TEST REPORT

COMPLIANCE EMISSION TEST PROGRAM
40 CFR 63, SUBPART UUU
PLATFORMER CATALYTIC REFORMING UNIT

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SECTIONONE Introduction and Summary

ARI Environmental, Inc. (ARI) was retained by Marathon Ashland Petroleum LLC (MAPLLC) to conduct a compliance emission test program on the Platformer Continuous Catalytic Reforming Unit (CCR) Scrubber at the MAPLLC refinery in Robinson, Illinois. The testing was performed on March 29 through 31, 2005.

The test program was conducted pursuant to the requirements of 40 CFR, Part 63, Subpart UUU – National Emission Standards for Hazardous Air Pollutants for Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units and Sulfur Recovery Units (2004).

The purpose of the testing was to determine the inlet and outlet concentrations and mass rates of hydrogen chloride (HCl) to and from the scrubber abating emissions from the Platformer Catalytic Reforming Unit (CRU). The inlet was compared to the outlet mass rates in order to calculate the percent removal efficiency (%RE) of HCl. In addition, procedures were conducted to determine the concentration of non-methane volatile organic compounds (VOC) from the scrubber outlet.

Testing was conducted at four (4) different operational conditions. At each operational condition, three (3) 60-minute samples were collected for the respective pollutants at the inlet and outlet to the scrubber. The operational test conditions were designated White Burn Condition 1, White Burn Condition 2, Black Burn Condition 1, and Black Burn Condition 2.

The program was conducted to comply with the test methods and procedures specified in 40 CFR Part 60, Appendix A, USEPA Methods 1 through 4, 18, 25A, 26 and 26A; and the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume III, Stationary Source Specific Methods.

Testing was conducted by Messrs. James Clark, Dan Fitzgerald, Steve Flaherty, and Jeff Goldfine of ARI. Ms. Wendy Gram of MAPLLC assisted in coordinating the test program and obtaining the process data.

This report details the test procedures and results of the testing. Included in the appendices is complete documentation of all field test data, calculation summary data, analytical data, ARI reference method monitoring data, calibration data, and process data.

A summary of the average test results is presented in Table 1-1.

TABLE 1-1. SUMMARY OF AVERAGE TEST RESULTS

	White Burn Condition 1	White Burn Condition 2	Black Burn Condition 1	Black Burn Condition 2
CCR SCRUBBER INLET				
Hydrogen Chloride				
Concentration, ppmv db	1,018.2	1,051.7	720.64	622.52
Emission rate, lb/hr	2.813	2.869	2.842	2.454
CCR SCRUBBER OUTLET				
Hydrogen Chloride				
Concentration, ppmv db @ 3% O_2	0.32	0.35	0.10	0.10
Emission rate, lb/hr	0.00011	0.0012	0.0004	0.0005
Removal Efficiency, %	99.96	99.96	99.98	99.98
VOC as Hexane (C_6)				
Concentration, ppmv db @ 3% O_2	3.0	3.1	2.9	3.3

SECTIONTWO Testing and Analytical Procedures

2.1 OVERVIEW

ARI was retained by MAPLLC to conduct a compliance emission test program on the Platformer CCR Scrubber at their refinery in Robinson, Illinois.

Testing was conducted at four (4) different operational conditions. At each operational condition, three (3) 60-minute samples were collected at the scrubber inlet and outlet. The operational test conditions were designated White Burn Condition 1, White Burn Condition 2, Black Burn Condition 1, and Black Burn Condition 2.

2.2 METHODOLOGY

The test program was conducted to comply with the test methods and procedures specified in 40 CFR Part 60, Appendix A, USEPA Methods 1 through 4, 18, 25A, 26 and 26A; and the Quality Assurance Handbook for Air Pollution Measurement Systems, Volume III, Stationary Source Specific Methods.

2.2.1 USEPA Method 1 - Sampling Location

The velocity sampling points were determined following USEPA Method 1. The sampling locations and number of velocity sampling points were as follows:

Sampling Location	Duct Diameter (inches)	No. Ports	Downstream Distance from Flow Disturbance (inches)	Upstream Distance from Flow Disturbance (inches)	Sampling Points per Port	Total Points
Scrubber Inlet	10	2	156	80	4	8
Scrubber Outlet	10	2	27	83	4	8

2.2.2 USEPA Method 2 - Volumetric Flow Rate

Gas velocity and volumetric flow rate were determined following USEPA Method 2 procedures. Velocity determinations were performed using a Type S pitot tube. Temperature measurements were conducted using a digital read-out meter and a Chromel-Alumel (Type K) thermocouple.

2.2.3 USEPA Method 3 - Molecular Weight

The stack gas oxygen (O_2) and carbon dioxide (CO_2) concentrations were determined following USEPA Method 3 procedures. During each one-hour test run, an integrated bag sample of the exhaust gases was collected. An Orsat combustion analyzer was used to determine the O_2 and CO_2 concentrations of each collected bag.

2.2.4 USEPA Method 4 - Moisture Content

The moisture concentration of the exhaust gas was determined following USEPA Method 4 protocol using the back half of the Method 26 and 26A sampling trains.

SECTIONTWO Testing and Analytical Procedures

2.2.5 USEPA Method 18 - Methane

USEPA Method 18 procedures were conducted to determine the concentration of methane. Any methane detected was subtracted from the total VOC measured by the USEPA Method 25A procedures to yield the non-methane VOC concentration as C_1. Specifically, the methane concentrations were determined on-site using ARI's VIG Model 300 Methane/Non-methane Hydrocarbon Analyzer. This analyzer splits the sample gas between two (2) channels; one is a continuously heated flame ionization detector (FID), and the second is a gas chromatograph (GC) equipped with a FID and separation column that is specific to methane. The GC/FID was calibrated by cylinder gas standards of methane in air standards to calculate a three-point calibration curve.

2.2.6 USEPA Method 25A - Total VOC

The determination of total VOC at the scrubber outlet was conducted following procedures described in USEPA Method 25A using a total hydrocarbon analyzer. The analyzer utilizes a continuous heated FID and sample line that keeps the sample gas stream above the dew point. The sampling system consisted of a stainless steel probe with an in-stack filter holder connected to a three-way calibration valve. The sample gas was transported by a Teflon lined heated pump through a heated Teflon line (>250°F) to the intake of the hydrocarbon analyzer (see Figure 2-1).

Calibration gases were introduced at the three-way calibration tee located at the exit end of the sample probe. A pre-test and post-test system bias was performed using propane and methane in air standards. The results of the calibration were within the ±5% of span allowed. The zero and upscale calibration gas drift values obtained after each run were within the ±3% of span allowed. The average zero and upscale calibration gas values obtained during each test run were used to correct the data for that test run.

The analyzers were calibrated with applicable zero, low-range, mid-range and high-range gases as specified in the USEPA methods. The gases met the calibration gas verification protocols of Alternate Number 1 or Alternate Number 2 as specified in USEPA Method 6C, Section 6. An Environics gas dilution system was used to prepare the calibration gases. The system was verified on-site following USEPA Method 205 procedures.

Results from the sample runs were continuously recorded by ARI's data acquisition system consisting of an Omega OMB-DAQ-56 datalogger connected to a computer for digital data archiving and data reduction.

2.2.7 USEPA Methods 26 and 26A - Hydrogen Chloride

Hydrogen chloride sampling was conducted following USEPA Methods 26 and 26A. USEPA Method 26 was conducted non-isokinetically with the sample gas extracted at a constant rate throughout each 60-minute test run. As shown in Figure 2-2, this test procedure was used at the inlet sampling location. It should be noted that large impingers rather than midget impingers were used to collect the HCl sample.

SECTIONTWO Testing and Analytical Procedures

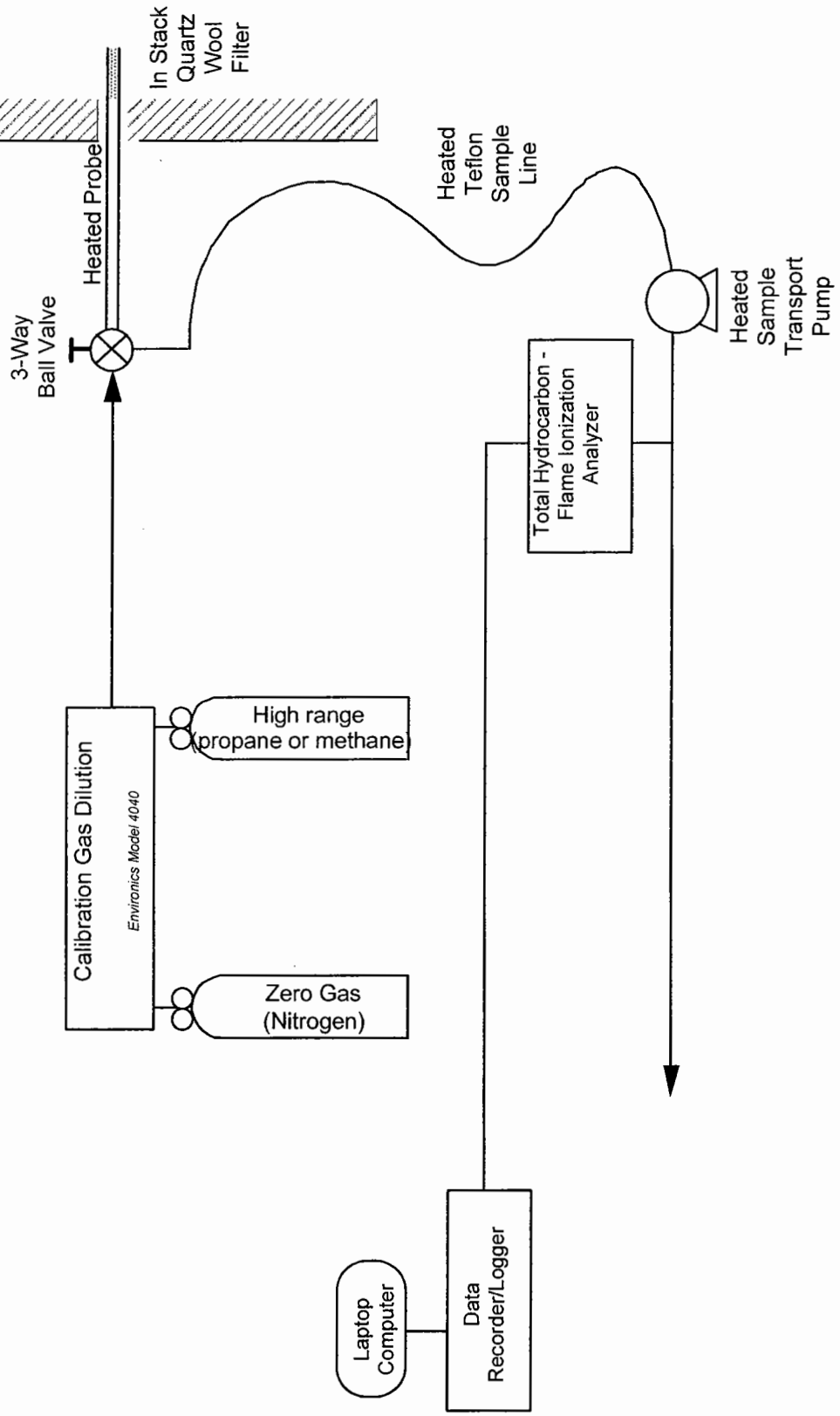


Figure 2-1. USEPA Method 25A - Total VOC Sampling System

SECTIONTWO Testing and Analytical Procedures

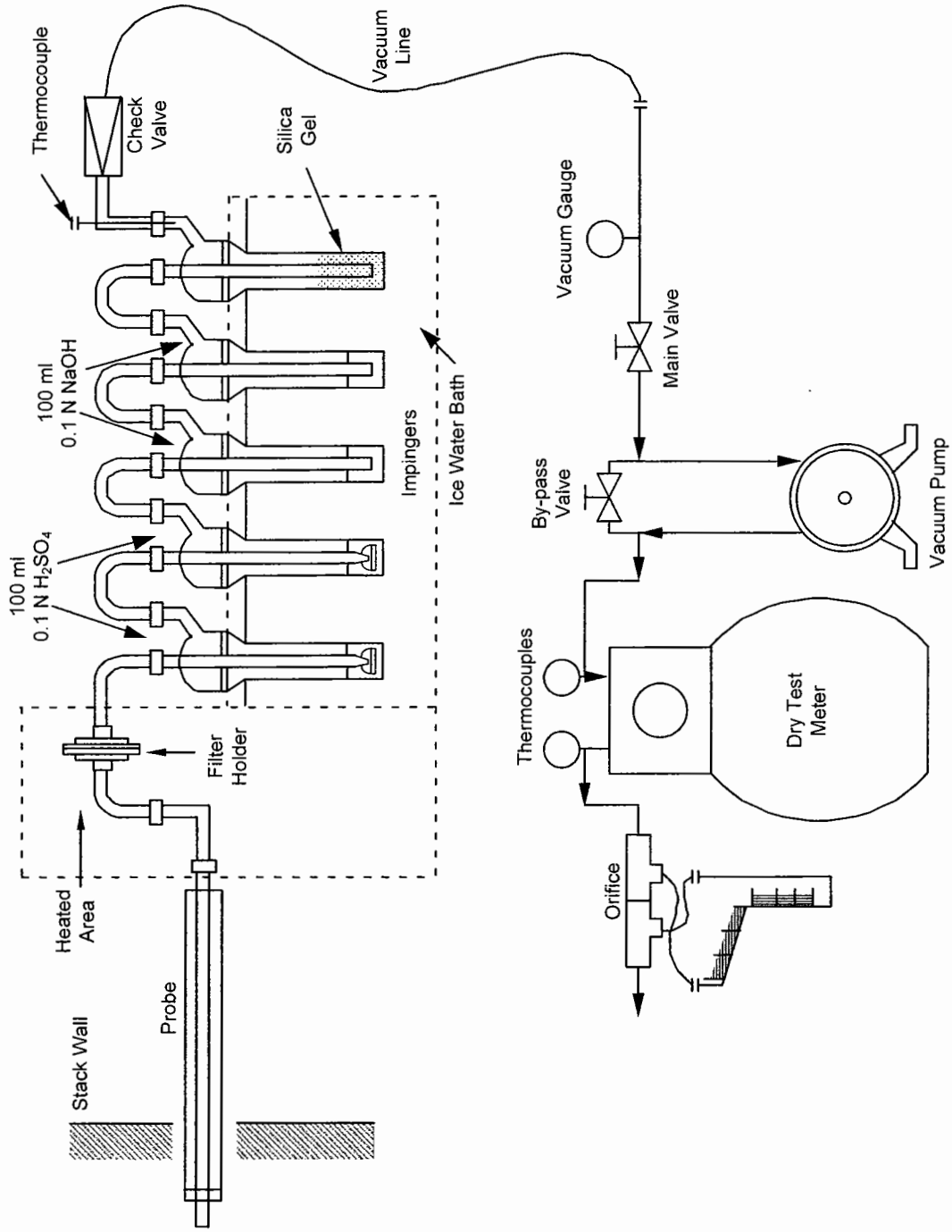


Figure 2-2. USEPA Method 26 Sampling Train

SECTION TWO Testing and Analytical Procedures

The scrubber outlet test required a sample to be collected isokinetically. As shown in Figure 2-3, sample gas was withdrawn isokinetically from the stack location through a heated glass lined sample probe and heated Teflon filter followed by a series of chilled impingers.

The sampling train consisted of an appropriately sized nozzle (outlet only, no nozzle at the inlet), a heated glass-lined probe attached to the Teflon filter assembly followed by a series of five impingers. The first and second impingers each contained 100 mL of 0.1N H_2SO_4, the third and fourth impingers contained 100 mL 0.1N NaOH, and the fifth impinger contained a preweighed amount of silica gel.

At the conclusion of each test run, after the final leak check was performed, the following clean-up procedure was conducted:

1. The contents of impingers 1 and 2 were measured for volume and then placed in Container 1. The impingers were then rinsed with deionized distilled water and the contents placed in this container. The total volume was then measured and the liquid level was marked on the outside of the bottle.

2. The contents of impingers 3 and 4 were measured for volume and then discarded.

3. The contents of impinger 5 were weighed to the nearest gram.

4. A 100 mL reagent blank of the 0.1N H_2SO_4 was placed in Container 2.

At ARI's laboratory, analysis of the HCl samples was performed in accordance with USEPA Methods 26 and 26A using ion chromatography techniques.

SECTIONTWO Testing and Analytical Procedures

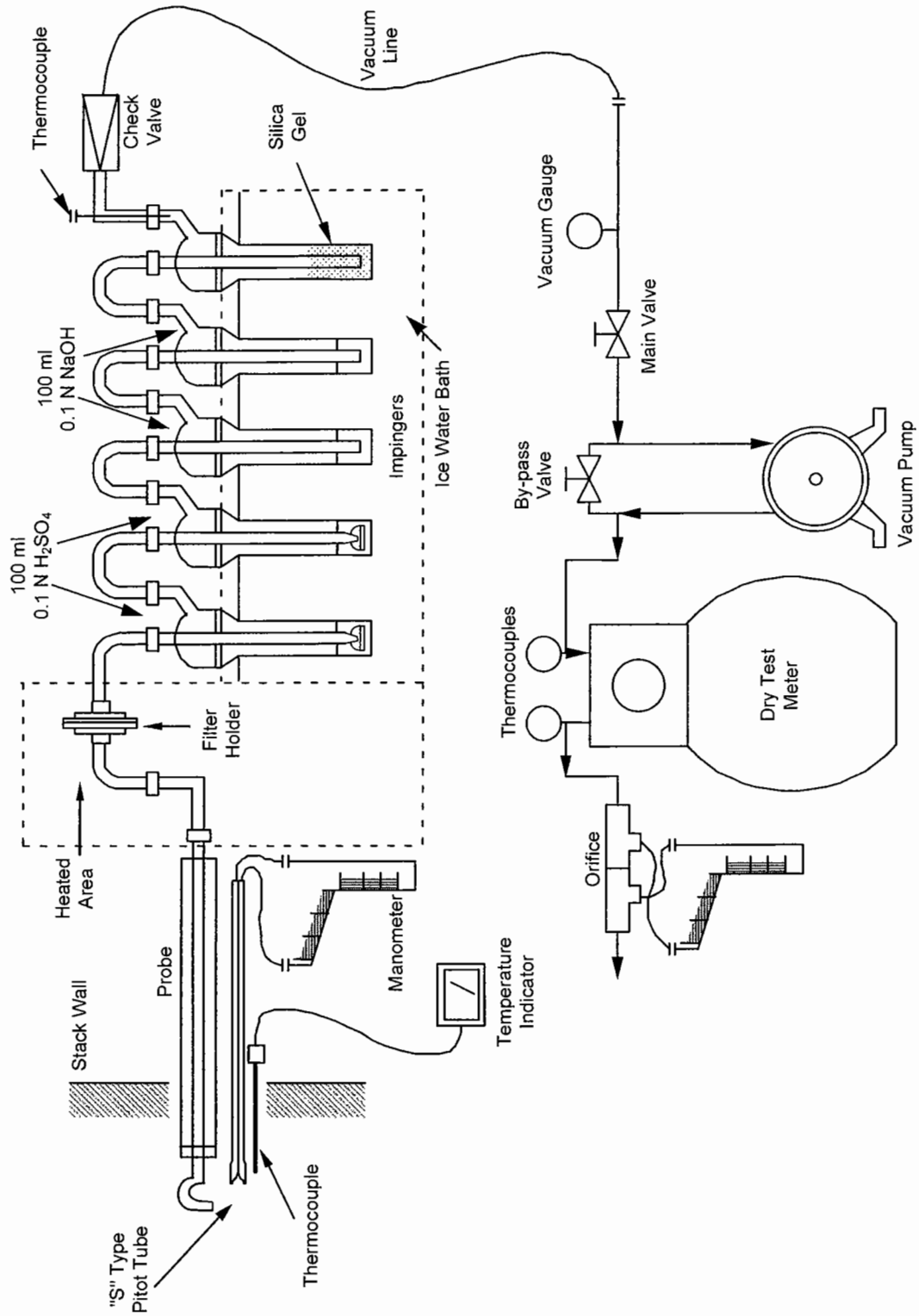


Figure 2-3. USEPA Method 26A Sampling Train

SECTION THREE Results

The test results are presented in Tables 3-1 through 3-8. The process parameters are summarized in Table 3-9.

The calculation summaries, field data, analytical data, ARI reference method monitoring data, calibration data, and process data are presented in the appendices as detailed in the Table of Contents.

TABLE 3-1. WHITE BURN CONDITION 1 SCRUBBER INLET TEST RESULTS

Company	:	Marathon Ashland Petroleum LLC			
Location	:	Robinson, IL			
Source	:	Platformer CCR Scrubber Inlet			
Operators	:	James Clark, Jeff Goldfine			
Test Run	:	WI-1-1	WI-1-2	WI-1-3	
Test Date	:	3/29/2005	3/29/2005	3/29/2005	
Test Time	:	17:04 - 18:08	18:54 - 19:58	20:25 - 21:32	Average
STACK GAS					
Temperature, av. °F		463.0	463.6	464.6	463.7
Velocity, av. ft/sec		26.769	26.727	26.689	26.728
Volume flow, acfm		876.01	874.65	873.38	874.68
Volume flow, scfh		30,085	30,008	29,981	30,025
Volume flow, dscfh		28,927	29,245	29,430	29,201
Moisture, av. % vol		3.85	2.54	1.84	2.74
CO_2, av. % vol, db		18.2	18.0	17.9	18.0
O_2, av. % vol, db		1.1	1.2	1.1	1.1
HYDROGEN CHLORIDE (HCl)					
Concentration					
ppmv db		1,033.2	1,038.6	982.9	1,018.2
lb/dscf x 10^{-6}		97.752	98.266	92.995	96.338
Emission rate					
lb/hr		2.8277	2.8738	2.7369	2.8128

SECTIONTHREE Results

TABLE 3-2. WHITE BURN CONDITION 1 SCRUBBER OUTLET TEST RESULTS

Company	:	Marathon Ashland Petroleum LLC			
Location	:	Robinson, IL			
Source	:	Platformer CCR Scrubber Outlet			
Operators	:	Steve Flaherty, Jeff Goldfine			
Test Run	:	WO-1-1	WO-1-2	WO-1-3	
Test Date	:	3/29/2005	3/29/2005	3/29/2005	
Test Time	:	17:04 - 18:08	18:54 - 19:58	20:25 - 21:32	Average
STACK GAS					
Temperature, av. °F		88.0	87.3	87.3	87.5
Velocity, av. ft/sec		16.882	17.394	18.143	17.473
Volume flow, acfm		552.47	569.20	593.74	571.81
Volume flow, scfh		31,754	32,758	34,228	32,914
Volume flow, dscfh		30,945	31,703	33,188	31,945
Moisture, av. % vol		2.55	3.22	3.04	2.94
CO_2, av. % vol, db		18.2	18.0	17.8	18.0
O_2, av. % vol, db		1.0	1.1	1.2	1.1
HYDROGEN CHLORIDE (HCl)					
Concentration					
ppmv db		0.29	0.42	0.35	0.35
ppmv db @ 3% O_2		**0.26**	**0.37**	**0.32**	**0.32**
lb/dscf x 10^{-6}		0.0277	0.0394	0.0334	0.0335
Emission rate					
lb/hr		0.00086	0.00125	0.00111	0.00107
% REMOVAL EFFICIENCY		**99.97**	**99.96**	**99.96**	**99.96**
VOC as Hexane (C_6)					
Concentration					
ppmv db		3.3	3.3	3.3	3.3
ppmv db @ 3% O_2		**3.0**	**3.0**	**2.9**	**3.0**

TABLE 3-3. WHITE BURN CONDITION 2 SCRUBBER INLET TEST RESULTS

Company	:	Marathon Ashland Petroleum LLC			
Location	:	Robinson, IL			
Source	:	Platformer CCR Scrubber Inlet			
Operators	:	James Clark, Jeff Goldfine			
Test Run	:	WI-2-1	WI-2-2	WI-2-3	
Test Date	:	3/30/2005	3/30/2005	3/30/2005	
Test Time	:	08:43 - 09:48	10:14 - 11:19	11:43 - 12:48	Average
STACK GAS					
Temperature, av. °F		450.2	443.5	435.3	443.0
Velocity, av. ft/sec		25.194	25.861	26.643	25.899
Volume flow, acfm		824.47	846.30	871.90	847.56
Volume flow, scfh		28,762	29,749	30,934	29,815
Volume flow, dscfh		27,831	28,789	29,810	28,810
Moisture, av. % vol		3.23	3.23	3.63	3.37
CO_2, av. % vol, db		17.5	16.9	17.8	17.4
O_2, av. % vol, db		1.2	1.5	1.1	1.3
HYDROGEN CHLORIDE (HCl)					
Concentration					
ppmv db		1,014.1	1,040.0	1,101.0	1,051.7
lb/dscf x 10^{-6}		95.944	98.398	104.166	99.502
Emission rate					
lb/hr		2.6703	2.8327	3.1051	2.8694

TABLE 3-4. WHITE BURN CONDITION 2 SCRUBBER OUTLET TEST RESULTS

Company	:	Marathon Ashland Petroleum LLC			
Location	:	Robinson, IL			
Source	:	Platformer CCR Scrubber Outlet			
Operators	:	Steve Flaherty, Jeff Goldfine			
Test Run	:	WO-2-1	WO-2-2	WO-2-3	
Test Date	:	3/30/2005	3/30/2005	3/30/2005	
Test Time	:	08:43 - 09:48	10:14 - 11:19	11:43 - 12:48	Average
STACK GAS					
Temperature, av. °F		87.5	89.0	89.3	88.6
Velocity, av. ft/sec		17.526	17.363	17.775	17.554
Volume flow, acfm		573.52	568.20	581.68	574.47
Volume flow, scfh		33,082	32,686	33,443	33,070
Volume flow, dscfh		31,707	31,260	31,970	31,646
Moisture, av. % vol		4.16	4.36	4.40	4.31
CO_2, av. % vol, db		17.6	17.0	17.8	17.5
O_2, av. % vol, db		1.2	1.4	1.0	1.2
HYDROGEN CHLORIDE (HCl)					
Concentration					
ppmv db		0.41	0.42	0.35	0.39
ppmv db @ 3% O_2		**0.37**	**0.38**	**0.31**	**0.35**
lb/dscf x 10^{-6}		0.0390	0.0395	0.0331	0.0372
Emission rate					
lb/hr		0.00124	0.00123	0.00106	0.00118
% REMOVAL EFFICIENCY		**99.95**	**99.96**	**99.97**	**99.96**
VOC as Hexane (C_6)					
Concentration					
ppmv db		3.4	3.5	3.5	3.5
ppmv db @ 3% O_2		**3.1**	**3.1**	**3.1**	**3.1**

TABLE 3-5. BLACK BURN CONDITION 1 SCRUBBER INLET TEST RESULTS

Company	:	Marathon Ashland Petroleum LLC			
Location	:	Robinson, IL			
Source	:	Platformer CCR Scrubber Inlet			
Operators	:	James Clark, Jeff Goldfine			
Test Run	:	BI-1-1	BI-1-2	BI-1-3	
Test Date	:	3/30/2005	3/30/2005	3/30/2005	
Test Time	:	15:42 - 16:48	17:11 - 18:15	18:36 - 19:41	Average
STACK GAS					
Temperature, av. °F		465.8	499.1	514.6	493.2
Velocity, av. ft/sec		36.003	40.395	40.777	39.058
Volume flow, acfm		1,178.2	1,321.9	1,334.4	1,278.2
Volume flow, scfh		40,656	44,134	43,827	42,872
Volume flow, dscfh		39,667	42,946	42,949	41,854
Moisture, av. % vol		2.43	2.69	2.00	2.38
CO_2, av. % vol, db		10.8	11.2	11.5	11.2
O_2, av. % vol, db		0.6	2.0	1.6	1.4
HYDROGEN CHLORIDE (HCl)					
Concentration					
ppmv db		830.39	691.84	639.69	720.64
lb/dscf x 10^{-6}		78.565	65.456	60.522	68.181
Emission rate					
lb/hr		3.1164	2.8111	2.5994	2.8423

TABLE 3-6. BLACK BURN CONDITION 1 SCRUBBER OUTLET TEST RESULTS

Company	:	Marathon Ashland Petroleum LLC			
Location	:	Robinson, IL			
Source	:	Platformer CCR Scrubber Outlet			
Operators	:	Steve Flaherty, Jeff Goldfine			
Test Run	:	BO-1-1	BO-1-2	BO-1-3	
Test Date	:	3/30/2005	3/30/2005	3/30/2005	
Test Time	:	15:47 - 16:48	17:11 - 18:15	18:36 - 19:41	Average
STACK GAS					
Temperature, av. °F		91.6	92.8	92.4	92.3
Velocity, av. ft/sec		23.904	24.291	25.178	24.458
Volume flow, acfm		782.25	794.93	823.96	800.38
Volume flow, scfh		44,883	45,518	47,212	45,871
Volume flow, dscfh		42,761	43,287	44,945	43,664
Moisture, av. % vol		4.73	4.90	4.80	4.81
CO_2, av. % vol, db		10.9	11.2	11.3	11.1
O_2, av. % vol, db		0.6	1.9	1.9	1.5
HYDROGEN CHLORIDE (HCl)					
Concentration					
ppmv db		0.10	0.12	0.09	0.11
ppmv db @ 3% O_2		**0.09**	**0.11**	**0.09**	**0.10**
lb/dscf x 10^{-6}		0.0097	0.0115	0.0088	0.0100
Emission rate					
lb/hr		0.00041	0.00050	0.00040	0.00044
% REMOVAL EFFICIENCY		**99.99**	**99.98**	**99.98**	**99.98**
VOC as Hexane (C_6)					
Concentration					
ppmv db		2.7	3.6	3.4	3.2
ppmv db @ 3% O_2		**2.5**	**3.3**	**3.0**	**2.9**

TABLE 3-7. BLACK BURN CONDITION 2 SCRUBBER INLET TEST RESULTS

Company	:	Marathon Ashland Petroleum LLC			
Location	:	Robinson, IL			
Source	:	Platformer CCR Scrubber Inlet			
Operators	:	James Clark, Jeff Goldfine			
Test Run	:	BI-2-1	BI-2-2	BI-2-3	
Test Date	:	3/31/2005	3/31/2005	3/31/2005	
Test Time	:	08:13 - 09:17	09:48 - 10:52	11:14 - 12:19	Average
STACK GAS					
Temperature, av. °F		497.0	494.1	492.3	494.5
Velocity, av. ft/sec		39.320	39.018	39.092	39.143
Volume flow, acfm		1,286.75	1,276.86	1,279.27	1,280.96
Volume flow, scfh		42,685	42,494	42,649	42,609
Volume flow, dscfh		41,834	41,531	41,637	41,667
Moisture, av. % vol		1.99	2.26	2.37	2.21
CO_2, av. % vol, db		12.1	12.1	12.0	12.1
O_2, av. % vol, db		0.7	0.7	0.7	0.7
HYDROGEN CHLORIDE (HCl)					
Concentration					
ppmv db		619.73	617.35	630.47	622.52
lb/dscf x 10^{-6}		58.633	58.408	59.650	58.897
Emission rate					
lb/hr		2.4529	2.4258	2.4836	2.4541

TABLE 3-8. BLACK BURN CONDITION 2 SCRUBBER OUTLET TEST RESULTS

Company	:	Marathon Ashland Petroleum LLC			
Location	:	Robinson, IL			
Source	:	Platformer CCR Scrubber Outlet			
Operators	:	Steve Flaherty, Jeff Goldfine			
Test Run	:	BO-2-1	BO-2-2	BO-2-3	
Test Date	:	3/31/2005	3/31/2005	3/31/2005	
Test Time	:	08:13 - 09:17	09:48 - 10:52	11:14 - 12:19	Average
STACK GAS					
Temperature, av. °F		85.0	85.5	86.8	85.8
Velocity, av. ft/sec		24.532	24.357	24.211	24.367
Volume flow, acfm		802.80	797.09	792.31	797.40
Volume flow, scfh		46,226	45,861	45,478	45,855
Volume flow, dscfh		44,459	44,063	43,751	44,091
Moisture, av. % vol		3.82	3.92	3.80	3.85
CO_2, av. % vol, db		11.4	11.2	11.4	11.3
O_2, av. % vol, db		1.6	1.8	1.6	1.7
HYDROGEN CHLORIDE (HCl)					
Concentration					
ppmv db		0.11	0.12	0.10	0.11
ppmv db @ 3% O_2		**0.10**	**0.11**	**0.09**	**0.10**
lb/dscf x 10^{-6}		0.0102	0.0109	0.0094	0.0102
Emission rate					
lb/hr		0.00045	0.00048	0.00041	0.00045
% REMOVAL EFFICIENCY		**99.98**	**99.98**	**99.98**	**99.98**
VOC as Hexane (C_6)					
Concentration					
ppmv db		3.8	3.6	3.6	3.7
ppmv db @ 3% O_2		**3.4**	**3.3**	**3.3**	**3.3**

APPENDIX A Calculation Summaries

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/29/2005
RUN NUMBER: WI-1-1

γ FACTOR:	1.002	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.75 **in. Hg**	**METER VOLUME:**	43.945 **ft^3**
STATIC PRES:	2.55 **in.H_2O**	**METER TEMP:**	88.2 **°F**
STACK TEMP:	463.0 **°F**	**LIQUID COLL:**	36.0 **milliliters**
SQ.RT ΔP:	0.3705 **in.H_2O**	**CO_2:**	18.2 **% by volume**
ΔH:	1.76 **in.H_2O**	**O_2:**	1.1 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 42.353 \text{ dscf}$$

γ = 1.002

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.695 \text{ scf}$$

V_{lc} = 36.0 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0385$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 1.0000$$

T = 512.4 °K
P = 760.4 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0385

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: WI-1-1

SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/29/2005

BAROMETRIC:	29.75 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	2.55 **in.H_2O**	**CO_2:**	18.2 **% by volume**
STACK TEMP:	463 **°F**	**O_2:**	1.1 **% by volume**
SQ.RT ΔP:	0.3705 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	30.96	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	30.46	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.3705	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
T_s = 463.0 °F + 460	=	923.0	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.94	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)(\text{avg}\sqrt{\Delta P})\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	26.769	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	876.01	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	501.41 30,085	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	482.12 28,927	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/29/2005
RUN NO: WI-1-1

INPUT

V_m:	43.945	ft^3	Q_s:	28,927	**dscfh**
γ **FACTOR:**	1.002		T_s:	463.0	**°F**
P_{bar}:	29.75	**in. Hg**	Θ:	60	**minutes**
ΔH:	1.76		V_s:	26.769	**fps**
T_m:	88.2	**°F**	P_s:	29.94	**in. Hg**
HCl in sample:	1,877,583	**µg**	V_{lc}:	36.0	**mL**

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 42.353 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= #DIV/0! **% I**

A_n = 0.00000000 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 1,877,583 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 97.7519 **x 10^{-6} lbs/dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26\ ft^3/lb-mole}{36.45\ lb/lb-mole} \times 10^6$$

= 1,033.19 **ppmv db**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 2.82769 **lbs/hr**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/29/2005
RUN NUMBER: WI-1-2

γ FACTOR:	1.002	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.75 **in. Hg**	**METER VOLUME:**	43.610 **ft^3**
STATIC PRES:	2.40 **in.H_2O**	**METER TEMP:**	87.6 **°F**
STACK TEMP:	463.6 **°F**	**LIQUID COLL:**	23.3 **milliliters**
SQ.RT ΔP:	0.3706 **in.H_2O**	**CO_2:**	18.0 **% by volume**
ΔH:	1.77 **in.H_2O**	**O_2:**	1.2 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 42.077 \text{ dscf}$$

γ = 1.002

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.097 \text{ scf}$$

V_{lc} = 23.3 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0254$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 1.0000$$

T = 512.8 °K
P = 760.1 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0254

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY:	Marathon Ashland Petrc	**SOURCE:**	Platformer CCR Scrubber Inlet
LOCATION:	Robinson, IL	**TEST DATE:**	3/29/2005
RUN NUMBER:	WI-1-2		

BAROMETRIC:	29.75 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	2.40 **in.H_2O**	**CO_2:**	18.0 **% by volume**
STACK TEMP:	463.6 **°F**	**O_2:**	1.2 **% by volume**
SQ.RT ΔP:	0.3706 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS

$$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$$ = 30.93 **lb/lb-mole**

MOLECULAR WEIGHT OF STACK GAS, wet basis

$$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$$ = 30.60 **lb/lb-mole**

PITOT TUBE COEFFICIENT

C_p (from calibration curve or geometric specifications) = 0.84

AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O

$$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$$ = 0.3706 **in. H_2O**

AVERAGE ABSOLUTE STACK GAS TEMPERATURE

T_s = 463.6 °F + 460 = 923.6 **°R**

ABSOLUTE STACK GAS PRESSURE

$$P_s = P_{bar} + \frac{P_{static}}{13.6}$$ = 29.93 **in.Hg**

STACK GAS VELOCITY

$$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$$ = 26.727 **ft/sec**

STACK GAS VOLUMETRIC FLOW RATE, actual

$$Q_s = 60 \times V_s \times A_s$$ = 874.65 **acfm**

Stack Area = 0.54542 ft^2

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis

$$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$$ = 500.13 **scfm, wb**
30,008 **scfh, wb**

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis

$$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$$ = 487.42 **dscfm**
29,245 **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/29/2005
RUN NO: WI-1-2

INPUT

V_m:	43.610	ft^3	Q_s:	29,245	**dscfh**
γ **FACTOR:**	1.002		T_s:	463.6	**°F**
P_{bar}:	29.75	**in. Hg**	Θ:	60	**minutes**
ΔH:	1.77		V_s:	26.727	**fps**
T_m:	87.6	**°F**	P_s:	29.93	**in. Hg**
HCl in sample:	1,875,162	**µg**	V_{lc}:	23.3	**mL**

Volume of Sample at Standard Conditions on a Dry Basis: **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 42.077 \text{ dscf}$$

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)} = \text{\#DIV/0! \% I}$$

A_n = 0.00000000 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 1,875,162 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9} \text{ lb}/\mu g)(M_n)}{V_{mstd}} = 98.2657 \text{ x } 10^{-6} \text{ lbs/dscf}$$

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/\text{lb-mole}}{36.45 \text{lb/lb-mole}} \times 10^6 = 1{,}038.62 \text{ ppmv db}$$

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)} = 2.87381 \text{ lbs/hr}$$

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/29/2005
RUN NUMBER: WI-1-3

γ FACTOR:	1.002	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.80 **in. Hg**	**METER VOLUME:**	43.733 **ft^3**
STATIC PRES:	2.40 **in.H_2O**	**METER TEMP:**	84.8 **°F**
STACK TEMP:	464.6 **°F**	**LIQUID COLL:**	16.9 **milliliters**
SQ.RT ΔP:	0.3706 **in.H_2O**	**CO_2:**	17.9 **% by volume**
ΔH:	1.80 **in.H_2O**	**O_2:**	1.1 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 42.487 \text{ dscf}$$

γ = 1.002

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 0.795 \text{ scf}$$

V_{lc} = 16.9 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0184$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 1.0000$$

T = 513.3 °K
P = 761.4 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0184

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: WI-1-3

SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/29/2005

BAROMETRIC:	29.80 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	2.40 **in.H_2O**	**CO_2:**	17.9 **% by volume**
STACK TEMP:	464.6 **°F**	**O_2:**	1.1 **% by volume**
SQ.RT ΔP:	0.3706 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS

$$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$$ = 30.91 **lb/lb-mole**

MOLECULAR WEIGHT OF STACK GAS, wet basis

$$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$$ = 30.67 **lb/lb-mole**

PITOT TUBE COEFFICIENT

C_p (from calibration curve or geometric specifications) = 0.84

AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O

$$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$$ = 0.3706 **in. H_2O**

AVERAGE ABSOLUTE STACK GAS TEMPERATURE

T_s = 464.6 °F + 460 = 924.6 **°R**

ABSOLUTE STACK GAS PRESSURE

$$P_s = P_{bar} + \frac{P_{static}}{13.6}$$ = 29.98 **in.Hg**

STACK GAS VELOCITY

$$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$$ = 26.689 **ft/sec**

STACK GAS VOLUMETRIC FLOW RATE, actual

$$Q_s = 60 \times V_s \times A_s$$ = 873.38 **acfm**

Stack Area = 0.54542 ft^2

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis

$$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$$ = 499.69 **scfm, wb**
29,981 **scfh, wb**

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis

$$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$$ = 490.51 **dscfm**
29,430 **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/29/2005
RUN NO: WI-1-3

INPUT

V_m:	43.733	ft^3	Q_s:	29,430	dscfh
γ FACTOR:	1.002		T_s:	464.6	°F
P_{bar}:	29.80	in. Hg	Θ:	60	minutes
ΔH:	1.80		V_s:	26.689	fps
T_m:	84.8	°F	P_s:	29.98	in. Hg
HCl in sample:	1,791,860	µg	V_{lc}:	16.9	mL

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 42.487 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= #DIV/0! **% I**

A_n = 0.00000000 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 1,791,860 µg

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 92.9950 **x 10^{-6} lbs/dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 982.92 **ppmv db**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 2.73689 **lbs/hr**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/29/2005
RUN NUMBER: WO-1-1

γ FACTOR:	1.006	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.75 **in. Hg**	**METER VOLUME:**	46.645 **ft^3**
STATIC PRES:	-0.03 **in.H_2O**	**METER TEMP:**	90.4 **°F**
STACK TEMP:	88.0 **°F**	**LIQUID COLL:**	25.0 **milliliters**
SQ.RT ΔP:	0.3031 **in.H_2O**	**CO_2:**	18.2 **% by volume**
ΔH:	1.95 **in.H_2O**	**O_2:**	1.0 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 44.975 \text{ dscf}$$

γ = 1.006

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.177 \text{ scf}$$

V_{lc} = 25.0 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0255$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 0.0424$$

T = 304.1 °K
P = 755.6 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0255

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: WO-1-1

SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/29/2005

BAROMETRIC:	29.75 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	-0.03 **in.H_2O**	**CO_2:**	18.2 **% by volume**
STACK TEMP:	88 **°F**	**O_2:**	1.0 **% by volume**
SQ.RT ΔP:	0.3031 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	30.95	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	30.62	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.3031	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 88.0 °F + 460	=	548.0	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.75	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)(\text{avg}\sqrt{\Delta P})\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	16.882	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	552.47	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	529.24 31,754	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	515.75 30,945	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/29/2005
RUN NO: WO-1-1

INPUT

V_m:	46.645	ft^3	Q_s:	30,945	dscfh
γ FACTOR:	1.006		T_s:	88.0	°F
P_{bar}:	29.75	in. Hg	Θ:	60	minutes
ΔH:	1.95		V_s:	16.882	fps
T_m:	90.4	°F	P_s:	29.75	in. Hg
HCl in sample:	566	µg	V_{lc}:	25.0	mL
			$\%O_2$:	1.00	%

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 44.975 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= 101.2 **% I**

A_n = 0.00078344 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 566 µg

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 0.0277 **x 10^{-6} lbs/ dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 0.29 **ppmv db**

$$C_{s(ppmv\,db@3\%O_2)} = C_{s(ppmv\,db@3\%O_2)} \times \left(\frac{17.9}{20.9 - \%O_2}\right)$$

= 0.26 **ppmv db @ 3% O_2**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 0.000859 **lbs/hr**

% Removal Efficiency

$$\%RE = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

= 99.97 **%RE**

MONITOR DATA SUMMARY

COMPANY :	MAPLLC
LOCATION:	Robinson, IL
SOURCE :	Platformer Scrubber Outlet
REPETITION :	WO-1-1
TEST DATE :	3/29/05
START TIME :	17:04
END TIME :	18:08

GAS ANALYZER — **VOC as C_3**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	49.00
AVERAGE ZERO BIAS (C_o):	0.00
CALIBRATION GAS:	Diluted Propane/N_2
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**6.95**

GAS ANALYZER — **CH_4**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	49.60
AVERAGE ZERO BIAS (C_o):	0.50
CALIBRATION GAS:	Diluted Methane/Air
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**0.80**

$$C_{gas} = (C - C_o)\frac{C_{ma}}{(C_m - C_o)}$$

VOC AS HEXANE (C_6) = 3.3

$$\frac{\text{VOC as } C_3}{2} - \frac{\text{Methane as } C_1}{6}$$

Stack Oxygen = 1.0

VOC as C_6 @3%O_2 = 3.0

$$\text{VOC as } C_6 @ 3\%O_2 = \text{VOC as } C_6 \times \frac{17.9}{20.9 - \%O_2}$$

	ELAPSED TIME	VOC	CH_4
17:04	0	-------	-------
17:05	1	6.98	0.72
17:06	2	7.41	0.72
17:07	3	7.17	1.25
17:08	4	7.16	1.37
17:09	5	7.46	1.37
17:10	6	6.93	1.37
17:11	7	6.78	1.37
17:12	8	7.10	1.38
17:13	9	6.82	1.39
17:14	10	7.06	1.38
17:15	11	7.13	1.37
17:16	12	6.72	1.37
17:17	13	6.72	1.37
17:18	14	6.73	1.37
17:19	15	6.48	1.33
17:20	16	7.07	1.32
17:21	17	7.00	1.32
17:22	18	6.84	1.32
17:23	19	7.15	1.32
17:24	20	6.90	1.32
17:25	21	6.92	1.32
17:26	22	7.23	1.32
17:27	23	6.97	1.32
17:28	24	6.93	1.32
17:29	25	7.21	1.32
17:30	26	7.01	1.32
17:31	27	6.77	1.32
17:32	28	7.14	1.32
17:33	29	6.62	1.32
17:34/17:38	30	6.70	1.32
17:39	31	6.56	1.32
17:40	32	6.62	1.37
17:41	33	6.56	1.37
17:42	34	6.27	1.37
17:43	35	6.27	1.33
17:44	36	6.25	1.32
17:45	37	6.53	1.32
17:46	38	6.64	1.32
17:47	39	6.43	1.32
17:48	40	6.71	1.32
17:49	41	6.61	1.32
17:50	42	6.73	1.32
17:51	43	7.27	1.32
17:52	44	6.93	1.28
17:53	45	6.65	1.27
17:54	46	6.84	1.27
17:55	47	6.64	1.27
17:56	48	6.82	1.27
17:57	49	6.58	1.27
17:58	50	6.61	1.27
17:59	51	6.90	1.27
18:00	52	6.51	1.27
18:01	53	6.55	1.37
18:02	54	6.79	1.38
18:03	55	6.73	1.38
18:04	56	6.65	1.02
18:05	57	6.77	0.92
18:06	58	6.79	0.92
18:07	59	6.51	1.04
18:08	60	6.88	1.07
	AVG (C) =	**6.812**	**1.282**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/29/2005
RUN NUMBER: WO-1-2

γ FACTOR:	1.006	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.75 **in. Hg**	**METER VOLUME:**	47.804 **ft^3**
STATIC PRES:	-0.03 **in.H_2O**	**METER TEMP:**	88.5 **°F**
STACK TEMP:	87.3 **°F**	**LIQUID COLL:**	32.7 **milliliters**
SQ.RT ΔP:	0.3119 **in.H_2O**	**CO_2:**	18.0 **% by volume**
ΔH:	2.05 **in.H_2O**	**O_2:**	1.1 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 46.264 \text{ dscf}$$

γ = 1.006

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.539 \text{ scf}$$

V_{lc} = 32.7 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0322$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 0.0414$$

T = 303.7 °K
P = 755.6 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0322

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: WO-1-2

SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/29/2005

BAROMETRIC:	29.75 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	-0.03 **in.H_2O**	**CO_2:**	18.0 **% by volume**
STACK TEMP:	87.3 **°F**	**O_2:**	1.1 **% by volume**
SQ.RT ΔP:	0.3119 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	30.92	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	30.51	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.3119	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 87.3 °F + 460	=	547.3	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.75	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	17.394	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	569.20	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	545.97 32,758	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	528.39 31,703	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/29/2005
RUN NO: WO-1-2

INPUT

V_m:	47.804	ft^3	Q_s:	31,703	dscfh
γ FACTOR:	1.006		T_s:	87.3	°F
P_{bar}:	29.75	in. Hg	Θ:	60	minutes
ΔH:	2.05		V_s:	17.394	fps
T_m:	88.5	°F	P_s:	29.75	in. Hg
HCl in sample:	827	µg	V_{lc}:	32.7	mL
			$\%O_2$:	1.10	%

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 46.264 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= 101.6 **% I**

A_n = 0.00078344 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 827 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 0.0394 **x 10^{-6} lbs/ dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 0.42 **ppmv db**

$$C_{s(ppmv\,db@3\%O_2)} = C_{s(ppmv\,db@3\%O_2)} \times \left(\frac{17.9}{20.9 - \%O_2}\right)$$

= 0.37 **ppmv db @ 3% O_2**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 0.001250 **lbs/hr**

% Removal Efficiency

$$\%RE = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

= 99.96 **%RE**

MONITOR DATA SUMMARY

COMPANY :	MAPLLC
LOCATION:	Robinson, IL
SOURCE :	Platformer Scrubber Outlet
REPETITION :	WO-1-2
TEST DATE :	3/29/05
START TIME :	18:54
END TIME :	19:58

GAS ANALYZER **VOC as C_3**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	50.00
AVERAGE ZERO BIAS (C_o):	0.00
CALIBRATION GAS:	Diluted Propane/N_2
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**6.93**

GAS ANALYZER **CH_4**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	49.60
AVERAGE ZERO BIAS (C_o):	0.50
CALIBRATION GAS:	Diluted Methane/Air
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**0.72**

$$C_{gas} = (C - C_o)\frac{C_{ma}}{(C_m - C_o)}$$

VOC AS HEXANE (C_6) = 3.3

$$\frac{\text{VOC as } C_3}{2} - \frac{\text{Methane as } C_1}{6}$$

Stack Oxygen = 1.0

VOC as C_6 @3%O_2 = 3.0

$$\text{VOC as } C_6 @ 3\%O_2 = \text{VOC as } C_6 \times \frac{17.9}{20.9 - \%O_2}$$

	ELAPSED TIME	VOC	CH_4
18:54	0	-------	-------
18:55	1	8.32	0.93
18:56	2	8.19	0.92
18:57	3	8.14	0.92
18:58	4	8.62	0.88
18:59	5	8.47	0.87
19:00	6	8.53	0.87
19:01	7	8.73	0.95
19:02	8	8.25	0.97
19:03	9	8.19	0.97
19:04	10	8.19	0.97
19:05	11	8.00	0.97
19:06	12	8.40	0.97
19:07	13	8.34	1.05
19:08	14	8.22	1.07
19:09	15	7.93	1.07
19:10	16	7.95	0.99
19:11	17	8.19	0.97
19:12	18	8.42	0.97
19:13	19	8.42	0.93
19:14	20	8.54	0.92
19:15	21	8.41	0.92
19:16	22	8.35	1.00
19:17	23	8.58	1.02
19:18	24	8.46	1.02
19:19	25	8.10	1.06
19:20	26	8.15	1.07
19:21	27	8.31	1.07
19:22	28	8.06	1.07
19:23	29	8.22	1.07
19:24/19:28	30	8.25	1.07
19:29	31	5.66	1.17
19:30	32	5.34	1.17
19:31	33	5.39	1.22
19:32	34	5.35	1.22
19:33	35	5.94	1.23
19:34	36	5.74	1.22
19:35	37	5.49	1.22
19:36	38	5.64	1.22
19:37	39	5.77	1.30
19:38	40	5.72	1.32
19:39	41	5.38	1.32
19:40	42	5.63	1.32
19:41	43	5.74	1.32
19:42	44	5.29	1.32
19:43	45	5.59	1.40
19:44	46	5.65	1.42
19:45	47	5.27	1.42
19:46	48	5.66	1.50
19:47	49	5.93	1.52
19:48	50	5.45	1.52
19:49	51	5.32	1.68
19:50	52	5.80	1.72
19:51	53	5.62	1.72
19:52	54	5.50	1.68
19:53	55	5.49	1.67
19:54	56	5.55	1.67
19:55	57	5.36	1.63
19:56	58	5.63	1.62
19:57	59	5.66	1.62
19:58	60	5.37	1.66
	AVG (C) =	**6.931**	**1.212**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/29/2005
RUN NUMBER: WO-1-3

γ FACTOR:	1.006	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.80 **in. Hg**	**METER VOLUME:**	49.596 **ft^3**
STATIC PRES:	-0.03 **in.H_2O**	**METER TEMP:**	85.5 **°F**
STACK TEMP:	87.3 **°F**	**LIQUID COLL:**	32.2 **milliliters**
SQ.RT ΔP:	0.3256 **in.H_2O**	**CO_2:**	17.8 **% by volume**
ΔH:	2.23 **in.H_2O**	**O_2:**	1.2 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 48.364 \text{ dscf}$$

γ = 1.006

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.516 \text{ scf}$$

V_{lc} = 32.2 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0304$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 0.0413$$

T = 303.7 °K
P = 756.9 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0304

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: WO-1-3

SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/29/2005

BAROMETRIC:	29.80 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	-0.03 **in.H_2O**	**CO_2:**	17.8 **% by volume**
STACK TEMP:	87.3 **°F**	**O_2:**	1.2 **% by volume**
SQ.RT ΔP:	0.3256 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	30.90	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	30.50	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.3256	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 87.3 °F + 460	=	547.3	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.80	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)(\text{avg}\sqrt{\Delta P})\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	18.143	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	593.74	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	570.47 34,228	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	553.13 33,188	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/29/2005
RUN NO: WO-1-3

INPUT

V_m:	49.596	ft^3	Q_s:	33,188	dscfh
γ FACTOR:	1.006		T_s:	87.3	°F
P_{bar}:	29.80	in. Hg	Θ:	60	minutes
ΔH:	2.23		V_s:	18.143	fps
T_m:	85.5	°F	P_s:	29.80	in. Hg
HCl in sample:	732	µg	V_{lc}:	32.2	mL
			$\%O_2$:	1.20	%

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 48.364 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= 101.4 **% I**

A_n = 0.00078344 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 732 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 0.0334 **x 10^{-6} lbs/ dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 0.35 **ppmv db**

$$C_{s(ppmv\,db@3\%O_2)} = C_{s(ppmv\,db@3\%O_2)} \times \left(\frac{17.9}{20.9 - \%O_2}\right)$$

= 0.32 **ppmv db @ 3% O_2**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 0.001108 **lbs/hr**

% Removal Efficiency

$$\%RE = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

= 99.96 **%RE**

MONITOR DATA SUMMARY

COMPANY :	MAPLLC
LOCATION:	Robinson, IL
SOURCE :	Platformer Scrubber Outlet
REPETITION :	WO-1-3
TEST DATE :	3/29/05
START TIME :	18:54
END TIME :	19:58

GAS ANALYZER — **VOC as C_3**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	51.25
AVERAGE ZERO BIAS (C_o):	0.00
CALIBRATION GAS:	Diluted Propane/N_2
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**6.76**

GAS ANALYZER — **CH_4**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	49.60
AVERAGE ZERO BIAS (C_o):	0.50
CALIBRATION GAS:	Diluted Methane/Air
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**0.72**

$$C_{gas} = (C - C_o)\frac{C_{ma}}{(C_m - C_o)}$$

VOC AS HEXANE (C_6) = 3.3

$$\frac{\text{VOC as } C_3}{2} - \frac{\text{Methane as } C_1}{6}$$

Stack Oxygen = 1.0

VOC as C_6 @3%O_2 = 2.9

$$\text{VOC as } C_6 @ 3\%O_2 = \text{VOC as } C_6 \times \frac{17.9}{20.9 - \%O_2}$$

	ELAPSED TIME	VOC	CH_4
18:54	0	-------	-------
18:55	1	8.32	0.93
18:56	2	8.19	0.92
18:57	3	8.14	0.92
18:58	4	8.62	0.88
18:59	5	8.47	0.87
19:00	6	8.53	0.87
19:01	7	8.73	0.95
19:02	8	8.25	0.97
19:03	9	8.19	0.97
19:04	10	8.19	0.97
19:05	11	8.00	0.97
19:06	12	8.40	0.97
19:07	13	8.34	1.05
19:08	14	8.22	1.07
19:09	15	7.93	1.07
19:10	16	7.95	0.99
19:11	17	8.19	0.97
19:12	18	8.42	0.97
19:13	19	8.42	0.93
19:14	20	8.54	0.92
19:15	21	8.41	0.92
19:16	22	8.35	1.00
19:17	23	8.58	1.02
19:18	24	8.46	1.02
19:19	25	8.10	1.06
19:20	26	8.15	1.07
19:21	27	8.31	1.07
19:22	28	8.06	1.07
19:23	29	8.22	1.07
19:24/19:28	30	8.25	1.07
19:29	31	5.66	1.17
19:30	32	5.34	1.17
19:31	33	5.39	1.22
19:32	34	5.35	1.22
19:33	35	5.94	1.23
19:34	36	5.74	1.22
19:35	37	5.49	1.22
19:36	38	5.64	1.22
19:37	39	5.77	1.30
19:38	40	5.72	1.32
19:39	41	5.38	1.32
19:40	42	5.63	1.32
19:41	43	5.74	1.32
19:42	44	5.29	1.32
19:43	45	5.59	1.40
19:44	46	5.65	1.42
19:45	47	5.27	1.42
19:46	48	5.66	1.50
19:47	49	5.93	1.52
19:48	50	5.45	1.52
19:49	51	5.32	1.68
19:50	52	5.80	1.72
19:51	53	5.62	1.72
19:52	54	5.50	1.68
19:53	55	5.49	1.67
19:54	56	5.55	1.67
19:55	57	5.36	1.63
19:56	58	5.63	1.62
19:57	59	5.66	1.62
19:58	60	5.37	1.66
	AVG (C) =	**6.931**	**1.212**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005
RUN NUMBER: WI-2-1

γ FACTOR:	1.002	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.83 **in. Hg**	**METER VOLUME:**	44.856 **ft^3**
STATIC PRES:	2.15 **in.H_2O**	**METER TEMP:**	82.5 **°F**
STACK TEMP:	450.2 **°F**	**LIQUID COLL:**	31.1 **milliliters**
SQ.RT ΔP:	0.3513 **in.H_2O**	**CO_2:**	17.5 **% by volume**
ΔH:	1.76 **in.H_2O**	**O_2:**	1.2 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 43.802 \text{ dscf}$$

γ = 1.002

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.464 \text{ scf}$$

V_{lc} = 31.1 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0323$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 1.0000$$

T = 505.3 °K
P = 761.7 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0323

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: WI-2-1

SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005

BAROMETRIC:	29.83 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	2.15 **in.H_2O**	**CO_2:**	17.5 **% by volume**
STACK TEMP:	450.2 **°F**	**O_2:**	1.2 **% by volume**
SQ.RT ΔP:	0.3513 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	30.85	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	30.43	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.3513	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 450.2 °F + 460	=	910.2	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.99	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)(\text{avg}\sqrt{\Delta P})\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	25.194	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	824.47	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	479.36 28,762	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	463.86 27,831	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005
RUN NO: WI-2-1

INPUT

V_m:	44.856	ft^3	Q_s:	27,831	**dscfh**
γ **FACTOR:**	1.002		T_s:	450.2	**°F**
P_{bar}:	29.83	**in. Hg**	Θ:	60	**minutes**
ΔH:	1.76		V_s:	25.194	**fps**
T_m:	82.5	**°F**	P_s:	29.99	**in. Hg**
HCl in sample:	1,905,915	**µg**	V_{lc}:	31.1	**mL**

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 43.802 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= #DIV/0! **% I**

A_n = 0.00000000 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 1,905,915 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 95.9440 **x 10^{-6} lbs/dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 1,014.09 **ppmv db**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 2.67026 **lbs/hr**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005
RUN NUMBER: WI-2-2

γ FACTOR:	1.002	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.83 **in. Hg**	**METER VOLUME:**	44.909 **ft^3**
STATIC PRES:	2.25 **in.H_2O**	**METER TEMP:**	87.5 **°F**
STACK TEMP:	443.5 **°F**	**LIQUID COLL:**	30.8 **milliliters**
SQ.RT ΔP:	0.3615 **in.H_2O**	**CO_2:**	16.9 **% by volume**
ΔH:	1.76 **in.H_2O**	**O_2:**	1.5 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 43.453 \text{ dscf}$$

γ = 1.002

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.450 \text{ scf}$$

V_{lc} = 30.8 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0323$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 1.0000$$

T = 501.6 °K
P = 761.9 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0323

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: WI-2-2

SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005

BAROMETRIC:	29.83 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	2.25 **in.H_2O**	**CO_2:**	16.9 **% by volume**
STACK TEMP:	443.5 **°F**	**O_2:**	1.5 **% by volume**
SQ.RT ΔP:	0.3615 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS

$$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$$ = 30.76 **lb/lb-mole**

MOLECULAR WEIGHT OF STACK GAS, wet basis

$$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$$ = 30.35 **lb/lb-mole**

PITOT TUBE COEFFICIENT

C_p (from calibration curve or geometric specifications) = 0.84

AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O

$$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$$ = 0.3615 **in. H_2O**

AVERAGE ABSOLUTE STACK GAS TEMPERATURE

T_s = 443.5 °F + 460 = 903.5 **°R**

ABSOLUTE STACK GAS PRESSURE

$$P_s = P_{bar} + \frac{P_{static}}{13.6}$$ = 30.00 **in.Hg**

STACK GAS VELOCITY

$$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$$ = 25.861 **ft/sec**

STACK GAS VOLUMETRIC FLOW RATE, actual

$$Q_s = 60 \times V_s \times A_s$$ = 846.30 **acfm**

Stack Area = 0.54542 ft^2

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis

$$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$$ = 495.82 **scfm, wb**
29,749 **scfh, wb**

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis

$$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$$ = 479.81 **dscfm**
28,789 **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005
RUN NO: WI-2-2

INPUT

V_m:	44.909	ft^3	Q_s:	28,789	dscfh
γ FACTOR:	1.002		T_s:	443.5	°F
P_{bar}:	29.83	in. Hg	Θ:	60	minutes
ΔH:	1.76		V_s:	25.861	fps
T_m:	87.5	°F	P_s:	30.00	in. Hg
HCl in sample:	1,939,091	µg	V_{lc}:	30.8	mL

Volume of Sample at Standard Conditions on a Dry Basis: — English Units (29.92 in. Hg, 68 °F)

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 43.453 \text{ dscf}$$

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)} = \text{\#DIV/0! \% I}$$

A_n = 0.00000000 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 1,939,091 µg

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9} \text{ lb/µg})(M_n)}{V_{mstd}} = 98.3975 \text{ x } 10^{-6} \text{ lbs/dscf}$$

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/\text{lb-mole}}{36.45 \text{lb/lb-mole}} \times 10^6 = 1{,}040.02 \text{ ppmv db}$$

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)} = 2.83274 \text{ lbs/hr}$$

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005
RUN NUMBER: WI-2-3

γ FACTOR:	1.002	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.83 **in. Hg**	**METER VOLUME:**	44.987 **ft^3**
STATIC PRES:	2.30 **in.H_2O**	**METER TEMP:**	90.1 **°F**
STACK TEMP:	435.3 **°F**	**LIQUID COLL:**	34.7 **milliliters**
SQ.RT ΔP:	0.3746 **in.H_2O**	**CO_2:**	17.8 **% by volume**
ΔH:	1.76 **in.H_2O**	**O_2:**	1.1 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 43.323 \text{ dscf}$$

γ = 1.002

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.633 \text{ scf}$$

V_{lc} = 34.7 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0363$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 1.0000$$

T = 497.1 °K
P = 762.0 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0363

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: WI-2-3

SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005

BAROMETRIC:	29.83 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	2.30 **in.H_2O**	**CO_2:**	17.8 **% by volume**
STACK TEMP:	435.3 **°F**	**O_2:**	1.1 **% by volume**
SQ.RT ΔP:	0.3746 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS

$$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$$ = 30.89 **lb/lb-mole**

MOLECULAR WEIGHT OF STACK GAS, wet basis

$$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$$ = 30.42 **lb/lb-mole**

PITOT TUBE COEFFICIENT

C_p (from calibration curve or geometric specifications) = 0.84

AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O

$$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$$ = 0.3746 **in. H_2O**

AVERAGE ABSOLUTE STACK GAS TEMPERATURE

T_s = 435.3 °F + 460 = 895.3 **°R**

ABSOLUTE STACK GAS PRESSURE

$$P_s = P_{bar} + \frac{P_{static}}{13.6}$$ = 30.00 **in.Hg**

STACK GAS VELOCITY

$$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$$ = 26.643 **ft/sec**

STACK GAS VOLUMETRIC FLOW RATE, actual

$$Q_s = 60 \times V_s \times A_s$$ = 871.90 **acfm**

Stack Area = 0.54542 ft^2

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis

$$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$$ = 515.56 **scfm, wb**
30,934 **scfh, wb**

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis

$$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$$ = 496.83 **dscfm**
29,810 **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005
RUN NO: WI-2-3

INPUT

V_m:	44.987	ft^3	Q_s:	29,810	**dscfh**
γ **FACTOR:**	1.002		T_s:	435.3	**°F**
P_{bar}:	29.83	**in. Hg**	Θ:	60	**minutes**
ΔH:	1.76		V_s:	26.643	**fps**
T_m:	90.1	**°F**	P_s:	30.00	**in. Hg**
HCl in sample:	2,046,608	**µg**	V_{lc}:	34.7	**mL**

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 43.323 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= #DIV/0! **% I**

A_n = 0.00000000 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 2,046,608 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\, lb/\mu g)(M_n)}{V_{mstd}}$$

= 104.1657 **x 10^{-6} lbs/dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 1,100.98 **ppmv db**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 3.10514 **lbs/hr**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005
RUN NUMBER: WO-2-1

γ FACTOR:	1.006	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.83 **in. Hg**	**METER VOLUME:**	48.094 **ft^3**
STATIC PRES:	-0.05 **in.H_2O**	**METER TEMP:**	89.3 **°F**
STACK TEMP:	87.5 **°F**	**LIQUID COLL:**	43.4 **milliliters**
SQ.RT ΔP:	0.3137 **in.H_2O**	**CO_2:**	17.6 **% by volume**
ΔH:	2.08 **in.H_2O**	**O_2:**	1.2 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 46.604 \text{ dscf}$$

γ = 1.006

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 2.043 \text{ scf}$$

V_{lc} = 43.4 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0420$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 0.0416$$

T = 303.8 °K
P = 757.6 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0416

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: WO-2-1

SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005

BAROMETRIC:	29.83 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	-0.05 **in.H_2O**	**CO_2:**	17.6 **% by volume**
STACK TEMP:	87.5 **°F**	**O_2:**	1.2 **% by volume**
SQ.RT ΔP:	0.3137 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	30.86	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	30.33	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.3137	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 87.5 °F + 460	=	547.5	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.83	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)(\text{avg}\sqrt{\Delta P})\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	17.526	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	573.52	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	551.36 33,082	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	528.44 31,707	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005
RUN NO: WO-2-1

