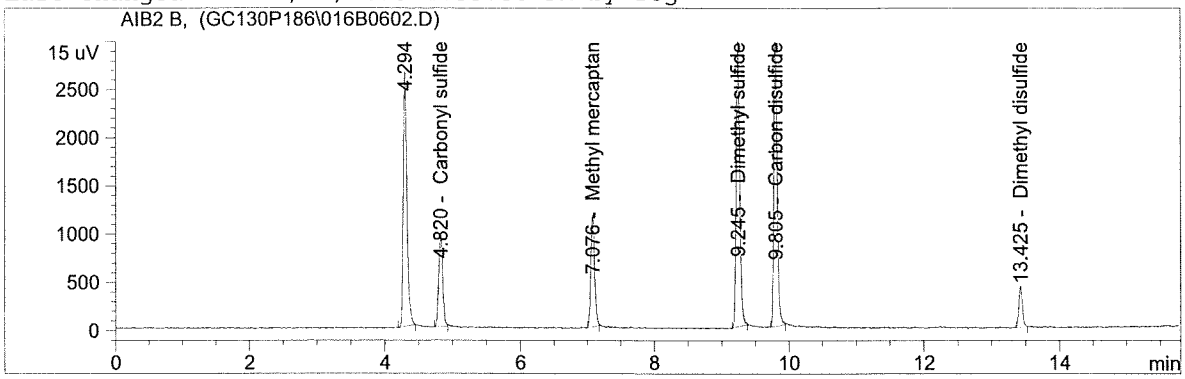


Dimethyl disulfide at exp. RT: 13.426
AIB2 B,
Correlation: 1.00000
Residual Std. Dev.: 0.00000
Formula: y = mx + b
m: 0.00000
b: 0.00000
x: Amount
y: Area

==========

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\016B0602.D
Sample Name: GC130p186 #H6

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :   6
Acq. Instrument  : Betty                                 Location : Vial 16
Injection Date   : 12-Feb-13, 16:46:02                       Inj :   2
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.820 BV     3808.76904 1.26786e-3    4.82899    Carbonyl sulfide
  7.076 BV     4581.02881 1.17995e-3    5.40536    Methyl mercaptan
  9.245 BB     1.09852e4     0.00000    0.00000    Dimethyl sulfide
  9.805 VV     1.02847e4  5.86286e-4    6.02976    Carbon disulfide
 13.425 VB     1500.16479    0.00000    0.00000    Dimethyl disulfide

Totals :                                16.26412

Uncalibrated Peaks    :      using compound Methyl mercaptan

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.294 BB     9808.53418 1.21758e-3   11.94265    ?

Uncalib. totals :                       11.94265

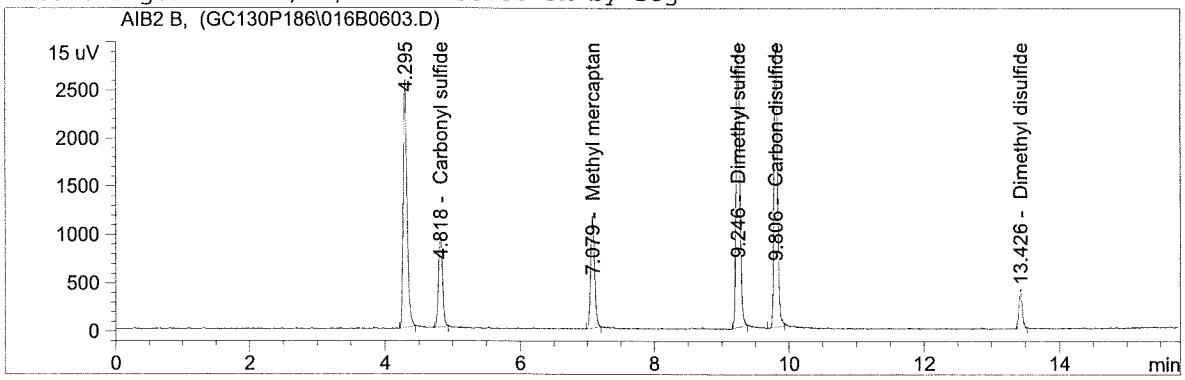

3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Invalid calibration curve, (Dimethyl sulfide)
Warning : Invalid calibration curve, (Dimethyl disulfide)

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\016B0603.D
Sample Name: GC130p186 #H6

```
================================================================================
Acq. Operator   : stg                                Seq. Line :   6
Acq. Instrument : Betty                               Location : Vial 16
Injection Date  : 12-Feb-13, 17:09:16                      Inj :   3
                                                    Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.818 VB     3845.27173 1.26824e-3    4.87672    Carbonyl sulfide
  7.079 BB     4744.64502 1.18238e-3    5.60997    Methyl mercaptan
  9.246 BB     1.14534e4     0.00000    0.00000    Dimethyl sulfide
  9.806 BV     1.04128e4   5.86536e-4   6.10749    Carbon disulfide
 13.426 BB     1443.29419    0.00000    0.00000    Dimethyl disulfide

Totals :                                16.59418

Uncalibrated Peaks    :      using compound Methyl mercaptan

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.295 BB     9931.23437 1.21798e-3   12.09609    ?

Uncalib. totals :                       12.09609

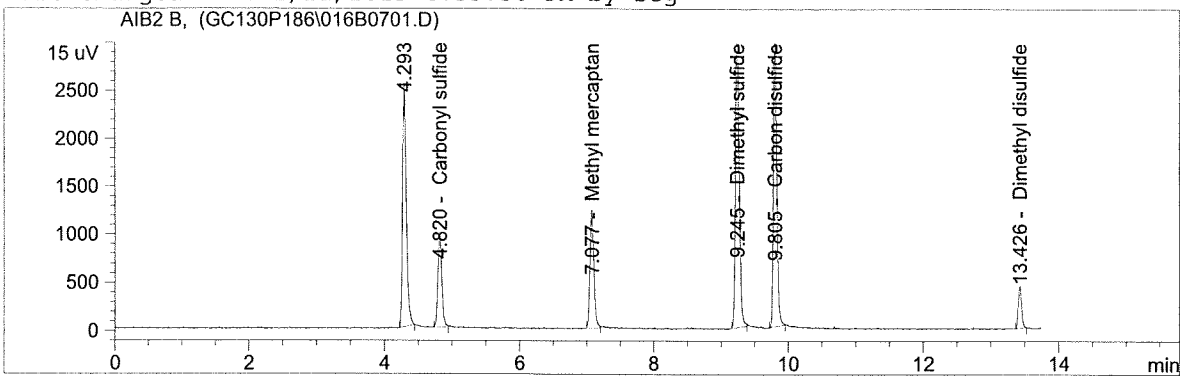

3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Invalid calibration curve, (Dimethyl sulfide)
Warning : Invalid calibration curve, (Dimethyl disulfide)

================================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\016B0701.D
Sample Name: GC130p186 #H6

```
==========================================================================
Acq. Operator   : stg                                 Seq. Line :   7
Acq. Instrument : Betty                               Location : Vial 16
Injection Date  : 12-Feb-13, 17:32:29                     Inj :   1
                                                    Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,
```

RetTime [min]	Type	Area [15 uV*s]	Amt/Area	Amount [ppm]	Grp	Name
4.820	BB	3927.93677	1.26906e-3	4.98480		Carbonyl sulfide
7.077	BB	4880.86768	1.18428e-3	5.78033		Methyl mercaptan
9.245	BV	1.16858e4	0.00000	0.00000		Dimethyl sulfide
9.805	BB	1.04312e4	5.86572e-4	6.11863		Carbon disulfide
13.426	BB	1461.01672	0.00000	0.00000		Dimethyl disulfide

```
Totals :                                  16.88376

Uncalibrated Peaks    :      using compound Methyl mercaptan
```

RetTime [min]	Type	Area [15 uV*s]	Amt/Area	Amount [ppm]	Grp	Name
4.293	BB	9715.82520	1.21726e-3	11.82671		?

```
Uncalib. totals :                         11.82671

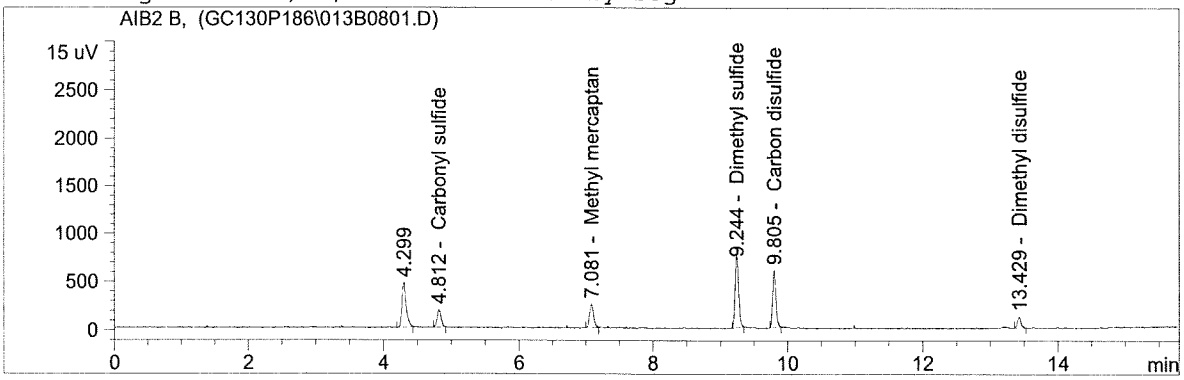

3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Invalid calibration curve, (Dimethyl sulfide)
Warning : Invalid calibration curve, (Dimethyl disulfide)

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\013B0801.D
Sample Name: GC130p186 #H3

```
================================================================================
Acq. Operator   : stg                                 Seq. Line :   8
Acq. Instrument : Betty                               Location : Vial 13
Injection Date  : 12-Feb-13, 17:53:06                     Inj :   1
                                                    Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.812 BB      722.09637 1.09839e-3 7.93147e-1    Carbonyl sulfide
  7.081 BV     1014.33905 9.31660e-4 9.45019e-1    Methyl mercaptan
  9.244 BB     2715.54077    0.00000    0.00000    Dimethyl sulfide
  9.805 BB     1975.14490 5.00751e-4 9.89055e-1    Carbon disulfide
 13.429 BB      424.62567    0.00000    0.00000    Dimethyl disulfide

Totals :                                 2.72722

Uncalibrated Peaks    :      using compound Methyl mercaptan

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.299 VB     1983.98950 1.08752e-3    2.15762    ?

Uncalib. totals :                        2.15762

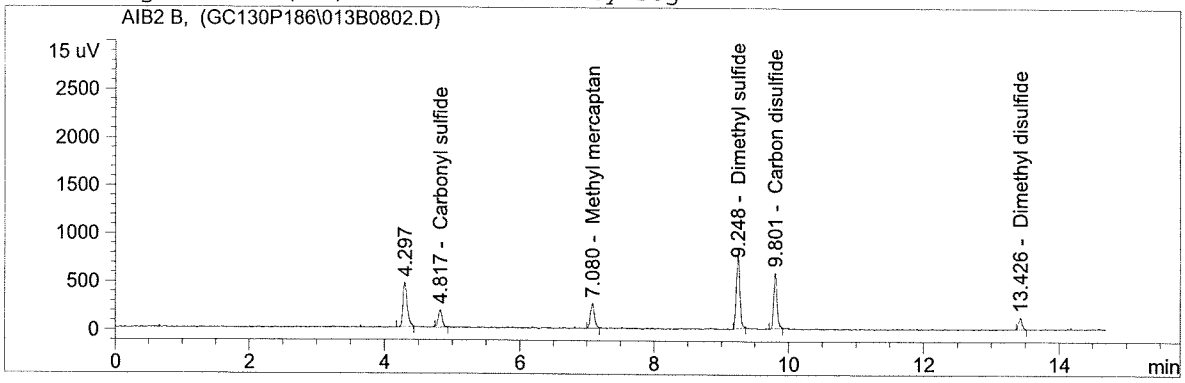

3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Invalid calibration curve, (Dimethyl sulfide)
Warning : Invalid calibration curve, (Dimethyl disulfide)

================================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\013B0802.D
Sample Name: GC130p186 #H3

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :   8
Acq. Instrument  : Betty                                 Location : Vial 13
Injection Date   : 12-Feb-13, 18:16:19                       Inj :   2
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.817 VV      758.11487 1.10833e-3 8.40241e-1    Carbonyl sulfide
  7.080 BV     1056.13501 9.44280e-4 9.97287e-1    Methyl mercaptan
  9.248 BB     2824.90039    0.00000    0.00000    Dimethyl sulfide
  9.801 BB     1973.31482 5.00652e-4 9.87945e-1    Carbon disulfide
 13.426 BB      425.86783    0.00000    0.00000    Dimethyl disulfide

Totals :                                 2.82547

Uncalibrated Peaks    :      using compound Methyl mercaptan

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.297 BB     1963.15271 1.08579e-3    2.13156    ?

Uncalib. totals :                        2.13156

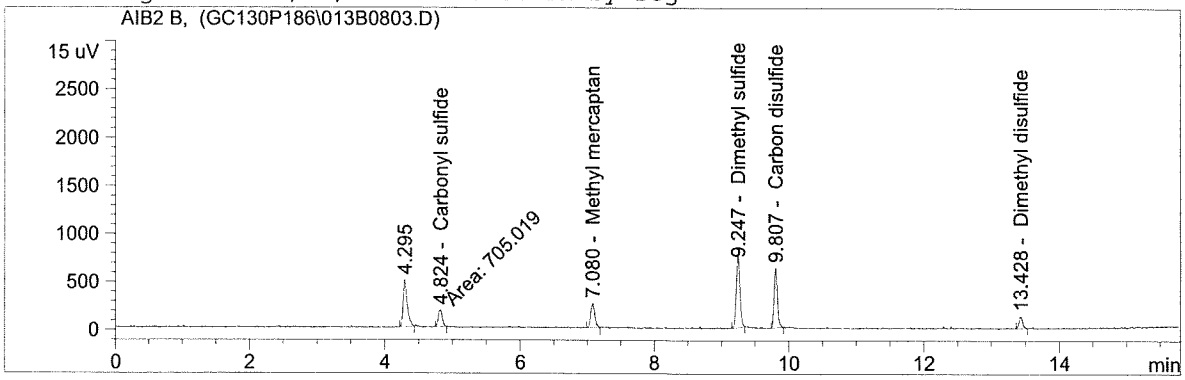

3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Invalid calibration curve, (Dimethyl sulfide)
Warning : Invalid calibration curve, (Dimethyl disulfide)

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\013B0803.D
Sample Name: GC130p186 #H3

```
================================================================================
Acq. Operator   : stg                                  Seq. Line :   8
Acq. Instrument : Betty                                 Location : Vial 13
Injection Date  : 12-Feb-13, 18:38:08                       Inj :   3
                                                      Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.824 MM      705.01923 1.09333e-3 7.70818e-1    Carbonyl sulfide
  7.080 BV     1083.71106 9.52073e-4    1.03177    Methyl mercaptan
  9.247 VB     2861.55371    0.00000    0.00000    Dimethyl sulfide
  9.807 BB     2093.03369 5.06713e-4    1.06057    Carbon disulfide
 13.428 BB      457.55539    0.00000    0.00000    Dimethyl disulfide

Totals :                                 2.86316

Uncalibrated Peaks    :      using compound Methyl mercaptan

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.295 BB     2028.10767 1.09106e-3    2.21279    ?

Uncalib. totals :                        2.21279

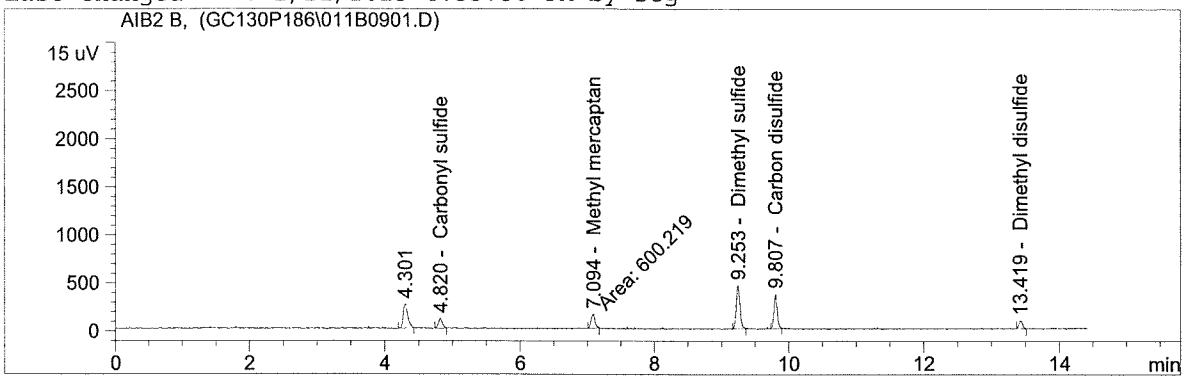

3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Invalid calibration curve, (Dimethyl sulfide)
Warning : Invalid calibration curve, (Dimethyl disulfide)

================================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\011B0901.D
Sample Name: GC130p186 #H1

```
==========================================================================
Acq. Operator   : stg                                Seq. Line :   9
Acq. Instrument : Betty                               Location : Vial 11
Injection Date  : 12-Feb-13, 19:01:20                     Inj :   1
                                                   Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.820 BV      417.80600 9.46098e-4 3.95286e-1    Carbonyl sulfide
  7.094 MM      600.21948 7.32257e-4 4.39515e-1    Methyl mercaptan
  9.253 BB     1696.57056    0.00000    0.00000    Dimethyl sulfide
  9.807 VB     1189.46948 4.30823e-4 5.12451e-1    Carbon disulfide
 13.419 BB      298.04593    0.00000    0.00000    Dimethyl disulfide

Totals :                                 1.34725

Uncalibrated Peaks    :      using compound Methyl mercaptan

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.301 BB     1156.37720 9.70830e-4    1.12265    ?

Uncalib. totals :                        1.12265

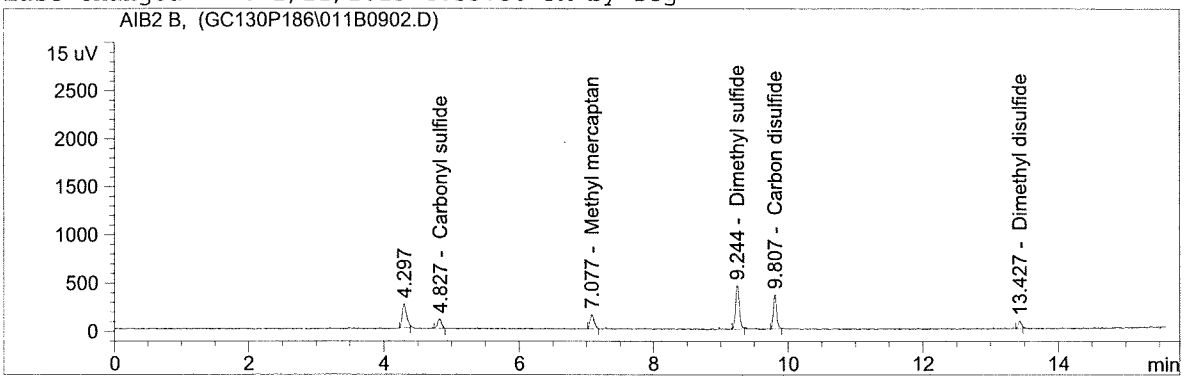

3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Invalid calibration curve, (Dimethyl sulfide)
Warning : Invalid calibration curve, (Dimethyl disulfide)

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\011B0902.D
Sample Name: GC130p186 #H1

```
==========================================================================
Acq. Operator   : stg                                Seq. Line :   9
Acq. Instrument : Betty                               Location : Vial 11
Injection Date  : 12-Feb-13, 19:22:44                      Inj :   2
                                                   Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.827 VV      435.91641 9.61113e-4 4.18965e-1    Carbonyl sulfide
  7.077 BB      628.23950 7.35675e-4 4.62180e-1    Methyl mercaptan
  9.244 BB     1764.94739    0.00000    0.00000    Dimethyl sulfide
  9.807 BB     1185.01697 4.30493e-4 5.10142e-1    Carbon disulfide
 13.427 BV      297.47113    0.00000    0.00000    Dimethyl disulfide

Totals :                                 1.39129

Uncalibrated Peaks    :      using compound Methyl mercaptan

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.297 BV     1123.84973 9.62734e-4    1.08197    ?

Uncalib. totals :                        1.08197

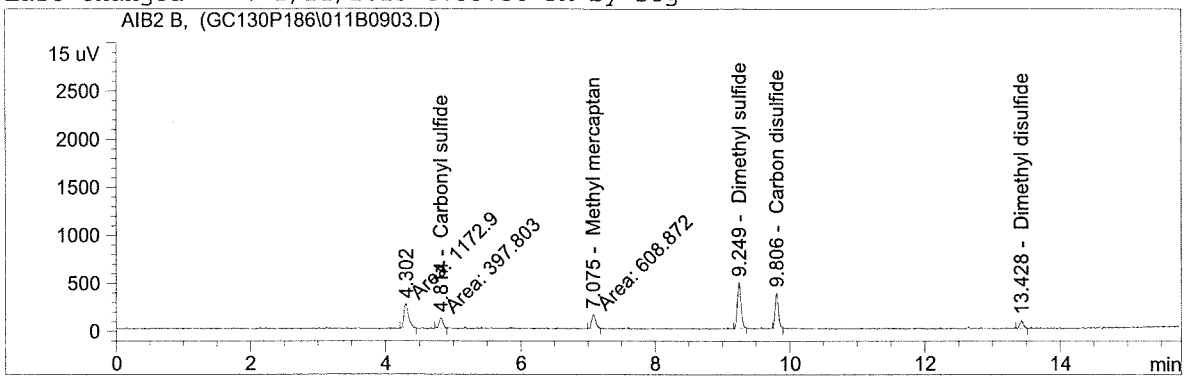

3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Invalid calibration curve, (Dimethyl sulfide)
Warning : Invalid calibration curve, (Dimethyl disulfide)

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\011B0903.D
Sample Name: GC130p186 #H1

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :   9
Acq. Instrument  : Betty                                 Location : Vial 11
Injection Date   : 12-Feb-13, 19:45:39                       Inj :   3
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,
```

RetTime [min]	Type	Area [15 uV*s]	Amt/Area	Amount [ppm]	Grp	Name
4.814	MM	397.80264	9.44045e-4	3.75544e-1		Carbonyl sulfide
7.075	MM	608.87231	7.32257e-4	4.45851e-1		Methyl mercaptan
9.249	BB	1769.89307	0.00000	0.00000		Dimethyl sulfide
9.806	BV	1255.52917	4.40072e-4	5.52524e-1		Carbon disulfide
13.428	VB	315.57996	0.00000	0.00000		Dimethyl disulfide

Totals : 1.37392

Uncalibrated Peaks : using compound Methyl mercaptan

RetTime [min]	Type	Area [15 uV*s]	Amt/Area	Amount [ppm]	Grp	Name
4.302	MM	1172.90125	9.74771e-4	1.14331		?

Uncalib. totals : 1.14331

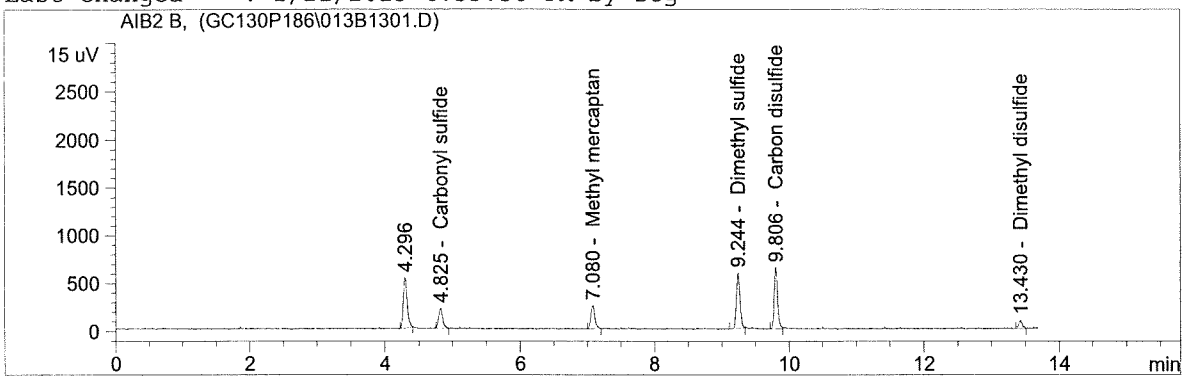
```
3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Invalid calibration curve, (Dimethyl sulfide)
Warning : Invalid calibration curve, (Dimethyl disulfide)

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\013B1301.D
Sample Name: GC130p186 #H3

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  13
Acq. Instrument  : Betty                                 Location : Vial 13
Injection Date   : 12-Feb-13, 22:28:12                       Inj :   1
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.825 BB      844.42889 1.12869e-3 9.53097e-1    Carbonyl sulfide
  7.080 BB      986.23969 9.22574e-4 9.09879e-1    Methyl mercaptan
  9.244 BB     2104.03491    0.00000    0.00000    Dimethyl sulfide
  9.806 BV     2220.84204 5.12463e-4    1.13810    Carbon disulfide
 13.430 BV      305.33249    0.00000    0.00000    Dimethyl disulfide

Totals :                                 3.00108

Uncalibrated Peaks    :      using compound Methyl mercaptan

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.296 BB     1967.50769 1.08615e-3    2.13701    ?

Uncalib. totals :                        2.13701

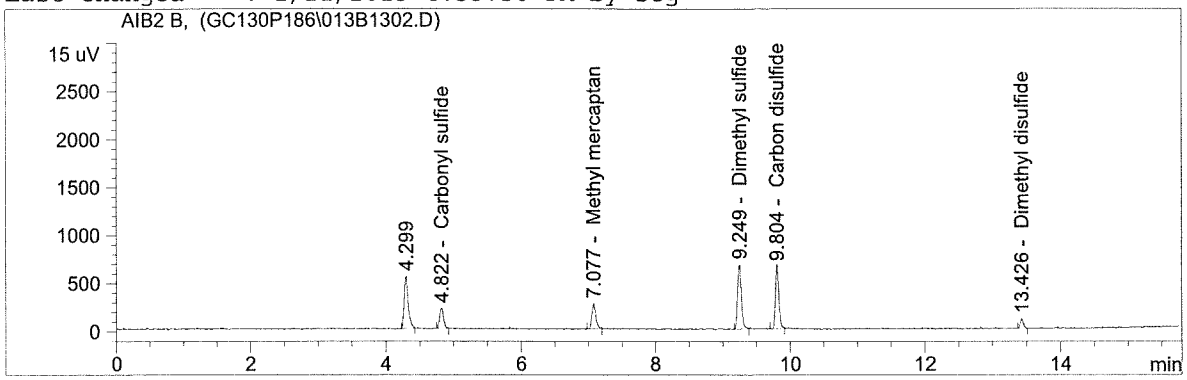

3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Invalid calibration curve, (Dimethyl sulfide)
Warning : Invalid calibration curve, (Dimethyl disulfide)

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\013B1302.D
Sample Name: GC130p186 #H3

```
==========================================================================
Acq. Operator    : stg                                  Seq. Line :  13
Acq. Instrument  : Betty                                 Location : Vial 13
Injection Date   : 12-Feb-13, 22:48:34                       Inj :   2
                                                      Inj Volume : External
Sequence File    : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed     : 2/12/2013 12:34:41 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed     : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,
```

RetTime [min]	Type	Area [15 uV*s]	Amt/Area	Amount [ppm]	Grp	Name
4.822	BB	841.21039	1.12800e-3	9.48889e-1		Carbonyl sulfide
7.077	BB	1037.15955	9.38676e-4	9.73557e-1		Methyl mercaptan
9.249	BB	2563.69800	0.00000	0.00000		Dimethyl sulfide
9.804	BV	2209.12354	5.11963e-4	1.13099		Carbon disulfide
13.426	BB	330.30981	0.00000	0.00000		Dimethyl disulfide

```
Totals :                                  3.05344

Uncalibrated Peaks    :      using compound Methyl mercaptan
```

RetTime [min]	Type	Area [15 uV*s]	Amt/Area	Amount [ppm]	Grp	Name
4.299	BB	2142.77393	1.09960e-3	2.35619		?

```
Uncalib. totals :                         2.35619

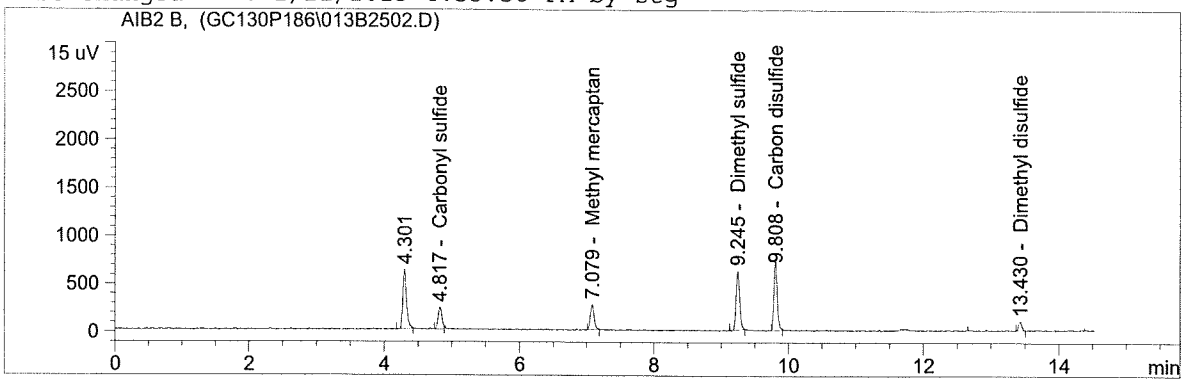

3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Invalid calibration curve, (Dimethyl sulfide)
Warning : Invalid calibration curve, (Dimethyl disulfide)

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\013B2502.D
Sample Name: GC130p186 #H3

```
==========================================================================
Acq. Operator   : stg                                Seq. Line :  25
Acq. Instrument : Betty                               Location : Vial 13
Injection Date  : 13-Feb-13, 10:32:00                      Inj :   2
                                                    Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.817 BV      894.40936 1.13868e-3    1.01845    Carbonyl sulfide
  7.079 BB     1018.33386 9.32911e-4 9.50015e-1    Methyl mercaptan
  9.245 BB     2227.64502    0.00000    0.00000    Dimethyl sulfide
  9.808 BV     2428.08862 5.20499e-4    1.26382    Carbon disulfide
 13.430 BB      308.24075    0.00000    0.00000    Dimethyl disulfide

Totals :                                3.23228

Uncalibrated Peaks    :      using compound Methyl mercaptan

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]               [ppm]
-------|------|----------|----------|----------|--|------------------
  4.301 BB     2283.67065 1.10891e-3    2.53239    ?

Uncalib. totals :                       2.53239

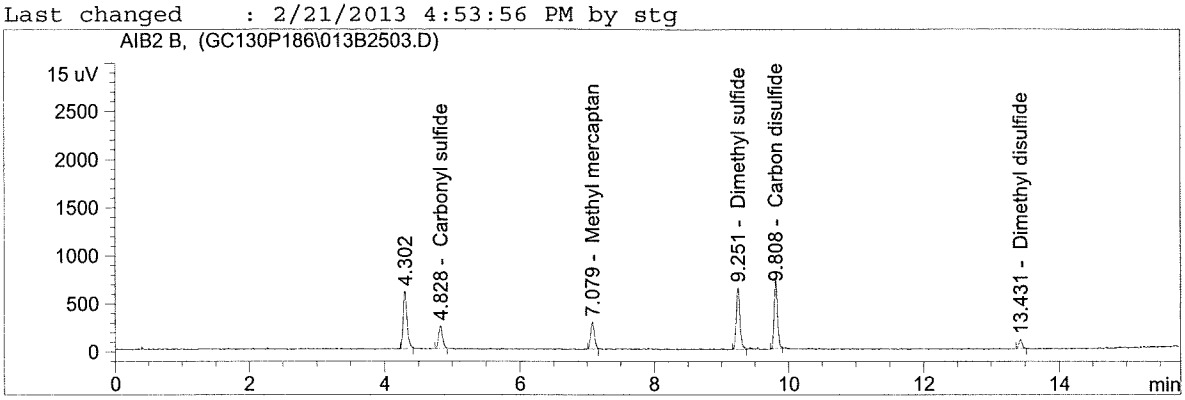

3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Invalid calibration curve, (Dimethyl sulfide)
Warning : Invalid calibration curve, (Dimethyl disulfide)

==========================================================================
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P186\013B2503.D
Sample Name: GC130p186 #H3

```
==========================================================================
Acq. Operator   : stg                                 Seq. Line :  25
Acq. Instrument : Betty                               Location : Vial 13
Injection Date  : 13-Feb-13, 10:56:13                     Inj :   3
                                                    Inj Volume : External
Sequence File   : G:\GC2013Q1\BETTY\SEQUENCE\GC130P186.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Last changed    : 2/12/2013 12:34:41 PM by MTH
Analysis Method : G:\GC2013Q1\BETTY\METHODS\GC130P186R 0213-39.M
Last changed    : 2/21/2013 4:53:56 PM by stg
```




```
==========================================================================
                    External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      Thursday, February 21, 2013 4:53:46 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: AIB2 B,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.828 BB       945.86786 1.14787e-3    1.08573    Carbonyl sulfide
  7.079 BV      1092.50989 9.54477e-4    1.04278    Methyl mercaptan
  9.251 BB      2432.63037    0.00000    0.00000    Dimethyl sulfide
  9.808 BB      2436.41235 5.20794e-4    1.26887    Carbon disulfide
 13.431 BB       306.17627    0.00000    0.00000    Dimethyl disulfide

Totals :                                 3.39737

Uncalibrated Peaks    :      using compound Methyl mercaptan

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [15 uV*s]                [ppm]
-------|------|----------|----------|----------|--|------------------
  4.302 BB      2324.48120 1.11140e-3    2.58342    ?

Uncalib. totals :                        2.58342


3 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Invalid calibration curve, (Dimethyl sulfide)
Warning : Invalid calibration curve, (Dimethyl disulfide)

==========================================================================
```

method: G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Modified on: 2/12/2013 at 12:34:41 PM

Injection Source and Location

Injection Source: 6890 GC Valve

Injection Location: Dual

6890 GC METHOD

OVEN
Initial temp: 40 'C (On)
Initial time: 5.10 min
Ramps:

#	Rate	Final temp	Final time
1	30.00	150	2.00
2	20.00	240	0.50
3	0.0(Off)		

Post temp: 50 'C
Post time: 0.00 min
Run time: 15.77 min
Maximum temp: 250 'C
Equilibration time: 0.20 min

CRYO (N2)
Cryo: Off
Cryo fault: On
Cryo timeout: 40.00 min (On)
Quick cryo cool: Off
Ambient temp: 30 'C

FRONT INLET (SPLIT/SPLITLESS)
Mode: Splitless
Initial temp: 200 'C (On)
Pressure: 11.65 psi (On)
Purge flow: 10.0 mL/min
Purge time: 0.00 min
Total flow: 18.8 mL/min
Gas saver: Off
Gas type: Helium

BACK INLET (SPLIT/SPLITLESS)
Mode: Split
Initial temp: 200 'C (On)
Pressure: 9.98 psi (On)
Split ratio: 7:1
Split flow: 10.7 mL/min
Total flow: 15.1 mL/min
Gas saver: Off
Gas type: Helium

COLUMN 1
Capillary Column
Model Number: Restek ???
15m x0.53mmMS&30m x0.53mmRt-S-BON
Max temperature: 250 'C
Nominal length: 45.0 m
Nominal diameter: 530.00 um
Nominal film thickness: 50.00 um
Mode: constant flow
Initial flow: 5.9 mL/min
Nominal init pressure: 11.66 psi
Average velocity: 50 cm/sec
Inlet: Front Inlet
Outlet: Front Detector
Outlet pressure: ambient

COLUMN 2
Capillary Column
Model Number: Restek 10180
60m x 0.32mm x 5um Rtx-1
Max temperature: 280 'C
Nominal length: 60.0 m
Nominal diameter: 320.00 um
Nominal film thickness: 5.00 um
Mode: constant flow
Initial flow: 1.5 mL/min
Nominal init pressure: 9.99 psi
Average velocity: 32 cm/sec
Inlet: Back Inlet
Outlet: (unspecified)
Outlet pressure: vacuum

FRONT DETECTOR (TCD)
Temperature: 275 'C (On)
Reference flow: 20.0 mL/min (On)
Mode: Constant makeup flow
Makeup flow: 7.0 mL/min (On)
Makeup Gas Type: Helium
Filament: On
Negative polarity: Off

BACK DETECTOR (AIB)
Electrometer: On

SIGNAL 1
Data rate: 20 Hz
Type: front detector

SIGNAL 2
Data rate: 20 Hz
Type: back detector

method: G:\GC2013Q1\BETTY\METHODS\TCD_SCD_2.M
Modified on: 2/12/2013 at 12:34:41 PM

Save Data: On	Save Data: On
Zero: 0.0 (Off)	Zero: 0.0 (Off)
Range: 0	Range: 0
Fast Peaks: Off	Fast Peaks: Off
Attenuation: 0	Attenuation: 0

COLUMN COMP 1
Derive from front detector

COLUMN COMP 2
(No Detectors Installed)

THERMAL AUX 1
Use: Valve Box Heater
Description:
Initial temp: 130 'C (On)
Initial time: 0.00 min

#	Rate	Final temp	Final time
1	0.0(Off)		

VALVES
Valve 1 Gas Sampling
Description:
Loop Volume: 1.000 mL
Load Time: 0.50 min
Inject Time: 0.10 min
Inlet: Front Inlet
Valve 2 Gas Sampling
Description:
Loop Volume: 1.000 mL
Load Time: 0.10 min
Inject Time: 1.90 min
Inlet: Front Inlet

POST RUN
Post Time: 0.00 min

TIME TABLE

Time	Specifier	Parameter & Setpoint	
3.65		Front Detector Polarity:	On
3.95		Front Detector Polarity:	Off

GC Injector

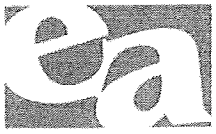
Front Injector:
Injector not configured, use these parameters if it becomes configured

Sample Washes	0
Sample Pumps	0
Injection Volume	1.00 microliters
Syringe Size	10.0 microliters
PostInj Solvent A Washes	0
PostInj Solvent B Washes	0
Viscosity Delay	0 seconds
Plunger Speed	Fast

Back Injector:
Injector not configured, use these parameters if it becomes configured

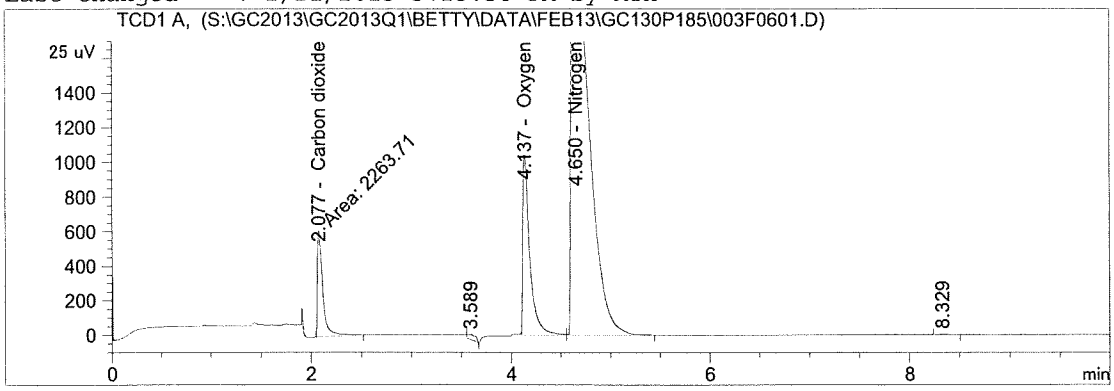
Sample Washes	0
Sample Pumps	0
Injection Volume	1.00 microliters
Syringe Size	10.0 microliters
PostInj Solvent A Washes	0
PostInj Solvent B Washes	0
Viscosity Delay	0 seconds
Plunger Speed	Fast

Sample Chromatograms



Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\003F0601.D
Sample Name: Bag-1A 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   6
Acq. Instrument  : Betty                             Location : Vial 3
Injection Date   : 08-Feb-13, 19:34:55                    Inj :   1
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.077	MM	2263.70850	2.49559e-3	5.64929		Carbon dioxide
4.137	BB	5106.79785	2.63007e-3	13.43122		Oxygen
4.650	BB	2.89364e4	2.30163e-3	66.60090		Nitrogen
5.450		-	-	-		Methane

```
Totals :                                  85.68141

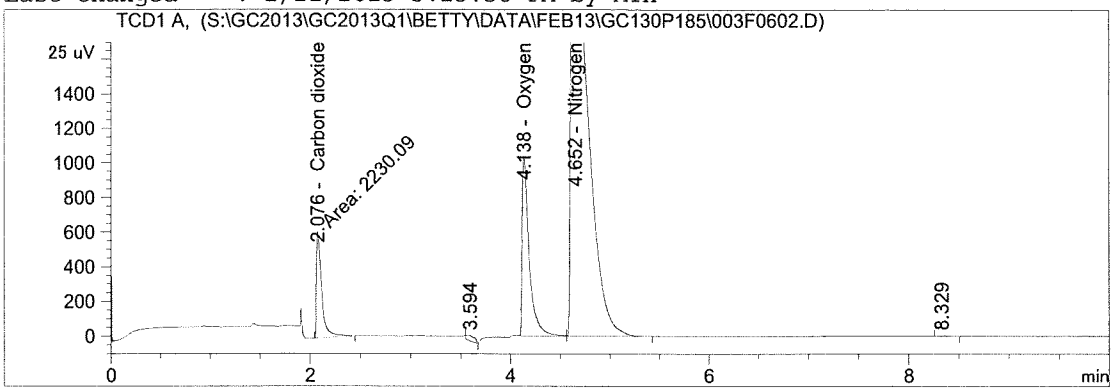

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\003F0602.D
Sample Name: Bag-1A 0213-39

```
==========================================================================
Acq. Operator    : MTH                                 Seq. Line :   6
Acq. Instrument  : Betty                               Location  : Vial 3
Injection Date   : 08-Feb-13, 19:50:35                     Inj   :   2
                                                       Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.076	MM	2230.09155	2.49609e-3	5.56651		Carbon dioxide
4.138	BB	5059.84424	2.63169e-3	13.31592		Oxygen
4.652	BB	2.87060e4	2.30186e-3	66.07729		Nitrogen
5.450		-	-	-		Methane

```
Totals :                                  84.95972

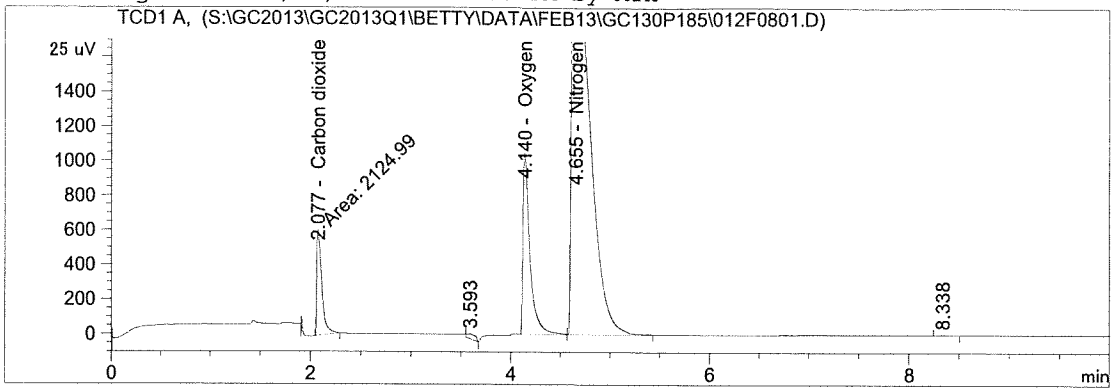

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\012F0801.D
Sample Name: Bag-2A 0213-39

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   8
Acq. Instrument  : Betty                                 Location : Vial 12
Injection Date   : 08-Feb-13, 20:37:36                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.077	MM	2124.98657	2.49775e-3	5.30768		Carbon dioxide
4.140	BB	5145.05615	2.62877e-3	13.52517		Oxygen
4.655	BB	2.89113e4	2.30166e-3	66.54388		Nitrogen
5.450		-	-	-		Methane

```
Totals :                                  85.37673

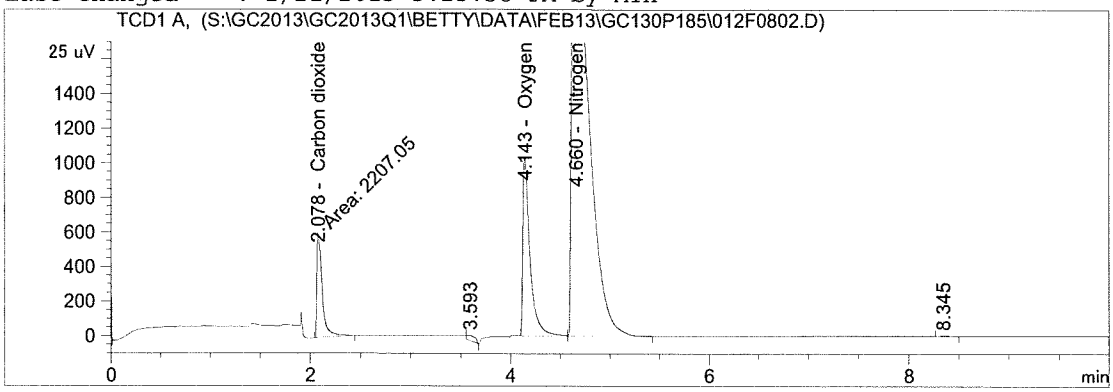

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\012F0802.D
Sample Name: Bag-2A 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   8
Acq. Instrument  : Betty                             Location : Vial 12
Injection Date   : 08-Feb-13, 20:53:12                   Inj :   2
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.078	MM	2207.04688	2.49644e-3	5.50976		Carbon dioxide
4.143	BB	5114.81982	2.62979e-3	13.45092		Oxygen
4.660	BB	2.87511e4	2.30182e-3	66.17973		Nitrogen
5.450		-	-	-		Methane

```
Totals :                                  85.14041

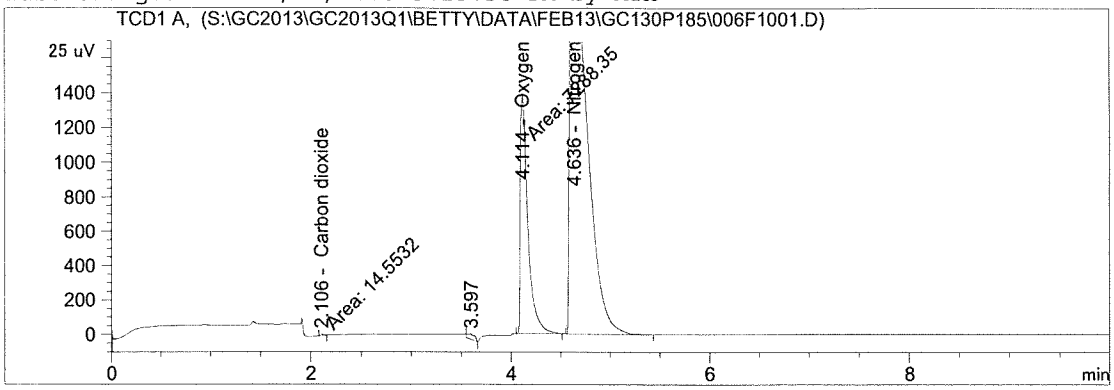

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\006F1001.D
Sample Name: Bag-3A 0213-39

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  10
Acq. Instrument  : Betty                                 Location : Vial 6
Injection Date   : 08-Feb-13, 21:39:53                       Inj :   1
                                                       Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
================================================================================
                          External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.106	MM	14.55323	3.02840e-3	4.40730e-2		Carbon dioxide
4.114	MM	7288.35107	2.57786e-3	18.78837		Oxygen
4.636	BB	2.73363e4	2.30333e-3	62.96464		Nitrogen
5.450		-	-	-		Methane
Totals :				81.79708		

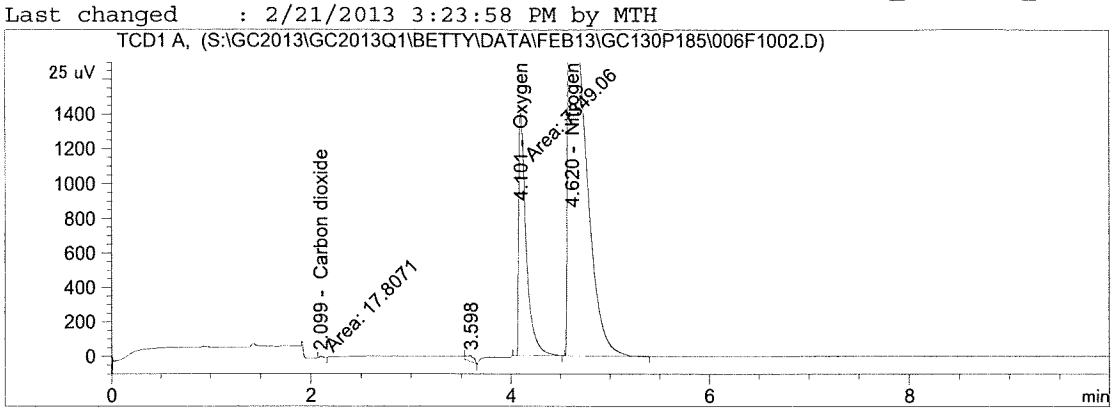
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                           *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\006F1002.D
Sample Name: Bag-3A 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  10
Acq. Instrument  : Betty                             Location : Vial 6
Injection Date   : 08-Feb-13, 21:55:26                    Inj :   2
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.099	MM	17.80710	3.02840e-3	5.39271e-2		Carbon dioxide
4.101	MM	7349.05811	2.57685e-3	18.93744		Oxygen
4.620	BB	2.74899e4	2.30316e-3	63.31363		Nitrogen
5.450		-	-	-		Methane
Totals :				82.30500		

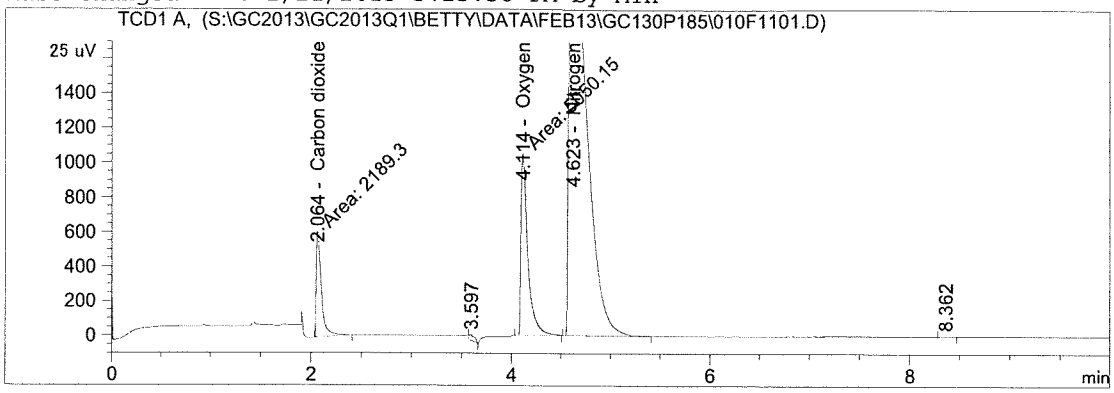
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\010F1101.D
Sample Name: Bag-3B 0213-39

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  11
Acq. Instrument  : Betty                               Location : Vial 10
Injection Date   : 08-Feb-13, 22:10:56                     Inj :   1
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.064 MM     2189.29932 2.49671e-3    5.46605     Carbon dioxide
  4.114 MM     5050.15381 2.63202e-3   13.29212     Oxygen
  4.623 BB     2.90113e4  2.30155e-3   66.77112     Nitrogen
  5.450            -          -          -         Methane

Totals :                                85.52929

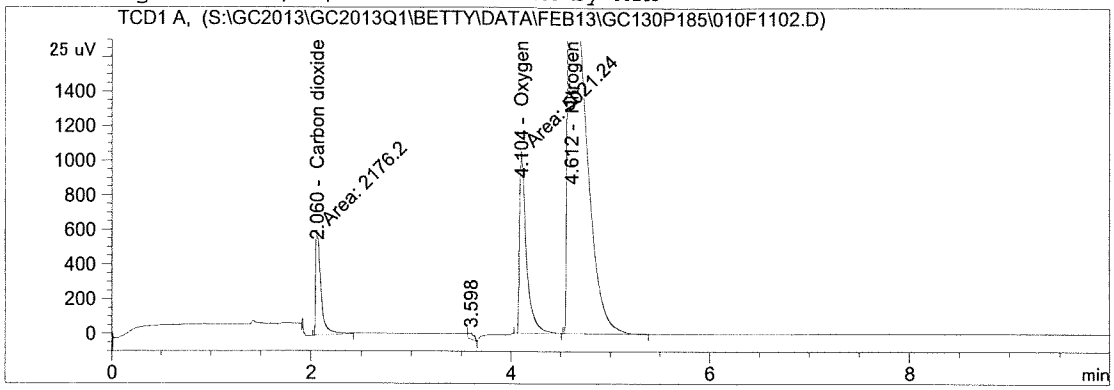

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\010F1102.D
Sample Name: Bag-3B 0213-39

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  11
Acq. Instrument  : Betty                                 Location : Vial 10
Injection Date   : 08-Feb-13, 22:26:26                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.060 MM     2176.20361 2.49692e-3    5.43380     Carbon dioxide
  4.104 MM     5021.24414 2.63304e-3   13.22113     Oxygen
  4.612 BB     2.88377e4  2.30173e-3   66.37667     Nitrogen
  5.450            -          -          -         Methane

Totals :                                85.03161

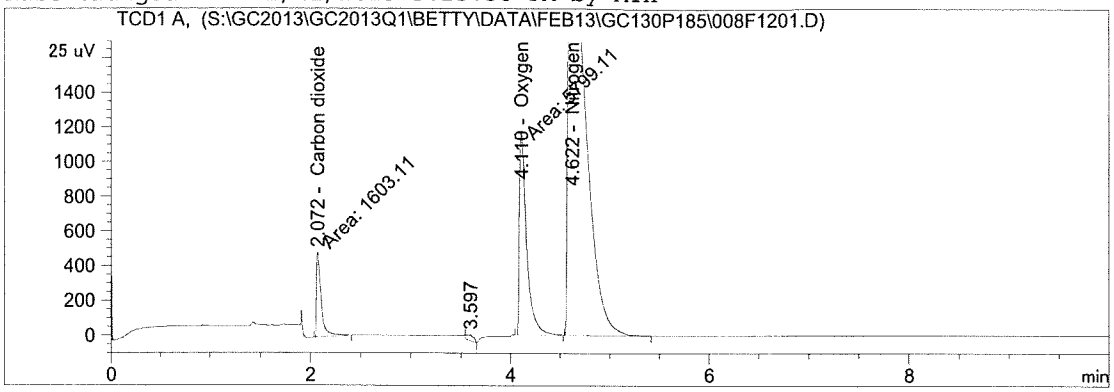

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\008F1201.D
Sample Name: Bag-4A 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  12
Acq. Instrument  : Betty                             Location : Vial 8
Injection Date   : 08-Feb-13, 22:41:52                    Inj :   1
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.072	MM	1603.10803	2.50920e-3	4.02251		Carbon dioxide
4.110	MM	5799.10645	2.60925e-3	15.13129		Oxygen
4.622	BB	2.88314e4	2.30174e-3	66.36223		Nitrogen
5.450		-	-	-		Methane
Totals :				85.51603		

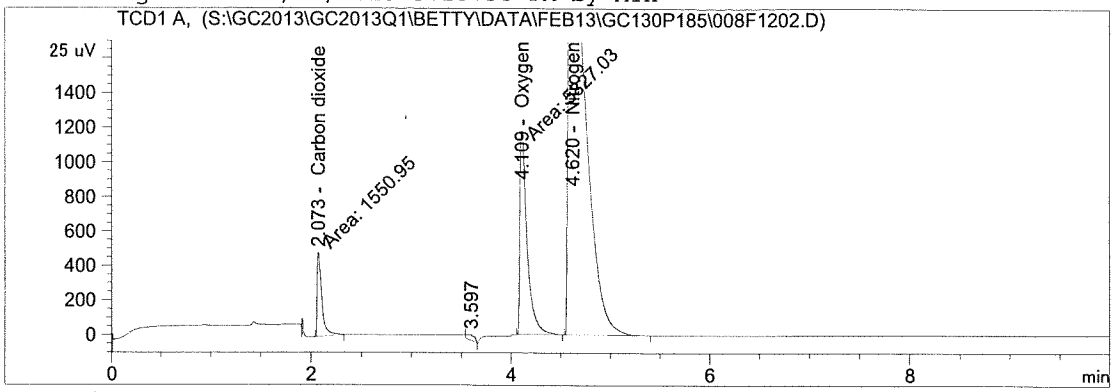
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\008F1202.D
Sample Name: Bag-4A 0213-39

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  12
Acq. Instrument  : Betty                                 Location : Vial 8
Injection Date   : 08-Feb-13, 22:57:21                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.073	MM	1550.94861	2.51076e-3	3.89406		Carbon dioxide
4.109	MM	5827.02637	2.60851e-3	15.19986		Oxygen
4.620	BB	2.90057e4	2.30156e-3	66.75837		Nitrogen
5.450		-	-	-		Methane

```
Totals :                                  85.85229

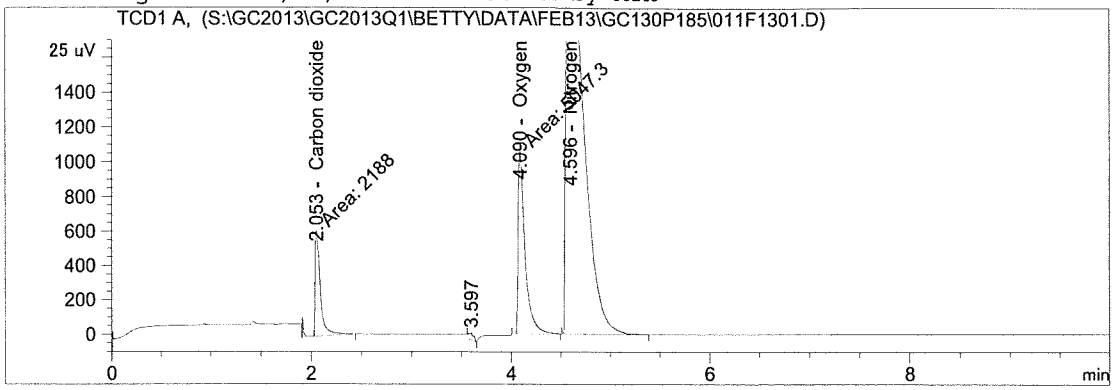

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\011F1301.D
Sample Name: Bag-4B 0213-39

```
==========================================================================
Acq. Operator    : MTH                                 Seq. Line :  13
Acq. Instrument  : Betty                               Location : Vial 11
Injection Date   : 08-Feb-13, 23:12:48                      Inj :   1
                                                    Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|-------------------
  2.053 MM     2187.99536 2.49673e-3    5.46284     Carbon dioxide
  4.090 MM     5047.29883 2.63212e-3   13.28511     Oxygen
  4.596 BB     2.87042e4  2.30186e-3   66.07315     Nitrogen
  5.450            -          -          -          Methane

Totals :                                84.82111

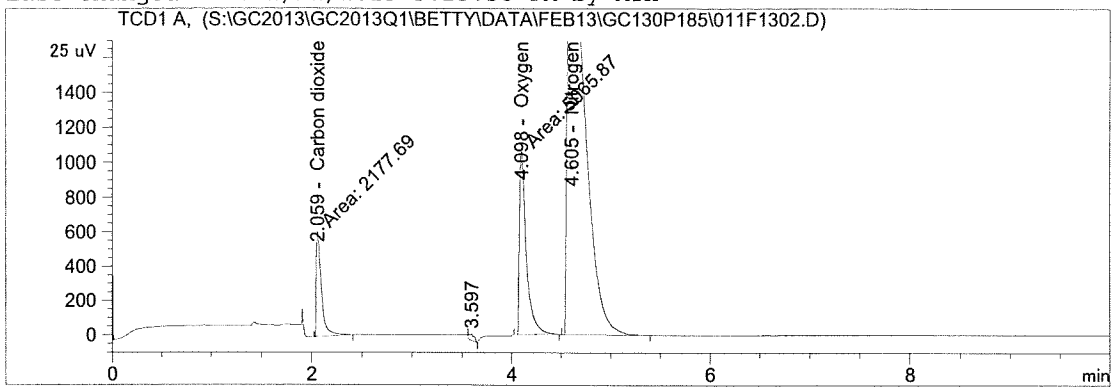

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\011F1302.D
Sample Name: Bag-4B 0213-39

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  13
Acq. Instrument  : Betty                                 Location : Vial 11
Injection Date   : 08-Feb-13, 23:28:14                       Inj :   2
                                                       Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
================================================================================
                          External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.059 MM     2177.69189 2.49689e-3    5.43747    Carbon dioxide
  4.098 MM     5065.86719 2.63148e-3   13.33071    Oxygen
  4.605 BB     2.88380e4  2.30173e-3   66.37728    Nitrogen
  5.450            -          -          -         Methane

Totals :                                85.14545

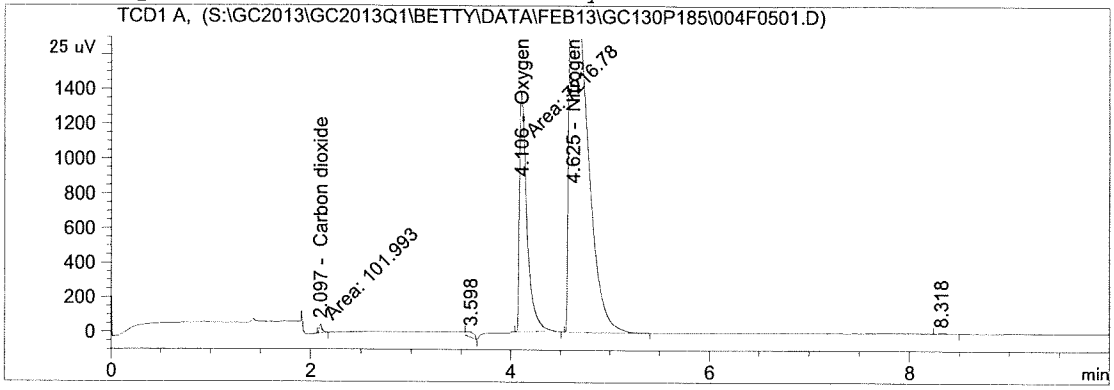

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                           *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\004F0501.D
Sample Name: Bag-5A 0213-39

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :   5
Acq. Instrument  : Betty                                 Location : Vial 4
Injection Date   : 08-Feb-13, 19:03:27                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.097	MM	101.99342	3.02840e-3	3.08877e-1		Carbon dioxide
4.106	MM	7216.77588	2.57907e-3	18.61260		Oxygen
4.625	BB	2.74330e4	2.30322e-3	63.18437		Nitrogen
5.450		-	-	-		Methane
Totals :				82.10585		

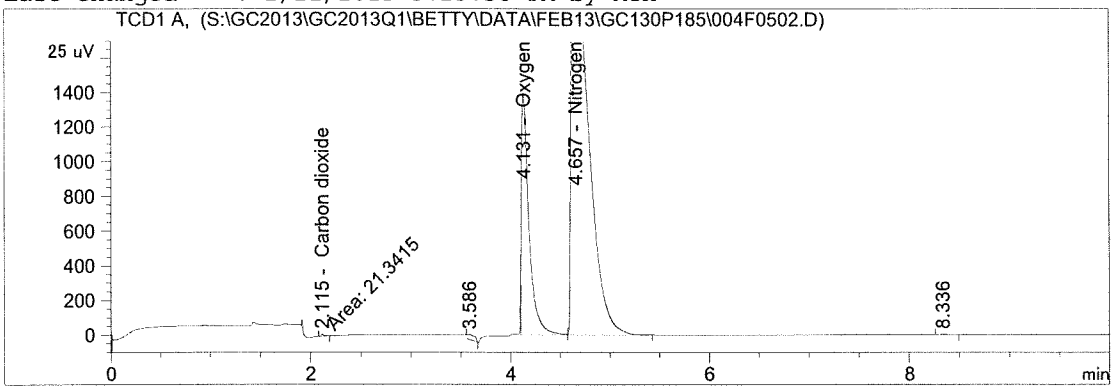
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\004F0502.D
Sample Name: Bag-5A 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   5
Acq. Instrument  : Betty                             Location : Vial 4
Injection Date   : 08-Feb-13, 19:19:11                   Inj :   2
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.115	MM	21.34146	3.02840e-3	6.46305e-2		Carbon dioxide
4.131	BV	7330.35889	2.57716e-3	18.89152		Oxygen
4.657	VB	2.72996e4	2.30337e-3	62.88107		Nitrogen
5.450		-	-	-		Methane

```
Totals :                                  81.83723

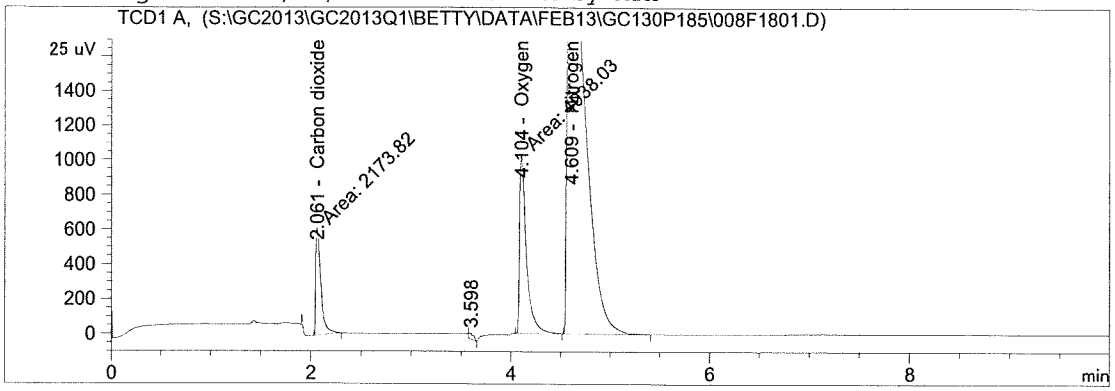

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\008F1801.D
Sample Name: Bag-5B 0213-39

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  18
Acq. Instrument  : Betty                                 Location : Vial 8
Injection Date   : 09-Feb-13, 11:06:49                       Inj :   1
                                                       Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.061	MM	2173.81592	2.49696e-3	5.42792		Carbon dioxide
4.104	MM	4938.03174	2.63603e-3	13.01679		Oxygen
4.609	BB	2.96780e4	2.30090e-3	68.28615		Nitrogen
5.450		-	-	-		Methane

```
Totals :                                  86.73087

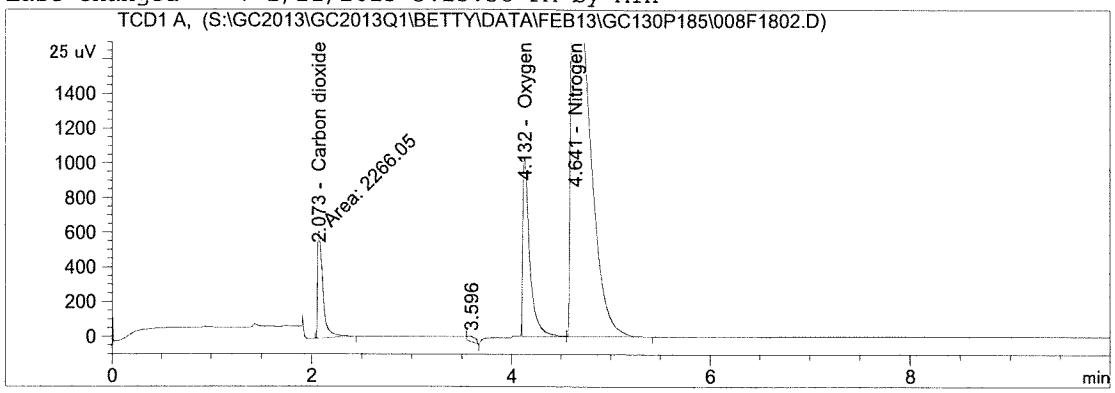

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\008F1802.D
Sample Name: Bag-5B 0213-39

```
======================================================================
Acq. Operator    : MTH                          Seq. Line :  18
Acq. Instrument  : Betty                         Location : Vial 8
Injection Date   : 09-Feb-13, 11:22:07               Inj :   2
                                                Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
======================================================================
                      External Standard Report
======================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.073	MM	2266.04858	2.49556e-3	5.65505		Carbon dioxide
4.132	BB	5031.46631	2.63268e-3	13.24623		Oxygen
4.641	BB	2.97566e4	2.30083e-3	68.46478		Nitrogen
5.450		-	-	-		Methane
Totals :				87.36607		

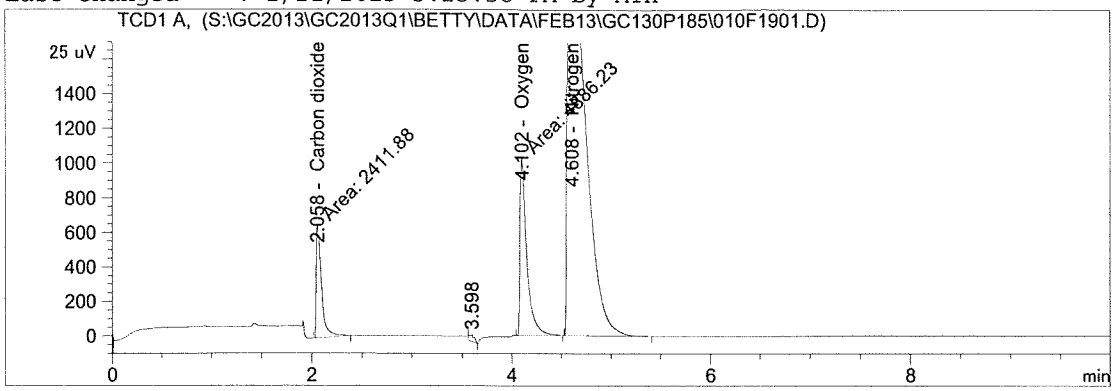
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

======================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\010F1901.D
Sample Name: Bag-6A 0213-39

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  19
Acq. Instrument  : Betty                               Location : Vial 10
Injection Date   : 09-Feb-13, 11:37:27                     Inj :   1
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,                                              Manual Integration
                                                               "II" (MTH)

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                [%]
-------|------|----------|----------|----------|--|------------------
  2.058 MM     2411.87988 2.49356e-3    6.01417    Carbon dioxide
  4.102 MM     4886.22656 2.63794e-3   12.88957    Oxygen
  4.608 BB     2.92252e4  2.30134e-3   67.25716    Nitrogen
  5.450            -          -          -         Methane

Totals :                                86.16091

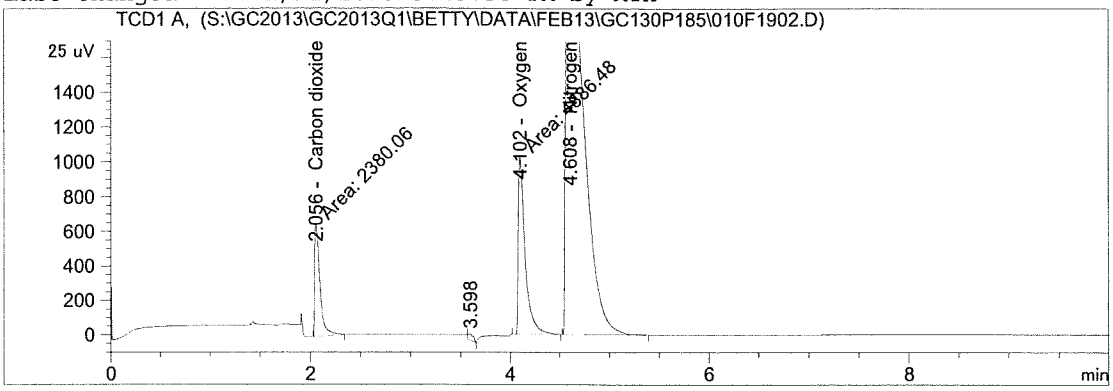

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\010F1902.D
Sample Name: Bag-6A 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  19
Acq. Instrument  : Betty                            Location : Vial 10
Injection Date   : 09-Feb-13, 11:52:49                   Inj :   2
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.056	MM	2380.06421	2.49398e-3	5.93582		Carbon dioxide
4.102	MM	4886.47510	2.63793e-3	12.89018		Oxygen
4.608	BB	2.91918e4	2.30138e-3	67.18124		Nitrogen
5.450		-	-	-		Methane

```
Totals :                                  86.00725

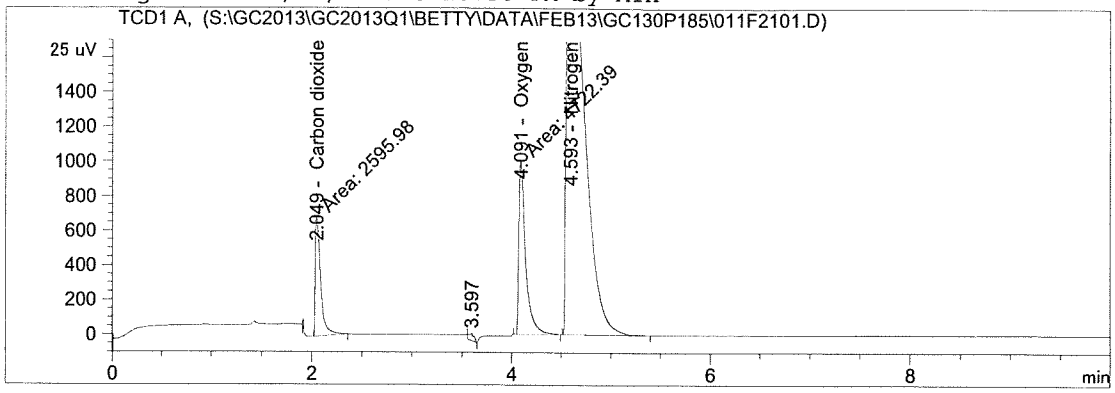

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\011F2101.D
Sample Name: Bag-7A 0213-39

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  21
Acq. Instrument  : Betty                                 Location : Vial 11
Injection Date   : 09-Feb-13, 12:39:00                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,                                          Manual Integration
                                                           "II" (MTH)
RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                [%]
-------|------|----------|----------|----------|--|------------------
  2.049 MM     2595.97900 2.49137e-3    6.46753     Carbon dioxide
  4.091 MM     4722.38721 2.64426e-3   12.48724     Oxygen
  4.593 BB     2.95548e4  2.30102e-3   68.00634     Nitrogen
  5.450            -          -          -          Methane

Totals :                                86.96111

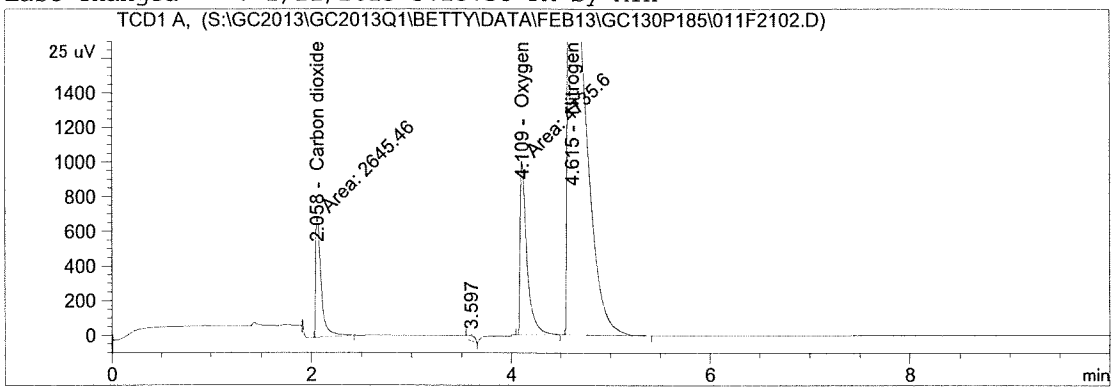

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\011F2102.D
Sample Name: Bag-7A 0213-39

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  21
Acq. Instrument  : Betty                               Location : Vial 11
Injection Date   : 09-Feb-13, 12:54:22                      Inj :   2
                                                    Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.058	MM	2645.45947	2.49083e-3	6.58938		Carbon dioxide
4.109	MM	4735.60254	2.64374e-3	12.51969		Oxygen
4.615	BB	2.96028e4	2.30098e-3	68.11530		Nitrogen
5.450		-	-	-		Methane

```
Totals :                                  87.22438

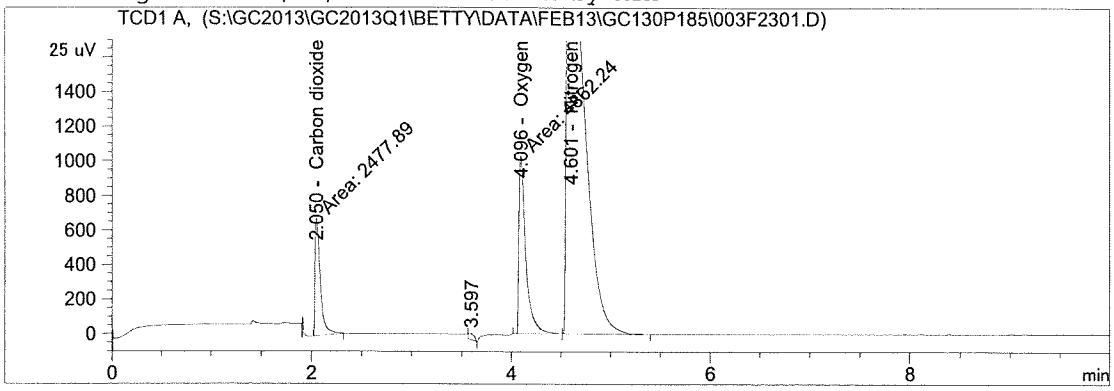

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\003F2301.D
Sample Name: Bag-8A 0213-39

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  23
Acq. Instrument  : Betty                               Location : Vial 3
Injection Date   : 09-Feb-13, 13:40:43                      Inj :   1
                                                    Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,                                                Manual Integration
                                                                 "II" (MTH)
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                [%]
-------|------|----------|----------|----------|--|------------------
  2.050 MM     2477.88989 2.49274e-3    6.17673     Carbon dioxide
  4.096 MM     4862.24463 2.63884e-3   12.83068     Oxygen
  4.601 BB     2.96859e4  2.30090e-3   68.30415     Nitrogen
  5.450            -          -          -         Methane

Totals :                                87.31156

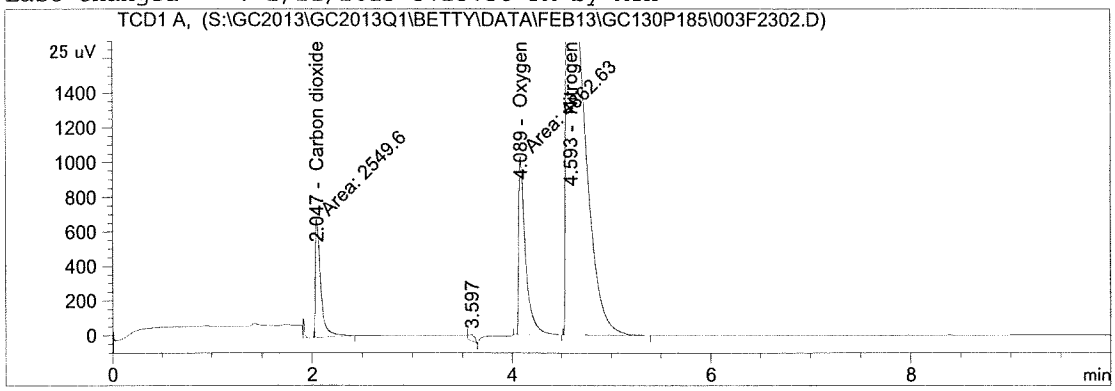

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\003F2302.D
Sample Name: Bag-8A 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  23
Acq. Instrument  : Betty                             Location : Vial 3
Injection Date   : 09-Feb-13, 13:56:10                    Inj :   2
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.047	MM	2549.60303	2.49189e-3	6.35333		Carbon dioxide
4.089	MM	4862.62695	2.63883e-3	12.83162		Oxygen
4.593	BB	2.97000e4	2.30088e-3	68.33621		Nitrogen
5.450		-	-	-		Methane

```
Totals :                                  87.52116

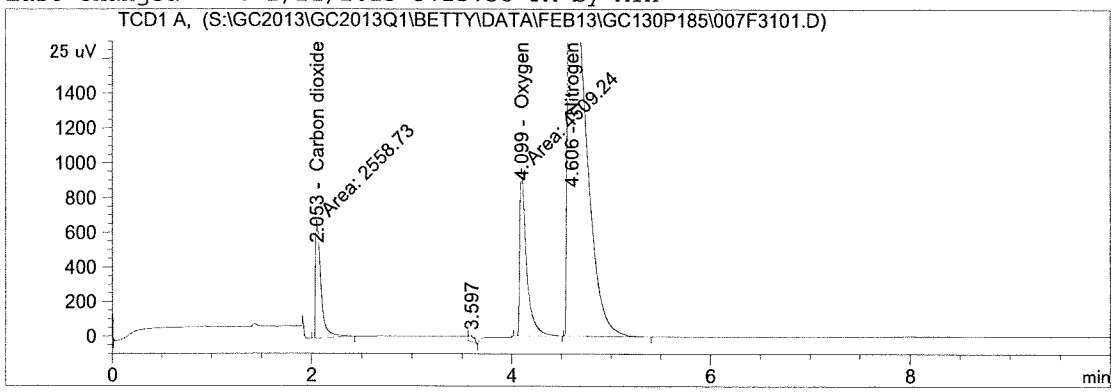

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\007F3101.D
Sample Name: Bag-9A 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  31
Acq. Instrument  : Betty                             Location : Vial 7
Injection Date   : 10-Feb-13, 15:00:19                   Inj :   1
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
                                                          Manual Integration
RetTime  Type     Area      Amt/Area    Amount   Grp   Name          "II" (MTH)
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.053 MM     2558.73315 2.49178e-3    6.37581    Carbon dioxide
  4.099 MM     4509.23975 2.65318e-3   11.96382    Oxygen
  4.606 BB     2.85498e4  2.30202e-3   65.72237    Nitrogen
  5.450            -          -          -         Methane

Totals :                                84.06201

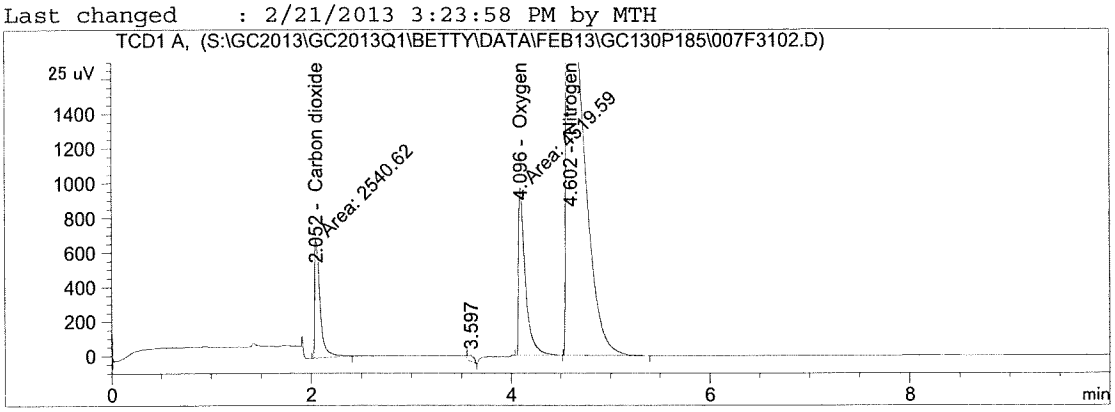

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\007F3102.D
Sample Name: Bag-9A 0213-39

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  31
Acq. Instrument  : Betty                               Location : Vial 7
Injection Date   : 10-Feb-13, 15:15:47                     Inj :   2
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.052	MM	2540.61646	2.49199e-3	6.33120		Carbon dioxide
4.096	MM	4519.59424	2.65273e-3	11.98925		Oxygen
4.602	BB	2.85527e4	2.30202e-3	65.72892		Nitrogen
5.450		-	-	-		Methane