INPUT

V_m:	48.094	ft^3	Q_s:	31,707	dscfh
γ FACTOR:	1.006		T_s:	87.5	°F
P_{bar}:	29.83	in. Hg	Θ:	60	minutes
ΔH:	2.08		V_s:	17.526	fps
T_m:	89.3	°F	P_s:	29.83	in. Hg
HCl in sample:	824	µg	V_{lc}:	43.4	mL
			$\%O_2$:	1.20	%

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 46.604 \text{ dscf}$$

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)} = 102.4 \text{ \% I}$$

*102.3 % I**

A_n = 0.00078344 ft^2 Runtime (θ) = 60 minutes

** based upon saturation*

Total µg HCl in sample (M_n) = 824 µg

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9} \text{ lb/µg})(M_n)}{V_{mstd}} = 0.0390 \text{ x } 10^{-6} \text{ lbs/dscf}$$

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/\text{lb-mole}}{36.45 \text{ lb/lb-mole}} \times 10^6 = 0.41 \text{ ppmv db}$$

$$C_{s(ppmv\,db@3\%O_2)} = C_{s(ppmv\,db@3\%O_2)} \times \left(\frac{17.9}{20.9 - \%O_2}\right) = 0.37 \text{ ppmv db @ 3\% } O_2$$

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)} = 0.001236 \text{ lbs/hr}$$

% Removal Efficiency

$$\%RE = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100 = 99.95 \text{ \%RE}$$

MONITOR DATA SUMMARY

COMPANY :	MAPLLC
LOCATION:	Robinson, IL
SOURCE :	Platformer Scrubber Outlet
REPETITION :	WO-2-1
TEST DATE :	3/30/05
START TIME :	8:43
END TIME :	9:48

GAS ANALYZER **VOC as C_3**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	51.25
AVERAGE ZERO BIAS (C_o):	0.35
CALIBRATION GAS:	Diluted Propane/N_2
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**8.06**

GAS ANALYZER **CH_4**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	50.30
AVERAGE ZERO BIAS (C_o):	0.10
CALIBRATION GAS:	Diluted Methane/Air
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**3.62**

$$C_{gas} = (C - C_o)\frac{C_{ma}}{(C_m - C_o)}$$

VOC AS HEXANE (C_6) = 3.4

$$\frac{\text{VOC as } C_3}{2} - \frac{\text{Methane as } C_1}{6}$$

Stack Oxygen = 1.0

VOC as C_6 @3%O_2 = 3.1

$$\text{VOC as } C_6 @ 3\%O_2 = \text{VOC as } C_6 \times \frac{17.9}{20.9 - \%O_2}$$

	ELAPSED TIME	VOC	CH_4
8:43	0	-------	-------
8:44	1	8.34	3.36
8:45	2	8.62	3.32
8:46	3	8.91	3.32
8:47	4	8.35	3.36
8:48	5	8.26	3.37
8:49	6	8.93	3.37
8:50	7	8.64	3.47
8:51	8	8.41	3.52
8:52	9	8.90	3.52
8:53	10	8.58	3.59
8:54	11	8.27	3.62
8:55	12	8.77	3.62
8:56	13	8.82	3.63
8:57	14	8.36	3.62
8:58	15	7.93	3.63
8:59	16	8.87	3.56
9:00	17	8.67	3.52
9:01	18	8.13	3.52
9:02	19	8.05	3.49
9:03	20	8.97	3.47
9:04	21	8.53	3.47
9:05	22	8.25	3.54
9:06	23	8.71	3.57
9:07	24	9.04	3.57
9:08	25	8.53	3.73
9:09	26	8.12	3.83
9:10	27	8.95	3.83
9:11	28	8.76	3.86
9:12	29	8.31	3.88
9:13/9:18	30	8.10	3.88
9:19	31	8.31	4.33
9:20	32	8.12	3.92
9:21	33	8.88	3.67
9:22	34	8.71	3.68
9:23	35	8.20	3.74
9:24	36	7.95	3.77
9:25	37	9.04	3.77
9:26	38	8.73	3.84
9:27	39	8.39	3.88
9:28	40	8.36	3.88
9:29	41	9.09	3.94
9:30	42	8.66	3.97
9:31	43	8.12	3.97
9:32	44	8.63	4.01
9:33	45	8.88	4.02
9:34	46	8.28	4.02
9:35	47	8.12	3.96
9:36	48	9.26	3.92
9:37	49	8.80	3.92
9:38	50	8.27	3.92
9:39	51	8.24	3.92
9:40	52	9.05	3.92
9:41	53	8.56	3.92
9:42	54	8.23	3.92
9:43	55	8.53	3.92
9:44	56	9.10	3.92
9:45	57	8.61	3.92
9:46	58	8.15	3.93
9:47	59	8.91	3.80
9:48	60	8.88	3.73
	AVG (C) =	**8.553**	**3.736**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005
RUN NUMBER: WO-2-2

γ FACTOR:	1.006	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.83 **in. Hg**	**METER VOLUME:**	47.749 **ft^3**
STATIC PRES:	-0.05 **in.H_2O**	**METER TEMP:**	93.0 **°F**
STACK TEMP:	89.0 **°F**	**LIQUID COLL:**	44.6 **milliliters**
SQ.RT ΔP:	0.3098 **in.H_2O**	**CO_2:**	17.0 **% by volume**
ΔH:	2.03 **in.H_2O**	**O_2:**	1.4 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 45.955 \text{ dscf}$$

γ = 1.006

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 2.099 \text{ scf}$$

V_{lc} = 44.6 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0437$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 0.0436$$

T = 304.7 °K
P = 757.6 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0436

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: WO-2-2

SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005

BAROMETRIC:	29.83 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	-0.05 **in.H_2O**	**CO_2:**	17.0 **% by volume**
STACK TEMP:	89 **°F**	**O_2:**	1.4 **% by volume**
SQ.RT ΔP:	0.3098 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	30.78	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	30.22	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.3098	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 89.0 °F + 460	=	549.0	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.83	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	17.363	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	568.20	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	544.76 32,686	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	521.00 31,260	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005
RUN NO: WO-2-2

INPUT

V_m:	47.749	ft^3	Q_s:	31,260	**dscfh**
γ **FACTOR:**	1.006		T_s:	89.0	**°F**
P_{bar}:	29.83	**in. Hg**	Θ:	60	**minutes**
ΔH:	2.03		V_s:	17.363	**fps**
T_m:	93.0	**°F**	P_s:	29.83	**in. Hg**
HCl in sample:	823	**µg**	V_{lc}:	44.6	**mL**
			$\%O_2$:	1.40	**%**

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 45.955 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= 102.3 **% I**
*102.3 % I**

A_n = 0.00078344 ft^2 Runtime (θ) = 60 minutes

** based upon saturation*

Total µg HCl in sample (M_n) = 823 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 0.0395 **x 10^{-6} lbs/dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26\ ft^3/lb-mole}{36.45\ lb/lb-mole} \times 10^6$$

= 0.42 **ppmv db**

$$C_{s(ppmv\ db@3\%O_2)} = C_{s(ppmv\ db@3\%O_2)} \times \left(\frac{17.9}{20.9 - \%O_2}\right)$$

= 0.38 **ppmv db @ 3% O_2**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 0.001234 **lbs/hr**

% Removal Efficiency

$$\%RE = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

= 99.96 **%RE**

MONITOR DATA SUMMARY

COMPANY :	MAPLLC
LOCATION:	Robinson, IL
SOURCE :	Platformer Scrubber Outlet
REPETITION :	WO-2-2
TEST DATE :	3/30/05
START TIME :	10:14
END TIME :	11:19

GAS ANALYZER **VOC as C_3**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	51.80
AVERAGE ZERO BIAS (C_o):	0.65
CALIBRATION GAS:	Diluted Propane/N_2
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**7.84**

GAS ANALYZER **CH_4**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	49.60
AVERAGE ZERO BIAS (C_o):	0.50
CALIBRATION GAS:	Diluted Methane/Air
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**2.65**

$$C_{gas} = (C - C_o)\frac{C_{ma}}{(C_m - C_o)}$$

VOC AS HEXANE (C_6) = 3.5

$$\frac{\text{VOC as } C_3}{2} - \frac{\text{Methane as } C_1}{6}$$

Stack Oxygen = 1.0

VOC as C_6 @3%O_2 = 3.1

$$\text{VOC as } C_6 @ 3\%O_2 = \text{VOC as } C_6 \times \frac{17.9}{20.9 - \%O_2}$$

	ELAPSED TIME	VOC	CH_4
10:14	0	-------	-------
10:15	1	8.97	3.38
10:16	2	8.92	3.38
10:17	3	8.70	3.31
10:18	4	8.91	3.28
10:19	5	8.62	3.28
10:20	6	8.43	3.18
10:21	7	8.93	3.13
10:22	8	8.45	3.13
10:23	9	8.28	3.06
10:24	10	8.79	3.02
10:25	11	8.52	3.02
10:26	12	8.39	3.02
10:27	13	9.15	3.02
10:28	14	8.67	3.02
10:29	15	8.32	3.06
10:30	16	8.81	3.07
10:31	17	9.06	3.07
10:32	18	8.42	3.04
10:33	19	8.15	3.02
10:34	20	9.07	3.02
10:35	21	8.85	3.02
10:36	22	8.50	3.02
10:37	23	8.39	3.02
10:38	24	9.12	2.99
10:39	25	8.78	2.97
10:40	26	8.22	2.97
10:41	27	8.50	2.94
10:42	28	9.02	2.92
10:43	29	8.48	2.92
10:44/10:49	30	8.15	2.93
10:50	31	8.61	3.01
10:51	32	8.19	2.97
10:52	33	8.28	2.97
10:53	34	8.91	2.94
10:54	35	8.59	2.92
10:55	36	8.27	2.92
10:56	37	8.99	2.96
10:57	38	9.02	2.97
10:58	39	8.48	2.97
10:59	40	8.09	3.01
11:00	41	9.21	3.02
11:01	42	8.80	3.02
11:02	43	8.36	3.02
11:03	44	8.59	3.02
11:04	45	9.16	3.02
11:05	46	8.66	3.05
11:06	47	8.37	3.07
11:07	48	8.72	3.07
11:08	49	8.94	3.14
11:09	50	8.51	3.17
11:10	51	8.13	3.17
11:11	52	9.18	3.17
11:12	53	9.07	3.17
11:13	54	8.50	3.17
11:14	55	8.30	3.36
11:15	56	9.42	3.48
11:16	57	8.91	3.48
11:17	58	8.44	3.54
11:18	59	8.76	3.58
11:19	60	9.15	3.58
	AVG (C) =	**8.670**	**3.104**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005
RUN NUMBER: WO-2-3

γ FACTOR:	1.006	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.83 **in. Hg**	**METER VOLUME:**	49.104 **ft^3**
STATIC PRES:	-0.04 **$in.H_2O$**	**METER TEMP:**	94.3 **°F**
STACK TEMP:	89.3 **°F**	**LIQUID COLL:**	47.5 **milliliters**
SQ.RT ΔP:	0.3176 **$in.H_2O$**	**CO_2:**	17.8 **% by volume**
ΔH:	2.15 **$in.H_2O$**	**O_2:**	1.0 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 47.162 \text{ dscf}$$

γ = 1.006

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 2.236 \text{ scf}$$

V_{lc} = 47.5 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0453$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 0.0440$$

T = 304.8 °K
P = 757.6 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0440

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: WO-2-3

SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005

BAROMETRIC:	29.83 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	-0.04 **in.H_2O**	**CO_2:**	17.8 **% by volume**
STACK TEMP:	89.3 **°F**	**O_2:**	1.0 **% by volume**
SQ.RT ΔP:	0.3176 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	30.89	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	30.32	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.3176	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 89.3 °F + 460	=	549.3	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.83	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	17.775	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	581.68	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	557.39 33,443	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	532.84 31,970	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005
RUN NO: WO-2-3

INPUT

V_m:	49.104	ft^3	Q_s:	31,970	**dscfh**
γ **FACTOR:**	1.006		T_s:	89.3	°F
P_{bar}:	29.83	**in. Hg**	Θ:	60	**minutes**
ΔH:	2.15		V_s:	17.775	**fps**
T_m:	94.3	°F	P_s:	29.83	**in. Hg**
HCl in sample:	707	µg	V_{lc}:	47.5	**mL**
			$\%O_2$:	1.00	%

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 47.162 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= 102.8 **% I**
102.7 ***% I****

A_n = 0.00078344 ft^2 Runtime (θ) = 60 minutes

** based upon saturation*

Total µg HCl in sample (M_n) = 707 µg

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 0.0331 **x 10^{-6} lbs/ dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 0.35 **ppmv db**

$$C_{s(ppmv\,db@3\%O_2)} = C_{s(ppmv\,db@3\%O_2)} \times \left(\frac{17.9}{20.9 - \%O_2}\right)$$

= 0.31 **ppmv db @ 3% O_2**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 0.001057 **lbs/hr**

% Removal Efficiency

$$\%RE = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

= 99.97 **%RE**

MONITOR DATA SUMMARY

COMPANY :	MAPLLC
LOCATION:	Robinson, IL
SOURCE :	Platformer Scrubber Outlet
REPETITION :	WO-2-3
TEST DATE :	3/30/05
START TIME :	11:43
END TIME :	12:48

GAS ANALYZER **VOC as C_3**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	51.75
AVERAGE ZERO BIAS (C_o):	0.60
CALIBRATION GAS:	Diluted Propane/N_2
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**8.05**

GAS ANALYZER **CH_4**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	49.60
AVERAGE ZERO BIAS (C_o):	0.50
CALIBRATION GAS:	Diluted Methane/Air
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**3.31**

$$C_{gas} = (C - C_o)\frac{C_{ma}}{(C_m - C_o)}$$

VOC AS HEXANE (C_6) = 3.5

$$\frac{\text{VOC as } C_3}{2} - \frac{\text{Methane as } C_1}{6}$$

Stack Oxygen = 1.0

VOC as C_6 @3%O_2 = 3.1

$$VOC\,as\,C_6\,@\,3\%O_2 = VOC\,as\,C_6 \times \frac{17.9}{20.9 - \%O_2}$$

	ELAPSED TIME	VOC	CH_4
11:43	0	-------	-------
11:44	1	8.93	3.32
11:45	2	9.36	4.33
11:46	3	8.79	4.33
11:47	4	8.40	4.33
11:48	5	9.35	4.33
11:49	6	9.06	4.33
11:50	7	8.53	4.24
11:51	8	8.42	4.18
11:52	9	9.46	4.18
11:53	10	9.09	4.15
11:54	11	8.63	4.13
11:55	12	8.72	4.13
11:56	13	9.10	4.04
11:57	14	8.73	3.98
11:58	15	8.51	3.98
11:59	16	9.39	3.95
12:00	17	9.28	3.92
12:01	18	8.69	3.92
12:02	19	8.31	3.95
12:03	20	9.66	3.98
12:04	21	9.16	3.98
12:05	22	8.59	3.98
12:06	23	8.67	3.98
12:07	24	9.21	3.98
12:08	25	8.74	4.00
12:09	26	8.46	4.03
12:10	27	8.94	4.03
12:11	28	9.11	4.00
12:12	29	8.69	3.98
12:13/12:18	30	8.22	3.98
12:19	31	8.78	4.08
12:20	32	8.34	3.91
12:21	33	9.06	3.78
12:22	34	9.06	3.78
12:23	35	8.82	3.66
12:24	36	8.99	3.58
12:25	37	8.90	3.58
12:26	38	8.64	3.52
12:27	39	8.36	3.48
12:28	40	9.08	3.48
12:29	41	8.67	3.48
12:30	42	8.64	3.48
12:31	43	9.23	3.48
12:32	44	8.90	3.45
12:33	45	8.67	3.43
12:34	46	8.95	3.43
12:35	47	8.77	3.37
12:36	48	8.61	3.33
12:37	49	9.27	3.33
12:38	50	8.67	3.33
12:39	51	8.57	3.33
12:40	52	9.25	3.33
12:41	53	8.85	3.27
12:42	54	8.42	3.23
12:43	55	8.70	3.23
12:44	56	8.96	3.20
12:45	57	8.57	3.18
12:46	58	8.93	3.18
12:47	59	8.96	3.18
12:48	60	8.53	3.18
	AVG (C) =	**8.839**	**3.746**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005
RUN NUMBER: BI-1-1

γ FACTOR:	1.002	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.90 **in. Hg**	**METER VOLUME:**	45.816 **ft^3**
STATIC PRES:	3.70 **in.H_2O**	**METER TEMP:**	93.2 **°F**
STACK TEMP:	465.8 **°F**	**LIQUID COLL:**	23.3 **milliliters**
SQ.RT ΔP:	0.4913 **in.H_2O**	**CO_2:**	10.8 **% by volume**
ΔH:	1.76 **in.H_2O**	**O_2:**	0.6 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 43.977 \text{ dscf}$$

γ = 1.002

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.097 \text{ scf}$$

V_{lc} = 23.3 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0243$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 1.0000$$

T = 514.0 °K
P = 766.4 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0243

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: BI-1-1

SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005

BAROMETRIC:	29.90 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	3.70 **in.H_2O**	**CO_2:**	10.8 **% by volume**
STACK TEMP:	465.8 **°F**	**O_2:**	0.6 **% by volume**
SQ.RT ΔP:	0.4913 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS

$$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$$ = 29.75 **lb/lb-mole**

MOLECULAR WEIGHT OF STACK GAS, wet basis

$$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$$ = 29.47 **lb/lb-mole**

PITOT TUBE COEFFICIENT

C_p (from calibration curve or geometric specifications) = 0.84

AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O

$$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$$ = 0.4913 **in. H_2O**

AVERAGE ABSOLUTE STACK GAS TEMPERATURE

T_s = 465.8 °F + 460 = 925.8 **°R**

ABSOLUTE STACK GAS PRESSURE

$$P_s = P_{bar} + \frac{P_{static}}{13.6}$$ = 30.17 **in.Hg**

STACK GAS VELOCITY

$$V_s = (85.49)(C_p)(\text{avg}\sqrt{\Delta P})\sqrt{\frac{T_s}{(P_s)(M_s)}}$$ = 36.003 **ft/sec**

STACK GAS VOLUMETRIC FLOW RATE, actual

$$Q_s = 60 \times V_s \times A_s$$ = 1,178.19 **acfm**

Stack Area = 0.54542 ft^2

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis

$$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$$ = 677.60 **scfm, wb**
40,656 **scfh, wb**

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis

$$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$$ = 661.12 **dscfm**
39,667 **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005
RUN NO: BI-1-1

INPUT

V_m:	45.816	ft^3	Q_s:	39,667	**dscfh**
γ **FACTOR:**	1.002		T_s:	465.8	**°F**
P_{bar}:	29.90	**in. Hg**	Θ:	60	**minutes**
ΔH:	1.76		V_s:	36.003	**fps**
T_m:	93.2	**°F**	P_s:	30.17	**in. Hg**
HCl in sample:	1,566,897	**µg**	V_{lc}:	23.3	**mL**

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 43.977 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= #DIV/0! **% I**

A_n = 0.00000000 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 1,566,897 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 78.5646 **x 10^{-6} lbs/dscf**

$$C'_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 830.39 **ppmv db**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 3.11642 **lbs/hr**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005
RUN NUMBER: BI-1-2

γ FACTOR:	1.002	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.90 **in. Hg**	**METER VOLUME:**	45.968 **ft^3**
STATIC PRES:	4.65 **in.H_2O**	**METER TEMP:**	95.9 **°F**
STACK TEMP:	499.1 **°F**	**LIQUID COLL:**	25.8 **milliliters**
SQ.RT ΔP:	0.5430 **in.H_2O**	**CO_2:**	11.2 **% by volume**
ΔH:	1.76 **in.H_2O**	**O_2:**	2.0 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 43.908 \text{ dscf}$$

γ = 1.002

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.214 \text{ scf}$$

V_{lc} = 25.8 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0269$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 1.0000$$

T = 532.5 °K
P = 768.1 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0269

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: BI-1-2

SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005

BAROMETRIC:	29.90 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	4.65 **in.H_2O**	**CO_2:**	11.2 **% by volume**
STACK TEMP:	499.1 **°F**	**O_2:**	2.0 **% by volume**
SQ.RT ΔP:	0.543 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS

$$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$$ = 29.87 **lb/lb-mole**

MOLECULAR WEIGHT OF STACK GAS, wet basis

$$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$$ = 29.55 **lb/lb-mole**

PITOT TUBE COEFFICIENT

C_p (from calibration curve or geometric specifications) = 0.84

AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O

$$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$$ = 0.5430 **in. H_2O**

AVERAGE ABSOLUTE STACK GAS TEMPERATURE

T_s = 499.1 °F + 460 = 959.1 **°R**

ABSOLUTE STACK GAS PRESSURE

$$P_s = P_{bar} + \frac{P_{static}}{13.6}$$ = 30.24 **in.Hg**

STACK GAS VELOCITY

$$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$$ = 40.395 **ft/sec**

STACK GAS VOLUMETRIC FLOW RATE, actual

$$Q_s = 60 \times V_s \times A_s$$ = 1,321.91 **acfm**

Stack Area = 0.54542 ft^2

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis

$$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$$ = 735.57 **scfm, wb**
44,134 **scfh, wb**

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis

$$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$$ = 715.77 **dscfm**
42,946 **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005
RUN NO: BI-1-2

INPUT

V_m:	45.968	ft^3	Q_s:	42,946	**dscfh**
γ **FACTOR:**	1.002		T_s:	499.1	**°F**
P_{bar}:	29.90	**in. Hg**	Θ:	60	**minutes**
ΔH:	1.76		V_s:	40.395	**fps**
T_m:	95.9	**°F**	P_s:	30.24	**in. Hg**
HCl in sample:	1,303,432	**µg**	V_{lc}:	25.8	**mL**

Volume of Sample at Standard Conditions on a Dry Basis: **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 43.908 \text{ dscf}$$

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)} = \text{\#DIV/0! \% I}$$

A_n = 0.00000000 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 1,303,432 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9} \text{ lb}/\mu g)(M_n)}{V_{mstd}} = 65.4563 \text{ x } 10^{-6} \text{ lbs/dscf}$$

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/\text{lb-mole}}{36.45 \text{lb/lb-mole}} \times 10^6 = 691.84 \text{ ppmv db}$$

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)} = 2.81109 \text{ lbs/hr}$$

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005
RUN NUMBER: BI-1-3

γ FACTOR:	1.002	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.90 **in. Hg**	**METER VOLUME:**	46.850 **ft^3**
STATIC PRES:	4.50 **$in.H_2O$**	**METER TEMP:**	91.2 **°F**
STACK TEMP:	514.6 **°F**	**LIQUID COLL:**	19.6 **milliliters**
SQ.RT ΔP:	0.5447 **$in.H_2O$**	**CO_2:**	11.5 **% by volume**
ΔH:	1.76 **$in.H_2O$**	**O_2:**	1.6 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 45.132 \text{ dscf}$$

γ = 1.002

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 0.923 \text{ scf}$$

V_{lc} = 19.6 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0200$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 1.0000$$

T = 541.1 °K
P = 767.9 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0200

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: BI-1-3

SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005

BAROMETRIC:	29.90 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	4.50 **in.H_2O**	**CO_2:**	11.5 **% by volume**
STACK TEMP:	514.6 **°F**	**O_2:**	1.6 **% by volume**
SQ.RT ΔP:	0.5447 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	29.90	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	29.67	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.5447	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 514.6 °F + 460	=	974.6	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	30.23	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)(\text{avg}\sqrt{\Delta P})\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	40.777	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	1,334.42	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	730.45 43,827	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	715.82 42,949	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/30/2005
RUN NO: BI-1-3

INPUT

V_m:	46.850	ft^3	Q_s:	42,949	**dscfh**
γ **FACTOR:**	1.002		T_s:	514.6	**°F**
P_{bar}:	29.90	**in. Hg**	Θ:	60	**minutes**
ΔH:	1.76		V_s:	40.777	**fps**
T_m:	91.2	**°F**	P_s:	30.23	**in. Hg**
HCl in sample:	1,238,776	**µg**	V_{lc}:	19.6	**mL**

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 45.132 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= #DIV/0! **% I**

A_n = 0.00000000 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 1,238,776 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 60.5221 **x 10^{-6} lbs/ dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 639.69 **ppmv db**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 2.59936 **lbs/hr**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005
RUN NUMBER: BO-1-1

γ FACTOR:	1.006	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.90 **in. Hg**	**METER VOLUME:**	44.084 **ft^3**
STATIC PRES:	-0.13 **in.H_2O**	**METER TEMP:**	93.8 **°F**
STACK TEMP:	91.6 **°F**	**LIQUID COLL:**	49.9 **milliliters**
SQ.RT ΔP:	0.4188 **in.H_2O**	**CO_2:**	10.9 **% by volume**
ΔH:	1.78 **in.H_2O**	**O_2:**	0.6 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 42.439 \text{ dscf}$$

γ = 1.006

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 2.349 \text{ scf}$$

V_{lc} = 49.9 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0524$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 0.0473$$

T = 306.1 °K
P = 759.2 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0473

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: BO-1-1

SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005

BAROMETRIC:	29.90 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	-0.13 **in.H_2O**	**CO_2:**	10.9 **% by volume**
STACK TEMP:	91.6 **°F**	**O_2:**	0.6 **% by volume**
SQ.RT ΔP:	0.4188 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS

$$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$$ = 29.77 **lb/lb-mole**

MOLECULAR WEIGHT OF STACK GAS, wet basis

$$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$$ = 29.21 **lb/lb-mole**

PITOT TUBE COEFFICIENT

C_p (from calibration curve or geometric specifications) = 0.84

AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O

$$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$$ = 0.4188 **in. H_2O**

AVERAGE ABSOLUTE STACK GAS TEMPERATURE

T_s = 91.6 °F + 460 = 551.6 **°R**

ABSOLUTE STACK GAS PRESSURE

$$P_s = P_{bar} + \frac{P_{static}}{13.6}$$ = 29.89 **in.Hg**

STACK GAS VELOCITY

$$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$$ = 23.904 **ft/sec**

STACK GAS VOLUMETRIC FLOW RATE, actual

$$Q_s = 60 \times V_s \times A_s$$ = 782.25 **acfm**

Stack Area = 0.54542 ft^2

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis

$$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$$ = 748.05 **scfm, wb**
44,883 **scfh, wb**

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis

$$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$$ = 712.68 **dscfm**
42,761 **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005
RUN NO: BO-1-1

INPUT

V_m:	44.084	ft^3	Q_s:	42,761	**dscfh**
γ **FACTOR:**	1.006		T_s:	91.6	°F
P_{bar}:	29.90	**in. Hg**	Θ:	60	**minutes**
ΔH:	1.78		V_s:	23.904	**fps**
T_m:	93.8	°F	P_s:	29.89	**in. Hg**
HCl in sample:	186	µg	V_{lc}:	49.9	**mL**
			$\%O_2$:	0.60	%

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 42.439 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= 101.8 **% I**
*101.2 % I**

A_n = 0.00053434 ft^2 Runtime (θ) = 60 minutes

** based upon saturation*

Total µg HCl in sample (M_n) = 186 µg

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 0.0097 **x 10^{-6} lbs/ dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26\ ft^3/lb-mole}{36.45\ lb/lb-mole} \times 10^6$$

= 0.10 **ppmv db**

$$C_{s(ppmv\,db@3\%O_2)} = C_{s(ppmv\,db@3\%O_2)} \times \left(\frac{17.9}{20.9 - \%O_2}\right)$$

= 0.09 **ppmv db @ 3% O_2**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 0.000413 **lbs/hr**

% Removal Efficiency

$$\%RE = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

= 99.99 **%RE**

MONITOR DATA SUMMARY

COMPANY :	MAPLLC
LOCATION:	Robinson, IL
SOURCE :	Platformer Scrubber Outlet
REPETITION :	BO-1-1
TEST DATE :	3/30/05
START TIME :	15:42
END TIME :	16:48

GAS ANALYZER **VOC as C_3**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	51.00
AVERAGE ZERO BIAS (C_o):	0.60
CALIBRATION GAS:	Diluted Propane/N_2
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**6.63**

GAS ANALYZER **CH_4**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	50.30
AVERAGE ZERO BIAS (C_o):	0.10
CALIBRATION GAS:	Diluted Methane/Air
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**3.53**

$$C_{gas} = (C - C_o)\frac{C_{ma}}{(C_m - C_o)}$$

VOC AS HEXANE (C_6) = 2.7

$$\frac{\text{VOC as } C_3}{2} - \frac{\text{Methane as } C_1}{6}$$

Stack Oxygen = 1.0

VOC as C_6 @3%O_2 = 2.5

$$\text{VOC as } C_6 @ 3\%O_2 = \text{VOC as } C_6 \times \frac{17.9}{20.9 - \%O_2}$$

	ELAPSED TIME	VOC	CH_4
15:42	0	-------	-------
15:43	1	6.91	3.52
15:44	2	7.22	3.52
15:45	3	7.18	3.52
15:46	4	7.03	3.52
15:47	5	7.31	3.55
15:48	6	7.07	3.57
15:49	7	7.39	3.57
15:50	8	6.90	3.66
15:51	9	7.32	3.73
15:52	10	7.36	3.73
15:53	11	6.86	3.70
15:54	12	7.28	3.68
15:55	13	7.08	3.67
15:56	14	7.17	3.70
15:57	15	7.39	3.72
15:58	16	6.95	3.72
15:59	17	6.99	3.70
16:00	18	7.22	3.68
16:01	19	7.16	3.68
16:02	20	6.95	3.62
16:03	21	6.69	3.58
16:04	22	6.95	3.58
16:05	23	7.14	3.58
16:06	24	6.96	3.58
16:07	25	7.11	3.57
16:08	26	6.84	3.58
16:09	27	7.11	3.58
16:10	28	6.96	3.58
16:11	29	6.96	3.55
16:12/16:18	30	7.15	3.52
16:19	31	7.37	4.08
16:20	32	7.44	3.99
16:21	33	7.37	3.92
16:22	34	7.64	3.92
16:23	35	7.66	3.95
16:24	36	7.54	3.98
16:25	37	7.66	3.98
16:26	38	7.12	3.92
16:27	39	7.66	3.88
16:28	40	7.63	3.88
16:29	41	7.08	3.76
16:30	42	7.50	3.68
16:31	43	7.25	3.68
16:32	44	6.93	3.56
16:33	45	7.58	3.48
16:34	46	7.26	3.48
16:35	47	7.18	3.47
16:36	48	7.60	3.47
16:37	49	7.24	3.48
16:38	50	7.66	3.50
16:39	51	7.64	3.52
16:40	52	7.35	3.52
16:41	53	7.65	3.52
16:42	54	7.55	3.52
16:43	55	7.40	3.52
16:44	56	7.80	3.52
16:45	57	7.54	3.52
16:46	58	7.51	3.52
16:47	59	7.87	3.58
16:48	60	7.87	3.62
	AVG (C) =	**7.286**	**3.648**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005
RUN NUMBER: BO-1-2

γ FACTOR:	1.006	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.90 **in. Hg**	**METER VOLUME:**	45.094 **ft^3**
STATIC PRES:	-0.10 **in.H_2O**	**METER TEMP:**	98.4 **°F**
STACK TEMP:	92.8 **°F**	**LIQUID COLL:**	51.9 **milliliters**
SQ.RT ΔP:	0.4257 **in.H_2O**	**CO_2:**	11.2 **% by volume**
ΔH:	1.84 **in.H_2O**	**O_2:**	1.9 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 43.060 \text{ dscf}$$

γ = 1.006

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 2.443 \text{ scf}$$

V_{lc} = 51.9 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0537$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 0.0490$$

T = 306.8 °K
P = 759.3 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0490

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: BO-1-2

SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005

BAROMETRIC:	29.90 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	-0.10 **in.H_2O**	**CO_2:**	11.2 **% by volume**
STACK TEMP:	92.75 **°F**	**O_2:**	1.9 **% by volume**
SQ.RT ΔP:	0.4257 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS

$$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$$ = 29.87 **lb/lb-mole**

MOLECULAR WEIGHT OF STACK GAS, wet basis

$$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$$ = 29.29 **lb/lb-mole**

PITOT TUBE COEFFICIENT

C_p (from calibration curve or geometric specifications) = 0.84

AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O

$$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$$ = 0.4257 **in. H_2O**

AVERAGE ABSOLUTE STACK GAS TEMPERATURE

T_s = 92.8 °F + 460 = 552.8 **°R**

ABSOLUTE STACK GAS PRESSURE

$$P_s = P_{bar} + \frac{P_{static}}{13.6}$$ = 29.89 **in.Hg**

STACK GAS VELOCITY

$$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$$ = 24.291 **ft/sec**

STACK GAS VOLUMETRIC FLOW RATE, actual

$$Q_s = 60 \times V_s \times A_s$$ = 794.93 **acfm**

Stack Area = 0.54542 ft^2

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis

$$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$$ = 758.64 **scfm, wb**
45,518 **scfh, wb**

STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis

$$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$$ = 721.44 **dscfm**
43,287 **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005
RUN NO: BO-1-2

INPUT

V_m:	45.094	ft^3	Q_s:	43,287	dscfh
γ FACTOR:	1.006		T_s:	92.8	°F
P_{bar}:	29.90	in. Hg	Θ:	60	minutes
ΔH:	1.84		V_s:	24.291	fps
T_m:	98.4	°F	P_s:	29.89	in. Hg
HCl in sample:	224	µg	V_{lc}:	51.9	mL
			$\%O_2$:	1.90	%

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 43.060 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= 102.0 **% I**
*101.5 % I**

A_n = 0.00053434 ft^2 Runtime (θ) = 60 minutes

** based upon saturation*

Total µg HCl in sample (M_n) = 224 µg

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 0.0115 **x 10^{-6} lbs/ dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 0.12 **ppmv db**

$$C_{s(ppmv\,db@3\%O_2)} = C_{s(ppmv\,db@3\%O_2)} \times \left(\frac{17.9}{20.9 - \%O_2}\right)$$

= 0.11 **ppmv db @ 3% O_2**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 0.000497 **lbs/hr**

% Removal Efficiency

$$\%RE = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

= 99.98 **%RE**

MONITOR DATA SUMMARY

COMPANY :	MAPLLC
LOCATION:	Robinson, IL
SOURCE :	Platformer Scrubber Outlet
REPETITION :	BO-1-2
TEST DATE :	3/30/05
START TIME :	17:11
END TIME :	18:15

GAS ANALYZER **VOC as C_3**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	51.15
AVERAGE ZERO BIAS (C_o):	0.60
CALIBRATION GAS:	Diluted Propane/N_2
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**8.48**

GAS ANALYZER **CH_4**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	49.60
AVERAGE ZERO BIAS (C_o):	0.50
CALIBRATION GAS:	Diluted Methane/Air
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**3.60**

$$C_{gas} = (C - C_o)\frac{C_{ma}}{(C_m - C_o)}$$

VOC AS HEXANE (C_6) = 3.6

$$\frac{\text{VOC as } C_3}{2} - \frac{\text{Methane as } C_1}{6}$$

Stack Oxygen = 1.0

VOC as C_6 @3%O_2 = 3.3

$$\text{VOC as } C_6 @ 3\%O_2 = \text{VOC as } C_6 \times \frac{17.9}{20.9 - \%O_2}$$

	ELAPSED TIME	VOC	CH_4
17:11	0	-------	-------
17:12	1	8.38	3.92
17:13	2	8.48	3.92
17:14	3	8.42	3.93
17:15	4	8.65	3.92
17:16	5	8.56	3.93
17:17	6	8.42	3.93
17:18	7	9.04	3.92
17:19	8	8.96	3.92
17:20	9	8.79	3.92
17:21	10	8.78	3.92
17:22	11	8.88	3.92
17:23	12	8.98	3.92
17:24	13	9.06	3.92
17:25	14	8.82	3.92
17:26	15	8.85	3.95
17:27	16	9.03	3.98
17:28	17	9.06	3.98
17:29	18	9.13	4.00
17:30	19	9.23	4.03
17:31	20	9.27	4.03
17:32	21	9.06	4.03
17:33	22	9.18	4.03
17:34	23	9.48	4.03
17:35	24	9.16	4.05
17:36	25	9.13	4.08
17:37	26	8.94	4.08
17:38	27	9.19	4.05
17:39	28	9.52	4.03
17:40	29	9.38	4.03
17:41/17:45	30	9.13	4.08
17:46	31	9.34	4.43
17:47	32	9.21	4.28
17:48	33	9.25	4.13
17:49	34	9.23	4.13
17:50	35	9.29	4.10
17:51	36	9.52	4.08
17:52	37	9.48	4.08
17:53	38	9.20	4.05
17:54	39	9.26	4.03
17:55	40	9.68	4.03
17:56	41	9.49	4.08
17:57	42	9.50	4.13
17:58	43	9.48	4.13
17:59	44	9.65	4.13
18:00	45	9.79	4.13
18:01	46	9.46	4.13
18:02	47	9.16	4.13
18:03	48	9.61	4.13
18:04	49	9.41	4.13
18:05	50	9.44	4.10
18:06	51	9.62	4.08
18:07	52	9.26	4.08
18:08	53	9.37	4.08
18:09	54	9.64	4.08
18:10	55	9.07	4.08
18:11	56	9.39	4.05
18:12	57	9.55	4.03
18:13	58	8.98	4.03
18:14	59	8.73	4.03
18:15	60	9.41	4.03
	AVG (C) =	**9.174**	**4.039**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005
RUN NUMBER: BO-1-3

γ FACTOR:	1.006	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.90 **in. Hg**	**METER VOLUME:**	46.116 **ft^3**
STATIC PRES:	-0.09 **in.H_2O**	**METER TEMP:**	91.3 **°F**
STACK TEMP:	92.4 **°F**	**LIQUID COLL:**	47.8 **milliliters**
SQ.RT ΔP:	0.4416 **in.H_2O**	**CO_2:**	11.3 **% by volume**
ΔH:	1.93 **in.H_2O**	**O_2:**	1.9 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 44.612 \text{ dscf}$$

γ = 1.006

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 2.250 \text{ scf}$$

V_{lc} = 47.8 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0480$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 0.0485$$

T = 306.6 °K
P = 759.3 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0480

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: BO-1-3

SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005

BAROMETRIC:	29.90 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	-0.09 **in.H_2O**	**CO_2:**	11.3 **% by volume**
STACK TEMP:	92.4 **°F**	**O_2:**	1.9 **% by volume**
SQ.RT ΔP:	0.4416 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	29.88	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	29.31	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.4416	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 92.4 °F + 460	=	552.4	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.89	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	25.178	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	823.96	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	786.87 47,212	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	749.09 44,945	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/30/2005
RUN NO: BO-1-3

INPUT

V_m:	46.116	ft^3	Q_s:	44,945	dscfh
γ FACTOR:	1.006		T_s:	92.4	°F
P_{bar}:	29.90	in. Hg	Θ:	60	minutes
ΔH:	1.93		V_s:	25.178	fps
T_m:	91.3	°F	P_s:	29.89	in. Hg
HCl in sample:	178	µg	V_{lc}:	47.8	mL
			$\%O_2$:	1.90	%

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 44.612 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= 101.3 **% I**

A_n = 0.00053434 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 178 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 0.0088 **x 10^{-6} lbs/dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 0.09 **ppmv db**

$$C_{s(ppmv\ db@3\%O_2)} = C_{s(ppmv\ db@3\%O_2)} \times \left(\frac{17.9}{20.9 - \%O_2}\right)$$

= 0.09 **ppmv db @ 3% O_2**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 0.000395 **lbs/hr**

% Removal Efficiency

$$\%RE = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

= 99.98 **%RE**

MONITOR DATA SUMMARY

COMPANY :	MAPLLC
LOCATION:	Robinson, IL
SOURCE :	Platformer Scrubber Outlet
REPETITION :	BO-1-3
TEST DATE :	3/30/05
START TIME :	18:36
END TIME :	19:41

GAS ANALYZER **VOC as C_3**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	51.20
AVERAGE ZERO BIAS (C_o):	0.65
CALIBRATION GAS:	Diluted Propane/N_2
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**7.28**

GAS ANALYZER **CH_4**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	49.60
AVERAGE ZERO BIAS (C_o):	0.50
CALIBRATION GAS:	Diluted Methane/Air
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**1.60**

$$C_{gas} = (C - C_o)\frac{C_{ma}}{(C_m - C_o)}$$

VOC AS HEXANE (C_6) = 3.4

$$\frac{\text{VOC as } C_3}{2} - \frac{\text{Methane as } C_1}{6}$$

Stack Oxygen = 1.0

VOC as C_6 @3%O_2 = 3.0

$$\text{VOC as } C_6 @ 3\%O_2 = \text{VOC as } C_6 \times \frac{17.9}{20.9 - \%O_2}$$

	ELAPSED TIME	VOC	CH_4
18:36	0	-------	-------
18:37	1	8.36	0.07
18:38	2	8.18	0.90
18:39	3	8.24	1.72
18:40	4	8.22	1.72
18:41	5	8.24	1.77
18:42	6	8.28	1.82
18:43	7	8.06	1.82
18:44	8	8.25	1.82
18:45	9	8.28	1.82
18:46	10	8.25	1.82
18:47	11	8.29	1.85
18:48	12	8.09	1.87
18:49	13	8.15	1.87
18:50	14	8.10	1.92
18:51	15	8.10	1.97
18:52	16	8.10	1.97
18:53	17	7.89	2.05
18:54	18	8.12	2.12
18:55	19	8.11	2.12
18:56	20	7.92	2.22
18:57	21	8.31	2.32
18:58	22	8.16	2.32
18:59	23	8.07	2.37
19:00	24	8.27	2.42
19:01	25	7.95	2.42
19:02	26	8.20	2.45
19:03	27	8.25	2.47
19:04	28	7.94	2.47
19:05	29	7.85	2.47
19:06/19:11	30	8.12	2.47
19:12	31	7.99	2.82
19:13	32	7.91	2.82
19:14	33	7.84	2.57
19:15	34	7.94	2.32
19:16	35	7.98	2.32
19:17	36	7.78	2.27
19:18	37	8.07	2.22
19:19	38	7.89	2.22
19:20	39	7.83	2.20
19:21	40	8.06	2.17
19:22	41	7.84	2.17
19:23	42	7.59	2.12
19:24	43	7.86	2.07
19:25	44	8.07	2.07
19:26	45	7.75	2.05
19:27	46	7.81	2.02
19:28	47	7.95	2.02
19:29	48	7.89	2.02
19:30	49	7.97	2.02
19:31	50	7.97	2.02
19:32	51	7.83	2.07
19:33	52	7.96	2.12
19:34	53	7.97	2.12
19:35	54	7.73	2.05
19:36	55	7.78	1.97
19:37	56	8.02	1.97
19:38	57	7.85	1.97
19:39	58	7.77	1.97
19:40	59	7.90	1.97
19:41	60	7.77	1.95
	AVG (C) =	**8.015**	**2.069**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/31/2005
RUN NUMBER: BI-2-1

γ FACTOR:	1.002	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.65 **in. Hg**	**METER VOLUME:**	45.624 **ft^3**
STATIC PRES:	4.50 **in.H_2O**	**METER TEMP:**	61.3 **°F**
STACK TEMP:	497.0 **°F**	**LIQUID COLL:**	19.9 **milliliters**
SQ.RT ΔP:	0.5284 **in.H_2O**	**CO_2:**	12.1 **% by volume**
ΔH:	1.76 **in.H_2O**	**O_2:**	0.7 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 46.085 \text{ dscf}$$

γ = 1.002

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 0.937 \text{ scf}$$

V_{lc} = 19.9 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0199$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 1.0000$$

T = 531.3 °K
P = 761.5 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0199

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: BI-2-1

SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/31/2005

BAROMETRIC:	29.65 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	4.50 **in.H_2O**	**CO_2:**	12.1 **% by volume**
STACK TEMP:	496.95 **°F**	**O_2:**	0.7 **% by volume**
SQ.RT ΔP:	0.5284 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	29.96	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	29.73	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.5284	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 497.0 °F + 460	=	957.0	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.98	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)(\text{avg}\sqrt{\Delta P})\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	39.320	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	1,286.75	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	711.41 42,685	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	697.24 41,834	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/31/2005
RUN NO: BI-2-1

INPUT

V_m:	45.624	ft^3	Q_s:	41,834	**dscfh**
γ **FACTOR:**	1.002		T_s:	497.0	**°F**
P_{bar}:	29.65	**in. Hg**	Θ:	60	**minutes**
ΔH:	1.76		V_s:	39.320	**fps**
T_m:	61.3	**°F**	P_s:	29.98	**in. Hg**
HCl in sample:	1,225,458	**µg**	V_{lc}:	19.9	**mL**

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 46.085 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= #DIV/0! **% I**

A_n = 0.00000000 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 1,225,458 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 58.6334 **x 10^{-6} lbs/dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 619.73 **ppmv db**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 2.45289 **lbs/hr**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/31/2005
RUN NUMBER: BI-2-2

γ FACTOR:	1.002	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.65 **in. Hg**	**METER VOLUME:**	45.796 **ft^3**
STATIC PRES:	4.60 **in.H_2O**	**METER TEMP:**	65.2 **°F**
STACK TEMP:	494.1 **°F**	**LIQUID COLL:**	22.6 **milliliters**
SQ.RT ΔP:	0.5249 **in.H_2O**	**CO_2:**	12.1 **% by volume**
ΔH:	1.76 **in.H_2O**	**O_2:**	0.7 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 45.915 \text{ dscf}$$

γ = 1.002

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.064 \text{ scf}$$

V_{lc} = 22.6 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0226$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 1.0000$$

T = 529.7 °K
P = 761.7 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0226

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY:	Marathon Ashland Petrc	**SOURCE:**	Platformer CCR Scrubber Inlet
LOCATION:	Robinson, IL	**TEST DATE:**	3/31/2005
RUN NUMBER:	BI-2-2		

BAROMETRIC:	29.65 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	4.60 **in.H_2O**	**CO_2:**	12.1 **% by volume**
STACK TEMP:	494.1 **°F**	**O_2:**	0.7 **% by volume**
SQ.RT ΔP:	0.5249 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	29.96	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	29.69	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.5249	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 494.1 °F + 460	=	954.1	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.99	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	39.018	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	1,276.86	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	708.23 42,494	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	692.19 41,531	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/31/2005
RUN NO: BI-2-2

INPUT

V_m:	45.796	ft^3	Q_s:	41,531	**dscfh**
γ **FACTOR:**	1.002		T_s:	494.1	**°F**
P_{bar}:	29.65	**in. Hg**	Θ:	60	**minutes**
ΔH:	1.76		V_s:	39.018	**fps**
T_m:	65.2	**°F**	P_s:	29.99	**in. Hg**
HCl in sample:	1,216,256	**µg**	V_{lc}:	22.6	**mL**

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 45.915 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= #DIV/0! **% I**

A_n = 0.00000000 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 1,216,256 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 58.4083 **x 10^{-6} lbs/dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 617.35 **ppmv db**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 2.42578 **lbs/hr**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/31/2005
RUN NUMBER: BI-2-3

γ FACTOR:	1.002	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.65 **in. Hg**	**METER VOLUME:**	46.563 **ft^3**
STATIC PRES:	4.55 **in.H_2O**	**METER TEMP:**	67.8 **°F**
STACK TEMP:	492.3 **°F**	**LIQUID COLL:**	24.0 **milliliters**
SQ.RT ΔP:	0.5261 **in.H_2O**	**CO_2:**	12.0 **% by volume**
ΔH:	1.76 **in.H_2O**	**O_2:**	0.7 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 46.454 \text{ dscf}$$

γ = 1.002

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.130 \text{ scf}$$

V_{lc} = 24.0 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0237$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 1.0000$$

T = 528.7 °K
P = 761.6 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0237

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: BI-2-3

SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/31/2005

BAROMETRIC:	29.65 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	4.55 **in.H_2O**	**CO_2:**	12.0 **% by volume**
STACK TEMP:	492.3 **°F**	**O_2:**	0.7 **% by volume**
SQ.RT ΔP:	0.5261 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	29.95	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	29.66	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.5261	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 492.3 °F + 460	=	952.3	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.98	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	39.092	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	1,279.27	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	710.82 42,649	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	693.94 41,637	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Inlet
TEST DATE: 3/31/2005
RUN NO: BI-2-3

INPUT

V_m:	46.563	**ft³**	**Q_s:**	41,637	**dscfh**
γ FACTOR:	1.002		**T_s:**	492.3	**°F**
P_{bar}:	29.65	**in. Hg**	**Θ:**	60	**minutes**
ΔH:	1.76		**V_s:**	39.092	**fps**
T_m:	67.8	**°F**	**P_s:**	29.98	**in. Hg**
HCl in sample:	1,256,696	**µg**	**V_{lc}:**	24.0	**mL**

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 46.454 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= #DIV/0! **% I**

A_n = 0.00000000 ft² Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 1,256,696 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 59.6501 **x 10^{-6} lbs/dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 630.47 **ppmv db**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 2.48362 **lbs/hr**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/31/2005
RUN NUMBER: BO-2-1

γ FACTOR:	1.006	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.65 **in. Hg**	**METER VOLUME:**	43.209 **ft^3**
STATIC PRES:	-0.16 **in.H_2O**	**METER TEMP:**	61.4 **°F**
STACK TEMP:	85.0 **°F**	**LIQUID COLL:**	37.0 **milliliters**
SQ.RT ΔP:	0.4322 **in.H_2O**	**CO_2:**	11.4 **% by volume**
ΔH:	1.78 **in.H_2O**	**O_2:**	1.6 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 43.813 \text{ dscf}$$

γ = 1.006

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.742 \text{ scf}$$

V_{lc} = 37.0 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0382$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 0.0386$$

T = 302.4 °K
P = 752.8 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0382

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: BO-2-1

SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/31/2005

BAROMETRIC:	29.65 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	-0.16 **in.H_2O**	**CO_2:**	11.4 **% by volume**
STACK TEMP:	85 **°F**	**O_2:**	1.6 **% by volume**
SQ.RT ΔP:	0.4322 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	29.89	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	29.43	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.4322	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 85.0 °F + 460	=	545.0	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.64	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)(\text{avg}\sqrt{\Delta P})\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	24.532	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	802.80	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	770.44 46,226	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	740.98 44,459	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/31/2005
RUN NO: BO-2-1

INPUT

V_m:	43.209	ft^3	Q_s:	44,459	dscfh
γ FACTOR:	1.006		T_s:	85.0	°F
P_{bar}:	29.65	in. Hg	Θ:	60	minutes
ΔH:	1.78		V_s:	24.532	fps
T_m:	61.4	°F	P_s:	29.64	in. Hg
HCl in sample:	202	µg	V_{lc}:	37.0	mL
			$\%O_2$:	1.60	%

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 43.813 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= 100.6 **% I**

A_n = 0.00053434 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 202 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 0.0102 **x 10^{-6} lbs/dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26\ ft^3/lb-mole}{36.45\ lb/lb-mole} \times 10^6$$

= 0.11 **ppmv db**

$$C_{s(ppmv\ db@3\%O_2)} = C_{s(ppmv\ db@3\%O_2)} \times \left(\frac{17.9}{20.9 - \%O_2}\right)$$

= 0.10 **ppmv db @ 3% O_2**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 0.000452 **lbs/hr**

% Removal Efficiency

$$\%RE = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

= 99.98 **%RE**

MONITOR DATA SUMMARY

COMPANY :	MAPLLC
LOCATION:	Robinson, IL
SOURCE :	Platformer Scrubber Outlet
REPETITION :	BO-2-1
TEST DATE :	3/31/05
START TIME :	8:13
END TIME :	9:17

GAS ANALYZER — **VOC as C_3**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	49.00
AVERAGE ZERO BIAS (C_o):	0.60
CALIBRATION GAS:	Diluted Propane/N_2
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**8.21**

GAS ANALYZER — **CH_4**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	50.60
AVERAGE ZERO BIAS (C_o):	0.10
CALIBRATION GAS:	Diluted Methane/Air
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**2.14**

$$C_{gas} = (C - C_o)\frac{C_{ma}}{(C_m - C_o)}$$

VOC AS HEXANE (C_6) = 3.8

$$\frac{\text{VOC as } C_3}{2} - \frac{\text{Methane as } C_1}{6}$$

Stack Oxygen = 1.0

VOC as C_6 @3%O_2 = 3.4

$$\text{VOC as } C_6 @ 3\%O_2 = \text{VOC as } C_6 \times \frac{17.9}{20.9 - \%O_2}$$

	ELAPSED TIME	VOC	CH_4
8:13	0	-------	-------
8:14	1	8.53	2.37
8:15	2	8.19	2.37
8:16	3	8.08	2.28
8:17	4	8.66	2.27
8:18	5	8.46	2.27
8:19	6	8.24	2.23
8:20	7	8.40	2.22
8:21	8	8.28	2.22
8:22	9	8.64	2.18
8:23	10	8.54	2.17
8:24	11	7.97	2.17
8:25	12	8.45	2.17
8:26	13	8.53	2.17
8:27	14	8.17	2.17
8:28	15	8.79	2.17
8:29	16	8.54	2.17
8:30	17	8.38	2.17
8:31	18	8.97	2.13
8:32	19	8.47	2.12
8:33	20	8.78	2.12
8:34	21	9.01	2.17
8:35	22	8.53	2.17
8:36	23	8.67	2.17
8:37	24	8.48	2.22
8:38	25	8.71	2.22
8:39	26	8.85	2.22
8:40	27	8.58	2.27
8:41	28	8.79	2.27
8:42	29	8.49	2.27
8:43/8:47	30	8.66	2.27
8:48	31	7.94	2.62
8:49	32	8.91	2.25
8:50	33	8.72	2.22
8:51	34	8.46	2.22
8:52	35	8.94	2.18
8:53	36	8.41	2.17
8:54	37	8.62	2.17
8:55	38	8.83	2.17
8:56	39	8.36	2.17
8:57	40	8.66	2.17
8:58	41	8.49	2.31
8:59	42	8.66	2.32
9:00	43	8.89	2.32
9:01	44	8.40	2.47
9:02	45	8.61	2.47
9:03	46	8.59	2.47
9:04	47	8.27	2.33
9:05	48	8.59	2.32
9:06	49	8.61	2.32
9:07	50	8.74	2.32
9:08	51	8.61	2.32
9:09	52	8.30	2.32
9:10	53	8.47	2.28
9:11	54	8.69	2.27
9:12	55	8.52	2.27
9:13	56	8.78	2.27
9:14	57	8.58	2.27
9:15	58	8.66	2.27
9:16	59	8.60	2.32
9:17	60	8.28	2.32
	AVG (C) =	**8.551**	**2.258**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/31/2005
RUN NUMBER: BO-2-2

γ FACTOR:	1.006	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.65 **in. Hg**	**METER VOLUME:**	43.158 **ft³**
STATIC PRES:	-0.11 **in.H_2O**	**METER TEMP:**	65.0 **°F**
STACK TEMP:	85.5 **°F**	**LIQUID COLL:**	40.9 **milliliters**
SQ.RT ΔP:	0.4287 **in.H_2O**	**CO_2:**	11.2 **% by volume**
ΔH:	1.76 **in.H_2O**	**O_2:**	1.8 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & 68 °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 43.460 \text{ dscf}$$

γ = 1.006

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.925 \text{ scf}$$

V_{lc} = 40.9 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0424$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 0.0392$$

T = 302.7 °K
P = 752.9 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0392

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: BO-2-2

SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/31/2005

BAROMETRIC:	29.65 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	-0.11 **in.H_2O**	**CO_2:**	11.2 **% by volume**
STACK TEMP:	85.5 **°F**	**O_2:**	1.8 **% by volume**
SQ.RT ΔP:	0.4287 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	29.86	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	29.40	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.4287	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 85.5 °F + 460	=	545.5	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.64	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)(\text{avg}\sqrt{\Delta P})\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	24.357	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	797.09	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	764.34 45,861	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	734.38 44,063	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/31/2005
RUN NO: BO-2-2

INPUT

V_m:	43.158	ft^3	Q_s:	44,063	**dscfh**
γ **FACTOR:**	1.006		T_s:	85.5	°F
P_{bar}:	29.65	**in. Hg**	Θ:	60	**minutes**
ΔH:	1.76		V_s:	24.357	**fps**
T_m:	65.0	°F	P_s:	29.64	**in. Hg**
HCl in sample:	215	µg	V_{lc}:	40.9	**mL**
			$\%O_2$:	1.80	%

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 43.460 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= 101.0 **% I**
*100.6 % I**

A_n = 0.00053434 ft^2 Runtime (θ) = 60 minutes

** based upon saturation*

Total µg HCl in sample (M_n) = 215 µg

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 0.0109 **x 10^{-6} lbs/ dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 0.12 **ppmv db**

$$C_{s(ppmv\,db@3\%O_2)} = C_{s(ppmv\,db@3\%O_2)} \times \left(\frac{17.9}{20.9 - \%O_2}\right)$$

= 0.11 **ppmv db @ 3% O_2**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 0.000481 **lbs/hr**

% Removal Efficiency

$$\%RE = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

= 99.98 **%RE**

MONITOR DATA SUMMARY

COMPANY :	MAPLLC
LOCATION:	Robinson, IL
SOURCE :	Platformer Scrubber Outlet
REPETITION :	BO-2-2
TEST DATE :	3/31/05
START TIME :	9:48
END TIME :	10:52

GAS ANALYZER — **VOC as C_3**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	48.85
AVERAGE ZERO BIAS (C_o):	0.85
CALIBRATION GAS:	Diluted Propane/N_2
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**7.98**

GAS ANALYZER — **CH_4**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	49.60
AVERAGE ZERO BIAS (C_o):	0.50
CALIBRATION GAS:	Diluted Methane/Air
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**2.05**

$$C_{gas} = (C - C_o)\frac{C_{ma}}{(C_m - C_o)}$$

VOC AS HEXANE (C_6) = 3.6

$$\frac{\text{VOC as } C_3}{2} - \frac{\text{Methane as } C_1}{6}$$

Stack Oxygen = 1.0

VOC as C_6 @3%O_2 = 3.3

$$\text{VOC as } C_6 @ 3\%O_2 = \text{VOC as } C_6 \times \frac{17.9}{20.9 - \%O_2}$$

	ELAPSED TIME	VOC	CH_4
9:48	0	-------	-------
9:49	1	8.74	2.46
9:50	2	8.62	2.52
9:51	3	8.30	2.52
9:52	4	8.63	2.52
9:53	5	8.41	2.52
9:54	6	8.13	2.52
9:55	7	8.74	2.48
9:56	8	8.56	2.47
9:57	9	8.43	2.47
9:58	10	8.79	2.52
9:59	11	8.48	2.52
10:00	12	8.74	2.52
10:01	13	8.76	2.52
10:02	14	8.20	2.52
10:03	15	8.17	2.52
10:04	16	8.00	2.52
10:05	17	8.16	2.52
10:06	18	8.24	2.52
10:07	19	7.99	2.43
10:08	20	8.28	2.42
10:09	21	8.08	2.42
10:10	22	7.84	2.38
10:11	23	7.98	2.37
10:12	24	8.11	2.37
10:13	25	8.12	2.45
10:14	26	8.03	2.45
10:15	27	8.40	2.45
10:16	28	7.81	2.45
10:17	29	7.89	2.45
10:18/10:22	30	8.02	2.48
10:23	31	8.34	2.72
10:24	32	7.57	2.72
10:25	33	8.21	2.52
10:26	34	8.49	2.53
10:27	35	7.82	2.53
10:28	36	8.35	2.62
10:29	37	7.93	2.62
10:30	38	8.10	2.62
10:31	39	8.48	2.47
10:32	40	7.99	2.47
10:33	41	8.20	2.47
10:34	42	8.69	2.47
10:35	43	8.37	2.47
10:36	44	8.44	2.47
10:37	45	8.32	2.52
10:38	46	8.80	2.52
10:39	47	8.83	2.52
10:40	48	8.81	2.57
10:41	49	9.20	2.57
10:42	50	8.95	2.57
10:43	51	9.31	2.62
10:44	52	9.69	2.62
10:45	53	9.00	2.62
10:46	54	9.65	2.52
10:47	55	9.74	2.52
10:48	56	9.11	2.52
10:49	57	9.73	2.52
10:50	58	9.37	2.52
10:51	59	9.21	2.52
10:52	60	9.48	2.47
	AVG (C) =	**8.514**	**2.514**

ARI ENVIRONMENTAL, INC.
MOISTURE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/31/2005
RUN NUMBER: BO-2-3

γ FACTOR:	1.006	**STACK DIAM:**	10.0 **inches**
BAROMETRIC:	29.65 **in. Hg**	**METER VOLUME:**	43.009 **ft^3**
STATIC PRES:	-0.10 **in.H_2O**	**METER TEMP:**	68.3 **°F**
STACK TEMP:	86.8 **°F**	**LIQUID COLL:**	36.1 **milliliters**
SQ.RT ΔP:	0.4259 **in.H_2O**	**CO_2:**	11.4 **% by volume**
ΔH:	1.73 **in.H_2O**	**O_2:**	1.6 **% by volume**

ENGLISH UNITS
(29.92 in.Hg & °F)

VOLUME OF SAMPLE
@ STANDARD CONDITIONS, DRY BASIS

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right] = 43.036 \text{ dscf}$$

γ = 1.006

VOLUME OF WATER IN SAMPLE
@ STANDARD CONDITIONS

$$V_{wstd} = 0.04707 \times V_{lc} = 1.699 \text{ scf}$$

V_{lc} = 36.1 mL

FRACTIONAL MOISTURE CONTENT OF STACK GAS AS MEASURED

$$B_{ws} = \frac{V_{wstd}}{V_{wstd} + V_{mstd}} = 0.0380$$

FRACTIONAL MOISTURE CONTENT OF STACK GAS @ SATURATION

$$MF = \frac{\left(10^{\left[8.361 - \left(\frac{1893.5}{T - 27.65}\right)\right]}\right) - 0.5}{P} = 0.0409$$

T = 303.4 °K
P = 752.9 mmHg

FRACTIONAL MOISTURE CONTENT USED IN CALCULATIONS

B_{ws} = 0.0380

ARI ENVIRONMENTAL, INC.
FLOW RATE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petrc
LOCATION: Robinson, IL
RUN NUMBER: BO-2-3

SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/31/2005

BAROMETRIC:	29.65 **in. Hg**	**STACK DIAM:**	10.0 **inches**
STATIC PRES:	-0.10 **in.H_2O**	**CO_2:**	11.4 **% by volume**
STACK TEMP:	86.8 **°F**	**O_2:**	1.6 **% by volume**
SQ.RT ΔP:	0.4259 **in.H_2O**		

DRY MOLECULAR WEIGHT OF STACK GAS			
$M_d = 0.44(\%CO_2) + 0.32(\%O_2) + 0.28(\%N_2 + \%CO)$	=	29.89	**lb/lb-mole**
MOLECULAR WEIGHT OF STACK GAS, wet basis			
$M_s = M_d(1 - B_{ws}) + 18(B_{ws})$	=	29.44	**lb/lb-mole**
PITOT TUBE COEFFICIENT			
C_p (from calibration curve or geometric specifications)	=	0.84	
AVERAGE VELOCITY HEAD OF STACK GAS, in. H_2O			
$\overline{\sqrt{\Delta P}} = \frac{1}{n}\sum_{i=1}^{n}\sqrt{\Delta p}$	=	0.4259	**in. H_2O**
AVERAGE ABSOLUTE STACK GAS TEMPERATURE			
$T_s =$ 86.8 °F + 460	=	546.8	**°R**
ABSOLUTE STACK GAS PRESSURE			
$P_s = P_{bar} + \frac{P_{static}}{13.6}$	=	29.64	**in.Hg**
STACK GAS VELOCITY			
$V_s = (85.49)(C_p)\left(\text{avg}\sqrt{\Delta P}\right)\sqrt{\frac{T_s}{(P_s)(M_s)}}$	=	24.211	**ft/sec**
STACK GAS VOLUMETRIC FLOW RATE, actual			
$Q_s = 60 \times V_s \times A_s$	=	792.31	**acfm**
Stack Area = 0.54542 ft^2			
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, wet basis			
$Q_{stdw} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)$	=	757.97 45,478	**scfm, wb** **scfh, wb**
STACK GAS VOLUMETRIC FLOW RATE, standard conditions, dry basis			
$Q_{std} = \left(\frac{528}{29.92}\right)(Q_s)\left(\frac{P_s}{T_s}\right)(1 - B_{ws})$	=	729.18 43,751	**dscfm** **dscfh**

HYDROGEN CHLORIDE CALCULATION SUMMARY

COMPANY: Marathon Ashland Petroleum, LLC
LOCATION: Robinson, IL
SOURCE: Platformer CCR Scrubber Outlet
TEST DATE: 3/31/2005
RUN NO: BO-2-3

INPUT

V_m:	43.009	**ft^3**	**Q_s:**	43,751	**dscfh**
γ FACTOR:	1.006		**T_s:**	86.8	**°F**
P_{bar}:	29.65	**in. Hg**	**Θ:**	60	**minutes**
ΔH:	1.73		**V_s:**	24.211	**fps**
T_m:	68.3	**°F**	**P_s:**	29.64	**in. Hg**
HCl in sample:	184	**µg**	**V_{lc}:**	36.1	**mL**
			$\%O_2$:	1.60	**%**

Volume of Sample at Standard Conditions on a Dry Basis: — **English Units (29.92 in. Hg, 68 °F)**

$$V_{mstd} = \left(\frac{528}{29.92}\right) \times V_m \times \gamma \left[\frac{P_{bar} + \frac{\Delta H}{13.6}}{T_m}\right]$$

= 43.036 **dscf**

Isokinetic Sampling Rate

$$\%ISO = \frac{(100)(T_s)\left[(0.002669 \times V_{lc}) + \left(\frac{V_m}{T_m}\right)(\gamma)\left(P_{bar} + \left(\frac{\Delta H}{13.6}\right)\right)\right]}{(60)(\theta)(V_s)(P_s)(A_n)}$$

= 100.4 **% I**

A_n = 0.00053434 ft^2 Runtime (θ) = 60 minutes

Total µg HCl in sample (M_n) = 184 **µg**

Concentration of HCl

$$C'_{s(lb/dscf)} = \frac{(2.205 \times 10^{-9}\ lb/\mu g)(M_n)}{V_{mstd}}$$

= 0.0094 **x 10^{-6} lbs/ dscf**

$$C_{s(ppmvdb)} = C'_{s(lb/dscf)} \times \frac{385.26 ft^3/lb-mole}{36.45 lb/lb-mole} \times 10^6$$

= 0.10 **ppmv db**

$$C_{s(ppmv\ db@3\%O_2)} = C_{s(ppmv\ db@3\%O_2)} \times \left(\frac{17.9}{20.9 - \%O_2}\right)$$

= 0.09 **ppmv db @ 3% O_2**

HCl Mass Rate:

$$E = Q_s \times C'_{s(lb/dscf)}$$

= 0.000412 **lbs/hr**

% Removal Efficiency

$$\%RE = \frac{E_{inlet} - E_{outlet}}{E_{inlet}} \times 100$$

= 99.98 **%RE**

MONITOR DATA SUMMARY

COMPANY :	MAPLLC
LOCATION:	Robinson, IL
SOURCE :	Platformer Scrubber Outlet
REPETITION :	BO-2-3
TEST DATE :	3/31/05
START TIME :	11:14
END TIME :	12:19

GAS ANALYZER — **VOC as C_3**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	49.00
AVERAGE ZERO BIAS (C_o):	0.80
CALIBRATION GAS:	Diluted Propane/N_2
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**7.75**

GAS ANALYZER — **CH_4**

SCALE :	0 - 100 ppm
AVERAGE CAL. BIAS (C_m):	49.60
AVERAGE ZERO BIAS (C_o):	0.50
CALIBRATION GAS:	Diluted Methane/Air
CALIBRATION % (C_{ma}):	50.0
% CORRECTED (C_{gas}):	**1.55**

$$C_{gas} = (C - C_o)\frac{C_{ma}}{(C_m - C_o)}$$

VOC AS HEXANE (C_6) = 3.6

$$\frac{\text{VOC as } C_3}{2} - \frac{\text{Methane as } C_1}{6}$$

Stack Oxygen = 1.0

VOC as C_6 @3%O_2 = 3.3

$$\text{VOC as } C_6 @ 3\%O_2 = \text{VOC as } C_6 \times \frac{17.9}{20.9 - \%O_2}$$

	ELAPSED TIME	VOC	CH_4
11:14	0	-------	-------
11:15	1	8.17	1.97
11:16	2	8.19	2.52
11:17	3	8.33	2.52
11:18	4	8.37	2.52
11:19	5	8.07	2.62
11:20	6	8.07	2.62
11:21	7	8.03	2.62
11:22	8	8.08	2.52
11:23	9	8.45	2.52
11:24	10	7.95	2.52
11:25	11	8.18	2.47
11:26	12	8.29	2.47
11:27	13	8.10	2.47
11:28	14	8.37	2.47
11:29	15	8.20	2.47
11:30	16	8.26	2.47
11:31	17	8.55	2.27
11:32	18	8.22	2.27
11:33	19	8.39	2.27
11:34	20	8.37	2.12
11:35	21	8.52	2.12
11:36	22	8.58	2.12
11:37	23	8.20	2.17
11:38	24	8.17	2.17
11:39	25	8.55	2.17
11:40	26	8.50	1.97
11:41	27	8.39	1.97
11:42	28	8.25	1.97
11:43	29	8.60	1.87
11:44/11:49	30	8.36	1.87
11:50	31	8.12	1.87
11:51	32	8.22	1.87
11:52	33	8.19	1.72
11:53	34	8.15	1.72
11:54	35	8.06	1.72
11:55	36	8.02	1.72
11:56	37	8.31	1.72
11:57	38	8.17	1.72
11:58	39	8.29	1.67
11:59	40	8.34	1.67
12:00	41	7.75	1.67
12:01	42	8.23	1.67
12:02	43	8.42	1.67
12:03	44	7.88	1.67
12:04	45	8.30	1.72
12:05	46	8.18	1.72
12:06	47	8.13	1.72
12:07	48	8.63	1.67
12:08	49	8.29	1.67
12:09	50	8.27	1.67
12:10	51	8.31	1.77
12:11	52	8.48	1.77
12:12	53	8.32	1.77
12:13	54	8.28	1.77
12:14	55	8.36	1.77
12:15	56	8.13	1.77
12:16	57	8.20	1.77
12:17	58	8.65	1.77
12:18	59	8.32	1.77
12:19	60	8.34	1.92
	AVG (C) =	**8.268**	**2.023**

APPENDIX B

Field Data

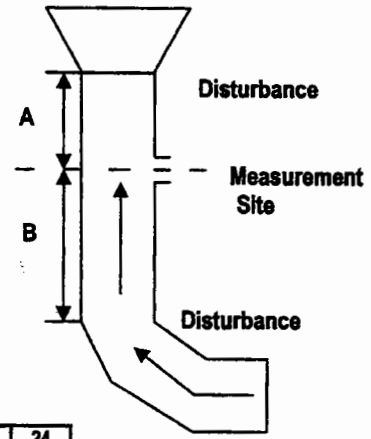
TRAVERSE POINT LOCATION FOR CIRCULAR AND RECTANGULAR DUCTS

PLANT Marathon
DATE 3/29/05
SAMPLING LOCATION Bk. Plat. Scrub. Inlet
INSIDE OF FAR WALL TO
OUTSIDE OF PORT (DISTANCE C) 4.25
INSIDE OF NEAR WALL TO
OUTSIDE OF PORT (DISTANCE D) 31.25
STACK ID 10"
NEAREST UPSTREAM DISTURBANCE (A) 80" = 8.00
NEAREST DOWNSTREAM DISTURBANCE (B) 150 = 15.000
CALCULATOR SC

Location of Traverse Points in Rectangular Stacks

	2	3	4	5	6	7	8	9	10	11	12
1	25.0	16.7	12.5	10.0	8.3	7.1	6.3	5.6	5.0	4.5	4.2
2	75.0	50.0	37.5	30.0	25.0	21.4	18.8	16.7	15.0	13.6	12.5
3		83.3	62.5	50.0	41.7	35.7	31.3	27.8	25.0	22.7	20.8
4			87.5	70.0	58.3	50.0	43.8	38.9	35.0	31.8	29.2
5				90.0	75.0	64.3	56.3	50.0	45.0	40.9	37.5
6					91.7	78.6	68.8	61.1	55.0	50.0	45.8
7						92.9	81.3	72.2	65.0	59.1	54.2
8							93.8	83.3	75.0	68.2	62.5
9								94.4	85.0	77.3	70.8
10									95.0	86.4	79.2
11										95.5	87.5
12											95.8

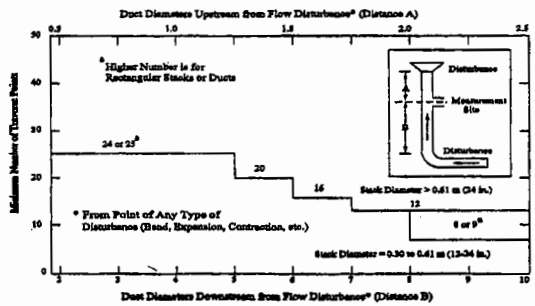
Rectangular Duct Equivalent Diameter Determination $\frac{2 \times L \times W}{L + W}$



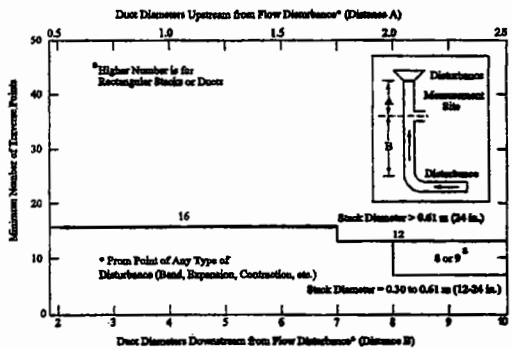
TRAVERSE POINT NUMBER	FRACTION OF STACK I.D.	STACK I.D.	PRODUCT OF COLUMNS 1 AND 2 (TO NEAREST 1/8 INCH)	DISTANCE D (PORT DEPTH)	TRAVERSE POINT LOCATION FROM OUTSIDE OF PORT (SUM OF COLUMNS 3 AND 4)
1	.067	10"	.67	31.25	31.92
2	.25	↓	2.5	↓	33.75
3	.75		7.5		38.75
4	.933	↓	9.33	↓	40.58
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

LOCATION OF TRAVERSE POINTS ON CIRCULAR STACKS

	4	6	8	10	12	14	16	18	20	22	24
1	6.7	4.4	3.2	2.6	2.1	1.8	1.6	1.4	1.3	1.1	1.1
2	25.0	14.6	10.5	8.2	6.7	5.7	4.9	4.4	3.9	3.5	3.2
3	75.0	29.6	19.4	14.6	11.8	9.9	8.5	7.5	6.7	6.0	5.5
4	93.3	70.4	32.3	22.6	17.7	14.6	12.5	10.9	9.7	8.7	7.9
5		85.4	67.7	34.2	25.0	20.1	16.9	14.6	12.9	11.6	10.5
6		95.6	80.6	65.8	35.6	26.9	22.0	18.8	16.5	14.6	13.2
7			89.5	77.4	64.4	36.6	28.3	23.6	20.4	18.0	16.1
8			96.8	85.4	75.0	63.4	37.5	29.6	25.0	21.8	19.4
9				91.8	82.3	73.1	62.5	38.2	30.6	26.2	23.0
10				97.4	88.2	79.9	71.7	61.8	38.8	31.5	27.2
11					93.3	85.4	78.0	70.4	61.2	39.3	32.3
12					97.9	90.1	83.1	76.4	69.4	60.7	39.8
13						94.3	87.5	81.2	75.0	68.5	60.2
14						98.2	91.5	85.4	79.6	73.8	67.7
15							95.1	89.1	83.5	78.2	72.8
16							98.4	92.5	87.1	82.0	77.0
17								95.6	90.3	85.4	80.6
18								98.6	93.3	88.4	83.9
19									96.1	91.3	86.8
20									98.7	94.0	89.5
21										96.5	92.1
22										98.9	94.5
23											96.8
24											98.9



Minimum number of traverse points for particulate traverses.