```
Totals :                                  84.04937

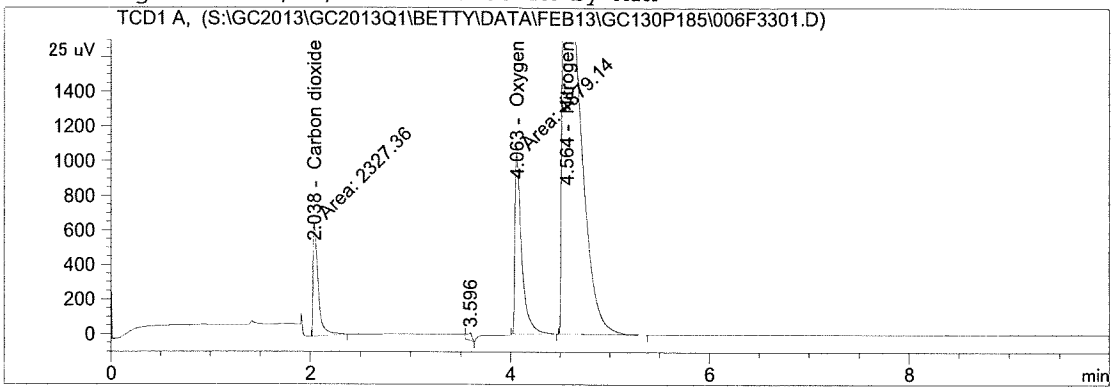

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\006F3301.D
Sample Name: Bag-10A 0213-39

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  33
Acq. Instrument  : Betty                             Location : Vial 6
Injection Date   : 10-Feb-13, 16:02:11                    Inj :   1
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.038	MM	2327.35522	2.49469e-3	5.80602		Carbon dioxide
4.063	MM	4879.13574	2.63821e-3	12.87216		Oxygen
4.564	BB	2.90665e4	2.30150e-3	66.89653		Nitrogen
5.450		-	-	-		Methane

Totals : 85.57472

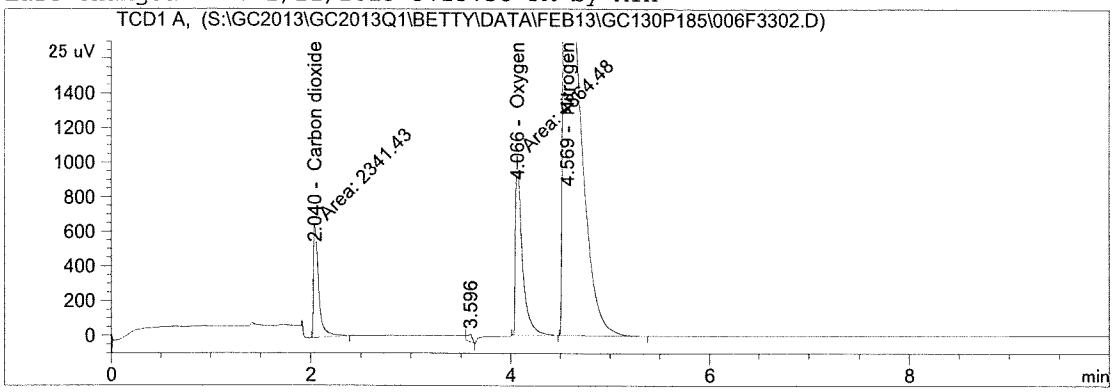
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\006F3302.D
Sample Name: Bag-10A 0213-39

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  33
Acq. Instrument  : Betty                                 Location : Vial 6
Injection Date   : 10-Feb-13, 16:17:42                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.040	MM	2341.42700	2.49449e-3	5.84068		Carbon dioxide
4.066	MM	4864.48340	2.63876e-3	12.83618		Oxygen
4.569	BB	2.89830e4	2.30158e-3	66.70680		Nitrogen
5.450		-	-	-		Methane

```
Totals :                                  85.38366

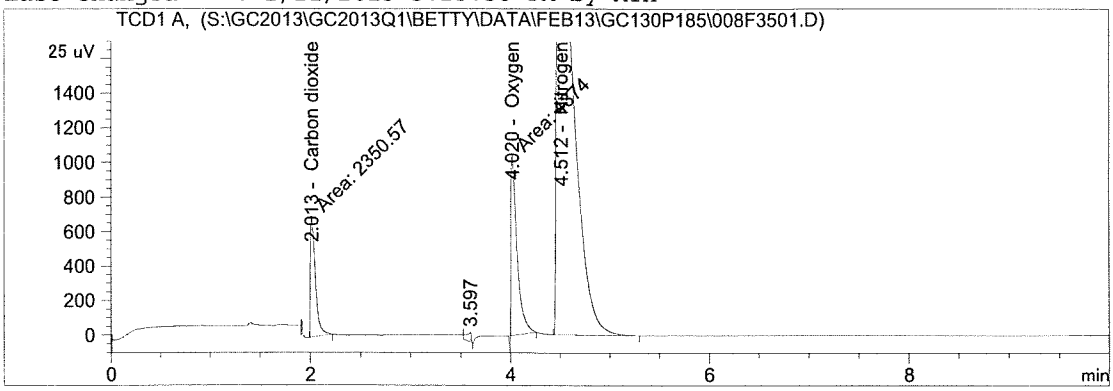

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\008F3501.D
Sample Name: Bag-11A 0213-39

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  35
Acq. Instrument  : Betty                               Location : Vial 8
Injection Date   : 10-Feb-13, 17:04:12                      Inj :   1
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.013	MM	2350.57324	2.49437e-3	5.86320		Carbon dioxide
4.020	MM	4373.99561	2.65929e-3	11.63171		Oxygen
4.512	BB	2.97763e4	2.30081e-3	68.50971		Nitrogen
5.450		-	-	-		Methane
Totals :				86.00463		

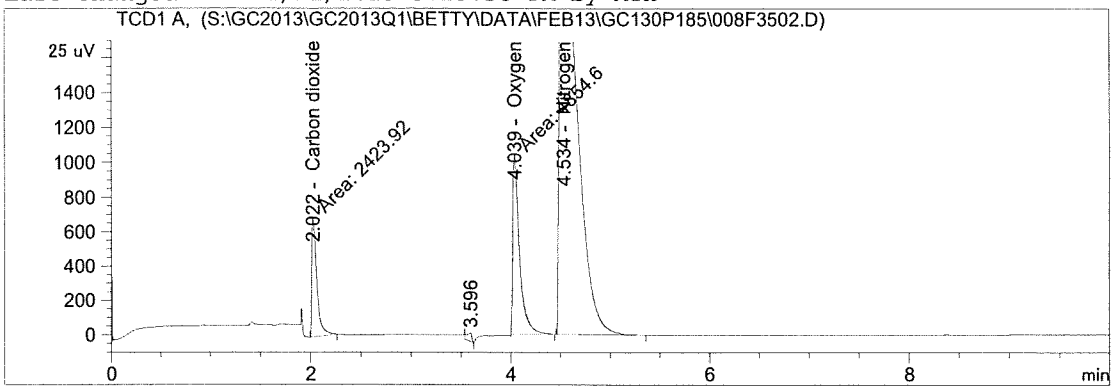
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\008F3502.D
Sample Name: Bag-11A 0213-39

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  35
Acq. Instrument  : Betty                               Location : Vial 8
Injection Date   : 10-Feb-13, 17:19:42                     Inj :   2
                                                    Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.022	MM	2423.91553	2.49341e-3	6.04381		Carbon dioxide
4.039	MM	4854.60400	2.63913e-3	12.81192		Oxygen
4.534	BB	2.99010e4	2.30069e-3	68.79305		Nitrogen
5.450		-	-	-		Methane

Totals : 87.64878

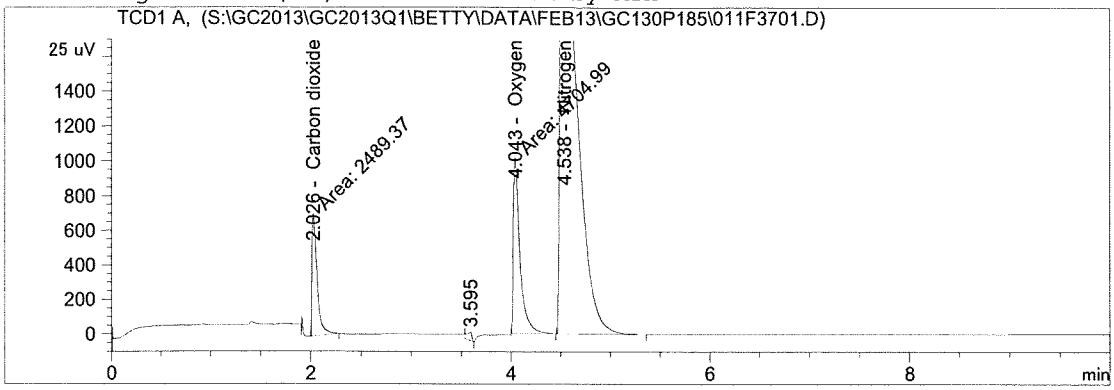
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\011F3701.D
Sample Name: Bag-12A 0213-39

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  37
Acq. Instrument  : Betty                               Location : Vial 11
Injection Date   : 10-Feb-13, 18:06:08                     Inj :   1
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.026	MM	2489.36670	2.49260e-3	6.20499		Carbon dioxide
4.043	MM	4704.98828	2.64496e-3	12.44452		Oxygen
4.538	BB	2.95840e4	2.30099e-3	68.07264		Nitrogen
5.450		-	-	-		Methane
Totals :				86.72215		

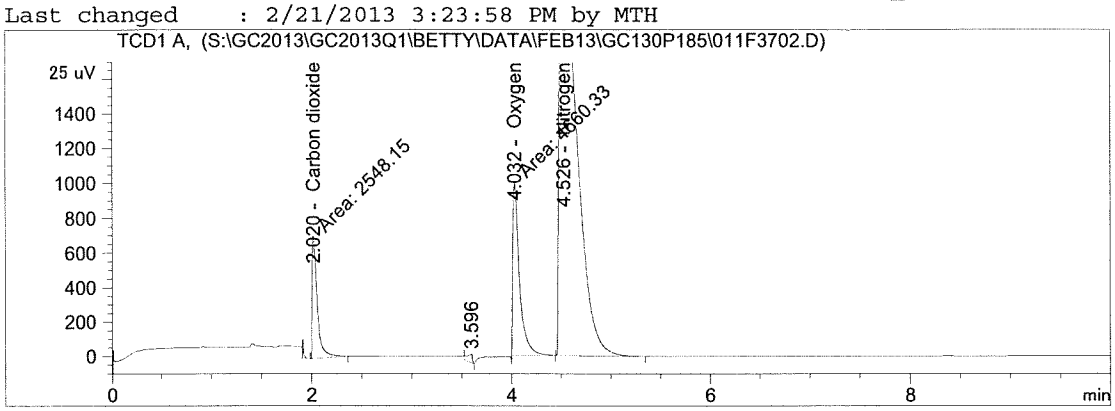
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\011F3702.D
Sample Name: Bag-12A 0213-39

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  37
Acq. Instrument  : Betty                               Location : Vial 11
Injection Date   : 10-Feb-13, 18:21:33                     Inj :   2
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.020	MM	2548.14868	2.49191e-3	6.34975		Carbon dioxide
4.032	MM	4660.33398	2.64678e-3	12.33486		Oxygen
4.526	BB	2.94489e4	2.30112e-3	67.76556		Nitrogen
5.450		-	-	-		Methane

```
Totals :                                  86.45016

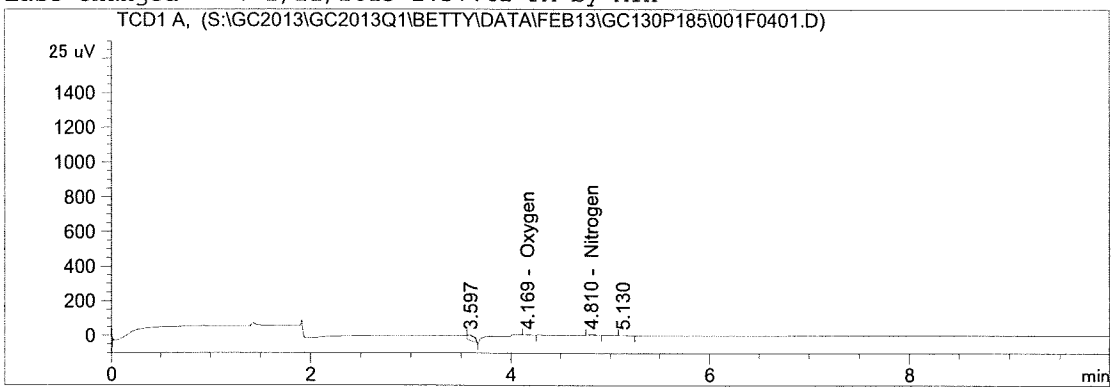

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\001F0401.D
Sample Name: He Blank

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :   4
Acq. Instrument  : Betty                               Location : Vial 1
Injection Date   : 08-Feb-13, 18:32:00                      Inj :   1
                                                    Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.119            -          -          -          Carbon dioxide
  3.907            -          -          -          Hydrogen
  4.169 BB       4.82336 3.30036e-3 1.59188e-2     Oxygen
  4.810 BB      18.66990 2.93146e-3 5.47300e-2     Nitrogen
  5.450            -          -          -          Methane
  7.904            -          -          -          Carbon monoxide

Totals :                              7.06488e-2

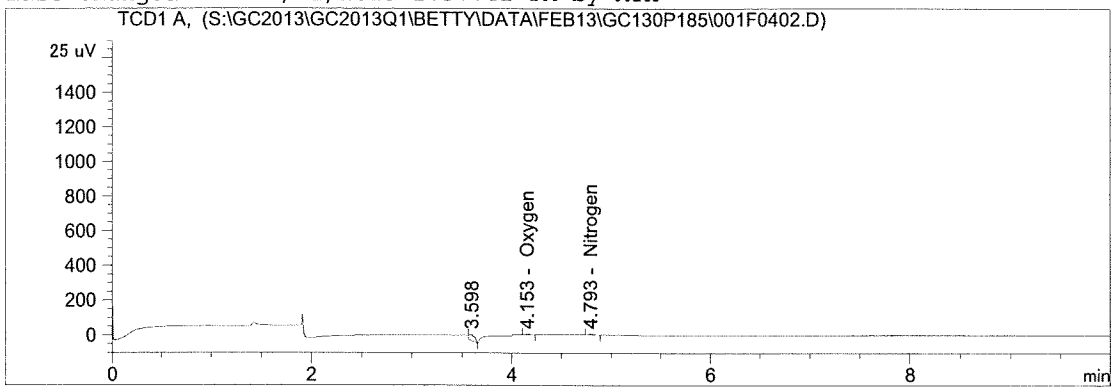

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\001F0402.D
Sample Name: He Blank

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :   4
Acq. Instrument  : Betty                               Location : Vial 1
Injection Date   : 08-Feb-13, 18:47:44                      Inj :   2
                                                    Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|-------------------
  2.119            -          -          -          Carbon dioxide
  3.907            -          -          -          Hydrogen
  4.153 BB       4.66920 3.30036e-3 1.54100e-2     Oxygen
  4.793 BB      18.38971 2.93146e-3 5.39086e-2     Nitrogen
  5.450            -          -          -          Methane
  7.904            -          -          -          Carbon monoxide

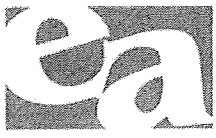
Totals :                              6.93187e-2


2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Calibration Curve Chromatograms



Calibration Table

Calib. Data Modified : 2/21/2013 3:23:44 PM

Rel. Reference Window : 2.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 2.000 %
Abs. Non-ref. Window : 0.200 min
Uncalibrated Peaks : not reported
Partial Calibration : Yes, identified peaks are recalibrated
Correct All Ret. Times: No, only for identified peaks

Curve Type : Linear
Origin : Connected
Weight : Quadratic (Amnt)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Signal 1: TCD1 A,
Signal 2: FID2 B,

RetTime [min]	Sig	Lvl	Amount [%]	Area	Amt/Area	Ref	Grp	Name
2.119	1	5	4.00000e-1	135.02638	2.96238e-3			Carbon dioxide
		6	1.00000	355.86853	2.81003e-3			
		7	3.48000	1386.78522	2.50940e-3			
		8	10.00000	4144.03247	2.41311e-3			
4.088	1	7	3.48000	1100.05554	3.16348e-3			Oxygen
		8	10.00000	3305.48779	3.02527e-3			
		22	99.99000	4.30846e4	2.32078e-3			
4.619	1	3	3.74000	1336.34198	2.79868e-3			Nitrogen
		4	10.10000	3601.41284	2.80445e-3			
		23	99.00000	4.62270e4	2.14161e-3			
5.450	1	1	3.20000e-1	72.01551	4.44349e-3			Methane
		2	8.00000e-1	187.77718	4.26037e-3			
		3	3.00000	708.82040	4.23238e-3			
		4	8.00000	1948.33533	4.10607e-3			

More compound-specific settings:

Compound: Carbon dioxide
Time Window : From 1.995 min To 2.319 min

Compound: Oxygen
Time Window : From 3.978 min To 4.278 min

Compound: Nitrogen
Time Window : From 4.499 min To 4.999 min

Compound: Methane
Time Window : From 5.350 min To 5.800 min

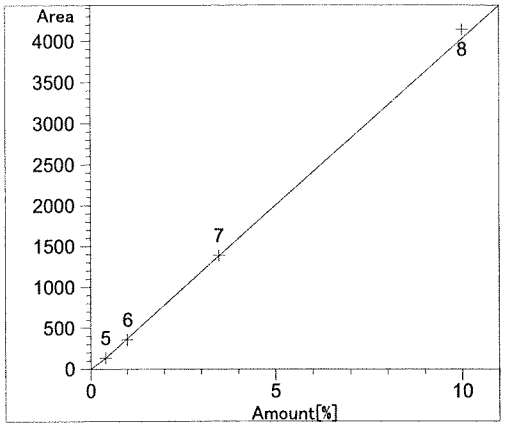
1 Warnings or Errors :

Warning : Overlapping peak time windows at 4.088 min, signal 1

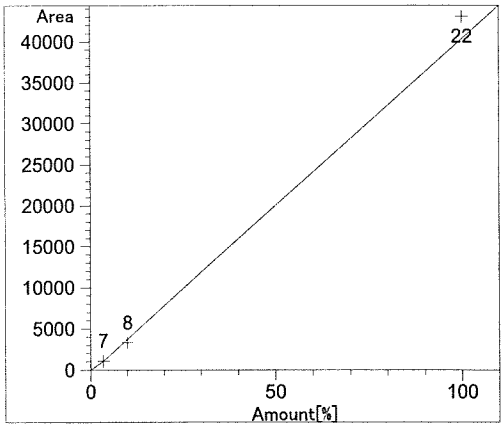
Peak Sum Table

No Entries in table

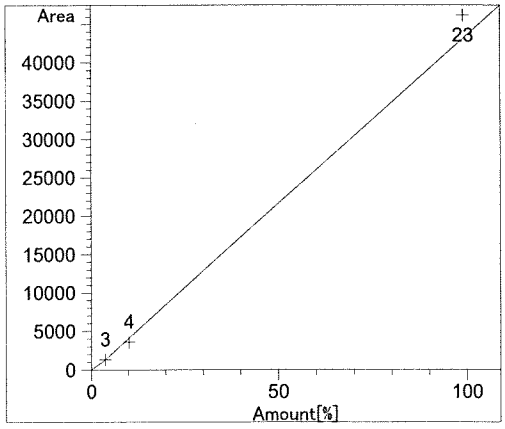
Calibration Curves



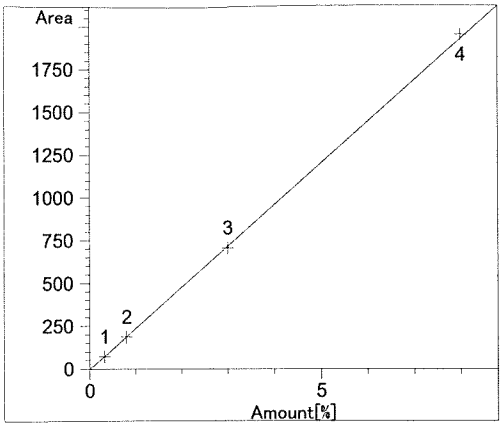
Carbon dioxide at exp. RT: 2.119
TCD1 A,
Correlation: 0.99910
Residual Std. Dev.: 81.61575
Formula: y = mx + b
m: 406.07886
b: -30.34870
x: Amount
y: Area
Calibration Level Weights:
Level 5 : 1
Level 6 : 0.16
Level 7 : 0.013212
Level 8 : 0.0016



Oxygen at exp. RT: 4.088
TCD1 A,
Correlation: 0.99412
Residual Std. Dev.: 2759.16489
Formula: y = mx + b
m: 407.22310
b: -362.70574
x: Amount
y: Area
Calibration Level Weights:
Level 7 : 1
Level 8 : 0.121104
Level 22 : 0.001211



Nitrogen at exp. RT: 4.619
TCD1 A,
Correlation: 0.99311
Residual Std. Dev.: 3071.28506
Formula: y = mx + b
m: 440.02855
b: -369.89040
x: Amount
y: Area
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.13712
Level 23 : 0.001427



Methane at exp. RT: 5.450
TCD1 A,
Correlation: 0.99992
Residual Std. Dev.: 18.09180
Formula: y = mx + b
m: 241.23510
b: -5.24587
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.011378
Level 4 : 0.0016

==========

Calibration Table

Calib. Data Modified : 2/21/2013 10:52:54 AM

Rel. Reference Window : 2.000 %
Abs. Reference Window : 0.000 min
Rel. Non-ref. Window : 2.000 %
Abs. Non-ref. Window : 0.200 min
Uncalibrated Peaks : not reported
Partial Calibration : Yes, identified peaks are recalibrated
Correct All Ret. Times: No, only for identified peaks

Curve Type : Linear
Origin : Connected
Weight : Quadratic (Amnt)

Recalibration Settings:
Average Response : Average all calibrations
Average Retention Time: Floating Average New 75%

Calibration Report Options :
Printout of recalibrations within a sequence:
Calibration Table after Recalibration
Normal Report after Recalibration
If the sequence is done with bracketing:
Results of first cycle (ending previous bracket)

Signal 1: TCD1 A,
Signal 2: FID2 B,

RetTime [min]	Sig	Lvl	Amount [%]	Area	Amt/Area	Ref	Grp	Name
2.119	1	5	4.00000e-1	135.02638	2.96238e-3			Carbon dioxide
		6	1.00000	355.86853	2.81003e-3			
		7	3.48000	1386.78522	2.50940e-3			
		8	10.00000	4144.03247	2.41311e-3			
3.907	1	1	3.40000e-1	7.23388	4.70011e-2			Hydrogen
		2	8.50000e-1	20.54236	4.13779e-2			
		3	3.19000	71.98270	4.43162e-2			
		4	8.10000	204.71364	3.95675e-2			
		21	99.00000	2535.91235	3.90392e-2			
4.088	1	7	3.48000	1100.05554	3.16348e-3			Oxygen
		8	10.00000	3305.48779	3.02527e-3			
		22	99.99000	4.30846e4	2.32078e-3			
4.619	1	3	3.74000	1336.34198	2.79868e-3			Nitrogen
		4	10.10000	3601.41284	2.80445e-3			
		23	99.00000	4.62270e4	2.14161e-3			
5.450	1	1	3.20000e-1	72.01551	4.44349e-3			Methane
		2	8.00000e-1	187.77718	4.26037e-3			
		3	3.00000	708.82040	4.23238e-3			
		4	8.00000	1948.33533	4.10607e-3			
7.904	1	1	4.00000e-1	129.59682	3.08650e-3			Carbon monoxide
		2	1.01000	332.00755	3.04210e-3			
		3	3.79000	1248.99329	3.03444e-3			
		4	10.00000	3426.00964	2.91885e-3			

More compound-specific settings:

Compound: Carbon dioxide
Time Window : From 1.995 min To 2.319 min

Compound: Hydrogen
Time Window : From 3.767 min To 4.007 min

Compound: Oxygen
  Time Window : From 3.978 min To 4.278 min

Compound: Nitrogen
  Time Window : From 4.499 min To 4.999 min

Compound: Methane
  Time Window : From 5.350 min To 5.800 min

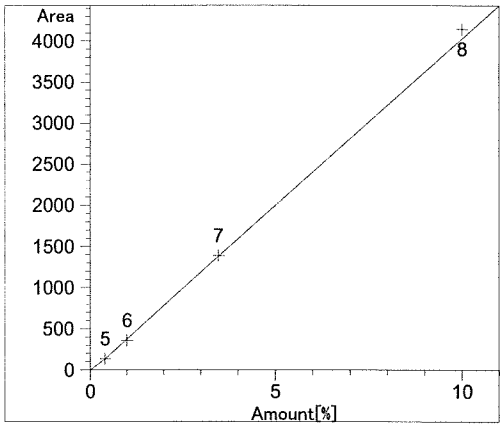
1 Warnings or Errors :

Warning : Overlapping peak time windows at 3.907 min, signal 1

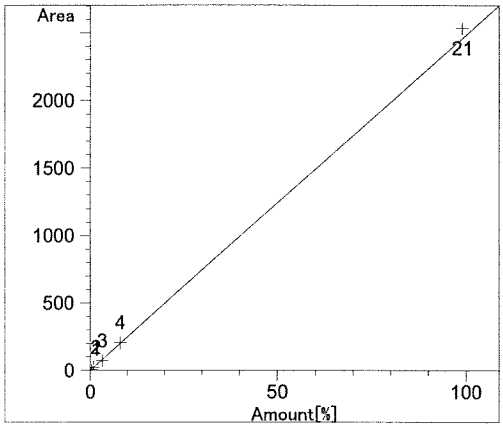
==========
Peak Sum Table
==========

No Entries in table

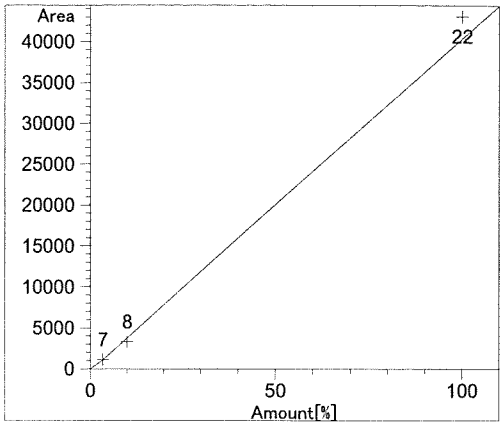
==========
==========
Calibration Curves
==========



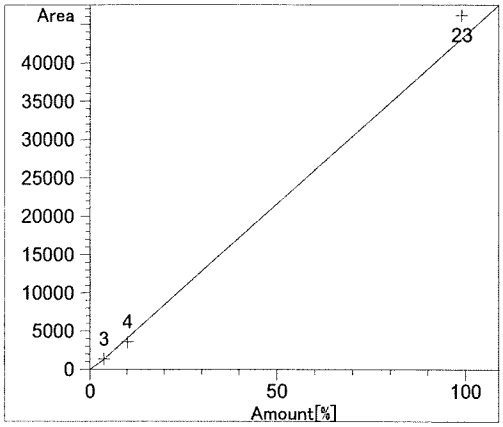
Carbon dioxide at exp. RT: 2.119
TCD1 A,
Correlation: 0.99910
Residual Std. Dev.: 81.61575
Formula: y = mx + b
m: 406.07886
b: -30.34870
x: Amount
y: Area
Calibration Level Weights:
Level 5 : 1
Level 6 : 0.16
Level 7 : 0.013212
Level 8 : 0.0016



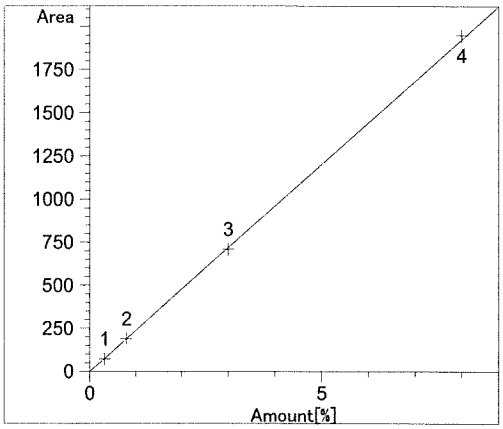
Hydrogen at exp. RT: 3.907
TCD1 A,
Correlation: 0.99860
Residual Std. Dev.: 44.03251
Formula: y = mx + b
m: 24.86076
b: -1.18442
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.01136
Level 4 : 0.001762
Level 21 : 0.000012



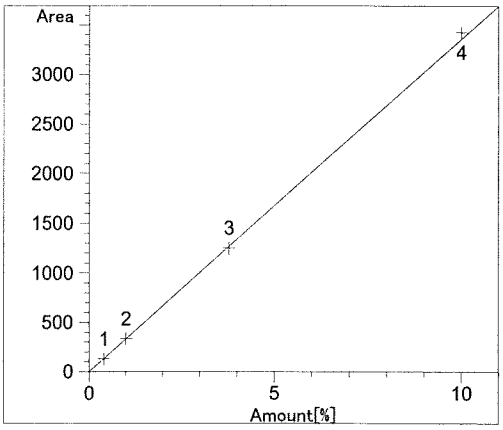
Oxygen at exp. RT: 4.088
TCD1 A,
Correlation: 0.99412
Residual Std. Dev.: 2759.16489
Formula: y = mx + b
m: 407.22310
b: -362.70574
x: Amount
y: Area
Calibration Level Weights:
Level 7 : 1
Level 8 : 0.121104
Level 22 : 0.001211



Nitrogen at exp. RT: 4.619
TCD1 A,
Correlation: 0.99311
Residual Std. Dev.: 3071.28506
Formula: y = mx + b
m: 440.02855
b: -369.89040
x: Amount
y: Area
Calibration Level Weights:
Level 3 : 1
Level 4 : 0.13712
Level 23 : 0.001427



Methane at exp. RT: 5.450
TCD1 A,
Correlation: 0.99992
Residual Std. Dev.: 18.09180
Formula: y = mx + b
m: 241.23510
b: -5.24587
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.16
Level 3 : 0.011378
Level 4 : 0.0016

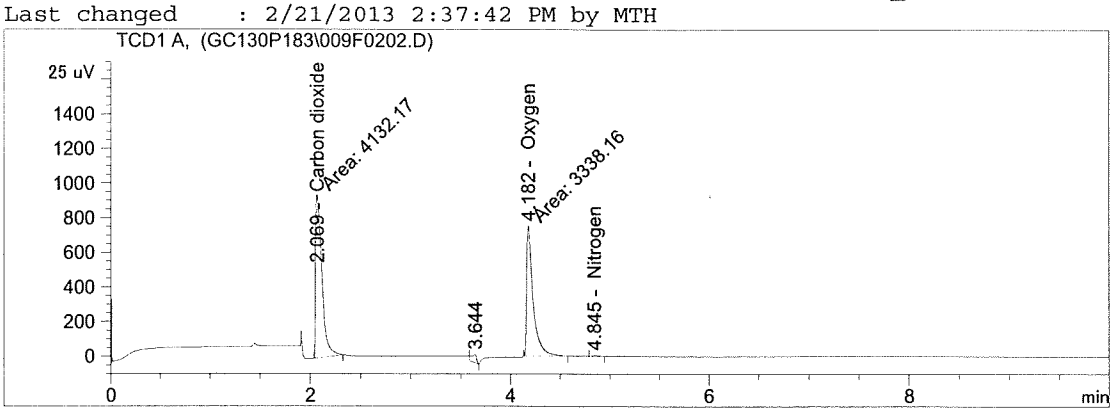


Carbon monoxide at exp. RT: 7.904
TCD1 A,
Correlation: 0.99982
Residual Std. Dev.: 49.15339
Formula: y = mx + b
m: 336.52816
b: -5.51372
x: Amount
y: Area
Calibration Level Weights:
Level 1 : 1
Level 2 : 0.156847
Level 3 : 0.011139
Level 4 : 0.0016

==========

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0202.D
Sample Name: gc130p177 #FG8 ENV(1=0,3=358.97)

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :   2
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 06-Feb-13, 15:59:39                     Inj :   2
                                                     Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs
```

Manual Integration
"II" (MTH)

```
Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.069 MM     4132.16748 2.48066e-3   10.25051    Carbon dioxide
  3.907            -          -          -         Hydrogen
  4.182 MM     3338.15576 2.72247e-3    9.08804    Oxygen
  4.845 BB       15.46593 2.93146e-3 4.53377e-2    Nitrogen
  5.450            -          -          -         Methane
  7.904            -          -          -         Carbon monoxide

Totals :                                19.38389

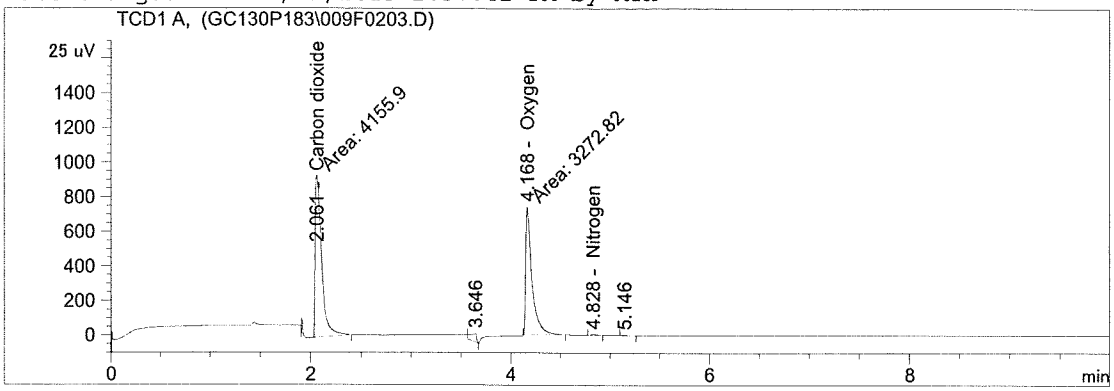

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0203.D
Sample Name: gc130p177 #FG8 ENV(1=0,3=358.97)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   2
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 06-Feb-13, 16:17:22                   Inj :   3
                                                   Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.061	MM	4155.89746	2.48056e-3	10.30895		Carbon dioxide
3.907		-	-	-		Hydrogen
4.168	MM	3272.81982	2.72780e-3	8.92760		Oxygen
4.828	BB	14.65819	2.93146e-3	4.29698e-2		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide
Totals :				19.27952		

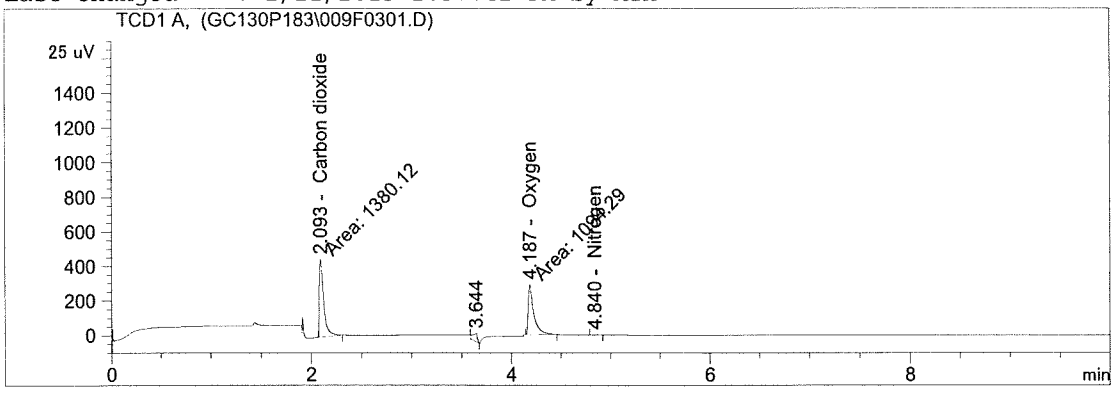
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0301.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   3
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 06-Feb-13, 16:35:06                   Inj :   1
                                                   Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.093	MM	1380.11987	2.51673e-3	3.47339		Carbon dioxide
3.907		-	-	-		Hydrogen
4.187	MM	1094.29077	3.26959e-3	3.57788		Oxygen
4.840	BB	7.59676	2.93146e-3	2.22696e-2		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide

```
Totals :                                  7.07354

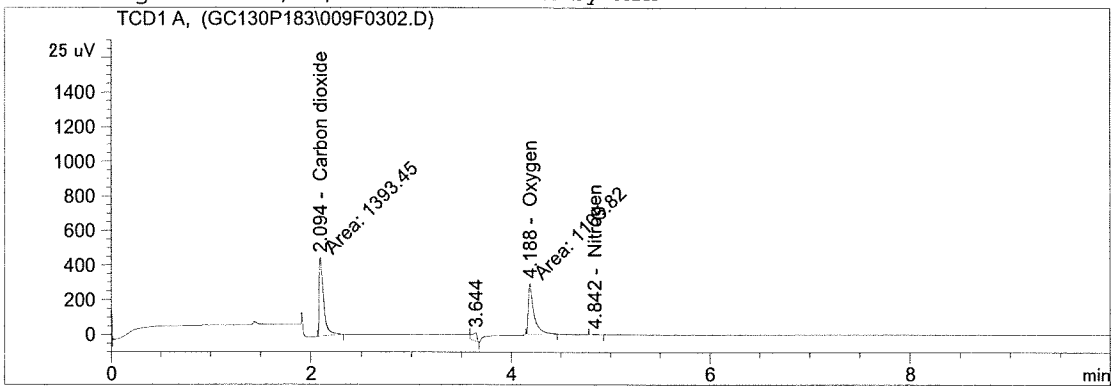

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0302.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :   3
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 06-Feb-13, 16:52:50                     Inj :   2
                                                    Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.094	MM	1393.45056	2.51621e-3	3.50621		Carbon dioxide
3.907		-	-	-		Hydrogen
4.188	MM	1105.82031	3.26110e-3	3.60620		Oxygen
4.842	BB	7.49318	2.93146e-3	2.19659e-2		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide

Totals : 7.13438

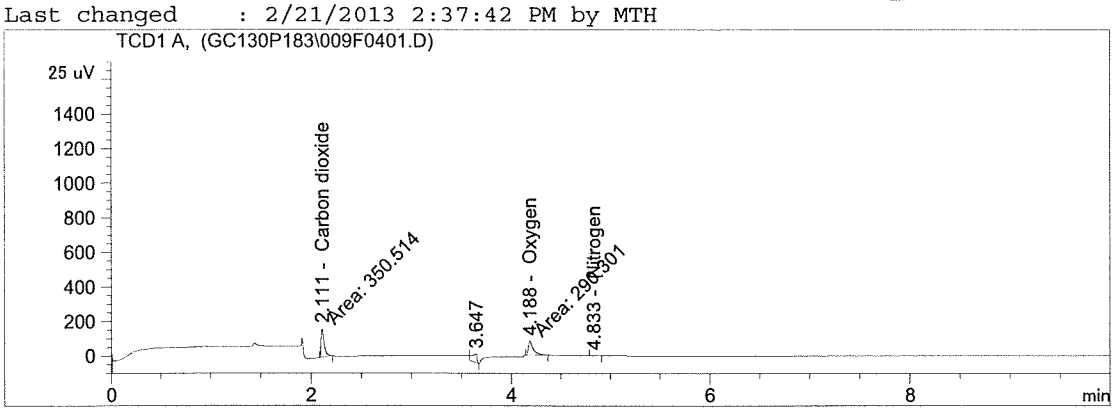
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0401.D
Sample Name: gc130p177 #FG6 ENV(1=1271.99,3=159.54)