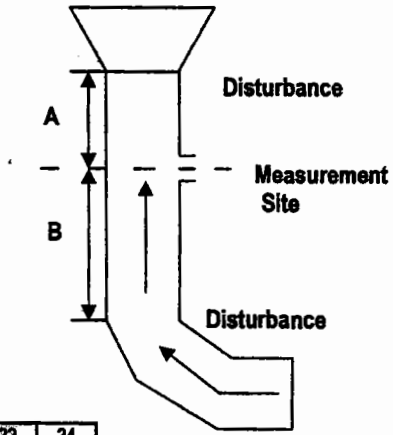
Minimum number of traverse points for velocity (nonparticulate) traverses.

TRAVERSE POINT LOCATION FOR CIRCULAR AND RECTANGULAR DUCTS

PLANT MAPLLC
DATE 3-29-05
SAMPLING LOCATION Platformer CCR Scrubber Outlet
INSIDE OF FAR WALL TO
OUTSIDE OF PORT (DISTANCE C) 28.5"
INSIDE OF NEAR WALL TO
OUTSIDE OF PORT (DISTANCE D) 18.5"
STACK ID 10"
NEAREST UPSTREAM DISTURBANCE (A) 83" = 8.3dd
NEAREST DOWNSTREAM DISTURBANCE (B) 27" = 2.7dd
CALCULATOR S. Flaherty

Location of Traverse Points in Rectangular Stacks

	2	3	4	5	6	7	8	9	10	11	12
1	25.0	16.7	12.5	10.0	8.3	7.1	6.3	5.6	5.0	4.5	4.2
2	75.0	50.0	37.5	30.0	25.0	21.4	18.8	16.7	15.0	13.6	12.5
3		83.3	62.5	50.0	41.7	35.7	31.3	27.8	25.0	22.7	20.8
4			87.5	70.0	58.3	50.0	43.8	38.9	35.0	31.8	29.2
5				90.0	75.0	64.3	56.3	50.0	45.0	40.9	37.5
6					91.7	78.6	68.8	61.1	55.0	50.0	45.8
7						92.9	81.3	72.2	65.0	59.1	54.2
8							93.8	83.3	75.0	68.2	62.5
9								94.4	85.0	77.3	70.8
10									95.0	86.4	79.2
11										95.5	87.5
12											95.8

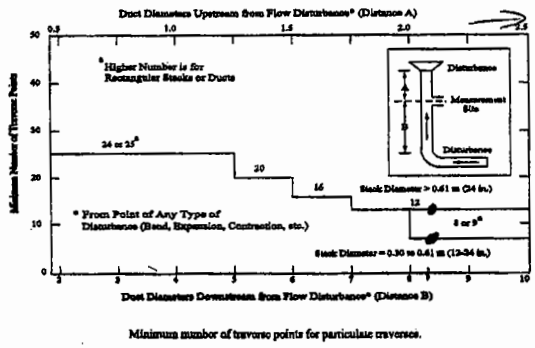


Rectangular Duct Equivalent Diameter Determination $\frac{2 \times L \times W}{L + W}$

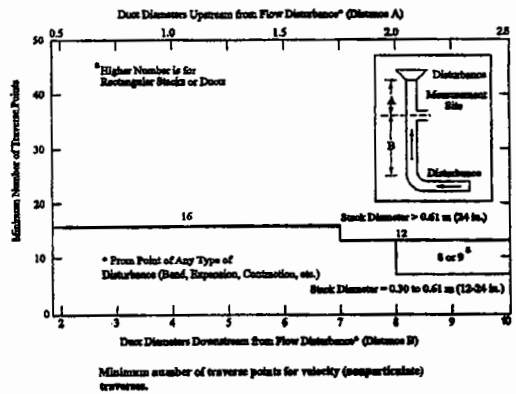
TRAVERSE POINT NUMBER	FRACTION OF STACK I.D.	STACK I.D.	PRODUCT OF COLUMNS 1 AND 2 (TO NEAREST 1/8 INCH)	DISTANCE D (PORT DEPTH)	TRAVERSE POINT LOCATION FROM OUTSIDE OF PORT (SUM OF COLUMNS 3 AND 4)
1	~~4.4~~	10"	0.44		
2	~~14.6~~	10"	1.46		
3	~~29.6~~	10"	2.96	for 12 Points	
4	~~70.4~~	10"	7.04		
5	~~85.4~~	10"	8.54		
6	~~95.6~~	10"	9.56		
7					
8					
9					
10	6.7	10"	0.67	18.5"	19.17
11	25.0	10"	2.50	18.5"	21.00
12	75.0	10"	7.50	18.5"	26.00
13	93.3	10"	9.33	18.5"	27.83
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					

LOCATION OF TRAVERSE POINTS ON CIRCULAR STACKS

	4	6	8	10	12	14	16	18	20	22	24
1	6.7	4.4	3.2	2.6	2.1	1.8	1.6	1.4	1.3	1.1	1.1
2	25.0	14.6	10.5	8.2	6.7	5.7	4.9	4.4	3.9	3.5	3.2
3	75.0	29.6	19.4	14.6	11.8	9.9	8.5	7.5	6.7	6.0	5.5
4	93.3	70.4	32.3	22.6	17.7	14.6	12.5	10.9	9.7	8.7	7.9
5		85.4	67.7	34.2	25.0	20.1	16.9	14.8	12.9	11.6	10.5
6		95.6	80.6	65.8	35.6	26.9	22.0	18.8	16.5	14.6	13.2
7			89.5	77.4	64.4	36.6	28.3	23.6	20.4	18.0	16.1
8			96.8	85.4	75.0	63.4	37.5	29.6	25.0	21.8	19.4
9				91.8	82.3	73.1	62.5	38.2	30.6	26.2	23.0
10				97.4	88.2	79.9	71.7	61.8	38.8	31.5	27.2
11					93.3	85.4	78.0	70.4	61.2	39.3	32.3
12					97.9	90.1	83.1	76.4	69.4	60.7	39.8
13						94.3	87.5	81.2	75.0	68.5	60.2
14						98.2	91.5	85.4	79.6	73.8	67.7
15							95.1	89.1	83.5	78.2	72.8
16							98.4	92.5	87.1	82.0	77.0
17								95.6	90.3	85.4	80.6
18								98.6	93.3	88.4	83.9
19									96.1	91.3	86.8
20									98.7	94.0	89.5
21										96.5	92.1
22										98.9	94.5
23											96.8
24											98.9



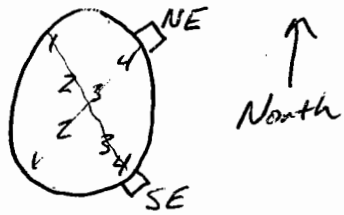
Minimum number of traverse points for particulate traverse.



Minimum number of traverse points for velocity (nonparticulate) traverse.

VELOCITY TRAVERSE AND CYCLONIC FLOW VERIFICATION

PLANT MAPLLC
DATE 3-31-05
LOCATION Robinson IL
SOURCE Platformer CCR Scrubber Outlet
STACK I.D. 10.0 inches
BAROMETRIC PRESSURE, in. Hg 29.65
OPERATORS S. Flaherty
Time 1230-1245



SCHEMATIC OF TRAVERSE POINT LAYOUT

RUN NO. Cyclonic Flow STATIC, in. H_2O -0.10 RUN NO. _____ STATIC, in. H_2O _____

TRAVERSE POINT NUMBER	VELOCITY HEAD ($\Delta\rho_s$), in. H_2O	STACK TEMP. (Ts), °F	YAW ANGLE °
NE-1	0.21	86	0
-2	0.20	87	-1
-3	0.17	87	3
-4	0.14	87	2
SE-1	0.22	87	0
-2	0.21	87	0
-3	0.18	87	2
-4	0.15	87	2
AVERAGE			

TRAVERSE POINT NUMBER	VELOCITY HEAD ($\Delta\rho_s$), in. H_2O	STACK TEMP. (Ts), °F	YAW ANGLE °
AVERAGE			

ARI ENVIRONMENTAL INC.

White Barn
Cond-1

FIELD DATA

PLANT	MARATHON	AMBIENT TEMPERATURE	60°F	PROBE HEATER SETTING	250
DATE	3/29/05	BAROMETRIC PRESSURE	29.75	HEATER BOX SETTING	250
LOCATION	Robinson, IL	ASSUMED MOISTURE, %	2-4	METER $H_@$	1.76
OPERATOR	SC, JG	PROBE LENGTH, in.	36"	C_p FACTOR	.84
STACK NO.	Platform Scrubber	NOZZLE DIAMETER, in.	N/A	Y_d FACTOR	1.002
RUN NO.	WI-1-1	STACK DIAMETER, in.	10"	PROBE #/TC#	632
SAMPLE BOX NO.	Aaec	MINUTES PER POINT	60		
METER BOX NO.	810068	NUMBER OF POINTS	4		
START TIME	1704	NUMBER OF PORTS	1		

WEIGHT OF PARTICULATE, mg		
Filter No.		
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	√ΔP_s	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	SAMPLE BOX TEMP. °F	~~CONE~~ Probe EXIT TEMP °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1704		0		See			1.7	1.76	707.650	79	79		252		58	3
1709		5		Flow			1.7		711.44	85	78		257		50	3
1714		10		Sheets			1.7		716.01	93	78		273		50	3
1719		15					1.7		718.61	97	79		273		51	3
1724		20					1.7		722.35	99	80		273		52	3
1729		25					1.8		725.90	101	80		273		52	3
1734/1738		30					1.8		729.68	91	81		270		61	3
		35					1.8		733.30	100	81		273		53	3
		40					1.8		736.96	102	81		273		54	3
		45					1.8		740.51	102	82		270		56	3
		50					1.8		744.19	102	82		273		56	3
		55					1.8		747.80	102	82		273		57	3
		60							751.595							
AVERAGE							1.76		43.945		82.2					

OK - CMF

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	113	112	109	91	~~211.0~~ 208.0
INITIAL	100	100	100	100	200
LIQUID COLLECTED	13	12	9	-9	~~11.0~~ 8.0
TOTAL COLLECTED (specify ml or g)					~~36.0~~ 36.0

11.0

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		18.2	1.0
TRIAL 2		18.2	1.2
TRIAL 3		18.2	1.2
Average		18.2	1.1

LEAK CHECK	
SYSTEM PRE:	.003 CFM@15"Hg
POST:	.008 CFM@15"Hg
PITOT PRE:	+/- OK/OK @>2" Hg
POST:	+/- OK/OK @>2" Hg

ARI ENVIRONMENTAL INC.

White Burn Cond. 1 **FIELD DATA**

PLANT	Marathon	AMBIENT TEMPERATURE	63°F	PROBE HEATER SETTING	250
DATE	3/29/05	BAROMETRIC PRESSURE	29.35	HEATER BOX SETTING	
LOCATION	Robinson, IL	ASSUMED MOISTURE, %	2-4	METER $H_@$	1.76
OPERATOR	SC, JG	PROBE LENGTH, in.	36"	C_p FACTOR	.84
STACK NO.	Plat. Scrub WF	NOZZLE DIAMETER, in.	N/A	Y_d FACTOR	1.002
RUN NO.	WT-2-2	STACK DIAMETER, in.	10"		
SAMPLE BOX NO.	Apex	MINUTES PER POINT	100		
METER BOX NO.	8006	NUMBER OF POINTS	1		
START TIME	1854	NUMBER OF PORTS	1		

WEIGHT OF PARTICULATE, mg		
Filter No.		
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD $\sqrt{\Delta P_s}$	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (Vm) ft^3	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	SAMPLE BOX TEMP. °F	PROBE COND. EXIT TEMP °F	SORRENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1854		0	—	See	—	—	1.7	1.76	754.000	79	75		254		64	5
1859		5	—	Velocity	—	—	1.7		757.62	93	75		260		56	5
1904		10	—	Sheets	—	—	1.7		761.25	95	76		273		55	5
1909		15					1.7		764.90	97	78		272		55	5
1914		20					1.8		768.69	98	78		273		55	5
1919		25					1.8		772.34	100	79		273		55	5
1924/1928		30					1.8		775.97	95	76		271		60	5
1933		35					1.7		779.59	100	79		272		56	5
1938		40					1.8		783.19	101	80		274		57	5
1943		45					1.8		786.79	102	80		273		67	5
1948		50					1.8		790.38	102	81		271		57	5
1953		55					1.8		793.99	102	81		273		57	5
1958		60							797.610							
AVERAGE							1.77		43.610		87.6					

OK-SMK

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	110	107	100	96	210.3
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	10	7	0	-4	10.3
TOTAL COLLECTED (specify ml or g)					23.3

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		18.0	1.2
TRIAL 2		18.0	1.2
TRIAL 3		18.0	1.2
Average		18.0	1.2

LEAK CHECK	
SYSTEM PRE:	0.001 CFM@15"Hg
POST:	CFM@15"Hg
PITOT PRE:	+/- OK @ > 2" Hg
POST:	+/- OK @ > 2" Hg

ARI ENVIRONMENTAL INC.

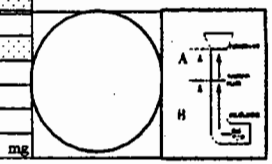
White Burn Cond. 1

FIELD DATA

PLANT	Marathon	AMBIENT TEMPERATURE	61°F	PROBE HEATER SETTING	250
DATE	3/29/05	BAROMETRIC PRESSURE	29.80	HEATER BOX SETTING	
LOCATION	Robinson, IL	ASSUMED MOISTURE, %	2-4	METER $H_@$	1.76
OPERATOR	SC, JG	PROBE LENGTH, in.	36"	C_p FACTOR	.84
STACK NO.	Plat. Scrub. Inlet	NOZZLE DIAMETER, in.	N/A	Y_d FACTOR	1.002
RUN NO.	WI-1-3	STACK DIAMETER, in.	10"		
SAMPLE BOX NO.	Apex	MINUTES PER POINT	60		
METER BOX NO.	1006	NUMBER OF POINTS	1		
START TIME	2025	NUMBER OF PORTS	1		

WEIGHT OF PARTICULATE, mg		
Filter No.		
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

A=____ B=____



CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (Vm) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET (Tm_{in}) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET (Tm_{out}) °F	SAMPLE BOX TEMP. °F	~~COND. EXIT~~ Probe TEMP °F	~~SORBENT MODULE TEMP. °F~~	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
2025		0	—	See	—	—	1.8	1.76	799.750	78	76		261		55	4
2030		5	—	Velocity	—	—	1.8		803.35	85	75		256		51	4
2035		10	—	Sheets	—	—	1.8		806.97	91	75		256		51	4
2040		15					1.8		810.24	93	75		271		51	4
2045		20					1.8		813.81	95	76		273		51	4
2050		25					1.8		817.45	96	76		269		52	4
2055/2102		30					1.8		820.95	97	77		270		52	4
2107		35					1.8		824.65	96	77		270		53	4
2112		40					1.8		828.46	96	77		270		53	4
2117		45					1.8		832.25	97	77		270		53	4
2122		50					1.8		835.99	97	78		272		54	4
2127		55					1.8		839.75	98	78		273		55	4
2132		60							843.483							
AVERAGE							1.80		43,733	84.8						

OK - SMF

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	110	100	100	98	208.9
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	10	0	0	-2	8.9
TOTAL COLLECTED (specify ml or g)					16.9

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		17.8	1.2
TRIAL 2		18.0	1.0
TRIAL 3		18.0	1.0
Average		17.9	1.1

LEAK CHECK		
SYSTEM PRE:	.001	CFM@15"Hg
POST:	.001	CFM@15"Hg
PITOT PRE:	+/- ok/ok	@ > 2" Hg
POST:	+/- ok/ok	@ > 2" Hg

VELOCITY TRAVERSE AND CYCLONIC FLOW VERIFICATION

PLANT MARATHON
DATE 3/29/05
LOCATION Plat. Scrubber Inlet
SOURCE Robinson, IL
STACK ID 10"
PROBE # / TC # 832
BAROMETRIC PRESSURE, in. Hg 29.75
OPERATORS SC, JG

White Burn
Cond. 1

SCHEMATIC OF TRAVERSE POINT LAYOUT

WI-1-A
RUN NO. ~~7 Pre~~ STATIC, in.H2O 2.7

WI-1-B
RUN NO. 8 STATIC, in.H2O 2.4

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in.H2O	STACK TEMP. (Ts), °F	YAW ANGLE °
A- 1	.14	459	
2	.15	467	
3	.13	461	
4	.13	447	
B- 1	.13	465	
2	.15	470	
3	.15	470	
4	.12	456	
AVERAGE	0.3705	461.9	

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in.H2O	STACK TEMP. (Ts), °F	YAW ANGLE °
A- 1	.14	469	
2	.13	470	
3	.15	465	
4	.12	455	
B- 1	.14	464	
2	.16	471	
3	.13	470	
4	.13	449	
AVERAGE	0.3705	464.1	

Run # WI-1-1
AVG ΔP = 0.3705
AVG Ts = 463.0
P static = 2.55

VELOCITY TRAVERSE
AND
CYCLONIC FLOW VERIFICATION

PLANT Marathon
DATE 3/29/05
LOCATION Robinson, IL
SOURCE Plat. Scrub. Inlet WhiteBurn Cond 1
STACK ID 1011
PROBE # / TC # 832
BAROMETRIC PRESSURE, in. Hg 29.80
OPERATORS SC, JG

SCHEMATIC OF TRAVERSE POINT LAYOUT

RUN NO. WI-1-C STATIC, in.H2O 2.4

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in.H2O	STACK TEMP. (Ts), °F	YAW ANGLE °
A- 1	.14	462	
2	.15	465	
3	.14	465	
4	.13	454	
B 1	.14	465	
2	.15	470	
3	.13	465	
4	.12	459	
AVERAGE	0.3706	463.1	

Run No. WI-1-2
Avg $\sqrt{\Delta p}$ = 0.3706
Ts = 463.6
P_{static} = 2.40

RUN NO. WI-1-D STATIC, in.H2O 2.4

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in.H2O	STACK TEMP. (Ts), °F	YAW ANGLE °
A 1	.13	465	
2	.15	465	
3	.14	467	
4	.13	470	
B- 1	.14	465	
2	.14	465	
3	.15	470	
4	.12	461	
AVERAGE	0.3706	466.0	

Run WI-1-3
$\sqrt{\Delta p}$ = 0.3706
Ts = 464.6
P_s = 2.40

ARI ENVIRONMENTAL INC.

FIELD DATA

White Burn
Condition #1
WO-1-1

A= ____ B= ____

PLANT	MAPLLC	AMBIENT TEMPERATURE	70°	PROBE HEATER SETTING	250
DATE	3-29-05	BAROMETRIC PRESSURE	29.75	HEATER BOX SETTING	250
LOCATION	Robinson IL	ASSUMED MOISTURE, %	3%	METER $H_@$	1.868
OPERATOR	S. Flaherty	PROBE LENGTH, in.	36"	C_p FACTOR	0.84
STACK NO.	Plat. ~~CRA~~ SCRB. OUT	NOZZLE DIAMETER, in.	0.379	Y_d FACTOR	1.006
RUN NO.	WO-1-1	STACK DIAMETER, in.	10"	PROBE #/TC#	414
SAMPLE BOX NO.	APEX	MINUTES PER POINT	7.5		
METER BOX NO.	503002	NUMBER OF POINTS	8		
START TIME	1704	NUMBER OF PORTS	2		

WEIGHT OF PARTICULATE, mg		
Filter No.	NA	NA
Sample		
Final wt.		
Tare wt.		
Wt. gain		
TOTAL		mg

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (V_m) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	Filter SAMPLE BOX TEMP. °F	Probe ~~COND. EXIT~~ TEMP °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1704	SE-1	0	-0.03	88	0.10	AVG	2.1	2.11	432.307	90	90	256	253	NA	65	3
1711.5	-2	7.5		88	0.12	↓	2.5	2.53	438.38	90	90	256	254	↓	52	5
1719	-3	15		88	0.08	↓	1.7	1.69	445.02	90	90	255	255	↓	48	3
1726.5	-4	22.5		90	0.07	↓	1.5	1.47	450.45	90	90	255	253	↓	50	2
* 1734/1738	NE-1	30	-0.03	88	0.09		1.9	1.90	455.52	90	90	252	251		59	3
1745.5	-2	37.5		88	0.11		2.3	2.33	461.27	91	91	253	247		54	4
1763	-3	45		87	0.09		1.9	1.91	467.65	91	91	251	253		52	3
1800.5	-4	52.5		87	0.08		1.7	1.70	473.42	91	91	252	257		53	3
1808		60							478.952							
						AVG $\sqrt{\Delta p}$										
AVERAGE	8pts	60min	-0.03	88.0	0.0925	0.3031	1.95	1.955	46.645	90.4		≈250	≈250	NA	≤68°	MAX 5

OK 3/30/05

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g	
FINAL	103	117	103	97	~~211.0~~	208.0
INITIAL	100	100	100	100	200.0	
LIQUID COLLECTED	13	17	3	-3	~~11.0~~	8.0
TOTAL COLLECTED (specify ml or g)					~~36.0~~	25.0

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		18.2	1.0
TRIAL 2		18.2	1.0
TRIAL 3		18.2	1.0
Average		18.2	1.0

Nozzle Calc.
0.379
0.378
0.379
0.379
MW=30.92

LEAK CHECK		
SYSTEM PRE:	0.001	CFM@15" Hg
POST:	0.001	CFM@~~15"~~ 7 Hg
PITOT PRE:	+/- OK/OK	@>~~2"~~ 3 Hg
POST:	+/- OK/OK	@>~~2"~~ 3 Hg

* Port Change

FIELD DATA

White Burn
Condition #1
WO-1-2

A= ____ B= ____

PLANT	MAP LLC	AMBIENT TEMPERATURE	62	PROBE HEATER SETTING	250		
DATE	3-29-05	BAROMETRIC PRESSURE	29.75	HEATER BOX SETTING	250		
LOCATION	Robinson IL	ASSUMED MOISTURE, %	3%	METER $H_@$	1.868		
OPERATOR	S. Flaherty	PROBE LENGTH, in.	36"	C, FACTOR	0.84		
STACK NO.	NAT. GAS CLR. OUT	NOZZLE DIAMETER, in.	0.379	Y_d FACTOR	1.006		
RUN NO.	WO-1-2	STACK DIAMETER, in.	10"	PROBE #/TC#	414		
SAMPLE BOX NO.	APEX	MINUTES PER POINT	7.5				
METER BOX NO.	5030002	NUMBER OF POINTS	8				
START TIME	1854	NUMBER OF PORTS	2				

WEIGHT OF PARTICULATE, mg		
Filter No.	NA	NA
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (V_m) ft^3	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	Filter SAMPLE BOX TEMP. °F	Probe ~~COND.~~ EXIT TEMP °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1854	NG-1	0	-0.03	88	0.10	AVG	2.1	2.10	479.800	88	88	251	254	NA	57	2
	-2	7.5		88	0.11		2.3	2.31	485.85	88	88	253	256		50	2
1909	-3	15		87	0.10		2.1	2.11	492.19	88	88	252	260		49	2
	-4	22.5		87	0.08		1.7	1.69	498.24	88	88	252	262		51	2
1924/1928	SE-1	30	-0.03	87	0.10		2.1	2.11	503.65	89	89	256	260		59	2
	-2	37.5		87	0.11		2.3	2.32	509.71	89	89	253	260		52	2
1943	-3	45		87	0.09		1.9	1.90	516.07	89	89	254	261		52	2
	-4	52.5		87	0.09		1.9	1.90	521.82	89	89	254	260		53	2
1958		60							527.604							
						AVG										
						$\sqrt{\Delta P}$										
AVERAGE	8 pts	60 min	-0.03	87.3	0.0975	0.3119	2.05	2.055	47.804	88.5		>250	>250	≤NA	≤68	MAX 2

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	118	108	96	98	210.7
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	18	8	-2	-2	10.7
TOTAL COLLECTED (specify ml or g)					32.7

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		18.0	1.2
TRIAL 2		18.0	1.0
TRIAL 3		18.0	1.0
Average		18.0	1.1

LEAK CHECK		
SYSTEM PRE:	0.001	CFM@15" Hg
POST:	0.001	CFM@15" Hg 5
PITOT PRE:	+/- 0 leak	@ 3" Hg
POST:	+/- 0 leak	@ 3" Hg 5

FIELD DATA

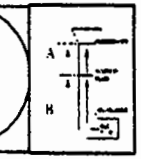
White Burn
Condition #1
WO-1-3

PLANT	MAPLL	AMBIENT TEMPERATURE	57	PROBE HEATER SETTING	250		
DATE	3-29-05	BAROMETRIC PRESSURE	29.80	HEATER BOX SETTING	250		
LOCATION	Robinson IL	ASSUMED MOISTURE, %	3	METER $H_@$	1.869		
OPERATOR	S. Flaherty	PROBE LENGTH, in.	36"	C_p FACTOR	0.84		
STACK NO.	PLAT.CRUSCRB.OUT	NOZZLE DIAMETER, in.	0.379	Y_d FACTOR	1.006		
RUN NO.	WO-1-3	STACK DIAMETER, in.	10"	PROBE #/TC#	414		
SAMPLE BOX NO.	APEX	MINUTES PER POINT	7.5				
METER BOX NO.	SD3002	NUMBER OF POINTS	8				
START TIME	2025	NUMBER OF PORTS	2				

A= ____ B= ____

WEIGHT OF PARTICULATE, mg		
Filter No.	NA	NA
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

CROSS SECTION



CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (Vm) ft^3	GAS SAMPLE TEMP AT DRY GAS METER INLET (Tm_{in}) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET (Tm_{out}) °F	Filter SAMPLE BOX TEMP. °F	Probe ~~COND.~~ EXIT TEMP °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
2025	S6-1	0	-0.03	87	0.10	AVG	2.1	2.10	529.400	86	86	252	260	NA	63	2
	-2	7.5		87	0.12		2.5	2.52	535.42	86	86	253	261		56	2
2040	-3	15		87	0.11		2.3	2.31	542.02	86	86	254	260		54	2
	-4	22.5		87	0.10		2.1	2.10	548.34	86	86	254	260		53	2
~~2055~~ 2102	N6-1	30	-0.03	87	0.11		2.3	2.31	554.37	85	85	251	262		61	2
	-2	37.5		87	0.12		2.5	2.52	560.67	85	85	252	259		54	2
2117	-3	45		88	0.10		2.1	2.09	567.26	85	85	254	260		52	2
	-4	52.5		88	0.09		1.9	1.88	573.27	85	85	252	260		52	2
2132		60							578.996							
				87.3		AVG $\sqrt{\Delta p}$										
AVERAGE	8pts	60min	-0.03	~~91.5~~	0.1063	0.3256	2.225	2.229	49.596	85.5		>250	>250	NA	≤68	MAX 2

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	117	106	100	96	213.2
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	17	6	0	-4	13.2
TOTAL COLLECTED (specify ml or g)					32.2

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		17.8	1.2
TRIAL 2		17.8	1.2
TRIAL 3		17.8	1.2
Average		17.8	1.2

LEAK CHECK		
SYSTEM PRE:	0.001	CFM@15" Hg
POST:	0.001	CFM@15" Hg
PITOT PRE:	+/- OK/OK	@>3" Hg
POST:	+/- OK/OK	@>3" Hg

FIELD DATA

White Bears Cond #2

PLANT	NAPLLC	AMBIENT TEMPERATURE	64	PROBE HEATER SETTING	250		
DATE	3-30-05	BAROMETRIC PRESSURE	29.83	HEATER BOX SETTING	250		
LOCATION	Robinson IL	ASSUMED MOISTURE, %	2-4%	METER $H_@$	1.76		
OPERATOR	JG	PROBE LENGTH, in.	3'	C_p FACTOR	.84		
STACK NO.	Plt. CRU Scrubber Inlet	NOZZLE DIAMETER, in.	NA	Y_d FACTOR	1.002		
RUN NO.	WI-2-1	STACK DIAMETER, in.	10"				
SAMPLE BOX NO.	APEX	MINUTES PER POINT	5				
METER BOX NO.	81006	NUMBER OF POINTS	9 pts total				
START TIME	843	NUMBER OF PORTS	2				

WEIGHT OF PARTICULATE, mg		
Filter No.		
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (Vm) ft^3	GAS SAMPLE TEMP AT DRY GAS METER INLET (Tm_{in}) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET (Tm_{out}) °F	SAMPLE BOX TEMP. °F	Probe COND. EXIT TEMP °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
843		0	—	SEE	—	—	1.76	1.76	843.900	69	70	NA	252	NA	65	5
848		5	—	VELOCITY	—	—			847.75	78	70		250		64	3
853		10	—	SHEET	—	—			851.41	83	70		250		64	3
858		15							855.16	88	72		254		65	3
903		20							858.95	91	74		253		58	3
908		25							862.68	93	74		251		55	3
913		30							866.43	95	74		251		55	3
918																
923		35							870.17	96	75		248		53	3
928		40							873.88	99	77		250		54	3
933		45							877.71	99	77		250		55	3
938		50							881.34	100	78		252		56	3
943		55							885.05	100	79		252		57	3
948		60							888.756							
AVERAGE							1.76		44.856 ✓	79.1	82.5 ✓		≈250		<68	

OK 3/30/05

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	105	112	103	100	211.1
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	5	12	3	0	11.1
TOTAL COLLECTED (specify ml or g)					31.1

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		13.6	1.2
TRIAL 2		13.6	1.2
TRIAL 3		13.4	1.2
Average		13.5	1.2

LEAK CHECK		
SYSTEM PRE:	.001	CFM@15"Hg
POST:	.001	CFM@15"Hg
PITOT PRE:	+/- OK/OK	@>2" Hg
POST:	OK/OK	@>2" Hg

White Rum
Cond 2

FIELD DATA

ARI ENVIRONMENTAL INC.

PLANT	MAPLLC	AMBIENT TEMPERATURE	64°	PROBE HEATER SETTING	250
DATE	3-30-05	BAROMETRIC PRESSURE	29.83	HEATER BOX SETTING	250
LOCATION	Robinson IL	ASSUMED MOISTURE, %	2-4 %	METER $H_@$	1.76
OPERATOR	JE	PROBE LENGTH, in.	3'	C_p FACTOR	.84
STACK NO.	Platform CRU Scrubber Inlet	NOZZLE DIAMETER, in.	NA	Y_d FACTOR	1.002
RUN NO.	WI-2-2	STACK DIAMETER, in.	10"	Probe#/TC#	832
SAMPLE BOX NO.	APEX	MINUTES PER POINT	5		
METER BOX NO.	81006	NUMBER OF POINTS	8pts total		
START TIME	1014	NUMBER OF PORTS	2		

WEIGHT OF PARTICULATE, mg		
Filter No.		
Sample		
Final wt.		
Tare wt.		
WL gain		
TOTAL		mg

A=____ B=____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (V_m) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	PROBE TEMP. °F	SAMPLE BOX TEMP. °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1014		0	SEE				1.76	1.76	889.100	78	77	255	NA	NA	64	3
1019		5	VELOCITY						893.03	84	76	256			60	3
1024		10	SHEET						896.85	91	76	253			59	3
1029		15							900.63	95	77	253			60	3
1034		20							904.37	97	78	250			61	3
1039		25							908.09	98	79	251			62	3
Stop 1044 Start 1049		30							911.82	99	80	252			62	3
1054		35							915.56	99	80	256			62	3
1059		40							919.25	101	81	248			62	3
1104		45							922.94	102	82	249			64	3
1109		50							926.65	103	82	253			59	3
1114		55							930.37	103	82	252			55	3
1119		60							934.009							
TOTAL									44.909	87.5		≈250			<68	
AVERAGE																

OK 3/30/05

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	112	108	101	100	209.8
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	12	8	1	0	9.8
TOTAL COLLECTED (specify ml or g)					30.8

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		17.0	1.6
TRIAL 2		17.0	1.6
TRIAL 3		16.8	1.4
Average		16.9	1.5

LEAK CHECK		
SYSTEM PRE:	.001	CFM@15"Hg
POST:	.001	CFM@15"Hg
PITOT PRE:	+/- OK/OK	@ > 3" H_2O
POST:	+/- OK/OK	@ > 3" H_2O

FIELD DATA

White Burn Cond 2

B

PLANT	MAPLLC	AMBIENT TEMPERATURE	66°	PROBE HEATER SETTING	250		
DATE	2-30-05	BAROMETRIC PRESSURE	29.83	HEATER BOX SETTING	250		
LOCATION	Robinson IL	ASSUMED MOISTURE, %	2-4%	METER $H_@$	1.76		
OPERATOR	JE	PROBE LENGTH, in.	3'	C_p FACTOR	.84		
STACK NO.	Platform SW Scrubber Inlet	NOZZLE DIAMETER, in.	NA	Y_d FACTOR	1.002		
RUN NO.	WI-2-3	STACK DIAMETER, in.	10"	PROBE #/TC#	B32		
SAMPLE BOX NO.	APEX	MINUTES PER POINT	5				
METER BOX NO.	81006	NUMBER OF POINTS	8pts from 1				
START TIME	1143	NUMBER OF PORTS	2				

WEIGHT OF PARTICULATE, mg		
Filter No.		
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	OUTLET ($T_{m_{out}}$) °F	SAMPLE BOX TEMP. °F	PROBE ~~CONT.~~ EXIT TEMP °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1143		0	SEE				1.76	1.76	934.900	81	80	NA	252	NA	52	3
1148		5	VELOCITY						938.75	90	80		255		48	3
1153		10	SHEET						942.56	95	80		254		48	3
1158		15							946.31	98	81		252		48	3
1203		20							950.07	100	81		248		49	3
1208		25							953.75	101	82		250		49	3
1213 (1218 stop start)		30							957.66	101	82		251		49	3
1223		35							961.48	100	84		249		49	3
1228		40							965.08	102	83		253		50	3
1233		45							968.89	104	83		252		51	3
1238		50							972.49	103	84		251		51	3
1243		55							976.88	104	84		253		51	3
1248		60							979.887							
AVERAGE									44.987	90.1 ✓			≈250		268	

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g)				SILICA GEL WEIGHT
	#1	#2	#3	#4	g
FINAL	114	107	102	102	209.7
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	14	7	2	2	9.7
TOTAL COLLECTED (specify ml or g)					34.7

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		17.8	1.0
TRIAL 2		17.8	1.0
TRIAL 3		17.8	1.2
Average		17.8	1.1

LEAK CHECK		
SYSTEM PRE:	.001	CFM@15"Hg
POST:	.001	CFM@15"Hg
PITOT PRE:	+/- ok 90k	@>2" Hg
POST:	+/- ok 10k	@>2" Hg

VELOCITY TRAVERSE AND CYCLONIC FLOW VERIFICATION

PLANT MAPLLC
DATE 3-30-05
LOCATION Robinson IL
SOURCE Platform CAU scrubber inlet
STACK ID 10in
PROBE # / TC # 832
BAROMETRIC PRESSURE, in. Hg 29.83
OPERATORS JF

SCHEMATIC OF TRAVERSE POINT LAYOUT

RUN NO. WI-2-A STATIC, in.H2O +2.1

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in.H2O	STACK TEMP. (Ts), °F	YAW ANGLE °
1 - 1	0.12	442	6
2	0.14	455	0
3	0.15	452	5
4	0.13	432	0
1 - 1	0.11	453	2
2	0.12	458	4
3	0.13	460	15
4	0.12	443	-1
AVERAGE	0.3567 ✓	449.4 ✓	

Run #1
AVERAGE ΔPs = 0.3513
Ts = 450.2
Static = 2.15

RUN NO. WI-2-B STATIC, in.H2O +2.2

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in.H2O	STACK TEMP. (Ts), °F	YAW ANGLE °
1 - 1	0.10	458	
2	0.13	462	
3	0.15	458	
4	0.12	435	
1 - 1	0.11	456	
2	0.12	458	
3	0.11	453	
4	0.12	428	
AVERAGE	0.3458 ✓	451.0 ✓	

OK 3/30/05

VELOCITY TRAVERSE AND CYCLONIC FLOW VERIFICATION

PLANT MAPLLC
DATE 3-30-05
LOCATION ~~Platform CRU Scrubber Inlet~~ Robinson, IL
SOURCE Platform CRU Scrubber Inlet
STACK ID 10;N
PROBE # / TC # 832
BAROMETRIC PRESSURE, in. Hg 29.83
OPERATORS ~~SHOLDFINE~~

SCHEMATIC OF TRAVERSE POINT LAYOUT

RUN NO. WI-2-C STATIC, in.H2O +2.3

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in.H2O	STACK TEMP. (Ts), °F	YAW ANGLE °
1-1	0.14	441	
2	0.16	445	
3	0.15	439	
4	0.14	408	
2-1	0.12	448	
2	0.15	450	
3	0.15	446	
4	0.13	415	
AVERAGE	0.3771 ✓	436.5 ✓	

WI-2-2
$\sqrt{\Delta p}$ = 0.3615
Ts = 443.5
P_{st} = 2.25

WI-2-3
AVERAGE ΔP = 0.3746
Ts = 435.3
Pstatic = 2.3

RUN NO. WI-2-D STATIC, in.H2O +2.3

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in.H2O	STACK TEMP. (Ts), °F	YAW ANGLE °
1-1	0.13	445	
2	0.15	447	
3	0.16	442	
4	0.13	410	
2-1	0.12	436	
2	0.13	442	
3	0.15	439	
4	0.14	412	
AVERAGE	0.372.1 ✓	434.1 ✓	

FIELD DATA

White Burn Condition #2
WO-Z-1

PLANT	MAPLLC	AMBIENT TEMPERATURE	50	PROBE HEATER SETTING	250
DATE	3-30-05	BAROMETRIC PRESSURE	29.83	HEATER BOX SETTING	250
LOCATION	Robinson, IL	ASSUMED MOISTURE, %	3	METER $H_@$	1.869
OPERATOR	S. Flaherty	PROBE LENGTH, in.	36"	C_p FACTOR	0.84
STACK NO.	PLAT.CCR.SCRB.OUT	NOZZLE DIAMETER, in.	0.379	Y_d FACTOR	1.006
RUN NO.	WO-Z-1	STACK DIAMETER, in.	10"	Probe #	414
SAMPLE BOX NO.	APEX	MINUTES PER POINT	7.5		
METER BOX NO.	503002	NUMBER OF POINTS	8		
START TIME	0843	NUMBER OF PORTS	2		

WEIGHT OF PARTICULATE, mg		
Filter No.	NA	NA
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD $\sqrt{\Delta P_s}$	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (Vm) ft^3	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	Filter SAMPLE BOX TEMP. °F	Probe ~~COND.~~ ~~EXIT~~ TEMP °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
0843	NE-1	0	-0.05	87	0.11	AVG	2.3	2.31	580.000	86	86	253	252	NA	64	3
	-2	7.5		87	0.12	↓	2.5	2.52	586.32	86	86	252	251	↓	56	4
0858	-3	15		87	0.10		2.1	2.10	592.91	87	87	254	251		55	3
	-4	22.5		87	0.09	↓	1.9	1.90	598.95	88	88	253	252	↓	55	2
ORB/0918	SE-1	30	-0.05	88	0.10		2.1	2.11	604.68	90	90	254	250		65	3
	-2	37.5		88	0.10		2.1	2.12	610.74	92	92	255	253		57	3
0933	-3	45		88	0.09		1.9	1.91	616.83	92	92	254	253		56	2
	-4	52.5		88	0.08		1.7	1.70	622.59	93	93	255	252		54	2
0948		60							628.094							
						Avg $\sqrt{\Delta P}$ ↓										
AVERAGE	8pts	60min	-0.05	87.5 ✓	0.0988	0.3137 ✓	2.075 ✓	2.084	48.094 ✓	— 89.3 — ✓		>250	>250	NA	≤68	MAX 4

OK 3/30/05

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT
FINAL	117	111	102	101	212.4
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	17	11	2	1	12.4
TOTAL COLLECTED (specify ml or g)					43.4 ✓

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		17.6	1.2
TRIAL 2		17.6	1.2
TRIAL 3		17.6	1.2
Average		17.6	1.2

LEAK CHECK		
SYSTEM PRE:	0.001	CFM@15"Hg
POST:	0.001	CFM@15"Hg
PITOT PRE:	+/- OK/OK	@ 3 8 in Hg
POST:	+/- OK/OK	@ 3 8 in Hg

FIELD DATA

White Burn
Condition #2
WO-2-2

PLANT	MAPLLC	AMBIENT TEMPERATURE	60	PROBE HEATER SETTING	250
DATE	3-30-05	BAROMETRIC PRESSURE	29.83	HEATER BOX SETTING	250
LOCATION	Robinson IL	ASSUMED MOISTURE, %	3	METER $H_@$	1.868
OPERATOR	S. Eberty	PROBE LENGTH, in.	36	C_p FACTOR	0.84
STACK NO.	PLAT.CCR.SEP.OUT	NOZZLE DIAMETER, in.	0.379	Y_d FACTOR	1.006
RUN NO.	WO-2-2	STACK DIAMETER, in.	10	Probe#/TC#	414
SAMPLE BOX NO.	APEX	MINUTES PER POINT	7.5		
METER BOX NO.	503007	NUMBER OF POINTS	8		
START TIME	1014	NUMBER OF PORTS	2		

WEIGHT OF PARTICULATE, mg		
Filter No.	NA	NA
Sample		
Final wt.		
Tare wt.		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD $\sqrt{\Delta P_s}$	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (Vm) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	PROBE TEMP. °F	Filter SAMPLE BOX TEMP. °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1014	SE-1	0	-0.05	89	0.10	AVG	2.1	2.11	628.900	91	91	257	250	NA	67	3
	-2	7.5		89	0.11		2.3	2.32	634.97	91	91	258	252		60	3
1029	-3	15		89	0.10		2.1	2.12	641.33	92	92	257	252		58	3
	-4	22.5		89	0.09		1.9	1.90	647.40	92	92	257	251		57	2
1044/1049	NE-1	30	-0.04	89	0.09		1.9	1.91	653.17	94	94	256	251		66	2
	-2	37.5		89	0.11		2.3	2.34	658.99	94	94	257	251		59	3
1104	-3	45		89	0.09		1.9	1.91	665.31	95	95	257	250		57	3
	-4	52.5		89	0.08		1.7	1.70	671.14	95	95	255	251		57	2
1119		60							676.649							
						AVG √ΔP										
	8pts	60min	-0.045	89.0	0.0963	0.3098	2.025	2.039	47.749	93.0		>250	>250	NA	≤68	MAX=3
TOTAL																
AVERAGE																

VOLUME OF WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	120	110	102	101	211.6
INITIAL	100	100	100	100	200
LIQUID COLLECTED	20	10	2	1	11.6
TOTAL COLLECTED (specify ml or g)					44.6

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		17.0	1.4
TRIAL 2		17.0	1.4
TRIAL 3		17.0	1.4
Average		17.0	1.4

LEAK CHECK

SYSTEM PRE: 0.001 CFM@15"Hg
POST: 0.001 CFM@15"Hg

PITOT PRE: +/- OK/OK @>3" H_2O
POST: +/- OK/OK @>3" H_2O

3/30/05

FIELD DATA

White Burn
Condition #2
WO-2-3

PLANT	MAPLLC	AMBIENT TEMPERATURE	63	PROBE HEATER SETTING	250
DATE	3-30-05	BAROMETRIC PRESSURE	29.83	HEATER BOX SETTING	250
LOCATION	Robinson IL	ASSUMED MOISTURE, %	3	METER $H_@$	1.868
OPERATOR	S. Flaherty	PROBE LENGTH, in.	36	C_p FACTOR	~~0.84~~ 0.84
STACK NO.	PLAT.CLR.SCRB.OUT	NOZZLE DIAMETER, in.	0.379	Y_d FACTOR	1.006
RUN NO.	WO-2-3	STACK DIAMETER, in.	10	Probe#/TC#	414
SAMPLE BOX NO.	ALEX	MINUTES PER POINT	7.5		
METER BOX NO.	503002	NUMBER OF POINTS	8		
START TIME	1143	NUMBER OF PORTS	2		

WEIGHT OF PARTICULATE, mg		
Filter No.	NA	NA
Sample		
Final wt.		
Tare wt.		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	$\sqrt{\Delta P_s}$	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (V_m) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	PROBE TEMP. °F	After SAMPLE BOX TEMP. °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1143	NE-1	0	-0.04	89	0.11	AVG	2.3	2.34	677.200	94	94	257	251	NA	66	3
	-2	7.5		89	0.11	↓	2.3	2.34	683.60	94	94	258	252	↓	61	3
1158	-3	15		89	0.10		2.1	2.13	689.96	95	95	257	252		59	3
	-4	22.5		89	0.09	↓	2.0	1.91	696.11	95	95	257	253	↓	58	2
1213/1218	SE-1	30	-0.04	89	0.11		2.3	2.34	701.91	94	94	258	252		64	3
	-2	37.5		89	0.12		2.6	2.55	708.30	94	94	257	253		60	3
1233	-3	45		90	0.09		1.9	1.91	714.97	94	94	258	252		59	2
	-4	52.5		90	0.08		1.7	1.70	720.20	94	94	258	253		59	2
1248		60							726.304							
	8pts	60min	-0.04	89	0.1013	0.3176	2.15 ✓	2.153	49.104	94	94.3	>250	>250	NA	≤ 68	
TOTAL																
AVERAGE																

VOLUME OF WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g)				SILICA GEL WEIGHT
	#1	#2	#3	#4	g
FINAL	111	114	104	101	217.5
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	11	14	4	1	17.5
TOTAL COLLECTED (specify ml or g)					47.5

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		17.8	1.0
TRIAL 2		17.8	1.0
TRIAL 3		17.6	1.0
Average		17.6	1.0

LEAK CHECK

SYSTEM PRE: 0.001 CFM@15"Hg
POST: 0.001 CFM@15"Hg

PITOT PRE: +/- 0K/0K @ > 3" H_2O
POST: +/- 0K/0K @ > 3" H_2O

FIELD DATA

ARI ENVIRONMENTAL INC.

PLANT	NAPLLC	AMBIENT TEMPERATURE	75	PROBE HEATER SETTING	250		
DATE	3-30-05	BAROMETRIC PRESSURE	29.90	HEATER BOX SETTING	250		
LOCATION	Robinson IL	ASSUMED MOISTURE, %	2-4%	METER $H_@$	1.76		
OPERATOR	JG	PROBE LENGTH, in.	3'	C_p FACTOR	.84		
STACK NO.	Platform CRU Scrubber INLET	NOZZLE DIAMETER, in.	NA	Y_d FACTOR	1.002		
RUN NO.	BI-1-1	STACK DIAMETER, in.	10"	PROBE #/TC#	832		
SAMPLE BOX NO.	APEX	MINUTES PER POINT	5				
METER BOX NO.	8100S	NUMBER OF POINTS	Spts total				
START TIME	1542	NUMBER OF PORTS	2				

WEIGHT OF PARTICULATE, mg		
Filter No.		
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (Vm) ft^3	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	SAMPLE BOX TEMP. °F	Probe EXIT TEMP °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1542		0	— SEE				1.76	1.76	980.200	81	81	NA	252	NA	66	3
1547		5	— VELOCITY						984.25	88	83		256		59	3
1552		10	— SHEET						988.16	94	84		253		61	3
1557		15							992.05	98	84		253		62	3
1602		20							995.85	101	85		253		63	3
1607		25							999.64	103	86		249		64	3
stop 1612 start 1618		30							1003.41	103	87		250		59	3
1623		35							007.21	105	87		255		55	3
1628		40							010.99	107	88		252		56	3
1633		45							014.77	108	88		253		56	3
1638		50							018.50	108	89		252		57	3
1643		55							022.32	109	89		250		57	3
1648		60							1026.016							
									45.816 ✓							
AVERAGE									[illegible]	93.2 ✓			≈250		<68	

OK 3/30/05

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	107	106	100	101	209.3
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	7	6	0	1	9.3
TOTAL COLLECTED (specify ml or g)					23.3

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		10.8	0.6
TRIAL 2		10.8	0.6
TRIAL 3		10.6	0.6
Average		10.8	0.6

LEAK CHECK		
SYSTEM PRE:	.001	CFM@15"Hg
POST:	.001	CFM@15"Hg
PITOT PRE:	+/- OK/OK	@>2" Hg
POST:	3/-0K/0K	@>2" Hg

FIELD DATA

PLANT	MAPLE	AMBIENT TEMPERATURE	76	PROBE HEATER SETTING	250		
DATE	3-30-05	BAROMETRIC PRESSURE	29.90	HEATER BOX SETTING	250		
LOCATION	Robinson IL	ASSUMED MOISTURE, %	2-4%	METER $H_@$	1.76		
OPERATOR	JG	PROBE LENGTH, in.	31	C_p FACTOR	.84		
STACK NO.	Platform CMU Scrubber INLET	NOZZLE DIAMETER, in.	NA	Y_d FACTOR	1.002		
RUN NO.	R1-1-2	STACK DIAMETER, in.	10"	PROBE #/TC#	832		
SAMPLE BOX NO.	ADEX	MINUTES PER POINT	5				
METER BOX NO.	81006	NUMBER OF POINTS	8 pts total				
START TIME	1711	NUMBER OF PORTS	2				

WEIGHT OF PARTICULATE, mg		
Filter No.		
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (Vm) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	SAMPLE BOX TEMP. °F	~~Probe~~ COND. EXIT TEMP °F	~~SORBENT~~ MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1711		0	SEE				1.76	1.76	026.300	90	87	NA	252	NA	64	5
1716		5	VELOCITY						030.14	99	87		252		57	5
1721		10	SHEET						033.98	104	88		252		57	5
1726		15							037.81	106	87		254		57	5
1731		20							041.63	107	88		254		57	5
1736		25							045.44	108	89		254		57	5
1741		30							049.23	108	89		253		58	5
1745																
1750		35							053.09	102	87		253		56	5
1755		40							056.94	104	88		250		56	5
1800		45							060.77	106	88		251		56	5
1805		50							064.61	107	88		255		56	5
1810		55							068.44	107	87		251		55	5
1815		60							072.268							
AVERAGE									45.968	95.9			≈250		268	

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	107	106	100	104	208.8
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	7	6	0	4	8.8
TOTAL COLLECTED (specify ml or g)					25.8

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		11.2	2.0
TRIAL 2		11.2	2.0
TRIAL 3		11.2	2.0
Average		11.2	2.0

LEAK CHECK		
SYSTEM PRE:	.001	CFM@15"Hg
POST:	.001	CFM@15"Hg
PITOT PRE:	+/- ok/ok	@>3" Hg
POST:	+/- ok/ok	@>3" Hg

FIELD DATA

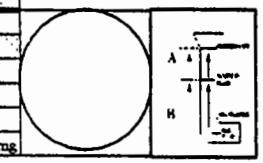
ARI ENVIRONMENTAL INC.

PLANT	MAPLLC	AMBIENT TEMPERATURE	76	PROBE HEATER SETTING	250
DATE	3-30-05	BAROMETRIC PRESSURE	29.90	HEATER BOX SETTING	250
LOCATION	Robinson IL	ASSUMED MOISTURE, %	2-4%	METER $H_@$	1.76
OPERATOR	JG	PROBE LENGTH, in.	3'	C_p FACTOR	.84
STACK NO.	Platform CRU Scrubber Inlet	NOZZLE DIAMETER, in.	NA	Y_d FACTOR	1.002
RUN NO.	RI-1-3	STACK DIAMETER, in.	10"	PROBE #/TC#	832
SAMPLE BOX NO.	APEX	MINUTES PER POINT	5		
METER BOX NO.	81006	NUMBER OF POINTS	8 pts total		
START TIME	1836	NUMBER OF PORTS	2		

WEIGHT OF PARTICULATE, mg		
Filter No.		
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION



CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (Vm) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET (Tm_{in}) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET (Tm_{out}) °F	SAMPLE BOX TEMP. °F	COND. EXIT TEMP °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1836		0	SEE				1.76	1.76	072.700	84	83	NA	255	NA	59	6
1841		5	VELOCITY						076.79	92	83		251		55	6
1846		10	SHEET						080.74	96	83		251		54	6
1851		15							084.59	98	83		252		55	6
1856		20							088.42	102	83		254		56	6
1901		25							092.26	103	84		250		56	6
1906		30							096.13	102	84		252		57	6
1911		35							100.05	97	84		251		56	6
1916		40							103.96	101	85		251		57	6
1921		45							107.87	102	84		251		58	6
1926		50							111.76	103	84		254		59	6
1931		55							115.65	103	85		252		59	6
1936		60							119.550							
AVERAGE									46.850	91.2			≈250		<68	

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	103	106	101	100	209.6
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	3	6	1	0	9.6
TOTAL COLLECTED (specify ml or g)					19.6

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		11.6	1.6
TRIAL 2		11.6	1.6
TRIAL 3		11.4	1.6
Average		11.5	1.6

LEAK CHECK		
SYSTEM PRE:	.001	CFM@15"Hg
POST:	.001	CFM@15"Hg
PITOT PRE:	+/- ok/ok	@>2" Hg
POST:	+/- ok/ok	@>2" Hg

VELOCITY TRAVERSE AND CYCLONIC FLOW VERIFICATION

PLANT MAPLLC
DATE 3-30-05
LOCATION Robinson IL
SOURCE Platform CRU Scrubber Inlet
STACK I.D. 10in
BAROMETRIC PRESSURE, in. Hg 29.83
OPERATORS JE

SCHEMATIC OF TRAVERSE POINT LAYOUT

RUN NO. B1-1-A STATIC, in. H_2O +2.9

TRAVERSE POINT NUMBER	VELOCITY HEAD (Δp_s), in. H_2O	STACK TEMP. (Ts), °F	YAW ANGLE °
1-1	0.18	452	
2	0.19	453	
3	0.21	452	
4	0.21	430	
2-1	0.17	443	
2	0.20	450	
3	0.21	445	
4	0.21	418	
AVERAGE	0.4441 ✓	442.9 ✓	

RUN NO. B1-1-B STATIC, in. H_2O +4.5

TRAVERSE POINT NUMBER	VELOCITY HEAD (Δp_s), in. H_2O	STACK TEMP. (Ts), °F	YAW ANGLE °
1-1	.28	486	
2	.30	493	
3	.32	494	
4	.29	484	
2-1	.28	488	
2	.28	495	
3	.28	492	
4	.29	477	
AVERAGE	.5384 ✓	488.6 ✓	

$\overline{\sqrt{\Delta p}}$ = 0.4913
$\overline{Ts}$ = 465.8
STATIC = 3.70

OK 3/30

CYCLOFLO

VELOCITY TRAVERSE AND CYCLONIC FLOW VERIFICATION

PLANT MAPLLC
DATE 3-30-05
LOCATION Robinson IL
SOURCE Platform CRU scrubber Inlet
STACK I.D. 10'IN
BAROMETRIC PRESSURE, in. Hg 29.90
OPERATORS JG

SCHEMATIC OF TRAVERSE POINT LAYOUT

RUN NO. BI-1-C STATIC, in. H_2O +4.8

TRAVERSE POINT NUMBER	VELOCITY HEAD (Δp_s), in. H_2O	STACK TEMP. (Ts), °F	YAW ANGLE °
1-1	.28	518	
2	.31	522	
3	.31	518	
4	.31	474	
2-1	.31	514	
2	.29	520	
3	.29	511	
4	.30	499	
	BI-1-2		
	$\sqrt{\Delta p}$ = 0.5430		
	Ts = 499.1		
	P_{ST} = 4.65		
AVERAGE	0.5476	509.5	

RUN NO. BI-1-D STATIC, in. H_2O +4.2

TRAVERSE POINT NUMBER	VELOCITY HEAD (Δp_s), in. H_2O	STACK TEMP. (Ts), °F	YAW ANGLE °
1-1	.26	516	
2	.30	523	
3	.30	524	
4	.30	508	
2-1	.28	522	
2	.31	529	
3	.30	526	
4	.30	509	
	BI-1-3		
	$\sqrt{\Delta p}$ = 0.5447		
	Ts = 514.6		
	P_{ST} = 4.50		
AVERAGE	0.5418	519.6	

CYCLOFLO

FIELD DATA

Black Burn
Condition #1
BO-1-1

PLANT	MAPLLC	AMBIENT TEMPERATURE	90	PROBE HEATER SETTING	250
DATE	3-30-05	BAROMETRIC PRESSURE	29.90	HEATER BOX SETTING	250
LOCATION	Robinson IL	ASSUMED MOISTURE, %	3	METER $H_@$	1.868
OPERATOR	S. Flaherty	PROBE LENGTH, in.	36	C_p FACTOR	0.84
STACK NO.	PLAT.CLR.SCRB.OUT	NOZZLE DIAMETER, in.	0.313	Y_d FACTOR	1.006
RUN NO.	BO-1-1	STACK DIAMETER, in.	10	Probe#/TC#	414
SAMPLE BOX NO.	APEX	MINUTES PER POINT	7.5		
METER BOX NO.	502003	NUMBER OF POINTS	8		
START TIME	1542	NUMBER OF PORTS	2		

WEIGHT OF PARTICULATE, mg		
Filter No.	NA	NA
Sample		
Final wt.		
Tare wt.		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔP_s)	$\sqrt{\Delta P_s}$	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (V_m) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	PROBE TEMP. °F	Filter SAMPLE BOX TEMP. °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1542	SE-1	0	-0.12	91	0.19	AVG	1.9	1.86	727.600	90	90	256	251	NA	66	3
	-2	7.5		91	0.21	↓	2.1	2.06	733.27	91	91	255	251	↓	61	4
1557	-3	15		91	0.15	↓	1.5	1.47	739.25	93	93	256	251		60	2
	-4	22.5		95	0.12	↓	1.2	1.17	744.32	94	94	257	252	↓	59	2
1612/1618	NE-1	30	-0.13	91	0.23		2.3	2.26	748.85	94	94	257	251		65	4
	-2	37.5		91	0.21		2.1	2.07	755.13	95	95	256	252		60	3
1633	-3	45		91	0.18		1.8	1.78	761.15	96	96	257	252		58	3
	-4	52.5		92	0.13		1.3	1.28	766.73	97	97	256	252		58	2
1648		60							771.684							
						AVG √Δp ↓					93.8 ✓					
TOTAL	8pts	60min	-0.125 ✓	91.6 ✓	0.1775	0.4188 ✓	1.775 ✓	1.744	44.084 ✓	— 93.0 —		>250	>250	NA	≤68	MAX=4
AVERAGE																

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT
FINAL	122	113	103	103	208.9
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	22	13	3	3	8.9
TOTAL COLLECTED (specify ml or g)					49.9

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		11.0	0.6
TRIAL 2		11.0	0.6
TRIAL 3		10.8	0.6
Average		10.9	0.6

Nozzle Calc
0.313
0.314
0.313
0.313

LEAK CHECK
SYSTEM PRE: 0.001 CFM@15"Hg
POST: 0.001 CFM@16"Hg
PITOT PRE: +/- OK/OK @>3" H_2O
POST: +/- OK/OK @>3" H_2O

FIELD DATA

Black Burn
Condition #1
BO-1-2

PLANT	MAPLLG	AMBIENT TEMPERATURE	94	PROBE HEATER SETTING	250		
DATE	3-30-05	BAROMETRIC PRESSURE	29.90	HEATER BOX SETTING	250		
LOCATION	Robinson IL	ASSUMED MOISTURE, %	3	METER $H_@$	1.868		
OPERATOR	S. Flaherty	PROBE LENGTH, in.	36	C_p FACTOR	0.84		
STACK NO.	FLAT.CCR.SCRB.OUT	NOZZLE DIAMETER, in.	0.313	Y_d FACTOR	1.006		
RUN NO.	BO-1-2	STACK DIAMETER, in.	10	Probe#/TC#	414		
SAMPLE BOX NO.	APEX	MINUTES PER POINT	7.5				
METER BOX NO.	502003	NUMBER OF POINTS	8				
START TIME	1711	NUMBER OF PORTS	2				

WEIGHT OF PARTICULATE, mg

Filter No.	NA		NA
Sample			
Final wt.			
Tare wt.			
Wt. gain			
TOTAL			mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔP_s)	√ΔP	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (Vm) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	PROBE TEMP. °F	SAMPLE BOX TEMP. °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1711	NE-1	0	-0.11	93	0.21	AVG	2.1	2.07	772.700	97	97	256	251	NA	67	3
	-2	7.5		92	0.21	↓	2.1	2.08	778.73	98	98	257	250	↓	62	3
1726	-3	15		92	0.18		1.8	1.78	784.78	98	98	258	250		59	3
	-4	22.5		93	0.13	↓	1.3	1.29	790.38	99	99	257	251	↓	58	2
1741/1745	SE-1	30	-0.09	93	0.23		2.3	2.27	795.14	98	98	257	249		61	4
	-2	37.5		93	0.22		2.2	2.17	801.46	98	98	256	250		57	3
1800	-3	45		93	0.18		1.8	1.78	807.64	99	99	258	251		55	3
	-4	52.5		93	0.11		1.1	1.09	813.24	100	100	258	251		55	2
1815		60							817.794							
						AVG √ΔP ↓		↓								
								1.8375								
	8pts	60min	-0.10	92.75	0.1838	0.4257	~~1.7125~~	1.8163	45.094	— 98.4 —		>250	>250	NA	≤68	MAX=4
TOTAL																
AVERAGE																

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	123	113	103	101	211.9
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	23	13	3	1	11.9
TOTAL COLLECTED (specify ml or g)					51.9

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		11.2	2.0
TRIAL 2		11.2	1.8
TRIAL 3		11.2	1.8
Average		11.2	1.9

LEAK CHECK

SYSTEM PRE: 0.001 CFM@15"Hg
POST: 0.001 CFM@15"Hg
PITOT PRE: +/- OK/OK @>3" H_2O
POST: +/- OK/OK @>3" H_2O

FIELD DATA

Black Burn
Condition #1
BO-1-3

PLANT	MAPLLC	AMBIENT TEMPERATURE	90	PROBE HEATER SETTING	250
DATE	3-30-05	BAROMETRIC PRESSURE	29.90	HEATER BOX SETTING	250
LOCATION	Robinson FL	ASSUMED MOISTURE, %	3	MBTER $H_@$	1.868
OPERATOR	S. Eubanks	PROBE LENGTH, in.	36	C_p FACTOR	0.84
STACK NO.	PLAT.CIR.SRCE.OUT	NOZZLE DIAMETER, in.	0.313	Y_d FACTOR	1.006
RUN NO.	BO-1-3	STACK DIAMETER, in.	10	Probe#/TC#	414
SAMPLE BOX NO.	APEX	MINUTES PER POINT	7.5		
METER BOX NO.	5021003	NUMBER OF POINTS	8		
START TIME	1836	NUMBER OF PORTS	2		

WEIGHT OF PARTICULATE, mg		
Filter No:	NA	NA
Sample		
Final wt:		
Tare wt:		
Wt. gain		
TOTAL		mg

A= B=

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP)	√(ΔP)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (V_m) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	OUTLET ($T_{m_{out}}$) °F	PROBE TEMP °F	SAMPLE BOX TEMP °F	SORBENT MODULE TEMP °F	LAST IMPINGER OUTLET TEMP °F	PUMP VACUUM in. Hg
1836	SE-1	0	-0.09	92	0.24	AVG	2.3	2.34	818.300	91	91	259	250	NA	65	4
	-2	7.5		92	0.23		2.3	2.25	824.68	92	92	257	249		60	4
1851	-3	15		92	0.20		2.0	1.96	830.94	93	93	258	250		57	3
	-4	22.5		93	0.15		1.5	1.47	836.79	93	93	258	248		56	3
1906/1911	NE-1	30	-0.09	92	0.19		1.9	1.86	841.85	91	91	257	251		61	4
	-2	37.5		92	0.21		2.0	2.05	847.53	90	90	256	250		56	4
1926	-3	45		92	0.20		2.0	1.95	853.49	90	90	258	251		55	3
	-4	52.5		94	0.15		1.4	1.46	859.31	90	90	257	250		55	3
1941		60							864.416							
						AVG √ΔP										
	8pts	60min	-0.09	92.4	0.1963	0.4416	1.925	1.92	46.116	91.3		≥250	≥250	NA	≤68	MAX=
TOTAL																
AVERAGE																

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	123	110	103	99	212.8
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	23	10	3	-1	12.8
TOTAL	COLLECTED (specify ml or g)				49.8

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		11.4	2.0
TRIAL 2		11.4	2.8
TRIAL 3		11.2	1.8
Average		11.3	1.9

LEAK CHECK		
SYSTEM PRE:	0.001	CFM@15"Hg
POST:	0.001	CFM@15"Hg
PITOT PRE:	+/- 04 OK	@>3" H_2O
POST:	+/- 04 OK	@>3" H_2O

FIELD DATA

PLANT	MAPLLC	AMBIENT TEMPERATURE	53	PROBE HEATER SETTING	250		
DATE	3-31-05	BAROMETRIC PRESSURE	29.65	HEATER BOX SETTING	250		
LOCATION	Robinson IL	ASSUMED MOISTURE, %	2-4%	METER $H_@$	1.76		
OPERATOR	JG	PROBE LENGTH, in.	31	C_p FACTOR	.84		
STACK NO.	Platform CELL Scrubber Inlet	NOZZLE DIAMETER, in.	NA	Y_d FACTOR	1.002		
RUN NO.	BL-2-1	STACK DIAMETER, in.	10"	PROBE #/TC#	832		
SAMPLE BOX NO.	APEX	MINUTES PER POINT	5				
METER BOX NO.	81006	NUMBER OF POINTS	8pts/port				
START TIME	813	NUMBER OF PORTS	2				

WEIGHT OF PARTICULATE, mg		
Filter No.		
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD $\sqrt{\Delta P_s}$	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (Vm) ft^3	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	SAMPLE BOX TEMP. °F	Probe ~~COND.~~ EXIT TEMP °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
813		0	SEE				1.76	1.76	119.800	53	53	NA	251	NA	48	3
818		5	VELOCITY						123.56	58	53		254		46	3
823		10	SHEET						127.35	62	54		255		48	3
828		15							131.08	66	55		250		50	3
833		20							134.87	67	55		248		50	3
838		25							138.63	68	56		252		51	3
843		30							142.49	69	57		251		51	3
847 STOP		35							146.15	70	57		248		51	3
852		40							149.92	70	58		253		52	3
857		45							153.74	71	58		249		52	3
902		50							157.71	71	59		250		52	3
907		55							161.57	72	59		252		52	3
912		60							165.424							
917																
AVERAGE									45.624	61.3			~250		68	

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	100	106	102	102	209.9
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	0	6	2	2	9.9
TOTAL COLLECTED (specify ml or g)					19.9

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		12.2	6.8
TRIAL 2		12.0	8.9
TRIAL 3		12.2	8.6
Average		12.1	8.7

LEAK CHECK		
SYSTEM PRE:	.001	CFM@15"Hg
POST:	.001	CFM@15"Hg
PITOT PRE:	+/- OK/OK	@>2" Hg
POST:	+/- OK/OK	@>2" Hg

FIELD DATA

PLANT	MAPLC	AMBIENT TEMPERATURE	55	PROBE HEATER SETTING	250		
DATE	3-31-05	BAROMETRIC PRESSURE	29.65	HEATER BOX SETTING	250		
LOCATION	Robinson IL	ASSUMED MOISTURE, %	2-4%	METER $H_@$	1.76		
OPERATOR	JTC	PROBE LENGTH, in.	3'	C_p FACTOR	.84		
STACK NO.	Platform CW Scrubber Inlet	NOZZLE DIAMETER, in.	NA	Y_d FACTOR	1.002		
RUN NO.	ST-2-2	STACK DIAMETER, in.	10"	PROBE #/TC#	832		
SAMPLE BOX NO.	API 2	MINUTES PER POINT	5				
METER BOX NO.	81006	NUMBER OF POINTS	8 pts - Inlet				
START TIME	948	NUMBER OF PORTS	2				

WEIGHT OF PARTICULATE, mg		
Filter No.		
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (Vm) ft^3	GAS SAMPLE TEMP AT DRY GAS METER INLET (Tm_{in}) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET (Tm_{out}) °F	SAMPLE BOX TEMP. °F	PROBE COND. EXIT TEMP °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
948		0	SEE				1.76	1.76	165.700	58	58	NA	253	NA	50	6
953		5	VELOCITY						169.56	62	58		250		44	6
958		10	SHEET						173.37	67	58		253		45	6
1003		15							177.16	71	59		253		46	6
1008		20							180.93	71	59		252		46	6
1013		25							184.72	72	60		248		46	6
STOP 1018 START 1022		30							188.51	72	60		254		47	6
1027		35							192.29	74	61		253		48	6
1032		40							196.13	75	61		252		48	6
1037		45							199.96	75	62		250		48	6
1042		50							203.75	74	62		251		49	6
1047		55							207.56	74	62		251		49	6
1052		60							211.496							
AVERAGE									45.796	65.2			≈250		<68	

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g)				SILICA GEL WEIGHT
	#1	#2	#3	#4	g
FINAL	106	106	101	101	208.6
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	6	6	1	1	8.6
TOTAL COLLECTED (specify ml or g)					22.6

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		12.0	0.6
TRIAL 2		12.0	0.6
TRIAL 3		12.2	0.8
Average		12.1	0.7

LEAK CHECK	
SYSTEM PRE:	.001 CFM@15"Hg
POST:	.001 CFM@15"Hg
PITOT PRE:	+/- 0k/0k @>2" Hg
POST:	+/- 0k/0k @>2" Hg

FIELD DATA

ARI ENVIRONMENTAL INC.

B

PLANT	NAALC	AMBIENT TEMPERATURE	58	PROBE HEATER SETTING	250		
DATE	3-31-05	BAROMETRIC PRESSURE	29.65	HEATER BOX SETTING	250		
LOCATION	Robinson IL	ASSUMED MOISTURE, %	2-4%	METER $H_@$	1.76		
OPERATOR	DE	PROBE LENGTH, in.	3'	C_p FACTOR	.84		
STACK NO.	Platform Chimney above inlet	NOZZLE DIAMETER, in.	NA	Y_d FACTOR	1.002		
RUN NO.	BI-2-3	STACK DIAMETER, in.	10'	PROBE #/TC#	832		
SAMPLE BOX NO.	APEX	MINUTES PER POINT	5				
METER BOX NO.	8006	NUMBER OF POINTS	8pts/axis				
START TIME	1114	NUMBER OF PORTS	2				

WEIGHT OF PARTICULATE, mg		
Filter No.		
Sample		
Final wt		
Tare wt		
Wt. gain		
TOTAL		mg

A= B=

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD ($\sqrt{\Delta P_s}$)	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (Vm) ft^3	GAS SAMPLE TEMP AT DRY GAS METER INLET (Tm_{in}) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET (Tm_{out}) °F	SAMPLE BOX TEMP. °F	PROBE COND. EXIT TEMP °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1114		0	— SEE				1.76	1.76	211.900	62	61	NA	~~251~~	NA	55	4
1119		5	— VELOCITY						215.82	65	61		255		51	4
1124		10	— SHEET						219.74	69	61		249		52	4
1129		15							223.56	73	61		250		53	4
1134		20							227.58	74	61		252		54	4
1139		25							231.47	75	62		254		54	4
Stop 1144		30							235.37	75	63		251		54	4
Start 1149		35							239.31	76	63		251		~~53~~	4
1154		40							243.12	76	64		252		54	4
1159		45							246.93	77	64		251		55	4
1204		50							250.75	77	64		248		55	4
1209		55							254.62	78	64		252		56	4
1214		60							258.463							
1219																
AVERAGE									46.563	67.8			x250		68	

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	103	104	102	107	213.0
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	3	4	2	2	13.0
TOTAL COLLECTED (specify ml or g)					24.0

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		12.0	0.6
TRIAL 2		12.0	0.6
TRIAL 3		12.0	0.8
Average		12.0	0.7

LEAK CHECK		
SYSTEM PRE:	.001	CFM@15"Hg
POST:	.001	CFM@15"Hg
PITOT PRE:	+/-OK/OK	@>2" Hg
POST:	+/-OK/OK	@>2" Hg

VELOCITY TRAVERSE AND CYCLONIC FLOW VERIFICATION

PLANT MAPLLC
DATE 3-31-05
LOCATION Robinson IL
SOURCE Platform CRU Scrubber Inlet
STACK I.D. 10in
BAROMETRIC PRESSURE, in. Hg 29.65
OPERATORS

SCHEMATIC OF TRAVERSE POINT LAYOUT

RUN NO. BI-2-A STATIC, in. H_2O +4.5

TRAVERSE POINT NUMBER	VELOCITY HEAD (Δp_s), in. H_2O	STACK TEMP. (Ts), °F	YAW ANGLE °
1-1	0.28	509	
2	0.30	512	
3	0.30	501	
4	0.31	465	
2-1	0.28	504	
2	0.27	509	
3	0.26	507	
4	0.27	482	
1			
	BI-2-1		
	$\sqrt{\Delta p}$ = 0.5284		
	Ts = 496.95		
	P_{st} = 4.5		
AVERAGE	0.5325	498.6	

RUN NO. BI-2-B STATIC, in. H_2O +4.5

TRAVERSE POINT NUMBER	VELOCITY HEAD (Δp_s), in. H_2O	STACK TEMP. (Ts), °F	YAW ANGLE °
1-1	.26	509	
2	.28	509	
3	.29	510	
4	.26	462	
2-1	.29	510	
2	.27	511	
3	.27	495	
4	.28	456	
AVERAGE	.5243	49525	

CYCLOFLO

VELOCITY TRAVERSE AND CYCLONIC FLOW VERIFICATION

PLANT NMPLLC
DATE 3-31-05
LOCATION Robinson IL
SOURCE Platform CRU Scrubber Inlet
STACK ID 10in
PROBE # / TC # 832
BAROMETRIC PRESSURE, in. Hg 29.65
OPERATORS JF

SCHEMATIC OF TRAVERSE POINT LAYOUT

RUN NO. BI-2-C STATIC, in.H2O +4.7

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in.H2O	STACK TEMP. (Ts), °F	YAW ANGLE °
1-1	.27	509	
2	.27	511	
3	.28	497	
4	.26	453	
2-1	.28	511	
2	.29	514	
3	.29	490	
4	.27	457	
	BI-2-2		
	$\sqrt{\Delta p}$ = 0.5249		
	T_s = 494.1		
	P_{st} = 4.6		
AVERAGE	.5255	492.8	

RUN NO. BI-2-D STATIC, in.H2O +4.4

TRAVERSE POINT NUMBER	VELOCITY HEAD (ΔPs), in.H2O	STACK TEMP. (Ts), °F	YAW ANGLE °
1-1	.28	512	
2	.29	516	
3	.29	491	
4	.27	438	
2-1	.27	513	
2	.27	517	
3	.28	501	
4	.27	446	
	BI-2-3		
	$\sqrt{\Delta p}$ = 0.5261		
	T_s = 492.3		
	P_{st} = 4.55		
AVERAGE	.5267	491.8	

FIELD DATA

Black Burn
Condition # 2
BO-2-1

PLANT	MAPLLC	AMBIENT TEMPERATURE	53	PROBE HEATER SETTING	250
DATE	3-31-05	BAROMETRIC PRESSURE	29.65	HEATER BOX SETTING	250
LOCATION	Robinson IL	ASSUMED MOISTURE, %	3	METER $H_@$	1.868
OPERATOR	S. Flaherty	PROBE LENGTH, in.	36	C_p FACTOR	0.84
STACK NO.	FLAT. CLR. SEAB. OUT	NOZZLE DIAMETER, in.	0.313	Y_d FACTOR	1.006
RUN NO.	BO-2-1	STACK DIAMETER, in.	10	Probe#/TC#	414
SAMPLE BOX NO.	APEX	MINUTES PER POINT	7.5		
METER BOX NO.	5020003	NUMBER OF POINTS	8		
START TIME	0813	NUMBER OF PORTS	2		

WEIGHT OF PARTICULATE, mg		
Filter No:	NA	NA
Sample		
Final wt.		
Tare wt.		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	$\sqrt{\Delta P_s}$	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (V_m) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m(in)}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m(out)}$) °F	PROBE TEMP. °F	Filter SAMPLE BOX TEMP. °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
0813	NE-1	0	-0.17	85	0.21	AVG	2.0	1.95	865.600	58	58	256	250	NA	57	3
	-2	7.5		85	0.21		1.9	1.95	871.28	58	58	258	251		53	3
0827	-3	15		85	0.19		1.8	1.78	876.95	60	60	261	251		52	3
	-4	22.5		85	0.15		1.4	1.40	882.37	61	61	261	250		50	2
0843/0847	SE-1	30	-0.15	85	0.24		2.3	2.26	887.19	63	63	263	252		53	4
	-2	37.5		85	0.22		2.1	2.07	893.32	63	63	264	251		50	3
0902	-3	45		85	0.17		1.6	1.60	899.18	64	64	263	252		49	3
	-4	52.5		85	0.12		1.1	1.13	904.35	64	64	263	251		49	2
0917		60							908.809							
						AVG $\sqrt{\Delta P}$										
	8pts	60min	-0.16	85.0	0.1888	0.4322	1.775	1.768	43.209	— 61.4 —		>250	>250	NA	≤68	MAX-4
TOTAL																
AVERAGE																

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT
FINAL	118	108	102	100	204.0
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	18	8	2	0	4.0
TOTAL COLLECTED (specify ml or g)					32.0

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		11.4	1.6
TRIAL 2		11.4	1.6
TRIAL 3		11.4	1.6
Average		11.4	1.6

LEAK CHECK		
SYSTEM PRE:	0.001	CFM@15"Hg
POST:	0.001	CFM@15"Hg
PITOT PRE:	+/- OK	@>3" H_2O
POST:	+/- OK	@>3" H_2O

Black Burn
Condition #2
BO-2-2

FIELD DATA

PLANT	MAPLLC	AMBIENT TEMPERATURE	55	PROBE HEATER SETTING	250		
DATE	3-31-05	BAROMETRIC PRESSURE	29.65	HEATER BOX SETTING	250		
LOCATION	Robinson IL	ASSUMED MOISTURE, %	3	METER $H_@$	1.868		
OPERATOR	S. Flaherty	PROBE LENGTH, in.	36	C_p FACTOR	0.84		
STACK NO.	FLAT: C.R. SCRB. OUT	NOZZLE DIAMETER, in.	0.313	Y_d FACTOR	1.006		
RUN NO.	BO-2-2	STACK DIAMETER, in.	10	Probe#/TC#	414		
SAMPLE BOX NO.	APEX	MINUTES PER POINT	7.5				
METER BOX NO.	502003	NUMBER OF POINTS	8				
START TIME	0948	NUMBER OF PORTS	2				

WEIGHT OF PARTICULATE, mg		
Filter No.	NA	NA
Sample		
Final wt.		
Tare wt.		
Wt. gain		
TOTAL		mg

A= ____ B= ____

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (T_s) °F	VELOCITY HEAD (ΔP_s)	VELOCITY HEAD $\sqrt{\Delta P_s}$	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O DESIRED	GAS SAMPLE VOLUME (V_m) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET ($T_{m_{in}}$) °F	GAS SAMPLE TEMP AT DRY GAS METER OUTLET ($T_{m_{out}}$) °F	PROBE TEMP. °F	First Impinger SAMPLE BOX TEMP. °F	SORBENT MODULE TEMP. °F	Last IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
0948	SE-1	0	-0.11	85	0.24	AVG	2.3	2.26	909.400	64	64	259	253	NA	58	4
	-2	7.5		85	0.22		2.1	2.07	915.54	64	64	260	252		52	3
1003	-3	15		85	0.18		1.7	1.70	921.41	65	65	261	253		52	3
	-4	22.5		85	0.11		1.0	1.04	926.73	65	65	260	253		51	2
1018/1022	NE-1	30	-0.11	86	0.21		2.0	1.98	930.89	65	65	262	254		57	3
	-2	37.5		86	0.21		2.0	1.98	936.64	65	65	261	253		52	3
1037	-3	45		86	0.18		1.7	1.70	942.38	66	66	260	253		50	3
	-4	52.5		86	0.14		1.3	1.32	947.71	66	66	260	254		50	2
1052		60							952.558							
						AVG $\sqrt{\Delta p}$										
TOTAL	8pts	60 min	-0.11	85.5	0.1863	0.4287	1.763	1.756	43.158	65.0		>250	>250	NA	≤68	MAX-4
AVERAGE																

VOLUME OF WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g) #1	#2	#3	#4	SILICA GEL WEIGHT g
FINAL	120	109	101	103	2089
INITIAL	100	100	100	100	2000
LIQUID COLLECTED	20	9	1	3	8.9
TOTAL COLLECTED (specify ml or g)					40.9

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		11.2	1.8
TRIAL 2		11.2	1.8
TRIAL 3		11.2	1.8
Average		11.2	1.8

LEAK CHECK	
SYSTEM PRE:	0.001 CFM@15"Hg
POST:	0.001 CFM@15"Hg
PITOT PRE:	+/- OK @>3" H_2O
POST:	+/- OK @>3" H_2O

FIELD DATA

Black Burn
Condition #2
BO-2-3

PLANT	MAPLLC	AMBIENT TEMPERATURE	54	PROBE HEATER SETTING	250
DATE	3-31-05	BAROMETRIC PRESSURE	29.65	HEATER BOX SETTING	250
LOCATION	Robinson IL	ASSUMED MOISTURE, %	3	METER $H_@$	1.868
OPERATOR	S. Flaherty	PROBE LENGTH, in.	36	C_p FACTOR	0.84
STACK NO.	PLAT-ccR-SCRB-OUT	NOZZLE DIAMETER, in.	0.313	Y_d FACTOR	1.006
RUN NO.	BO-2-3	STACK DIAMETER, in.	10	Probe#/TC#	414
SAMPLE BOX NO.	APEX	MINUTES PER POINT	7.5		
METER BOX NO.	502003	NUMBER OF POINTS	8		
START TIME	1114	NUMBER OF PORTS	2		

A=____ B=____

WEIGHT OF PARTICULATE, mg		
Filter No.	NA	NA
Sample		
Final wt.		
Tare wt.		
Wt. gain		
TOTAL		mg

CROSS SECTION

CLOCK TIME	TRAVERSE POINT NUMBER	SAMPLING TIME (Θ) min.	STATIC PRESSURE (in. H_2O)	STACK TEMP (Ts) °F	VELOCITY HEAD (ΔP)	√ΔP	PRESSURE DIFFERENTIAL ACROSS ORIFICE METER (ΔH) in. H_2O ACTUAL	DESIRED	GAS SAMPLE VOLUME (Vm) ft³	GAS SAMPLE TEMP AT DRY GAS METER INLET (Tm_in) °F	OUTLET (Tm_out) °F	PROBE TEMP. °F	Filter SAMPLE BOX TEMP. °F	SORBENT MODULE TEMP. °F	LAST IMPINGER OUTLET TEMP. °F	PUMP VACUUM in. Hg
1114	NE-1	0	-0.11	86	0.21	AVG	2.0	1.98	953.600	67	67	263	247	NA	60	3
	-2	7.5		86	0.21		2.0	1.98	959.37	67	67	265	251		57	3
1129	-3	15		87	0.18		1.7	1.70	965.13	68	68	264	250		55	3
	-4	22.5		87	0.14		1.3	1.32	970.48	68	68	263	251		55	2
1144/1149	SE-1	30	-0.09	87	0.21		2.0	1.98	975.19	68	68	264	253		59	4
	-2	37.5		87	0.20		1.9	1.89	980.96	69	69	264	252		56	4
1204	-3	45		87	0.17		1.6	1.61	986.61	69	69	266	251		55	3
	-4	52.5		87	0.14		1.3	1.33	991.81	70	70	264	253		55	2
1219		60							996.609							
						AVG √ΔP										
TOTAL	8 pts	60 min	-0.10	86.8	0.1825	0.4259	1.725	1.724	43.009	68.3		>250	>250	NA	≤68	MAX=4
AVERAGE																

VOLUME OR WEIGHT OF LIQUID WATER COLLECTED	IMPINGER VOLUME (ml) OR WEIGHT (g)				SILICA GEL WEIGHT
	#1	#2	#3	#4	g
FINAL	118	107	102	100	209.1
INITIAL	100	100	100	100	200.0
LIQUID COLLECTED	18	7	2	0	9.1
TOTAL COLLECTED (specify ml or g)					36.1

ORSAT DATA	TIME	CO_2	O_2
TRIAL 1		11.4	1.6
TRIAL 2		11.4	1.6
TRIAL 3		11.4	1.6
Average		11.4	1.6

LEAK CHECK

SYSTEM PRE:	0.001	CFM@15"Hg
POST:	0.001	CFM@15"Hg
PITOT PRE:	+/- OK/OK	@>3" H_2O
POST:	+/- OK/OK	@>3" H_2O

CEMS CALIBRATION DATA

ENVIRONMENTAL INC.

Plant	MAPLLC	Plant Rep.	WENDY GRAM	Analyzer Span Values (% or ppm)	
Location	ROBINSON, IL	Team Leader	DAN FITZGERALD	CO	ppm
Source	SCRUBBER OUTLET	CEM Operator	DAN FITZGERALD	CO_2	%
Date	3-30-05 3-29-05 AJ			O_2	%
Run Number	WO-1-1			THC 100	ppm
Start Time	17:04			NO_x	ppm
Stop Time	18:08			CH_4 100	ppm

PORT CHANGE 17:34 - 17:38

	CALIBRATION ERROR - 09:21 hrs				SYSTEM BIAS CHECK					Calibration Correction Factors
					Pretest: 15:45 hrs		18:11 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Time	System Response	Time	System Response	Time	Drift (% of Span)	
CO Zero										Co=
CO Low										
CO Mid										Cm=
CO High										
CO_2 Zero										Co=
CO_2 Low										
CO_2 Mid										Cm=
CO_2 High										
O_2 Zero										Co=
O_2 Low										
O_2 Mid										Cm=
O_2 High										
THC Zero	0.0		0.3	09:21	0.0	15:45	0.0	18:13		Co=
THC Low	25.0	PROPANE/N_2	25.5	09:30						
THC Mid	50.0	ALM049794	50.5	09:24	51.1	15:54	48.9	18:11		Cm=
THC High	85.0	1,004 ppm	85.9	09:26						
NO_x Zero										Co=
NO_x Low										
NO_x Mid										Cm=
NO_x High										
CH_4 Zero	0.0		0.5	09:33						Co=
CH_4 Low	25.0	METHANE/AIR	24.1	10:06						
CH_4 Mid	50.0	ALM048846	49.6	09:48						Cm=
CH_4 High	84.2	84.2 ppm	84.9	09:57						

WHITEBURN CONDITION #1

CEMS CALIBRATION DATA

Plant	MAPLLC	Plant Rep.	WENDY GRAHAM	Analyzer Span Values (% or ppm)	
Location	ROBINSON, IL	Team Leader	DAN FITZGERALD	CO	ppm
Source	SCRUBBER OUTLET	CEM Operator	DAN FITZGERALD	CO_2	%
Date	~~3-30-05~~ 3-29-05 AF			O_2	%
Run Number	WO-1-2			THC 100	ppm
Start Time	18:54			NO_x	ppm
Stop Time	19:58			CH_4 100	ppm

PORT CHANGE: 19:24 - 19:28

	CALIBRATION ERROR - hrs				SYSTEM BIAS CHECK					Calibration Correction Factors
					Pretest: 18:11 hrs		20:01 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Time	System Response	Time	System Response	Time	Drift (% of Span)	
CO Zero										Co=
CO Low										
CO Mid										Cm=
CO High										
CO_2 Zero										Co=
CO_2 Low										
CO_2 Mid										Cm=
CO_2 High										
O_2 Zero										Co=
O_2 Low										
O_2 Mid										Cm=
O_2 High										
THC Zero	0.0				0.0	18:13	0.0	20:01		Co=
THC Low										
THC Mid	50.0				48.9	18:11	51.1	20:03		Cm=
THC High										
NO_x Zero										Co=
NO_x Low										
NO_x Mid										Cm=
NO_x High										
CH_4 Zero										Co=
CH_4 Low										
CH_4 Mid										Cm=
CH_4 High										

WHITEBURN CONDITION #1

CEMS CALIBRATION DATA

Plant	MAPLLC	Plant Rep.	WENDY GRAM	Analyzer Span Values (% or ppm)	
Location	ROBINSON, IL	Team Leader	DAN FITZGERALD	CO	ppm
Source	SCRUBBER OUT	CEM Operator	DAN FITZGERALD	CO_2	%
Date	3-30-3-29-05 CA			O_2	%
Run Number	WO-1-3			THC 100	ppm
Start Time	20:25			NO_x	ppm
Stop Time	21:32			CH_4 100	ppm

CHANGE OF PORTS: 20:55 - 21:02

	CALIBRATION ERROR - hrs				SYSTEM BIAS CHECK					Calibration Correction Factors
					Pretest: 20:01 hrs		21:36 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Time	System Response	Time	System Response	Time	Drift (% of Span)	
CO Zero										Co=
CO Low										
CO Mid										Cm=
CO High										
CO_2 Zero										Co=
CO_2 Low										
CO_2 Mid										Cm=
CO_2 High										
O_2 Zero										Co=
O_2 Low										
O_2 Mid										Cm=
O_2 High										
THC Zero	0.0				0.0	20:01	0.0	21:38		Co=
THC Low										
THC Mid	50.0				51.1	20:03	51.4	21:36		Cm=
THC High										
NO_x Zero										Co=
NO_x Low										
NO_x Mid										Cm=
NO_x High										
CH_4 Zero	0.0						0.0	21:43		Co=
CH_4 Low										
CH_4 Mid	50.0						50.5	21:52		Cm=
CH_4 High										

WHITEBURN CONDITION #1

CEMS CALIBRATION DATA

ENVIRONMENTAL INC.

Plant	MAPLLC
Location	ROBINSON, IL
Source	SCRUBBER OUTLET
Date	3-30-05
Run Number	WO-2-1
Start Time	08:43
Stop Time	09:48

Plant Rep.	WENDY GRAM
Team Leader	DAN FITZGERALD
CEM Operator	DAN FITZGERALD

Analyzer Span Values (% or ppm)

CO		ppm
CO_2		%
O_2		%
THC	100	ppm
NO_x		ppm
CH_4	100	ppm

CHANGE OF PORTS: 09:13 - 09:18

CALIBRATION ERROR - 07:20 hrs

SYSTEM BIAS CHECK

Pretest: 07:20 hrs 10:05 hrs

	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Time	System Response	Time	System Response	Time	Drift (% of Span)	Calibration Correction Factors
CO Zero										Co=
CO Low										
CO Mid										Cm=
CO High										
CO_2 Zero										Co=
CO_2 Low										
CO_2 Mid										Cm=
CO_2 High										
O_2 Zero										Co=
O_2 Low										
O_2 Mid										Cm=
O_2 High										
THC Zero	0.0		0.0	07:20	0.0	07:20	0.7	10:05		Co=
THC Low	25.0		26.0	07:32						
THC Mid	50.0		50.8	07:26	50.8	07:26	51.7	10:11		Cm=
THC High	85.0		88.2	07:28						
NO_x Zero										Co=
NO_x Low										
NO_x Mid										Cm=
NO_x High										
CH_4 Zero	0.0		0.1	07:24	0.1					Co=
CH_4 Low	25.0		25.3	07:55						
CH_4 Mid	50.0		50.3	07:33						Cm=
CH_4 High	84.2		85.3	07:46						

WHITE BURN CONDITION #2

CEMS CALIBRATION DATA

Plant	MAPLLC	Plant Rep.	WENDY GRAM	Analyzer Span Values (% or ppm)	
Location	ROBINSON, IL	Team Leader	DAN FITZGERALD	CO	ppm
Source	SCRUBBER OUTLET	CEM Operator	DAN FITZGERALD	CO_2	%
Date	3-30-05			O_2	%
Run Number	WO-2-2			THC 100	ppm
Start Time	10:14			NO_x	ppm
Stop Time	11:19			CH_4 100	ppm

CHANGE OF PORTS: 10:44 - 10:49

	CALIBRATION ERROR - hrs				SYSTEM BIAS CHECK					Calibration Correction Factors
					Pretest: 10:05 hrs		11:22 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Time	System Response	Time	System Response	Time	Drift (% of Span)	
CO Zero										Co=
CO Low										
CO Mid										Cm=
CO High										
CO_2 Zero										Co=
CO_2 Low										
CO_2 Mid										Cm=
CO_2 High										
O_2 Zero										Co=
O_2 Low										
O_2 Mid										Cm=
O_2 High										
THC Zero	0.0				0.7	10:05	0.6	11:25		Co=
THC Low										
THC Mid	50.0				51.7	10:11	51.9	11:22		Cm=
THC High										
NO_x Zero										Co=
NO_x Low										
NO_x Mid										Cm=
NO_x High										
CH_4 Zero	0.0									Co=
CH_4 Low										
CH_4 Mid	50.0									Cm=
CH_4 High										

WHITEBURN CONDITION # 2

CEMS CALIBRATION DATA

ENVIRONMENTAL INC.

Plant	MAPLLC	Plant Rep.	WENDY GRAM
Location	ROBINSON, IL	Team Leader	DAN FITZGERALD
Source	SCRUBBER OUTLET	CEM Operator	DAN FITZGERALD
Date	3-30-05		
Run Number	WO-2-3		
Start Time	11:43		
Stop Time	12:48		

CHANGE OF PORTS: 12:13 - 12:18

Analyzer Span Values (% or ppm)

CO		ppm
CO_2		%
O_2		%
THC	100	ppm
NO_x		ppm
CH_4	100	ppm

	CALIBRATION ERROR - hrs				SYSTEM BIAS CHECK					Calibration Correction Factors
					Pretest: 11:22 hrs		12:52 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Time	System Response	Time	System Response	Time	Drift (% of Span)	
CO Zero										Co=
CO Low										
CO Mid										Cm=
CO High										
CO_2 Zero										Co=
CO_2 Low										
CO_2 Mid										Cm=
CO_2 High										
O_2 Zero										Co=
O_2 Low										
O_2 Mid										Cm=
O_2 High										
THC Zero	0.0				0.6	11:25	0.6	12:52		Co=
THC Low										
THC Mid	50.0				51.9	11:22	51.6	12:55		Cm=
THC High										
NO_x Zero										Co=
NO_x Low										
NO_x Mid										Cm=
NO_x High										
CH_4 Zero	0.0						1.0	12:53		Co=
CH_4 Low										
CH_4 Mid	50.0						51.2	13:08		Cm=
CH_4 High										

WHITEBURN CONDITION #2

CEMS CALIBRATION DATA

Plant	MPPLLC	Plant Rep.	WENDY GRAM	Analyzer Span Values (% or ppm)	
Location	ROBINSON, IL	Team Leader	DAN FITZGERALD	CO	ppm
Source	SCRUBBER OUTLET	CEM Operator	DAN FITZGERALD	CO_2	%
Date	3-30-05			O_2	%
Run Number	BO-1-1			THC 100	ppm
Start Time	15:42			NO_x	ppm
Stop Time	16:48			CH_4 100	ppm

CHANGE OF PORTS: 16:12 - 16:18

	CALIBRATION ERROR - 15' hrs				SYSTEM BIAS CHECK					Calibration Correction Factors
					Pretest: 15:32 hrs		16:52 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Time	System Response	Time	System Response	Time	Drift (% of Span)	
CO Zero										Co=
CO Low										
CO Mid										Cm=
CO High										
CO_2 Zero										Co=
CO_2 Low										
CO_2 Mid										Cm=
CO_2 High										
O_2 Zero										Co=
O_2 Low										
O_2 Mid										Cm=
O_2 High										
THC Zero	0.0				0.6	15:32	0.6	16:57		Co=
THC Low	25.0									
THC Mid	50.0				50.7	15:36	51.3	16:52		Cm=
THC High	85.0									
NO_x Zero										Co=
NO_x Low										
NO_x Mid										Cm=
NO_x High										
CH_4 Zero	0.0									Co=
CH_4 Low	25.0									
CH_4 Mid	50.0									Cm=
CH_4 High	84.2									

BLACKBURN CONDITION #1

CEMS CALIBRATION DATA

Plant	MAP LLC
Location	ROBINSON, IL
Source	SCRUBBER OUTLET
Date	3-30-05
Run Number	BO-1-2
Start Time	17:11
Stop Time	18:15

Plant Rep.	WENDY GRAM
Team Leader	DAN FITZGERALD
CEM Operator	DAN FITZGERALD

CHANGE OF PORTS: 17:41 - 17:45

Analyzer Span Values (% or ppm)		
CO		ppm
CO_2		%
O_2		%
THC	100	ppm
NO_x		ppm
CH_4	100	ppm

	CALIBRATION ERROR - hrs				SYSTEM BIAS CHECK					Calibration Correction Factors
					Pretest: 16:52 hrs		18:21 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Time	System Response	Time	System Response	Time	Drift (% of Span)	
CO Zero										Co=
CO Low										
CO Mid										Cm=
CO High										
CO_2 Zero										Co=
CO_2 Low										
CO_2 Mid										Cm=
CO_2 High										
O_2 Zero										Co=
O_2 Low										
O_2 Mid										Cm=
O_2 High										
THC Zero	0.0				0.6	16:57	0.6	18:21		Co=
THC Low										
THC Mid	50.0				51.3	16:52	51.0	18:24		Cm=
THC High										
NO_x Zero										Co=
NO_x Low										
NO_x Mid										Cm=
NO_x High										
CH_4 Zero	0.0									Co=
CH_4 Low										
CH_4 Mid	50.0									Cm=
CH_4 High										

BLACKBURN CONDITION # 1

CEMS CALIBRATION DATA

Plant	MAPLLC	Plant Rep.	WENDY GRAM	Analyzer Span Values (% or ppm)	
Location	ROBINSON, IL	Team Leader	DAN FITZGERALD	CO	ppm
Source	SCRUBBER OUTLET	CEM Operator	DAN FITZGERALD	CO_2	%
Date	3-30-05			O_2	%
Run Number	BO-1-3	CHANGE OF PORTS: 19:06 - 19:11		THC 100	ppm
Start Time	18:36			NO_x	ppm
Stop Time	19:41			CH_4 100	ppm

	CALIBRATION ERROR - hrs				SYSTEM BIAS CHECK					Calibration Correction Factors
					Pretest: 18:21 hrs		19:43 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Time	System Response	Time	System Response	Time	Drift (% of Span)	
CO Zero										Co=
CO Low										
CO Mid										Cm=
CO High										
CO_2 Zero										Co=
CO_2 Low										
CO_2 Mid										Cm=
CO_2 High										
O_2 Zero										Co=
O_2 Low										
O_2 Mid										Cm=
O_2 High										
THC Zero	0.0				0.6	18:21	0.7	19:45		Co=
THC Low										
THC Mid	50.0				51.0	18:24	51.4	19:48		Cm=
THC High										
NO_x Zero										Co=
NO_x Low										
NO_x Mid										Cm=
NO_x High										
CH_4 Zero	0.0						0.2	19:43		Co=
CH_4 Low										
CH_4 Mid	50.0						49.6	19:58		Cm=
CH_4 High										

BLACKBURN CONDITION #1

CEMS CALIBRATION DATA

Plant	MAPLLC	Plant Rep.	WENDY GROM	Analyzer Span Values (% or ppm)	
Location	ROBINSON, IL	Team Leader	DAN FITZGERALD	CO	ppm
Source	SCRUBBER OUTLET	CEM Operator	DAN FITZGERALD	CO_2	%
Date	3-31-05			O_2	%
Run Number	B0-2-1			THC 100	ppm
Start Time	08:13			NO_x	ppm
Stop Time	09:17			CH_4 100	ppm

CHANGE OF PORTS: 08:43 - 08:47

	CALIBRATION ERROR - 07:12 hrs				SYSTEM BIAS CHECK					Calibration
					Pretest: 07:12 hrs		09:21 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Time	System Response	Time	System Response	Time	Drift (% of Span)	Correction Factors
CO Zero										Co=
CO Low										
CO Mid										Cm=
CO High										
CO_2 Zero										Co=
CO_2 Low										
CO_2 Mid										Cm=
CO_2 High										
O_2 Zero	0.0									Co=
O_2 Low										
O_2 Mid										Cm=
O_2 High										
THC Zero	0.0		0.4	07:12	0.4	07:12	0.8	09:21		Co=
THC Low	25.0		24.4	07:29						
THC Mid	50.0		49.4	07:24	49.4	07:24	48.6	09:25		Cm=
THC High	85.0		82.6	07:26						
NO_x Zero										Co=
NO_x Low										
NO_x Mid										Cm=
NO_x High										
CH_4 Zero	0.0		0.1	07:18						Co=
CH_4 Low	25.0		25.5	07:57						
CH_4 Mid	50.0		50.6	07:33						Cm=
CH_4 High	84.2		85.4	07:42						

BLACKBURN CONDITION # 2

CEMS CALIBRATION DATA

Plant	MAPLLC	Plant Rep.	WENDY GRAM	Analyzer Span Values (% or ppm)	
Location	ROBINSON, IL	Team Leader	DAN FITZGERALD	CO	ppm
Source	SCRUBBER OUTLET	CEM Operator	DAN FITZGERALD	CO_2	%
Date	3-31-05			O_2	%
Run Number	BO-2-2			THC 100	ppm
Start Time	09:48			NO_x	ppm
Stop Time	10:52			CH_4 100	ppm

CHANGE OF PORTS: 10:18-10:22

	CALIBRATION ERROR - hrs				SYSTEM BIAS CHECK					Calibration Correction Factors
					Pretest: 09:21 hrs		10:56 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Time	System Response	Time	System Response	Time	Drift (% of Span)	
CO Zero										Co=
CO Low										
CO Mid										Cm=
CO High										
CO_2 Zero										Co=
CO_2 Low										
CO_2 Mid										Cm=
CO_2 High										
O_2 Zero										Co=
O_2 Low										
O_2 Mid										Cm=
O_2 High										
THC Zero	0.0				0.8	09:21	0.4	10:56		Co=
THC Low										
THC Mid	50.0				48.6	09:25	49.1	11:01		Cm=
THC High										
NO_x Zero										Co=
NO_x Low										
NO_x Mid										Cm=
NO_x High										
CH_4 Zero	0.0									Co=
CH_4 Low										
CH_4 Mid	50.0									Cm=
CH_4 High										

BLACKBURN CONDITION # 2

CEMS CALIBRATION DATA

Plant	MAPLLC	Plant Rep.	WENDY GRAM	Analyzer Span Values (% or ppm)	
Location	ROBINSON, IL	Team Leader	DAN FITZGERALD	CO	ppm
Source	SCRUBBER OUTLET	CEM Operator	DAN FITZGERALD	CO_2	%
Date	3-31-05			O_2	%
Run Number	BO-2-3			THC 100	ppm
Start Time	11:14			NO_x	ppm
Stop Time	12:19			CH_4 100	ppm

CHANGE OF PORTS: 11:44 - 11:49

	CALIBRATION ERROR - hrs				SYSTEM BIAS CHECK					Calibration Correction Factors
					Pretest: 10:56 hrs		12:22 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Time	System Response	Time	System Response	Time	Drift (% of Span)	
CO Zero										Co=
CO Low										
CO Mid										Cm=
CO High										
CO_2 Zero										Co=
CO_2 Low										
CO_2 Mid										Cm=
CO_2 High										
O_2 Zero										Co=
O_2 Low										
O_2 Mid										Cm=
O_2 High										
THC Zero	0.0				0.9	10:56	0.7	12:22		Co=
THC Low										
THC Mid	50.0				49.1	11:01	48.9	12:28		Cm=
THC High										
NO_x Zero										Co=
NO_x Low										
NO_x Mid										Cm=
NO_x High										
CH_4 Zero	0.0						0.3	12:24		Co=
CH_4 Low										
CH_4 Mid	50.0						51.1	12:33		Cm=
CH_4 High										

BLACKBURN CONDITION #2

APPENDIX C

Analytical Data

MAPLCC, Robinson IL - Platformer CRU Scrubber; 3/29/05 - 3/31/05
USEPA Method 26A 40CFR60, Appx. A
HCl Determination

Calibration Curve Calculation

Std. (µg/ml)	Pre Cal (µS*min)	Post Cal (µS*min)	Average (µS*min)
0.0	0.000	0.000	0.000
1.0	0.194	0.203	0.199
2.0	0.364	0.384	0.374
5.0	0.906	0.944	0.925
10.0	1.893	1.969	1.931
25.0	5.174	5.391	5.283

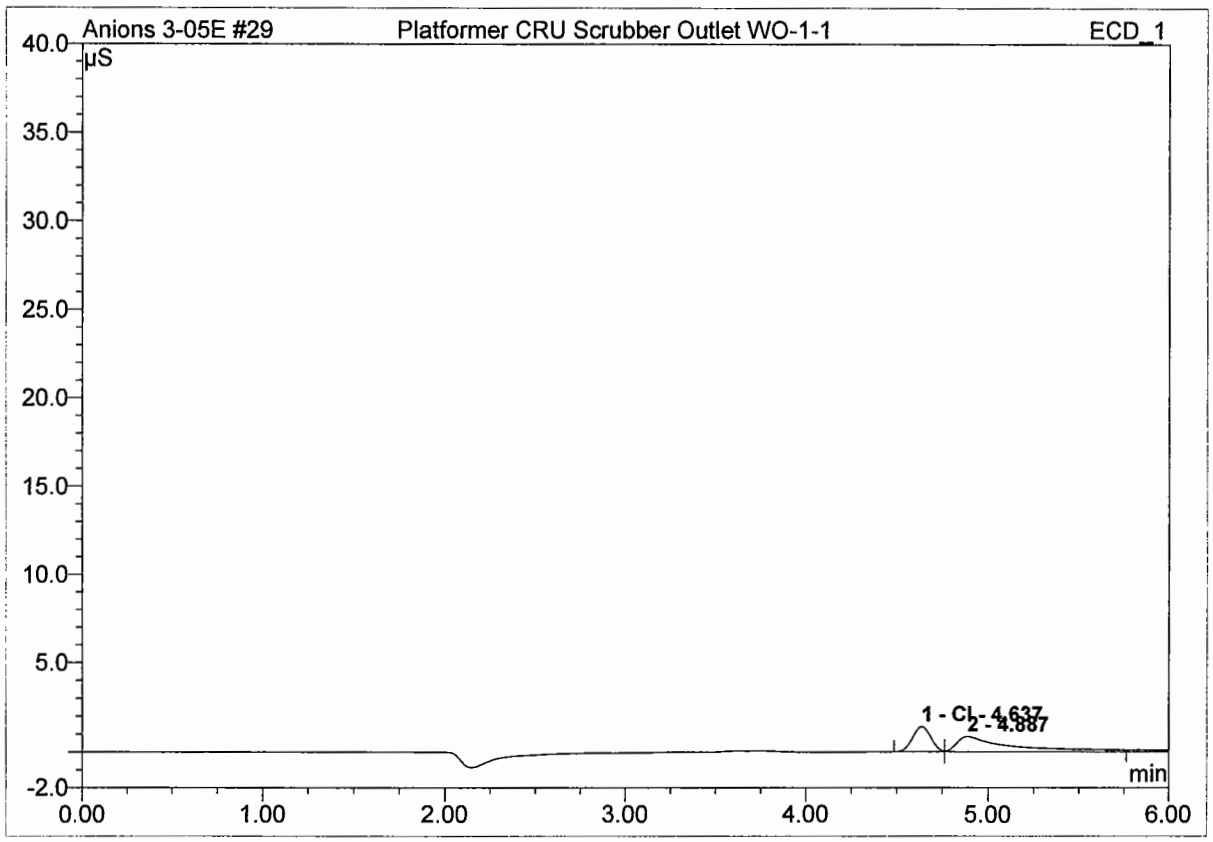
Sample Concentration Calculations

ID	Analysis 1 (µS*min)	Analysis 2 (µS*min)	Average (µS*min)	Concentration (µg/ml)	Sample volume(ml)	Dilution Factor	Sample HCl mass (µg)
Outlet WO-1-1	0.166	0.169	0.168	1.10	500	1	566
Outlet WO-1-2	0.276	0.274	0.275	1.61	500	1	827
Outlet WO-1-3	0.236	0.236	0.236	1.42	500	1	732
Inlet WI-1-1	3.830	3.791	3.811	18.26	500	200	1,877,583
Inlet WI-1-2	3.756	3.855	3.806	18.24	500	200	1,875,162
Inlet WI-1-3	3.639	3.628	3.634	17.43	500	200	1,791,860
Outlet WO-2-1	0.273	0.275	0.274	1.60	500	1	824
Outlet WO-2-2	0.273	0.274	0.274	1.60	500	1	823
Outlet WO-2-3	0.226	0.225	0.226	1.37	500	1	707
Inlet WI-2-1	3.851	3.887	3.869	18.54	500	200	1,905,915
Inlet WI-2-2	3.934	3.941	3.938	18.86	500	200	1,939,091
Inlet WI-2-3	4.170	4.149	4.160	19.91	500	200	2,046,608
Outlet BO-1-1	0.012	0.009	0.011	0.36	500	1	186
Outlet BO-1-2	0.026	0.026	0.026	0.43	500	1	224
Outlet BO-1-3	0.007	0.007	0.007	0.35	500	1	178
Inlet BI-1-1	3.134	3.204	3.169	15.24	500	200	1,566,897
Inlet BI-1-2	2.641	2.609	2.625	12.68	500	200	1,303,432
Inlet BI-1-3	2.486	2.497	2.492	12.05	500	200	1,238,776
Outlet BO-2-1	0.019	0.015	0.017	0.39	500	1	202
Outlet BO-2-2	0.022	0.023	0.023	0.42	500	1	215
Outlet BO-2-3	0.009	0.010	0.010	0.36	500	1	184
Inlet BI-2-1	2.462	2.466	2.464	11.92	500	200	1,225,458
Inlet BI-2-2	2.441	2.449	2.445	11.83	500	200	1,216,256
Inlet BI-2-3	2.525	2.532	2.529	12.22	500	200	1,256,696
Blank 0.1 N H_2SO_4	<0.005	<0.005	<0.005	<0.34	-	-	-

Analyst: E. Vogt
Date: 4/15/05

29 Platformer CRU Scrubber Outlet WO-1-1

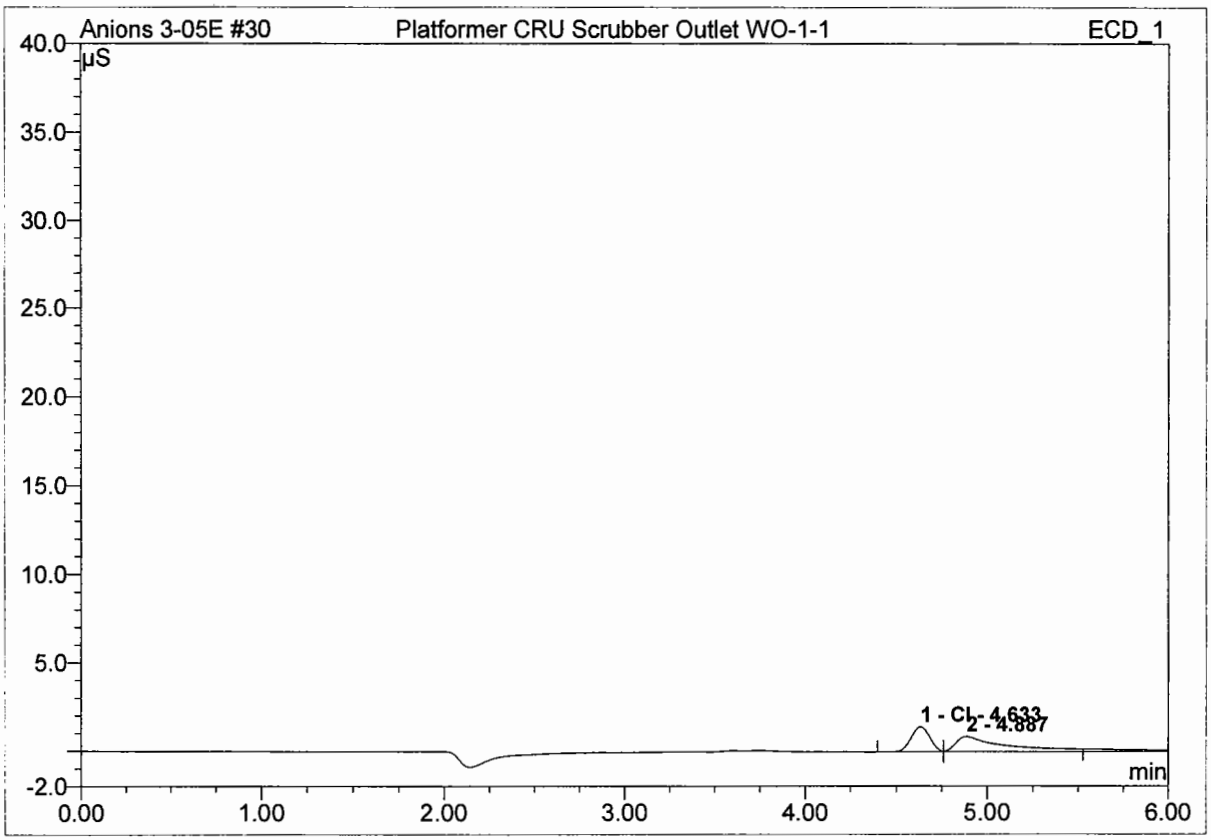
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 11:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	1.414	0.166
Total:			1.414	0.166

30 Platformer CRU Scrubber Outlet WO-1-1

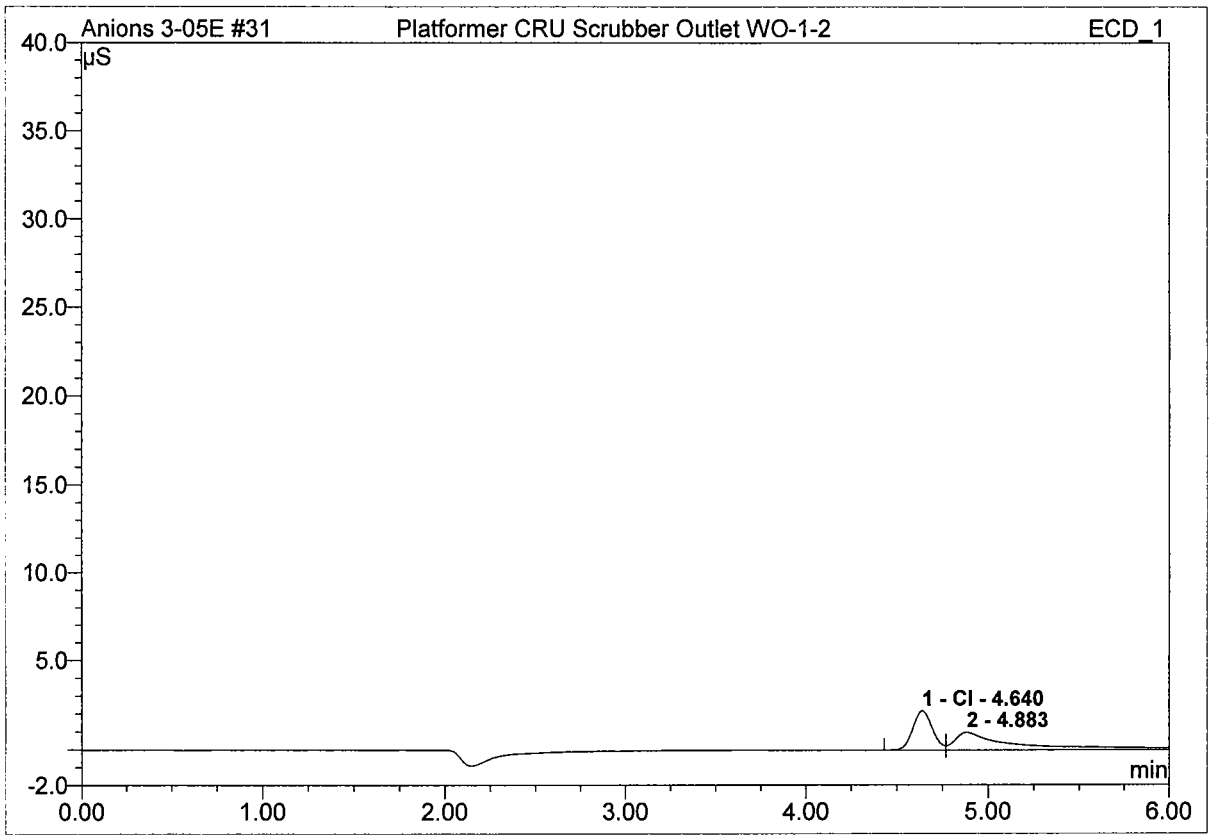
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 12:13**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.63	Cl	1.426	0.169
Total:			1.426	0.169

31 Platformer CRU Scrubber Outlet WO-1-2

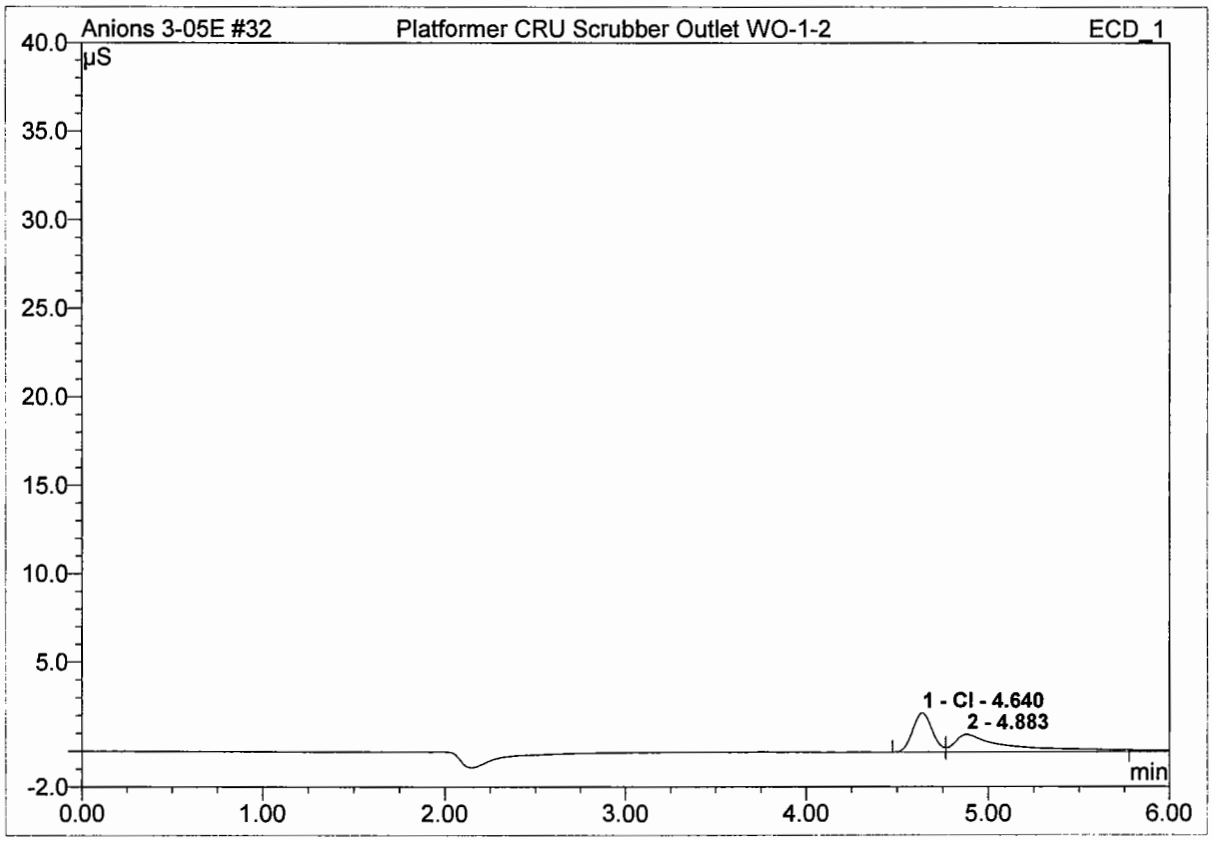
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 12:31**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	2.200	0.276
Total:			2.200	0.276

32 Platformer CRU Scrubber Outlet WO-1-2

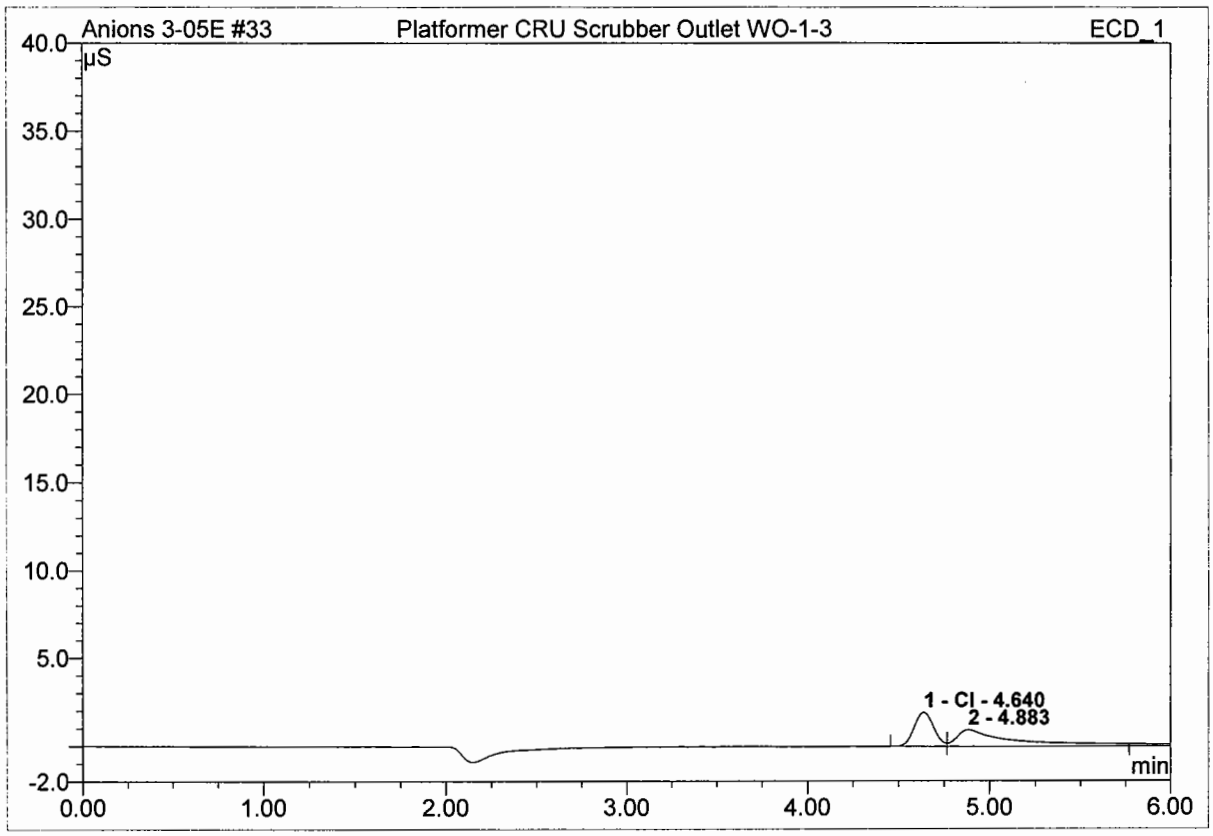
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 12:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	2.203	0.274
Total:			2.203	0.274

33 Platformer CRU Scrubber Outlet WO-1-3

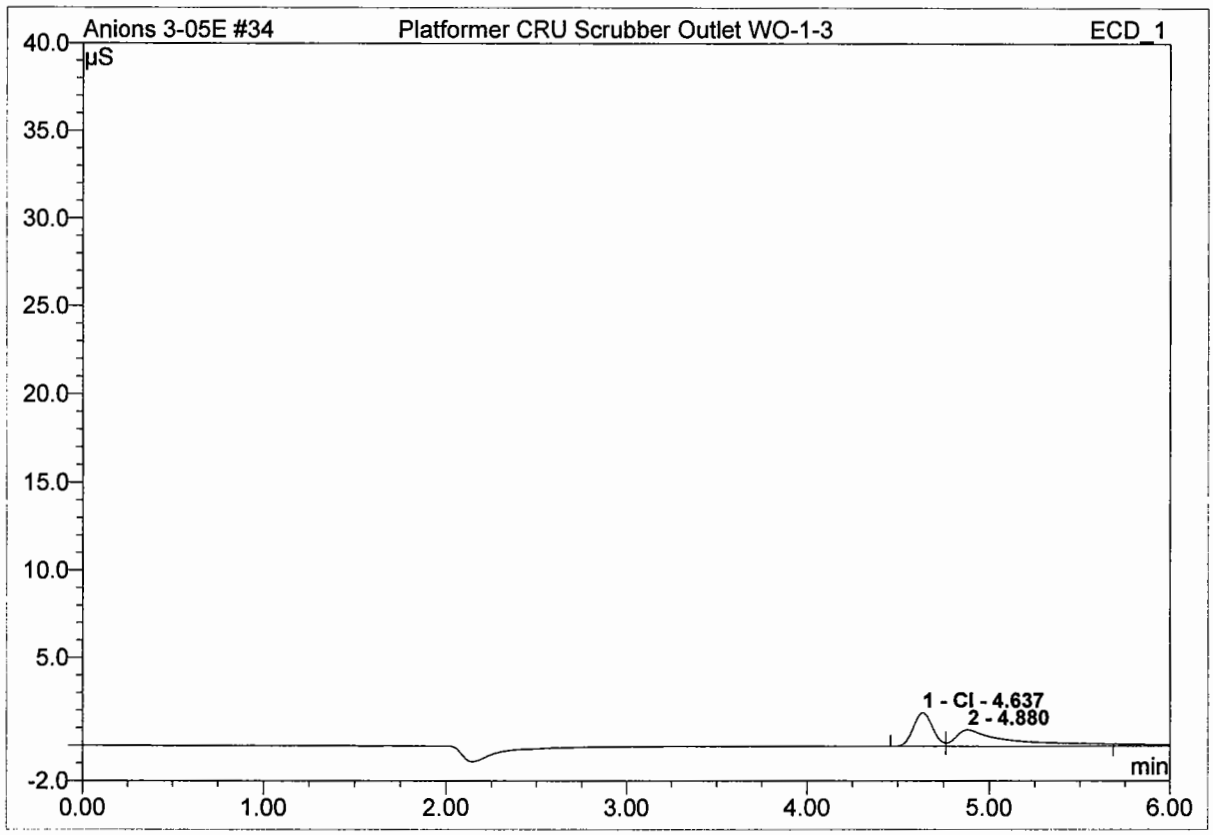
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 13:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	1.925	0.236
Total:			1.925	0.236