```
==========================================================================
Acq. Operator    : MTH                          Seq. Line :   4
Acq. Instrument  : Betty                         Location : Vial 9
Injection Date   : 06-Feb-13, 17:10:36                Inj :   1
                                                Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                      External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.111	MM	350.51407	2.67579e-3	9.37903e-1		Carbon dioxide
3.907		-	-	-		Hydrogen
4.188	MM	290.30069	3.30036e-3	9.58097e-1		Oxygen
4.833	BB	5.27771	2.93146e-3	1.54714e-2		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide
Totals :				1.91147		

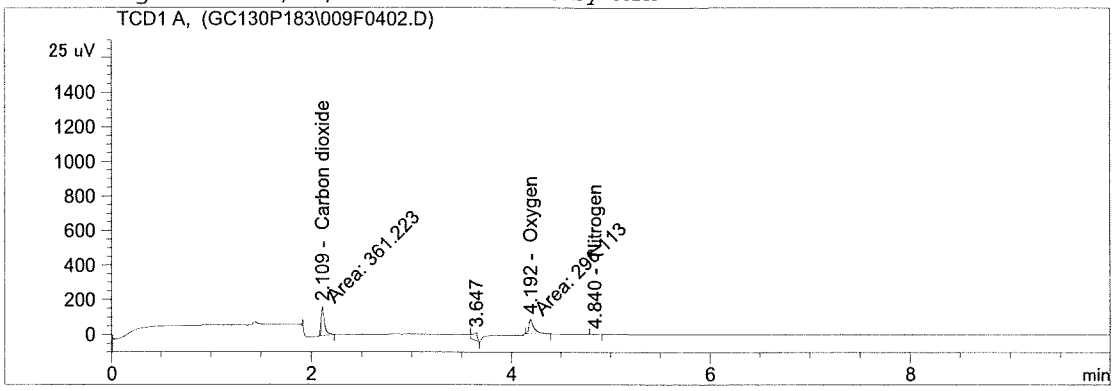
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0402.D
Sample Name: gc130p177 #FG6 ENV(1=1271.99,3=159.54)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   4
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 06-Feb-13, 17:28:21                       Inj :   2
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                          External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.109	MM	361.22299	2.66947e-3	9.64275e-1		Carbon dioxide
3.907		-	-	-		Hydrogen
4.192	MM	296.11310	3.30036e-3	9.77280e-1		Oxygen
4.840	BB	5.19381	2.93146e-3	1.52254e-2		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide

Totals : 1.95678

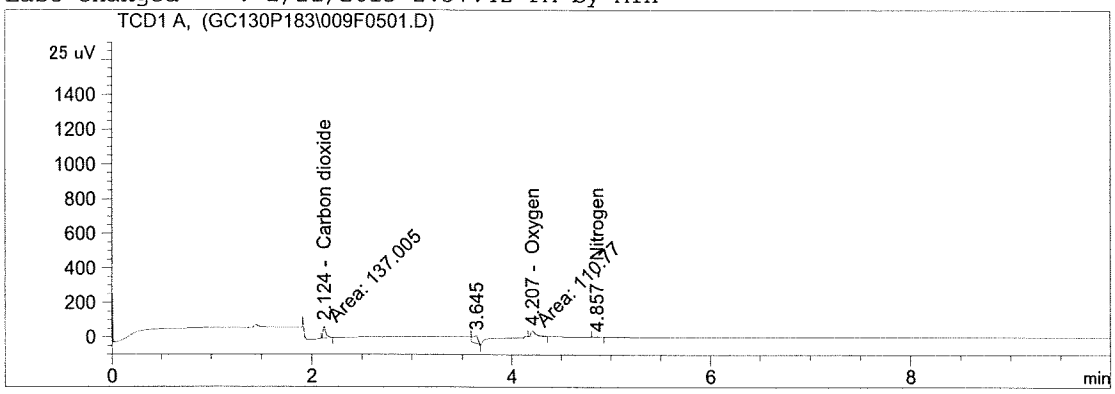
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

```
================================================================================
                           *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0501.D
Sample Name: gc130p177 #FG5 ENV(1=3391.99,3=159.54)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   5
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 06-Feb-13, 17:46:07                   Inj :   1
                                                   Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.124	MM	137.00536	3.00807e-3	4.12122e-1		Carbon dioxide
3.907		-	-	-		Hydrogen
4.207	MM	110.77024	3.30036e-3	3.65582e-1		Oxygen
4.857	BB	5.01959	2.93146e-3	1.47147e-2		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide

Totals : 7.92418e-1

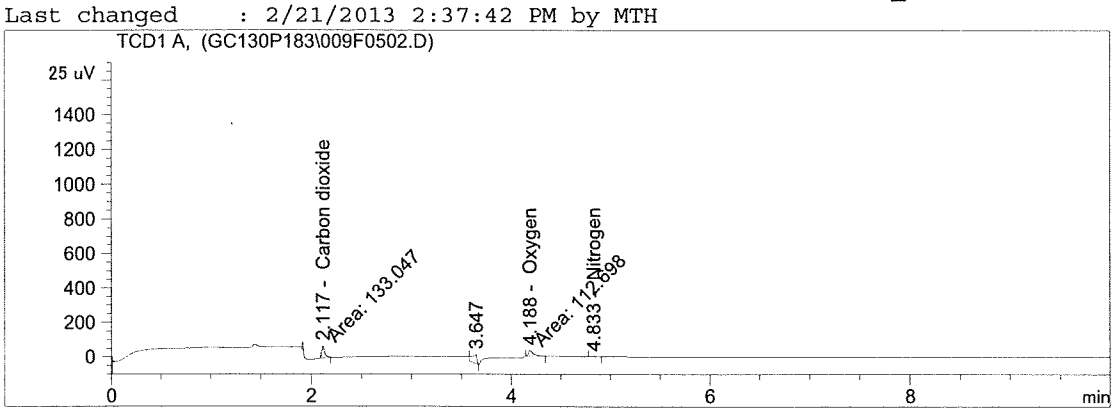
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0502.D
Sample Name: gc130p177 #FG5 ENV(1=3391.99,3=159.54)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   5
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 06-Feb-13, 18:03:49                   Inj :   2
                                                   Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.117	MM	133.04741	3.02430e-3	4.02375e-1		Carbon dioxide
3.907		-	-	-		Hydrogen
4.188	MM	112.69788	3.30036e-3	3.71944e-1		Oxygen
4.833	BB	4.65368	2.93146e-3	1.36421e-2		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide

Totals : 7.87961e-1

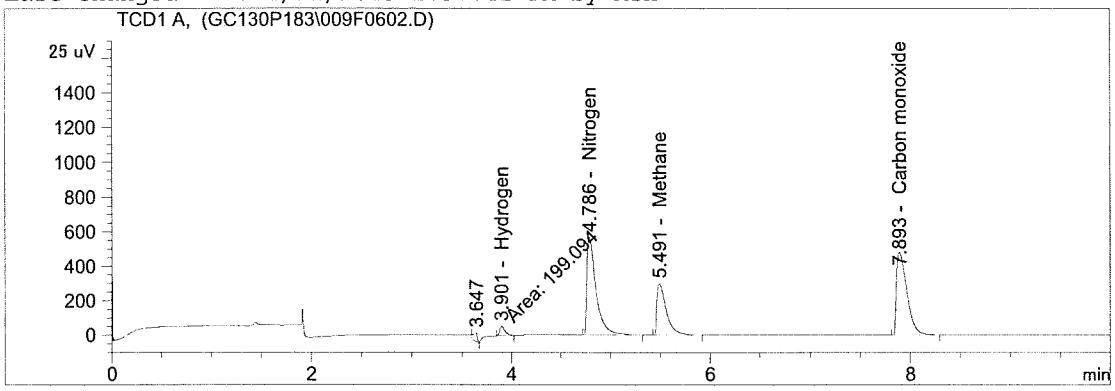
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0602.D
Sample Name: gc130p177 #FG4 ENV(1=0,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   6
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 06-Feb-13, 18:39:14                       Inj :   2
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.119		-	-	-		Carbon dioxide
3.901	MM	199.09418	4.04633e-2	8.05601		Hydrogen
4.088		-	-	-		Oxygen
4.786	BB	3586.89233	2.50693e-3	8.99210		Nitrogen
5.491	BB	1940.46777	4.15654e-3	8.06563		Methane
7.893	BB	3413.00244	2.97632e-3	10.15819		Carbon monoxide

Totals : 35.27194

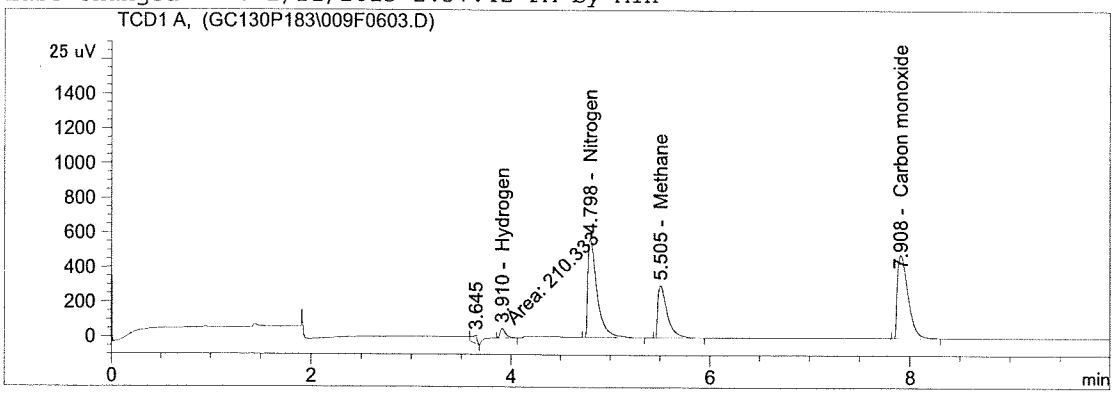
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0603.D
Sample Name: gc130p177 #FG4 ENV(1=0,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   6
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 06-Feb-13, 18:56:53                       Inj :   3
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs
```

Manual Integration
"II" (MTH)

Signal 1: TCD1 A,

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.119		-	-	-		Carbon dioxide
3.910	MM	210.33310	4.04505e-2	8.50809		Hydrogen
4.088		-	-	-		Oxygen
4.798	BB	3615.93335	2.50505e-3	9.05810		Nitrogen
5.505	BB	1956.20288	4.15645e-3	8.13086		Methane
7.908	BB	3439.01685	2.97628e-3	10.23549		Carbon monoxide

Totals : 35.93254

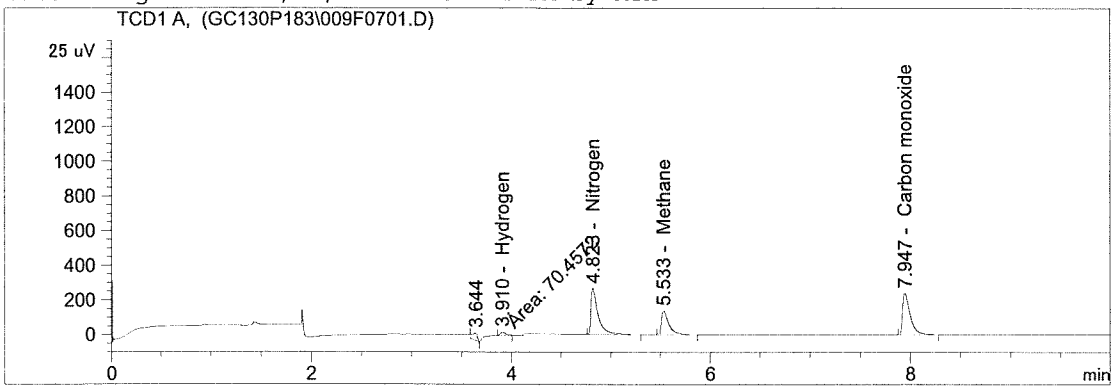
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0701.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   7
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 06-Feb-13, 19:14:30                   Inj :   1
                                                   Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.119		-	-	-		Carbon dioxide
3.910	MM	70.45720	4.09002e-2	2.88172		Hydrogen
4.088		-	-	-		Oxygen
4.823	BB	1339.89612	2.89995e-3	3.88563		Nitrogen
5.533	BB	710.78015	4.17593e-3	2.96817		Methane
7.947	BB	1251.09705	2.98462e-3	3.73404		Carbon monoxide
Totals :				13.46955		

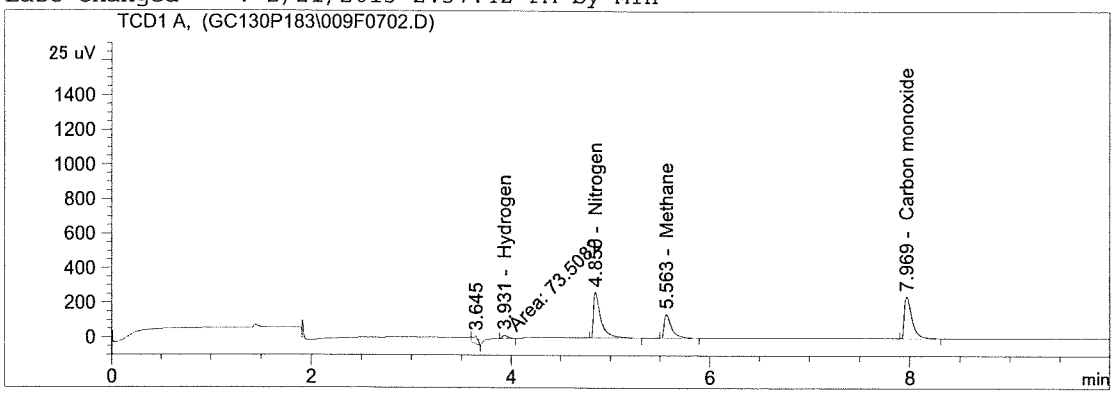
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0702.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   7
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 06-Feb-13, 19:32:07                       Inj :   2
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
                                                          Manual Integration
RetTime  Type     Area      Amt/Area    Amount   Grp   Name          "II" (MTH)
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.119            -           -          -         Carbon dioxide
  3.931 MM       73.50821 4.08722e-2    3.00444     Hydrogen
  4.088            -           -          -         Oxygen
  4.850 BB     1332.78784 2.90329e-3    3.86947     Nitrogen
  5.563 BB      706.86066 4.17610e-3    2.95192     Methane
  7.969 BB     1246.88953 2.98466e-3    3.72154     Carbon monoxide

Totals :                                13.54737

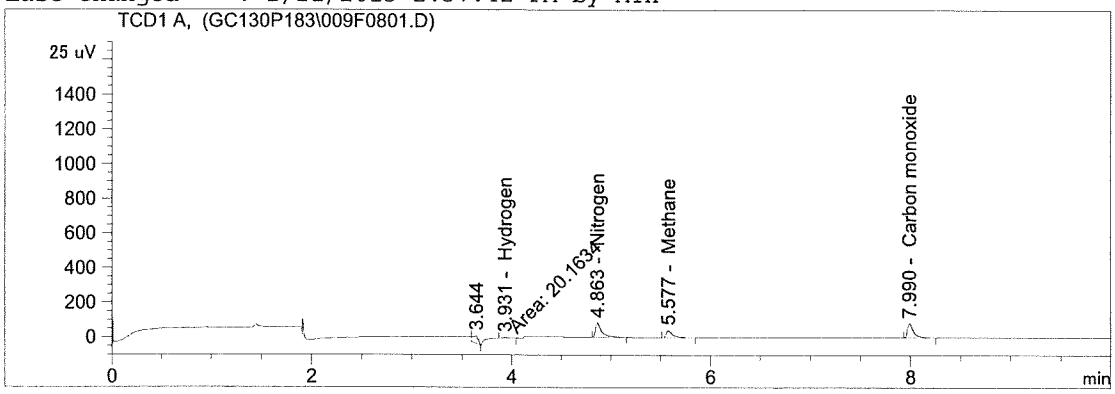

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0801.D
Sample Name: gc130p177 #FG2 ENV(1=1271.99,2=167.43)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   8
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 06-Feb-13, 19:49:41                    Inj :   1
                                                   Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.119		-	-	-		Carbon dioxide
3.931	MM	20.16338	4.25868e-2	8.58695e-1		Hydrogen
4.088		-	-	-		Oxygen
4.863	BB	342.82571	2.93146e-3	1.00498		Nitrogen
5.577	BB	188.25728	4.26085e-3	8.02135e-1		Methane
7.990	BB	332.32153	3.02082e-3	1.00388		Carbon monoxide
Totals :				3.66969		

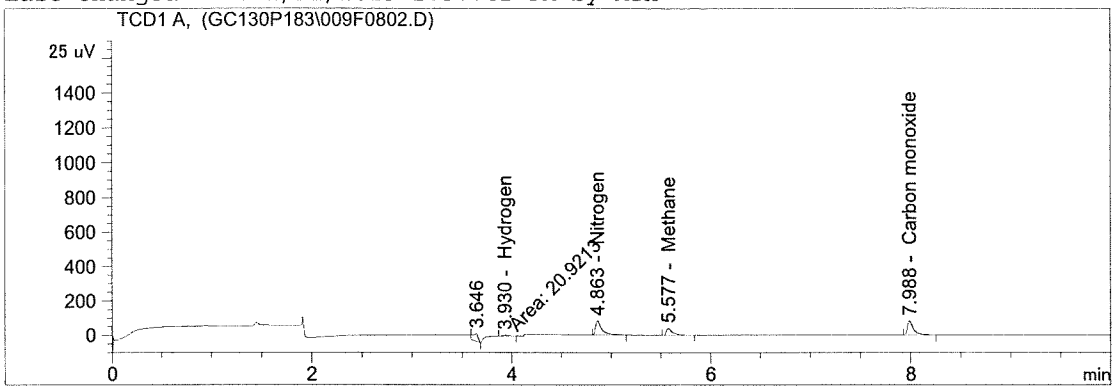
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0802.D
Sample Name: gc130p177 #FG2 ENV(1=1271.99,2=167.43)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   8
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 06-Feb-13, 20:07:18                   Inj :   2
                                                   Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.119		-	-	-		Carbon dioxide
3.930	MM	20.92134	4.25012e-2	8.89183e-1		Hydrogen
4.088		-	-	-		Oxygen
4.863	BB	343.00677	2.93146e-3	1.00551		Nitrogen
5.577	BB	187.29707	4.26144e-3	7.98155e-1		Methane
7.988	BB	331.69357	3.02091e-3	1.00202		Carbon monoxide

Totals : 3.69487

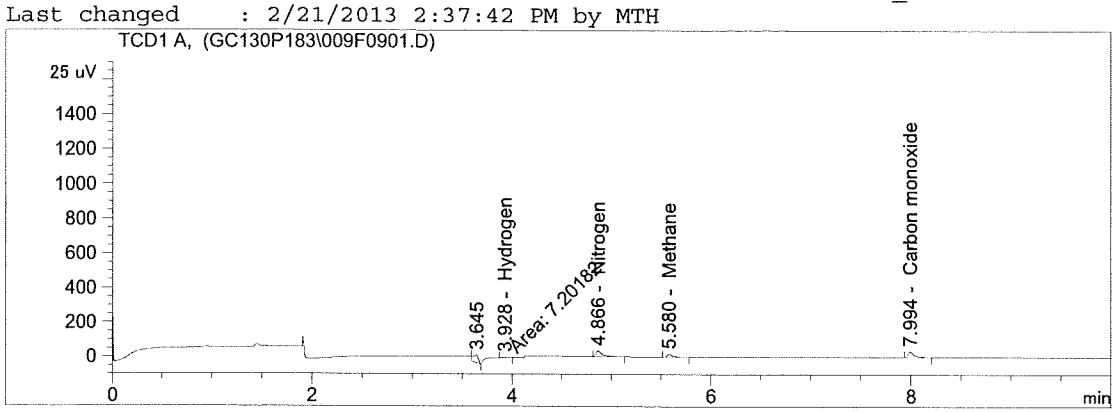
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0901.D
Sample Name: gc130p177 #FG1 ENV(1=3391.99,2=167.43)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :   9
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 06-Feb-13, 20:24:51                   Inj :   1
                                                   Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.119		-	-	-		Carbon dioxide
3.928	MM	7.20182	4.67789e-2	3.36893e-1		Hydrogen
4.088		-	-	-		Oxygen
4.866	BB	137.75699	2.93146e-3	4.03829e-1		Nitrogen
5.580	BB	72.46914	4.44540e-3	3.22155e-1		Methane
7.994	BB	129.79712	3.09775e-3	4.02079e-1		Carbon monoxide

Totals : 1.46496

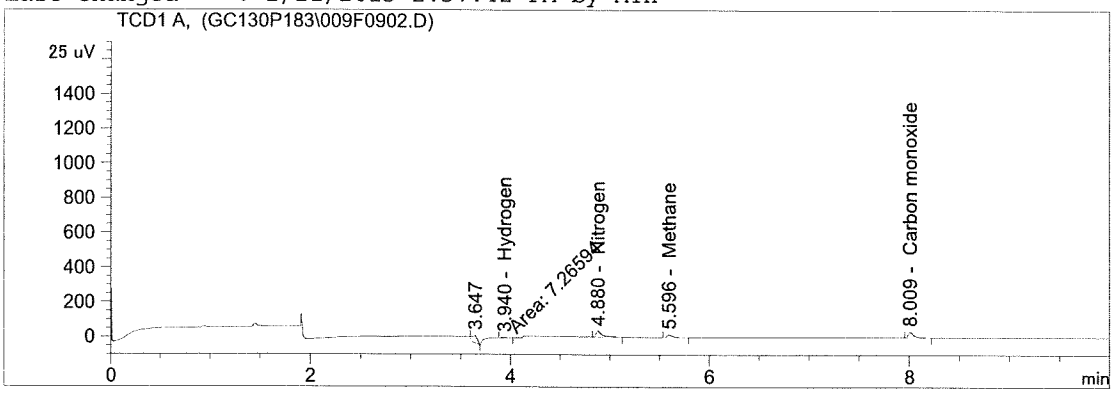
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==
*** End of Report ***

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\009F0902.D
Sample Name: gc130p177 #FG1 ENV(1=3391.99,2=167.43)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   9
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 06-Feb-13, 20:42:27                       Inj :   2
                                                      Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,                                                Manual Integration
                                                                 "II" (MTH)
RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.119            -           -          -          Carbon dioxide
  3.940 MM       7.26594 4.67789e-2 3.39893e-1       Hydrogen
  4.088            -           -          -          Oxygen
  4.880 BB     136.35648 2.93146e-3 3.99723e-1       Nitrogen
  5.596 BB      71.56188 4.44757e-3 3.18277e-1       Methane
  8.009 BB     129.39651 3.09814e-3 4.00888e-1       Carbon monoxide

Totals :                               1.45878

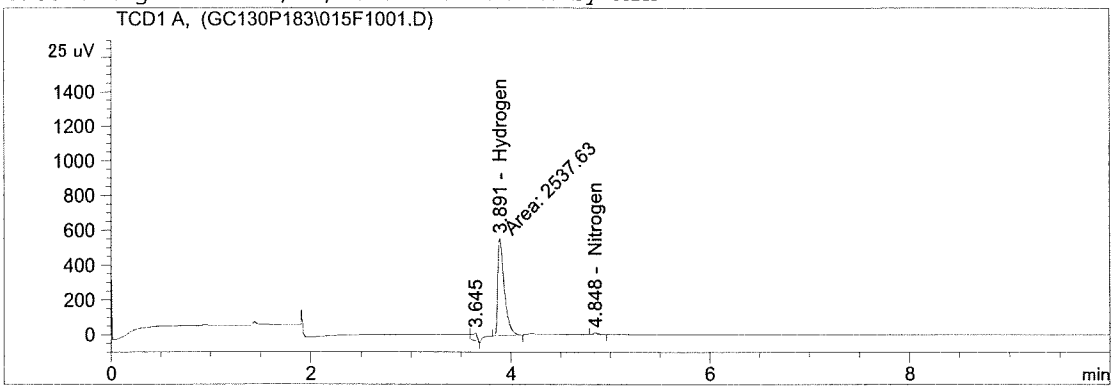

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\015F1001.D
Sample Name: 99% Hydrogen std

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  10
Acq. Instrument  : Betty                               Location : Vial 15
Injection Date   : 06-Feb-13, 20:58:01                      Inj :   1
                                                    Inj Volume : External
Sequence File    : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/6/2013 3:53:40 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.119		-	-	-		Carbon dioxide
3.891	MM	2537.62964	4.02428e-2	102.12135		Hydrogen
4.088		-	-	-		Oxygen
4.848	BB	30.64694	2.93146e-3	8.98402e-2		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide

```
Totals :                                  102.21119

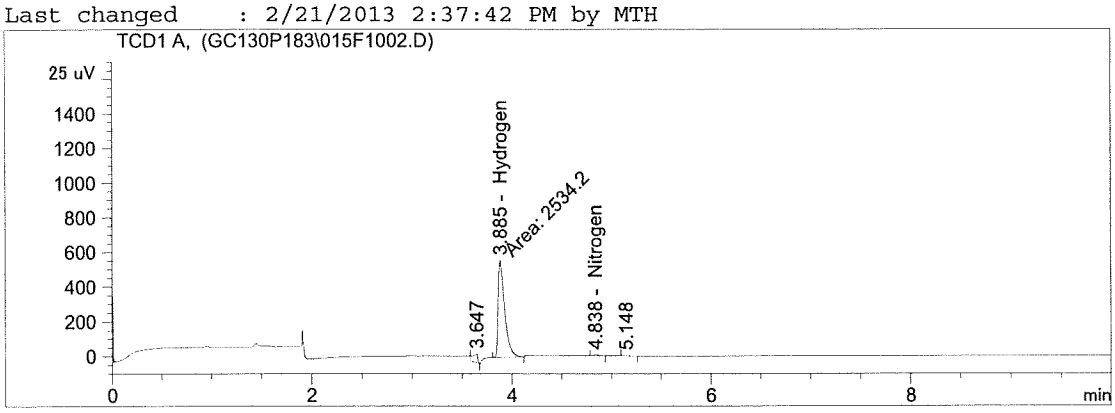

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P183\015F1002.D
Sample Name: 99% Hydrogen std

```
==========================================================================
Acq. Operator   : MTH                              Seq. Line :  10
Acq. Instrument : Betty                             Location : Vial 15
Injection Date  : 06-Feb-13, 21:13:35                    Inj :   2
                                                  Inj Volume : External
Sequence File   : S:\GC2013\GC2013Q1\BETTY\SEQUENCE\GC130P183.S
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed    : 2/6/2013 3:53:40 PM by MTH
Analysis Method : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed    : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration
"II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.119		-	-	-		Carbon dioxide
3.885	MM	2534.19507	4.02428e-2	101.98320		Hydrogen
4.088		-	-	-		Oxygen
4.838	BB	18.39191	2.93146e-3	5.39151e-2		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide

```
Totals :                              102.03712

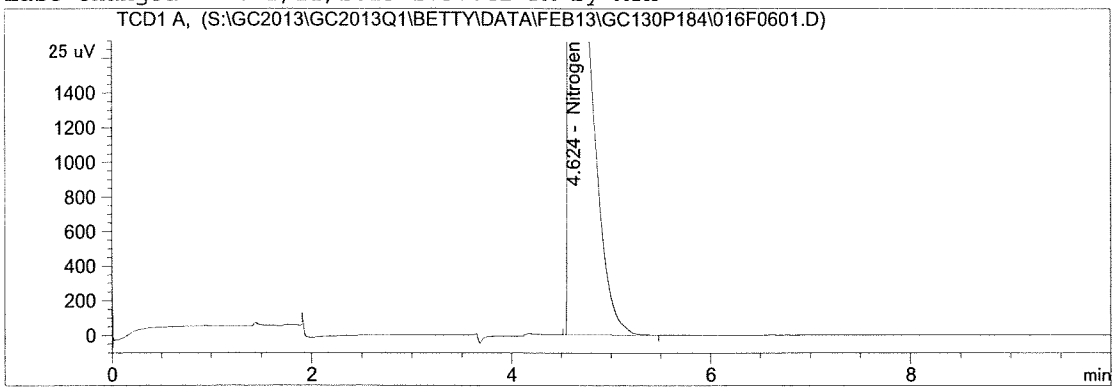

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P184\016F0601.D
Sample Name: 99.0% Nitrogen standard

```
================================================================================
Acq. Operator   : MTH                                Seq. Line :   6
Acq. Instrument : Betty                               Location : Vial 16
Injection Date  : 08-Feb-13, 14:28:53                     Inj :   1
                                                    Inj Volume : External
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed    : 2/6/2013 3:53:40 PM by MTH
Analysis Method : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed    : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                          External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.119		-	-	-		Carbon dioxide
3.907		-	-	-		Hydrogen
4.088		-	-	-		Oxygen
4.624	BB	4.63303e4	2.29072e-3	106.12982		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide

```
Totals :                                  106.12982

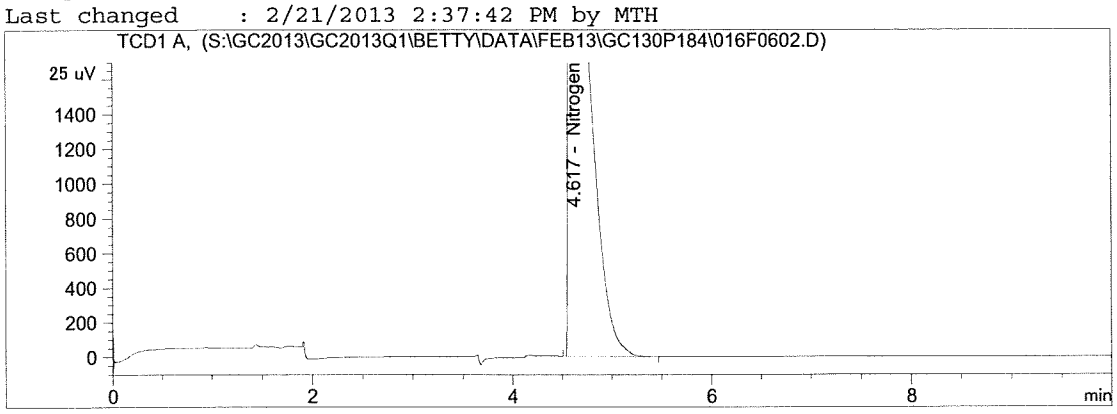

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                           *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P184\016F0602.D
Sample Name: 99.0% Nitrogen standard

```
================================================================================
Acq. Operator   : MTH                                 Seq. Line :   6
Acq. Instrument : Betty                               Location : Vial 16
Injection Date  : 08-Feb-13, 14:44:36                     Inj :   2
                                                    Inj Volume : External
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed    : 2/6/2013 3:53:40 PM by MTH
Analysis Method : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed    : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.119		-	-	-		Carbon dioxide
3.907		-	-	-		Hydrogen
4.088		-	-	-		Oxygen
4.617	BB	4.61237e4	2.29080e-3	105.66038		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide
Totals :				105.66038		

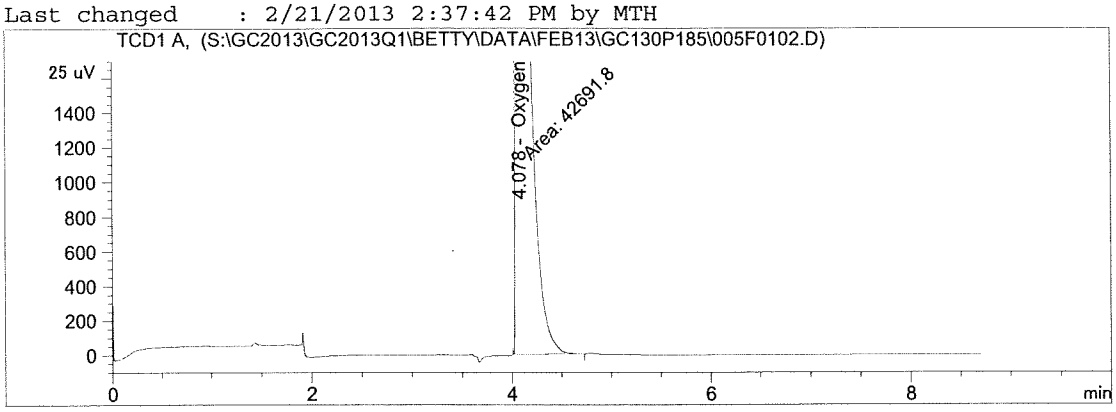
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\005F0102.D
Sample Name: 99.99% Oxygen std

```
==========================================================================
Acq. Operator    : MTH                                 Seq. Line :   1
Acq. Instrument : Betty                                 Location : Vial 5
Injection Date  : 08-Feb-13, 16:15:20                       Inj :   2
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.119		-	-	-		Carbon dioxide
3.907		-	-	-		Hydrogen
4.078	MM	4.26918e4	2.47652e-3	105.72699		Oxygen
4.619		-	-	-		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide

```
Totals :                                  105.72699

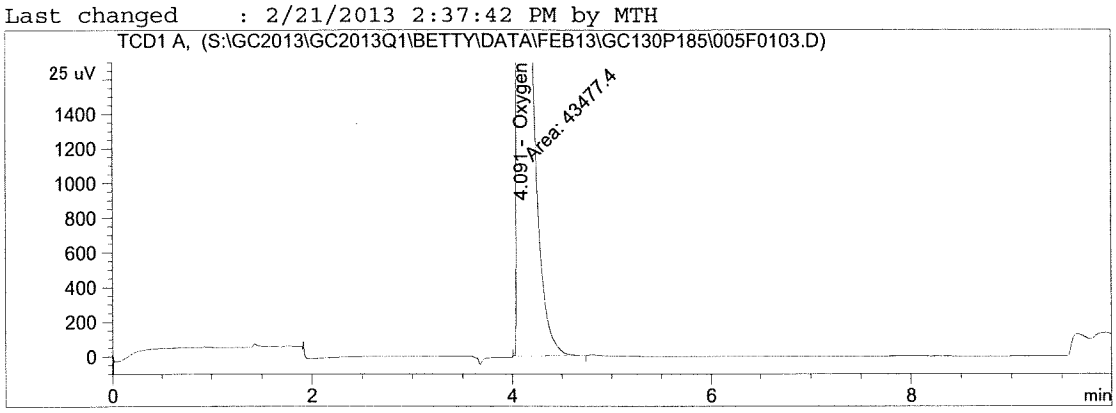

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\005F0103.D
Sample Name: 99.99% Oxygen std

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :   1
Acq. Instrument  : Betty                               Location : Vial 5
Injection Date   : 08-Feb-13, 16:29:26                     Inj :   3
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

Manual Integration "II" (MTH)