34 Platformer CRU Scrubber Outlet WO-1-3

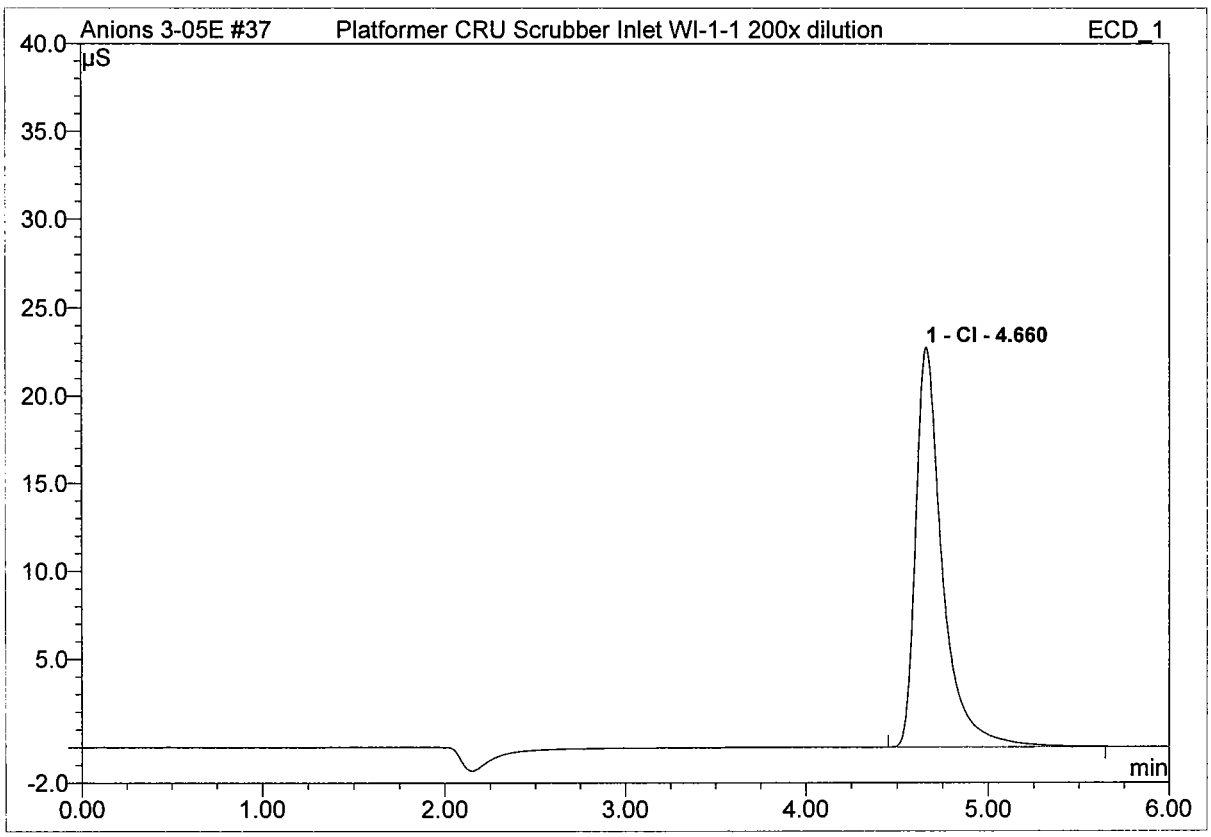
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 13:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	1.922	0.236
Total:			1.922	0.236

37 Platformer CRU Scrubber Inlet WI-1-1 200x dilution

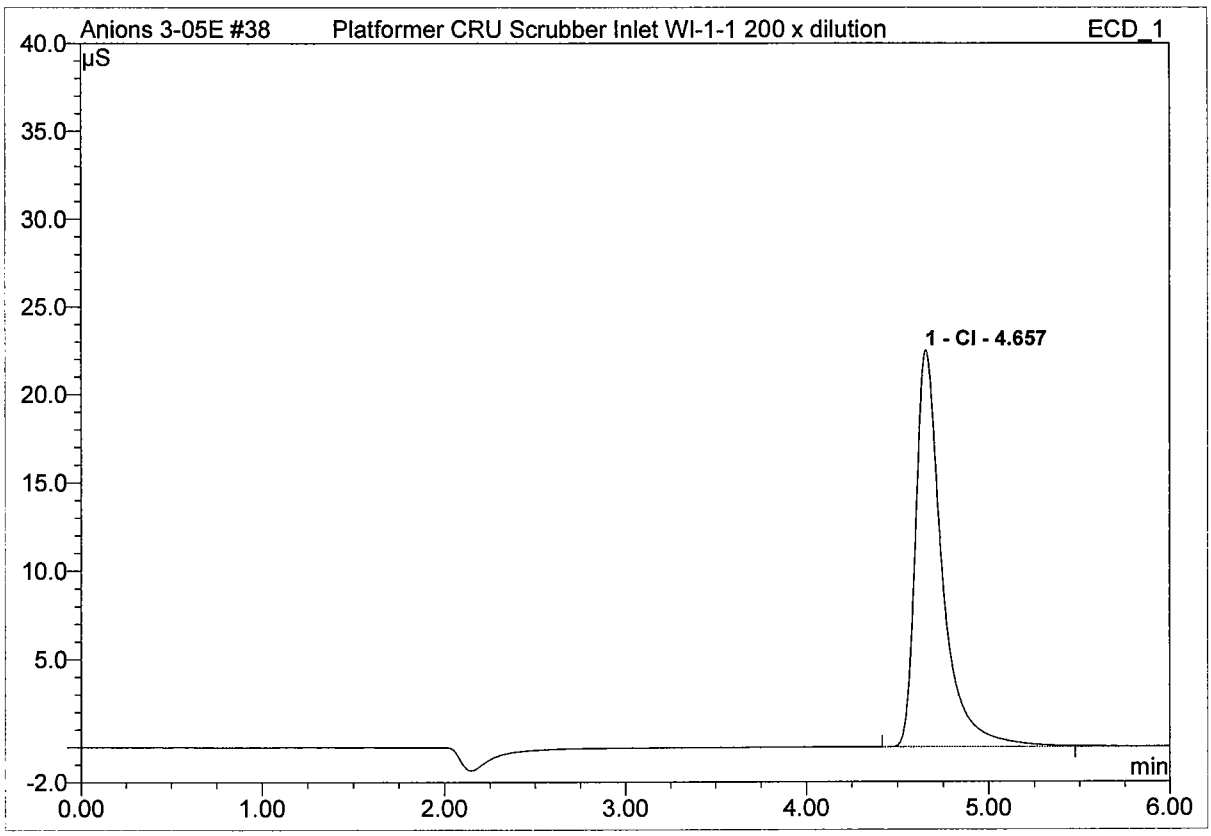
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 15:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	22.760	3.830
Total:			22.760	3.830

38 Platformer CRU Scrubber Inlet WI-1-1 200 x dilution

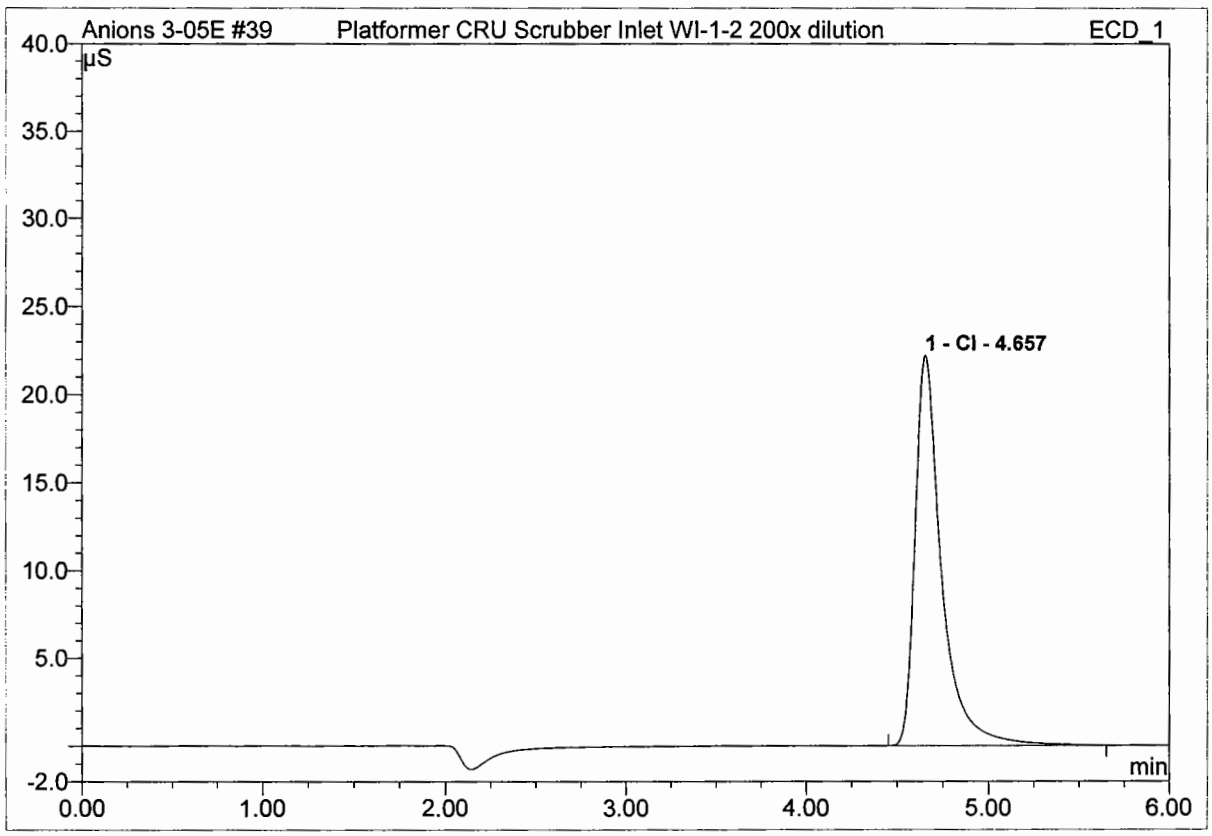
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 15:50**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	22.504	3.791
Total:			22.504	3.791

39 Platformer CRU Scrubber Inlet WI-1-2 200x dilution

Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 16:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

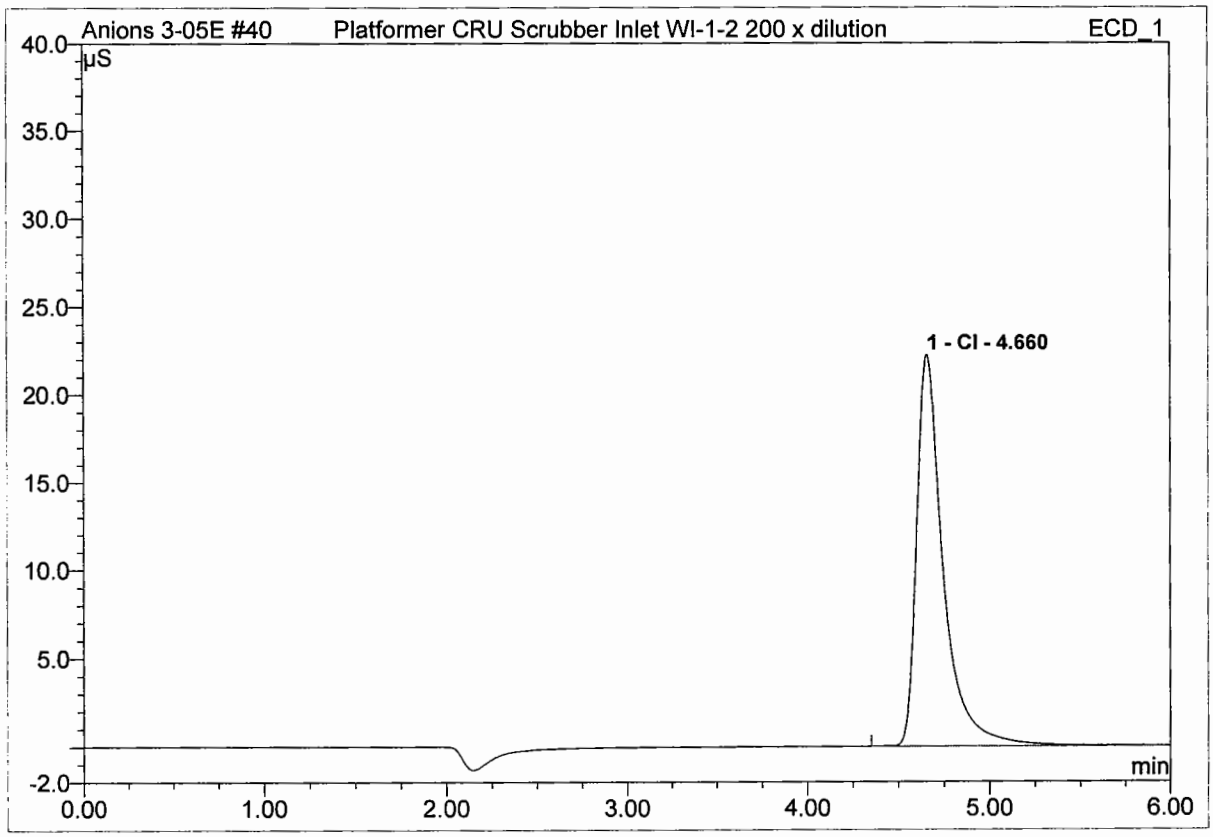


No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	22.220	3.756
Total:			22.220	3.756

Chromeleon (c) Dionex 1996-2001
Version 6.60 SP2 Build 1472

40 Platformer CRU Scrubber Inlet WI-1-2 200 x dilution

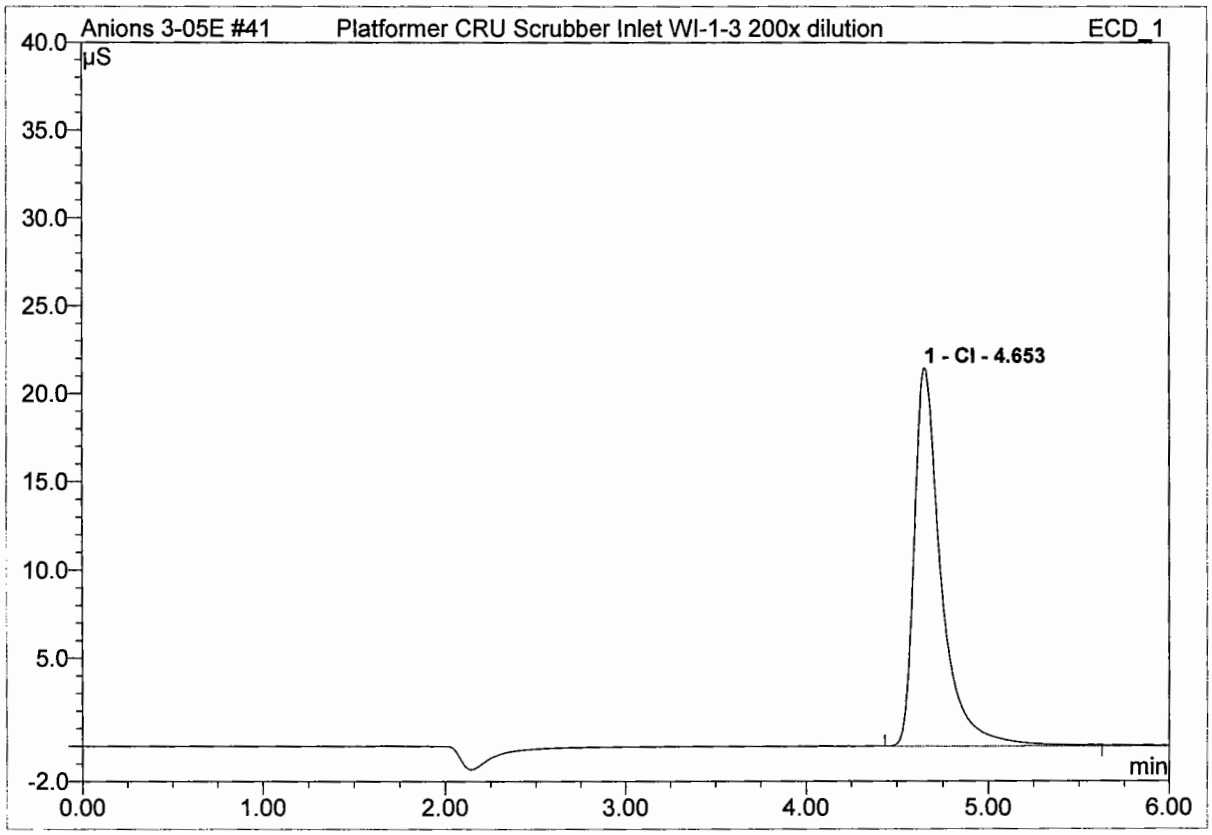
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 16:39**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	22.246	3.855
Total:			22.246	3.855

41 Platformer CRU Scrubber Inlet WI-1-3 200x dilution

Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 17:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

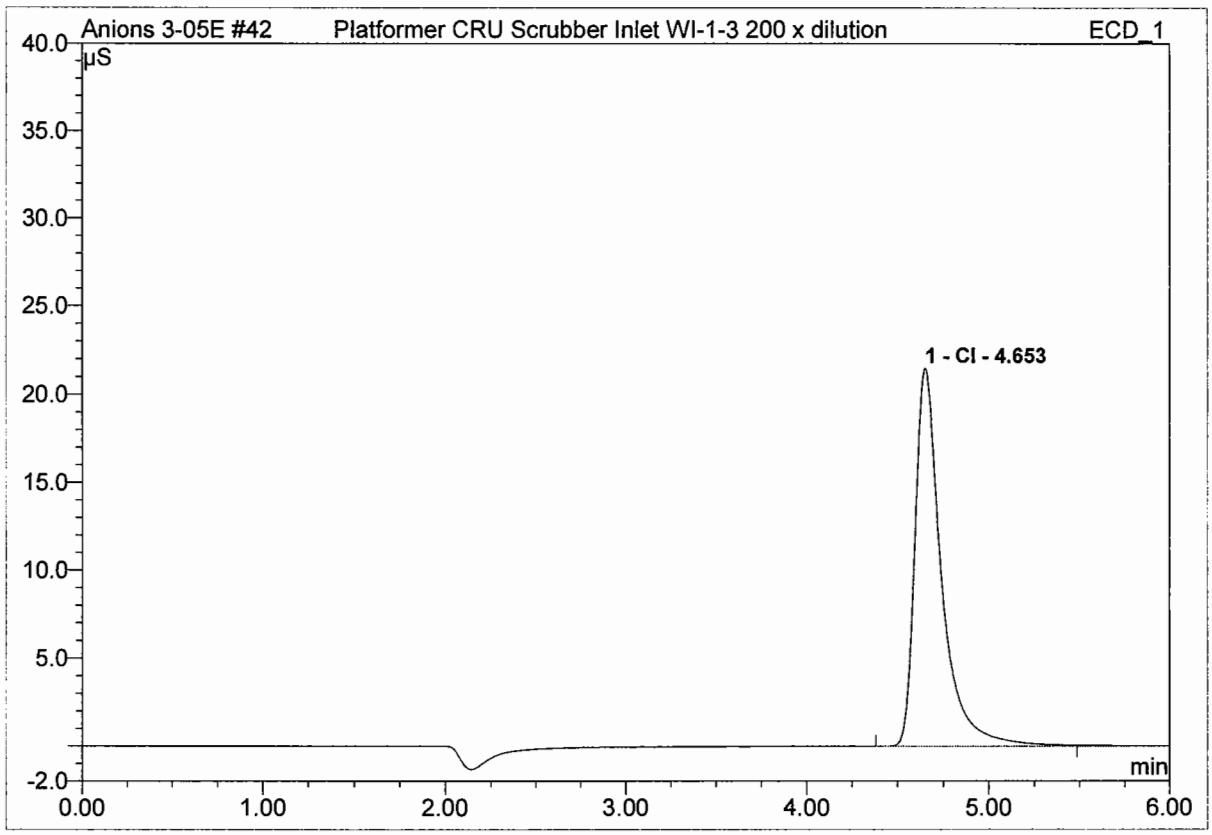


No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.65	Cl	21.492	3.639
Total:			21.492	3.639

Chromeleon (c) Dionex 1996-2001
Version 6.60 SP2 Build 1472

42 Platformer CRU Scrubber Inlet WI-1-3 200 x dilution

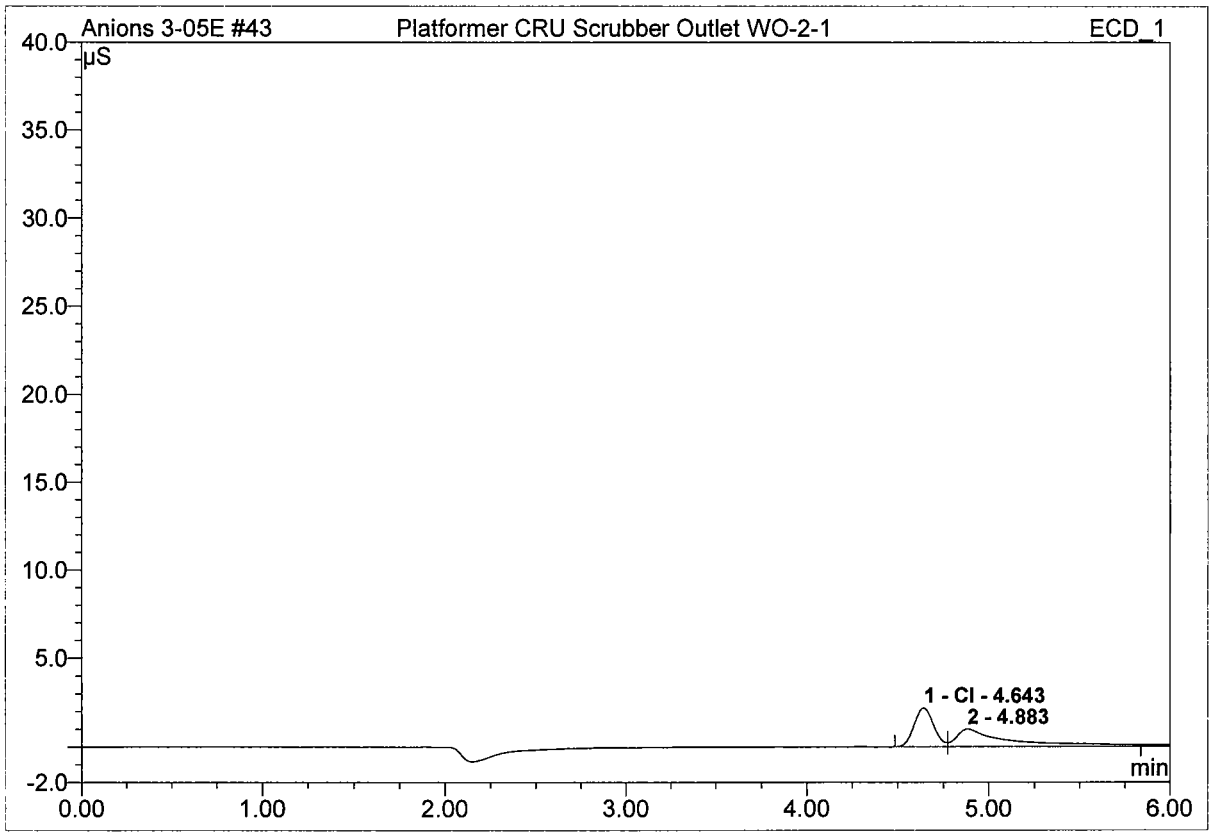
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 17:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.65	Cl	21.504	3.628
Total:			21.504	3.628

43 Platformer CRU Scrubber Outlet WO-2-1

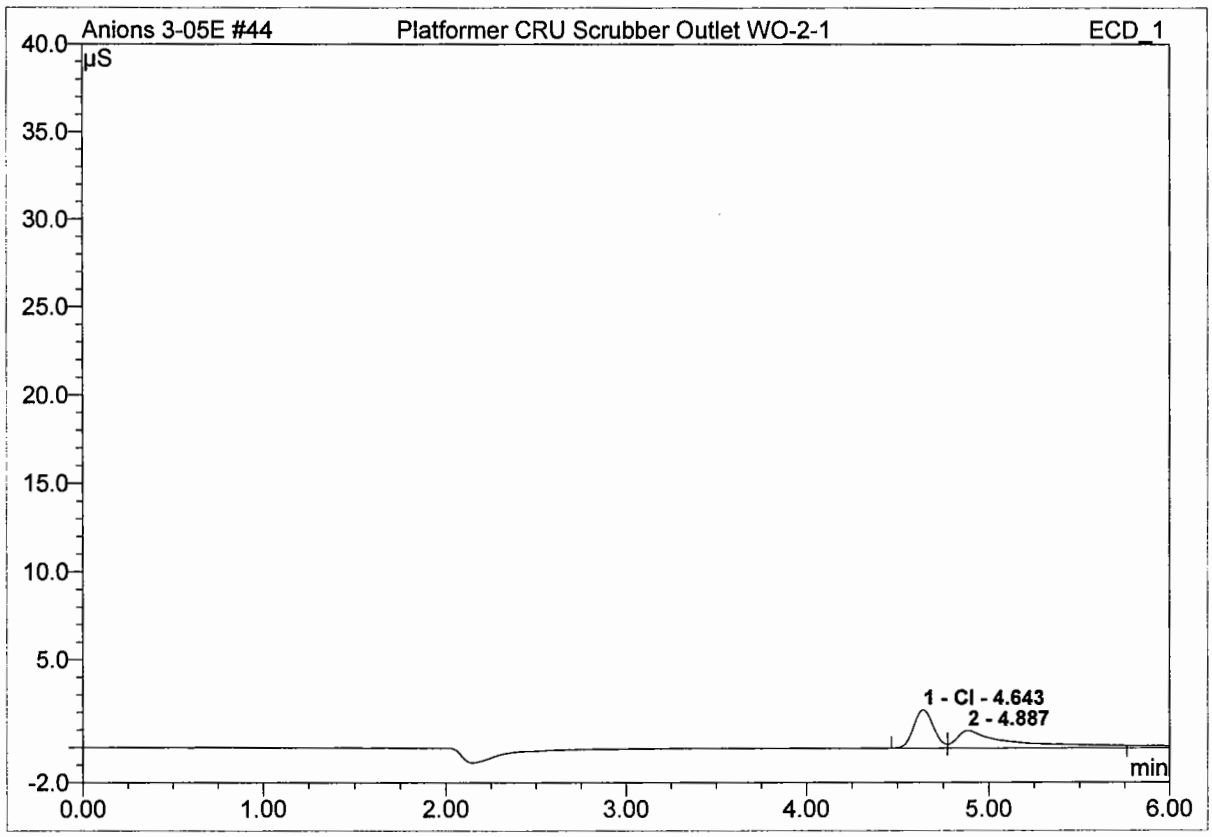
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 17:48**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	2.193	0.273
Total:			2.193	0.273

44 Platformer CRU Scrubber Outlet WO-2-1

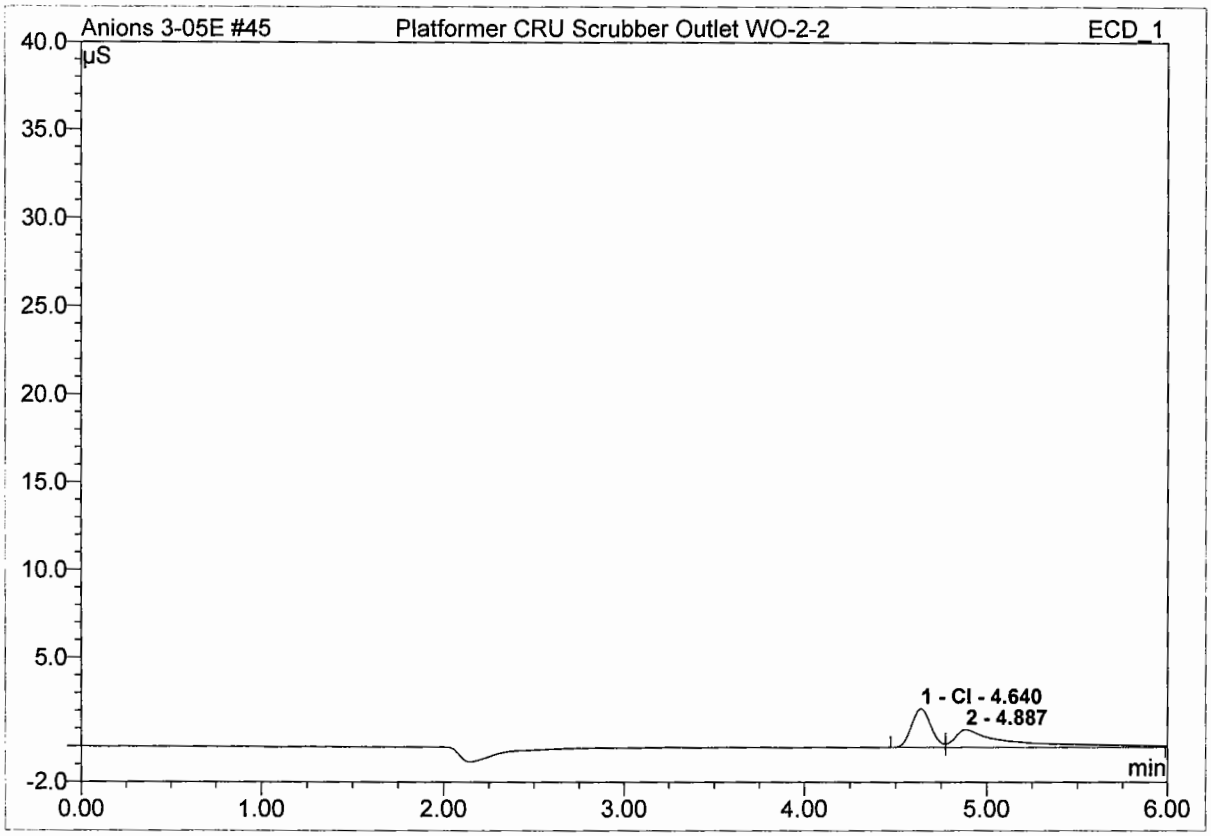
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 18:06**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	2.193	0.275
Total:			2.193	0.275

45 Platformer CRU Scrubber Outlet WO-2-2

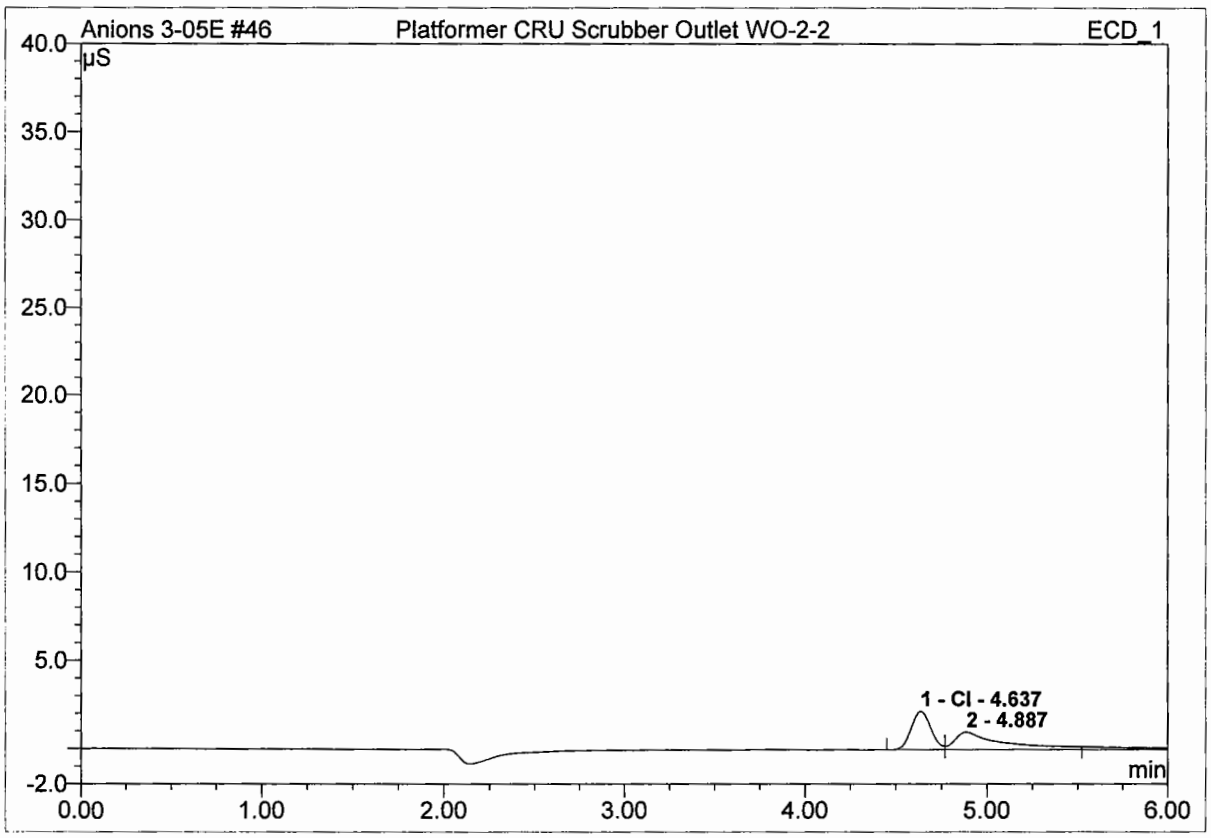
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 18:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	2.177	0.273
Total:			2.177	0.273

46 Platformer CRU Scrubber Outlet WO-2-2

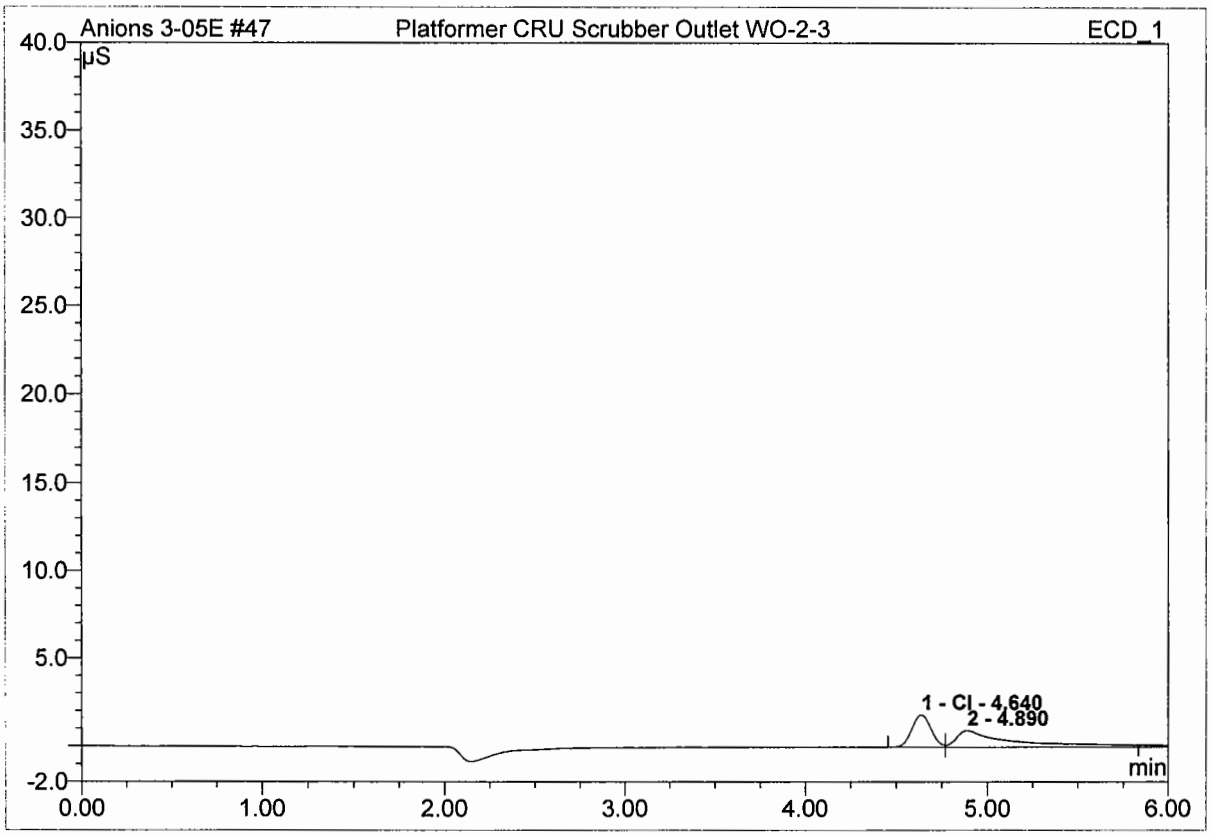
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 18:43**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	2.188	0.274
Total:			2.188	0.274

47 Platformer CRU Scrubber Outlet WO-2-3

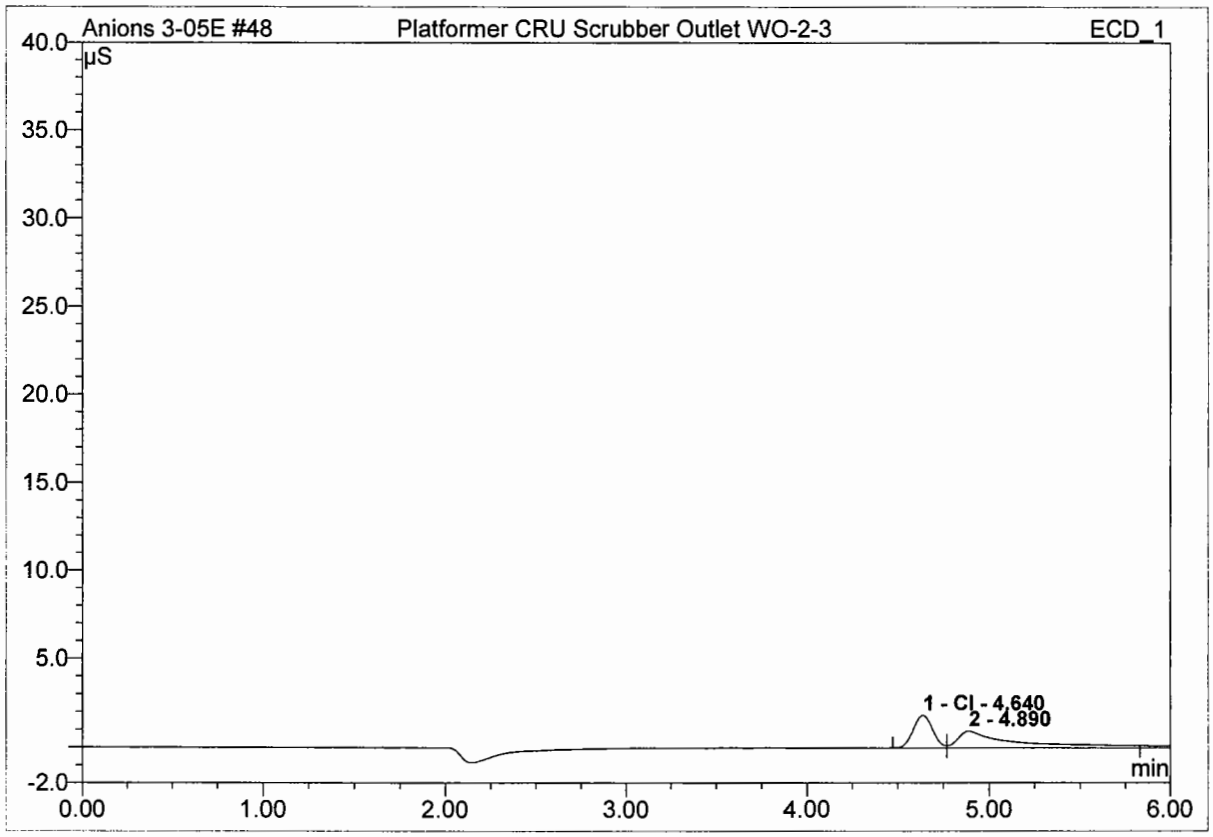
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 19:01**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	1.832	0.226
Total:			1.832	0.226

48 Platformer CRU Scrubber Outlet WO-2-3

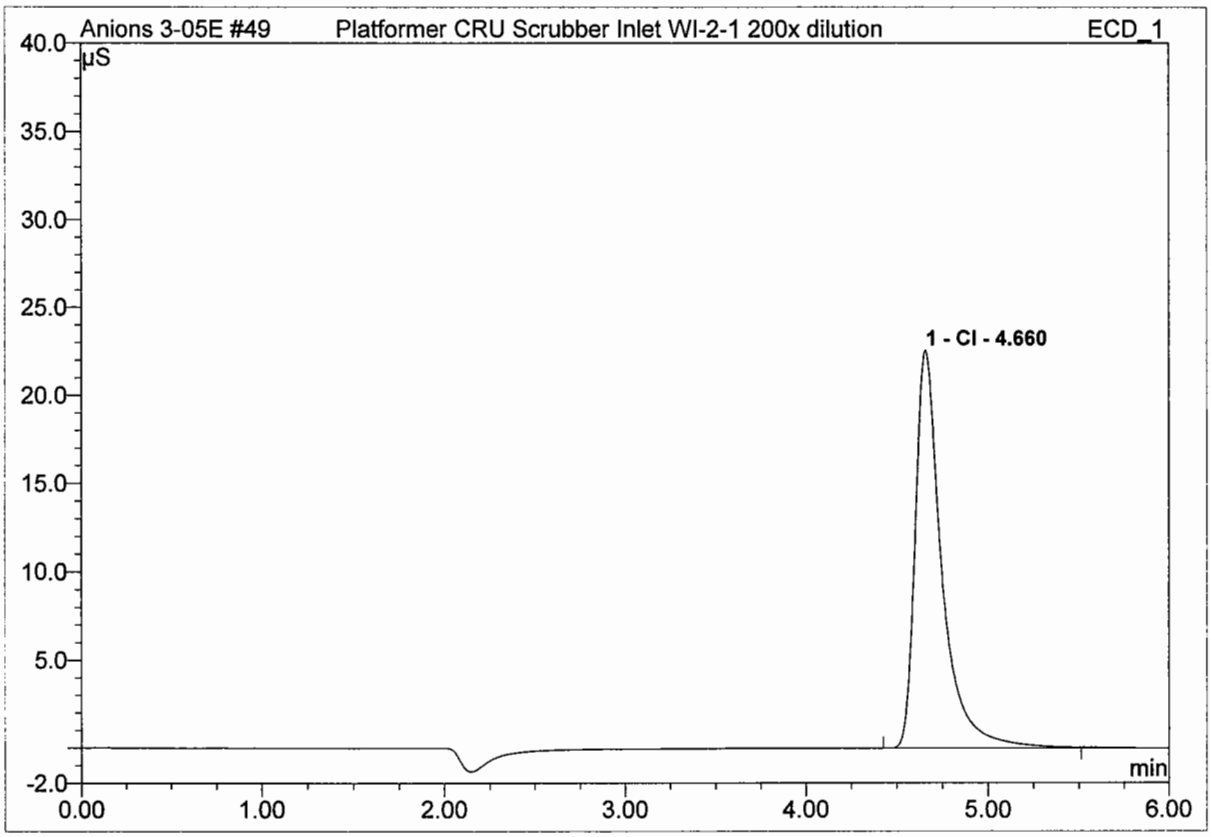
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 19:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	1.831	0.225
Total:			1.831	0.225

49 Platformer CRU Scrubber Inlet WI-2-1 200x dilution

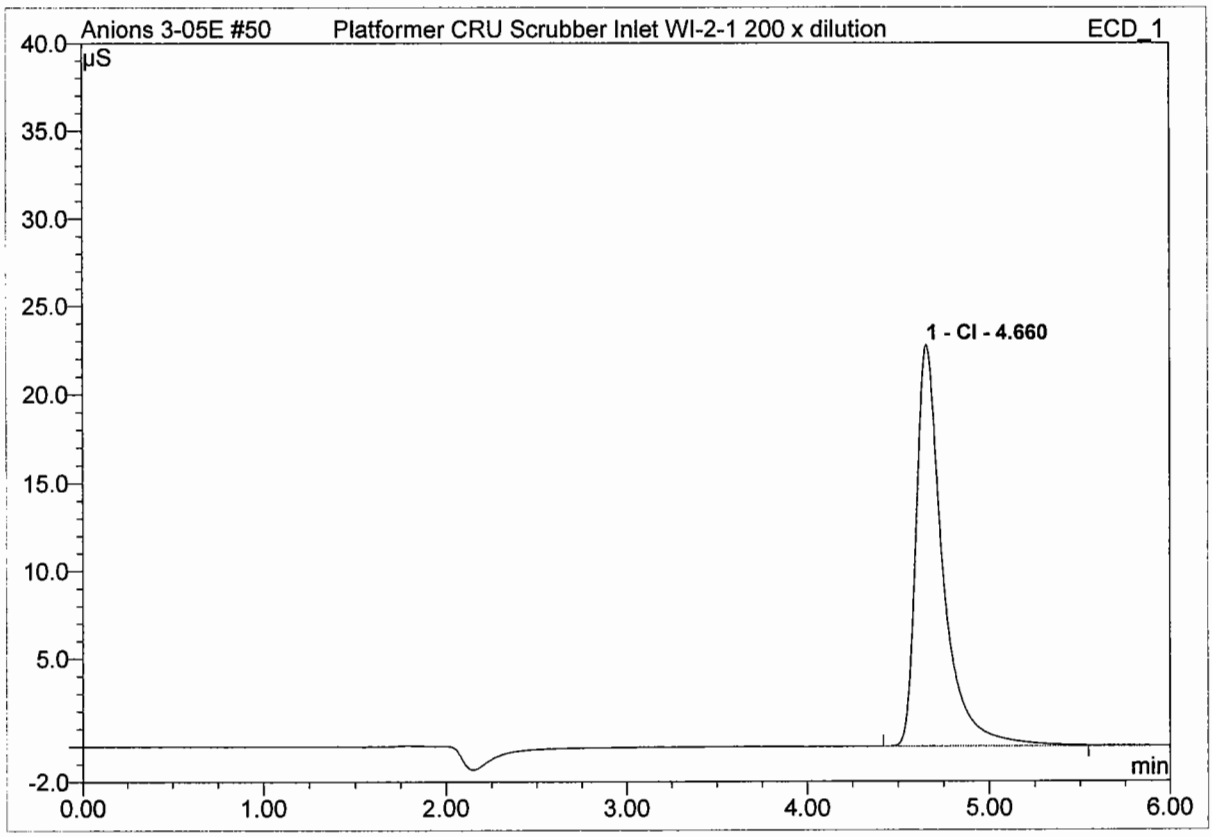
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 19:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	22.576	3.851
Total:			22.576	3.851

50 Platformer CRU Scrubber Inlet WI-2-1 200 x dilution

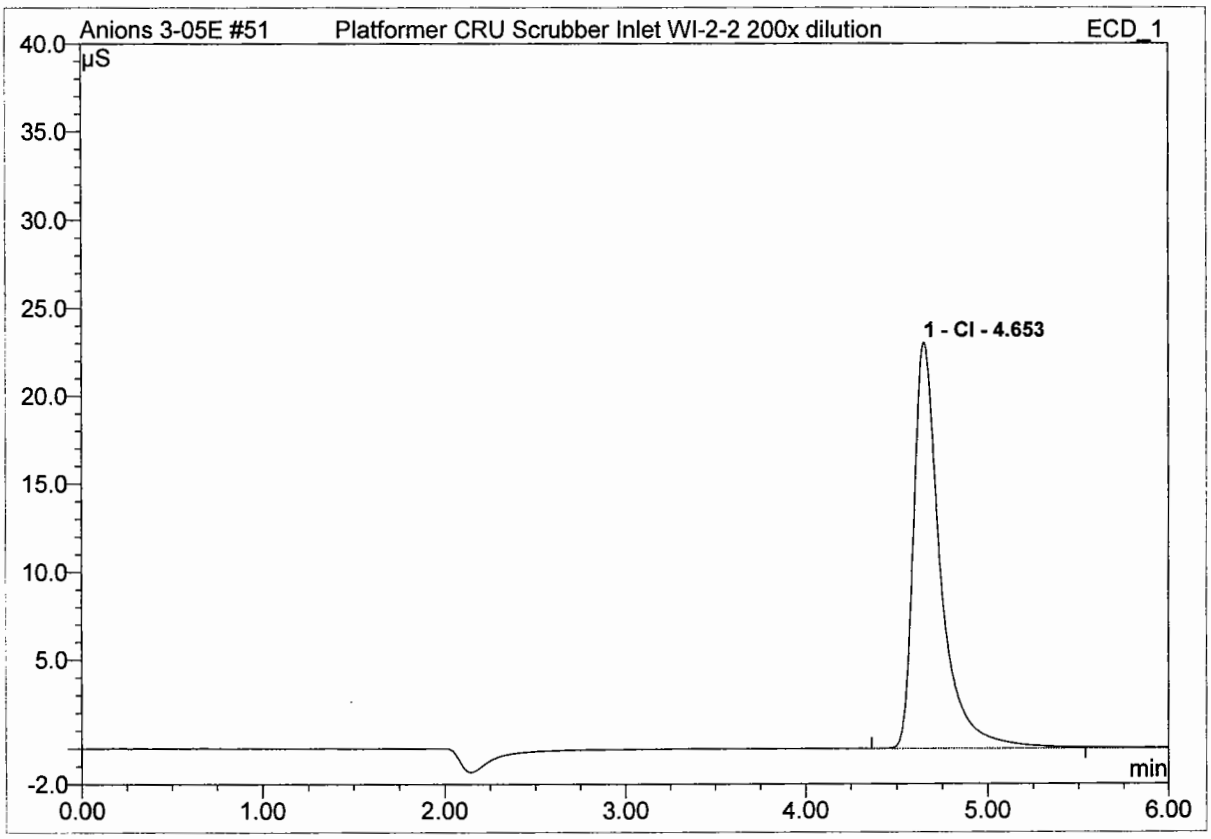
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 19:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	22.783	3.887
Total:			22.783	3.887

51 Platformer CRU Scrubber Inlet WI-2-2 200x dilution

Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 20:13**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.65	Cl	23.067	3.934
Total:			23.067	3.934

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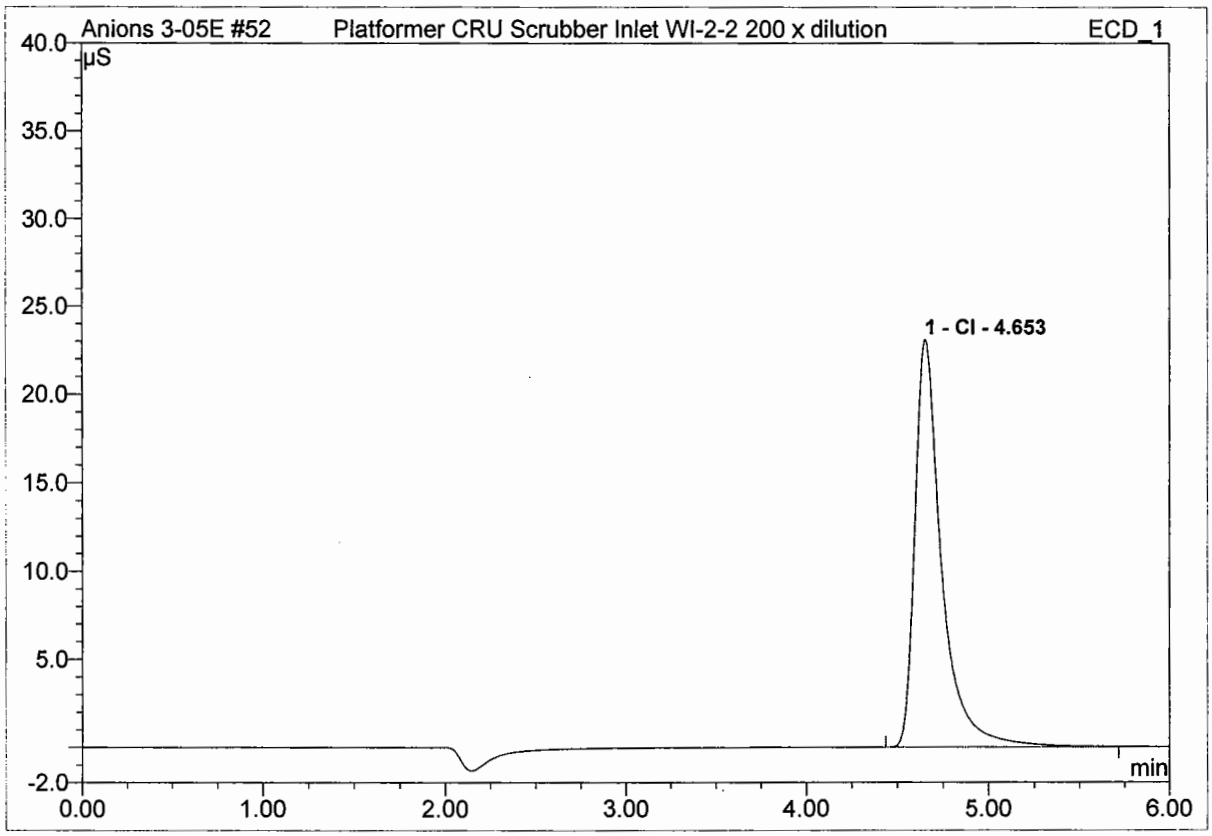
52 Platformer CRU Scrubber Inlet WI-2-2 200 x dilution

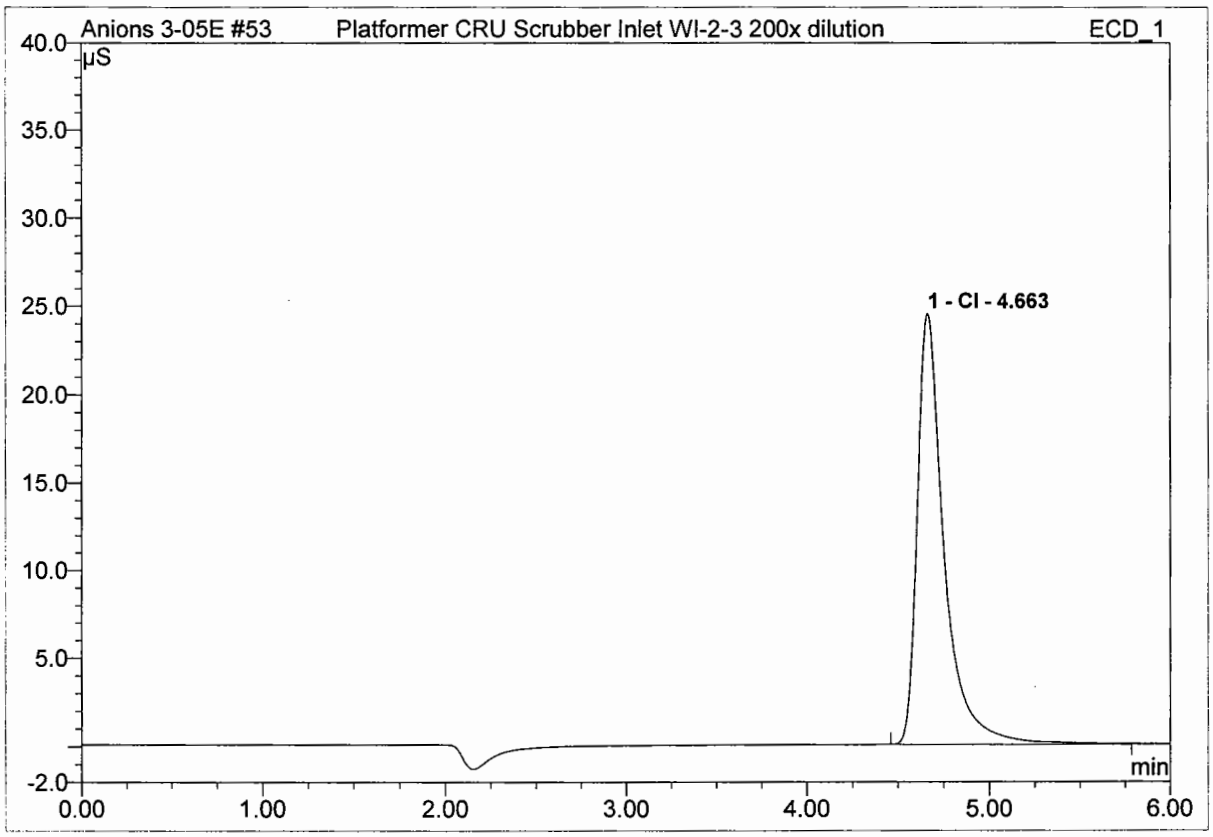
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 20:31**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.65	Cl	23.095	3.941
Total:			23.095	3.941

53 Platformer CRU Scrubber Inlet WI-2-3 200x dilution

Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 20:49**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	24.490	4.170
Total:			24.490	4.170

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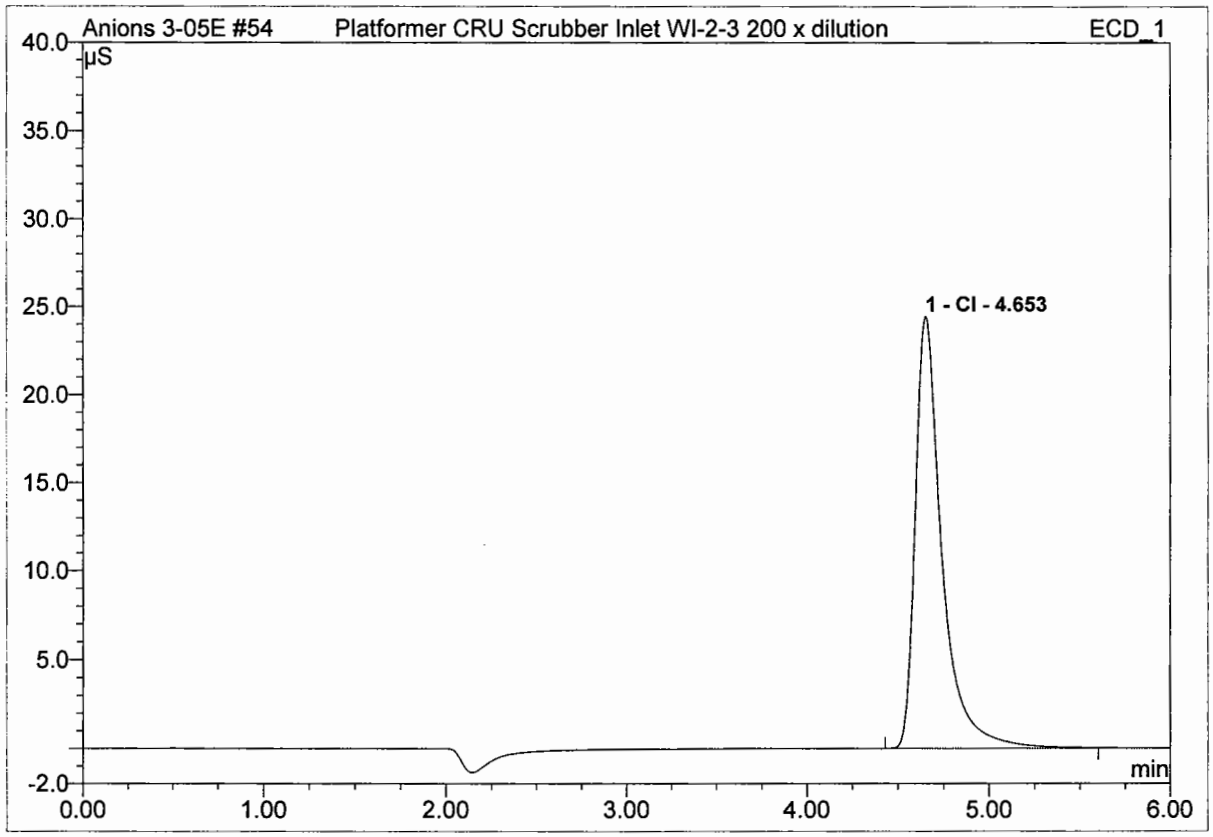
54 Platformer CRU Scrubber Inlet WI-2-3 200 x dilution

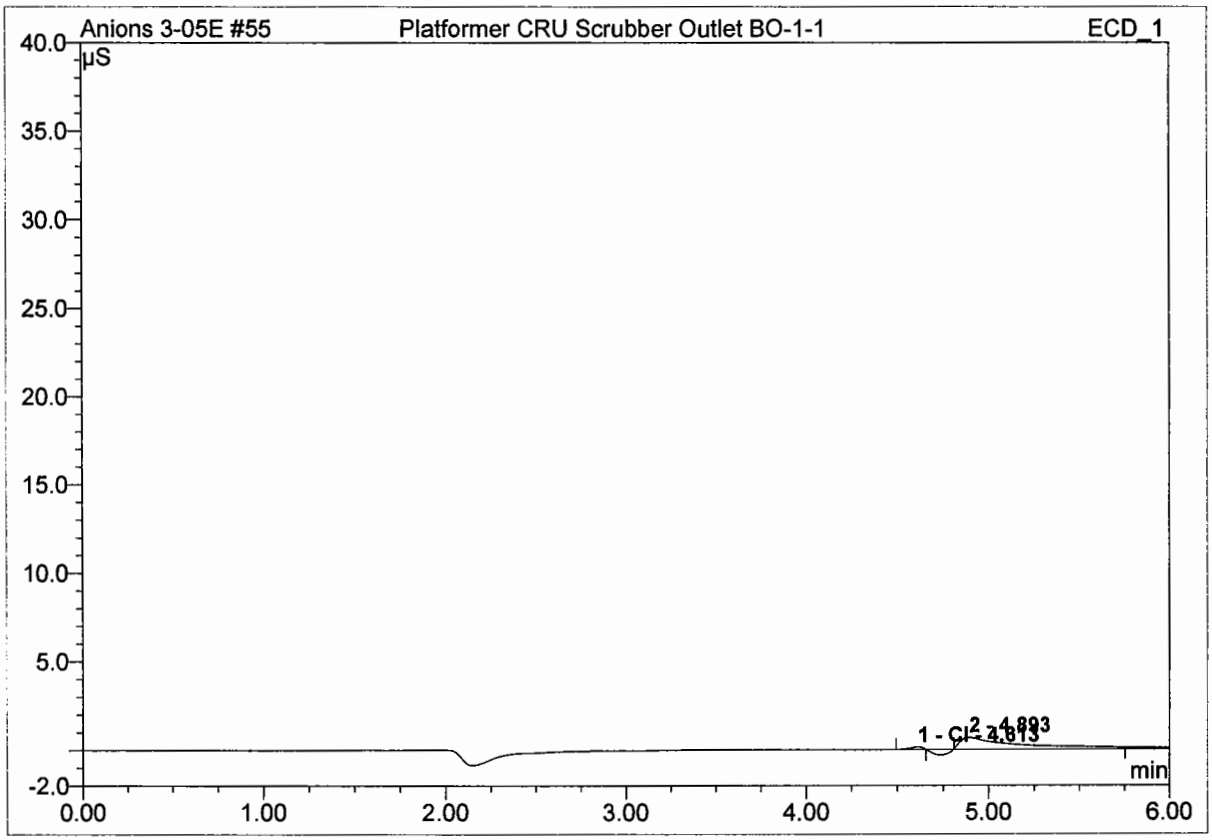
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 8:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.65	Cl	24.470	4.149
Total:			24.470	4.149

55 Platformer CRU Scrubber Outlet BO-1-1

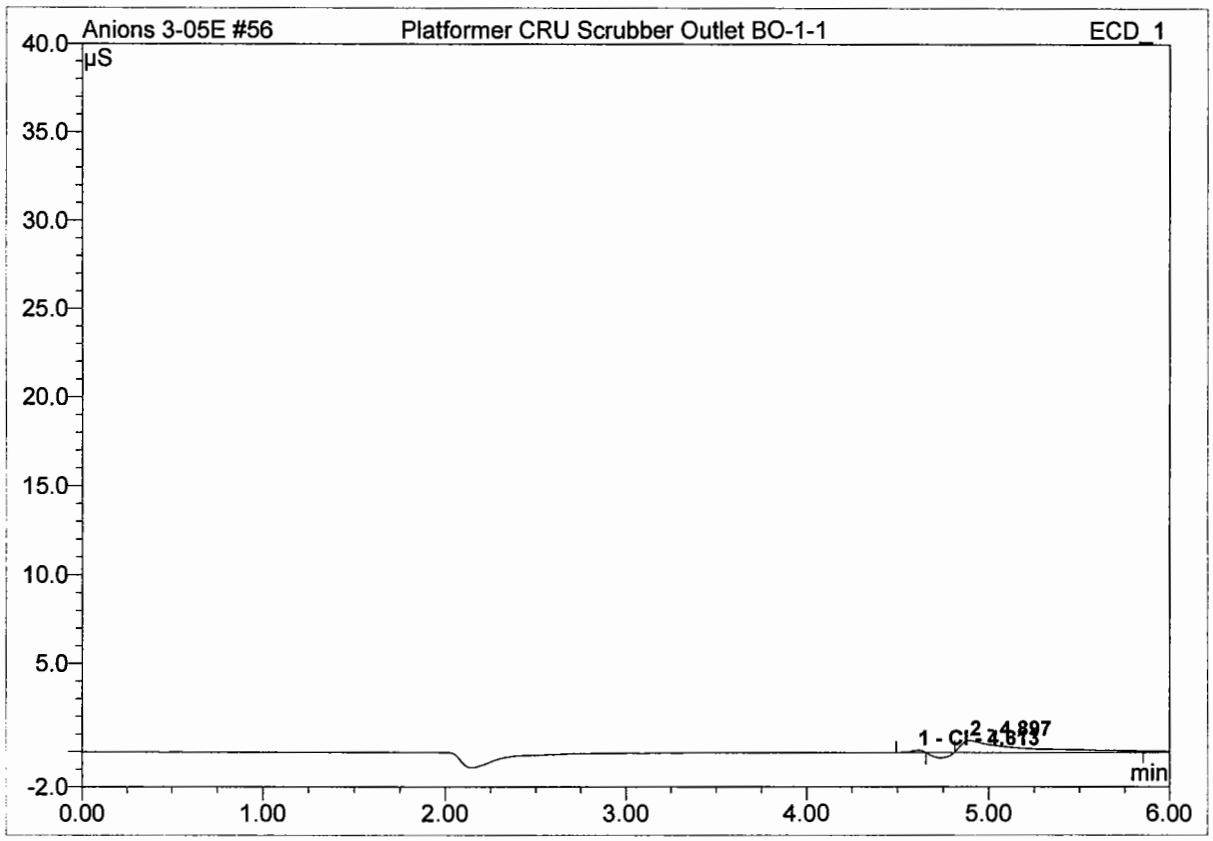
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 9:00**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.61	Cl	0.146	0.012
Total:			0.146	0.012