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.119		-	-	-		Carbon dioxide
3.907		-	-	-		Hydrogen
4.091	MM	4.34774e4	2.47614e-3	107.65618		Oxygen
4.619		-	-	-		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide

```
Totals :                                  107.65618

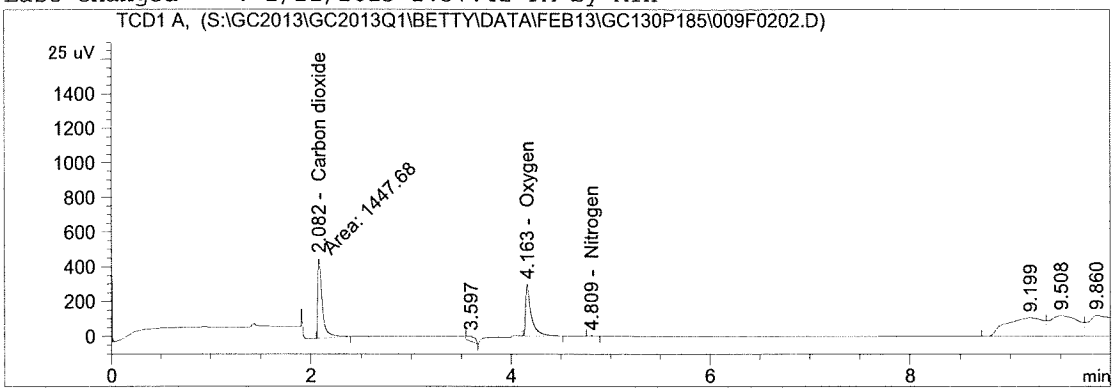

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F0202.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   2
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 08-Feb-13, 17:05:02                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                [%]
-------|------|----------|----------|----------|--|-------------------
  2.082 MM     1447.68164 2.51420e-3    3.63976    Carbon dioxide
  3.907            -          -          -         Hydrogen
  4.163 BB     1139.98401 3.23697e-3    3.69009    Oxygen
  4.809 BB        7.18130 2.93146e-3 2.10517e-2    Nitrogen
  5.450            -          -          -         Methane
  7.904            -          -          -         Carbon monoxide

Totals :                                7.35090

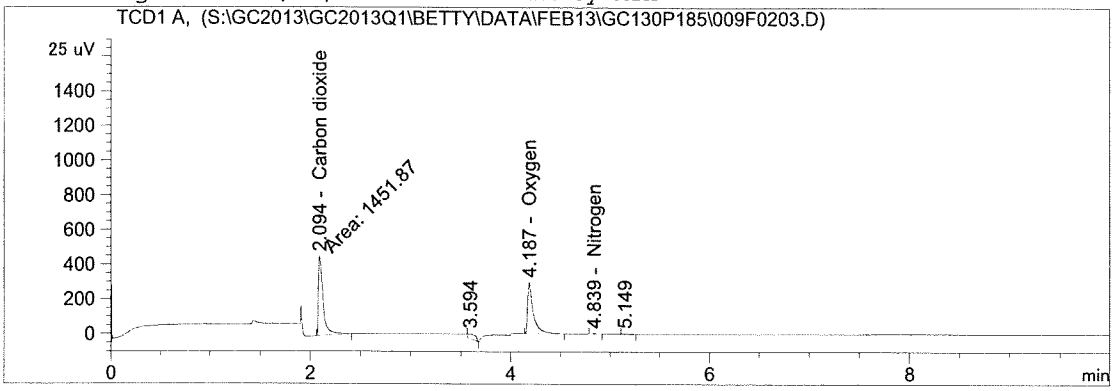

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F0203.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
================================================================================
Acq. Operator    : MTH                                 Seq. Line :   2
Acq. Instrument  : Betty                                Location : Vial 9
Injection Date   : 08-Feb-13, 17:22:51                      Inj :   3
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.094 MM     1451.87402 2.51405e-3    3.65009    Carbon dioxide
  3.907            -          -          -         Hydrogen
  4.187 BB     1138.08789 3.23827e-3    3.68543    Oxygen
  4.839 BB        7.35050 2.93146e-3 2.15477e-2    Nitrogen
  5.450            -          -          -         Methane
  7.904            -          -          -         Carbon monoxide

Totals :                                7.35707

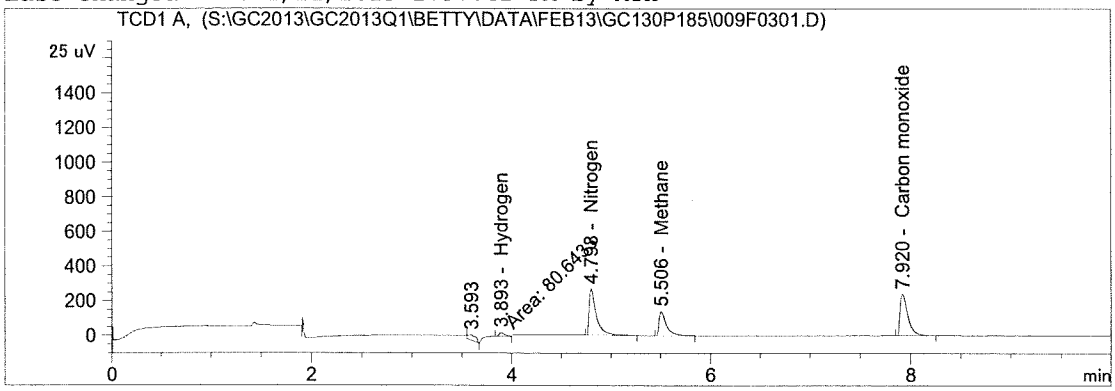

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F0301.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   3
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 08-Feb-13, 17:40:40                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|-------------------
  2.119            -           -          -          Carbon dioxide
  3.893 MM       80.64330 4.08148e-2    3.29144      Hydrogen
  4.088            -           -          -          Oxygen
  4.798 BB     1339.09497 2.90032e-3    3.88381      Nitrogen
  5.506 BB      709.90875 4.17597e-3    2.96455      Methane
  7.920 BB     1251.14636 2.98461e-3    3.73419      Carbon monoxide

Totals :                                13.87399

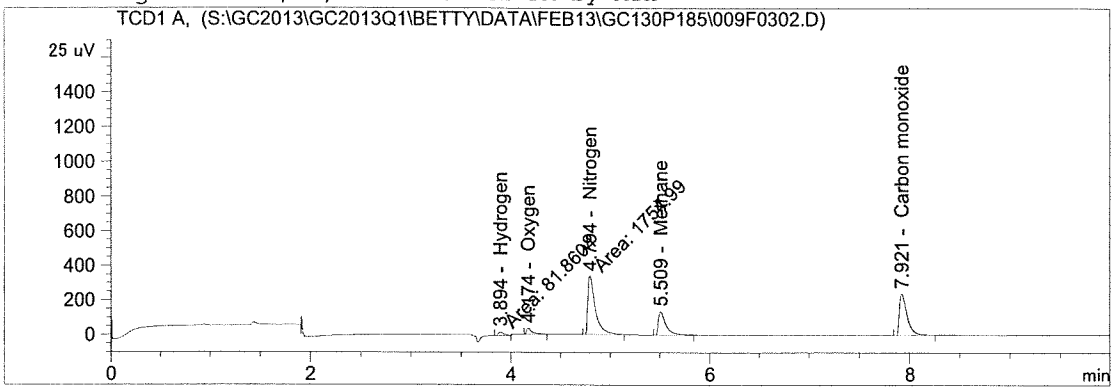

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F0302.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :   3
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 08-Feb-13, 17:58:28                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.119            -           -          -          Carbon dioxide
  3.894 MM       81.86040 4.08060e-2    3.34040      Hydrogen
  4.174 BB      122.24544 3.30036e-3 4.03454e-1      Oxygen
  4.794 MM     1754.99243 2.75156e-3    4.82897      Nitrogen
  5.509 BB      693.72900 4.17668e-3    2.89748      Methane
  7.921 BB     1233.82996 2.98480e-3    3.68273      Carbon monoxide

Totals :                                15.15304

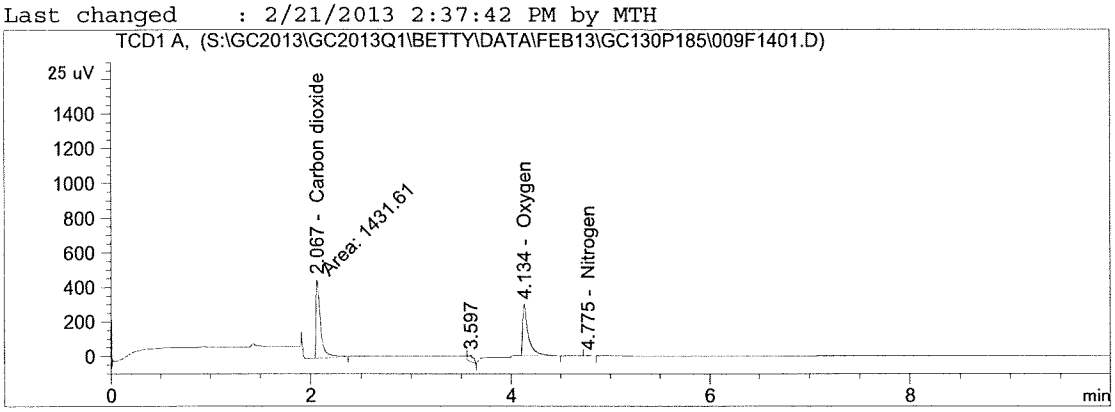

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F1401.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator   : MTH                                 Seq. Line :  14
Acq. Instrument : Betty                              Location : Vial 9
Injection Date  : 08-Feb-13, 23:45:40                     Inj :   1
                                                   Inj Volume : External
Acq. Method     : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed    : 2/8/2013 4:11:47 PM by MTH
Analysis Method : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed    : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|-------------------
  2.067 MM     1431.60608 2.51478e-3    3.60017    Carbon dioxide
  3.907            -          -          -         Hydrogen
  4.134 BB     1138.96631 3.23766e-3    3.68759    Oxygen
  4.775 BB        8.34129 2.93146e-3 2.44521e-2    Nitrogen
  5.450            -          -          -         Methane
  7.904            -          -          -         Carbon monoxide

Totals :                                7.31222

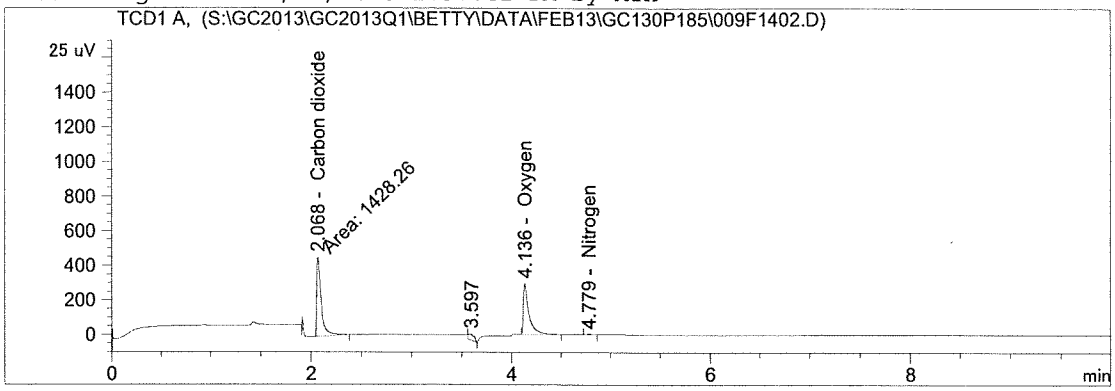

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F1402.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  14
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 09-Feb-13, 00:03:02                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                [%]
-------|------|----------|----------|----------|--|------------------
  2.068 MM     1428.26416 2.51490e-3    3.59194     Carbon dioxide
  3.907            -          -          -          Hydrogen
  4.136 BB     1136.44519 3.23940e-3    3.68140     Oxygen
  4.779 BB        7.69882 2.93146e-3 2.25688e-2     Nitrogen
  5.450            -          -          -          Methane
  7.904            -          -          -          Carbon monoxide

Totals :                                 7.29591

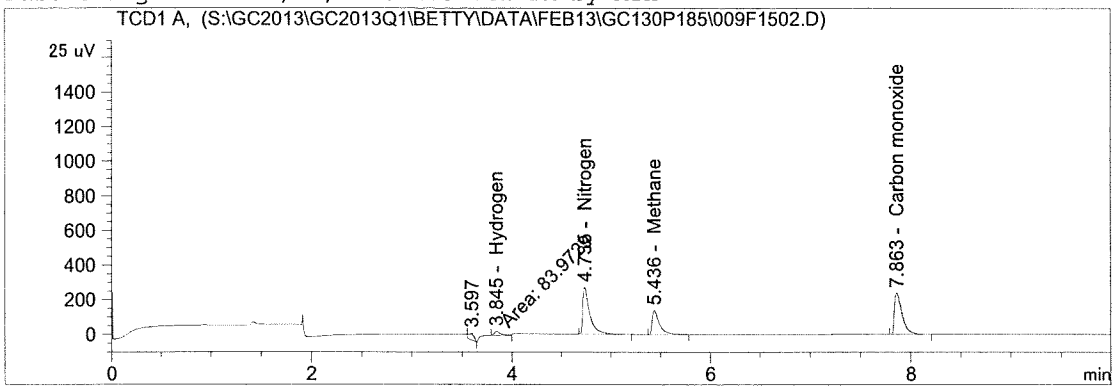

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F1502.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  15
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 09-Feb-13, 00:55:08                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|-------------------
  2.119            -           -          -          Carbon dioxide
  3.845 MM       83.97292 4.07914e-2    3.42537      Hydrogen
  4.088            -           -          -          Oxygen
  4.735 BB     1342.89026 2.89855e-3    3.89243      Nitrogen
  5.436 BB      712.00031 4.17588e-3    2.97322      Methane
  7.863 BB     1253.71533 2.98459e-3    3.74182      Carbon monoxide

Totals :                                14.03285

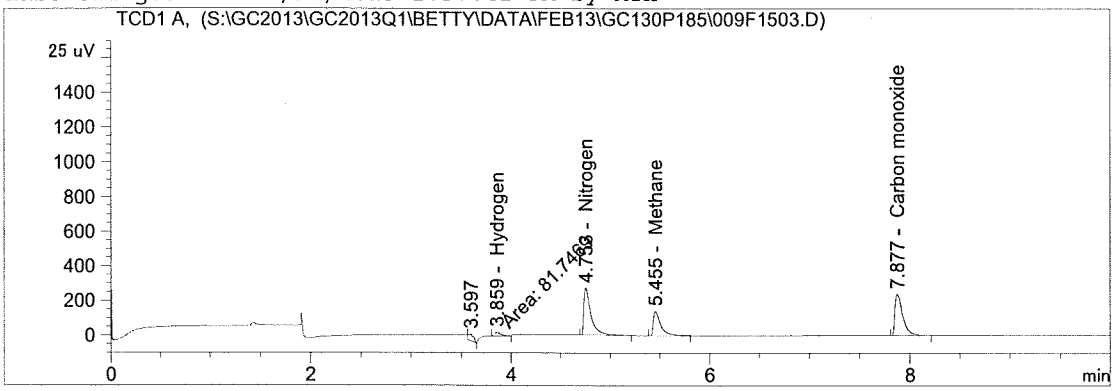

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F1503.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  15
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 09-Feb-13, 01:12:28                   Inj :   3
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.119            -           -          -          Carbon dioxide
  3.859 MM       81.74690 4.08068e-2    3.33583     Hydrogen
  4.088            -           -          -          Oxygen
  4.753 BB     1345.19128 2.89748e-3    3.89766     Nitrogen
  5.455 BB      714.28754 4.17578e-3    2.98271     Methane
  7.877 BB     1255.03076 2.98457e-3    3.74573     Carbon monoxide

Totals :                                13.96193

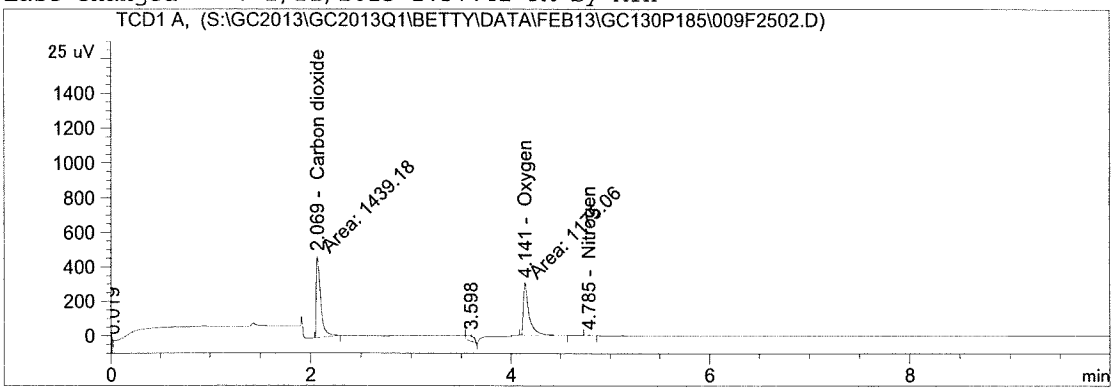

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F2502.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  25
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 09-Feb-13, 15:02:10                   Inj :   2
                                                   Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.069 MM     1439.17603 2.51451e-3    3.61882     Carbon dioxide
  3.907            -          -           -         Hydrogen
  4.141 MM     1175.06177 3.21364e-3    3.77623     Oxygen
  4.785 BB        8.33782 2.93146e-3 2.44420e-2     Nitrogen
  5.450            -          -           -         Methane
  7.904            -          -           -         Carbon monoxide

Totals :                                 7.41949

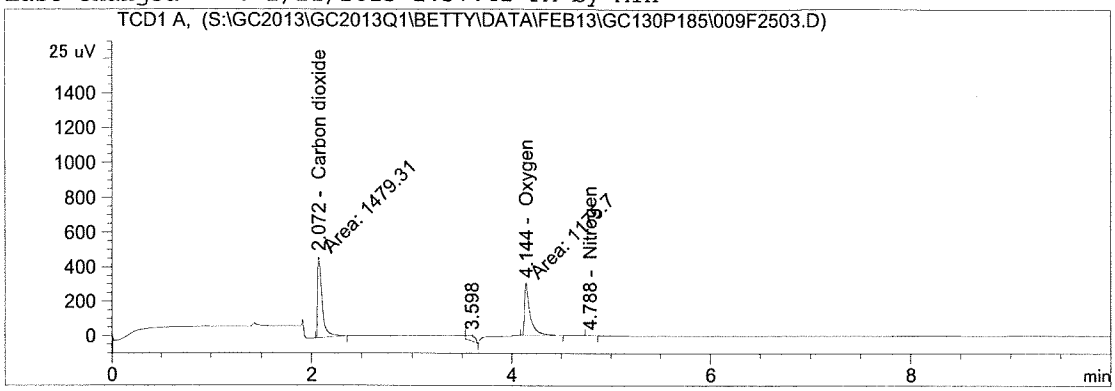

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F2503.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  25
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 09-Feb-13, 15:19:42                       Inj :   3
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                          External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.072	MM	1479.30615	2.51310e-3	3.71764		Carbon dioxide
3.907		-	-	-		Hydrogen
4.144	MM	1175.69556	3.21323e-3	3.77778		Oxygen
4.788	BB	8.12249	2.93146e-3	2.38107e-2		Nitrogen
5.450		-	-	-		Methane
7.904		-	-	-		Carbon monoxide

Totals : 7.51924

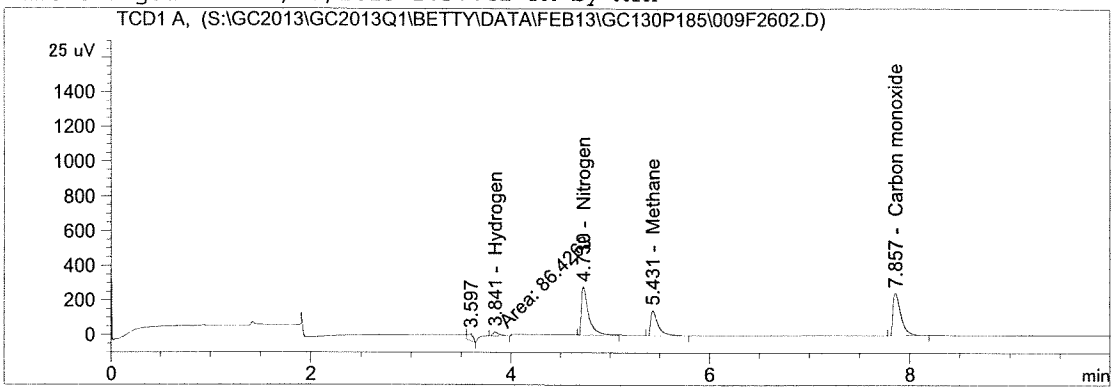
```
2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F2602.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  26
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 09-Feb-13, 15:54:45                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.119            -           -          -          Carbon dioxide
  3.841 MM       86.42628 4.07753e-2    3.52406      Hydrogen
  4.088            -           -          -          Oxygen
  4.730 BB     1379.73145 2.88183e-3    3.97616      Nitrogen
  5.431 BB      737.67145 4.17481e-3    3.07964      Methane
  7.857 BB     1296.32361 2.98416e-3    3.86844      Carbon monoxide

Totals :                                14.44829

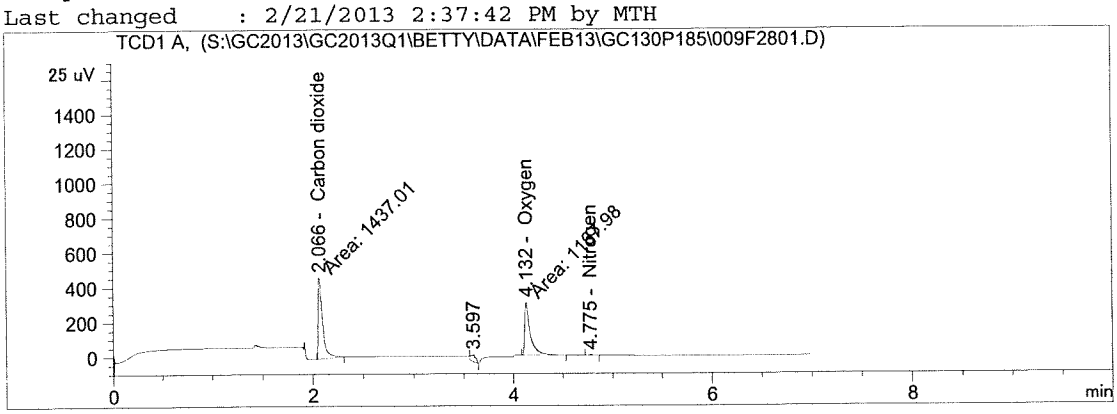

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F2801.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  28
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 10-Feb-13, 12:51:01                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                [%]
-------|------|----------|----------|----------|--|------------------
  2.066 MM     1437.01184 2.51458e-3    3.61349     Carbon dioxide
  3.907           -          -             -        Hydrogen
  4.132 MM     1167.98328 3.21824e-3    3.75885     Oxygen
  4.775 BB       10.16782 2.93146e-3 2.98065e-2     Nitrogen
  5.450           -          -             -        Methane
  7.904           -          -             -        Carbon monoxide

Totals :                                 7.40214

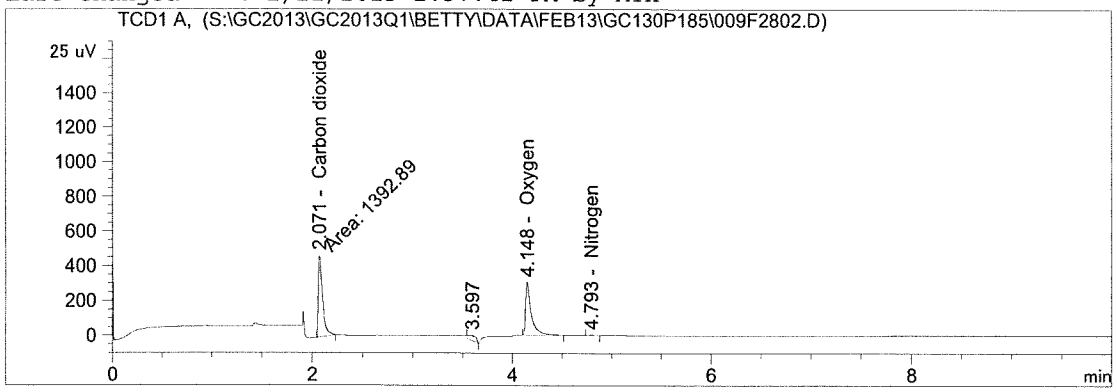

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F2802.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  28
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 10-Feb-13, 13:04:18                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                          External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                [%]
-------|------|----------|----------|----------|--|------------------
  2.071 MM     1392.88818 2.51623e-3    3.50483    Carbon dioxide
  3.907            -          -          -         Hydrogen
  4.148 BB     1187.21472 3.20588e-3    3.80607    Oxygen
  4.793 BB        8.71384 2.93146e-3 2.55442e-2    Nitrogen
  5.450            -          -          -         Methane
  7.904            -          -          -         Carbon monoxide

Totals :                                 7.33645

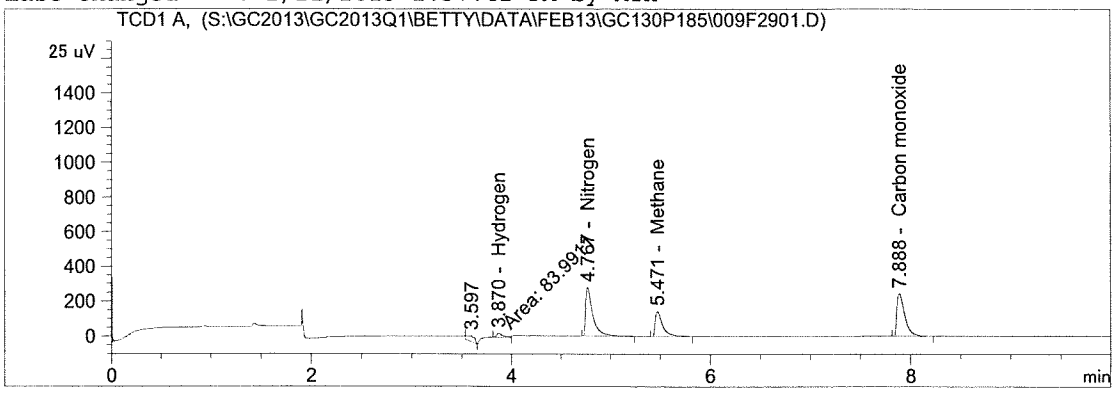

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                           *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F2901.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : MTH                                Seq. Line :  29
Acq. Instrument  : Betty                               Location : Vial 9
Injection Date   : 10-Feb-13, 13:39:17                     Inj :   1
                                                     Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.119            -           -          -          Carbon dioxide
  3.870 MM      83.99107 4.07913e-2    3.42610       Hydrogen
  4.088            -           -          -          Oxygen
  4.767 BB    1400.16882 2.87294e-3    4.02260       Nitrogen
  5.471 BB     744.52216 4.17454e-3    3.10804       Methane
  7.888 BB    1312.48108 2.98400e-3    3.91645       Carbon monoxide

Totals :                              14.47319

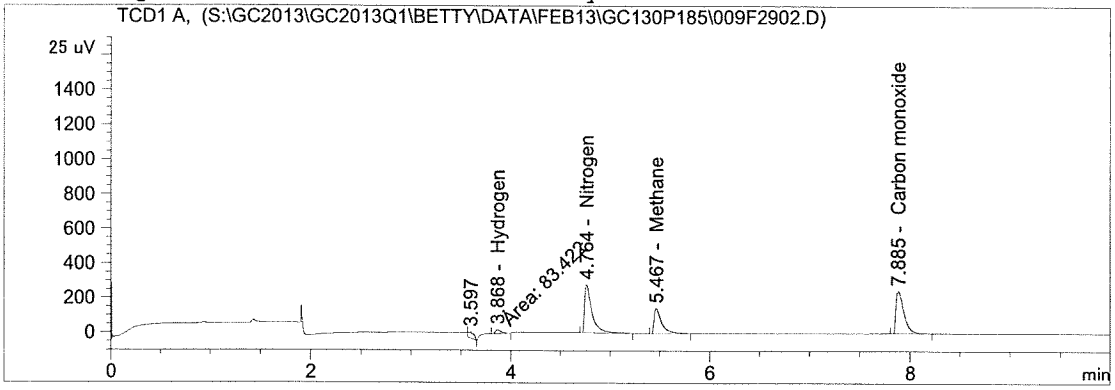

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F2902.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  29
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 10-Feb-13, 13:56:39                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,
```

RetTime [min]	Type	Area [25 uV*s]	Amt/Area	Amount [%]	Grp	Name
2.119		-	-	-		Carbon dioxide
3.868	MM	83.42199	4.07951e-2	3.40321		Hydrogen
4.088		-	-	-		Oxygen
4.764	BB	1407.58875	2.86978e-3	4.03946		Nitrogen
5.467	BB	745.50183	4.17450e-3	3.11210		Methane
7.885	BB	1315.08459	2.98398e-3	3.92418		Carbon monoxide

```
Totals :                                  14.47896

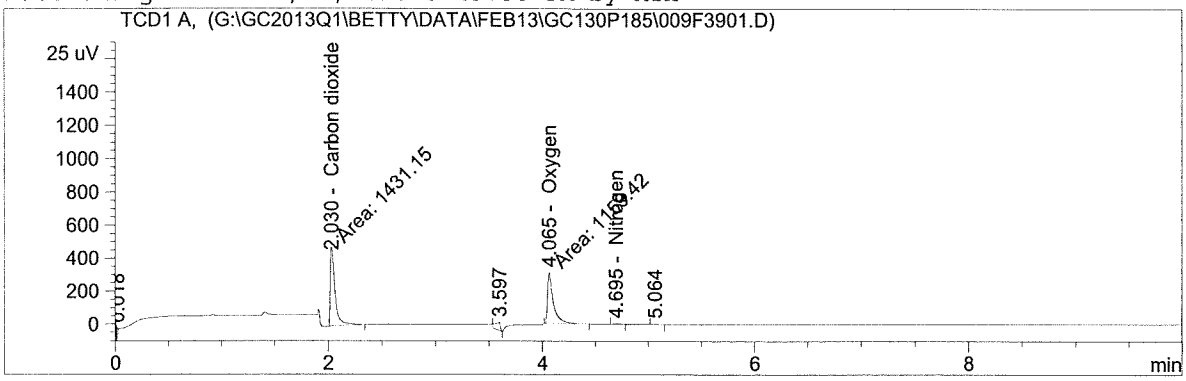

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F3901.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  39
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 10-Feb-13, 19:09:47                       Inj :   1
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                [%]
-------|------|----------|----------|----------|--|------------------
  2.030 MM     1431.15149 2.51480e-3    3.59906     Carbon dioxide
  4.065 MM     1159.42249 3.22387e-3    3.73782     Oxygen
  4.695 BB        8.68991 2.93146e-3 2.54741e-2     Nitrogen
  5.450            -          -          -         Methane

Totals :                                 7.36235

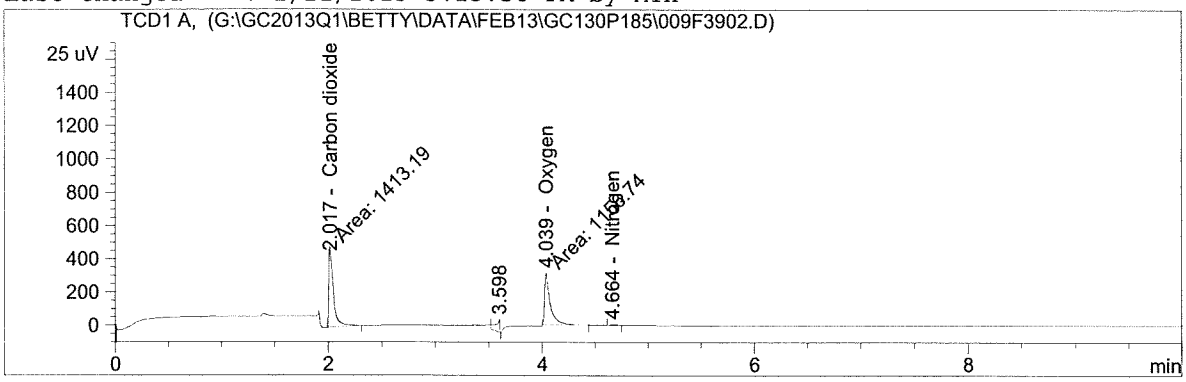

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File G:\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F3902.D
Sample Name: gc130p177 #FG7 ENV(1=530,3=319.08)

```
==========================================================================
Acq. Operator    : MTH                                  Seq. Line :  39
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 10-Feb-13, 19:27:11                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : G:\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2_0213-39.M
Last changed     : 2/21/2013 3:23:58 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 3:23:44 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.017 MM     1413.19067 2.51546e-3    3.55483    Carbon dioxide
  4.039 MM     1156.73523 3.22565e-3    3.73122    Oxygen
  4.664 BB        8.02269 2.93146e-3 2.35182e-2    Nitrogen
  5.450            -          -          -         Methane

Totals :                                 7.30957

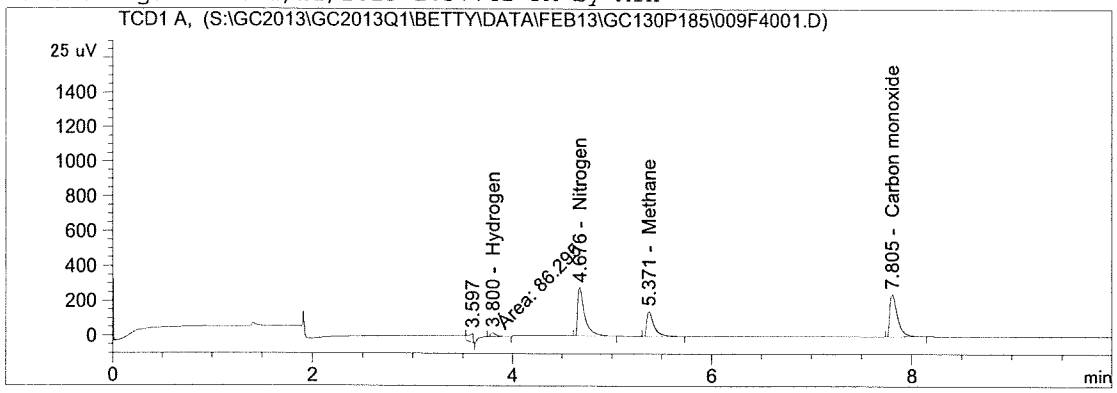

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F4001.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
==========================================================================
Acq. Operator    : MTH                              Seq. Line :  40
Acq. Instrument  : Betty                             Location : Vial 9
Injection Date   : 10-Feb-13, 20:01:54                    Inj :   1
                                                  Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
==========================================================================
                        External Standard Report
==========================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type     Area      Amt/Area    Amount   Grp   Name
 [min]         [25 uV*s]                  [%]
-------|------|----------|----------|----------|--|------------------
  2.119            -           -          -          Carbon dioxide
  3.800 MM       86.29499 4.07761e-2    3.51878      Hydrogen
  4.088            -           -          -          Oxygen
  4.676 BB     1329.95117 2.90464e-3    3.86303      Nitrogen
  5.371 BB      723.75067 4.17538e-3    3.02193      Methane
  7.805 BB     1285.17358 2.98427e-3    3.83530      Carbon monoxide

Totals :                                14.23904

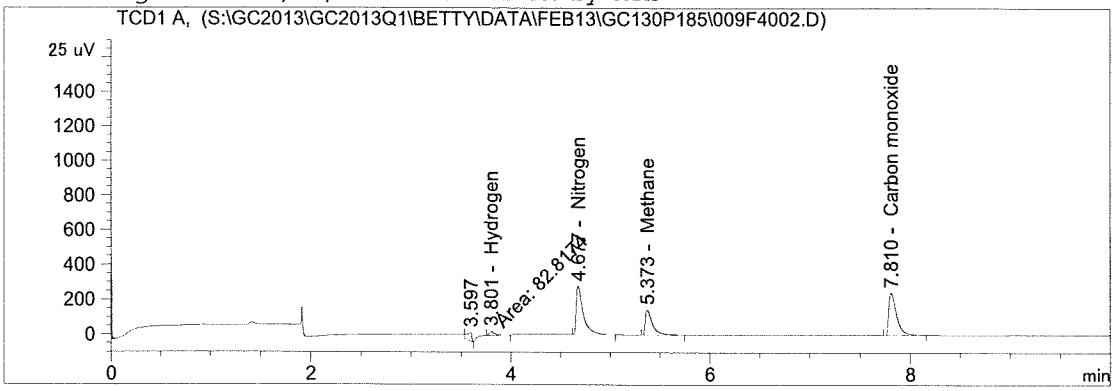

2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

==========================================================================
                          *** End of Report ***
```

Data File S:\GC2013\GC2013Q1\BETTY\DATA\FEB13\GC130P185\009F4002.D
Sample Name: gc130p177 #FG3 ENV(1=530,2=376.73)

```
================================================================================
Acq. Operator    : MTH                                  Seq. Line :  40
Acq. Instrument  : Betty                                 Location : Vial 9
Injection Date   : 10-Feb-13, 20:19:15                       Inj :   2
                                                      Inj Volume : External
Acq. Method      : G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Last changed     : 2/8/2013 4:11:47 PM by MTH
Analysis Method  : S:\GC2013\GC2013Q1\BETTY\METHODS\GC130P185F_HIGHN2O2.M
Last changed     : 2/21/2013 2:37:42 PM by MTH
```




```
================================================================================
                        External Standard Report
================================================================================

Sorted By             :      Signal
Calib. Data Modified  :      2/21/2013 2:36:57 PM
Multiplier:                   :      1.0000
Dilution:                     :      1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: TCD1 A,

RetTime  Type      Area      Amt/Area    Amount    Grp   Name
 [min]          [25 uV*s]                 [%]
-------|------|----------|----------|----------|--|------------------
  2.119            -           -          -          Carbon dioxide
  3.801 MM       82.81744 4.07993e-2    3.37889     Hydrogen
  4.088            -           -          -          Oxygen
  4.677 BB     1333.06750 2.90316e-3    3.87011     Nitrogen
  5.373 BB      726.50482 4.17527e-3    3.03335     Methane
  7.810 BB     1290.77100 2.98421e-3    3.85194     Carbon monoxide

Totals :                                14.13429


2 Warnings or Errors :

Warning : Calibration warnings (see calibration table listing)
Warning : Calibrated compound(s) not found

================================================================================
                          *** End of Report ***
```

method: G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Modified on: 1/31/2013 at 3:41:52 PM

==========

6890 GC METHOD

==========

OVEN
- Initial temp: 40 'C (On)
- Initial time: 5.10 min
- Ramps:

#	Rate	Final temp	Final time
1	30.00	150	1.30
2	0.0(Off)		

- Post temp: 50 'C
- Post time: 0.00 min
- Run time: 10.07 min
- Maximum temp: 250 'C
- Equilibration time: 0.20 min

CRYO (N2)
- Cryo: Off
- Cryo fault: On
- Cryo timeout: 40.00 min (On)
- Quick cryo cool: Off
- Ambient temp: 30 'C

FRONT INLET (SPLIT/SPLITLESS)
- Mode: Splitless
- Initial temp: 200 'C (On)
- Pressure: 11.66 psi (On)
- Purge flow: 10.0 mL/min
- Purge time: 0.00 min
- Total flow: 18.8 mL/min
- Gas saver: Off
- Gas type: Helium

BACK INLET (SPLIT/SPLITLESS)
- Mode: Split
- Initial temp: 200 'C (On)
- Pressure: 9.99 psi (On)
- Split ratio: 7:1
- Split flow: 10.7 mL/min
- Total flow: 15.2 mL/min
- Gas saver: Off
- Gas type: Helium

COLUMN 1
- Capillary Column
- Model Number: Restek ???
- 15m x0.53mmMS&30m x0.53mmRt-S-BON
- Max temperature: 250 'C
- Nominal length: 45.0 m
- Nominal diameter: 530.00 um
- Nominal film thickness: 50.00 um
- Mode: constant flow
- Initial flow: 5.9 mL/min
- Nominal init pressure: 11.66 psi
- Average velocity: 50 cm/sec
- Inlet: Front Inlet
- Outlet: Front Detector
- Outlet pressure: ambient

COLUMN 2
- Capillary Column
- Model Number: Restek 10180
- 60m x 0.32mm x 5um Rtx-1
- Max temperature: 280 'C
- Nominal length: 60.0 m
- Nominal diameter: 320.00 um
- Nominal film thickness: 5.00 um
- Mode: constant flow
- Initial flow: 1.5 mL/min
- Nominal init pressure: 10.00 psi
- Average velocity: 32 cm/sec
- Inlet: Back Inlet
- Outlet: (unspecified)
- Outlet pressure: vacuum

FRONT DETECTOR (TCD)
- Temperature: 275 'C (On)
- Reference flow: 20.0 mL/min (On)
- Mode: Constant makeup flow
- Makeup flow: 7.0 mL/min (On)
- Makeup Gas Type: Helium
- Filament: On
- Negative polarity: Off

BACK DETECTOR (AIB)
- Electrometer: Off

SIGNAL 1
- Data rate: 20 Hz
- Type: front detector
- Save Data: On
- Zero: 0.0 (Off)
- Range: 0
- Fast Peaks: Off
- Attenuation: 0

SIGNAL 2
- Data rate: 20 Hz
- Type: test plot
- Save Data: Off
- Zero: 0.0 (Off)
- Range: 0
- Fast Peaks: Off
- Attenuation: 0

COLUMN COMP 1
- Derive from front detector

COLUMN COMP 2
- (No Detectors Installed)

method: G:\GC2013Q1\BETTY\METHODS\GC130P177_FGA.M
Modified on: 1/31/2013 at 3:41:52 PM
THERMAL AUX 1
Use: Valve Box Heater
Description:
Initial temp: 130 'C (On)
Initial time: 0.00 min
Rate Final temp Final time
1 0.0(Off)

VALVES
Valve 2 Gas Sampling
Description:
Loop Volume: 1.000 mL
Load Time: 0.10 min
Inject Time: 1.90 min
Inlet: Front Inlet

POST RUN
Post Time: 0.00 min

TIME TABLE

Time	Specifier	Parameter & Setpoint	
3.70		Front Detector Polarity:	On
4.19		Front Detector Polarity:	Off

GC Injector

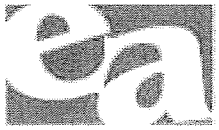
Front Injector:
Injector not configured, use these parameters if it becomes configured

Sample Washes	0
Sample Pumps	0
Injection Volume	1.00 microliters
Syringe Size	10.0 microliters
PostInj Solvent A Washes	0
PostInj Solvent B Washes	0
Viscosity Delay	0 seconds
Plunger Speed	Fast

Back Injector:
Injector not configured, use these parameters if it becomes configured

Sample Washes	0
Sample Pumps	0
Injection Volume	1.00 microliters
Syringe Size	10.0 microliters
PostInj Solvent A Washes	0
PostInj Solvent B Washes	0
Viscosity Delay	0 seconds
Plunger Speed	Fast

This Is The Last Page Of This Report.



Appendix K

Chain of Custody

FedEx Express Shipment Detail By Payor Type (Original)

Picked up: Feb 07, 2013 **Cust. Ref.:** 11267 / FLARE TESTING / S **Ref.#2:** 11267
Payor: Shipper **Ref.#3:**

- Fuel Surcharge - FedEx has applied a fuel surcharge of 10.00% to this shipment.
- Distance Based Pricing, Zone 5

		Sender	Recipient		
Automation	INET	Stacy L. Jones, Logistics	Attn: Sample Receiving/Jon Esc		
Tracking ID	794704146355	Offshore Air & Refrigeration (	ENTHALPY ANALYTICAL INC.		
Service Type	FedEx First Overnight	124 Trahan Street	800-1 Capitola Drive		
Package Type	Customer Packaging	LAFAYETTE LA 70506 US	DURHAM NC 27713 US		
Zone	05				
Packages	1				
Rated Weight	25.0 lbs, 11.3 kgs				
Delivered	Feb 08, 2013 07:35	Transportation Charge			176.35
Svc Area	A1	Courier Pickup Charge			4.00
Signed by	T.HUML	Fuel Surcharge			18.04
FedEx Use	000000000/0000012/_	**Total Charge**		USD	$198.39

Picked up: Feb 07, 2013 **Cust. Ref.:** 11267 FLARE TESTING / SA **Ref.#2:** 11267
Payor: Shipper **Ref.#3:**

- Fuel Surcharge - FedEx has applied a fuel surcharge of 10.00% to this shipment.
- Distance Based Pricing, Zone 5

		Sender	Recipient		
Automation	INET	Stacy L. Jones, Logistics	Attn: Sample Receiving/Jon Esc		
Tracking ID	794705866032	Offshore Air & Refrigeration (	ENTHALPY ANALYTICAL		
Service Type	FedEx First Overnight	124 Trahan Street	800-1 Capitola Drive		
Package Type	Customer Packaging	LAFAYETTE LA 70506 US	DURHAM NC 27713 US		
Zone	05				
Packages	1				
Rated Weight	5.0 lbs, 2.3 kgs				
Delivered	Feb 08, 2013 07:35	Transportation Charge			92.75
Svc Area	A1	Courier Pickup Charge			4.00
Signed by	T.HUML	Fuel Surcharge			9.68
FedEx Use	000000000/0000012/_	**Total Charge**		USD	$106.43

Picked up: Feb 08, 2013 **Cust. Ref.:** W&T PO # 64886-66208 **Ref.#2:** 4570H W&T MC 243A
Payor: Shipper **Ref.#3:**

- Fuel Surcharge - FedEx has applied a fuel surcharge of 10.00% to this shipment.
- Distance Based Pricing, Zone 2

		Sender	Recipient		
Automation	INET	Stacy L. Jones, Logistics	c/o GIS DOCK		
Tracking ID	794713053977	Offshore Air & Refrigeration (	W&T MC 243A		
Service Type	FedEx Priority Overnight	124 Trahan Street	310 McDermott Dr		
Package Type	FedEx Box	LAFAYETTE LA 70506 US	VENICE LA 70091 US		
Zone	02				
Packages	1				
Rated Weight	3.0 lbs, 1.4 kgs	Transportation Charge			27.05
Delivered	Feb 09, 2013 13:07	Fuel Surcharge			4.82
Svc Area	A6	Courier Pickup Charge			4.00
Signed by	J.JONES	DAS Extended Comm			2.15
FedEx Use	000000000/0001486/_	Saturday Delivery			15.00
		Total Charge		USD	$53.02

Invoice Number	Invoice Date	Account Number	Page
2-177-24711	Feb 14, 2013	1347-4633-5	5 of 5

Picked up: Feb 08, 2013 | Cust. Ref.: HOLD FOR PICKUP - ENTHAL | Ref.#2: 11267 COMM
Payor: Shipper | Ref.#3:

- Fuel Surcharge - FedEx has applied a fuel surcharge of 10.00% to this shipment.
- Hold for pickup
- Distance Based Pricing, Zone 5
- 1st attempt Feb 09, 2013 at 08:10 AM.
- FedEx has audited this shipment for correct packages, weight, and service. Any changes made are reflected in the invoice amount.
- We calculated your charges based on a dimensional weight of 31.0 lbs, 21" x 15" x 16", using a dimensional factor of 166.

		Sender	Recipient		
Automation	INET				
Tracking ID	794713139987	Stacy L. Jones, Logistics	FED EX CENTER		
Service Type	FedEx Priority Overnight	Offshore Air & Refrigeration (	HOLD FOR PICKUP - ENTHALPY ANA		
Package Type	Customer Packaging	124 Trahan Street	2311 ENGLERT DR		
Zone	05	LAFAYETTE LA 70506 US	DURHAM NC 27713 US		
Packages	1				
Actual Weight	9.0 lbs, 4.1 kgs				
Rated Weight	31.0 lbs, 14.1 kgs				
Delivered	Feb 09, 2013 09:19	Transportation Charge			173.00
Svc Area	AT	Courier Pickup Charge			4.00
Signed by	J. ESCOVEDO	Fuel Surcharge			17.70
FedEx Use	000000000/0001552/_	**Total Charge**		USD	$194.70

Shipper Subtotal	**USD**	**$552.54**
Total FedEx Express	**USD**	**$552.54**

FedEx Ground Prepaid Detail (Original)

Pickup Date: Feb 05, 2013 | Cust. Ref.: 4563-204-ISJ | P.O.#: 4563-204-ISJ
Payor: Shipper | Dept.#:

		Sender	Recipient			
Tracking ID	443 116515000235	Stacy L. Jones, Logistics	W&T OFFSHORE	Transportation Charge		6.35
Service Type	Ppd, Domestic	Offshore Air & Refrigeration (	W&T HI A379B	NDOC P/U - Auto Comm		3.00
Zone	02	124 Trahan Street	9729 ETHLYN RD	Fuel Surcharge		0.79
Packages	1	Lafayette LA 70506	ABBEVILLE LA 70510-054529	DAS Extended Comm		2.00
Rated Weight	2 lbs			**Total Charge**	USD	$12.14
Delivered	Feb 06, 2013					

Prepaid Subtotal	**USD**	**$12.14**
Total FedEx Ground	**USD**	**$12.14**

Silonite Canisters

Chain of Custody Record

ENTHALPY analytical, inc.