56 Platformer CRU Scrubber Outlet BO-1-1

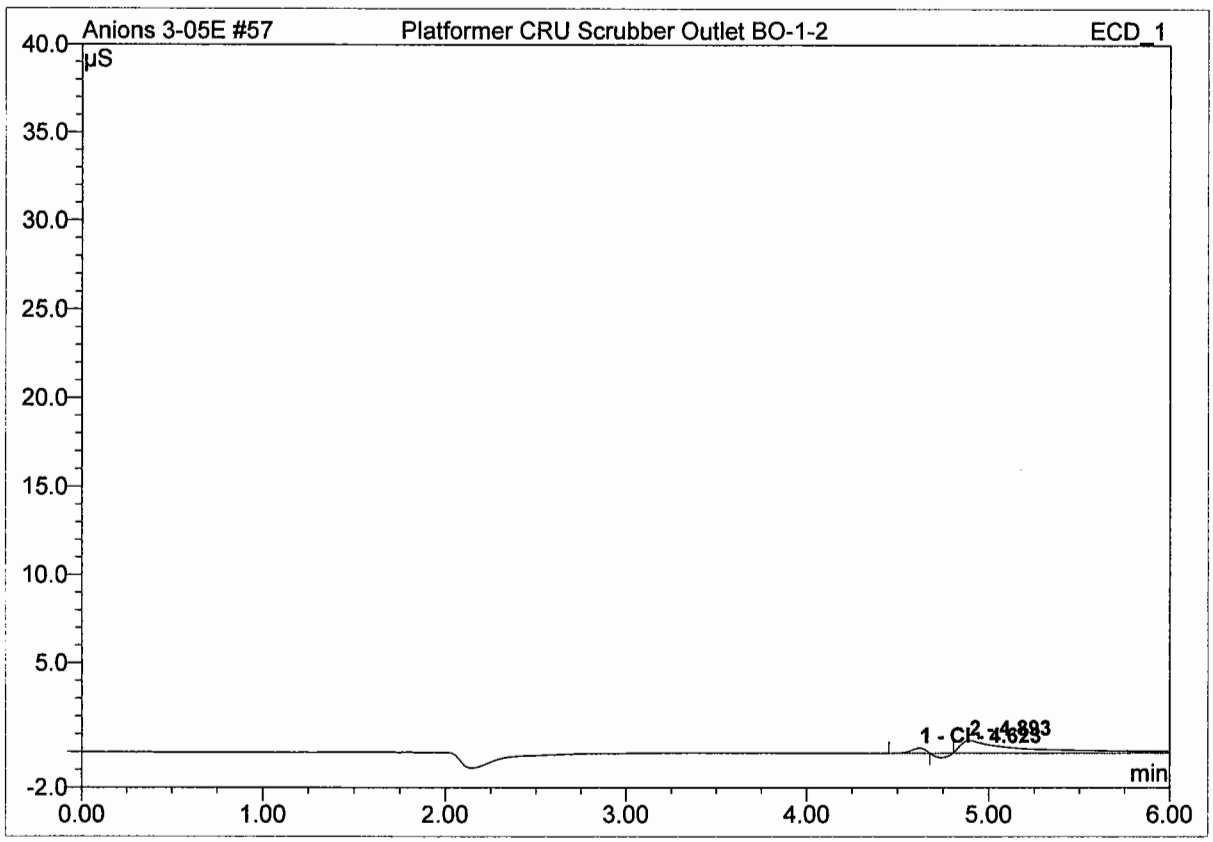
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 9:18**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.61	Cl	0.126	0.009
Total:			0.126	0.009

57 Platformer CRU Scrubber Outlet BO-1-2

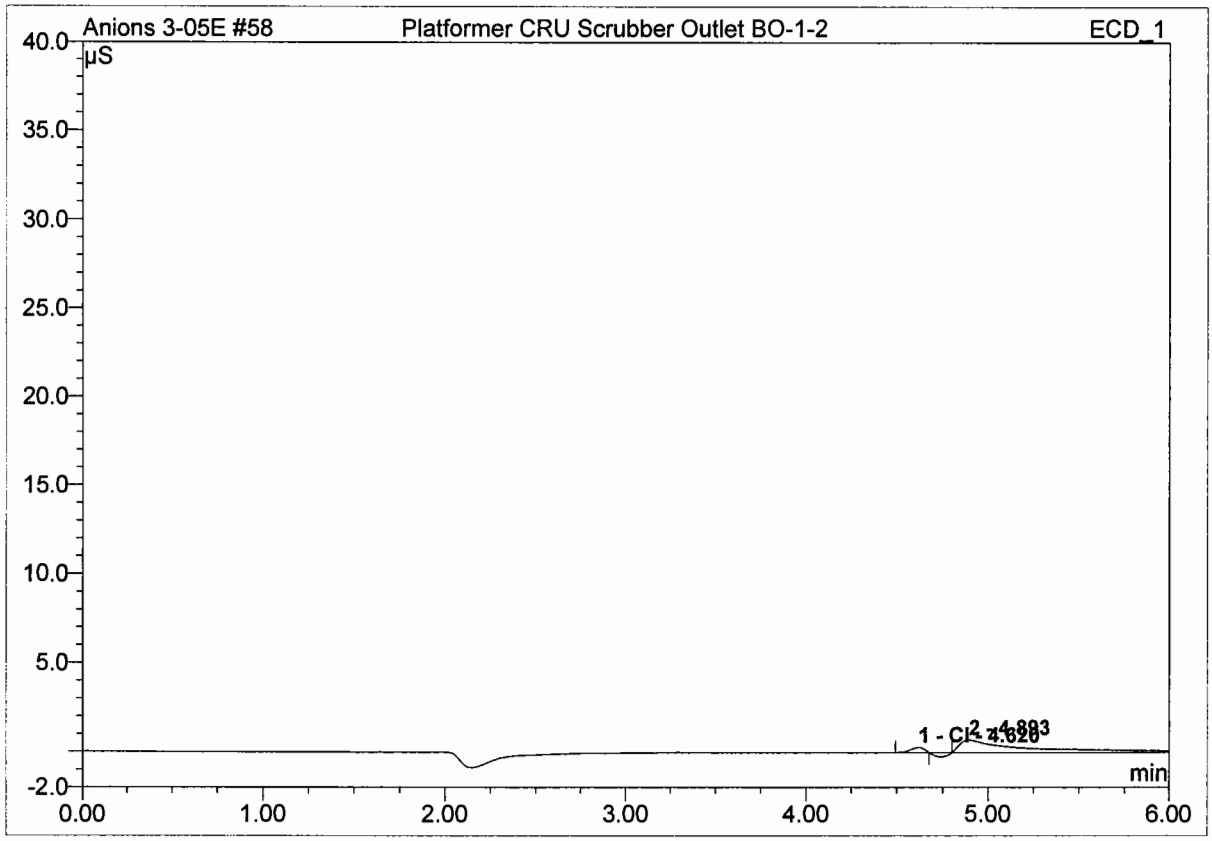
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 9:36**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.62	Cl	0.289	0.026
Total:			0.289	0.026

58 Platformer CRU Scrubber Outlet BO-1-2

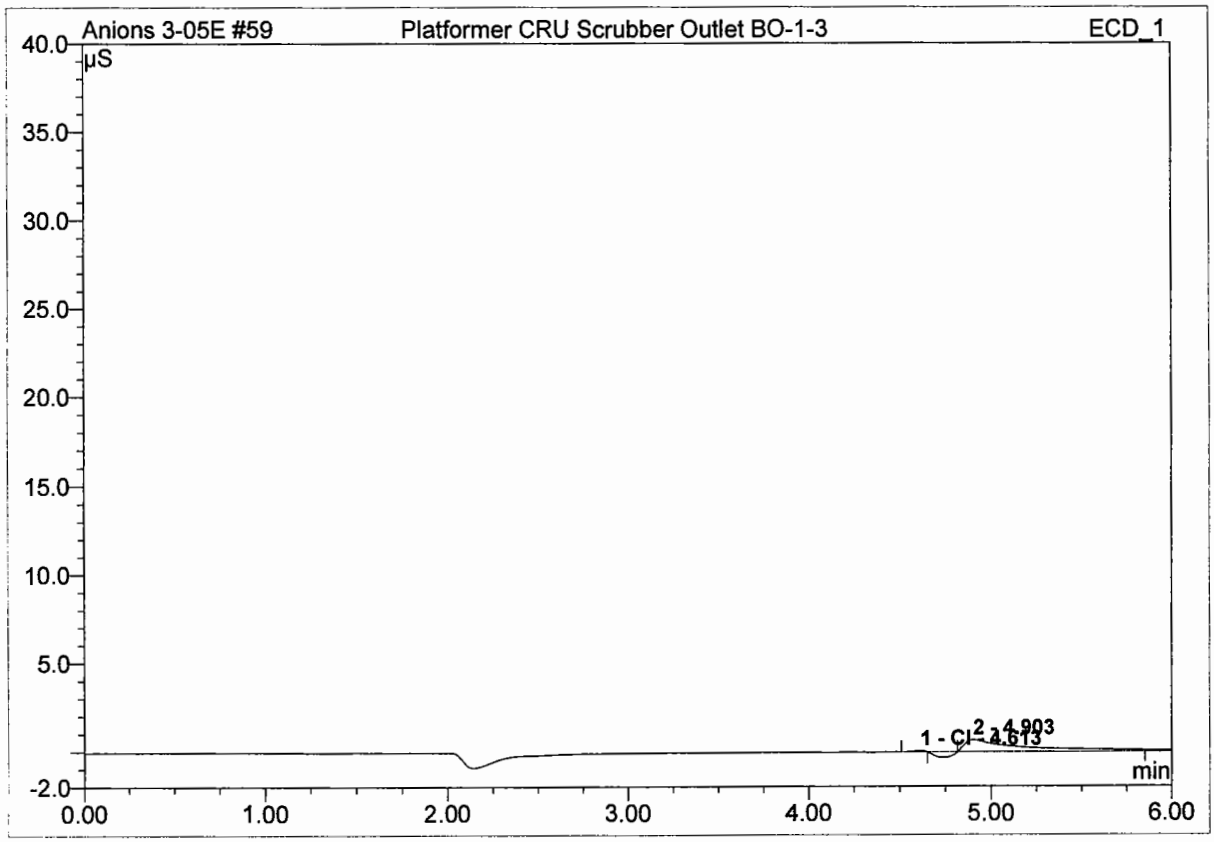
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 9:55**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.62	Cl	0.290	0.026
Total:			0.290	0.026

59 Platformer CRU Scrubber Outlet BO-1-3

Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 10:13**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.61	Cl	0.091	0.007
Total:			0.091	0.007

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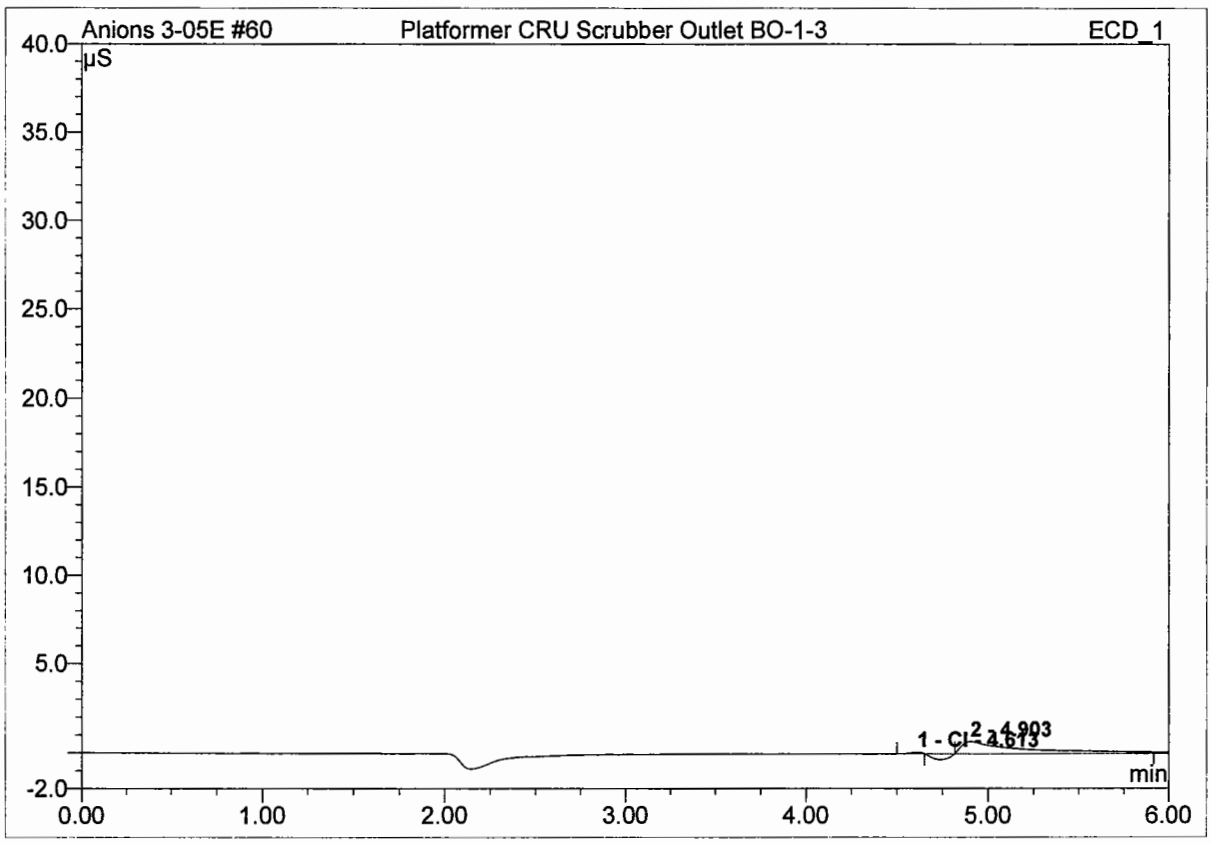
60 Platformer CRU Scrubber Outlet BO-1-3

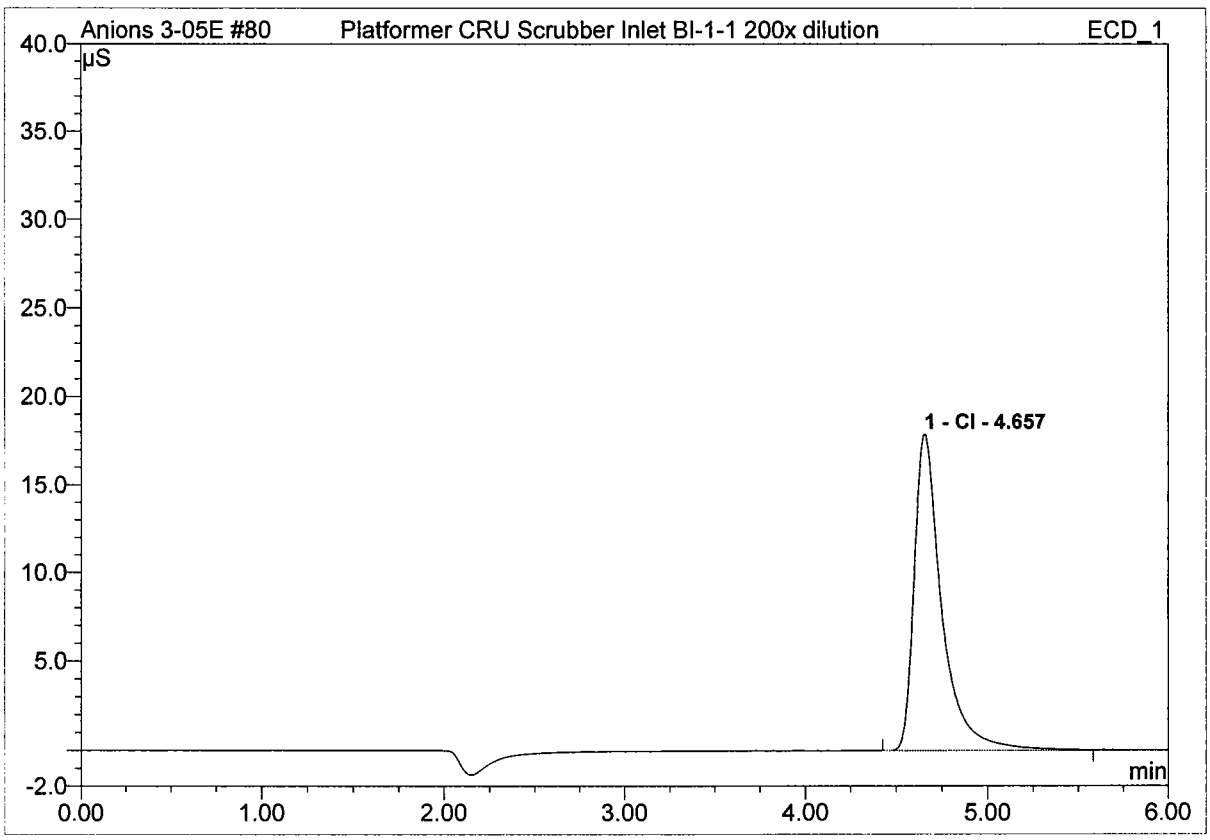
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 10:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.61	Cl	0.099	0.007
Total:			0.099	0.007

80 Platformer CRU Scrubber Inlet BI-1-1 200x dilution

Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 17:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	17.911	3.134
Total:			17.911	3.134

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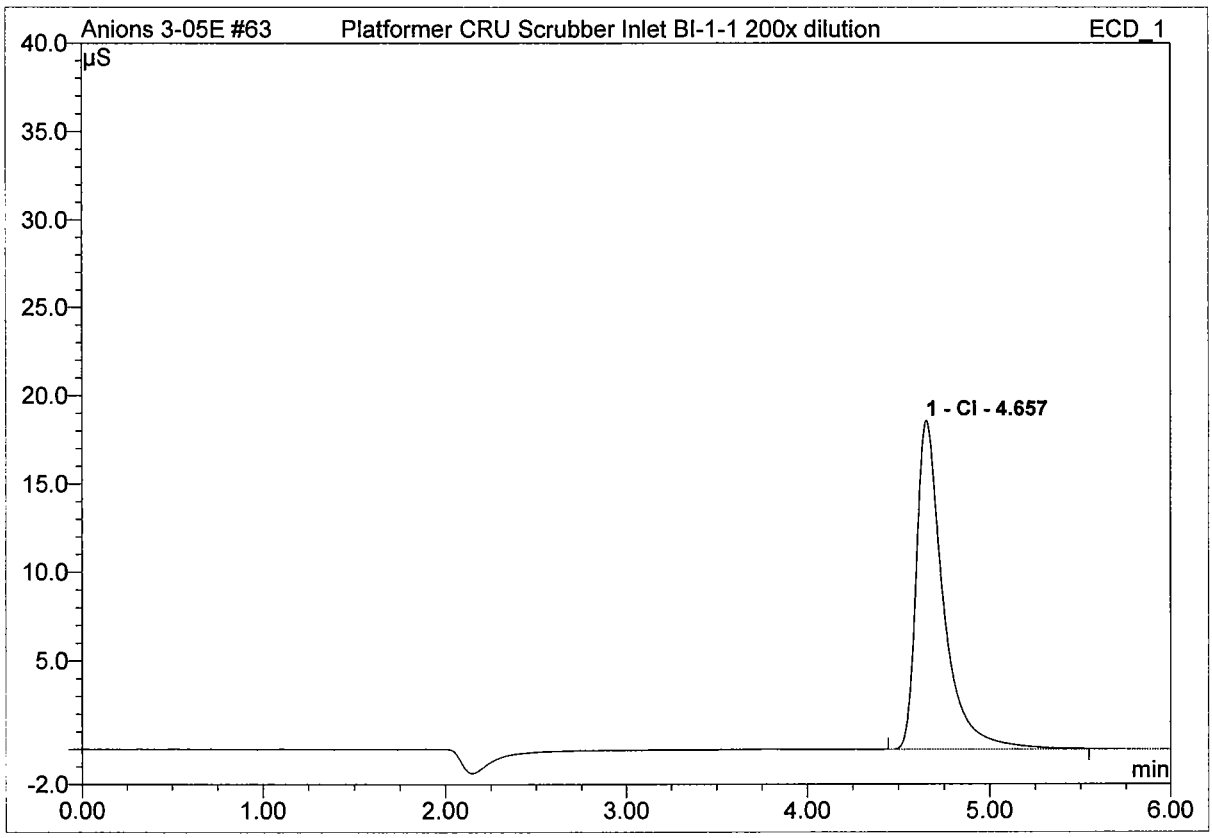
63 Platformer CRU Scrubber Inlet BI-1-1 200x dilution

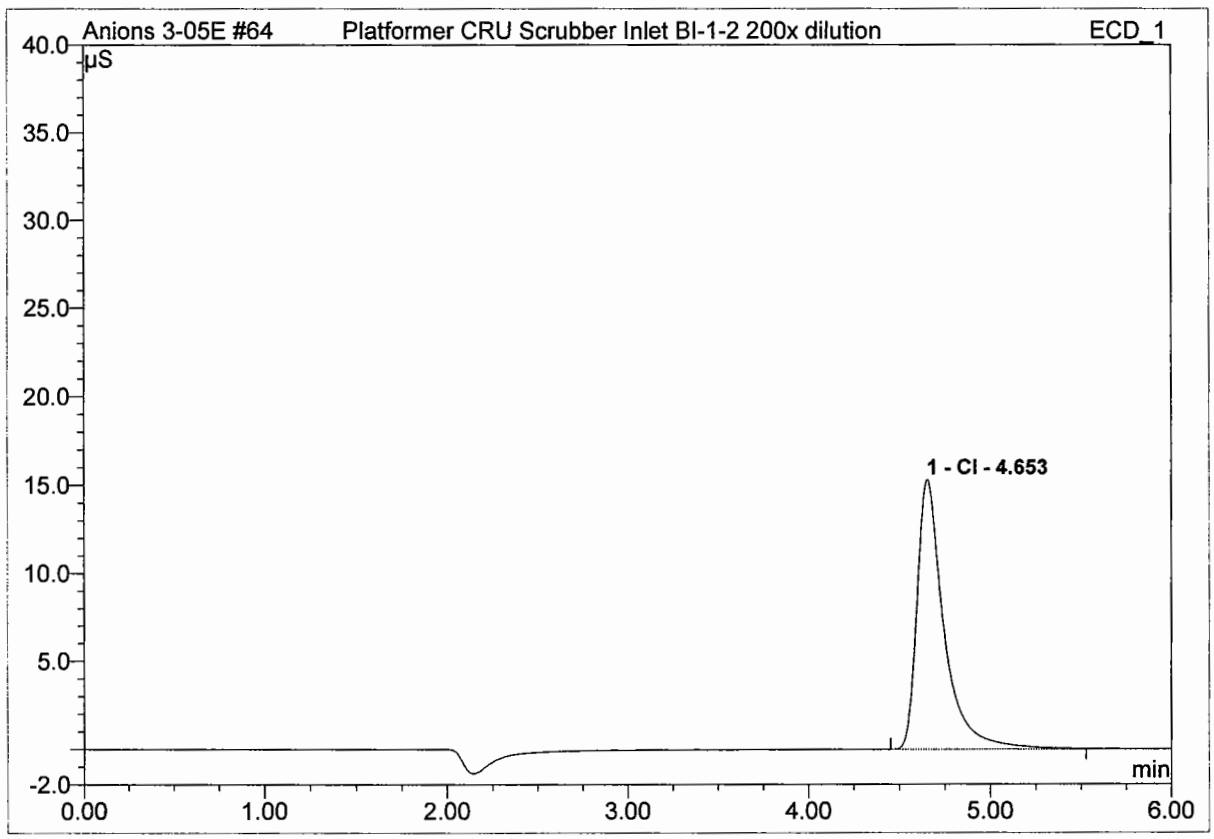
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 11:42**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	18.581	3.204
Total:			18.581	3.204

64 Platformer CRU Scrubber Inlet BI-1-2 200x dilution

Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 12:00**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.65	Cl	15.313	2.641
Total:			15.313	2.641

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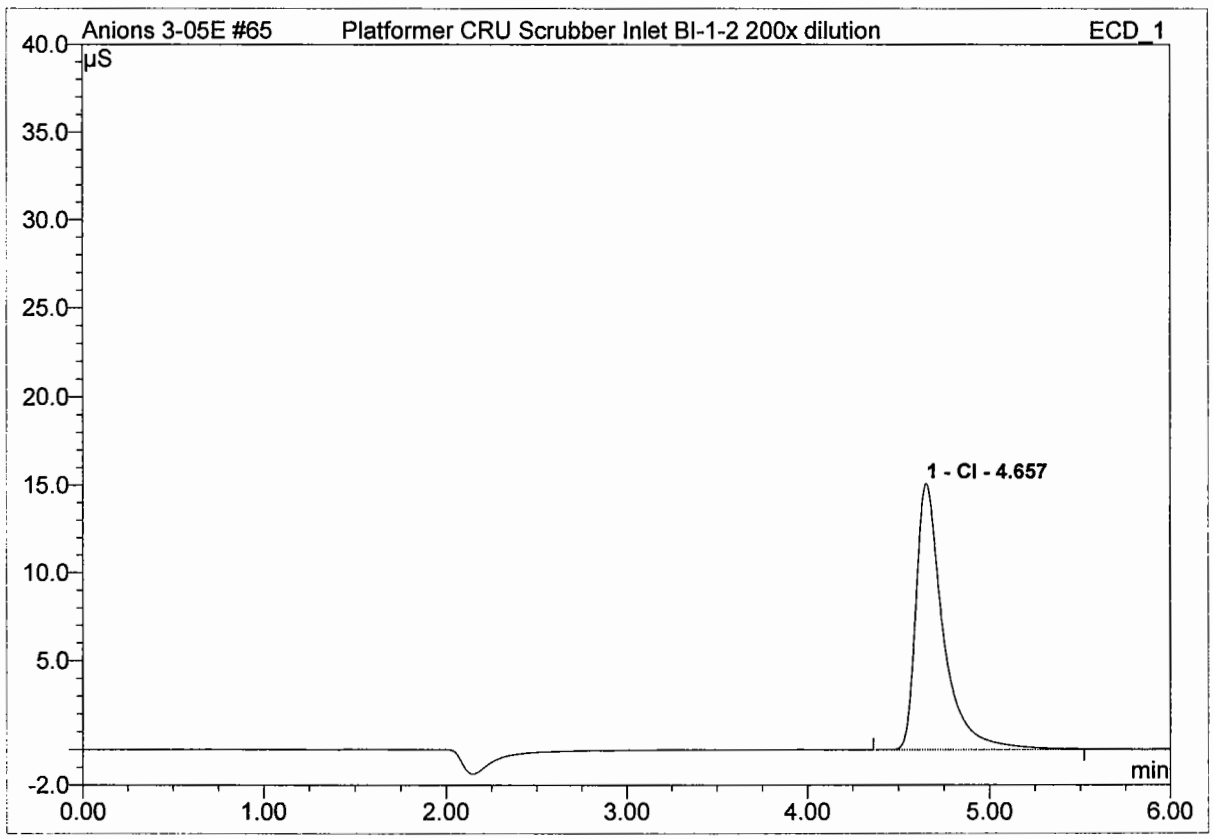
65 Platformer CRU Scrubber Inlet BI-1-2 200x dilution

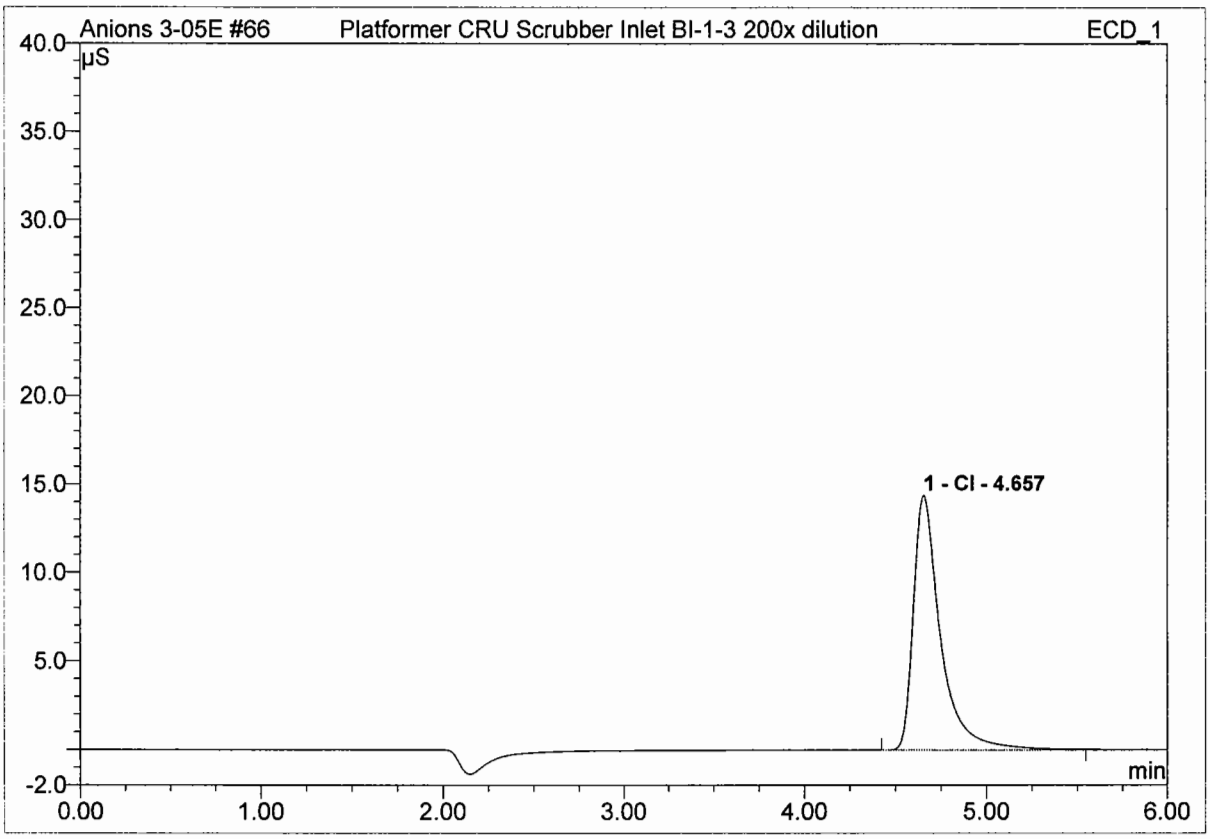
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 12:19**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	15.090	2.609
Total:			15.090	2.609

66 Platformer CRU Scrubber Inlet BI-1-3 200x dilution

Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 12:37**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	14.378	2.486
Total:			14.378	2.486

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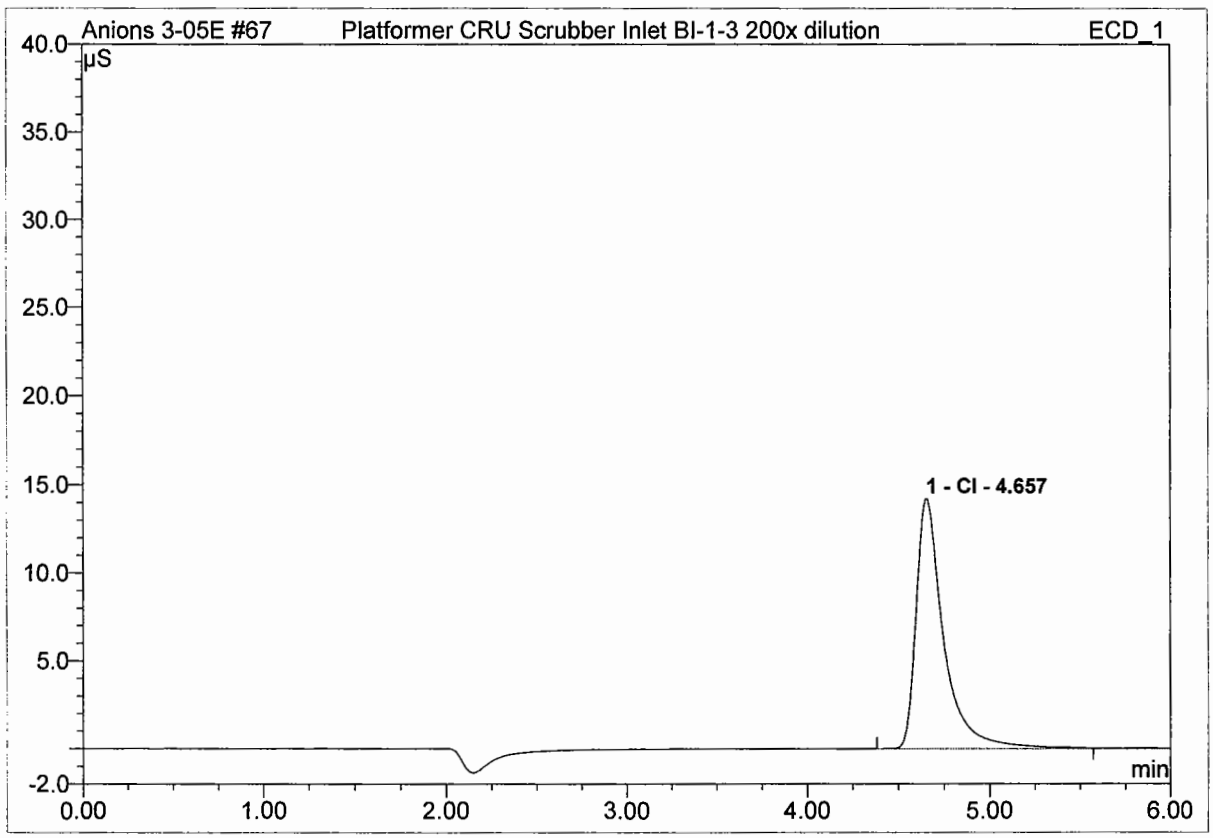
67 Platformer CRU Scrubber Inlet BI-1-3 200x dilution

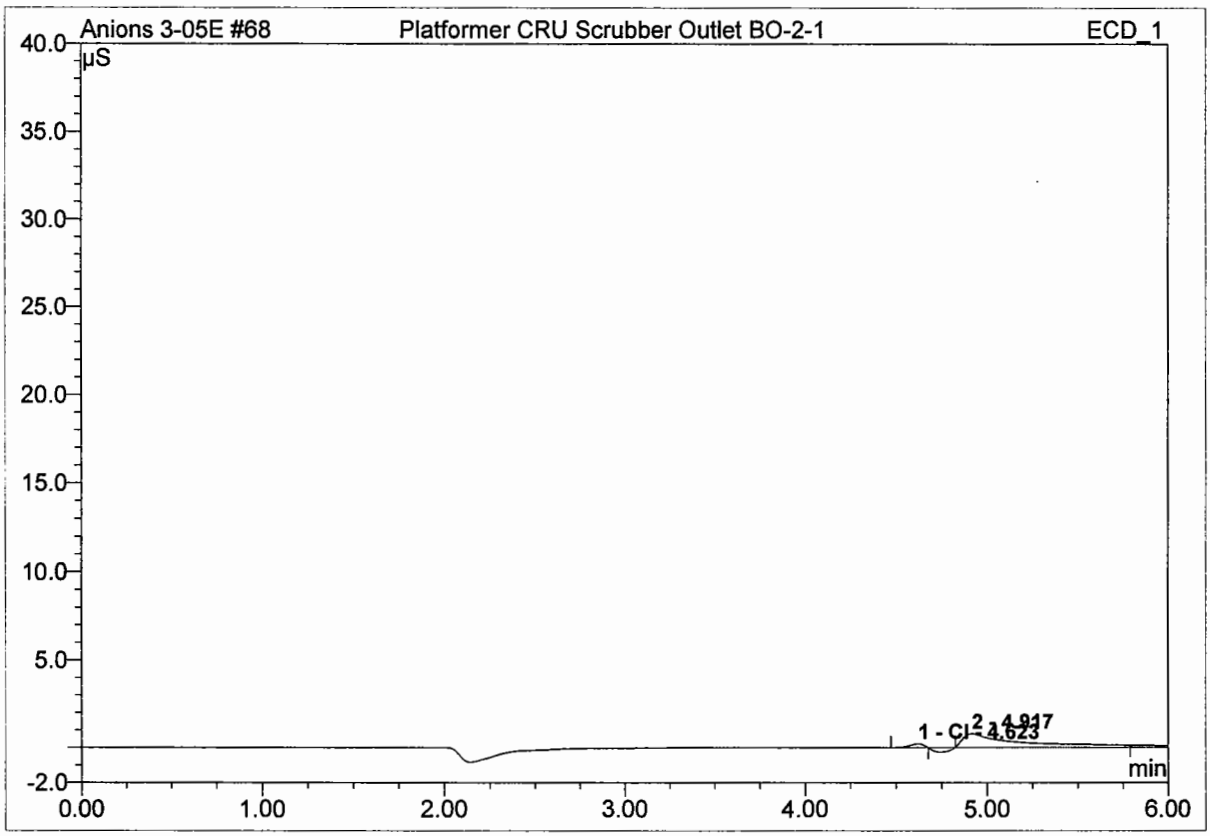
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 12:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	14.244	2.497
Total:			14.244	2.497

68 Platformer CRU Scrubber Outlet BO-2-1

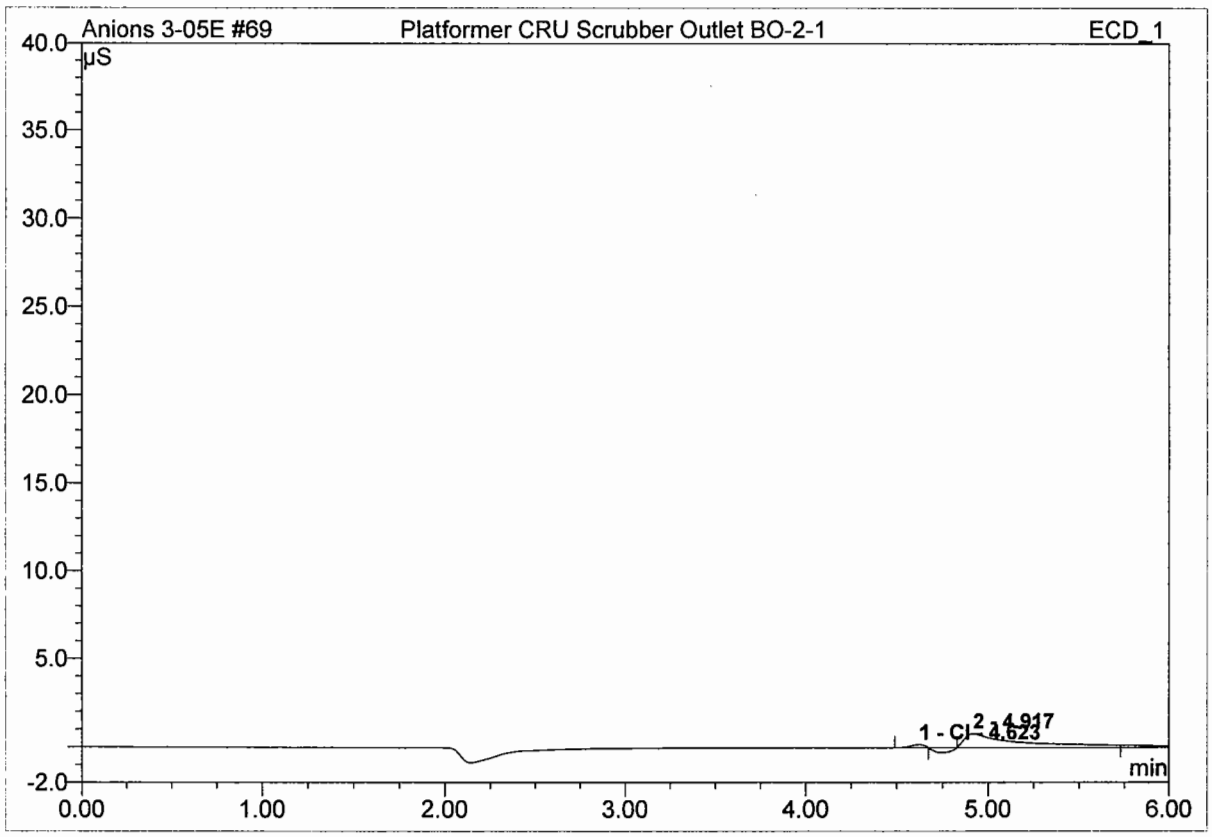
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 13:14**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.62	Cl	0.216	0.019
Total:			0.216	0.019

69 Platformer CRU Scrubber Outlet BO-2-1

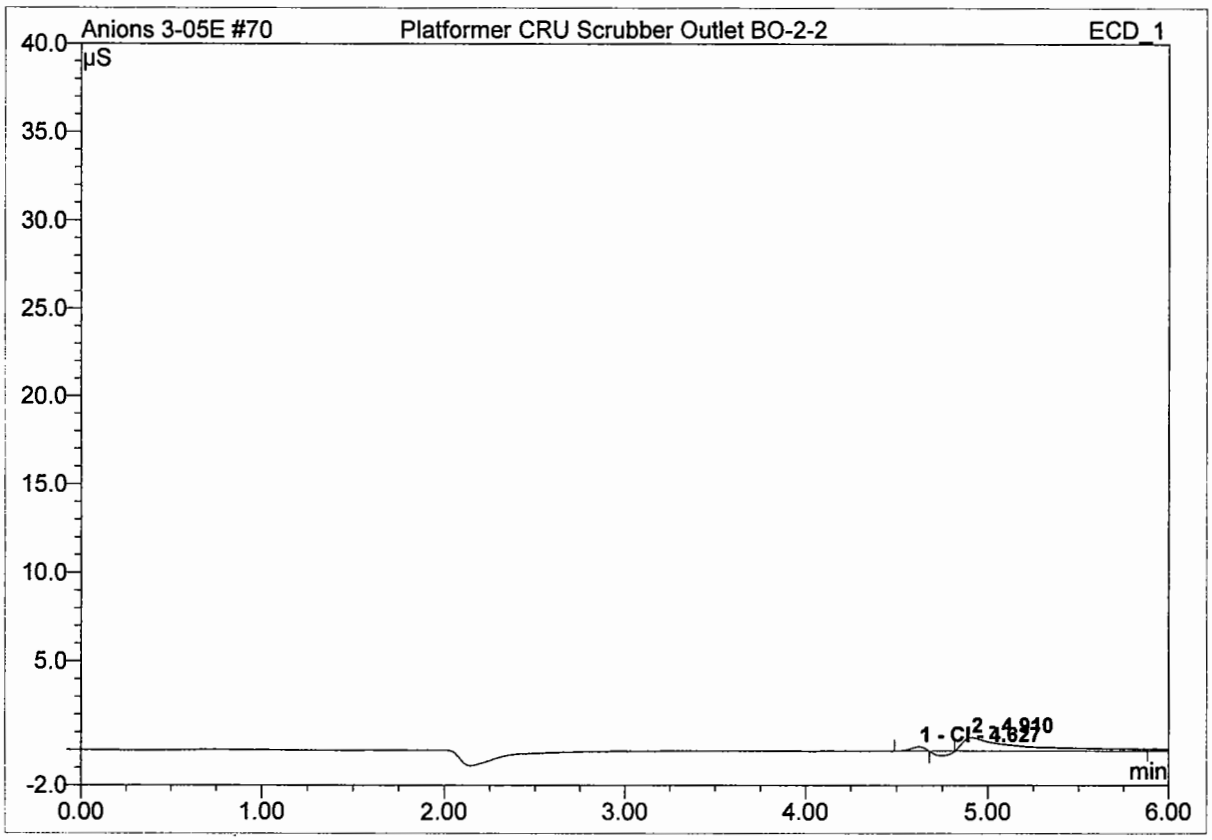
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 13:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.62	Cl	0.178	0.015
Total:			0.178	0.015

70 Platformer CRU Scrubber Outlet BO-2-2

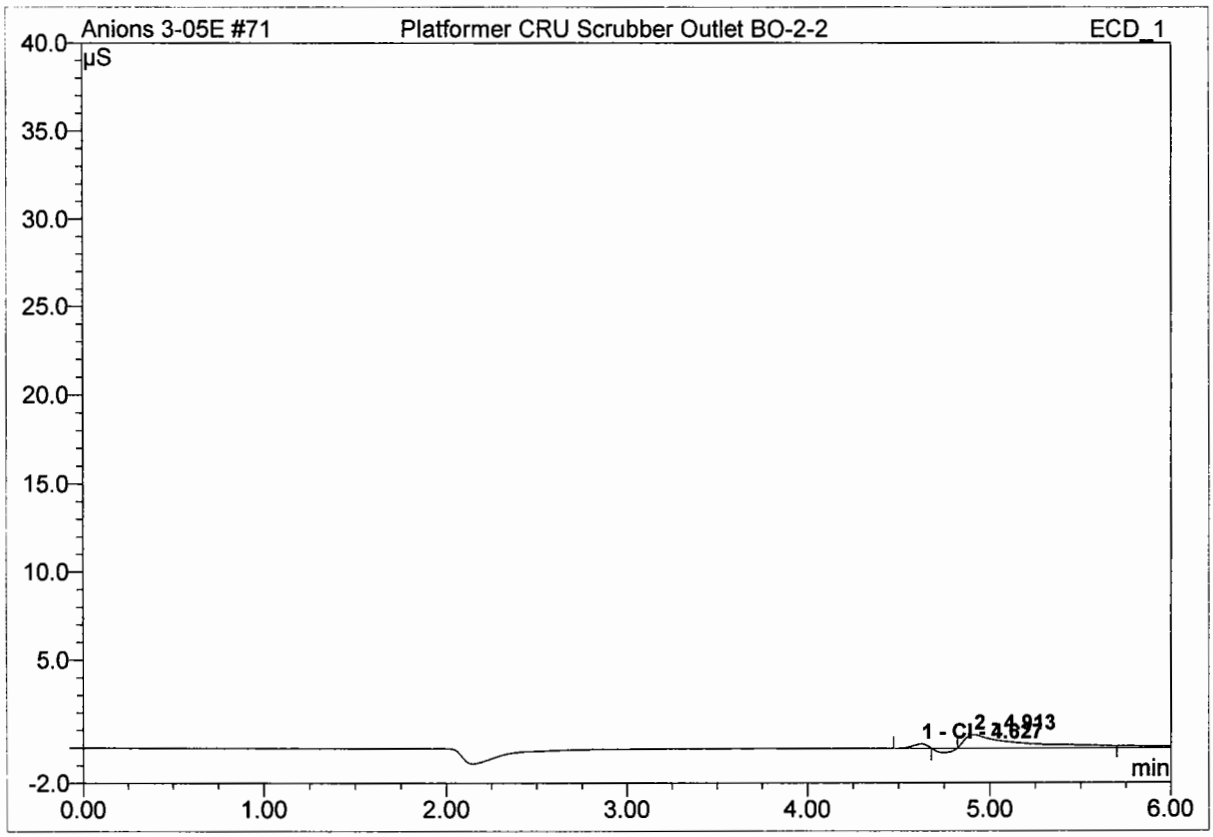
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 13:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.63	Cl	0.245	0.022
Total:			0.245	0.022

71 Platformer CRU Scrubber Outlet BO-2-2

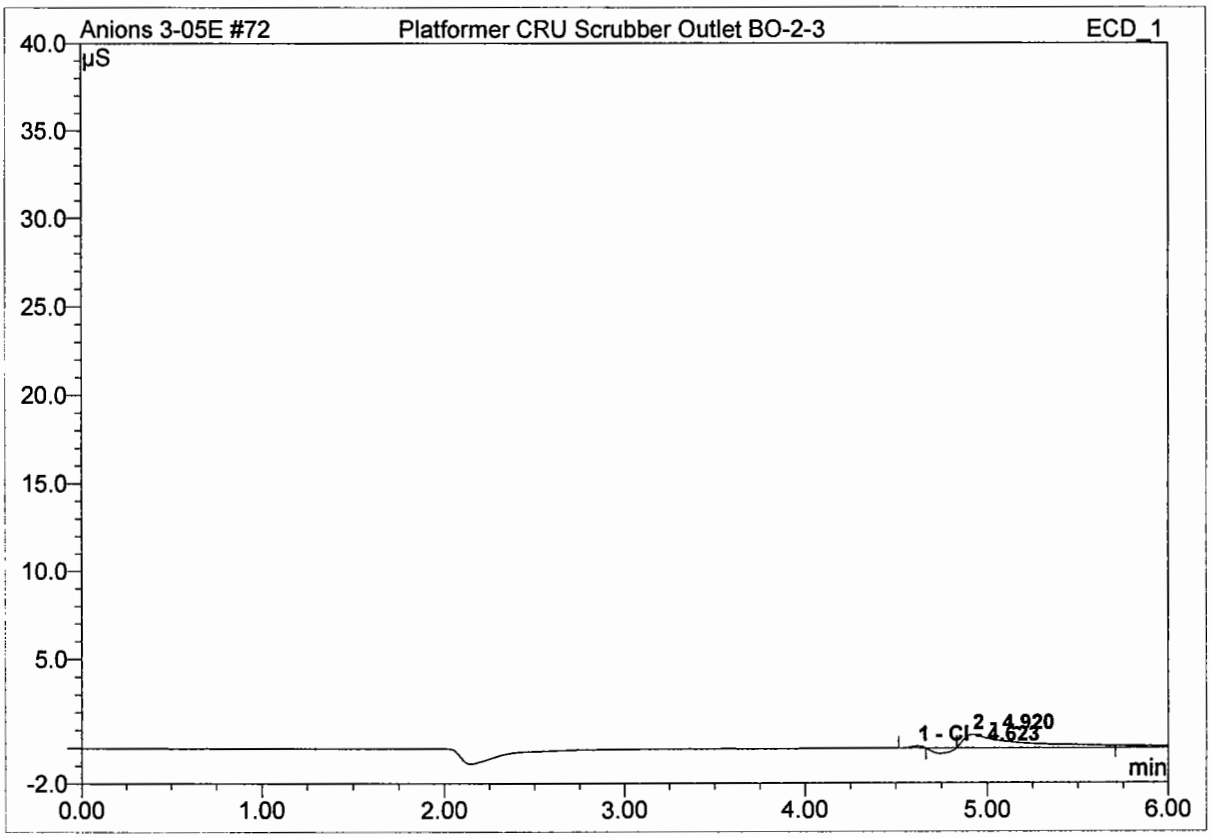
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 14:09**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.63	Cl	0.253	0.023
Total:			0.253	0.023

72 Platformer CRU Scrubber Outlet BO-2-3

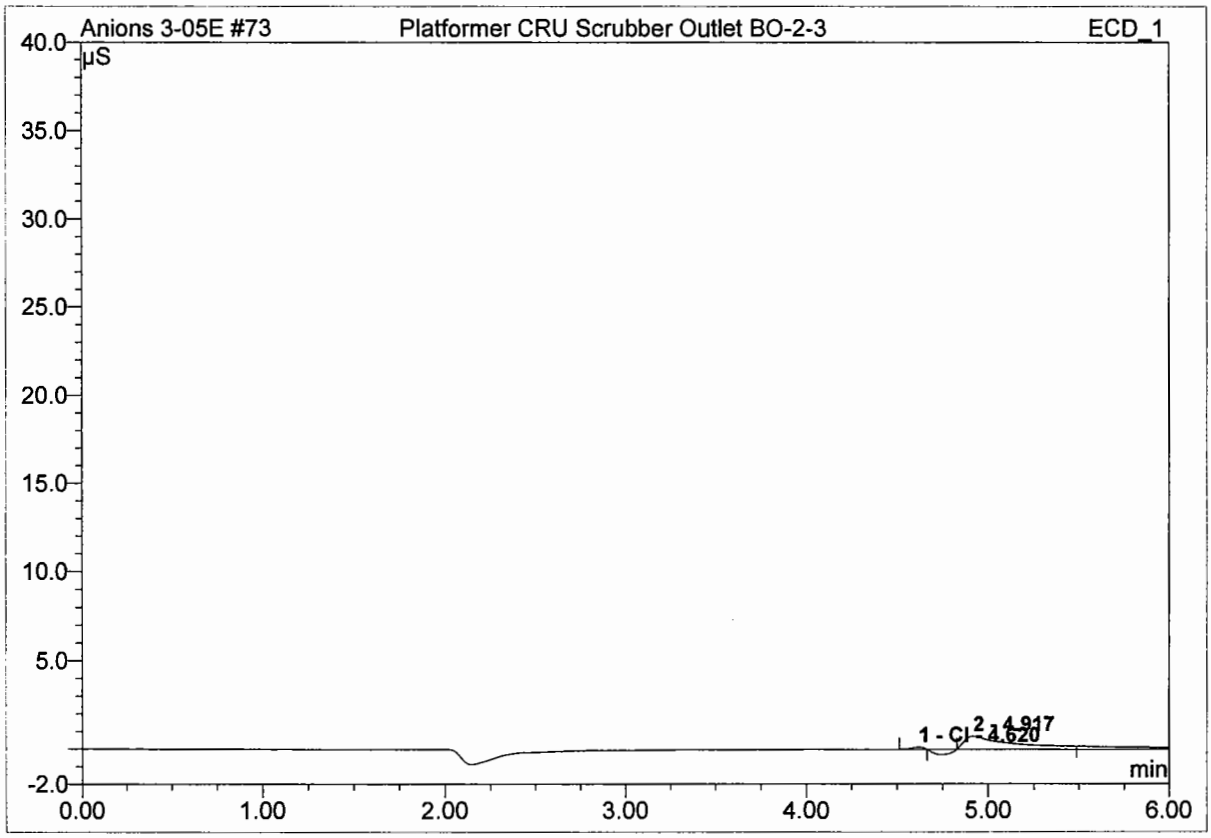
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 14:27**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.62	Cl	0.113	0.009
Total:			0.113	0.009

73 Platformer CRU Scrubber Outlet BO-2-3

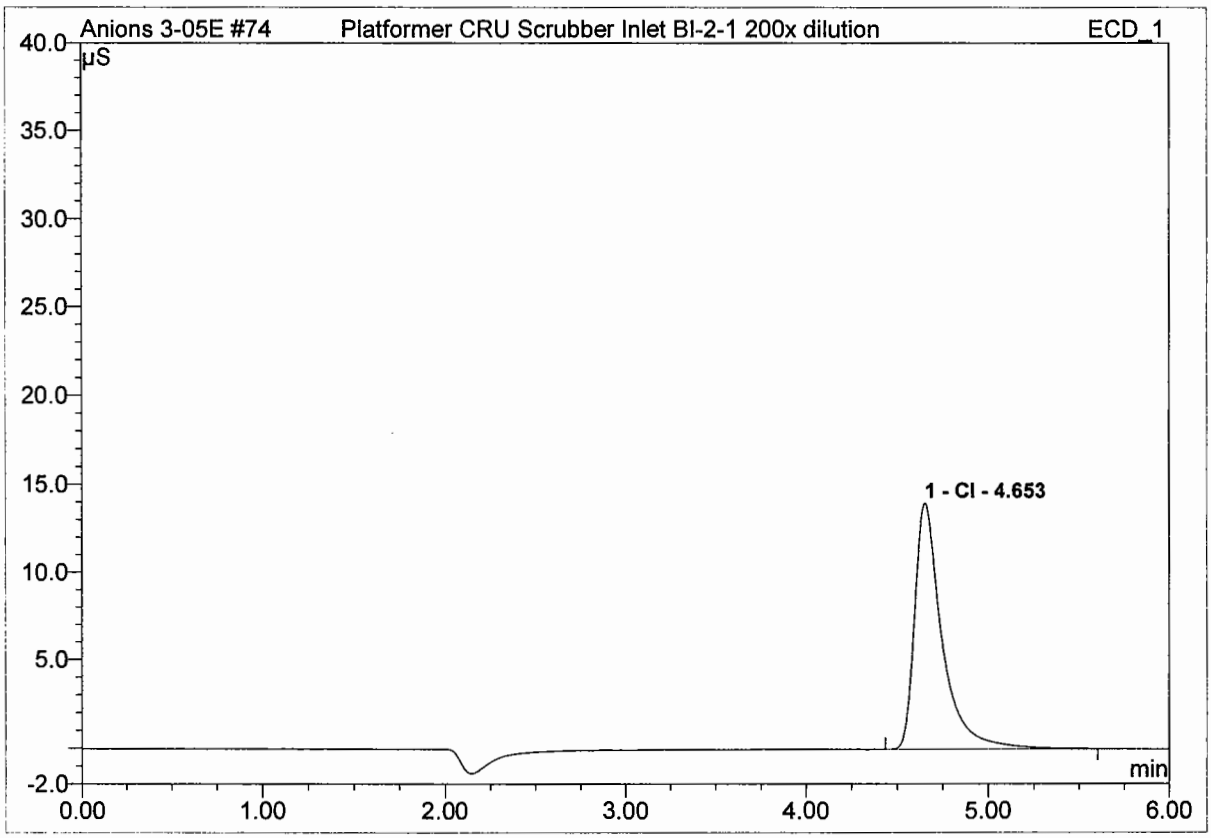
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 14:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.62	Cl	0.122	0.010
Total:			0.122	0.010

74 Platformer CRU Scrubber Inlet BI-2-1 200x dilution

Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 15:04**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

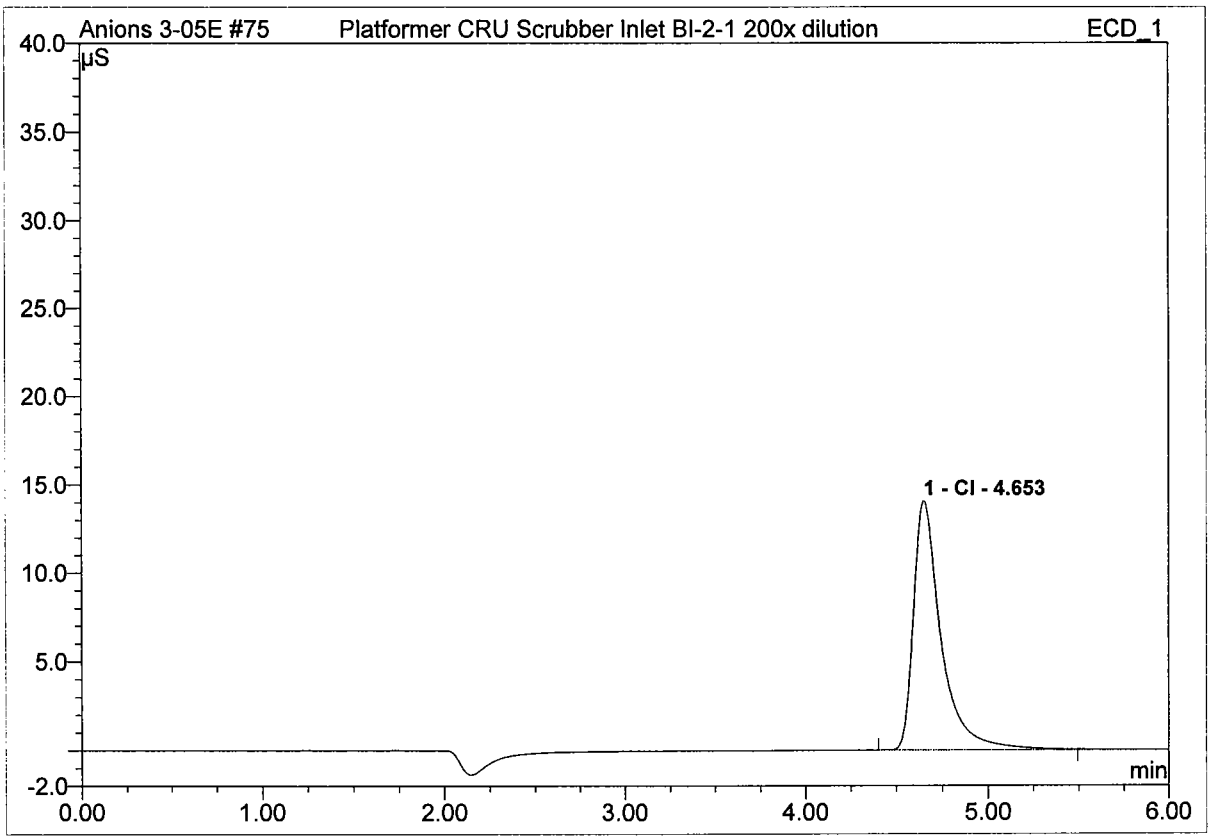


No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.65	Cl	13.992	2.462
Total:			13.992	2.462

Chromeleon (c) Dionex 1996-2001
Version 6.60 SP2 Build 1472

75 Platformer CRU Scrubber Inlet BI-2-1 200x dilution

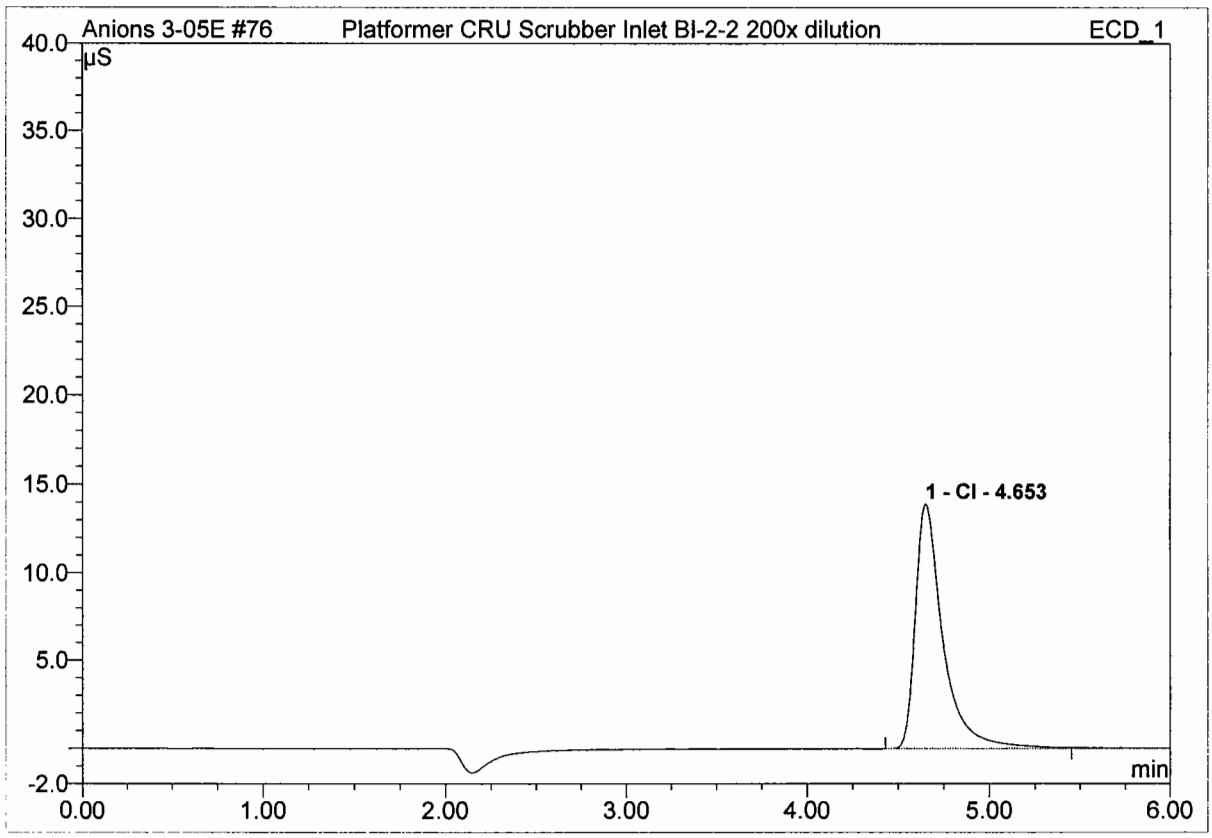
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 15:33**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.65	Cl	14.077	2.466
Total:			14.077	2.466

76 Platformer CRU Scrubber Inlet BI-2-2 200x dilution

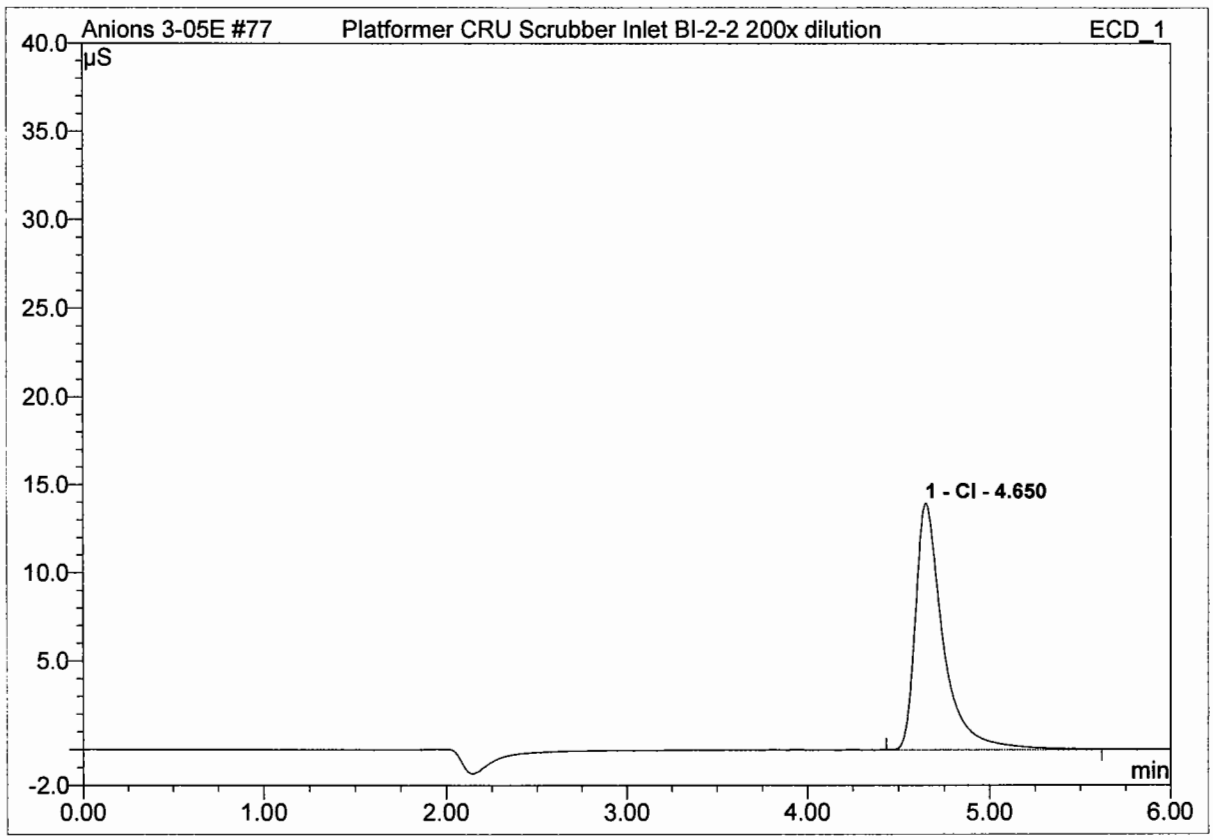
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 15:51**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.65	Cl	13.917	2.441
Total:			13.917	2.441