Page ____ of ____

Special Handling:
- ☐ Standard Turn Around Time (10 business days)
- ☐ Rush Turn Around Time – Date Needed_____
- * All TAT's Subject to Approval by Enthalpy Analytical, Inc.
- * All Bag/Can Samples Disposed of 1 Month from Receipt.
- * All Other Samples Disposed of 4 Months from Receipt.

Client Name: Comm Engineering
Project Manager: Steve Hogg
Report To: Steve Hogg

Project Number: 11267
Site Name: Lafayette, LA
Location: OAR Inc.

PO#: KV-11267
Telephone#: 337-237 4373
Email: shogg@commengineering.com

For spiked or duplicate samples: please provide sample volumes for recovery calculations.
For Particulates: please provide tare weights and/or condensed water volumes.

Special Instructions:
Silonite Canisters

A=Air 1=H2SO4 2=NaOH 3=_____ 4=_____
X=XAD C=Charcoal SG=Silica Gel
G=Grab C=Composite Q=Quality Control

Sample ID	Date	Time	Sample Volume	Type	Matrix	# of VOA Vials	# of Glass	# of Plastic	# of Bags	# of Canisters	# of Tubes	# Other	Analyses								Notes:
122	2.5.13	2pm	1HR																		
144	2.5.13	3:20pm	1HR																		
204	2.5.13	4:35pm	1HR																		
179	2.6.13	10:45AM	1HR																		
959	2.7.13	9:50AM	1HR																		
952	2.7.13	2:10pm	1HR																		
186	2.7.13	3:30pm	1HR																		
203	2.7.13	4:45pm	1HR																		
146	2.8.13	9:25AM	1HR																		
177	2.8.13	12:12PM	1HR																		
196	2.8.13	1:27pm	1HR																		
905	2.8.13	2:40pm	1HR																		

Relinquished By	Date	Received By	Date	Time	Sample Condition Upon Receipt
TEST 1-8 Steve Hogg	2.7.13	CCB + JEE per BTT	2/8+9/13		☐ Iced ☑ Ambient ☐ °C_____
TEST 9-12 Steve Hogg	2.8.13				☐ Iced ☐ Ambient ☐ °C_____
					☐ Iced ☐ Ambient ☐ °C_____

800-1 Capitola Drive • Durham, NC 27713 • (919) 850-4392 • FAX (919) 850-9012 • www.enthalpy.com

COC received electronically on 2/28/13, BTT

GRAB BAGS

ENTHALPY analytical, inc.

Chain of Custody Record

Page 1 of 1

Special Handling:
- ☐ Standard Turn Around Time (10 business days)
- ☐ Rush Turn Around Time – Date Needed_____
- All TATs Subject to Approval by Enthalpy Analytical, Inc.
- All Bag/Can Samples Disposed of 1 Month from Receipt.
- All Other Samples Disposed of 4 Months from Receipt.

Client Name: COMM ENGINEERING
Project Manager: STEVE HOGG
Report To: STEVE HOGG

Project Number: 11267
Site Name: LAFAYETTE, LA
Location: OAR, INC

PO#: KV-11267
Telephone#: 337-237 4373
Email: SWHOGG@COMMENGINEERING.COM

For spiked or duplicate samples: please provide sample volumes for recovery calculations.
For Particulates: please provide tare weights and/or condensed water volumes.

Special Instructions:
GRAB BAGS

A=Air 1=H2SO4 2=NaOH 3=_____ 4=_____
X=XAD C=Charcoal SG=Silica Gel
G=Grab C=Composite Q=Quality Control

Sample ID	Date	Time	Sample Volume	Type	Matrix	# of VOA Vials	# of Glass	# of Plastic	# of Bags	# of Canisters	# of Tubes	# Other	Analyses	Notes:
1A/1B	2.5.13	2pm	1 HR											
2A/2B	2.5.13	3.20pm	1 HR											
3A/3B	2.5.13	4:35pm	1 HR											
4A/4B	2.6.13	10:45AM	1 HR											
5A/5B	2.7.13	9:50AM	1 HR											
6A/6B	2.7.13	2:10pm	1 HR											
7A/7B	2.7.13	3:30pm	1 HR											
8A/8B	2.7.13	4:45pm	1 HR											
9A/9B	2.8.13	9:25AM	1 HR											
10A/10B	2.8.13	12:12pm	1 HR											
11A/11B	2.8.13	1:27pm	1 HR											
12A/12B	2.8.13	2:40pm	1 HR											

Relinquished By	Date	Received By	Date	Time	Sample Condition Upon Receipt
TEST 1-8 STEVE HOGG	2.7.13	CCB + JEE @ BTEX	2/8+9/13		☐ Iced ☑ Ambient ☐ °C_____
TEST 9-12 STEVE HOGG	2.8.13				☐ Iced ☐ Ambient ☐ °C_____
					☐ Iced ☐ Ambient ☐ °C_____

800-1 Capitola Drive • Durham, NC 27713 • (919) 850-4392 • FAX (919) 850-9012 • www.enthalpy.com

COC received electronically on 2/8/13, BDT

Company	Keika Ventures
Analyst	
Parameters	Tank Dilutions

Client #	
Job #	0113-55
# Samples	12

	Sample ID	Tank ID	Tank Dilution	Canister Size	Sample Vol (L) at STP	Pre-sample: Temp Field (F)	Pre-sample: P_{bar} Field (mmHg)	Pre-sample: Gauge Field (mmHg)	Post-sample: Temp Lab/Field (F)	Post-sample: P_{bar} Lab/Field (mmHg)	Post-sample: Gauge Lab/Field (mmHg) (inches water column)	Final: Temp Lab (F)	Final: P_{bar} Lab (mmHg)	Final: Gauge Lab (mmHg)
FEB 5	SCD CLEAN 01-30-13	00122	1.398	1.40	1.40	71.5	751	-752	71°		35" WC			
FEB 5	SCD CLEAN 01-30-13	00144	1.398	1.40	1.40	71.5	751	-752	70°		35" WC			
FEB 5	SCD CLEAN 01-30-13	00204	1.398	1.40	1.40	71.5	751	-752	68°		35" WC			
FEB 6	SCD CLEAN 01-30-13	00179	1.398	1.40	1.40	71.5	751	-752	66°		20"-40" WC			
FEB 7	SCD CLEAN 01-30-13	959	1.398	1.40	1.40	71.5	751	-752	59°		20"-40" WC			
FEB 7	SCD CLEAN 01-30-13	952	1.398	1.40	1.40	71.5	751	-752	68°		20"-40" WC			
FEB 7	SCD CLEAN 01-30-13	00186	1.401	1.40	1.40	71.5	751	-751	69°		5"-24" WC			
FEB 7	SCD CLEAN 01-30-13	00203	1.401	1.40	1.40	71.5	751	-751	69°		5"-24" WC			
	SCD CLEAN 01-30-13	00146	1.401	1.40	1.40	71.5	751	-751						
	SCD CLEAN 01-30-13	00177	1.401	1.40	1.40	71.5	751	-751						
	SCD CLEAN 01-30-13	00196	1.401	1.40	1.40	71.5	751	-751						
	SCD CLEAN 01-30-13	905	1.401	1.40	1.40	71.5	751	-751						

The tank dilution factors are calculated using the following formula:

$$\frac{\frac{GaugeLab + PbarLab}{TempLab + 460}}{\frac{GaugeLab\ /\ Field + PbarLab\ /\ Field}{TempLab\ /\ Field + 460} - \frac{GaugeField + PbarField}{TempField + 460}}$$

Received by: Chester Burnett 2-8-15 9:15AM

Temp = Ambient

Company	Keika Ventures
Analyst	
Parameters	Tank Dilutions

Client #	
Job #	0113-55
# Samples	12

	Sample ID TEST #	Tank ID	Tank Dilution	Canister Size	Sample Vol (L) at STP	Pre-sample Temp Field (F)	Pre-sample P_{bar} Field (mmHg)	Pre-sample Gauge Field (mmHg)	Post-sample Temp Lab/Field (F)	Post-sample P_{bar} Lab/Field (mmHg)	Post-sample Gauge Lab/Field (mmHg) (inches water column)	Final Temp Lab (F)	Final P_{bar} Lab (mmHg)	Final Gauge Lab (mmHg)
FEB 5	SCD CLEAN 01-30-13 1	00122	1.398	1.40	1.40	71.5	751	-752	71°		35" WC			
FEB 5	SCD CLEAN 01-30-13 2	00144	1.398	1.40	1.40	71.5	751	-752	70°		35" WC			
FEB 5	SCD CLEAN 01-30-13 3	00204	1.398	1.40	1.40	71.5	751	-752	68°		35" WC			
FEB 6	SCD CLEAN 01-30-13 4	00179	1.398	1.40	1.40	71.5	751	-752	66°		20"-40" WC			
FEB 7	SCD CLEAN 01-30-13 5	959	1.398	1.40	1.40	71.5	751	-752	59°		20"-40" WC			
FEB 7	SCD CLEAN 01-30-13 6	952	1.398	1.40	1.40	71.5	751	-752	68°		20"-40" WC			
FEB 7	SCD CLEAN 01-30-13 7	00186	1.401	1.40	1.40	71.5	751	-751	69°		5"-24" WC			
FEB 7	SCD CLEAN 01-30-13 8	00203	1.401	1.40	1.40	71.5	751	-751	69°		5"-24" WC			
FEB 8	SCD CLEAN 01-30-13 *9	00146	1.401	1.40	1.40	71.5	751	-751	62°		12"-50" WC	70.5	29.7	
FEB 8	SCD CLEAN 01-30-13 *10	00177	1.401	1.40	1.40	71.5	751	-751	66°		1"-49" WC			
FEB 8	SCD CLEAN 01-30-13 *11	00196	1.401	1.40	1.40	71.5	751	-751	66°		7"-68" WC			
FEB 8	SCD CLEAN 01-30-13 *12	905	1.401	1.40	1.40	71.5	751	-751	65°		13"-70" WC			

*Received canisters for test #'s 9, 10, 11, 12

Received by: Jonathan Scoheld
2/9/13
0915
Temp = Ambient

The tank dilution factors are calculated using the following formula:

$$\frac{\frac{GaugeLab + PbarLab}{TempLab + 460}}{\frac{GaugeLab\ /\ Field + PbarLab\ /\ Field}{TempLab\ /\ Field + 460}} - \frac{GaugeField + PbarField}{TempField + 460}$$

FedEx Express Shipment Detail By Payor Type (Original)

Picked up: Feb 07, 2013 **Cust. Ref.:** 11267 FLARE TESTING / S **Ref.#2:** 11267
Payor: Shipper **Ref.#3:**

- Fuel Surcharge - FedEx has applied a fuel surcharge of 10.00% to this shipment.
- Distance Based Pricing, Zone 5

		Sender	Recipient		
Automation	INET	Stacy L. Jones, Logistics	Attn: Sample Receiving/Jon Esc		
Tracking ID	794704146355	Offshore Air & Refrigeration (	ENTHALPY ANALYTICAL INC.		
Service Type	FedEx First Overnight	124 Trahan Street	800-1 Capitola Drive		
Package Type	Customer Packaging	LAFAYETTE LA 70506 US	DURHAM NC 27713 US		
Zone	05				
Packages	1				
Rated Weight	25.0 lbs, 11.3 kgs				
Delivered	Feb 08, 2013 07:35	Transportation Charge			176.35
Svc Area	A1	Courier Pickup Charge			4.00
Signed by	T.HUML	Fuel Surcharge			18.04
FedEx Use	000000000/0000012/_	**Total Charge**		**USD**	**$198.39**

Picked up: Feb 07, 2013 **Cust. Ref.:** 11267 FLARE TESTING / SA **Ref.#2:** 11267
Payor: Shipper **Ref.#3:**

- Fuel Surcharge - FedEx has applied a fuel surcharge of 10.00% to this shipment.
- Distance Based Pricing, Zone 5

		Sender	Recipient		
Automation	INET	Stacy L. Jones, Logistics	Attn: Sample Receiving/Jon Esc		
Tracking ID	794705866032	Offshore Air & Refrigeration (	ENTHALPY ANALYTICAL		
Service Type	FedEx First Overnight	124 Trahan Street	800-1 Capitola Drive		
Package Type	Customer Packaging	LAFAYETTE LA 70506 US	DURHAM NC 27713 US		
Zone	05				
Packages	1				
Rated Weight	5.0 lbs, 2.3 kgs				
Delivered	Feb 08, 2013 07:35	Transportation Charge			92.75
Svc Area	A1	Courier Pickup Charge			4.00
Signed by	T.HUML	Fuel Surcharge			9.68
FedEx Use	000000000/0000012/_	**Total Charge**		**USD**	**$106.43**

Picked up: Feb 08, 2013 **Cust. Ref.:** W&T PO # 64886-66708 **Ref.#2:** 4570H W&T MC 243A
Payor: Shipper **Ref.#3:**

- Fuel Surcharge - FedEx has applied a fuel surcharge of 10.00% to this shipment.
- Distance Based Pricing, Zone 2

		Sender	Recipient		
Automation	INET	Stacy L. Jones, Logistics	c/o GIS DOCK		
Tracking ID	794713053977	Offshore Air & Refrigeration (	W&T MC 243A		
Service Type	FedEx Priority Overnight	124 Trahan Street	310 McDermott Dr		
Package Type	FedEx Box	LAFAYETTE LA 70506 US	VENICE LA 70091 US		
Zone	02				
Packages	1				
Rated Weight	3.0 lbs, 1.4 kgs	Transportation Charge			27.05
Delivered	Feb 09, 2013 13:07	Fuel Surcharge			4.82
Svc Area	A6	Courier Pickup Charge			4.00
Signed by	J.JONES	DAS Extended Comm			2.15
FedEx Use	000000000/0001486/_	Saturday Delivery			15.00
		Total Charge		**USD**	**$53.02**

Picked up: Feb 08, 2013 Cust. Ref.: HOLD FOR PICKUP - ENTHAL Ref.#2: 11267 COMM
Payor: Shipper Ref.#3:

- Fuel Surcharge - FedEx has applied a fuel surcharge of 10.00% to this shipment.
- Hold for pickup
- Distance Based Pricing, Zone 5
- 1st attempt Feb 09, 2013 at 08:10 AM.
- FedEx has audited this shipment for correct packages, weight, and service. Any changes made are reflected in the invoice amount.
- We calculated your charges based on a dimensional weight of 31.0 lbs, 21" x 15" x 16", using a dimensional factor of 166.

		Sender	Recipient
Automation	INET	Stacy L. Jones, Logistics	FED EX CENTER
Tracking ID	794713139987	Offshore Air & Refrigeration (	HOLD FOR PICKUP - ENTHALPY ANA
Service Type	FedEx Priority Overnight	124 Trahan Street	2311 ENGLERT DR
Package Type	Customer Packaging	LAFAYETTE LA 70506 US	DURHAM NC 27713 US
Zone	05		
Packages	1		
Actual Weight	9.0 lbs, 4.1 kgs		
Rated Weight	31.0 lbs, 14.1 kgs		
Delivered	Feb 09, 2013 09:19	Transportation Charge	173.00
Svc Area	A1	Courier Pickup Charge	4.00
Signed by	J. ESCOVEDO	Fuel Surcharge	17.70
FedEx Use	000000000/0001552/_	**Total Charge** USD	$194.70

Shipper Subtotal	**USD**	$552.54
Total FedEx Express	**USD**	$552.54

FedEx Ground Prepaid Detail (Original)

Pickup Date: Feb 05, 2013 Cust. Ref.: 4563-204-ISJ P.O.#: 4563-204-ISJ
Payor: Shipper Dept.#:

		Sender	Recipient		
Tracking ID	443 116515000235	Stacy L. Jones, Logistics	W&T OFFSHORE	Transportation Charge	6.35
Service Type	Ppd, Domestic	Offshore Air & Refrigeration (	W&T HI A379B	NDOC P/U- Auto Comm	3.00
Zone	02	124 Trahan Street	9729 ETHLYN RD	Fuel Surcharge	0.79
Packages	1	Lafayette LA 70506	ABBEVILLE LA 70510-054529	DAS Extended Comm	2.00
Rated Weight	2 lbs			**Total Charge** USD	$12.14
Delivered	Feb 06, 2013				

Prepaid Subtotal	**USD**	$12.14
Total FedEx Ground	**USD**	$12.14

Appendix L

Personnel Certifications

SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

TOM ARMSTRONG

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

GASEOUS POLLUTANTS INSTRUMENTAL SAMPLING METHODS

ISSUED THIS 1st DAY OF MAY 2012 AND EFFECTIVE UNTIL APRIL 30TH , 2017

Peter R. Westlin, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

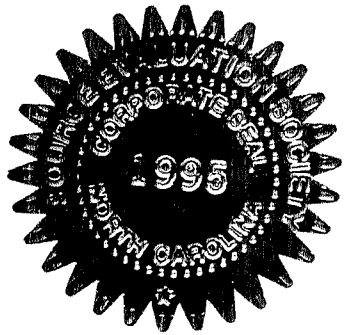
LeRoy Owens, QSTI/QSTO Review Board

C. David Bagwell, QSTI/QSTO Review Board

Karen D. Kajiya-Mills , QSTI/QSTO Review Board

Glenn C. England, QSTI/QSTO Review Board

APPLICATION NO. 2012-662



SOURCE EVALUATION SOCIETY

Qualified Source Testing Individual

LET IT BE KNOWN THAT

TOM ARMSTRONG

HAS SUCCESSFULLY PASSED A COMPREHENSIVE EXAMINATION AND SATISFIED EXPERIENCE REQUIREMENTS IN ACCORDANCE WITH THE GUIDELINES ISSUED BY THE SES QUALIFIED SOURCE TEST INDIVIDUAL REVIEW BOARD FOR

MANUAL GAS VOLUME MEASUREMENTS AND ISOKINETIC PARTICULATE SAMPLING METHODS

ISSUED THIS 1st DAY OF MAY 2012 AND EFFECTIVE UNTIL APRIL 30TH , 2017

Peter R. Westlin, QSTI/QSTO Review Board

C. David Bagwell, QSTI/QSTO Review Board

Peter S. Pakalnis, QSTI/QSTO Review Board

Karen D. Kajiya-Mills , QSTI/QSTO Review Board

LeRoy Owens, QSTI/QSTO Review Board

Glenn C. England, QSTI/QSTO Review Board

APPLICATION NO. 2012-662

Appendix M

Propylene Fuel Systems

(Includes Piping Diagram)

GAS INNOVATIONS
Independent Wholesale Provider of Gases & Service

phone: 281.471.2200
fax: 281.471.2201

PROPYLENE
Technical Data Sheet

LPGas

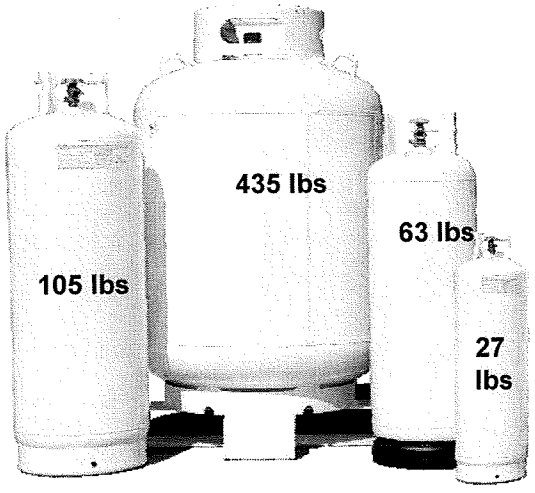
LIQUEFIED PETROLEUM GAS

PROPYLENE
THE PRODUCTIVITY FUEL GAS....

***Propylene** has proven its productivity nationwide for more than 30 years in metalworking applications that include flame cutting, heating, (preheating and stress relieving), brazing, soldering, flame hardening and HVOF metalizing. The high flame temperature and the heat of combustion produced by Propylene and oxygen produces cutting speeds 30% -60% greater than Natural Gas. Heating applications often produce an even greater advantage...especially over acetylene.*

***Propylene** cylinders are safe, economical and easy to handle. They come in 435, 105, 63 and 27 lb sizes. Propylene is available in economical bulk stations with capacities 1,000 to 12,000 gallon horizontal and 1,900 and 3,900 gallon vertical tanks to reduce costs and eliminate problems with low pressure natural gas and generated or trailered acetylene.*

***Propylene Productivity:** The predictable performance of propylene is a matter of chemical truth. Propylene has a double bond in its molecule which decomposed and produces a higher flame temperature that Propane which has only a single bond in its molecule. No blended fuel is hotter than Propylene.*



Heating Values of Fuel Gases

	Propylene	Propane	Acetylene	Natural Gas
Neutral Flame Temp.	5342	4700	5700	4500
Heat Emission BTU/cu.ft. Primary Flame	433	255	507	11
Secondary Flame	1938	2243	963	989
Total BTU/cu.ft.	2371	2498	1470	1000
Total Heat Value BTU/lb.	21,600	21,600	21,500	23,600

Properties of Industrial Fuels

	Propylene	Propane	Acetylene	Natural Gas
SAFETY DATA				
Shock Sensitivity	Stable	Stable	Unstable	Stable
Explosive Limits in Oxygen (%)	2.3-55	2.4-57	3.0-93	5.0-59
Explosive Limits in Air (%)	2.0-11	2.3-9.5	2.5-80	5.3-14
Max. Allowable Pressure	Cylinder	Cylinder	15 PSIG	Line
Burning Velocity in Oxygen ft/sec.	15	12.2	22.7	13.6
Backfire Tendency	Low	Low	High	Low
Toxicity	Low	Low	Low	Low
Physical Properties				
Specific Gravity of liquid	0.522	0.507	X	X
Lbs./Gal. Liquid	4.35	4.98	X	X
Cu. Ft./Lb. Gas	9.1	8.66	14.6	23.6
Specific Gravity of Gas	1.49	1.52	0.906	0.62
Vapour Pressure @ 70 F PSIG	135	120	X	X
Boiling Range	-54	-50	-8.4	-161

18005 E Hwy 225 La Porte, TX 77571 www.gasinnovations.com

GAS INNOVATIONS
Independent Wholesale Provider of Gases & Service

PROPYLENE FUEL GAS

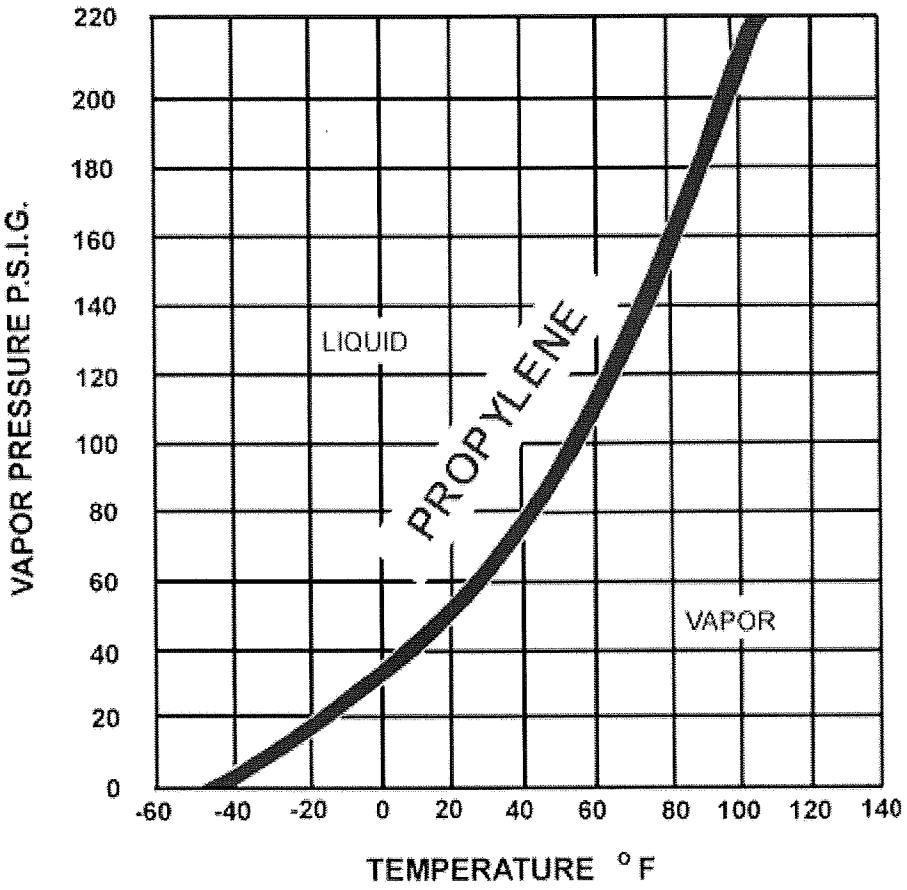
phone: 281.471.2200
fax: 281.471.2201

LPGas

LIQUEFIED PETROLEUM GAS

Propylene has the highest vapor pressure of all available fuel gases, an important factor for cold weather applications. This superior pressure delivery often allows the user to eliminate vaporization equipment on storage tanks. This also prevents the reliquification of gas in the piping and hoses which often occurs with propane and blended fuels.

VAPOR PRESSURE vs. TEMPERATURE



Cubic Feet Per Hour with Cylinder 60% Full

Cylinder Size	TEMPERATURE Degrees F				
	-5	10+	20+	40+	60+
27 lbs	8	16	21	32	42
63 lbs	15	29	39	58	78
105 lbs	20	40	53	80	106
435 lbs	44	89	119	178	238

40% FULL - Multiply 0.8
20% FULL - Multiply 0.6

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Appendix N

Combustor Sample Ports

(Drawing)

Appendix O

40 CFR 60.5413(d) Testing Requirements

Attachment "A"

(2) You must design and operate a vapor recovery device (*e.g.*, carbon adsorption system or condenser) or other non-destructive control device to reduce the mass content of VOC in the gases vented to the device by 95.0 percent by weight or greater as determined in accordance with the requirements of § 60.5413. The vapor recovery device must meet the design analysis requirements of § 60.5413(c).

(3) You must design and operate a flare in accordance with the requirements of § 60.5413.

(b) You must operate each control device in accordance with the requirements specified in paragraphs (b)(1) and (2) of this section.

(1) You must operate each control device used to comply with this subpart at all times when gases, vapors, and fumes are vented from the storage vessel affected facility, as required under § 60.5395, or wet seal fluid degassing system affected facility, as required under § 60.5380, through the closed vent system to the control device. You may vent more than one affected facility to a control device used to comply with this subpart.

(2) For each control device monitored in accordance with the requirements of § 60.5417, you must demonstrate compliance according to the requirements of § 60.5415(e)(2), as applicable.

(c) For each carbon adsorption system used as a control device to meet the requirements of paragraph (a)(2) of this section, you must manage the carbon in accordance with the requirements specified in paragraphs (c)(1) or (2) of this section.

(1) Following the initial startup of the control device, you must replace all carbon in the control device with fresh carbon on a regular, predetermined time interval that is no longer than the carbon service life established according to § 60.5413(c)(2) or (3) for the carbon adsorption system. You must maintain records identifying the schedule for replacement and records of each carbon replacement as required in § 60.5420(c)(6).

(2) You must either regenerate, reactivate, or burn the spent carbon removed from the carbon adsorption system in one of the units specified in paragraphs (c)(2)(i) through (vii) of this section.

(i) Regenerate or reactivate the spent carbon in a thermal treatment unit for which you have been issued a final permit under 40 CFR part 270 that implements the requirements of 40 CFR part 264, subpart X.

(ii) Regenerate or reactivate the spent carbon in a thermal treatment unit equipped with and operating air emission controls in accordance with this section.

(iii) Regenerate or reactivate the spent carbon in a thermal treatment unit equipped with and operating organic air emission controls in accordance with an emissions standard for VOC under another subpart in 40 CFR part 60 or this part.

(iv) Burn the spent carbon in a hazardous waste incinerator for which the owner or operator has been issued a final permit under 40 CFR part 270 that implements the requirements of 40 CFR part 264, subpart O.

(v) Burn the spent carbon in a hazardous waste incinerator which you have designed and operated in accordance with the requirements of 40 CFR part 265, subpart O.

(vi) Burn the spent carbon in a boiler or industrial furnace for which you have been issued a final permit under 40 CFR part 270 that implements the requirements of 40 CFR part 266, subpart H.

(vii) Burn the spent carbon in a boiler or industrial furnace that you have designed and operated in accordance with the interim status requirements of 40 CFR part 266, subpart H.

§ 60.5413 What are the performance testing procedures for control devices used to demonstrate compliance at my storage vessel or centrifugal compressor affected facility?

This section applies to the performance testing of control devices used to demonstrate compliance with the emissions standards for your storage vessel or centrifugal compressor affected facility. You must demonstrate that a control device achieves the performance requirements of § 60.5412(a) using the performance test methods and procedures specified in paragraph (b) of this section. For condensers, you may use a design analysis as specified in paragraph (c) of this section in lieu of complying with paragraph (b) of this section.

(a) *Performance test exemptions.* You are exempt from the requirements to conduct performance tests and design analyses if you use any of the control devices described in paragraphs (a)(1) through (7) of this section.

(1) A flare that is designed and operated in accordance with § 60.18(b). You must conduct the compliance determination using Method 22 at 40 CFR part 60, appendix A–7, to determine visible emissions.

(2) A boiler or process heater with a design heat input capacity of 44 megawatts or greater.

(3) A boiler or process heater into which the vent stream is introduced with the primary fuel or is used as the primary fuel.

(4) A boiler or process heater burning hazardous waste for which you have either been issued a final permit under 40 CFR part 270 and comply with the requirements of 40 CFR part 266, subpart H; or you have certified compliance with the interim status requirements of 40 CFR part 266, subpart H.

(5) A hazardous waste incinerator for which you have been issued a final permit under 40 CFR part 270 and comply with the requirements of 40 CFR part 264, subpart O; or you have certified compliance with the interim status requirements of 40 CFR part 265, subpart O.

(6) A performance test is waived in accordance with § 60.8(b).

(7) A control device that can be demonstrated to meet the performance requirements of § 60.5412(a) through a performance test conducted by the manufacturer, as specified in paragraph (d) of this section.

(b) *Test methods and procedures.* You must use the test methods and procedures specified in paragraphs (b)(1) through (5) of this section, as applicable, for each performance test conducted to demonstrate that a control device meets the requirements of § 60.5412(a). You must conduct the initial and periodic performance tests according to the schedule specified in paragraph (b)(5) of this section.

(1) You must use Method 1 or 1A at 40 CFR part 60, appendix A–1, as appropriate, to select the sampling sites specified in paragraphs (b)(1)(i) and (ii) of this section. Any references to particulate mentioned in Methods 1 and 1A do not apply to this section.

(i) Sampling sites must be located at the inlet of the first control device, and at the outlet of the final control device, to determine compliance with the control device percent reduction requirement specified in § 60.5412(a)(1)(i) or (a)(2).

(ii) The sampling site must be located at the outlet of the combustion device to determine compliance with the enclosed combustion device total TOC concentration limit specified in § 60.5412(a)(1)(ii).

(2) You must determine the gas volumetric flowrate using Method 2, 2A, 2C, or 2D at 40 CFR part 60, appendix A–2, as appropriate.

(3) To determine compliance with the control device percent reduction performance requirement in § 60.5412(a)(1)(i) or (a)(2), you must use Method 25A at 40 CFR part 60, appendix A–7. You must use the procedures in paragraphs (b)(3)(i)

through (iv) of this section to calculate percent reduction efficiency.

(i) For each run, you must take either an integrated sample or a minimum of four grab samples per hour. If grab sampling is used, then the samples must be taken at approximately equal intervals in time, such as 15-minute intervals during the run.

(ii) You must compute the mass rate of TOC (minus methane and ethane) using the equations and procedures specified in paragraphs (b)(3)(ii)(A) and (B) of this section.

(A) You must use the following equations:

$$E_i = K_2\left(\sum_{j=1}^{n} C_{ij}M_{ij}\right)Q_i$$

$$E_o = K_2\left(\sum_{j=1}^{n} C_{oj}M_{oj}\right)Q_o$$

Where:

E_i, E_o = Mass rate of TOC (minus methane and ethane) at the inlet and outlet of the control device, respectively, dry basis, kilogram per hour.

K_2 = Constant, 2.494×10^{-6} (parts per million) (gram-mole per standard cubic meter) (kilogram/gram) (minute/hour), where standard temperature (gram-mole per standard cubic meter) is 20 °C.

C_{ij}, C_{oj} = Concentration of sample component j of the gas stream at the inlet and outlet of the control device, respectively, dry basis, parts per million by volume.

M_{ij}, M_{oj} = Molecular weight of sample component j of the gas stream at the inlet and outlet of the control device, respectively, gram/gram-mole.

Q_i, Q_o = Flowrate of gas stream at the inlet and outlet of the control device, respectively, dry standard cubic meter per minute.

n = Number of components in sample.

(B) When calculating the TOC mass rate, you must sum all organic compounds (minus methane and ethane) measured by Method 25A at 40 CFR part 60, appendix A–7 using the equations in paragraph (b)(3)(ii)(A) of this section.

(iii) You must calculate the percent reduction in TOC (minus methane and ethane) as follows:

$$R_{cd} = \frac{E_i - E_o}{E_i} * 100\%$$

Where:

R_{cd} = Control efficiency of control device, percent.

E_i = Mass rate of TOC (minus methane and ethane) at the inlet to the control device as calculated under paragraph (b)(3)(ii) of this section, kilograms TOC per hour or kilograms HAP per hour.

E_o = Mass rate of TOC (minus methane and ethane) at the outlet of the control device, as calculated under paragraph (b)(3)(ii) of this section, kilograms TOC per hour per hour.

(iv) If the vent stream entering a boiler or process heater with a design capacity less than 44 megawatts is introduced with the combustion air or as a secondary fuel, you must determine the weight-percent reduction of total TOC (minus methane and ethane) across the device by comparing the TOC (minus methane and ethane) in all combusted vent streams and primary and secondary fuels with the TOC (minus methane and ethane) exiting the device, respectively.

(4) You must use Method 25A at 40 CFR part 60, appendix A–7 to measure TOC (minus methane and ethane) to determine compliance with the enclosed combustion device total VOC concentration limit specified in § 60.5412(a)(1)(ii). You must calculate parts per million by volume concentration and correct to 3 percent oxygen, using the procedures in paragraphs (b)(4)(i) through (iii) of this section.

(i) For each run, you must take either an integrated sample or a minimum of four grab samples per hour. If grab sampling is used, then the samples must be taken at approximately equal intervals in time, such as 15-minute intervals during the run.

(ii) You must calculate the TOC concentration for each run as follows:

$$C_{TOC} = \sum_{i=1}^{x} \frac{\left(\sum_{j=i}^{n} C_{ji}\right)}{x}$$

Where:

C_{TOC} = Concentration of total organic compounds minus methane and ethane, dry basis, parts per million by volume.

C_{ji} = Concentration of sample component j of sample i, dry basis, parts per million by volume.

n = Number of components in the sample.

x = Number of samples in the sample run.

(iii) You must correct the TOC concentration to 3 percent oxygen as specified in paragraphs (b)(4)(iii)(A) and (B) of this section.

(A) You must use the emission rate correction factor for excess air, integrated sampling and analysis procedures of Method 3A or 3B at 40 CFR part 60, appendix A, ASTM D6522–00 (Reapproved 2005), or ANSI/ASME PTC 19.10–1981, Part 10 (manual portion only) (incorporated by reference as specified in § 60.17) to determine the oxygen concentration. The samples must be taken during the same time that the samples are taken for determining TOC concentration.

(B) You must correct the TOC concentration for percent oxygen as follows:

$$C_c = C_m\left(\frac{17.9}{20.9 - \%O_{2d}}\right)$$

Where:

C_c = TOC concentration corrected to 3 percent oxygen, dry basis, parts per million by volume.

C_m = TOC concentration, dry basis, parts per million by volume.

$\%O_{2d}$ = Concentration of oxygen, dry basis, percent by volume.

(5) You must conduct performance tests according to the schedule specified in paragraphs (b)(5)(i) and (ii) of this section.

(i) You must conduct an initial performance test within 180 days after initial startup for your affected facility. You must submit the performance test results as required in § 60.5420(b)(7).

(ii) You must conduct periodic performance tests for all control devices required to conduct initial performance tests except as specified in paragraphs (b)(5)(ii)(A) and (B) of this section. You must conduct the first periodic performance test no later than 60 months after the initial performance test required in paragraph (b)(5)(i) of this section. You must conduct subsequent periodic performance tests at intervals no longer than 60 months following the previous periodic performance test or whenever you desire to establish a new operating limit. You must submit the periodic performance test results as specified in § 60.5420(b)(7). Combustion control devices meeting the criteria in either paragraph (b)(5)(ii)(A) or (B) of this section are not required to conduct periodic performance tests.

(A) A control device whose model is tested under, and meets the criteria of paragraph (d) of this section.

(B) A combustion control device tested under paragraph (b) of this section that meets the outlet TOC performance level specified in § 60.5412(a)(1)(ii) and that establishes a correlation between firebox or combustion chamber temperature and the TOC performance level.

(c) *Control device design analysis to meet the requirements of § 60.5412(a).* (1) For a condenser, the design analysis must include an analysis of the vent stream composition, constituent concentrations, flowrate, relative humidity, and temperature, and must establish the design outlet organic compound concentration level, design average temperature of the condenser exhaust vent stream, and the design

average temperatures of the coolant fluid at the condenser inlet and outlet.

(2) For a regenerable carbon adsorption system, the design analysis shall include the vent stream composition, constituent concentrations, flowrate, relative humidity, and temperature, and shall establish the design exhaust vent stream organic compound concentration level, adsorption cycle time, number and capacity of carbon beds, type and working capacity of activated carbon used for the carbon beds, design total regeneration stream flow over the period of each complete carbon bed regeneration cycle, design carbon bed temperature after regeneration, design carbon bed regeneration time, and design service life of the carbon.

(3) For a nonregenerable carbon adsorption system, such as a carbon canister, the design analysis shall include the vent stream composition, constituent concentrations, flowrate, relative humidity, and temperature, and shall establish the design exhaust vent stream organic compound concentration level, capacity of the carbon bed, type and working capacity of activated carbon used for the carbon bed, and design carbon replacement interval based on the total carbon working capacity of the control device and source operating schedule. In addition, these systems will incorporate dual carbon canisters in case of emission breakthrough occurring in one canister.

(4) If you and the Administrator do not agree on a demonstration of control device performance using a design analysis, then you must perform a performance test in accordance with the requirements of paragraph (b) of this section to resolve the disagreement. The Administrator may choose to have an authorized representative observe the performance test.

(d) *Performance testing for combustion control devices—manufacturers' performance test.* The manufacturer must demonstrate that a specific model of combustion control device achieves the performance requirements in paragraph (d)(1) of this section by conducting a performance test as specified in paragraphs (d)(2) through (8) of this section. You must submit a test report for each combustion control device in accordance with the requirements in paragraphs (d)(9) of this section.

(1) The manufacturer must meet the performance test criteria in paragraphs (d)(1)(i) through (iii) of this section.

(i) The control device model tested must meet the emission levels in paragraphs (d)(1)(i)(A) through (C) of this section.

(A) Method 22 at 40 CFR part 60, appendix A–7, results under paragraph (d)(6)(iv) of this section with no indication of visible emissions.

(B) Average Method 25A at 40 CFR part 60, appendix A–7, results under paragraph (d)(8) of this section equal to or less than 10.0 parts per million by volume-wet THC as propane corrected to 3.0 percent carbon dioxide, and

(C) Average carbon monoxide emissions determined under paragraph (d)(6)(iii) of this section equal to or less than 10 parts per million by volume-dry, corrected to 3.0 percent carbon dioxide.

(ii) The manufacturer must determine a maximum inlet gas flow rate, which must not be exceeded for each control device model to achieve the criteria in paragraph (d)(1)(i) of this section.

(iii) A control device meeting the emission levels in paragraph (d)(1)(i)(A) through (C) of this section must demonstrate a minimum destruction efficiency of 95.0 percent for VOC regulated under this subpart.

(2) Performance testing must consist of three one-hour (or longer) test runs for each of the four firing rate settings in paragraphs (d)(2)(i) through (iv) of this section, making a total of 12 test runs per test. The manufacturer must use propene (propylene) gas for the testing fuel. An independent third-party laboratory (not affiliated with the control device manufacturer or fuel supplier) must perform all fuel analyses.

(i) 90–100 percent of maximum design rate (fixed rate).

(ii) 70–100–70 percent (ramp up, ramp down). Begin the test at 70 percent of the maximum design rate. Within the first 5 minutes, ramp up the firing rate to 100 percent of the maximum design rate. Hold at 100 percent for 5 minutes. In the 10–15 minute time range, ramp back down to 70 percent of the maximum design rate. Repeat three more times for a total of 60 minutes of sampling.

(iii) 30–70–30 percent (ramp up, ramp down). Begin the test at 30 percent of the maximum design rate. Within the first 5 minutes, ramp up the firing rate to 70 percent of the maximum design rate. Hold at 70 percent for 5 minutes. In the 10–15 minute time range, ramp back down to 30 percent of the maximum design rate. Repeat three more times for a total of 60 minutes of sampling.