77 Platformer CRU Scrubber Inlet BI-2-2 200x dilution

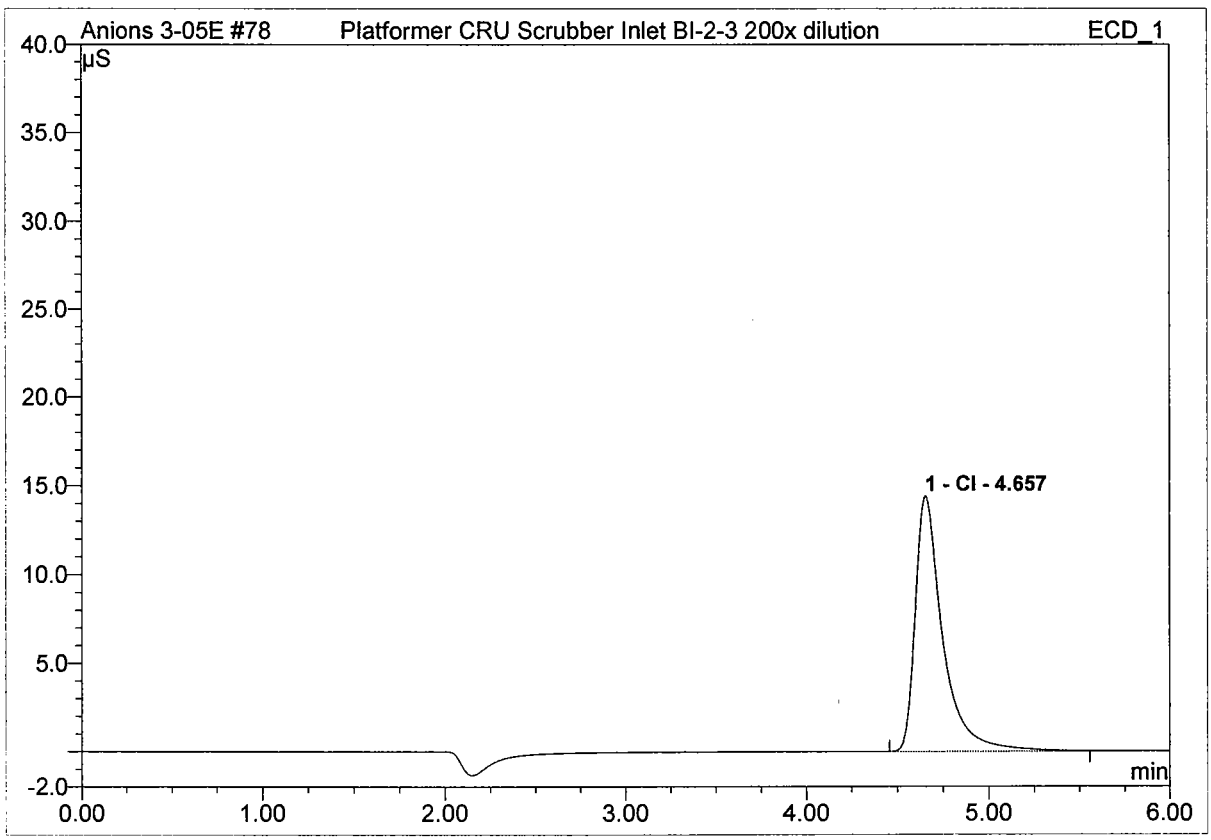
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 16:10**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.65	Cl	13.936	2.449
Total:			13.936	2.449

78 Platformer CRU Scrubber Inlet BI-2-3 200x dilution

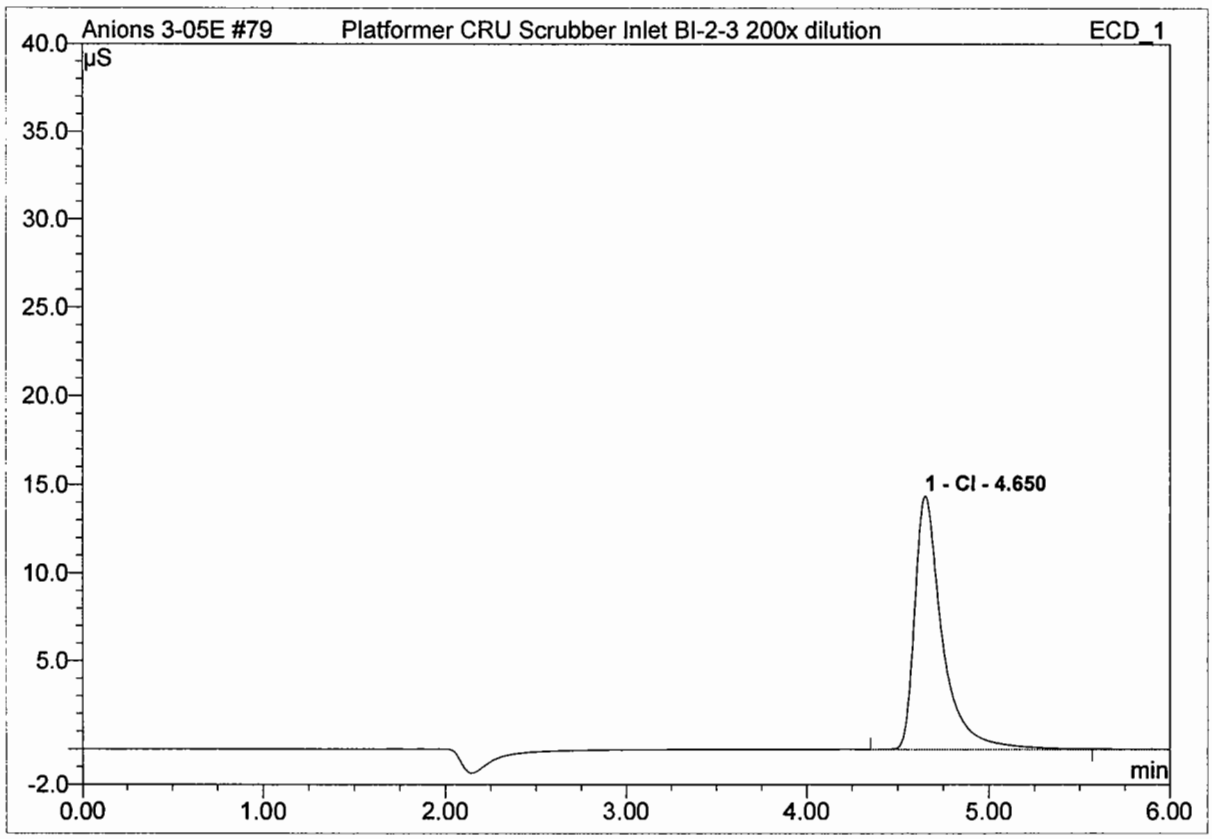
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 16:28**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	14.409	2.525
Total:			14.409	2.525

79 Platformer CRU Scrubber Inlet BI-2-3 200x dilution

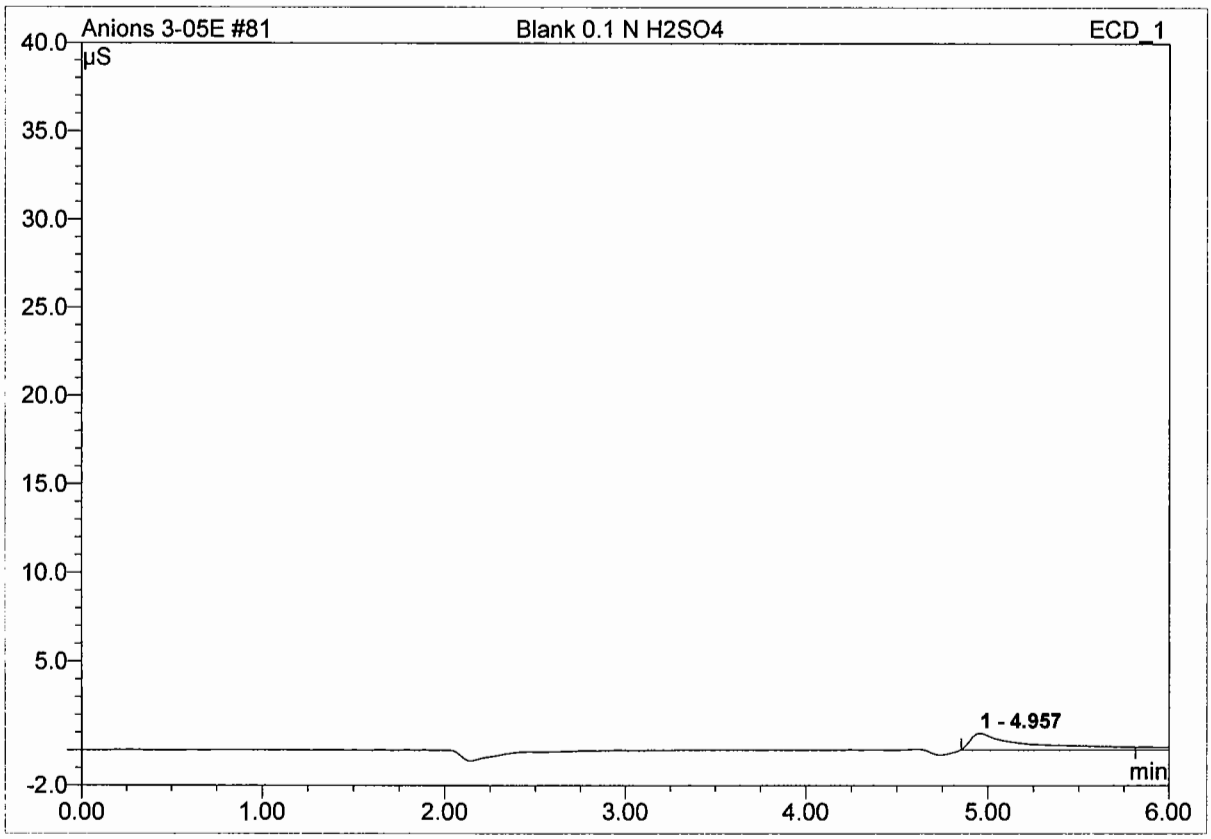
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/12/2005 16:46**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.65	Cl	14.399	2.532
Total:			14.399	2.532

81 Blank 0.1 N H2SO4

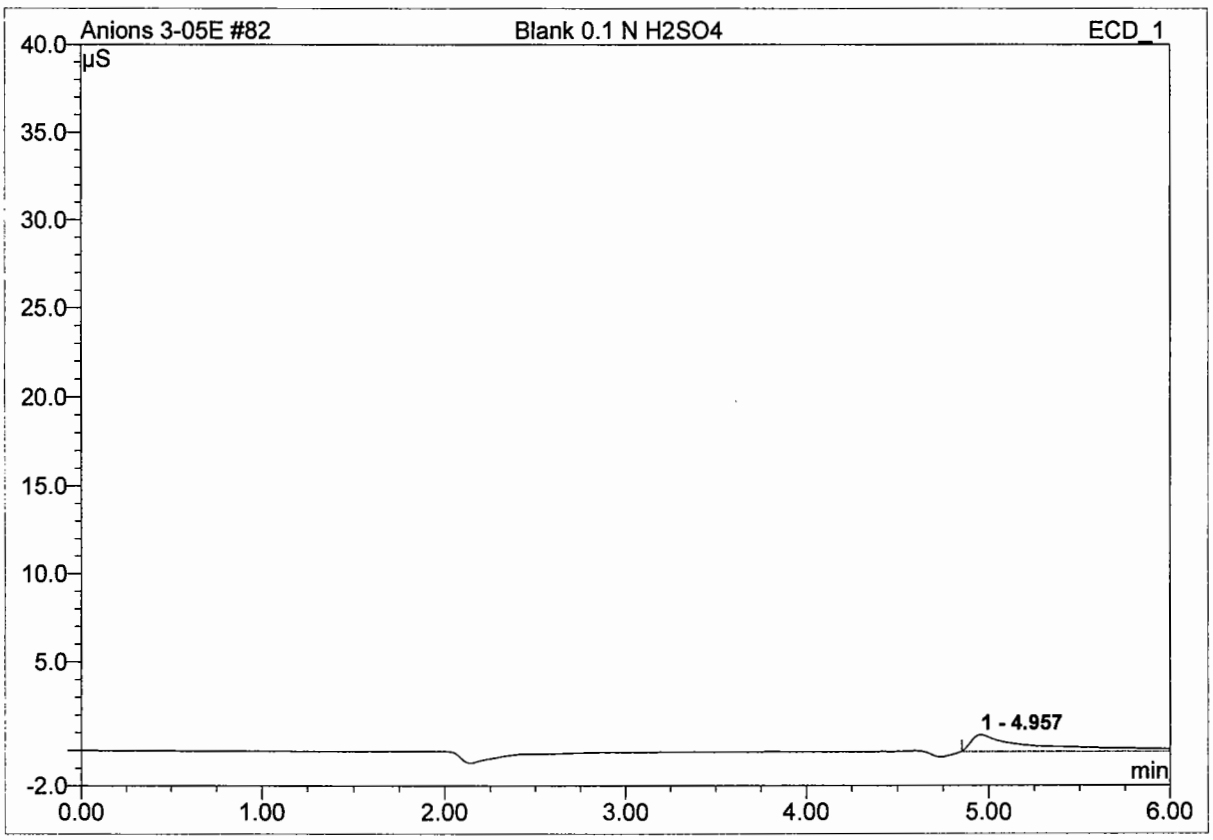
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/13/2005 8:20**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



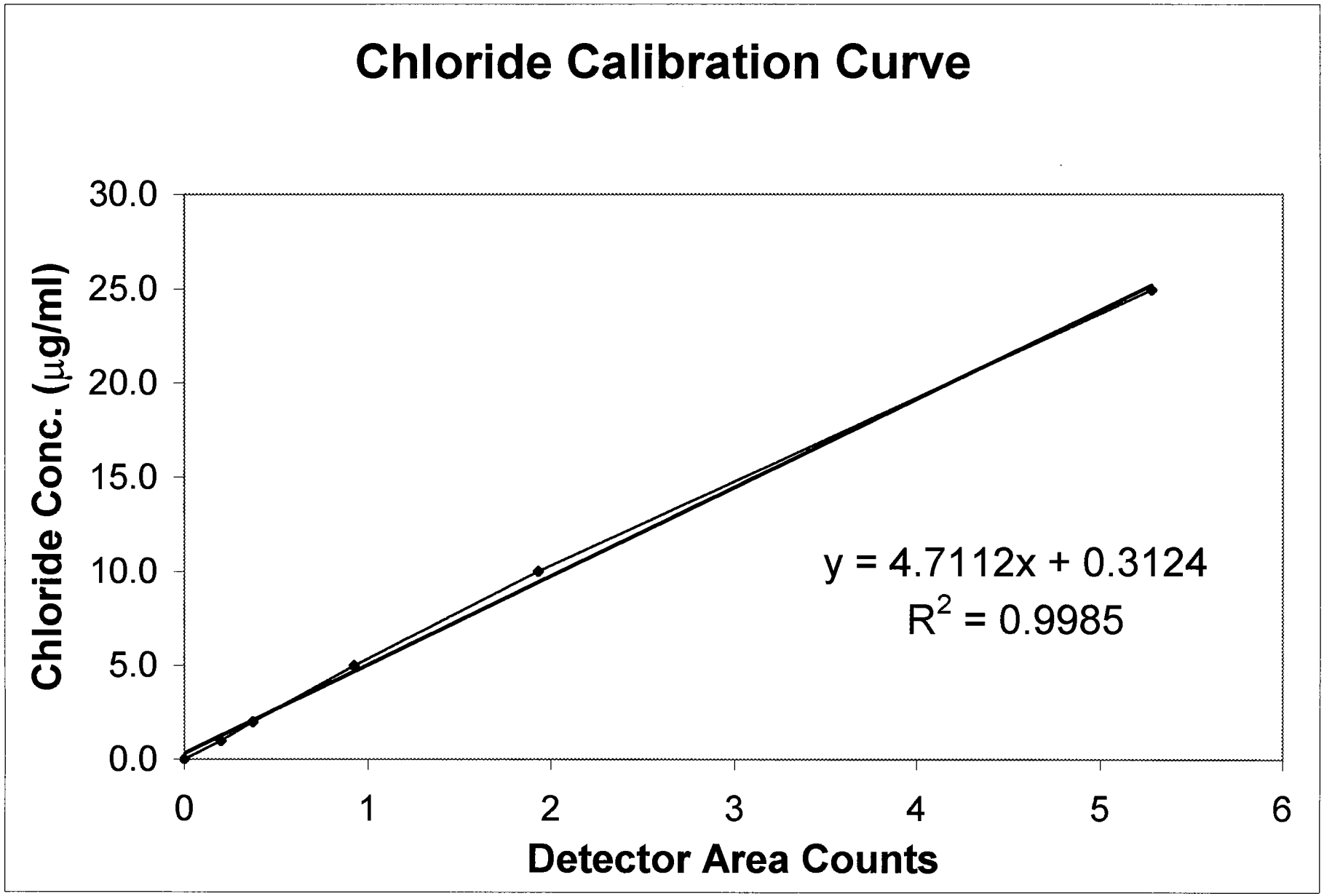
No.	Ret.Time min	Peak Name	Height µS	Area µS*min
Total:			0.000	0.000

82 Blank 0.1 N H2SO4

Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**unknown**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/13/2005 8:41**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**

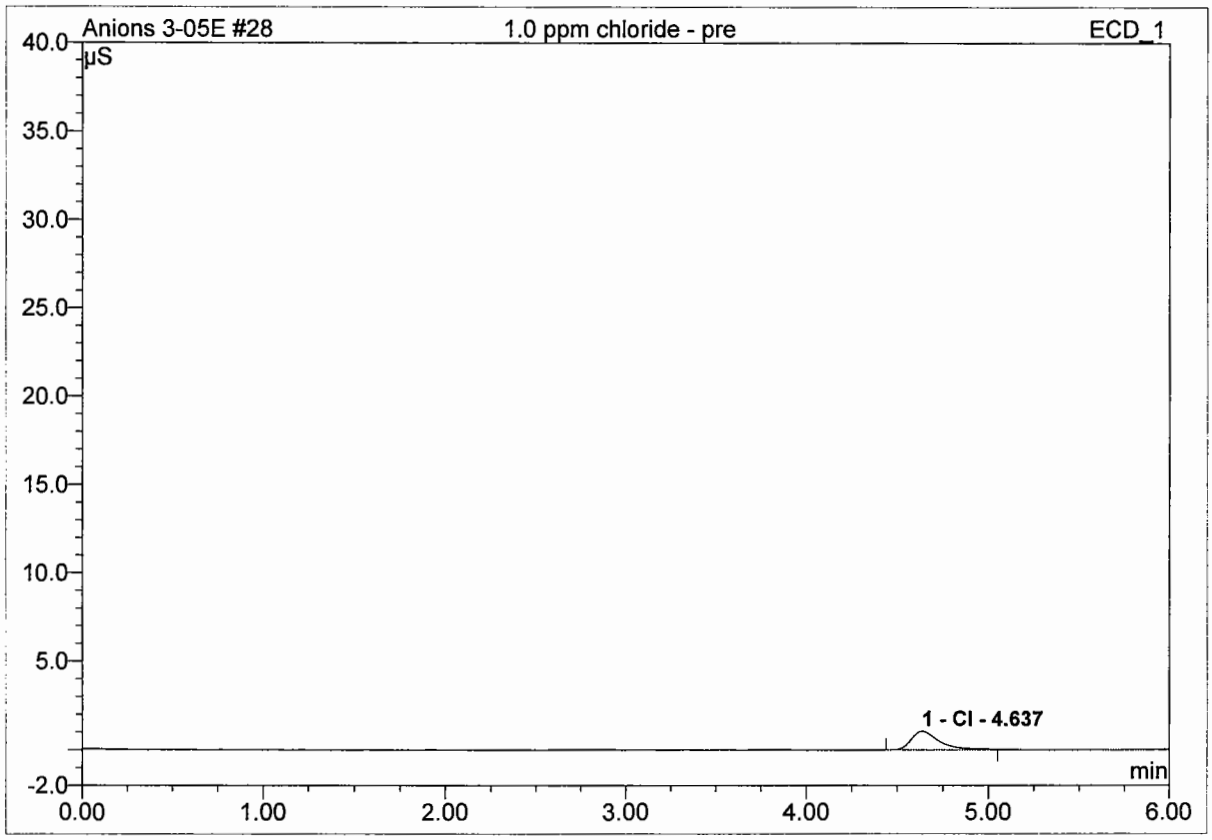


No.	Ret.Time min	Peak Name	Height µS	Area µS*min
Total:			0.000	0.000


Chloride Calibration Curve
Chloride Conc. (µg/ml)
30.0
25.0
20.0
15.0
10.0
5.0
0.0
0
1
2
3
4
5
6
Detector Area Counts
y = 4.7112x + 0.3124
R2 = 0.9985

28 1.0 ppm chloride - pre

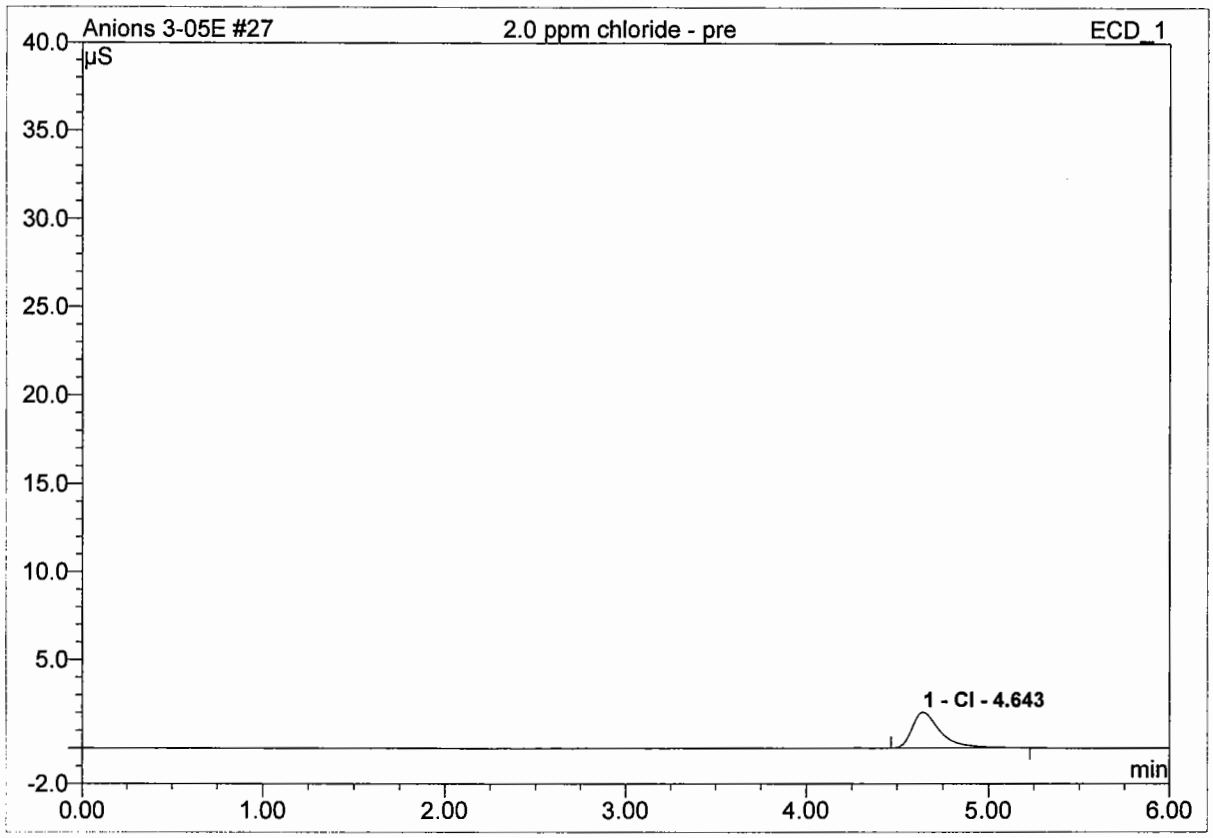
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 11:24**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	1.060	0.194
Total:			1.060	0.194

27 2.0 ppm chloride - pre

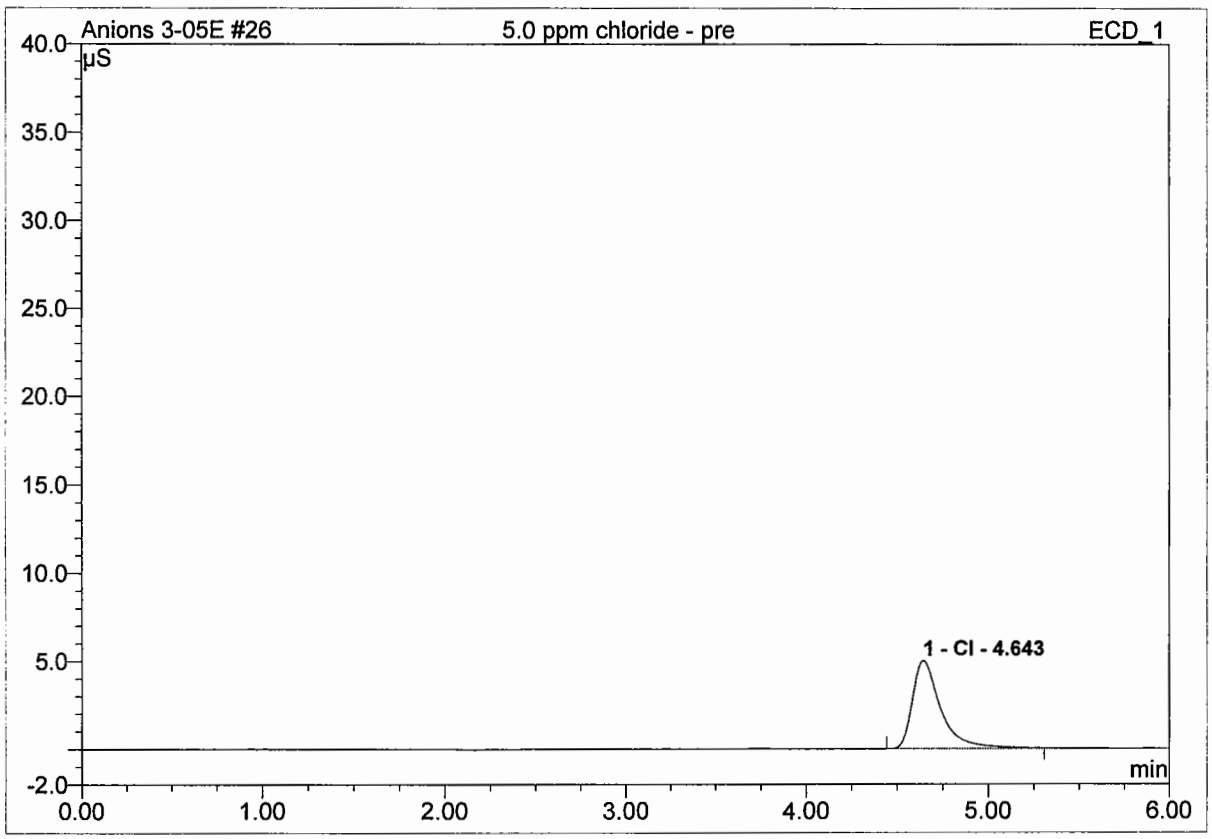
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 10:58**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	2.011	0.364
Total:			2.011	0.364

26 5.0 ppm chloride - pre

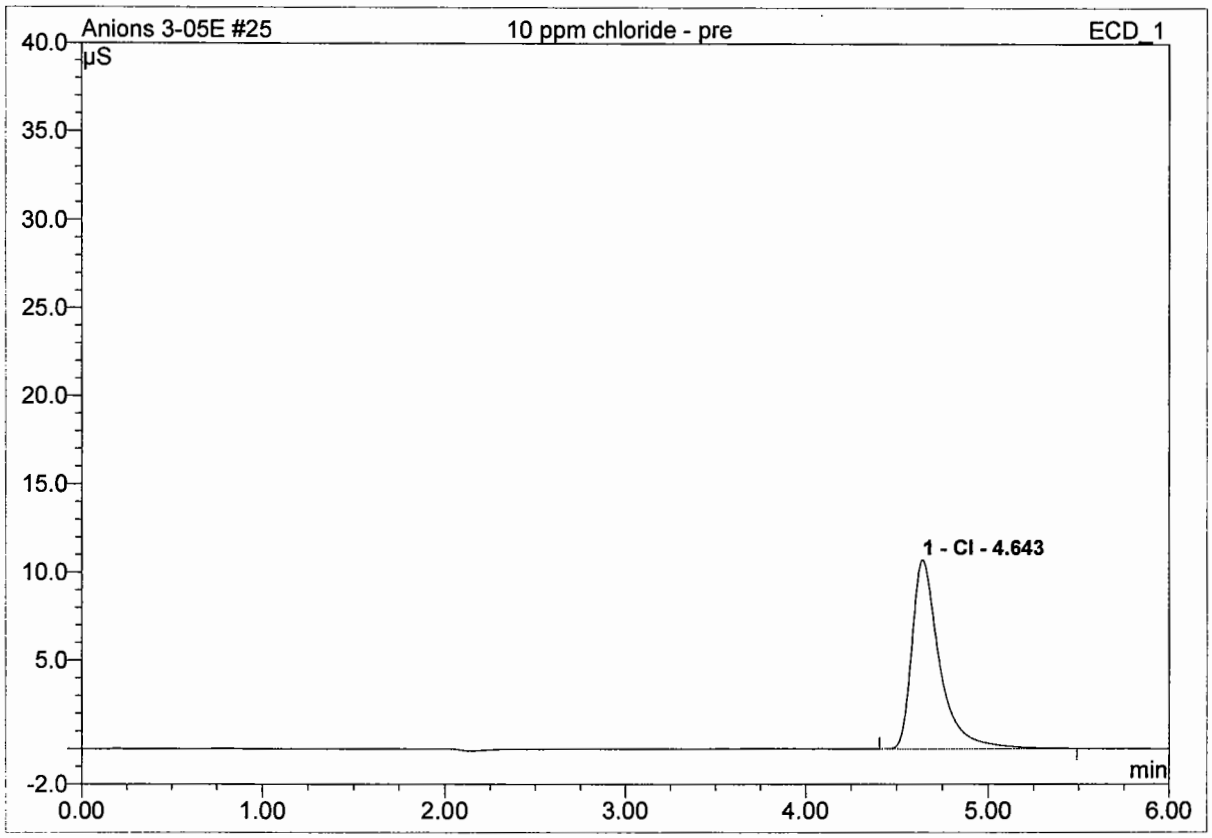
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 10:39**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	5.032	0.906
Total:			5.032	0.906

25 10 ppm chloride - pre

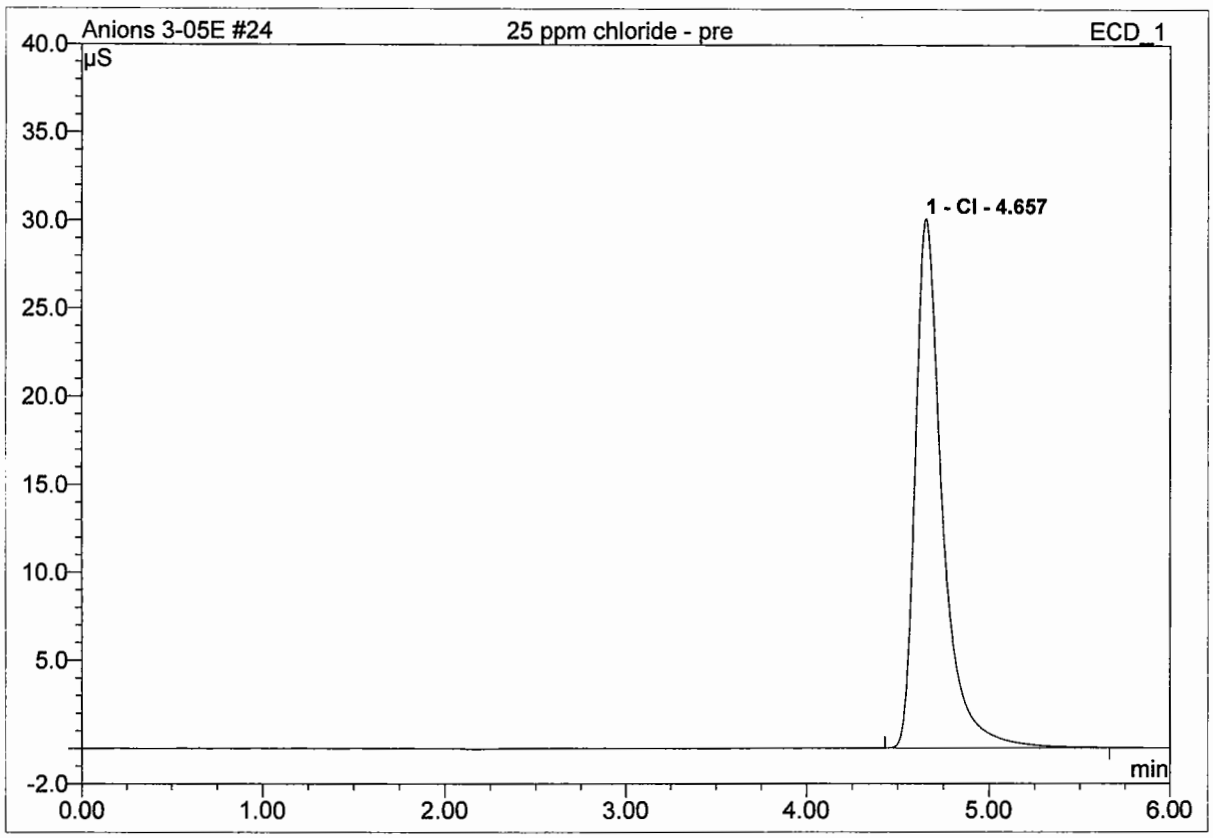
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 10:21**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	10.721	1.893
Total:			10.721	1.893

24 25 ppm chloride - pre

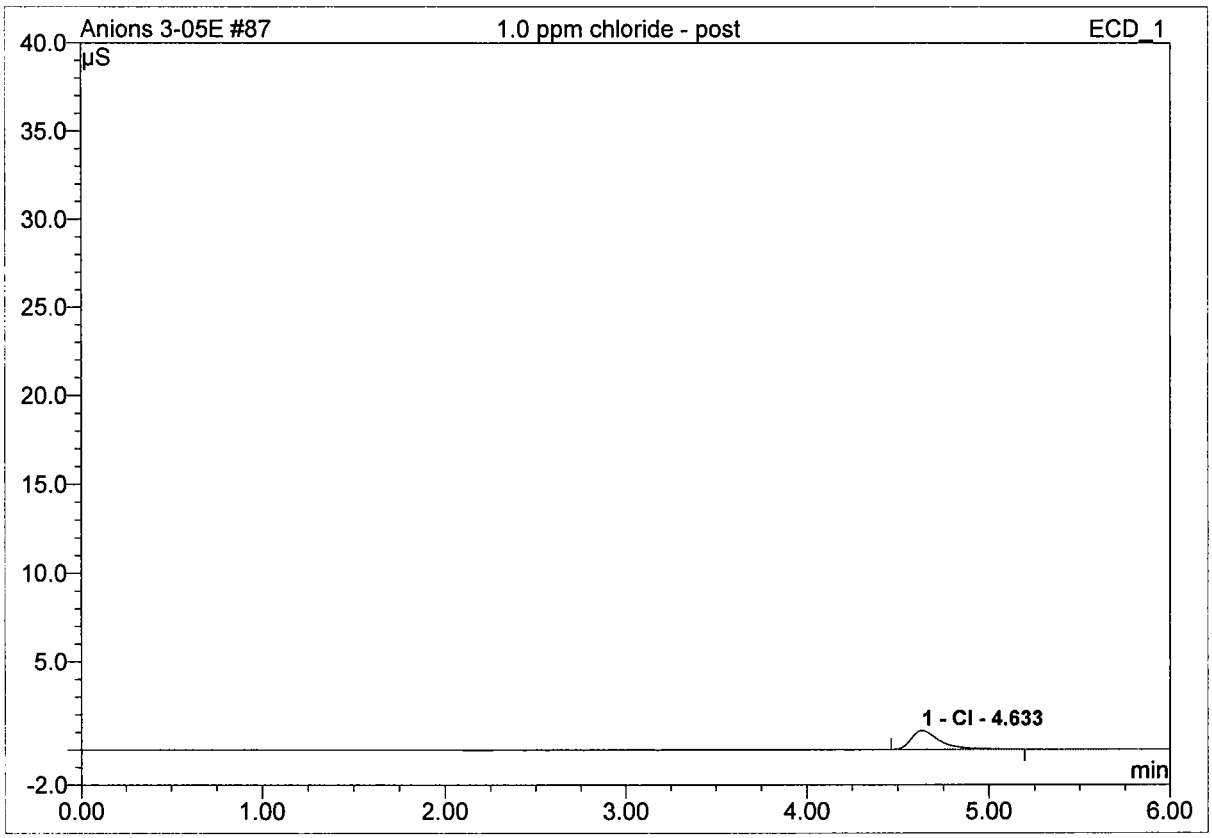
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/11/2005 10:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.66	Cl	30.129	5.174
Total:			30.129	5.174

87 1.0 ppm chloride - post

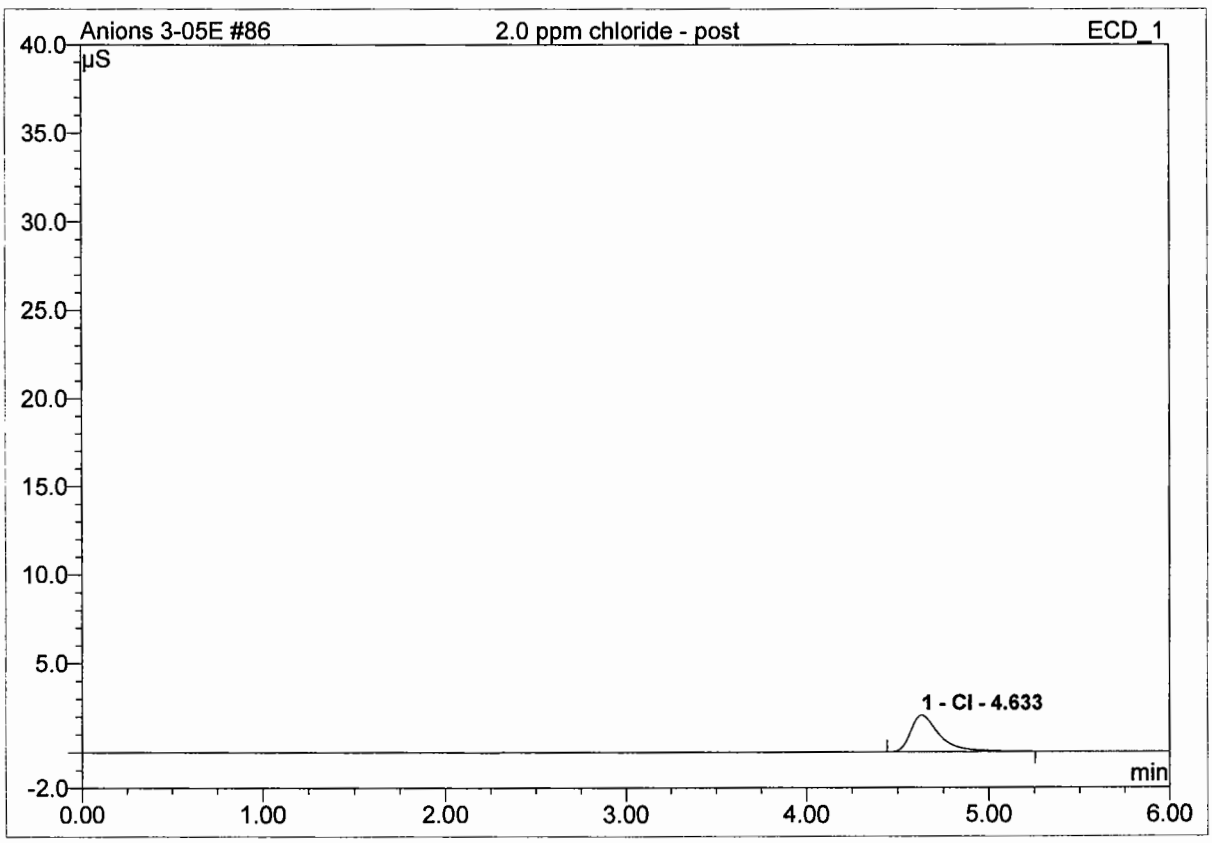
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/13/2005 10:15**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.63	Cl	1.090	0.203
Total:			1.090	0.203

86 2.0 ppm chloride - post

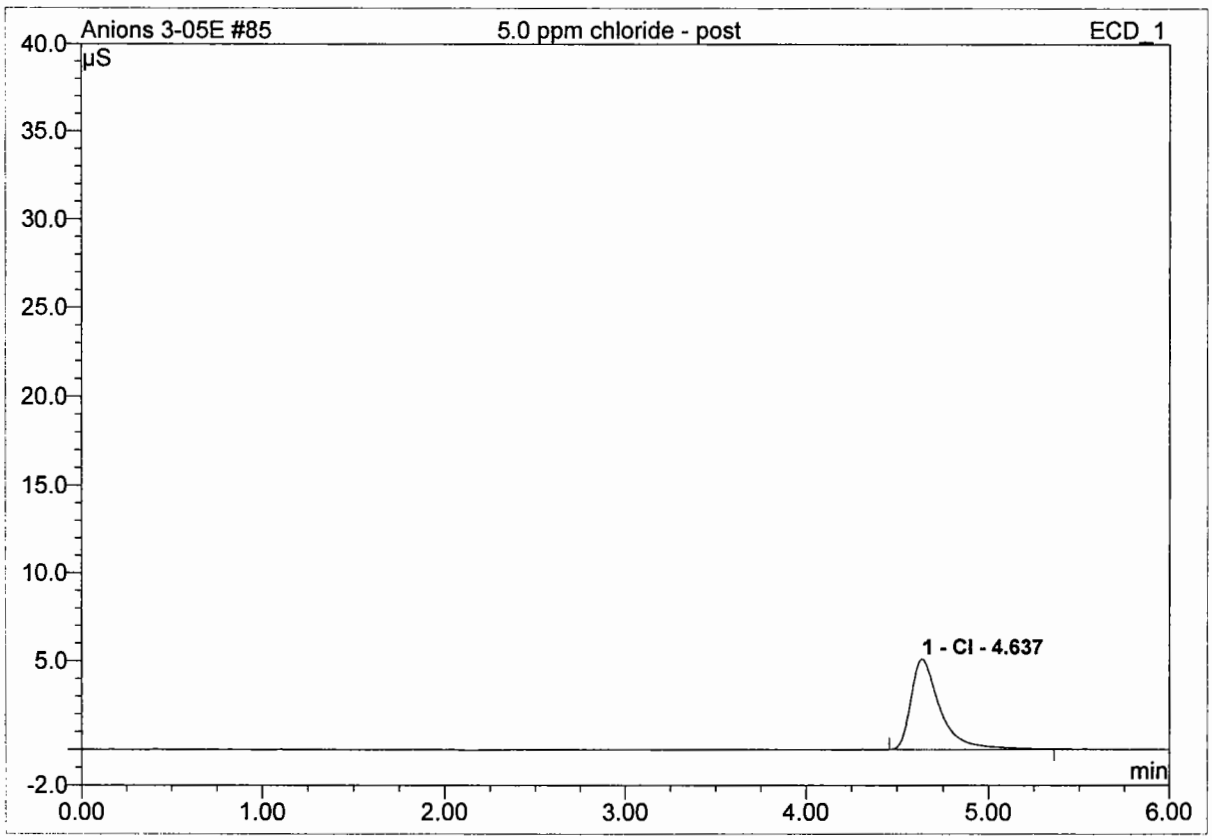
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/13/2005 9:56**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.63	Cl	2.075	0.384
Total:			2.075	0.384

85 5.0 ppm chloride - post

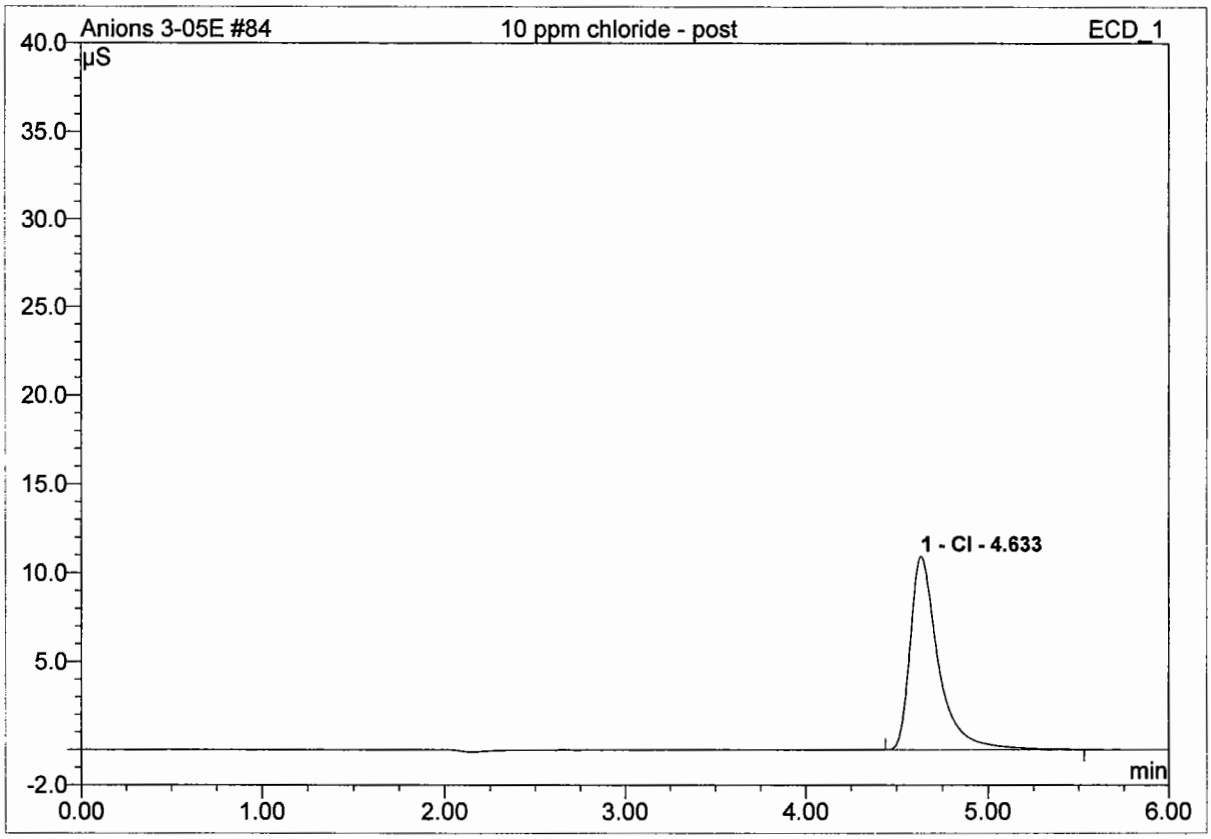
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/13/2005 9:38**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	5.115	0.944
Total:			5.115	0.944

84 10 ppm chloride - post

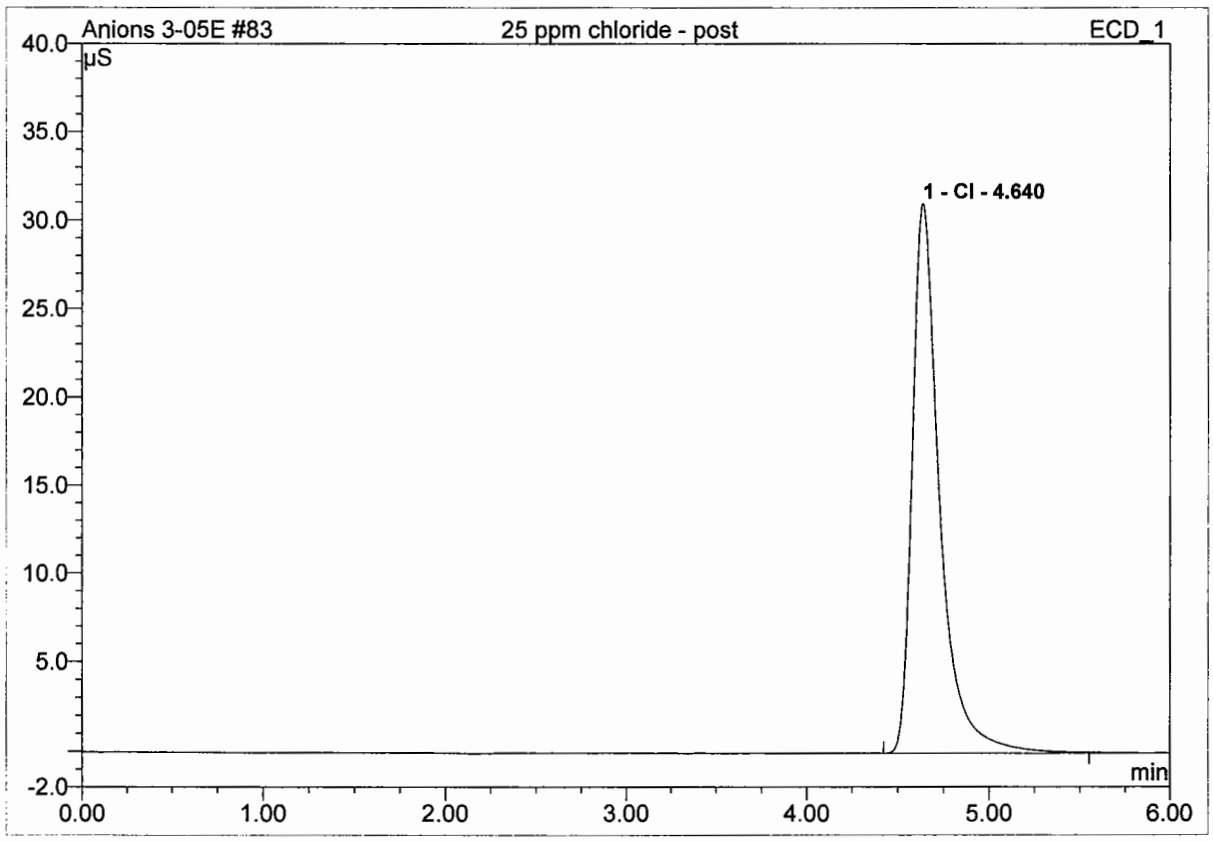
Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/13/2005 9:18**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.63	Cl	10.956	1.969
Total:			10.956	1.969

83 25 ppm chloride - post

Client	**MAPLCC - Robinson**	*Injection Volume:*	**35.0**
Vial Number:	**42**	*Channel:*	**ECD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**AnionsMan**	*Bandwidth:*	**n.a.**
Quantif. Method:	**Anions**	*Dilution Factor:*	**1.0000**
Recording Time:	**4/13/2005 8:59**	*Sample Weight:*	**1.0000**
Run Time (min):	**16.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min
1	4.64	Cl	31.047	5.391
Total:			31.047	5.391

Chromeleon (c) Dionex 1996-2001
Version 6.60 SP2 Build 1472

3659

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME	NO. OF CON-TAINERS	USEPA 26A (HCl)	REMARKS
	MAPLLC - ROBINSON			1 OF 2

SAMPLERS: *(Signature)*

LAB NO.	SAMPLE NO.	DATE	TIME	SAMPLE LOCATION	NO. OF CON-TAINERS	USEPA 26A (HCl)	REMARKS
V	20914	3/29		PLATFORMER CRU SCRUB. OUT.	1	✓	RUN # WO-1-1
	20915	3/29		" " " IN.	1	✓	WI-1-1
V	20911	3/29		" " " OUT.	1	✓	WO-1-2
V	20910	3/29		" " " IN.	1	✓	WI-1-2
V	20907	3/29		" " " OUT.	1	✓	WO-1-3
V	20906	3/29		" " " IN	1	✓	WI-1-3
V	20988	3/30		" " " OUT.	1	✓	WO-2-1
V	20989	3/30		" " " IN	1	✓	WI-2-1
V	20991	3/30		" " " OUT	1	✓	WO-2-2
V	20992	3/30		" " " IN	1	✓	WI-2-2
V	20986	3/30		" " " OUT	1	✓	WO-2-3
V	20987	3/30		" " " IN	1	✓	WI-2-3
V	20953	3/30		" " " IN/OUT	1	✓	BLANK
V	20948	3/30		" " " OUT	1	✓	BO-1-1
V	20949	3/30		" " " IN	1	✓	BI-1-1

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
[signature]	4/1/05 08:50				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by:	Date / Time		
		[signature]	4/1/05	19:00	

REMARKS: ALL SAMPLES REPRESENT IMPINGER CONTENTS OF NOS. 1 & 2 AND RESPECTIVE RINSE (0.1N H_2SO_4 + H_2O)

ARI ENVIRONMENTAL INC.
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PRINT FILE COPY - WHITE RECORD FILE COPY - CANARY RETAIN COPY - PINK CUSTOMER COPY - GOLDENROD

3655

CHAIN OF CUSTODY RECORD

PROJ. NO.	PROJECT NAME
094	MAPLLC-ROBINSON

SAMPLERS: *(Signature)*

2 OF 2

LAB NO.	SAMPLE NO.	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	USEPA 26/26A (HCl)	REMARKS
	20944	3/30		PLATFORMER CRU SCRUB. OUT.	1	✓	RUN No.# BO-1-2
	20945	3/30		" " " IN.	1	✓	BI-1-2
	22834	3/30		" " " OUT	1	✓	BO-1-3
	22833	3/30		" " " IN	1	✓	BI-1-3
	22837	3/31		" " " OUT	1	✓	BO-2-1
	22838	3/31		" " " IN	1	✓	BI-2-1
	22854	3/31		" " " OUT	1	✓	BO-2-2
	22852	3/31		" " " IN	1	✓	BI-2-2
	22840	3/31		" " " OUT	1	✓	BO-2-3
	22853	3/31		" " " IN	1	✓	BQ BI-2-3

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
[signature]	4/1/05 08:50				
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by:	Date / Time		
		[signature]	4/1/05 19:00		

REMARKS: ALL SAMPLES REPRESENT IMPINGER CONTENTS OF NOS. 1 AND 2 AND RESPECTIVE RINSE (0.1N H_2SO_4 + H_2O) FROM A USEPA METHOD 26/26A SAMPLING TRAIN (40 CFR 60, APPENDIX A)

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APPENDIX D ARI Reference Method Monitoring Data

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 9:20:00	0.0	9.4	
3/29/2005 9:20:15	0.0	9.4	
3/29/2005 9:20:30	0.0	9.4	
3/29/2005 9:20:45	0.1	9.4	
3/29/2005 9:21:00	0.2	9.3	
3/29/2005 9:21:15	0.3	9.2	
3/29/2005 9:21:30	0.3	9.2	**Calibration**
3/29/2005 9:21:45	**0.3**	9.2	**0.3 Zero Propane/N_2**
3/29/2005 9:22:00	**0.3**	9.2	
3/29/2005 9:22:15	**0.3**	9.2	
3/29/2005 9:22:30	**0.3**	9.2	
3/29/2005 9:22:45	31.5	9.2	
3/29/2005 9:23:00	50.4	9.2	
3/29/2005 9:23:15	51.3	9.2	
3/29/2005 9:23:30	50.3	9.2	
3/29/2005 9:23:45	50.2	9.2	**Calibration**
3/29/2005 9:24:00	**50.3**	9.2	**50.5 50.0 ppm Propane/N_2**
3/29/2005 9:24:15	**50.5**	9.2	
3/29/2005 9:24:30	**50.5**	9.2	
3/29/2005 9:24:45	**50.6**	9.2	
3/29/2005 9:25:00	50.2	9.2	
3/29/2005 9:25:15	53.1	9.2	
3/29/2005 9:25:30	83.7	9.2	
3/29/2005 9:25:45	85.8	9.2	
3/29/2005 9:26:00	86.0	9.2	
3/29/2005 9:26:15	85.9	9.2	
3/29/2005 9:26:30	85.7	9.2	**Calibration**
3/29/2005 9:26:45	**85.7**	9.2	**85.9 85.0 ppm Propane/N_2**
3/29/2005 9:27:00	**85.9**	9.2	
3/29/2005 9:27:15	**86.0**	9.2	
3/29/2005 9:27:30	**86.0**	9.2	
3/29/2005 9:27:45	85.7	9.2	
3/29/2005 9:28:00	62.1	9.2	
3/29/2005 9:28:15	29.7	9.2	
3/29/2005 9:28:30	26.1	9.2	
3/29/2005 9:28:45	25.8	9.2	
3/29/2005 9:29:00	25.7	9.2	
3/29/2005 9:29:15	25.5	9.2	
3/29/2005 9:29:30	25.3	9.2	
3/29/2005 9:29:45	25.3	9.2	
3/29/2005 9:30:00	25.4	5.9	**Calibration**
3/29/2005 9:30:15	**25.5**	2.5	**25.5 25.0 ppm Propane/N_2**
3/29/2005 9:30:30	**25.6**	2.5	
3/29/2005 9:30:45	**25.5**	2.5	
3/29/2005 9:31:00	**25.5**	2.5	
3/29/2005 9:31:15	19.1	2.5	
3/29/2005 9:31:30	7.1	2.5	
3/29/2005 9:31:45	0.7	2.5	
3/29/2005 9:32:00	0.4	2.5	
3/29/2005 9:32:15	0.2	2.5	
3/29/2005 9:32:30	0.0	2.5	
3/29/2005 9:32:45	0.0	2.5	
3/29/2005 9:33:00	0.1	1.6	**Calibration - 1st Injection**
3/29/2005 9:33:15	0.2	**0.8**	**0.8 Zero Methane**
3/29/2005 9:33:30	0.3	**0.8**	
3/29/2005 9:33:45	0.2	**0.8**	
3/29/2005 9:34:00	0.2	**0.8**	
3/29/2005 9:34:15	0.2	0.8	
3/29/2005 9:34:30	0.2	0.8	

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 9:34:45	0.2	0.8	
3/29/2005 9:35:00	0.2	0.8	
3/29/2005 9:35:15	0.1	0.8	
3/29/2005 9:35:30	0.0	0.8	
3/29/2005 9:35:45	0.0	0.8	
3/29/2005 9:36:00	0.0	0.6	**Calibration - 2nd Injection**
3/29/2005 9:36:15	0.1	**0.4**	**0.4 Zero Methane**
3/29/2005 9:36:30	0.1	**0.4**	
3/29/2005 9:36:45	0.1	**0.4**	
3/29/2005 9:37:00	0.1	**0.4**	
3/29/2005 9:37:15	0.7	0.4	
3/29/2005 9:37:30	70.4	0.4	
3/29/2005 9:37:45	34.9	0.4	
3/29/2005 9:38:00	2.2	0.4	
3/29/2005 9:38:15	0.7	0.4	
3/29/2005 9:38:30	0.4	0.4	
3/29/2005 9:38:45	33.9	0.4	
3/29/2005 9:39:00	18.6	0.4	**Calibration - 3rd Injection**
3/29/2005 9:39:15	16.0	**0.4**	**0.4 Zero Methane**
3/29/2005 9:39:30	15.9	**0.4**	
3/29/2005 9:39:45	15.8	**0.4**	
3/29/2005 9:40:00	15.8	**0.4**	
3/29/2005 9:40:15	15.7	0.4	**0.5 Average Zero Methane**
3/29/2005 9:40:30	15.7	0.4	
3/29/2005 9:40:45	15.7	0.4	
3/29/2005 9:41:00	15.6	0.4	
3/29/2005 9:41:15	15.5	0.4	
3/29/2005 9:41:30	15.3	0.4	
3/29/2005 9:41:45	15.3	0.4	
3/29/2005 9:42:00	15.4	23.7	
3/29/2005 9:42:15	15.6	46.9	
3/29/2005 9:42:30	15.6	46.9	
3/29/2005 9:42:45	15.5	46.9	
3/29/2005 9:43:00	15.5	46.9	
3/29/2005 9:43:15	15.5	46.9	
3/29/2005 9:43:30	15.5	46.9	
3/29/2005 9:43:45	15.5	46.9	
3/29/2005 9:44:00	15.5	46.9	
3/29/2005 9:44:15	15.3	46.9	
3/29/2005 9:44:30	15.2	46.9	
3/29/2005 9:44:45	15.1	46.9	
3/29/2005 9:45:00	15.3	47.6	
3/29/2005 9:45:15	15.4	48.4	
3/29/2005 9:45:30	15.4	48.4	
3/29/2005 9:45:45	15.4	48.4	
3/29/2005 9:46:00	15.4	48.4	
3/29/2005 9:46:15	15.4	48.4	
3/29/2005 9:46:30	15.4	48.4	
3/29/2005 9:46:45	15.4	48.4	
3/29/2005 9:47:00	15.3	48.4	
3/29/2005 9:47:15	15.2	48.4	
3/29/2005 9:47:30	15.1	48.4	
3/29/2005 9:47:45	15.1	48.4	
3/29/2005 9:48:00	15.2	49.0	**Calibration - 1st Injection**
3/29/2005 9:48:15	15.3	**49.5**	**49.5 50.0 ppm Methane**
3/29/2005 9:48:30	15.3	**49.5**	
3/29/2005 9:48:45	15.3	**49.5**	
3/29/2005 9:49:00	15.3	**49.5**	
3/29/2005 9:49:15	15.3	49.5	

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 9:49:30	15.3	49.5	
3/29/2005 9:49:45	15.2	49.5	
3/29/2005 9:50:00	15.2	49.5	
3/29/2005 9:50:15	15.1	49.5	
3/29/2005 9:50:30	14.9	49.5	
3/29/2005 9:50:45	14.9	49.5	
3/29/2005 9:51:00	15.1	49.6	**Calibration - 2nd Injection**
3/29/2005 9:51:15	15.2	**49.7**	**49.7 50.0 ppm Methane**
3/29/2005 9:51:30	15.2	**49.7**	
3/29/2005 9:51:45	15.2	**49.7**	
3/29/2005 9:52:00	15.2	**49.7**	
3/29/2005 9:52:15	15.2	49.7	
3/29/2005 9:52:30	15.2	49.7	
3/29/2005 9:52:45	15.2	49.7	
3/29/2005 9:53:00	15.2	49.7	
3/29/2005 9:53:15	15.0	49.7	
3/29/2005 9:53:30	14.9	49.7	
3/29/2005 9:53:45	14.9	49.7	
3/29/2005 9:54:00	15.0	49.6	**Calibration - 3rd Injection**
3/29/2005 9:54:15	15.2	**49.5**	**49.5 50.0 ppm Methane**
3/29/2005 9:54:30	15.2	**49.5**	
3/29/2005 9:54:45	15.2	**49.5**	
3/29/2005 9:55:00	15.2	**49.5**	
3/29/2005 9:55:15	9.1	49.5	**49.6 Average 50.0 ppm Methane**
3/29/2005 9:55:30	16.6	49.5	
3/29/2005 9:55:45	24.7	49.5	
3/29/2005 9:56:00	25.0	49.5	
3/29/2005 9:56:15	25.2	49.5	
3/29/2005 9:56:30	24.7	49.5	
3/29/2005 9:56:45	24.7	49.5	
3/29/2005 9:57:00	24.8	67.0	**Calibration - 1st Injection**
3/29/2005 9:57:15	25.0	**84.5**	**84.5 84.2 ppm Methane**
3/29/2005 9:57:30	25.0	**84.5**	
3/29/2005 9:57:45	25.0	**84.5**	
3/29/2005 9:58:00	25.1	**84.5**	
3/29/2005 9:58:15	25.0	84.5	
3/29/2005 9:58:30	25.0	84.5	
3/29/2005 9:58:45	25.0	84.5	
3/29/2005 9:59:00	25.0	84.5	
3/29/2005 9:59:15	24.8	84.5	
3/29/2005 9:59:30	24.7	84.5	
3/29/2005 9:59:45	24.7	84.5	
3/29/2005 10:00:00	24.8	84.4	**Calibration - 2nd Injection**
3/29/2005 10:00:15	25.0	**84.3**	**84.3 84.2 ppm Methane**
3/29/2005 10:00:30	24.9	**84.3**	
3/29/2005 10:00:45	25.0	**84.3**	
3/29/2005 10:01:00	24.9	**84.3**	
3/29/2005 10:01:15	24.9	84.3	
3/29/2005 10:01:30	24.9	84.3	
3/29/2005 10:01:45	24.9	84.3	
3/29/2005 10:02:00	24.9	84.3	
3/29/2005 10:02:15	24.8	84.3	
3/29/2005 10:02:30	24.6	84.3	
3/29/2005 10:02:45	24.6	84.3	
3/29/2005 10:03:00	24.8	84.3	**Calibration - 3rd Injection**
3/29/2005 10:03:15	24.9	**84.4**	**84.4 84.2 ppm Methane**
3/29/2005 10:03:30	24.9	**84.4**	
3/29/2005 10:03:45	24.9	**84.4**	
3/29/2005 10:04:00	24.9	**84.4**	