(iv) 0–30–0 percent (ramp up, ramp down). Begin the test at 0 percent of the maximum design rate. Within the first 5 minutes, ramp up the firing rate to 100 percent of the maximum design rate. Hold at 30 percent for 5 minutes. In the 10–15 minute time range, ramp back down to 0 percent of the maximum design rate. Repeat three more times for a total of 60 minutes of sampling.

(3) The manufacturer must test all models employing multiple enclosures simultaneously and with all burners operational. The manufacturer must report results for each enclosure individually and for the average of the emissions from all interconnected combustion enclosures/chambers. Control device operating data must be collected continuously throughout the performance test using an electronic Data Acquisition System and strip chart. The manufacturer must submit data with the test report in accordance with paragraph (d)(9) of this section.

(4) The manufacturer must conduct inlet testing as specified in paragraphs (d)(4)(i) through (iii) of this section.

(i) The fuel flow metering system must be located in accordance with Method 2A at 40 CFR part 60, appendix A–1, (or other approved procedure) to measure fuel flow rate at the control device inlet location. You must position the fitting for filling fuel sample containers a minimum of eight pipe diameters upstream of any inlet fuel flow monitoring meter.

(ii) The manufacturer must determine the inlet flow rate using Method 2A at 40 CFR part 60, appendix A–1. Record the start and stop reading for each 60-minute THC test. Record the gas pressure and temperature at 5-minute intervals throughout each 60-minute THC test.

(iii) The manufacturer must conduct inlet fuel sampling in accordance with the criteria in paragraph (d)(5) of this section.

(5) The manufacturer must conduct inlet fuel sampling as specified in paragraphs (d)(5)(i) and (ii) of this section.

(i) At the inlet fuel sampling location, the manufacturer must securely connect a Silonite-coated stainless steel evacuated canister fitted with a flow controller sufficient to fill the canister over a 1 hour period. Filling must be conducted as specified in paragraphs (d)(5)(i)(A) through (C) of this section.

(A) Open the canister sampling valve at the beginning of the total hydrocarbon test, and close the canister at the end of the total hydrocarbon test.

(B) Fill one canister for each total hydrocarbon test run.

(C) Label the canisters individually and record on a chain of custody form.

(ii) The manufacturer must analyze each fuel sample using the methods in paragraphs (d)(5)(ii)(A) through (D) of this section. You must include the results in the test report in paragraph (d)(9) of this section.

(A) Hydrocarbon compounds containing between one and five atoms of carbon plus benzene using ASTM D1945–03 (Reapproved 2010) (incorporated by reference as specified in § 60.17).

(B) Hydrogen (H_2), carbon monoxide (CO), carbon dioxide (CO_2), nitrogen (N_2), oxygen (O_2) using ASTM D1945–03 (Reapproved 2010) (incorporated by reference as specified in § 60.17).

(C) Carbonyl sulfide, carbon disulfide plus mercaptans using ASTM D5504–08 (incorporated by reference as specified in § 60.17).

(D) Higher heating value using ASTM D3588–98 (Reapproved 2003) or ASTM D4891–89 (Reapproved 2006) (incorporated by reference as specified in § 60.17).

(6) The manufacturer must conduct outlet testing in accordance with the criteria in paragraphs (d)(6)(i) through (iv) and (d)(7) of this section.

(i) The manufacturer must sample and measure flowrate in accordance with the following:

(A) The manufacturer must position the outlet sampling location a minimum of four equivalent stack diameters downstream from the highest peak flame or any other flow disturbance, and a minimum of one equivalent stack diameter upstream of the exit or any other flow disturbance. A minimum of two sample ports must be used.

(B) The manufacturer must measure flow rate using Method 1 at 40 CFR part 60, appendix A–1 for determining flow measurement traverse point location, and Method 2 at 40 CFR part 60, appendix A–1 for measuring duct velocity. If low flow conditions are encountered (*i.e.,* velocity pressure differentials less than 0.05 inches of water) during the performance test, a more sensitive manometer must be used to obtain an accurate flow profile.

(ii) The manufacturer must determine molecular weight as specified in paragraph (d)(7) of this section.

(iii) The manufacturer must determine carbon monoxide using Method 10 at 40 CFR part 60, appendix A–4 or ASTM D6522–00 (Reapproved 2005) (incorporated by reference as specified in § 60.17). The manufacturer must run the test at the same time and with the sample points used for the Method 25A at 40 CFR part 60, appendix A–7, testing. An instrument range of 0–10 parts per million by volume-dry (ppmvd) must be used.

(iv) The manufacturer must determine visible emissions using Method 22 at 40 CFR part 60, appendix A–7. The test must be performed continuously during each test run. A digital color photograph of the exhaust point, taken from the position of the observer and annotated with date and time, will be taken once per test run and the four photos included in the test report.

(7) The manufacturer must determine molecular weight as specified in paragraphs (d)(7)(i) and (ii) of this section.

(i) The manufacturer must collect an integrated bag sample during the Method 4 at 40 CFR part 60, appendix A–3, moisture test. The manufacturer must analyze the bag sample using a gas chromatograph-thermal conductivity detector (GC–TCD) analysis meeting the criteria in paragraphs (d)(7)(i)(A) through (D) of this section.

(A) Collect the integrated sample throughout the entire test, and collect representative volumes from each traverse location.

(B) Purge the sampling line with stack gas before opening the valve and beginning to fill the bag.

(C) Knead or otherwise vigorously mix the bag contents prior to the gas chromatograph analysis.

(D) Modify the gas chromatograph-thermal conductivity detector calibration procedure in Method 3C at 40 CFR part 60, appendix A–2 by using EPA Alt–045 as follows: For the initial calibration, triplicate injections of any single concentration must agree within 5 percent of their mean to be valid. The calibration response factor for a single concentration re-check must be within 10 percent of the original calibration response factor for that concentration. If this criterion is not met, repeat the initial calibration using at least three concentration levels.

(ii) The manufacturer must report the molecular weight of oxygen, carbon dioxide, methane, and nitrogen and include in the test report submitted under § 60.5420(b)(7). The manufacturer must determine moisture using Method 4 at 40 CFR part 60, appendix A–3. Traverse both ports with the Method 4 at 40 CFR part 60, appendix A–3, sampling train during each test run. The manufacturer must not introduce ambient air into the Method 3C at 40 CFR part 60, appendix A–2, integrated bag sample during the port change.

(8) The manufacturer must determine total hydrocarbons as specified by the criteria in paragraphs (d)(8)(i) through (vii) of this section.

(i) Conduct THC sampling using Method 25A at 40 CFR part 60, appendix A–7, except the option for locating the probe in the center 10 percent of the stack is not allowed. The THC probe must be traversed to 16.7 percent, 50 percent, and 83.3 percent of the stack diameter during the testing.

(ii) A valid test must consist of three Method 25A at 40 CFR part 60, appendix A–7, tests, each no less than 60 minutes in duration.

(iii) A 0–10 parts per million by volume-wet (ppmvw) (as propane) measurement range is preferred; as an alternative a 0–30 ppmvw (as carbon) measurement range may be used.

(iv) Calibration gases will be propane in air and be certified through EPA Protocol 1—"EPA Traceability Protocol for Assay and Certification of Gaseous Calibration Standards," September 1997, as amended August 25, 1999, EPA–600/R–97/121.

(v) THC measurements must be reported in terms of ppmvw as propane.

(vi) THC results must be corrected to 3 percent CO_2, as measured by Method 3C at 40 CFR part 60, appendix A–2.

(vii) Subtraction of methane/ethane from the THC data is not allowed in determining results.

(9) For each combustion control device model tested by the manufacturer under this section, you must maintain records of the information listed in paragraphs (d)(9)(i) through (vi) of this section.

(i) A full schematic of the control device and dimensions of the device components.

(ii) The design net heating value (minimum and maximum) of the device.

(iii) The test fuel gas flow range (in both mass and volume). Include the minimum and maximum allowable inlet gas flow rate.

(iv) The air/stream injection/assist ranges, if used.

(v) The test parameter ranges listed in paragraphs (d)(9)(v)(A) through (O) of this section, as applicable for the tested model.

(A) Fuel gas delivery pressure and temperature.

(B) Fuel gas moisture range.

(C) Purge gas usage range.

(D) Condensate (liquid fuel) separation range.

(E) Combustion zone temperature range. This is required for all devices that measure this parameter.

(F) Excess combustion air range.

(G) Flame arrestor(s).

(H) Burner manifold pressure.

(I) Pilot flame sensor.

(J) Pilot flame design fuel and fuel usage.

(K) Tip velocity range.

(L) Momentum flux ratio.

(M) Exit temperature range.

(N) Exit flow rate.

(O) Wind velocity and direction.

(vi) You must include all calibration quality assurance/quality control data, calibration gas values, gas cylinder certification, and strip charts annotated

with test times and calibration values in the test report.

§ 60.5415 How do I demonstrate continuous compliance with the standards for my gas well affected facility, my centrifugal compressor affected facility, my stationary reciprocating compressor affected facility, my pneumatic controller affected facility, my storage vessel affected facility, and my affected facilities at onshore natural gas processing plants?

(a) For each gas well affected facility, you must demonstrate continuous compliance by submitting the reports required by § 60.5420(b) and maintaining the records for each completion operation specified in § 60.5420(c)(1).

(b) For each centrifugal compressor affected facility, you must demonstrate continuous compliance according to paragraphs (b)(1) and (2) of this section.

(1) You must reduce VOC emissions from the wet seal fluid degassing system by 95.0 percent or greater.

(2) If you use a control device to reduce emissions, you must demonstrate continuous compliance according to paragraph (e)(2) of this section.

(3) You must submit the annual report required by 60.5420(b) and maintain the records as specified in § 60.5420(c)(2).

(c) For each reciprocating compressor affected facility, you must demonstrate continuous compliance according to paragraphs (c)(1) through (3) of this section.

(1) You must continuously monitor the number of hours of operation for each reciprocating compressor affected facility or track the number of months since initial startup, or October 15, 2012, or the date of the most recent reciprocating compressor rod packing replacement, whichever is later.

(2) You must submit the annual report as required in § 60.5420(b) and maintain records as required in § 60.5420(c)(3).

(3) You must replace the reciprocating compressor rod packing before the total number of hours of operation reaches 26,000 hours or the number of months since the most recent rod packing replacement reaches 36 months.

(d) For each pneumatic controller affected facility, you must demonstrate continuous compliance according to paragraphs (d)(1) through (3) of this section.

(1) You must continuously operate the pneumatic controllers as required in § 60.5390(a), (b), or (c).

(2) You must submit the annual report as required in § 60.5420(b).

(3) You must maintain records as required in § 60.5420(c)(4).

(e) For each storage vessel affected facility for which the VOC emissions are greater than 6 tpy, you must demonstrate continuous compliance according to paragraphs (e)(1) and (2) of this section.

(1) You must reduce VOC emissions from each storage vessel are reduced by 95.0 percent or greater.

(2) If you use a control device to reduce VOC emissions, you must demonstrate continuous compliance with the performance requirements of § 60.5412(a)(2) using the procedure specified in paragraphs (e)(2)(i) through (vii) of this section. If you use a condenser as the control device to achieve the requirements specified in § 60.5412(a)(2), you may demonstrate compliance according to paragraph (e)(2)(viii) of this section. You may switch between compliance with paragraphs (e)(2)(i) through (vii) of this section and compliance with paragraph (e)(2)(viii) of this section only after at least 1 year of operation in compliance with the selected approach. You must provide notification of such a change in the compliance method in the next Annual Report, as required in § 60.5420(b), following the change.

(i) You must operate below (or above) the site specific maximum (or minimum) parameter value established according to the requirements of § 60.5417(f)(1).

(ii) You must calculate the daily average of the applicable monitored parameter in accordance with § 60.5417(e) except that the inlet gas flow rate to the control device must not be averaged.

(iii) Compliance with the operating parameter limit is achieved when the daily average of the monitoring parameter value calculated under paragraph (e)(2)(ii) of this section is either equal to or greater than the minimum monitoring value or equal to or less than the maximum monitoring value established under paragraph (e)(2)(i) of this section. When performance testing of a combustion control device is conducted by the device manufacturer as specified in § 60.5413(d), compliance with the operating parameter limit is achieved when the inlet gas flow rate is equal to or less than the value established under § 60.5413(d)(1)(ii).

(iv) You must operate the continuous monitoring system required in § 60.5417 at all times the affected source is operating, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits and required zero and span adjustments). A monitoring system malfunction is any sudden, infrequent, not reasonably preventable failure of the monitoring system to provide valid data. Monitoring system failures that are caused in part by poor maintenance or careless operation are not malfunctions. You are required to complete monitoring system repairs in response to monitoring system malfunctions and to return the monitoring system to operation as expeditiously as practicable.

(v) You may not use data recorded during monitoring system malfunctions, repairs associated with monitoring system malfunctions, or required monitoring system quality assurance or control activities in calculations used to report emissions or operating levels. You must use all the data collected during all other required data collection periods to assess the operation of the control device and associated control system.

(vi) Failure to collect required data is a deviation of the monitoring requirements, except for periods of monitoring system malfunctions, repairs associated with monitoring system malfunctions, and required quality monitoring system quality assurance or quality control activities (including, as applicable, system accuracy audits and required zero and span adjustments).

(vii) If you use a combustion control device to meet the requirements of § 60.5412(a), you must demonstrate compliance by installing a device tested under the provisions in § 60.5413(d) and complying with the criteria in paragraphs (e)(2)(vii)(A) through (D) of this section.

(A) The inlet gas flow rate must meet the range specified by the manufacturer. You must measure the flow rate as specified in § 60.5417(d)(1)(viii)(A).

(B) A pilot flame must be present at all times of operation. You must monitor the pilot flame in accordance with § 60.5417(d)(1)(viii)(B).

(C) You must operate the combustion control device with no visible emissions, except for periods not to exceed a total of 5 minutes during any 2 consecutive hours. You must perform a visible emissions test using Method 22 at 40 CFR part 60, appendix A–7 monthly. The observation period must be 2 hours and must follow Method 22.

(D) Compliance with the operating parameter limit is achieved when the criteria in paragraphs (e)(2)(vii)(D)(*1*) through (*5*) are met.

(*1*) The inlet gas flow rate monitored under paragraph (e)(2)(vii)(A) of this section is equal to or below the maximum established by the manufacturer.

Appendix P

Safety Information – JSA, Flare Safety

COMM FLARE SAFETY

WARNING: All operating and maintenance personnel must read and become familiar with this operating instruction manual. Operation of the combuster must be strictly in accordance with COMM Engineering operating and maintenance Instructions. IMPROPER OPERATION OF THE EQUIPMENT CAN RESULT IN EQUIPMENT DAMAGE AND / OR INJURY OR POSSIBLE LOSS OF LIFE TO OPERATING PERSONNEL.

CAUTION

FIRE AND EXPLOSION HAZARDS

1. The combustion system has an enclosed flame during normal operation and it is imperative that it be installed in a non-hazardous area.
2. Smoking, welding or open flames should be prohibited around the unit as long as it contains hydrocarbon vapors. Leaks should be repaired as soon as possible to prevent accumulation of spilled combustibles. Spillage should be cleaned up promptly.
3. The piping and pilot gas lines contain hydro-carbon vapor that released in air may become explosive. Extreme caution must be exercised when opening the system for inspection and service. Smoking, welding, or open flame must be prohibited whenever the system is opened to the atmosphere.

ELEVATED TEMPERATURES

1. The COMM Engineering enclosed flare system generates very high internal temperatures. Ceramic fiber insulation is provided to maintain acceptable external surface temperatures. It may be possible, however, to encounter elevated surface temperatures during certain operating conditions. Care must be exercised to prevent burns and other thermal hazards when in proximity of the combustion system. **NEVER ENTER** the combustion stack until an adequate cool-off period has been observed and safety personnel are present.
2. **Under no circumstances** should any person go into the stack when the equipment is operating or has not been purged of hydrocarbon vapors.

ELECTRICAL HAZARDS

1. Potentially dangerous voltages exist in control cabinets and electrically actuated control components. These components should only be serviced when system power is removed and only be qualified electrical / instrumentation servicemen.
2. **High voltage** capable of causing severe **injury** or **death** is used on this equipment.
3. Insure all skids and flare stack are properly grounded.

OPERATION & MAINTENANCE

1. Combuster operation and maintenance should only be performed by qualified personnel who have received instruction and training from COMM Engineering field service personnel.

PERSONAL PROTECTIVE EQUIPMENT

1. Hard Hat
2. Full Face Shield
3. NOMEX Suit
4. Long Sleeve shirts
5. Gloves

REFRACTORY

WARNING: The castable refractory dust contains cristabolite and or crystalline silica and the ceramic fiber refractory contains fibers, all of which may be carcinogenic. Use proper and approved respiratory protective equipment to avoid exposure.

SAFETY MEETING

FEB 5, 2013

7:30 AM

JOB # 11267 FLARE CERTIFICATION

	Date	Time In	Time Out	Print Name	Company	Person Visiting or Reason for Visit	Signature
1	2/5/13	6:50		Fischer	Rytex		
2	2/5/13	6:50		M. Goodyear	COMM		
3	2/5/13	6:30		Lynn Dercher	OAR		
4	2/5/13	6:50		Troy Bequet	OAR		
5	2/5/13	7:00		Tom Armstrg	Armstrg		
6	2/5/13	7:20		Michael Chaumont	OAR		
7	2/5/13	7:25		Kayla Hollier	OAR		
8	2/5/13	7:25		Steve Hoeg	Comm		
9	2/5/13	7:28		Grant Fleming	OAR		
10	2-15-13	7:30		John Terrell	OAR		
11	2-5-13	7:30		Nadine Gary	OAR		
12	2-5-13	7:30		Dave Landry	OAR		
13	2-5-13	7:30		Clay Jones	OAR		
14	2-5-13	7:30		Andrew Bierview	Comm		
15	2-5-13	7:30		Carroll Jagneaux	OAR.		
16	2-5-13	7:30		Larry Whicker	Armstrong Env		
17	2-5-13	7:30		Tom Armstrong	Armstrong Env.		
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

APR 9 2014

ASSISTANT ADMINISTRATOR
FOR ENFORCEMENT AND
COMPLIANCE ASSURANCE

MEMORANDUM

To: Edward Messina, Director
Monitoring, Assistance, and Media Programs Division

Through: Julius Banks, Chief
Air Branch

From: Marcia B. Mia
Air Branch

Subject: Performance Testing for Enclosed Combustion Control Devices – Manufacturer's Performance Test under New Source Performance Standards for Crude Oil and Natural Gas Production, Transmission and Distribution (NSPS OOOO) and National Emissions Standards for Hazardous Air Pollutant (NESHAP) for Oil and Natural Gas Production (MACT HH) and NESHAP for Natural Gas Transmission and Storage (MACT HHH)

Recommendation for Posting – COMM Engineering "Combustor 200"

I have completed the review of the manfacturer performance test submitted by COMM Engineering on March 6, 2013, for the "Combustor 200" and recommend it for posting to the EPA Oil and Gas page at: http://www.epa.gov/airquality/oilandgas/.

According to NSPS OOOO, owners or operators of centrifigual compressors are exempt from the requirement to conduct performance tests and design evaluations (§60.5413(a)(7)) if they use a control device whose model can be demonstrated to meet the performance requirements for centrifigul compressors at §60.5412(a), through a performance test conducted by the manufacturer, According to §60.5413(a)(7), the performance requirements for centrifigual compressors are demonstrated using the provisions specified in §60.5413(d).

In addition, under NSPS OOOO, owners or operators of storage vessels may meet the emissions reduction standard in §60.5395(d) by installing a control device model that is tested under §60.5413(d) and meets the criteria of §60.5413(d)(11) and §60.5413(e).

MACT HH and MACT HHH also provides for the use of manufacturer tested control devices. Section 63.772(e) (MACT HH) states that "[a]s an alternative to conducting a performance test under this section for combustion control devices, a control device that can be demonstrated to meet the performance requirements of § 63.771(d)(1), (e)(3)(ii) or (f)(1) through a performance test conducted by the manufacturer, as specified in paragraph (h) of this section, can be used." MACT HHH has conforming cites at §63.1282(d) (alternative to conducting a performance test), §63.1281(d)(1), (e)(3)(ii), or (f)(1) (performance requirements), and §63.1282(g) (demonstration specifications).

Using the demonstration specifications at §60.5413(d), §63.772(h) and §63.1282(g), the attached checklist was created. The performance test, referenced above, was evaluated against this checklist. The results of this review and the supporting documents which form the basis of this recommendation are attached.

The review was coordinated with the Office of Air Quality Planning and Standards. I recommend that you concur, by signing below. If you have any questions, please contact me at mia.marcia@epa.gov or 202-564-7042.

4/9/14

Concur/Signature

NonConcur/Signature

Attachments (7)

Cc (without attachments):
Amy Branning, OGC
Steffan Johnson, OAQPS
Bruce Moore, OAQPS
Chris Franz, OAQPS
Alison Davis, OAQPS

Index of Attachments

Tab 1: External PDF Document: "Enclosed Combustor Performance Testing 40 CFR 60 Subpart OOOO Requirements"; COMM OOOO Combustor 200; February 5-8, 2013; Armstrong Environmental, Inc; Project W-2734-13

Tab 2: EPA Word Document: "NSPS Subpart OOOO/NESHAP HH/HHH Enclosed Combustor Manufacturer Performance Test Administrative Checklist
Enclosed Combustor Make/Model: COMM Engineering Combustor 200"

Tab 3: Email: Email from Steve Hogg (COMM Engineering) to Marcia Mia (EPA) and Rachel Agnew (EPA); 6/11/2013; "COMM Engineering - Combustor 200 Quad "O" Submittal Followup!"

Tab 4: Email: Email from Marcia Mia to Steve Hogg; 12/17/2013; "Summary of Teleconference Regarding OOOO Manufacturing Testing Questions and Review"

Tab 5: Email: Email from Marcia Mia to Bill Schneider (COMM Engineering), Steffan Johnson (EPA) and Jason Huckabee (ERG); 2/10/2014; "Re: Response to EPA/COMM Teleconference Monday January 7, 2014"

Tab 6: Email: Email from Marcia Mia to Bill Schneider, Steffan Johnson and Jason Huckaby; 02/18/2014; "Re: Response to EPA/COMM Teleconference Monday January 7, 2014"

Tab 7: Email: Email from Steve Hogg to Marcia Mia and Steffan Johnson; 02/26/2014; "COMM Engineering – Variance Request for sample port for Combustor 200 testing"

NSPS Subpart OOOO/NESHAP HH/HHH Enclosed Combustor Manufacturer Performance Test Administrative Checklist

Enclosed Combustor Make/Model: COMM Engineering Combustor 200

Manufacturer Testing/Reporting Element	Rule Cite	Meets criterion	Comments
1. 4 conditions tested - Three 1 hr. (or longer) test runs at each setting.	§60.5413(d)(2); §63.772(h)(2); §63.1282(g)(2)	Y	
a. Propene (propylene) gas must be used as testing fuel.	§60.5413(d)(2); §63.772(h)(2); §63.1282(g)(2)	Y	
b. All fuel analyses must be performed by an independent third-party laboratory (not affiliated with the control device manufacturer or fuel supplier).	§60.5413(d)(2); §63.772(h)(2); §63.1282(g)(2)	Y	
c. 90-100% max	§60.5413(d)(2)(i); §63.772(h)(2)(i); §63.1282(g)(2)(i)	Y	
d. 70-100-70 ramp up/down	§60.5413(d)(2)(ii); §63.772(h)(2)(ii); §63.1282(g)(2)(ii)	Y	
e. 30-70-30 ramp up/down	§60.5413(d)(2)(iii); §63.772(h)(2)(iii); §63.1282(g)(2)(iii)	Y	
f. 0-30-0 ramp up /down	§60.5413(d)(2)(iv); §63.772(h)(2)(iv); §63.1282(g)(2)(iv)	Y	
2. Multiple enclosures must be tested simultaneously and with all burners operational. Results must be reported for each enclosure individually and for the average of the emissions from all interconnected combustion enclosures/chambers.	§60.5413(d)(3); §63.772(h)(3); §63.1282(g)(3)	N/A	Unit has one burner.
3. Inlet fuel metering:	§60.5413(d)(4); §63.772(h)(4); §63.1282(g)(4)	Y	
a. Inlet gas flow metering system located according to Me 2A – must position the fitting for filling fuel sample containers a minimum of 8 diameters upstream of any inlet gas flow monitoring meter.	§60.5413(d)(4)(i); §63.772(h)(4)(i); §63.1282(g)(4)(i)	Y	

Manufacturer Testing/Reporting Element	Rule Cite	Meets criterion	Comments
b. Calibrated meter	Referenced from Me 2A, Section 10.0	Y	
c. Record the start and stop reading for each 60-minute THC test.	§60.5413(d)(4)(ii); §63.772(h)(4)(ii); §63.1282(g)(4)(ii)	Y	
d. Temp/pressure compensated or recorded every 5 minutes	§60.5413(d)(4)(ii); §63.772(h)(4)(ii); §63.1282(g)(4)(ii)	Y	
4. Inlet fuel sampling and analysis:	§60.5413(d)(5); §63.772(h)(4)(iii); §63.1282(g)(4)(iii)	Y	
a. 4 samples, 1 for each condition	§60.5413(d)(5)(i)(B); §63.772(h)(4)(iii)(A)(2); §63.1282(g)(4)(iii)(A)(2)	Y	
b. Sampled for 3 hours	§60.5413(d)(5)(i); §63.772(h)(4)(iii)(A); §63.1282(g)(4)(iii)(A)	Y	
c. Sampled in accordance with (d)(5)(i)(A)-(C) (e.g., label each canister and record information on chain of custody).	§60.5413(d)(5)(i)(A)-(C); §63.772(h)(4)(iii)(A)(1-3); §63.1282(g)(4)(iii)(A)(1-3)	Y	
d. Labs for hydrocarbons	§60.5413(d)(5)(ii)(A); §63.772(h)(4)(iii)(B)(1); §63.1282(g)(4)(iii)(B)(1)	Y	
e. Labs for fixed gases	§60.5413(d)(5)(ii)(B); §63.772(h)(4)(iii)(B)(2); §63.1282(g)(4)(iii)(B)(2)	Y	
f. Labs for Higher Heat Value (Btu)	§60.5413(d)(5)(ii)(C); §63.772(h)(4)(iii)(B)(3); §63.1282(g)(4)(iii)(B)(3)	Y	
5. Outlet testing:	§60.5413(d)(6)-(10); §63.772(h)(5)-(6); §63.1282(g)(5)-(6)	Y	
a. Location: 4 diameters downstream	§60.5413(d)(6)(i)(A); §63.772(h)(5)(i)(A); §63.1282(g)(5)(i)(A)	Y	See 3/26/2014 Alternative Approval (attached)

Manufacturer Testing/Reporting Element	Rule Cite	Meets criterion	Comments
b. One diameter upstream	§60.5413(d)(6)(i)(A); §63.772(h)(5)(i)(A); §63.1282(g)(5)(i)(A)	Y	
c. Two sample ports	§60.5413(d)(6)(i)(A); §63.772(h)(5)(i)(A); §63.1282(g)(5)(i)(A)	Y	
d. Method 1 for flow traverse point location	§60.5413(d)(6)(i)(B); §63.772(h)(5)(i)(B); §63.1282(g)(5)(i)(B)	Y	
e. Method 2 for duct velocity	§60.5413(d)(6)(i)(B); §63.772(h)(5)(i)(B); §63.1282(g)(5)(i)(B)	Y	
f. Method 4 - Traverse both ports	§60.5413(d)(7)(ii); §63.772(h)(5)(ii)(B); §63.1282(g)(5)(ii)(B)	Y	
g. Method 3C - Integrated bag O2, CO2, N2, and CH4	§60.5413(d)(7)(i); §63.772(h)(5)(ii)(A); §63.1282(g)(5)(ii)(A)	Y	
h. Collect integrated Me 3C sample throughout entire test.	§60.5413(d)(7)(i)(A); §63.772(h)(5)(ii)(A)(1); §63.1282(g)(5)(ii)(A)(1)	Y	
i. Clearly label each bag and record information on a chain of custody form.	§60.5413(d)(7)(i)(B)	Y	
j. The GC-TCD calibration procedure in Me 3C must be modified using EPA Alt-045.	§60.5413(d)(7)(i)(D); §63.772(h)(5)(ii)(A)(4); §63.1282(g)(5)(ii)(A)(4)	Y	
k. Method 10 for CO and Method 25A for THC- 3 point traverse, simultaneous; 60 minute duration	§60.5413(d)(8), §60.5413(d)(9)(i-ii); §63.772(h)(5)(iii), §63.772(h)(6)(i)-(ii); §63.1282(g)(5)(iii), §63.1282(g)(6)(i)-(ii)	Y	
l. Protocol 1 calibration gas	§60.5413(d)(9)(iv); §63.772(h)(6)(iv); §63.1282(g)(6)(iv)	Y	
m. Method 22 VE - 12 color photos, one from each test run.	§60.5413(d)(10); §63.772(h)(5)(iv); §63.1282(g)(5)(iv)	Y	

Manufacturer Testing/Reporting Element	Rule Cite	Meets criterion	Comments
n. Excess combustion air determined	§60.5413(d)(7)(iii); §63.772(h)(5)(v); §63.1282(g)(5)(iv)	Y	
o. CO corrected to 3% CO2	§60.5413(d)(11)(i)(C); §63.772(h)(7)(i)(C); §63.1282(g)(7)(i)(C)	Y	
p. THC, as propane, corrected to 3% CO2	§60.5413(d)(9)(v-vi); §63.772(h)(6)(v)-(vi); §63.1282(g)(6)(v)-(vi)	Y	
q. Subtraction of methane or ethane from THC data is not allowed	§60.5413(d)(9)(vii); §63.772(h)(6)(vii); §63.1282(g)(6)(vii)	Y	
6. Performance Test Criteria			
a. Method 22 – No VE	§60.5413(d)(11)(i)(A); §63.772(h)(7)(i)(A); §63.1282(g)(7)(i)(A)	Y	Addendum from COMM on 1/9/14: Clarified with VE observers that no smoke emissions were witnessed. Haze was result of condensed water vapor due to weather conditions during testing.
b. Average Method 25A ≤ 10 ppmv at 3% CO2	§60.5413(d)(11)(i)(B); §63.772(h)(7)(i)(B); §63.1282(g)(7)(i)(B)	Y	
c. Average Method 10 for CO ≤ 10 ppmv at 3% CO2	§60.5413(d)(11)(i)(C); §63.772(h)(7)(i)(C); §63.1282(g)(7)(i)(C)	Y	
d. Excess combustion air ≥150%	§60.5413(d)(11)(i)(D); §63.772(h)(7)(i)(D); §63.1282(g)(7)(i)(D)	Y	
e. Destruction efficiency 95% for regulated VOC	§60.5413(d)(11)(iii); §63.772(h)(7)(iii); §63.1282(g)(7)(iii)	Y	

Manufacturer Testing/Reporting Element	Rule Cite	Meets criterion	Comments
7. To be included in test report:	§60.5413(d)(12); §63.772(h)(8); §63.1282(g)(8)	Y	
a. Name (or other identifier) of the model tested.	Implied in §60.5413(d)(12); §63.772(h)(8); §63.1282(g)(8)?	Y	Addendum from COMM on 1/9/14: The model's official name is Combustor 200.
b. Schematic of control device including dimensions.	§60.5413(d)(12)(i); §63.772(h)(8)(i); §63.1282(g)(8)(i)	Y	
c. Maximum net heating value of the device.	§60.5413(d)(12)(ii); §63.772(h)(8)(ii); §63.1282(g)(8)(ii)	Y	
d. Fuel gas flow range, including max. allowable inlet gas flow.	§60.5413(d)(3), §60.5413(d)(11)(ii), §60.5413(d)(12)(iii) and (vi)(operating strip charts)); §63.772(h)(3), §63.772(h)(7)(ii), §63.772(h)(8)(iii) and (vi); §63.1282(g)(3), §63.1282(g)(7)(ii), §63.1282(g)(8)(iii) and (vi)	Y	
e. Air/steam injection/assist ranges, if used. (Optional)	§60.5413(d)(12)(iv); §63.772(h)(8)(iv); §63.1282(g)(8)(iv)	N/A	
f. Fuel gas delivery pressure and temperature.	§60.5413(d)(3), §60.5413(d)(12)(v)(A), §60.5413(d)(12)(vi)(strip charts); §63.772(h)(3), §63.772(h)(8)(v)(A), §63.772(h)(8)(vi); §63.1282(g)(3), §63.1282(g)(8)(v)(A), §63.1282(g)(8)(vi)	Y	
g. Fuel gas moisture range. (Optional)	§60.5413(d)(12)(v)(B); §63.772(h)(8)(v)(B); §63.1282(g)(8)(v)(B)	Y	Not provided, but optional
h. Purge gas usage. (Optional)	§60.5413(d)(12)(v)(C); §63.772(h)(8)(v)(C); §63.1282(g)(8)(v)(C)	Y	Not provided, but optional
i. Condensate separation range. (Optional)	§60.5413(d)(12)(v)(D); §63.772(h)(8)(v)(D); §63.1282(g)(8)(v)(D)	Y	Not provided, but optional

Manufacturer Testing/Reporting Element	Rule Cite	Meets criterion	Comments
j. Combustion zone temperature range.	§60.5413(d)(3), §60.5413(d)(12)(v)(E), §60.5413(d)(12)(vi)(strip charts); §63.772(h)(3), §63.772(h)(8)(v)(E), §63.772(h)(8)(vi); §63.1282(g)(3), §63.1282(g)(8)(v)(E), §63.1282(g)(8)(vi)	Y	
k. Excess combustion air range.	§60.5413(d)(12)(v)(F); §63.772(h)(8)(v)(F); §63.1282(g)(8)(v)(F)	Y	
l. Flame arrestor(s). (Optional)	§60.5413(d)(12)(v)(G); §63.772(h)(8)(v)(G); §63.1282(g)(8)(v)(G)	Y	
m. Burner manifold pressure. (Optional)	§60.5413(d)(12)(v)(H); §63.772(h)(8)(v)(H); §63.1282(g)(8)(v)(H)	Y	
n. Pilot flame indicator presence.	§60.5413(d)(12)(v)(I); §63.772(h)(8)(v)(I); §63.1282(g)(8)(v)(I)	Y	Addendum from COMM on 1/9/14: Control panel has flame ionization and thermocouple sensing for pilot flame.
o. Pilot flame design fuel and calculated/measured pilot fuel usage during test. (Required - but okay if none burned during test)	§60.5413(d)(12)(v)(J); §63.772(h)(8)(v)(J); §63.1282(g)(8)(v)(J)	Y	
p. Burner tip velocity range. (Optional)	§60.5413(d)(12)(v)(K); §63.772(h)(8)(v)(K); §63.1282(g)(8)(v)(K)	Y	Not provided, but optional
q. Momentum flux ratio. (Optional)	§60.5413(d)(12)(v)(L); §63.772(h)(8)(v)(L); §63.1282(g)(8)(v)(L)	Y	Not provided, but optional
r. Exit temperature range. (From Method 1-4 data)	§60.5413(d)(12)(v)(M); §63.772(h)(8)(v)(M); §63.1282(g)(8)(v)(M)	Y	

Manufacturer Testing/Reporting Element	Rule Cite	Meets criterion	Comments
s. Exit flow rate	§60.5413(d)(12)(v)(N); §63.772(h)(8)(v)(N); §63.1282(g)(8)(v)(N)	Y	
t. Wind velocity and direction.	§60.5413(d)(12)(v)(O); §63.772(h)(8)(v)(O); §63.1282(g)(8)(v)(O)	Y	
u. Calibration and QA data (Required)	§60.5413(d)(12)(vi); §63.772(h)(8)(vi); §63.1282(g)(8)(vi)	Y	
v. Strip charts. Gas cylinder certifications. (Required)	§60.5413(d)(3)(operating parameters, THC and CO), §60.5413(d)(12)(vi); §63.772(h)(3), §63.772(h)(8)(vi); §63.1282(g)(3), §63.1282(g)(8)(vi)	Y	Addendum from COMM on 1/9/14: Provided the fuel flow data charts for all four test conditions (two charts were accidentally omitted from original report).
w. Field test data sheets.	Referenced from EPA Quality assurance guidance[1]	Y	
x. Lab report w/lab data and QA.	§60.5413(d)(5)(ii), §60.5413(d)(12)(vi); §63.772(h)(4)(iii)(B), §63.772(h)(8)(vi); §63.1282(g)(4)(iii)(B), §63.1282(g)(8)(vi)	Y	

[1] U.S. EPA, *Quality Assurance Handbook for Air Pollution Measurement Systems* (EPA/600/R-94/038c, September 1994). Accessed from http://www.epa.gov/ttnemc01/qahandbook3/qaiii%201994/qa%20vol%20iii%20-%20sept%201994%20pt1.pdf on 3/7/2014.

Tease, Ashley

From: Steve Hogg [swhogg@commengineering.com]
Sent: Tuesday, June 11, 2013 12:28 PM
To: Agnew, Rachel; Mia, Marcia
Cc: Moore, Bruce; Bill Schneider
Subject: COMM Engineering - Combustor 200 Quad "O" Submittal - Follow up!

Rachel / Marcia,
I wanted to follow up with you and see if the review or certification process for our Quad "O" submittal has been finalized.

We will be testing and submitting the results on another model within the next month. If there is anything we can do to help simplify the process please let us know.

Also, I wanted to comment on one of the things mentioned in the April 12, 2013 Proposed Rule, Page 22128.

It states that "based on information available to us, there will not be sufficient supply of control devices until 2016".

We currently have a production capability of producing 1,580 combustors a month. This equates to 18,960 control devices a year.

I am aware of multiple manufacturers who are gearing up to handle the current demands of the market. Once enforcement goes into effect, there should not be a shortage of control devices.

Again, if there is anything we can do to help, please let us know.

Thanks,

Steve Hogg
Project Manager
COMM Engineering
1319 W. Pinhook Rd., Suite 401
Lafayette, LA. 70503
Ph. 1.888.234.8061
Ph. 337.237.4373 ext. 135
Fx. 337.234.1805
Cell 205.253.7581
www.commengineering.com

- M

Tease, Ashley

From: Mia, Marcia
Sent: Tuesday, December 17, 2013 2:09 PM
To: Steve Hogg; Jason.huckaby@erg.com; Bill Schneider; Mark Goodyear
Subject: RE: EPA Teleconference - Regarding OOOO Manufacturers' testing - Questions and Review

Here is a summary of our review of the test report fro tomorrow's call.



Review of COMM Engineering Enc...

Thanks.

Marcia B Mia
Air Branch/MAMPD
Office of Compliance
Mail Code 2223A
202-564-7042

-----Original Appointment-----
From: Steve Hogg [mailto:swhogg@commengineering.com]
Sent: Wednesday, December 04, 2013 12:06 PM
To: Steve Hogg; Jason.huckaby@erg.com; Mia, Marcia; Bill Schneider; Mark Goodyear
Subject: FW: EPA Teleconference - Regarding OOOO Manufacturers' testing - Questions and Review
When: Wednesday, December 18, 2013 3:00 PM-4:30 PM (GMT-05:00) Eastern Time (US & Canada).
Where: Teleconference: CALL 1-267-507-0003 Access Code: 286-094-317

Jason,
Marcia Mia has requested that you attend this confence call.

Thanks,

Steve

-----Original Appointment-----
From: Steve Hogg
Sent: Wednesday, December 04, 2013 10:30 AM
To: Steve Hogg; Mark Goodyear; mia.marcia@epa.gov; johnson.steffan@epa.gov; Bill Schneider; Andrew Bienvenu; Brian Boyer; armst@ix.netcom.com
Subject: EPA Teleconference - Regarding OOOO Manufacturers' testing - Questions and Review
When: Wednesday, December 18, 2013 2:00 PM-3:30 PM (GMT-06:00) Central Time (US & Canada).
Where: Teleconference: CALL 1-267-507-0003 Access Code: 286-094-317

Purpose:

1. To address questions by the EPA regarding the Quad 'O' test. (The EPA will email questions prior to the teleconference)
2. Address a standardized process for future submittals.

Rev 12/3/2013

COMM Engineering Enclosed Combustor Testing under NSPS OOOO and MACT HH/HHH
Notes for Joint EPA/COMM Engineering Conference Call
12/18/2013
CALL 1-267-507-0003 Access Code: 286-094-317

Model	Performance Test and Cite	Notes
Combustor 200	Outlet Testing – Probe at 4 diameters downstream of peak flame (§60.5413(d)(6)((i)(A))	Probe < 4.0 diameters
	Method 4 Traverse (§60.5413(d)(7)((i)(A)) and (§60.5413(d)(7)((ii))	Method 4 data sheets not included. Test report states that Method 4 traverse was done correctly and moisture data is in the Emissions Test Summary, but data sheets not included.
	Method 22 VE (§60.5413(d)(10)	VE's noted (78 total seconds during most challenging conditions)
	Excess Air 150% (§60.5413(d)(7)((iii))	Excess air at 150.24%
	Combustor Name (§60.5413(d))	Listed as Combustor 200 and EFS 48-20 Enclosed Combustor
	Strip Charts (§60.5413(d)(12)(vi))	Charts of Tests III and IV fuel flow found on page 303 and 304. Cannot find same information for Tests I and II.

Tease, Ashley

From: Mia, Marcia
Sent: Monday, February 10, 2014 1:02 PM
To: Bill Schneider; Johnson, Steffan; Jason.huckaby@erg.com
Cc: Mark Goodyear; Brian Boyer; Andrew Bienvenu; Steve Hogg
Subject: RE: Response to EPA / COMM Teleconference Monday January 7, 2014

Thank you Bill for this additional information. We still have a few remaining items:

1. Pls provide a graphical representations or strip chart of the control device operating data and emissions test data, per 60.5413(d)(3). Your test report includes the data but not in the required graphical or strip chart form.
2. Pls provide a schematic of the pilot sensor system. The 03/13/2013 email from Rachel Agnew, referenced in your 01/09/2014 submittal, attests to the presence of a system to ensure continuous pilot, but does not provide sufficient detail.
3. In the 01/07/2014 call, you referenced a video in which the pilot indicator light is visible. Where is this video available for EPA review?
4. Pls provide the amount of pilot fuel used, per 5413(d)(12)(v)(J) (calculated or measured).

Thank you for you time.
Marcia B Mia
Air Branch/MAMPD
Office of Compliance
Mail Code 2227A
202-564-7042

From: Bill Schneider [mailto:bill@commengineering.com]
Sent: Thursday, January 09, 2014 12:30 PM
To: Mia, Marcia; Johnson, Steffan; Jason.huckaby@erg.com
Cc: Mark Goodyear; Brian Boyer; Andrew Bienvenu; Steve Hogg; Bill Schneider
Subject: Response to EPA / COMM Teleconference Monday January 7, 2014

Marcia, Steffan & Jason,

Thanks for your time and energy to review the results of the combustor testing with us.

Attached is the formal response along with referenced email communication with Rachel Agnew and the missing strip charts.

As stated in our conference call, we would be happy to review your industry documents and provide our feedback. In addition, if you would like any feedback on incentives for operators, please let us know. We have gotten feedback from Operators that they are anxiously waiting for EPA to publish on the web site which combustors have met the performance requirements.

Let us know if you have any questions.

Regards,
Bill Schneider
President
COMM Engineering
Office 337.237.4373

Teese, Ashley

From: Mia, Marcia
Sent: Monday, February 10, 2014 1:02 PM
To: Bill Schmelder; Johnson, Steffan; Jason.Ruckaby@erg.com
Cc: Mark Goodyear; Brian Boyer; Andrew Bienvenu; Steve Hogg
Subject: RE: Responses to EPA \ COMM Teleconference Monday January 7, 2014

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Marcia B Mia
Air Branch/MAMPD
Office of Compliance
Mail Code 2227A
202-564-7042

From: Bill Schmelder [mailto:bill@commengineering.com]
Sent: Thursday, January 09, 2014 12:30 PM
To: Mia, Marcia; Johnson, Steffan; Jason.Ruckaby@erg.com
Cc: Mark Goodyear; Brian Boyer; Andrew Bienvenu; Steve Hogg; Bill Schmelder
Subject: Responses to EPA \ COMM Teleconference Monday January 7, 2014

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Regards,
Bill Schmelder
President
COMM Engineering
Office 337.237.4373

www.commengineering.com

From: Mia, Marcia [mailto:Mia.Marcia@epa.gov]
Sent: Tuesday, January 07, 2014 3:24 PM
To: Steve Hogg; Mark Goodyear; Bill Schneider; Johnson, Steffan; Jason.huckaby@erg.com; armst@ix.netcom.com; Andrew Bienvenu; Brian Boyer; Leigh A. Noel
Subject: RE: EPA / COMM Teleconference - Monday January 7, 2014

Steve and others,
Thank you for your time today. As we summarized at the end of the call, we would like the following additional information. For files that you are uploading, pls upload to the EPA mailbox Oil_and_Gas_PT@epa.gov

Otherwise, pls reply to this email with any narrative required.

1. Pls provide an explanation and rationale for your decision to locate the outlet testing probe at 3 dia downstream of the peak flame, instead of 4.0 diam downstream, as required by §60.5413(d)(6)(i)(A)
2. Pls reconcile what appears to be VE during certain portions of the testing. The data logs on pages 180-203 show 78 total seconds of VE. The writeup of the test report (page 5) says zero visible emissions. Section 60.5413(d)(1) requires Method 22VE with no visible emissions.
3. Pls confirm that the name by which the combustor will be marketed is the Combustor 200
4. Pls provide data for the Pilot Flame Indicator as required by §60.5413(d)(12)(v)(I); including any email transcript with EPA staff (e.g. Rachel Agnew) concerning the pilot flame. See references in test report on page 12
5. Pls provide strip charts for Test Runs 1 and 2 which are missing from the report. Section 60.5413(d)(1)(vi) requires submittal of all strip charts.

Pls let me know if you have any questions!

Marcia B Mia
Air Branch/MAMPD
Office of Compliance
Mail Code 2223A
202-564-7042

-----Original Appointment-----
From: Steve Hogg [mailto:swhogg@commengineering.com]
Sent: Tuesday, December 17, 2013 4:59 PM
To: Steve Hogg; Mark Goodyear; Bill Schneider; Mia, Marcia; Johnson, Steffan; Jason.huckaby@erg.com; armst@ix.netcom.com; Andrew Bienvenu; Brian Boyer; Leigh A. Noel
Subject: EPA / COMM Teleconference - Monday January 7, 2014
When: Tuesday, January 07, 2014 3:00 PM-4:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: Dial: 1-213-493-0007 Enter Access Code: 867-214-205

Reminder to use the following Teleconference # for today's meeting.

COMM Engineering: Teleconference
1. Please join my meeting.
Call in using your telephone.

www.commenglineering.com

From: Mia, Marcia [mailto:Mia.Marcia@epa.gov]
Sent: Tuesday, January 07, 2014 3:24 PM
To: Steve Hogg; Mark Goodyear; Bill Schneider; Johnson, Steffan; Jason.Huckaby@ert.com; amst@ix.netcom.com; Andrew Bienvenu; Brian Boyer; Leigh A. Noel
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Pls let me know if you have any questions!

Marcia B Mia
Air Branch/MAMPD
Office of Compliance
Mail Code 2223A
202 564-7042

-----Original Appointment-----
From: Steve Hogg [mailto:swhogg@commengineering.com]
Sent: Tuesday, December 17, 2013 4:59 PM
To: Steve Hogg; Mark Goodyear; Bill Schneider; Mia, Marcia; Johnson, Steffan; Jason.Huckaby@ert.com; amst@ix.netcom.com; Andrew Bienvenu; Brian Boyer; Leigh A. Noel
Subject: EPA \ COMM Teleconference - Monday January 7, 2014
When: Tuesday, January 07, 2014 3:00 PM-4:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: Dial: 1-213-493-0007 Enter Access Code: 867-214-205

Reminder to use the following Teleconference # for today's meeting

COMM Engineering: Teleconference
1. Please join my meeting
Call in using your telephone

United States: +1 (213) 493-0007
Access Code: 867-214-205
Meeting ID:867-214-205

Purpose:

1. To address questions by the EPA regarding the Quad 'O' test. (The EPA will email questions prior to the teleconference)
2. Address a standardized process for future submittals.

Date / Time:

- January 7, 2014 at 2:00pm Central Time (1:00pm Eastern Time)

Purpose:

3. To address questions by the EPA regarding the Quad 'O' test. (The EPA will email questions prior to the teleconference)
4. Address a standardized process for future submittals.

Date / Time:

- December 18, 2013 at 2:00pm Central Time (1:00pm Eastern Time)

Attending:

- Marcia Mia EPA - Office of Compliance
- Steffan Johnston EPA - Measurement Policy Group
- Jason Huckaby ERG - EPA Contractor
- Mark Goodyear COMM - CEO
- Bill Schneider COMM - President
- Brian Boyer COMM - VP
- Steve Hogg COMM - Project Management
- Andrew Bienvenu COMM - Engineering
- Tom Armstrong Armstrong Environmental - 3rd Party Testing (Available to call when needed)

Tease, Ashley

From: Mia, Marcia
Sent: Tuesday, February 18, 2014 11:51 AM
To: Bill Schneider; Johnson, Steffan; Jason.huckaby@erg.com
Cc: Mark Goodyear; Brian Boyer; Andrew Bienvenu; Steve Hogg
Subject: RE: Response to EPA / COMM Teleconference Monday January 7, 2014

Bill and Steve,

The email exchange between Rachel Agnew and Steve is really not sufficient for the purposes of demonstrating the pilot flame indicator. A detail of the pilot schematic and sequence of operation for its use is more what we are looking for. Pls let me know if this is something you can provide.

Also, since you substituted Method 1 to determine the sampling location instead of the 4/1 critera in the rule (I recognize you received guidance from EPA staff that this was okay) we will need for you to submit a request to OAQPS to do that, to formalize the alternative. I will follow up with the contact information, shortly.

Marcia B Mia
Air Branch/MAMPD
Office of Compliance
Mail Code 2227A
202-564-7042

From: Bill Schneider [mailto:bill@commengineering.com]
Sent: Thursday, January 09, 2014 12:30 PM
To: Mia, Marcia; Johnson, Steffan; Jason.huckaby@erg.com
Cc: Mark Goodyear; Brian Boyer; Andrew Bienvenu; Steve Hogg; Bill Schneider
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Regards,
Bill Schneider
President
COMM Engineering
Office 337.237.4373
www.commengineering.com

From: Mia, Marcia [mailto:Mia.Marcia@epa.gov]
Sent: Tuesday, January 07, 2014 3:24 PM
To: Steve Hogg; Mark Goodyear; Bill Schneider; Johnson, Steffan; Jason.huckaby@erg.com; armst@ix.netcom.com; Andrew Bienvenu; Brian Boyer; Leigh A. Noel
Subject: RE: EPA / COMM Teleconference - Monday January 7, 2014

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1. Pls provide an explanation and rationale for your decision to locate the outlet testing probe at 3 dia downstream of the peak flame, instead of 4.0 diam downstream, as required by §60.5413(d)(6)(i)(A)
2. Pls reconcile what appears to be VE during certain portions of the testing. The data logs on pages 180-203 show 78 total seconds of VE. The writeup of the test report (page 5) says zero visible emissions. Section 60.5413(d)(1) requires Method 22VE with no visible emissions.
3. Pls confirm that the name by which the combustor will be marketed is the Combustor 200
4. Pls provide data for the Pilot Flame Indicator as required by §60.5413(d)(12)(v)(I); including any email transcript with EPA staff (e.g. Rachel Agnew) concerning the pilot flame. See references in test report on page 12
5. Pls provide strip charts for Test Runs 1 and 2 which are missing from the report. Section 60.5413(d)(1)(vi) requires submittal of all strip charts.

Pls let me know if you have any questions!

Marcia B Mia
Air Branch/MAMPD
Office of Compliance
Mail Code 2223A
202-564-7042

-----Original Appointment-----
From: Steve Hogg [mailto:swhogg@commengineering.com]
Sent: Tuesday, December 17, 2013 4:59 PM
To: Steve Hogg; Mark Goodyear; Bill Schneider; Mia, Marcia; Johnson, Steffan; Jason.huckaby@erg.com; armst@ix.netcom.com; Andrew Bienvenu; Brian Boyer; Leigh A. Noel
Subject: EPA / COMM Teleconference - Monday January 7, 2014
When: Tuesday, January 07, 2014 3:00 PM-4:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: Dial: 1-213-493-0007 Enter Access Code: 867-214-205

Reminder to use the following Teleconference # for today's meeting.

COMM Engineering: Teleconference
1. Please join my meeting.
Call in using your telephone.
United States: +1 (213) 493-0007
Access Code: 867-214-205

Meeting ID:867-214-205

Purpose:

1. To address questions by the EPA regarding the Quad 'O' test. (The EPA will email questions prior to the teleconference)
2. Address a standardized process for future submittals.

Date / Time:

- January 7, 2014 at 2:00pm Central Time (1:00pm Eastern Time)

Purpose:

3. To address questions by the EPA regarding the Quad 'O' test. (The EPA will email questions prior to the teleconference)
4. Address a standardized process for future submittals.

Date / Time:

- December 18, 2013 at 2:00pm Central Time (1:00pm Eastern Time)

Attending:

- Marcia Mia EPA - Office of Compliance
- Steffan Johnston EPA - Measurement Policy Group
- Jason Huckaby ERG - EPA Contractor
- Mark Goodyear COMM - CEO
- Bill Schneider COMM - President
- Brian Boyer COMM - VP
- Steve Hogg COMM - Project Management
- Andrew Bienvenu COMM - Engineering
- Tom Armstrong Armstrong Environmental - 3rd Party Testing (Available to call when needed)

Steve Hogg

From: Agnew, Rachel <Agnew.Rachel@epa.gov>
Sent: Wednesday, March 13, 2013 11:54 AM
To: Steve Hogg
Cc: Bill Schneider; Andrew Bienvenu; Mark Goodyear
Subject: RE: OOOO Tested Enclosed Combustors

Thanks so much, Steve.

Thanks!
Rachel

US EPA, Measurement Policy Group
OAR/OAQPS/SPPD
Research Triangle Park, NC
Ph: 919-541-0328 Fax: 919-541-3207

From: Steve Hogg [mailto:swhogg@commengineering.com]
Sent: Wednesday, March 13, 2013 12:49 PM
To: Agnew, Rachel
Cc: Bill Schneider; Andrew Bienvenu; Mark Goodyear
Subject: RE: OOOO Tested Enclosed Combustors

Rachel,

Yes it does.

Let me know if you need anything else.

Thanks,

Steve Hogg
Project Manager
COMM Engineering
1319 W. Pinhook Rd., Suite 401
Lafayette, LA. 70503
Ph. 1.888.234.8061
Ph. 337.237.4373 ext. 135
Fx. 337.234.1805
Cell 205.253.7581
www.commengineering.com

From: Agnew, Rachel [mailto:Agnew.Rachel@epa.gov]
Sent: Wednesday, March 13, 2013 11:15 AM
Cc: Mia, Marcia
Subject: OOOO Tested Enclosed Combustors

Hi,

I have a question regarding your enclosed combustors manufactured and tested for compliance with OOOO. Do the combustors you manufacture come with built-in thermocouples and/or monitors which ensure that a flame is present at all times? A quick response would be very much appreciated!

Thanks!
Rachel

US EPA, Measurement Policy Group
OAR/OAQPS/SPPD
Research Triangle Park, NC
Ph: 919-541-0328 Fax: 919-541-3207



COMM ENGINEERING
1319 W. Pinhook Rd.
Lafayette, LA 70503
337-237-4373
www.commengineering.com

Response to Combustor 200 Testing Questions

January 9, 2014

COMM ENGINEERING
1319 W. Pinhook Rd.
Lafayette, LA 70503
337-237-4373
www.commengineering.com

Response to Combustor 200 Testing Questions
January 9, 2014

1. **Outlet Testing – Probe at 4 diameters downstream of peak flame (60.5413(d)(6)(i)(A)**
   EPA Notes: Probe < 4.0 diameters. 3 diameters downstream

   The total length of combustion chamber is 204 inches (17 feet) and the inner diameter of the combustion chamber on drawings is 42 inches. In order to meet both the 4 diameters downstream and 1 diameter upstream criteria, the combustion chamber would have to be more than 17.5 feet. Due to the physical dimensions of our unit, it was not possible to meet both requirements. In the regulation, there is a reference to utilizing Method 1 which provides an alternative location. See below.

   Per 60.5413(d)(6)(i)(B), Flow rate must be measured using Method 1, 40 CFR part 60, appendix A-1.

   Per Method 1, 11.0 *Procedure,* 11.1 Selection of Measurement Site;

   > 11.1.1 States the following; *"If necessary, an alternative location may be selected, at a position AT LEAST two stack or duct diameters downstream and a half a diameter upstream from any flow disturbance."*

   Based on the dimensions and 11.1.1, COMM meets the Method 1 requirements for sample port location. The Combustor 200 sample ports were located at a distance of 3 stack diameters downstream and 1.7 stack diameters upstream of any flow disturbance. From past experience, the upstream location is most critical and having the location 1.7 diameters upstream minimized the potential impact of wind entering the top of combustor during testing. This was demonstrated and confirmed by the test results.

   In addition, the flow data is non-stratified and fairly uniform across the stack at the test location selected. Continuous emissions monitors taken across both sampling ports show uniform concentrations and no incomplete combustion (VOC uniformly less than 1 ppm, CO uniformly less than 10 ppm @ 3% CO2). The data would confirm that the sampling ports were located properly to prove VOC and CO emissions meet Subpart OOOO requirements.

2. **Method 22 VE** **60.5413(d)(10)**
   EPA Notes: **VE's noted 78 total seconds during most challenging conditions.**

   During test 10, 11 & 12 the observers erroneously noted a few seconds of condensed water vapor as emissions.

   Per the observers, "At no time were smoke emissions witnessed. Only a slight clear haze was visible near the tip of the flare."

   The haze was the result of condensed water vapor due to the weather conditions during testing.

   Method 22, 11.4.1 Procedure states that *"Condensed water vapor is not considered an emission."*

   As stated in the third party certification summary, page 5 of 741, the combustor *"operated without smoke emissions."*

3. **Combustor Name** **60.5413(d)**
   EPA Notes: **Listed as both Combustor 200 and EFS 48-20 Enclosed Combustor. Please confirm.**

   Combustor 200

4. **Pilot Flame Indicator** **60.5413(d)(12)(V)(I)**
   EPA Notes: **No data for pilot flame indicator**

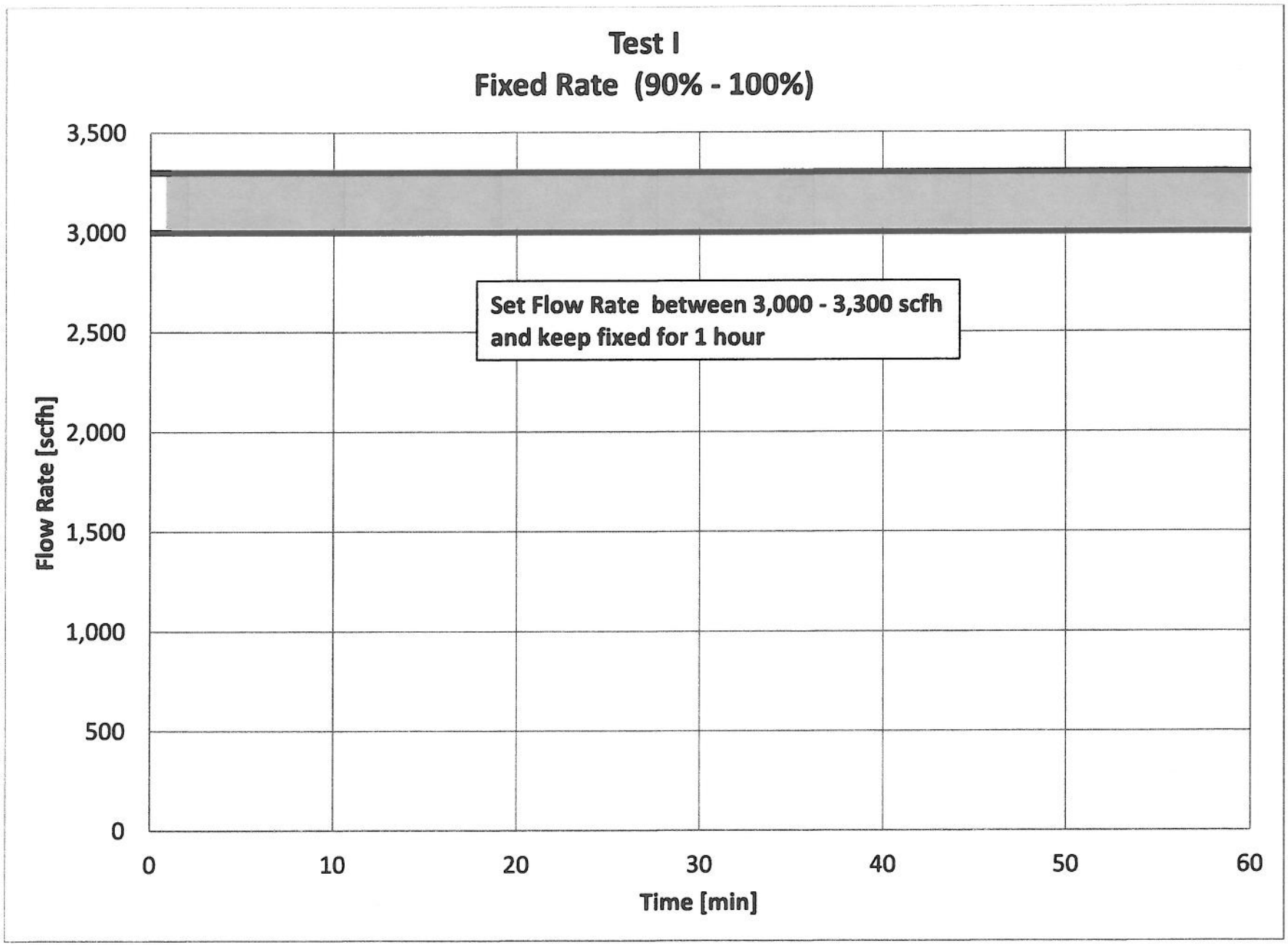
   Our control panel has both flame ionization and thermocouple sensing to ensure that there is a continuous pilot. There is a pilot indicator light on the front of the control panel.

   See attached email communication between Rachel Agnew and Steve Hogg dated March 13, 2013.

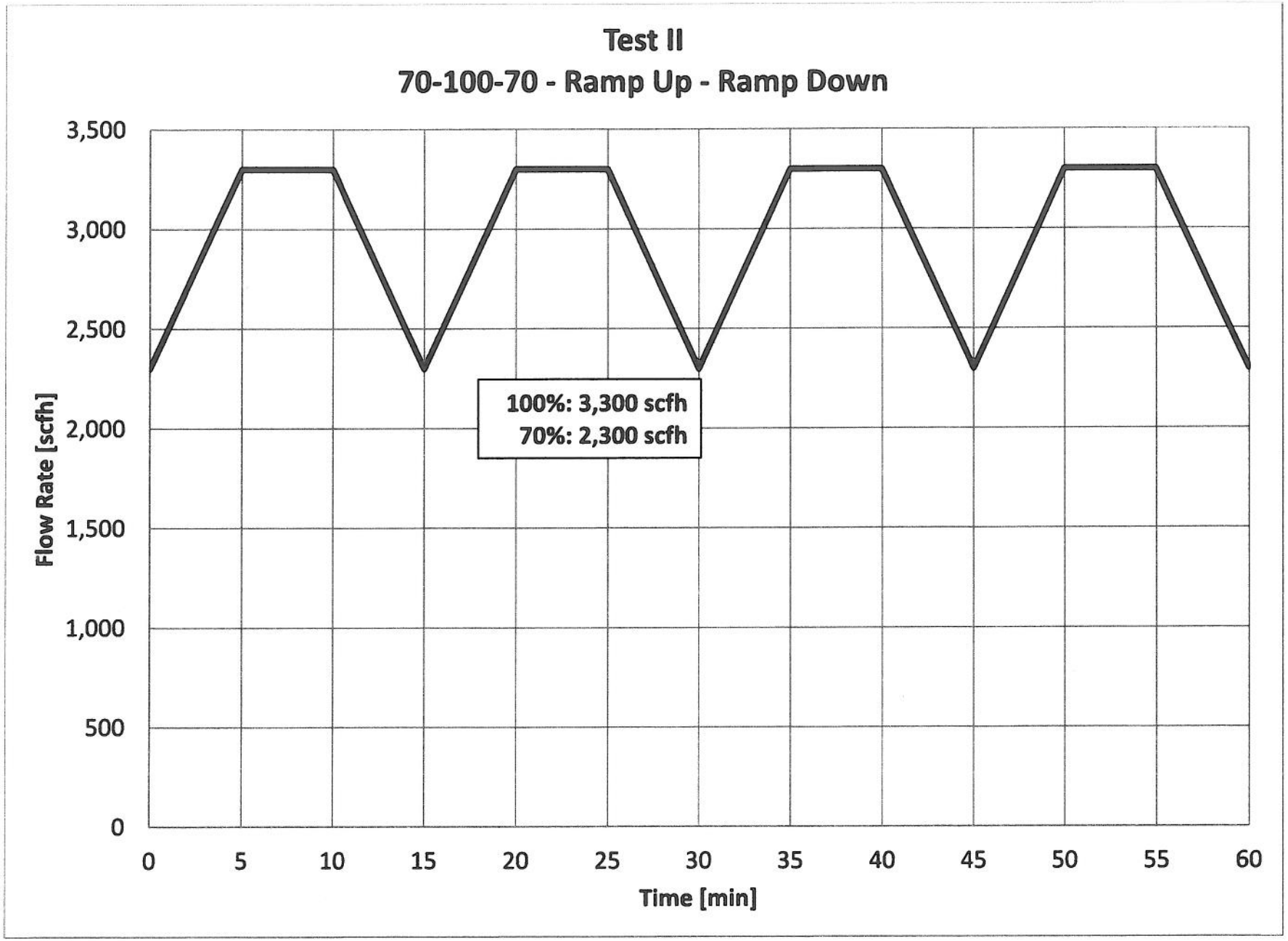
5. **Strip Charts** **60.5413(d)(12)(vi)**
   EPA Notes: **Charts of test III and IV fuel flow found on page 303 and 304. Cannot find Tests I and II.**

   The original strip charts for tests I and II were accidentally omitted from the submittal package.

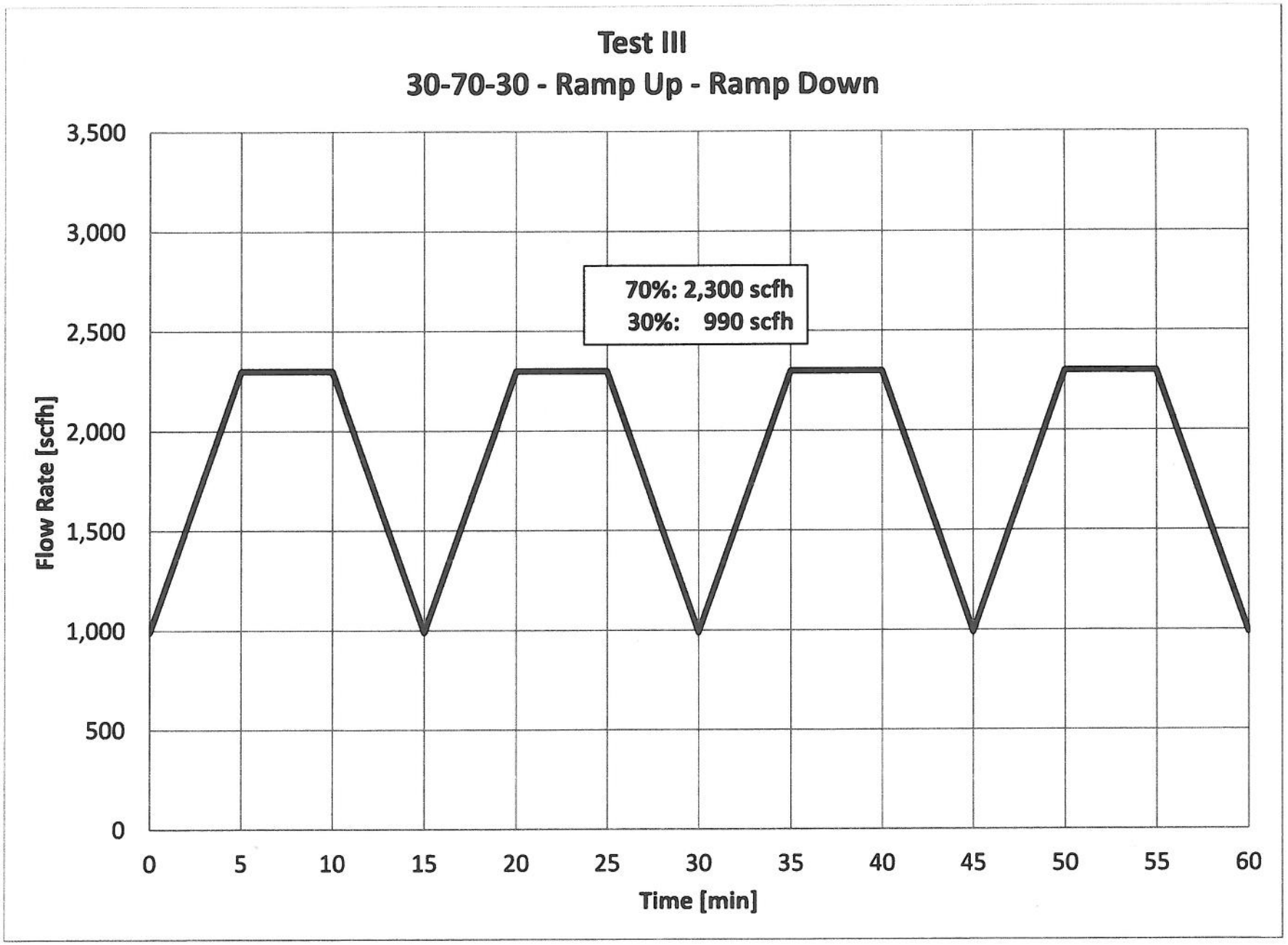
   See attached strip charts for test I at 90-100% and test II at 70-100% ramping.


Test I
Fixed Rate (90% - 100%)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Flow Rate [scfh]
Set Flow Rate between 3,000 - 3,300 scfh
and keep fixed for 1 hour
0
10
20
30
40
50
60
Time [min]

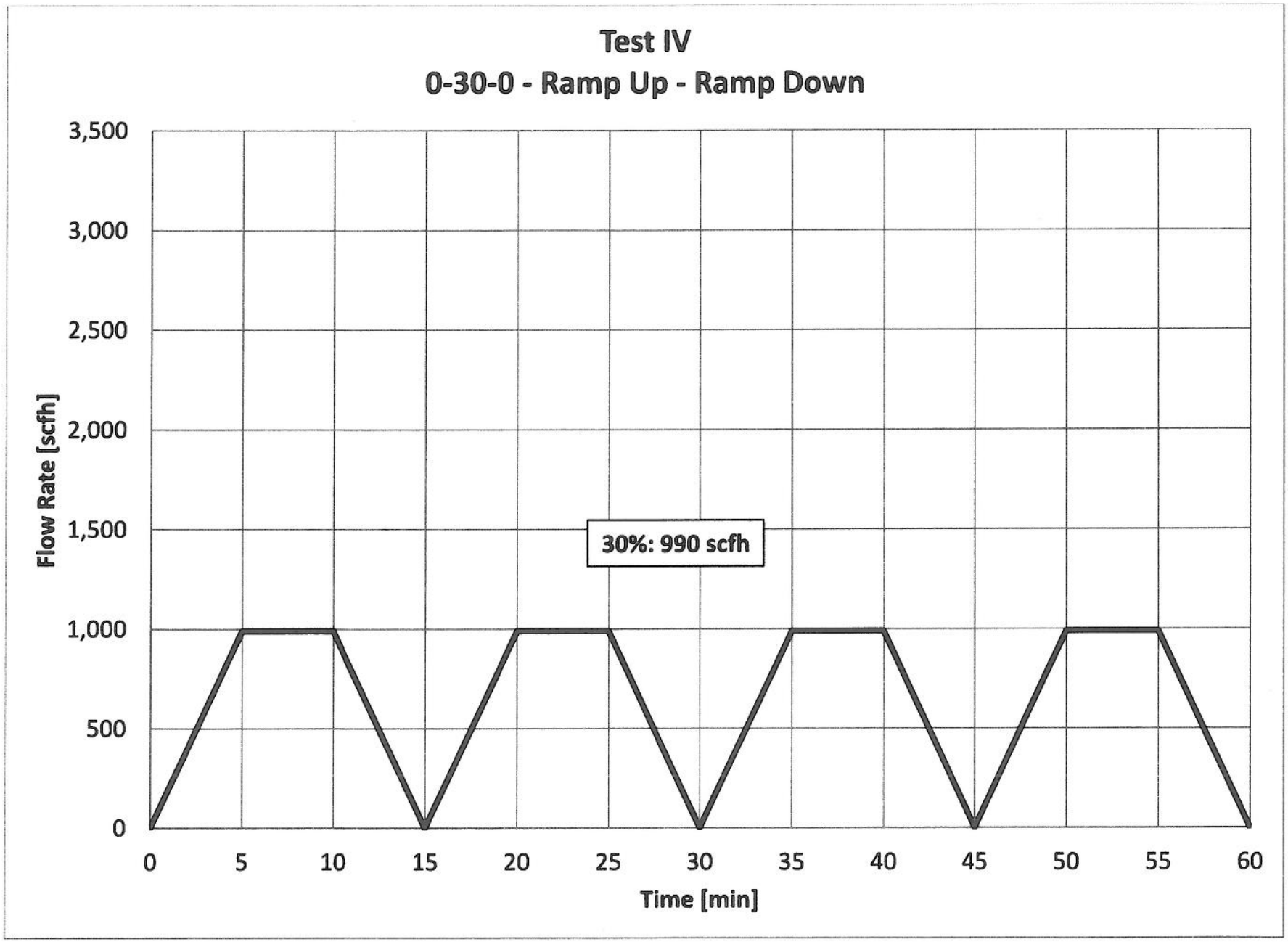
Test I
Fixed Rate (90% - 100%)
Set Flow Rate between 3,000 - 3,300 scfh
and keep fixed for 1 hour
Flow Rate [scfh]
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0
10
20
30
40
50
60
Time [min]


Test II
70-100-70 - Ramp Up - Ramp Down
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Flow Rate [scfh]
100%: 3,300 scfh
70%: 2,300 scfh
0
5
10
15
20
25
30
35
40
45
50
55
60
Time [min]

Test 11
70-100-70 - Ramp Up - Ramp Down
100%: 3,300 scfh
70%: 2,300 scfh
Flow Rate [scfh]
Time [min]
0
500
1,000
1,500
2,000
2,500
3,000
3,500
0
5
10
15
20
25
30
35
40
45
50
55
60


Test III
30-70-30 - Ramp Up - Ramp Down
70%: 2,300 scfh
30%: 990 scfh
Flow Rate [scfh]
3,500
3,000
2,500
2,000
1,500
1,000
500
0
0
5
10
15
20
25
30
35
40
45
50
55
60
Time [min]

Test III
30-70-30 - Ramp Up - Ramp Down
70K: 2,300 scfh
30K: 960 scfh
Flow Rate [scfh]
0
500
1,000
1,500
2,000
2,500
3,000
3,500
Time [min]
0
5
10
15
20
25
30
35
40
45
50
55
60


Test IV
0-30-0 - Ramp Up - Ramp Down
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Flow Rate [scfh]
30%: 990 scfh
0
5
10
15
20
25
30
35
40
45
50
55
60
Time [min]

Test IV
0-30-0 - Ramp Up - Ramp Down
30K: 950 acfm
Time [min]
Flow Rate [acfm]
0
2
10
12
20
22
30
32
40
42
50
52
60
0
500
1,000
1,500
2,000
2,500
3,000
3,500

Tease, Ashley

From: Steve Hogg [swhogg@commengineering.com]
Sent: Wednesday, February 26, 2014 2:35 PM
To: Johnson, Steffan
Cc: Mia, Marcia; Bill Schneider; Brian Boyer
Subject: COMM Engineering - Variance request for sample port for Combustor 200 testing
Attachments: COMM Request for sample port variance.pdf

Steffan,
Attached is a request for a variance on the sample port locations as required in 60.5413(d)(6)(i)(A) of the 40 CFR Part 60 Subpart OOOO rule.

Please review and call me with any questions.

Regards,

Steve Hogg
Project Manager
COMM Engineering
1319 W. Pinhook Rd., Suite 401
Lafayette, LA. 70503
Ph. 1.888.234.8061
Ph. 337.237.4373 ext. 135
Fx. 337.234.1805
Cell 205.253.7581
www.commengineering.com

COMM
ENGINEERING

Brian E. Boyer
Vice President

1319 W. Pinhook, Suite 401
Lafayette, Louisiana 70503
337.237.4373
Fax: 337.234.1805
www.commengineering.com

February 19, 2014

Mr. Steffan Johnson
Acting Leader, Measurement Technology Group
OAQPS AQAD
Environmental Protection Agency
109 TW Alexander Way
Mail Drop: E143-02
RTP, NC 27713

RE: Request for to use EPA Method 1 for Sample Port Configuration

Dear Mr. Johnson:

The following is a request for approval to use the sampling port locations based on EPA Method 1 (40 CFR 60 Appendix A). This is based on allowance for alternative methods under 40 CFR 60.8 and 40 CFR 63.7. The requested sample port locations are in lieu of sampling locations specified by sections 60.5413(d)(6)(i)(A), 63.772(h)(5)(i)(A) and 63.1283(g)(5)(i)(A).

> The rule states *"(A) The outlet sampling location must be a minimum of four equivalent stack diameters downstream from the highest peak flame or any other flow disturbance, and a minimum of one equivalent stack diameter upstream of the exit or any other flow disturbance. A minimum of two sample ports must be used."*

For the testing of the Combustor 200, COMM used a configuration of sample ports that were located 3 stack diameters downstream of the flame and 1.7 stack diameters upstream of the terminal end of the combustor. We used these locations based on the length of the combustion chamber.

The total length of combustion chamber is 204 inches (17 feet) and the inner diameter of the combustion chamber on drawings is 42 inches. In order to meet both the 4 diameters downstream and 1 diameter upstream criteria, the combustion chamber would have to be more than 17.5 feet. Due to the physical dimensions of our unit, it was not possible to meet both requirements.

In the regulation, there is a reference to utilizing Method 1 which provides an alternative location. According to 60.5413(d)(6)(i)(B), flow rate must be measured using Method 1, 40 CFR 60, Appendix A-1. In Method 1, 11.0 *Procedure,* 11.1 Selection of Measurement Site;

> 11.1.1 States the following; "*If necessary, an alternative location may be selected, at a position AT LEAST two stack or duct diameters downstream and a half a diameter upstream from any flow disturbance*."

Based on the combustor dimensions and 11.1.1, COMM meets the Method 1 requirements for sample port location. The Combustor 200 sample ports were located at a distance of 3 stack diameters downstream and 1.7 stack diameters upstream of any flow disturbance. From past experience, the

upstream location is most critical and having the location 1.7 diameters upstream minimized the potential impact of wind entering the top of combustor during testing. This was demonstrated and confirmed by the test results.

In addition, the flow data is non-stratified and fairly uniform across the stack at the test location selected. Continuous emissions monitors taken across both sampling ports show uniform concentrations and no incomplete combustion (VOC uniformly less than 1 ppm, CO uniformly less than 10 ppm @ 3% CO2). The data would confirm that the sampling ports were located properly to prove VOC and CO emissions meet Subpart OOOO requirements.

Sincerely,

Brian E. Boyer

Brian E. Boyer
Vice President

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
RESEARCH TRIANGLE PARK, NC 27711

MAR 26 2014

Mr. Brian E. Boyer, Vice President
COMM Engineering
1319 W. Pinhook, Suite 401
Lafayette, Louisiana 70503

OFFICE OF
AIR QUALITY PLANNING
AND STANDARDS

Dear Mr. Boyer,

We are writing in response to your request of February 19, 2014, to use EPA Method 1 for location of sample ports in lieu of the sampling port location requirements specified by 40 CFR 60, Subpart OOOO, sections 60.5413(d)(6)(i)(A), 63.772(h)(5)(i)(A), and 63.1283(g)(5)(i)(A). The acceptance criterion for such applications is that the change in the testing or monitoring method or procedure will always produce results adequate for the Administrator's determination of compliance, in general, at the same or higher stringency as the method or procedure specified in the applicable regulation.

I have reviewed your request and conducted a detailed review of the Manufacturer's Performance Test methodology and data that you submitted to meet the requirements of 40 CFR 60.5413(d). Though we typically do not approve method alternatives or modifications after the testing has been conducted, I am approving your modification to the sampling locations for the purpose of the specific test program you conducted on Combustor 200 for the reasons explained below.

The Subpart OOOO requirement to use EPA Method 1 was included to guide the tester in determination of the correct traverse point locations for sampling while the requirement to locate ports at least 4 diameters downstream from a flow disturbance and 1 diameter upstream of the combustor exhaust point is specific to Subpart OOOO for testing of the subject combustion control devices. That said, I recognize, as you point out, that EPA Method 1 allows for sampling locations with criteria as low as 2 diameters downstream from a flow disturbance and 0.5 diameters upstream from the exhaust point, with the requirement to sample additional traverse points. I further note that your tester did, indeed, include additional traverse points as required by EPA Method 1 for the test location used.

Additionally, the diluent gas measurement data submitted demonstrate no appreciable stratification across the stack and the flow rate measurements made at the sufficiently greater number of traverse points indicate none of the difficulties that can be expected with shorter exit locations such as crosswind interference or back pressuring of the exhaust (as evidenced by the consistent dP and temperature readings of the flow rate measurement). We sought to avoid such interferences with the Subpart OOOO requirement for the 4 and 1 sample port location criteria.

As Method 1 is designed to be "self adjusting" for different sample locations (e.g., more traverse points where the location has less up/down stream clearance), and as your tester made proper use

of Method 1 even though your stack did not meet the specific dimensional criteria required by Subpart OOOO, my review finds that there has been no apparent deleterious effect to the data quality as a result. Additionally, the Method 25A test results were less than one tenth of the performance test criteria of 60.5413(d)(11)(B), a significant margin and further indication that any determinations made using the data from this test series will not be affected by the sample port locations used.

Should you conduct similar testing in the future, please ensure that the outlet sampling location complies with the 4 and 1 sample port location criteria of 40 CFR 60.5413(d)(6)(i)(A).

If you have any questions regarding this matter, please contact me at (919) 541-4790 or at johnson.steffan@epa.gov.

Sincerely,

Steffan Johnson, Acting Group Leader
Measurement Technology Group

cc: Chris Frantz, OAQPS/SPPD
Marcia Mia, OECA
Bruce Moore, OAQPS/SPPD