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 10:04:15	24.9	84.4	84.4 Average 84.2 ppm Methane
3/29/2005 10:04:30	24.5	84.4	
3/29/2005 10:04:45	18.3	84.4	
3/29/2005 10:05:00	8.5	84.4	
3/29/2005 10:05:15	7.6	84.4	
3/29/2005 10:05:30	7.3	84.4	
3/29/2005 10:05:45	7.3	84.4	
3/29/2005 10:06:00	7.4	54.3	Calibration - 1st Injection
3/29/2005 10:06:15	7.6	**24.2**	**24.2 25.0 ppm Methane**
3/29/2005 10:06:30	7.6	**24.2**	
3/29/2005 10:06:45	7.5	**24.2**	
3/29/2005 10:07:00	7.5	**24.2**	
3/29/2005 10:07:15	7.5	24.2	
3/29/2005 10:07:30	7.5	24.2	
3/29/2005 10:07:45	7.5	24.2	
3/29/2005 10:08:00	7.5	24.2	
3/29/2005 10:08:15	7.4	24.2	
3/29/2005 10:08:30	7.2	24.2	
3/29/2005 10:08:45	7.2	24.2	
3/29/2005 10:09:00	7.4	24.2	Calibration - 2nd Injection
3/29/2005 10:09:15	7.5	**24.1**	**24.1 25.0 ppm Methane**
3/29/2005 10:09:30	7.5	**24.1**	
3/29/2005 10:09:45	7.5	**24.1**	
3/29/2005 10:10:00	7.5	**24.1**	
3/29/2005 10:10:15	7.5	24.1	
3/29/2005 10:10:30	7.5	24.1	
3/29/2005 10:10:45	7.5	24.1	
3/29/2005 10:11:00	7.5	24.1	
3/29/2005 10:11:15	7.3	24.1	
3/29/2005 10:11:30	7.2	24.1	
3/29/2005 10:11:45	7.2	24.1	
3/29/2005 10:12:00	7.3	24.0	Calibration - 3rd Injection
3/29/2005 10:12:15	7.5	**23.9**	**23.9 25.0 ppm Methane**
3/29/2005 10:12:30	7.5	**23.9**	
3/29/2005 10:12:45	7.4	**23.9**	
3/29/2005 10:13:00	7.5	**23.9**	
3/29/2005 10:13:15	5.4	23.9	24.1 Average 25.0 ppm Methane
3/29/2005 10:13:30	1.7	23.9	
3/29/2005 10:13:45	0.0	23.9	
3/29/2005 10:14:00	0.0	23.9	
3/29/2005 10:14:15	0.0	23.9	
3/29/2005 10:14:30	0.0	23.9	
3/29/2005 10:14:45	0.0	23.9	
3/29/2005 10:15:00	0.0	11.9	
3/29/2005 10:15:15	0.0	-0.1	
3/29/2005 10:15:30	0.0	-0.1	
3/29/2005 10:15:45	0.0	-0.1	
3/29/2005 10:16:00	0.1	-0.1	
3/29/2005 10:16:15	0.1	-0.1	
3/29/2005 10:16:30	0.1	-0.1	
3/29/2005 10:16:45	14.9	-0.1	
3/29/2005 10:17:00	26.6	-0.1	
3/29/2005 10:17:15	39.4	-0.1	
3/29/2005 10:17:30	45.4	-0.1	
3/29/2005 10:17:45	46.8	-0.1	
3/29/2005 10:18:00	47.4	-0.1	
3/29/2005 10:18:15	47.8	-0.1	
3/29/2005 10:18:30	47.9	-0.1	
3/29/2005 10:18:45	48.0	-0.1	

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 10:19:00	48.3	-0.1	
3/29/2005 10:19:15	49.0	-0.1	
3/29/2005 10:19:30	50.5	-0.1	
3/29/2005 10:19:45	50.7	-0.1	
3/29/2005 10:20:00	50.7	-0.1	
3/29/2005 10:20:15	50.3	-0.1	
3/29/2005 10:20:30	50.3	-0.1	
3/29/2005 10:20:45	50.6	-0.1	
3/29/2005 10:21:00	50.4	-0.1	
3/29/2005 10:21:15	50.6	-0.1	

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 15:42:00	9.3	1.1	
3/29/2005 15:42:15	9.2	1.0	
3/29/2005 15:42:30	9.0	1.0	
3/29/2005 15:42:45	9.0	1.0	
3/29/2005 15:43:00	9.3	1.0	
3/29/2005 15:43:15	9.1	1.0	
3/29/2005 15:43:30	8.8	1.0	
3/29/2005 15:43:45	9.6	1.0	
3/29/2005 15:44:00	53.5	1.0	
3/29/2005 15:44:15	2.5	1.0	
3/29/2005 15:44:30	0.0	1.0	
3/29/2005 15:44:45	0.0	1.0	
3/29/2005 15:45:00	0.0	0.7	**Calibration**
3/29/2005 15:45:15	**0.0**	-0.1	**0.0 Zero Propane**
3/29/2005 15:45:30	**0.0**	-0.1	
3/29/2005 15:45:45	**0.0**	-0.1	
3/29/2005 15:46:00	**0.0**	-0.1	
3/29/2005 15:46:15	0.0	-0.1	
3/29/2005 15:46:30	0.0	-0.1	
3/29/2005 15:46:45	0.0	-0.1	
3/29/2005 15:47:00	0.0	-0.1	
3/29/2005 15:47:15	0.0	-0.1	
3/29/2005 15:47:30	0.0	-0.1	
3/29/2005 15:47:45	0.0	-0.1	
3/29/2005 15:48:00	0.1	-0.1	
3/29/2005 15:48:15	0.2	-0.1	
3/29/2005 15:48:30	0.2	-0.1	
3/29/2005 15:48:45	3.4	-0.1	
3/29/2005 15:49:00	30.3	-0.1	
3/29/2005 15:49:15	36.8	-0.1	
3/29/2005 15:49:30	45.0	-0.1	
3/29/2005 15:49:45	48.1	-0.1	
3/29/2005 15:50:00	49.4	-0.1	
3/29/2005 15:50:15	50.0	-0.1	
3/29/2005 15:50:30	50.2	-0.1	
3/29/2005 15:50:45	50.6	-0.1	
3/29/2005 15:51:00	50.3	-0.1	
3/29/2005 15:51:15	50.4	-0.1	
3/29/2005 15:51:30	50.1	-0.1	
3/29/2005 15:51:45	50.5	-0.1	
3/29/2005 15:52:00	50.8	-0.1	
3/29/2005 15:52:15	50.1	-0.1	
3/29/2005 15:52:30	50.2	-0.1	
3/29/2005 15:52:45	50.9	-0.1	
3/29/2005 15:53:00	50.9	-0.1	
3/29/2005 15:53:15	50.9	-0.1	
3/29/2005 15:53:30	50.7	-0.1	
3/29/2005 15:53:45	50.6	-0.1	
3/29/2005 15:54:00	50.8	-0.1	**Calibration**
3/29/2005 15:54:15	**51.0**	-0.1	**51.1 50.0 ppm Propane**
3/29/2005 15:54:30	**51.1**	-0.1	
3/29/2005 15:54:45	**51.1**	-0.1	
3/29/2005 15:55:00	**51.1**	-0.1	
3/29/2005 15:55:15	47.8	-0.1	
3/29/2005 15:55:30	60.5	-0.1	
3/29/2005 15:55:45	52.3	-0.1	
3/29/2005 15:56:00	17.6	-0.1	
3/29/2005 15:56:15	12.9	-0.1	
3/29/2005 15:56:30	11.9	-0.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 15:56:45	10.6	-0.1	
3/29/2005 15:57:00	9.7	0.4	
3/29/2005 15:57:15	9.3	1.9	
3/29/2005 15:57:30	9.3	1.9	
3/29/2005 15:57:45	17.8	1.9	
3/29/2005 15:58:00	32.1	1.9	
3/29/2005 15:58:15	3.6	1.9	
3/29/2005 15:58:30	1.4	1.9	
3/29/2005 15:58:45	2.1	1.9	
3/29/2005 15:59:00	2.3	1.9	
3/29/2005 15:59:15	0.9	1.9	
3/29/2005 15:59:30	0.4	1.9	
3/29/2005 15:59:45	0.3	1.9	
3/29/2005 16:00:00	0.3	1.4	
3/29/2005 16:00:15	0.4	-0.1	
3/29/2005 16:00:30	0.3	-0.1	
3/29/2005 16:00:45	0.3	-0.1	
3/29/2005 16:01:00	0.2	-0.1	
3/29/2005 16:01:15	0.3	-0.1	
3/29/2005 16:01:30	0.2	-0.1	
3/29/2005 16:01:45	0.2	-0.1	
3/29/2005 16:02:00	0.2	-0.1	
3/29/2005 16:02:15	1.1	-0.1	
3/29/2005 16:02:30	1.2	-0.1	
3/29/2005 16:02:45	0.2	-0.1	
3/29/2005 16:03:00	0.1	0.0	
3/29/2005 16:03:15	0.3	0.4	
3/29/2005 16:03:30	0.3	0.4	
3/29/2005 16:03:45	0.3	0.4	
3/29/2005 16:04:00	0.3	0.4	
3/29/2005 16:04:15	0.3	0.4	
3/29/2005 16:04:30	0.3	0.4	
3/29/2005 16:04:45	0.3	0.4	
3/29/2005 16:05:00	1.4	0.4	
3/29/2005 16:05:15	0.6	0.4	
3/29/2005 16:05:30	0.3	0.4	
3/29/2005 16:05:45	0.3	0.4	
3/29/2005 16:06:00	0.4	0.3	
3/29/2005 16:06:15	0.6	0.1	
3/29/2005 16:06:30	0.6	0.1	
3/29/2005 16:06:45	0.6	0.1	
3/29/2005 16:07:00	0.6	0.1	
3/29/2005 16:07:15	0.8	0.1	
3/29/2005 16:07:30	4.4	0.1	
3/29/2005 16:07:45	1.2	0.1	
3/29/2005 16:08:00	0.8	0.1	
3/29/2005 16:08:15	0.7	0.1	
3/29/2005 16:08:30	0.6	0.1	
3/29/2005 16:08:45	0.6	0.1	
3/29/2005 16:09:00	0.6	0.1	
3/29/2005 16:09:15	0.7	0.3	
3/29/2005 16:09:30	0.7	0.3	
3/29/2005 16:09:45	0.7	0.3	
3/29/2005 16:10:00	0.7	0.3	
3/29/2005 16:10:15	0.6	0.3	
3/29/2005 16:10:30	0.6	0.3	
3/29/2005 16:10:45	0.6	0.3	
3/29/2005 16:11:00	0.6	0.3	
3/29/2005 16:11:15	0.5	0.3	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 16:11:30	0.4	0.3	
3/29/2005 16:11:45	0.3	0.3	
3/29/2005 16:12:00	0.4	0.4	
3/29/2005 16:12:15	0.5	0.7	
3/29/2005 16:12:30	0.5	0.7	
3/29/2005 16:12:45	0.5	0.7	
3/29/2005 16:13:00	0.5	0.7	
3/29/2005 16:13:15	0.5	0.7	
3/29/2005 16:13:30	0.5	0.7	
3/29/2005 16:13:45	0.5	0.7	
3/29/2005 16:14:00	0.5	0.7	
3/29/2005 16:14:15	0.8	0.7	
3/29/2005 16:14:30	1.7	0.7	
3/29/2005 16:14:45	0.4	0.7	
3/29/2005 16:15:00	0.2	0.7	
3/29/2005 16:15:15	0.3	0.7	
3/29/2005 16:15:30	0.3	0.7	
3/29/2005 16:15:45	0.3	0.7	
3/29/2005 16:16:00	0.3	0.7	
3/29/2005 16:16:15	0.3	0.7	
3/29/2005 16:16:30	0.3	0.7	
3/29/2005 16:16:45	0.3	0.7	
3/29/2005 16:17:00	0.2	0.7	
3/29/2005 16:17:15	1.5	0.7	
3/29/2005 16:17:30	0.7	0.7	
3/29/2005 16:17:45	0.1	0.7	
3/29/2005 16:18:00	0.0	0.7	
3/29/2005 16:18:15	0.2	0.7	
3/29/2005 16:18:30	0.2	0.7	
3/29/2005 16:18:45	0.1	0.7	
3/29/2005 16:19:00	0.1	0.7	
3/29/2005 16:19:15	0.2	0.7	
3/29/2005 16:19:30	0.1	0.7	
3/29/2005 16:19:45	0.1	0.7	
3/29/2005 16:20:00	0.1	0.7	
3/29/2005 16:20:15	1.3	0.7	
3/29/2005 16:20:30	0.8	0.7	
3/29/2005 16:20:45	0.0	0.7	
3/29/2005 16:21:00	0.0	0.6	
3/29/2005 16:21:15	0.1	0.6	
3/29/2005 16:21:30	0.1	0.6	
3/29/2005 16:21:45	0.1	0.6	
3/29/2005 16:22:00	0.1	0.6	
3/29/2005 16:22:15	0.1	0.6	
3/29/2005 16:22:30	0.1	0.6	
3/29/2005 16:22:45	0.0	0.6	
3/29/2005 16:23:00	0.0	0.6	
3/29/2005 16:23:15	0.0	0.6	
3/29/2005 16:23:30	0.0	0.6	
3/29/2005 16:23:45	0.0	0.6	
3/29/2005 16:24:00	0.0	0.5	
3/29/2005 16:24:15	0.1	0.4	
3/29/2005 16:24:30	2.7	0.4	
3/29/2005 16:24:45	11.2	0.4	
3/29/2005 16:25:00	10.7	0.4	
3/29/2005 16:25:15	9.7	0.4	
3/29/2005 16:25:30	9.2	0.4	
3/29/2005 16:25:45	9.0	0.4	
3/29/2005 16:26:00	8.7	0.4	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 16:26:15	8.2	0.4	
3/29/2005 16:26:30	7.8	0.4	
3/29/2005 16:26:45	8.1	0.4	
3/29/2005 16:27:00	8.8	0.9	
3/29/2005 16:27:15	8.9	2.2	
3/29/2005 16:27:30	8.7	2.2	
3/29/2005 16:27:45	8.5	2.2	
3/29/2005 16:28:00	8.6	2.2	
3/29/2005 16:28:15	8.5	2.2	
3/29/2005 16:28:30	8.2	2.2	
3/29/2005 16:28:45	7.9	2.2	
3/29/2005 16:29:00	7.7	2.2	
3/29/2005 16:29:15	7.8	2.2	
3/29/2005 16:29:30	7.5	2.2	
3/29/2005 16:29:45	7.2	2.2	
3/29/2005 16:30:00	7.0	2.1	
3/29/2005 16:30:15	7.1	1.9	
3/29/2005 16:30:30	7.8	1.9	
3/29/2005 16:30:45	8.2	1.9	
3/29/2005 16:31:00	8.2	1.9	
3/29/2005 16:31:15	7.9	1.9	
3/29/2005 16:31:30	7.9	1.9	
3/29/2005 16:31:45	8.0	1.9	
3/29/2005 16:32:00	7.9	1.9	
3/29/2005 16:32:15	7.5	1.9	
3/29/2005 16:32:30	7.1	1.9	
3/29/2005 16:32:45	7.1	1.9	
3/29/2005 16:33:00	7.3	1.9	
3/29/2005 16:33:15	7.3	1.7	
3/29/2005 16:33:30	7.0	1.7	
3/29/2005 16:33:45	6.9	1.7	
3/29/2005 16:34:00	7.1	1.7	
3/29/2005 16:34:15	7.8	1.7	
3/29/2005 16:34:30	7.9	1.7	
3/29/2005 16:34:45	7.8	1.7	
3/29/2005 16:35:00	7.7	1.7	
3/29/2005 16:35:15	7.7	1.7	
3/29/2005 16:35:30	7.6	1.7	
3/29/2005 16:35:45	7.4	1.7	
3/29/2005 16:36:00	7.2	1.6	
3/29/2005 16:36:15	7.1	1.4	
3/29/2005 16:36:30	7.1	1.4	
3/29/2005 16:36:45	7.1	1.4	
3/29/2005 16:37:00	6.9	1.4	
3/29/2005 16:37:15	6.7	1.4	
3/29/2005 16:37:30	6.6	1.4	
3/29/2005 16:37:45	7.2	1.4	
3/29/2005 16:38:00	7.8	1.4	
3/29/2005 16:38:15	7.8	1.4	
3/29/2005 16:38:30	7.4	1.4	
3/29/2005 16:38:45	7.2	1.4	
3/29/2005 16:39:00	7.4	1.3	
3/29/2005 16:39:15	7.5	1.1	
3/29/2005 16:39:30	7.3	1.1	
3/29/2005 16:39:45	7.1	1.1	
3/29/2005 16:40:00	6.9	1.1	
3/29/2005 16:40:15	7.0	1.1	
3/29/2005 16:40:30	7.0	1.1	
3/29/2005 16:40:45	6.9	1.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 16:41:00	6.7	1.1	
3/29/2005 16:41:15	6.8	1.1	
3/29/2005 16:41:30	7.2	1.1	
3/29/2005 16:41:45	7.3	1.1	
3/29/2005 16:42:00	7.3	1.1	
3/29/2005 16:42:15	7.3	1.0	
3/29/2005 16:42:30	7.4	1.0	
3/29/2005 16:42:45	7.5	1.0	
3/29/2005 16:43:00	7.3	1.0	
3/29/2005 16:43:15	7.1	1.0	
3/29/2005 16:43:30	6.9	1.0	
3/29/2005 16:43:45	6.9	1.0	
3/29/2005 16:44:00	7.0	1.0	
3/29/2005 16:44:15	7.1	1.0	
3/29/2005 16:44:30	7.0	1.0	
3/29/2005 16:44:45	6.9	1.0	
3/29/2005 16:45:00	7.2	0.9	
3/29/2005 16:45:15	7.4	0.8	
3/29/2005 16:45:30	7.2	0.8	
3/29/2005 16:45:45	6.9	0.8	
3/29/2005 16:46:00	6.7	0.8	
3/29/2005 16:46:15	6.9	0.8	
3/29/2005 16:46:30	7.1	0.8	
3/29/2005 16:46:45	7.2	0.8	
3/29/2005 16:47:00	7.3	0.8	
3/29/2005 16:47:15	7.3	0.8	
3/29/2005 16:47:30	7.5	0.8	
3/29/2005 16:47:45	7.5	0.8	
3/29/2005 16:48:00	7.3	0.8	
3/29/2005 16:48:15	7.1	0.8	
3/29/2005 16:48:30	6.9	0.8	
3/29/2005 16:48:45	7.1	0.8	
3/29/2005 16:49:00	7.0	0.8	
3/29/2005 16:49:15	6.9	0.8	
3/29/2005 16:49:30	7.1	0.8	
3/29/2005 16:49:45	7.3	0.8	
3/29/2005 16:50:00	7.5	0.8	
3/29/2005 16:50:15	7.3	0.8	
3/29/2005 16:50:30	6.9	0.8	
3/29/2005 16:50:45	6.7	0.8	
3/29/2005 16:51:00	6.7	0.7	
3/29/2005 16:51:15	7.1	0.6	
3/29/2005 16:51:30	7.1	0.6	
3/29/2005 16:51:45	7.1	0.6	
3/29/2005 16:52:00	7.3	0.6	
3/29/2005 16:52:15	7.5	0.6	
3/29/2005 16:52:30	7.8	0.6	
3/29/2005 16:52:45	5.4	0.6	
3/29/2005 16:53:00	0.6	0.6	
3/29/2005 16:53:15	0.1	0.6	
3/29/2005 16:53:30	0.0	0.6	
3/29/2005 16:53:45	0.0	0.6	**Calibration**
3/29/2005 16:54:00	**0.0**	0.4	**0.0 Zero Propane/N_2**
3/29/2005 16:54:15	**0.0**	-0.1	
3/29/2005 16:54:30	**0.0**	-0.1	
3/29/2005 16:54:45	**0.0**	-0.1	
3/29/2005 16:55:00	0.7	-0.1	
3/29/2005 16:55:15	11.6	-0.1	
3/29/2005 16:55:30	39.5	-0.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 16:55:45	46.0	-0.1	
3/29/2005 16:56:00	47.0	-0.1	
3/29/2005 16:56:15	47.1	-0.1	
3/29/2005 16:56:30	47.2	-0.1	
3/29/2005 16:56:45	47.3	-0.1	
3/29/2005 16:57:00	47.4	-0.1	
3/29/2005 16:57:15	47.7	-0.1	
3/29/2005 16:57:30	47.8	-0.1	
3/29/2005 16:57:45	47.9	-0.1	
3/29/2005 16:58:00	48.2	-0.1	
3/29/2005 16:58:15	48.4	-0.1	
3/29/2005 16:58:30	48.5	-0.1	
3/29/2005 16:58:45	48.5	-0.1	
3/29/2005 16:59:00	48.4	-0.1	
3/29/2005 16:59:15	48.5	-0.1	
3/29/2005 16:59:30	48.6	-0.1	
3/29/2005 16:59:45	48.6	-0.1	
3/29/2005 17:00:00	48.7	-0.1	
3/29/2005 17:00:15	48.8	-0.1	
3/29/2005 17:00:30	48.8	-0.1	Calibration
3/29/2005 17:00:45	**48.9**	-0.1	**49.1 50.0 ppm Propane/N_2**
3/29/2005 17:01:00	**49.2**	-0.1	
3/29/2005 17:01:15	**49.2**	-0.1	
3/29/2005 17:01:30	**49.1**	-0.1	
3/29/2005 17:01:45	43.6	-0.1	
3/29/2005 17:02:00	12.1	-0.1	
3/29/2005 17:02:15	8.2	-0.1	
3/29/2005 17:02:30	7.5	-0.1	
3/29/2005 17:02:45	7.2	-0.1	
3/29/2005 17:03:00	7.0	0.1	
3/29/2005 17:03:15	7.3	0.7	
3/29/2005 17:03:30	7.4	0.7	
3/29/2005 17:03:45	7.2	0.7	**Begin Run No. WO-1-1 - Whiteburn Condition 1**
3/29/2005 17:04:00	**6.9**	**0.7**	
3/29/2005 17:04:15	**6.8**	**0.7**	
3/29/2005 17:04:30	**7.0**	**0.7**	
3/29/2005 17:04:45	**7.2**	**0.7**	
3/29/2005 17:05:00	**7.4**	**0.7**	
3/29/2005 17:05:15	**7.5**	**0.7**	
3/29/2005 17:05:30	**7.3**	**0.7**	
3/29/2005 17:05:45	**7.5**	**0.7**	
3/29/2005 17:06:00	**7.5**	**0.9**	
3/29/2005 17:06:15	**7.3**	**1.4**	
3/29/2005 17:06:30	**7.0**	**1.4**	
3/29/2005 17:06:45	**6.9**	**1.4**	
3/29/2005 17:07:00	**7.1**	**1.4**	
3/29/2005 17:07:15	**7.1**	**1.4**	
3/29/2005 17:07:30	**7.1**	**1.4**	
3/29/2005 17:07:45	**7.3**	**1.4**	
3/29/2005 17:08:00	**7.4**	**1.4**	
3/29/2005 17:08:15	**7.7**	**1.4**	
3/29/2005 17:08:30	**7.5**	**1.4**	
3/29/2005 17:08:45	**7.2**	**1.4**	
3/29/2005 17:09:00	**6.9**	**1.4**	
3/29/2005 17:09:15	**6.9**	**1.4**	
3/29/2005 17:09:30	**7.0**	**1.4**	
3/29/2005 17:09:45	**6.9**	**1.4**	
3/29/2005 17:10:00	**6.7**	**1.4**	
3/29/2005 17:10:15	**6.5**	**1.4**	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 17:10:30	6.6	1.4	
3/29/2005 17:10:45	7.3	1.4	
3/29/2005 17:11:00	7.4	1.4	
3/29/2005 17:11:15	7.2	1.4	
3/29/2005 17:11:30	6.9	1.4	
3/29/2005 17:11:45	6.9	1.4	
3/29/2005 17:12:00	7.0	1.4	
3/29/2005 17:12:15	7.0	1.4	
3/29/2005 17:12:30	6.8	1.4	
3/29/2005 17:12:45	6.5	1.4	
3/29/2005 17:13:00	6.6	1.4	
3/29/2005 17:13:15	7.0	1.4	
3/29/2005 17:13:30	7.3	1.4	
3/29/2005 17:13:45	7.3	1.4	
3/29/2005 17:14:00	7.1	1.4	
3/29/2005 17:14:15	7.3	1.4	
3/29/2005 17:14:30	7.2	1.4	
3/29/2005 17:14:45	6.9	1.4	
3/29/2005 17:15:00	6.7	1.4	
3/29/2005 17:15:15	6.6	1.4	
3/29/2005 17:15:30	6.8	1.4	
3/29/2005 17:15:45	6.8	1.4	
3/29/2005 17:16:00	6.6	1.4	
3/29/2005 17:16:15	6.6	1.4	
3/29/2005 17:16:30	6.7	1.4	
3/29/2005 17:16:45	7.1	1.4	
3/29/2005 17:17:00	7.1	1.4	
3/29/2005 17:17:15	6.9	1.4	
3/29/2005 17:17:30	6.5	1.4	
3/29/2005 17:17:45	6.4	1.4	
3/29/2005 17:18:00	6.6	1.4	
3/29/2005 17:18:15	6.6	1.3	
3/29/2005 17:18:30	6.5	1.3	
3/29/2005 17:18:45	6.3	1.3	
3/29/2005 17:19:00	6.5	1.3	
3/29/2005 17:19:15	7.2	1.3	
3/29/2005 17:19:30	7.3	1.3	
3/29/2005 17:19:45	7.2	1.3	
3/29/2005 17:20:00	7.0	1.3	
3/29/2005 17:20:15	7.0	1.3	
3/29/2005 17:20:30	7.0	1.3	
3/29/2005 17:20:45	6.9	1.3	
3/29/2005 17:21:00	6.7	1.3	
3/29/2005 17:21:15	6.7	1.3	
3/29/2005 17:21:30	6.9	1.3	
3/29/2005 17:21:45	7.1	1.3	
3/29/2005 17:22:00	7.2	1.3	
3/29/2005 17:22:15	7.1	1.3	
3/29/2005 17:22:30	7.1	1.3	
3/29/2005 17:22:45	7.2	1.3	
3/29/2005 17:23:00	7.3	1.3	
3/29/2005 17:23:15	7.0	1.3	
3/29/2005 17:23:30	6.7	1.3	
3/29/2005 17:23:45	6.6	1.3	
3/29/2005 17:24:00	6.7	1.3	
3/29/2005 17:24:15	6.9	1.3	
3/29/2005 17:24:30	6.9	1.3	
3/29/2005 17:24:45	7.1	1.3	
3/29/2005 17:25:00	7.0	1.3	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 17:25:15	7.2	1.3	
3/29/2005 17:25:30	7.4	1.3	
3/29/2005 17:25:45	7.3	1.3	
3/29/2005 17:26:00	7.0	1.3	
3/29/2005 17:26:15	6.9	1.3	
3/29/2005 17:26:30	7.0	1.3	
3/29/2005 17:26:45	7.0	1.3	
3/29/2005 17:27:00	6.8	1.3	
3/29/2005 17:27:15	6.8	1.3	
3/29/2005 17:27:30	6.9	1.3	
3/29/2005 17:27:45	7.2	1.3	
3/29/2005 17:28:00	7.3	1.3	
3/29/2005 17:28:15	7.2	1.3	
3/29/2005 17:28:30	7.1	1.3	
3/29/2005 17:28:45	7.2	1.3	
3/29/2005 17:29:00	7.4	1.3	
3/29/2005 17:29:15	7.2	1.3	
3/29/2005 17:29:30	6.9	1.3	
3/29/2005 17:29:45	6.6	1.3	
3/29/2005 17:30:00	6.6	1.3	
3/29/2005 17:30:15	6.8	1.3	
3/29/2005 17:30:30	6.8	1.3	
3/29/2005 17:30:45	6.9	1.3	
3/29/2005 17:31:00	7.0	1.3	
3/29/2005 17:31:15	7.2	1.3	
3/29/2005 17:31:30	7.3	1.3	
3/29/2005 17:31:45	7.1	1.3	
3/29/2005 17:32:00	6.8	1.3	
3/29/2005 17:32:15	6.5	1.3	
3/29/2005 17:32:30	6.5	1.3	
3/29/2005 17:32:45	6.7	1.3	
3/29/2005 17:33:00	6.6	1.3	
3/29/2005 17:33:15	6.6	1.3	
3/29/2005 17:33:30	6.5	1.3	
3/29/2005 17:33:45	7.1	1.3	
3/29/2005 17:34:00	7.5	1.3	Change of Ports
3/29/2005 17:34:15	7.4	1.3	
3/29/2005 17:34:30	7.0	1.3	
3/29/2005 17:34:45	2.8	1.3	
3/29/2005 17:35:00	1.1	1.3	
3/29/2005 17:35:15	1.2	1.3	
3/29/2005 17:35:30	0.7	1.3	
3/29/2005 17:35:45	0.7	1.3	
3/29/2005 17:36:00	0.5	1.3	
3/29/2005 17:36:15	0.6	1.3	
3/29/2005 17:36:30	0.7	1.3	
3/29/2005 17:36:45	0.3	1.3	
3/29/2005 17:37:00	3.2	1.3	
3/29/2005 17:37:15	5.0	1.3	
3/29/2005 17:37:30	6.3	1.3	
3/29/2005 17:37:45	6.4	1.3	Resume Testing
3/29/2005 17:38:00	6.9	1.3	
3/29/2005 17:38:15	6.2	1.3	
3/29/2005 17:38:30	6.6	1.3	
3/29/2005 17:38:45	6.5	1.3	
3/29/2005 17:39:00	7.1	1.4	
3/29/2005 17:39:15	6.7	1.4	
3/29/2005 17:39:30	6.1	1.4	
3/29/2005 17:39:45	6.5	1.4	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 17:40:00	6.4	1.4	
3/29/2005 17:40:15	6.9	1.4	
3/29/2005 17:40:30	6.4	1.4	
3/29/2005 17:40:45	6.6	1.4	
3/29/2005 17:41:00	6.5	1.4	
3/29/2005 17:41:15	6.4	1.4	
3/29/2005 17:41:30	6.1	1.4	
3/29/2005 17:41:45	6.0	1.4	
3/29/2005 17:42:00	6.4	1.4	
3/29/2005 17:42:15	6.0	1.3	
3/29/2005 17:42:30	6.2	1.3	
3/29/2005 17:42:45	6.4	1.3	
3/29/2005 17:43:00	6.3	1.3	
3/29/2005 17:43:15	6.1	1.3	
3/29/2005 17:43:30	6.3	1.3	
3/29/2005 17:43:45	6.3	1.3	
3/29/2005 17:44:00	6.3	1.3	
3/29/2005 17:44:15	6.4	1.3	
3/29/2005 17:44:30	6.5	1.3	
3/29/2005 17:44:45	6.9	1.3	
3/29/2005 17:45:00	6.9	1.3	
3/29/2005 17:45:15	6.7	1.3	
3/29/2005 17:45:30	6.5	1.3	
3/29/2005 17:45:45	6.4	1.3	
3/29/2005 17:46:00	6.6	1.3	
3/29/2005 17:46:15	6.5	1.3	
3/29/2005 17:46:30	6.4	1.3	
3/29/2005 17:46:45	6.3	1.3	
3/29/2005 17:47:00	6.5	1.3	
3/29/2005 17:47:15	7.0	1.3	
3/29/2005 17:47:30	6.8	1.3	
3/29/2005 17:47:45	6.6	1.3	
3/29/2005 17:48:00	6.5	1.3	
3/29/2005 17:48:15	6.6	1.3	
3/29/2005 17:48:30	6.7	1.3	
3/29/2005 17:48:45	6.6	1.3	
3/29/2005 17:49:00	6.6	1.3	
3/29/2005 17:49:15	6.5	1.3	
3/29/2005 17:49:30	6.6	1.3	
3/29/2005 17:49:45	7.2	1.3	
3/29/2005 17:50:00	7.5	1.3	
3/29/2005 17:50:15	7.4	1.3	
3/29/2005 17:50:30	7.0	1.3	
3/29/2005 17:50:45	7.1	1.3	
3/29/2005 17:51:00	7.2	1.3	
3/29/2005 17:51:15	7.1	1.3	
3/29/2005 17:51:30	6.8	1.3	
3/29/2005 17:51:45	6.7	1.3	
3/29/2005 17:52:00	6.7	1.3	
3/29/2005 17:52:15	6.7	1.3	
3/29/2005 17:52:30	6.6	1.3	
3/29/2005 17:52:45	6.6	1.3	
3/29/2005 17:53:00	6.7	1.3	
3/29/2005 17:53:15	7.0	1.3	
3/29/2005 17:53:30	6.9	1.3	
3/29/2005 17:53:45	6.7	1.3	
3/29/2005 17:54:00	6.5	1.3	
3/29/2005 17:54:15	6.5	1.3	
3/29/2005 17:54:30	6.7	1.3	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 17:54:45	6.8	1.3	
3/29/2005 17:55:00	6.7	1.3	
3/29/2005 17:55:15	6.7	1.3	
3/29/2005 17:55:30	6.8	1.3	
3/29/2005 17:55:45	7.1	1.3	
3/29/2005 17:56:00	6.9	1.3	
3/29/2005 17:56:15	6.7	1.3	
3/29/2005 17:56:30	6.4	1.3	
3/29/2005 17:56:45	6.3	1.3	
3/29/2005 17:57:00	6.5	1.3	
3/29/2005 17:57:15	6.5	1.3	
3/29/2005 17:57:30	6.7	1.3	
3/29/2005 17:57:45	6.7	1.3	
3/29/2005 17:58:00	6.9	1.3	
3/29/2005 17:58:15	7.1	1.3	
3/29/2005 17:58:30	6.9	1.3	
3/29/2005 17:58:45	6.7	1.3	
3/29/2005 17:59:00	6.5	1.3	
3/29/2005 17:59:15	6.6	1.3	
3/29/2005 17:59:30	6.5	1.3	
3/29/2005 17:59:45	6.4	1.3	
3/29/2005 18:00:00	6.3	1.3	
3/29/2005 18:00:15	6.3	1.4	
3/29/2005 18:00:30	6.7	1.4	
3/29/2005 18:00:45	6.9	1.4	
3/29/2005 18:01:00	6.9	1.4	
3/29/2005 18:01:15	6.8	1.4	
3/29/2005 18:01:30	6.7	1.4	
3/29/2005 18:01:45	6.8	1.4	
3/29/2005 18:02:00	7.0	1.4	
3/29/2005 18:02:15	6.9	1.4	
3/29/2005 18:02:30	6.6	1.4	
3/29/2005 18:02:45	6.5	1.4	
3/29/2005 18:03:00	6.7	1.3	
3/29/2005 18:03:15	6.8	0.9	
3/29/2005 18:03:30	6.6	0.9	
3/29/2005 18:03:45	6.5	0.9	
3/29/2005 18:04:00	6.4	0.9	
3/29/2005 18:04:15	6.8	0.9	
3/29/2005 18:04:30	6.9	0.9	
3/29/2005 18:04:45	6.9	0.9	
3/29/2005 18:05:00	6.8	0.9	
3/29/2005 18:05:15	6.8	0.9	
3/29/2005 18:05:30	6.8	0.9	
3/29/2005 18:05:45	6.7	0.9	
3/29/2005 18:06:00	6.6	1.0	
3/29/2005 18:06:15	6.5	1.1	
3/29/2005 18:06:30	6.4	1.1	
3/29/2005 18:06:45	6.6	1.1	
3/29/2005 18:07:00	6.7	1.1	
3/29/2005 18:07:15	6.9	1.1	
3/29/2005 18:07:30	6.9	1.1	
3/29/2005 18:07:45	7.0	1.1	
3/29/2005 18:08:00	7.1	1.1	End Run No. WO-1-1 - Whiteburn Condition #1
3/29/2005 18:08:15	7.0	1.1	
3/29/2005 18:08:30	6.5	1.1	
3/29/2005 18:08:45	10.2	1.1	
3/29/2005 18:09:00	40.0	1.1	
3/29/2005 18:09:15	42.7	1.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 18:09:30	48.8	1.1	
3/29/2005 18:09:45	50.4	1.1	
3/29/2005 18:10:00	50.9	1.1	
3/29/2005 18:10:15	50.0	1.1	
3/29/2005 18:10:30	48.8	1.1	
3/29/2005 18:10:45	48.9	1.1	
3/29/2005 18:11:00	48.7	1.1	**Calibration**
3/29/2005 18:11:15	**49.1**	1.1	**48.9 50.0 ppm Propane/N_2**
3/29/2005 18:11:30	**48.9**	1.1	
3/29/2005 18:11:45	**48.7**	1.1	
3/29/2005 18:12:00	**48.8**	0.8	
3/29/2005 18:12:15	48.7	-0.1	
3/29/2005 18:12:30	43.2	-0.1	
3/29/2005 18:12:45	8.2	-0.1	
3/29/2005 18:13:00	0.1	-0.1	
3/29/2005 18:13:15	0.0	-0.1	**Calibration**
3/29/2005 18:13:30	**0.0**	-0.1	**0.0 Zero Propane/N_2**
3/29/2005 18:13:45	**0.0**	-0.1	
3/29/2005 18:14:00	**0.0**	-0.1	
3/29/2005 18:14:15	**0.0**	-0.1	
3/29/2005 18:14:30	0.0	-0.1	
3/29/2005 18:14:45	0.0	-0.1	
3/29/2005 18:15:00	0.0	-0.1	
3/29/2005 18:15:15	2.8	-0.1	
3/29/2005 18:15:30	8.2	-0.1	
3/29/2005 18:15:45	8.1	-0.1	
3/29/2005 18:16:00	7.7	-0.1	
3/29/2005 18:16:15	7.6	-0.1	
3/29/2005 18:16:30	7.6	-0.1	
3/29/2005 18:16:45	7.5	-0.1	
3/29/2005 18:17:00	7.3	-0.1	
3/29/2005 18:17:15	7.0	-0.1	
3/29/2005 18:17:30	6.8	-0.1	
3/29/2005 18:17:45	6.8	-0.1	
3/29/2005 18:18:00	6.8	0.3	
3/29/2005 18:18:15	6.7	1.6	
3/29/2005 18:18:30	6.5	1.6	
3/29/2005 18:18:45	6.8	1.6	
3/29/2005 18:19:00	7.3	1.6	
3/29/2005 18:19:15	7.3	1.6	
3/29/2005 18:19:30	7.1	1.6	
3/29/2005 18:19:45	6.9	1.6	
3/29/2005 18:20:00	7.0	1.6	
3/29/2005 18:20:15	7.0	1.6	
3/29/2005 18:20:30	6.7	1.6	
3/29/2005 18:20:45	6.4	1.6	
3/29/2005 18:21:00	6.3	1.6	
3/29/2005 18:21:15	6.5	1.5	
3/29/2005 18:21:30	6.7	1.5	
3/29/2005 18:21:45	6.9	1.5	
3/29/2005 18:22:00	7.1	1.5	
3/29/2005 18:22:15	7.1	1.5	
3/29/2005 18:22:30	7.2	1.5	
3/29/2005 18:22:45	7.1	1.5	
3/29/2005 18:23:00	6.9	1.5	
3/29/2005 18:23:15	6.7	1.5	
3/29/2005 18:23:30	6.3	1.5	
3/29/2005 18:23:45	6.4	1.5	
3/29/2005 18:24:00	6.4	1.5	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 18:24:15	6.2	1.4	
3/29/2005 18:24:30	5.3	1.4	
3/29/2005 18:24:45	5.3	1.4	
3/29/2005 18:25:00	5.8	1.4	
3/29/2005 18:25:15	6.1	1.4	
3/29/2005 18:25:30	6.1	1.4	
3/29/2005 18:25:45	5.9	1.4	
3/29/2005 18:26:00	5.9	1.4	
3/29/2005 18:26:15	6.0	1.4	
3/29/2005 18:26:30	5.7	1.4	
3/29/2005 18:26:45	5.5	1.4	
3/29/2005 18:27:00	5.3	1.4	
3/29/2005 18:27:15	5.4	1.4	
3/29/2005 18:27:30	5.5	1.4	
3/29/2005 18:27:45	5.5	1.4	
3/29/2005 18:28:00	5.5	1.4	
3/29/2005 18:28:15	5.6	1.4	
3/29/2005 18:28:30	5.9	1.4	
3/29/2005 18:28:45	6.2	1.4	
3/29/2005 18:29:00	6.0	1.4	
3/29/2005 18:29:15	5.8	1.4	
3/29/2005 18:29:30	5.5	1.4	
3/29/2005 18:29:45	5.6	1.4	
3/29/2005 18:30:00	5.8	1.4	
3/29/2005 18:30:15	5.9	1.4	
3/29/2005 18:30:30	5.8	1.4	
3/29/2005 18:30:45	5.7	1.4	
3/29/2005 18:31:00	5.9	1.4	
3/29/2005 18:31:15	5.9	1.4	
3/29/2005 18:31:30	5.8	1.4	
3/29/2005 18:31:45	5.6	1.4	
3/29/2005 18:32:00	5.4	1.4	
3/29/2005 18:32:15	5.6	1.4	
3/29/2005 18:32:30	5.4	1.4	
3/29/2005 18:32:45	5.2	1.4	
3/29/2005 18:33:00	5.1	1.4	
3/29/2005 18:33:15	5.4	1.3	
3/29/2005 18:33:30	5.8	1.3	
3/29/2005 18:33:45	5.9	1.3	
3/29/2005 18:34:00	5.9	1.3	
3/29/2005 18:34:15	5.8	1.3	
3/29/2005 18:34:30	5.8	1.3	
3/29/2005 18:34:45	5.9	1.3	
3/29/2005 18:35:00	5.8	1.3	
3/29/2005 18:35:15	5.7	1.3	
3/29/2005 18:35:30	5.3	1.3	
3/29/2005 18:35:45	5.2	1.3	
3/29/2005 18:36:00	5.4	1.3	
3/29/2005 18:36:15	5.7	1.2	
3/29/2005 18:36:30	5.9	1.2	
3/29/2005 18:36:45	5.9	1.2	
3/29/2005 18:37:00	6.0	1.2	
3/29/2005 18:37:15	6.1	1.2	
3/29/2005 18:37:30	5.9	1.2	
3/29/2005 18:37:45	5.7	1.2	
3/29/2005 18:38:00	5.5	1.2	
3/29/2005 18:38:15	5.5	1.2	
3/29/2005 18:38:30	5.4	1.2	
3/29/2005 18:38:45	5.3	1.2	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 18:39:00	5.3	1.2	
3/29/2005 18:39:15	5.7	1.1	
3/29/2005 18:39:30	6.0	1.1	
3/29/2005 18:39:45	6.1	1.1	
3/29/2005 18:40:00	5.9	1.1	
3/29/2005 18:40:15	5.7	1.1	
3/29/2005 18:40:30	5.6	1.1	
3/29/2005 18:40:45	5.7	1.1	
3/29/2005 18:41:00	5.7	1.1	
3/29/2005 18:41:15	5.6	1.1	
3/29/2005 18:41:30	5.4	1.1	
3/29/2005 18:41:45	5.4	1.1	
3/29/2005 18:42:00	5.9	1.1	
3/29/2005 18:42:15	6.3	1.1	
3/29/2005 18:42:30	6.2	1.1	
3/29/2005 18:42:45	6.0	1.1	
3/29/2005 18:43:00	5.9	1.1	
3/29/2005 18:43:15	6.0	1.1	
3/29/2005 18:43:30	6.0	1.1	
3/29/2005 18:43:45	5.8	1.1	
3/29/2005 18:44:00	5.6	1.1	
3/29/2005 18:44:15	5.5	1.1	
3/29/2005 18:44:30	5.4	1.1	
3/29/2005 18:44:45	5.4	1.1	
3/29/2005 18:45:00	5.6	1.1	
3/29/2005 18:45:15	5.9	1.0	
3/29/2005 18:45:30	6.0	1.0	
3/29/2005 18:45:45	6.2	1.0	
3/29/2005 18:46:00	6.0	1.0	
3/29/2005 18:46:15	5.8	1.0	
3/29/2005 18:46:30	5.7	1.0	
3/29/2005 18:46:45	5.7	1.0	
3/29/2005 18:47:00	5.9	1.0	
3/29/2005 18:47:15	5.9	1.0	
3/29/2005 18:47:30	6.0	1.0	
3/29/2005 18:47:45	6.2	1.0	
3/29/2005 18:48:00	6.4	1.0	
3/29/2005 18:48:15	6.8	1.1	
3/29/2005 18:48:30	6.7	1.1	
3/29/2005 18:48:45	6.7	1.1	
3/29/2005 18:49:00	6.7	1.1	
3/29/2005 18:49:15	6.9	1.1	
3/29/2005 18:49:30	7.0	1.1	
3/29/2005 18:49:45	6.9	1.1	
3/29/2005 18:50:00	6.8	1.1	
3/29/2005 18:50:15	6.8	1.1	
3/29/2005 18:50:30	7.3	1.1	
3/29/2005 18:50:45	7.6	1.1	
3/29/2005 18:51:00	7.6	1.0	
3/29/2005 18:51:15	7.7	1.0	
3/29/2005 18:51:30	7.7	1.0	
3/29/2005 18:51:45	7.9	1.0	
3/29/2005 18:52:00	7.9	1.0	
3/29/2005 18:52:15	7.8	1.0	
3/29/2005 18:52:30	7.7	1.0	
3/29/2005 18:52:45	7.7	1.0	
3/29/2005 18:53:00	7.9	1.0	
3/29/2005 18:53:15	8.1	1.0	
3/29/2005 18:53:30	8.0	1.0	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 18:53:45	8.1	1.0	Begin Run No. WO-1-2 - Whiteburn Condition #1
3/29/2005 18:54:00	8.2	1.0	
3/29/2005 18:54:15	8.5	0.9	
3/29/2005 18:54:30	8.4	0.9	
3/29/2005 18:54:45	8.3	0.9	
3/29/2005 18:55:00	8.1	0.9	
3/29/2005 18:55:15	8.1	0.9	
3/29/2005 18:55:30	8.3	0.9	
3/29/2005 18:55:45	8.2	0.9	
3/29/2005 18:56:00	8.1	0.9	
3/29/2005 18:56:15	8.0	0.9	
3/29/2005 18:56:30	7.9	0.9	
3/29/2005 18:56:45	8.5	0.9	
3/29/2005 18:57:00	8.6	0.9	
3/29/2005 18:57:15	8.7	0.9	
3/29/2005 18:57:30	8.5	0.9	
3/29/2005 18:57:45	8.6	0.9	
3/29/2005 18:58:00	8.7	0.9	
3/29/2005 18:58:15	8.6	0.9	
3/29/2005 18:58:30	8.4	0.9	
3/29/2005 18:58:45	8.2	0.9	
3/29/2005 18:59:00	8.3	0.9	
3/29/2005 18:59:15	8.7	0.9	
3/29/2005 18:59:30	8.6	0.9	
3/29/2005 18:59:45	8.5	0.9	
3/29/2005 19:00:00	8.5	0.9	
3/29/2005 19:00:15	8.9	1.0	
3/29/2005 19:00:30	8.9	1.0	
3/29/2005 19:00:45	8.7	1.0	
3/29/2005 19:01:00	8.4	1.0	
3/29/2005 19:01:15	8.2	1.0	
3/29/2005 19:01:30	8.2	1.0	
3/29/2005 19:01:45	8.1	1.0	
3/29/2005 19:02:00	8.0	1.0	
3/29/2005 19:02:15	8.2	1.0	
3/29/2005 19:02:30	8.2	1.0	
3/29/2005 19:02:45	8.4	1.0	
3/29/2005 19:03:00	8.3	1.0	
3/29/2005 19:03:15	8.3	1.0	
3/29/2005 19:03:30	8.1	1.0	
3/29/2005 19:03:45	8.1	1.0	
3/29/2005 19:04:00	8.1	1.0	
3/29/2005 19:04:15	8.0	1.0	
3/29/2005 19:04:30	7.9	1.0	
3/29/2005 19:04:45	7.9	1.0	
3/29/2005 19:05:00	8.2	1.0	
3/29/2005 19:05:15	8.7	1.0	
3/29/2005 19:05:30	8.5	1.0	
3/29/2005 19:05:45	8.3	1.0	
3/29/2005 19:06:00	8.2	1.0	
3/29/2005 19:06:15	8.4	1.1	
3/29/2005 19:06:30	8.4	1.1	
3/29/2005 19:06:45	8.4	1.1	
3/29/2005 19:07:00	8.3	1.1	
3/29/2005 19:07:15	8.2	1.1	
3/29/2005 19:07:30	8.2	1.1	
3/29/2005 19:07:45	8.2	1.1	
3/29/2005 19:08:00	8.0	1.1	
3/29/2005 19:08:15	8.0	1.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 19:08:30	7.8	1.1	
3/29/2005 19:08:45	8.0	1.1	
3/29/2005 19:09:00	8.0	1.0	
3/29/2005 19:09:15	8.0	1.0	
3/29/2005 19:09:30	7.9	1.0	
3/29/2005 19:09:45	7.9	1.0	
3/29/2005 19:10:00	8.1	1.0	
3/29/2005 19:10:15	8.2	1.0	
3/29/2005 19:10:30	8.3	1.0	
3/29/2005 19:10:45	8.2	1.0	
3/29/2005 19:11:00	8.4	1.0	
3/29/2005 19:11:15	8.6	1.0	
3/29/2005 19:11:30	8.4	1.0	
3/29/2005 19:11:45	8.3	1.0	
3/29/2005 19:12:00	8.3	1.0	
3/29/2005 19:12:15	8.5	0.9	
3/29/2005 19:12:30	8.5	0.9	
3/29/2005 19:12:45	8.4	0.9	
3/29/2005 19:13:00	8.3	0.9	
3/29/2005 19:13:15	8.5	0.9	
3/29/2005 19:13:30	8.6	0.9	
3/29/2005 19:13:45	8.7	0.9	
3/29/2005 19:14:00	8.6	0.9	
3/29/2005 19:14:15	8.5	0.9	
3/29/2005 19:14:30	8.2	0.9	
3/29/2005 19:14:45	8.3	0.9	
3/29/2005 19:15:00	8.4	0.9	
3/29/2005 19:15:15	8.5	1.0	
3/29/2005 19:15:30	8.4	1.0	
3/29/2005 19:15:45	8.2	1.0	
3/29/2005 19:16:00	8.2	1.0	
3/29/2005 19:16:15	8.7	1.0	
3/29/2005 19:16:30	8.7	1.0	
3/29/2005 19:16:45	8.6	1.0	
3/29/2005 19:17:00	8.5	1.0	
3/29/2005 19:17:15	8.6	1.0	
3/29/2005 19:17:30	8.4	1.0	
3/29/2005 19:17:45	8.3	1.0	
3/29/2005 19:18:00	8.0	1.0	
3/29/2005 19:18:15	8.1	1.1	
3/29/2005 19:18:30	8.1	1.1	
3/29/2005 19:18:45	8.2	1.1	
3/29/2005 19:19:00	8.1	1.1	
3/29/2005 19:19:15	8.0	1.1	
3/29/2005 19:19:30	8.0	1.1	
3/29/2005 19:19:45	8.4	1.1	
3/29/2005 19:20:00	8.6	1.1	
3/29/2005 19:20:15	8.5	1.1	
3/29/2005 19:20:30	8.1	1.1	
3/29/2005 19:20:45	8.1	1.1	
3/29/2005 19:21:00	8.2	1.1	
3/29/2005 19:21:15	8.2	1.1	
3/29/2005 19:21:30	8.0	1.1	
3/29/2005 19:21:45	7.8	1.1	
3/29/2005 19:22:00	7.8	1.1	
3/29/2005 19:22:15	8.2	1.1	
3/29/2005 19:22:30	8.4	1.1	
3/29/2005 19:22:45	8.5	1.1	
3/29/2005 19:23:00	8.3	1.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 19:23:15	**8.4**	**1.1**	
3/29/2005 19:23:30	**8.2**	**1.1**	
3/29/2005 19:23:45	**8.0**	**1.1**	
3/29/2005 19:24:00	7.8	1.0	**Change of Ports**
3/29/2005 19:24:15	7.8	1.0	
3/29/2005 19:24:30	7.7	1.0	
3/29/2005 19:24:45	7.8	1.0	
3/29/2005 19:25:00	7.7	1.0	
3/29/2005 19:25:15	7.0	1.0	
3/29/2005 19:25:30	3.0	1.0	
3/29/2005 19:25:45	1.3	1.0	
3/29/2005 19:26:00	0.7	1.0	
3/29/2005 19:26:15	0.5	1.0	
3/29/2005 19:26:30	0.4	1.0	
3/29/2005 19:26:45	0.8	1.0	
3/29/2005 19:27:00	0.7	1.0	
3/29/2005 19:27:15	1.4	1.2	
3/29/2005 19:27:30	3.4	1.2	
3/29/2005 19:27:45	5.7	1.2	**Resume Testing**
3/29/2005 19:28:00	**5.5**	**1.2**	
3/29/2005 19:28:15	**5.6**	**1.2**	
3/29/2005 19:28:30	**6.0**	**1.2**	
3/29/2005 19:28:45	**5.6**	**1.2**	
3/29/2005 19:29:00	**5.6**	**1.2**	
3/29/2005 19:29:15	**4.8**	**1.2**	
3/29/2005 19:29:30	**5.2**	**1.2**	
3/29/2005 19:29:45	**5.8**	**1.2**	
3/29/2005 19:30:00	**5.0**	**1.2**	
3/29/2005 19:30:15	**5.4**	**1.2**	
3/29/2005 19:30:30	**5.4**	**1.2**	
3/29/2005 19:30:45	**5.6**	**1.2**	
3/29/2005 19:31:00	**5.6**	**1.2**	
3/29/2005 19:31:15	**5.4**	**1.2**	
3/29/2005 19:31:30	**5.2**	**1.2**	
3/29/2005 19:31:45	**5.2**	**1.2**	
3/29/2005 19:32:00	**5.9**	**1.2**	
3/29/2005 19:32:15	**6.3**	**1.2**	
3/29/2005 19:32:30	**5.9**	**1.2**	
3/29/2005 19:32:45	**5.7**	**1.2**	
3/29/2005 19:33:00	**5.6**	**1.2**	
3/29/2005 19:33:15	**5.9**	**1.2**	
3/29/2005 19:33:30	**5.8**	**1.2**	
3/29/2005 19:33:45	**5.6**	**1.2**	
3/29/2005 19:34:00	**5.4**	**1.2**	
3/29/2005 19:34:15	**5.4**	**1.2**	
3/29/2005 19:34:30	**5.5**	**1.2**	
3/29/2005 19:34:45	**5.6**	**1.2**	
3/29/2005 19:35:00	**5.5**	**1.2**	
3/29/2005 19:35:15	**5.5**	**1.2**	
3/29/2005 19:35:30	**5.6**	**1.2**	
3/29/2005 19:35:45	**5.9**	**1.2**	
3/29/2005 19:36:00	**5.8**	**1.2**	
3/29/2005 19:36:15	**5.8**	**1.3**	
3/29/2005 19:36:30	**5.7**	**1.3**	
3/29/2005 19:36:45	**5.8**	**1.3**	
3/29/2005 19:37:00	**5.9**	**1.3**	
3/29/2005 19:37:15	**5.8**	**1.3**	
3/29/2005 19:37:30	**5.6**	**1.3**	
3/29/2005 19:37:45	**5.5**	**1.3**	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 19:38:00	5.6	1.3	
3/29/2005 19:38:15	5.6	1.3	
3/29/2005 19:38:30	5.2	1.3	
3/29/2005 19:38:45	5.1	1.3	
3/29/2005 19:39:00	5.0	1.3	
3/29/2005 19:39:15	5.7	1.3	
3/29/2005 19:39:30	5.9	1.3	
3/29/2005 19:39:45	5.9	1.3	
3/29/2005 19:40:00	5.8	1.3	
3/29/2005 19:40:15	5.7	1.3	
3/29/2005 19:40:30	5.8	1.3	
3/29/2005 19:40:45	5.7	1.3	
3/29/2005 19:41:00	5.5	1.3	
3/29/2005 19:41:15	5.3	1.3	
3/29/2005 19:41:30	5.1	1.3	
3/29/2005 19:41:45	5.2	1.3	
3/29/2005 19:42:00	5.3	1.3	
3/29/2005 19:42:15	5.6	1.4	
3/29/2005 19:42:30	5.7	1.4	
3/29/2005 19:42:45	5.8	1.4	
3/29/2005 19:43:00	5.9	1.4	
3/29/2005 19:43:15	5.7	1.4	
3/29/2005 19:43:30	5.6	1.4	
3/29/2005 19:43:45	5.4	1.4	
3/29/2005 19:44:00	5.4	1.4	
3/29/2005 19:44:15	5.5	1.4	
3/29/2005 19:44:30	5.2	1.4	
3/29/2005 19:44:45	5.0	1.4	
3/29/2005 19:45:00	5.0	1.4	
3/29/2005 19:45:15	5.5	1.5	
3/29/2005 19:45:30	6.1	1.5	
3/29/2005 19:45:45	6.1	1.5	
3/29/2005 19:46:00	6.0	1.5	
3/29/2005 19:46:15	5.8	1.5	
3/29/2005 19:46:30	5.9	1.5	
3/29/2005 19:46:45	6.0	1.5	
3/29/2005 19:47:00	5.8	1.5	
3/29/2005 19:47:15	5.5	1.5	
3/29/2005 19:47:30	5.2	1.5	
3/29/2005 19:47:45	5.3	1.5	
3/29/2005 19:48:00	5.3	1.6	
3/29/2005 19:48:15	5.3	1.7	
3/29/2005 19:48:30	5.3	1.7	
3/29/2005 19:48:45	5.4	1.7	
3/29/2005 19:49:00	5.8	1.7	
3/29/2005 19:49:15	5.9	1.7	
3/29/2005 19:49:30	5.8	1.7	
3/29/2005 19:49:45	5.7	1.7	
3/29/2005 19:50:00	5.6	1.7	
3/29/2005 19:50:15	5.8	1.7	
3/29/2005 19:50:30	5.6	1.7	
3/29/2005 19:50:45	5.4	1.7	
3/29/2005 19:51:00	5.3	1.7	
3/29/2005 19:51:15	5.5	1.7	
3/29/2005 19:51:30	5.7	1.7	
3/29/2005 19:51:45	5.6	1.7	
3/29/2005 19:52:00	5.4	1.7	
3/29/2005 19:52:15	5.3	1.7	
3/29/2005 19:52:30	5.4	1.7	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 19:52:45	**5.8**	**1.7**	
3/29/2005 19:53:00	**5.9**	**1.7**	
3/29/2005 19:53:15	**5.7**	**1.7**	
3/29/2005 19:53:30	**5.3**	**1.7**	
3/29/2005 19:53:45	**5.4**	**1.7**	
3/29/2005 19:54:00	**5.5**	**1.7**	
3/29/2005 19:54:15	**5.5**	**1.6**	
3/29/2005 19:54:30	**5.3**	**1.6**	
3/29/2005 19:54:45	**5.2**	**1.6**	
3/29/2005 19:55:00	**5.3**	**1.6**	
3/29/2005 19:55:15	**5.7**	**1.6**	
3/29/2005 19:55:30	**5.8**	**1.6**	
3/29/2005 19:55:45	**5.8**	**1.6**	
3/29/2005 19:56:00	**5.7**	**1.6**	
3/29/2005 19:56:15	**5.8**	**1.6**	
3/29/2005 19:56:30	**5.7**	**1.6**	
3/29/2005 19:56:45	**5.5**	**1.6**	
3/29/2005 19:57:00	**5.3**	**1.6**	
3/29/2005 19:57:15	**5.4**	**1.7**	
3/29/2005 19:57:30	**5.4**	**1.7**	
3/29/2005 19:57:45	**5.4**	**1.7**	
3/29/2005 19:58:00	5.3	1.7	**End Run No. WO-1-2 - Whiteburn Condition #1**
3/29/2005 19:58:15	5.1	1.7	
3/29/2005 19:58:30	5.0	1.7	
3/29/2005 19:58:45	5.6	1.7	
3/29/2005 19:59:00	6.4	1.7	
3/29/2005 19:59:15	6.4	1.7	
3/29/2005 19:59:30	0.4	1.7	
3/29/2005 19:59:45	0.0	1.7	
3/29/2005 20:00:00	0.0	1.4	
3/29/2005 20:00:15	0.0	-0.1	
3/29/2005 20:00:30	0.0	-0.1	
3/29/2005 20:00:45	0.0	-0.1	**Calibration**
3/29/2005 20:01:00	**0.0**	-0.1	**0.0 Zero Propane/N_2**
3/29/2005 20:01:15	**0.0**	-0.1	
3/29/2005 20:01:30	**0.0**	-0.1	
3/29/2005 20:01:45	**0.0**	-0.1	
3/29/2005 20:02:00	1.8	-0.1	
3/29/2005 20:02:15	39.5	-0.1	
3/29/2005 20:02:30	49.0	-0.1	
3/29/2005 20:02:45	50.9	-0.1	**Calibration**
3/29/2005 20:03:00	**51.1**	-0.1	**51.1 50.0 ppm Propane/N_2**
3/29/2005 20:03:15	**51.1**	-0.1	
3/29/2005 20:03:30	**51.2**	-0.1	
3/29/2005 20:03:45	**51.1**	-0.1	
3/29/2005 20:04:00	51.1	-0.1	
3/29/2005 20:04:15	51.2	-0.1	
3/29/2005 20:04:30	37.2	-0.1	
3/29/2005 20:04:45	21.6	-0.1	
3/29/2005 20:05:00	24.8	-0.1	
3/29/2005 20:05:15	25.1	-0.1	
3/29/2005 20:05:30	27.5	-0.1	
3/29/2005 20:05:45	27.0	-0.1	
3/29/2005 20:06:00	29.4	0.1	
3/29/2005 20:06:15	31.3	1.9	
3/29/2005 20:06:30	31.1	1.9	
3/29/2005 20:06:45	33.7	1.9	
3/29/2005 20:07:00	35.7	1.9	
3/29/2005 20:07:15	34.8	1.9	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 20:07:30	34.4	1.9	
3/29/2005 20:07:45	33.1	1.9	
3/29/2005 20:08:00	35.3	1.9	
3/29/2005 20:08:15	33.2	1.9	
3/29/2005 20:08:30	33.5	1.9	
3/29/2005 20:08:45	32.2	1.9	
3/29/2005 20:09:00	34.8	1.9	
3/29/2005 20:09:15	33.5	1.8	
3/29/2005 20:09:30	34.3	1.8	
3/29/2005 20:09:45	31.8	1.8	
3/29/2005 20:10:00	31.4	1.8	
3/29/2005 20:10:15	34.6	1.8	
3/29/2005 20:10:30	33.8	1.8	
3/29/2005 20:10:45	32.2	1.8	
3/29/2005 20:11:00	35.9	1.8	
3/29/2005 20:11:15	35.7	1.8	
3/29/2005 20:11:30	33.6	1.8	
3/29/2005 20:11:45	33.0	1.8	
3/29/2005 20:12:00	31.7	1.8	
3/29/2005 20:12:15	33.5	1.8	
3/29/2005 20:12:30	27.8	1.8	
3/29/2005 20:12:45	19.6	1.8	
3/29/2005 20:13:00	15.7	1.8	
3/29/2005 20:13:15	37.7	1.8	
3/29/2005 20:13:30	50.5	1.8	
3/29/2005 20:13:45	39.7	1.8	
3/29/2005 20:14:00	10.7	1.8	
3/29/2005 20:14:15	2.7	1.8	
3/29/2005 20:14:30	1.2	1.8	
3/29/2005 20:14:45	0.8	1.8	
3/29/2005 20:15:00	0.6	1.8	
3/29/2005 20:15:15	0.9	-0.1	
3/29/2005 20:15:30	1.1	-0.1	
3/29/2005 20:15:45	1.0	-0.1	
3/29/2005 20:16:00	0.7	-0.1	
3/29/2005 20:16:15	0.4	-0.1	
3/29/2005 20:16:30	0.4	-0.1	
3/29/2005 20:16:45	0.3	-0.1	
3/29/2005 20:17:00	0.3	-0.1	
3/29/2005 20:17:15	0.3	-0.1	
3/29/2005 20:17:30	0.0	-0.1	
3/29/2005 20:17:45	0.0	-0.1	
3/29/2005 20:18:00	0.5	-0.1	
3/29/2005 20:18:15	9.4	0.0	
3/29/2005 20:18:30	12.2	0.0	
3/29/2005 20:18:45	12.1	0.0	
3/29/2005 20:19:00	11.9	0.0	
3/29/2005 20:19:15	11.8	0.0	
3/29/2005 20:19:30	12.5	0.0	
3/29/2005 20:19:45	12.8	0.0	
3/29/2005 20:20:00	12.5	0.0	
3/29/2005 20:20:15	12.2	0.0	
3/29/2005 20:20:30	11.9	0.0	
3/29/2005 20:20:45	11.9	0.0	
3/29/2005 20:21:00	11.5	0.0	
3/29/2005 20:21:15	11.3	2.1	
3/29/2005 20:21:30	10.9	2.1	
3/29/2005 20:21:45	10.8	2.1	
3/29/2005 20:22:00	10.7	2.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 20:22:15	10.4	2.1	
3/29/2005 20:22:30	10.0	2.1	
3/29/2005 20:22:45	9.8	2.1	
3/29/2005 20:23:00	10.2	2.1	
3/29/2005 20:23:15	10.8	2.1	
3/29/2005 20:23:30	10.6	2.1	
3/29/2005 20:23:45	10.1	2.1	
3/29/2005 20:24:00	9.8	2.1	
3/29/2005 20:24:15	9.8	2.0	
3/29/2005 20:24:30	9.8	2.0	
3/29/2005 20:24:45	9.5	2.0	**Begin Run No. WO-1-3 - Whiteburn Condition #1**
3/29/2005 20:25:00	**9.1**	**2.0**	
3/29/2005 20:25:15	**8.8**	**2.0**	
3/29/2005 20:25:30	**9.0**	**2.0**	
3/29/2005 20:25:45	**8.9**	**2.0**	
3/29/2005 20:26:00	**8.7**	**2.0**	
3/29/2005 20:26:15	**8.5**	**2.0**	
3/29/2005 20:26:30	**8.2**	**2.0**	
3/29/2005 20:26:45	**8.8**	**2.0**	
3/29/2005 20:27:00	**9.2**	**2.0**	
3/29/2005 20:27:15	**9.3**	**1.9**	
3/29/2005 20:27:30	**9.1**	**1.9**	
3/29/2005 20:27:45	**9.0**	**1.9**	
3/29/2005 20:28:00	**9.2**	**1.9**	
3/29/2005 20:28:15	**9.0**	**1.9**	
3/29/2005 20:28:30	**8.8**	**1.9**	
3/29/2005 20:28:45	**8.5**	**1.9**	
3/29/2005 20:29:00	**8.4**	**1.9**	
3/29/2005 20:29:15	**8.5**	**1.9**	
3/29/2005 20:29:30	**8.1**	**1.9**	
3/29/2005 20:29:45	**7.9**	**1.9**	
3/29/2005 20:30:00	**7.7**	**1.9**	
3/29/2005 20:30:15	**8.0**	**1.8**	
3/29/2005 20:30:30	**8.8**	**1.8**	
3/29/2005 20:30:45	**9.0**	**1.8**	
3/29/2005 20:31:00	**8.8**	**1.8**	
3/29/2005 20:31:15	**8.6**	**1.8**	
3/29/2005 20:31:30	**8.7**	**1.8**	
3/29/2005 20:31:45	**8.8**	**1.8**	
3/29/2005 20:32:00	**8.6**	**1.8**	
3/29/2005 20:32:15	**8.3**	**1.8**	
3/29/2005 20:32:30	**7.9**	**1.8**	
3/29/2005 20:32:45	**8.0**	**1.8**	
3/29/2005 20:33:00	**8.1**	**1.8**	
3/29/2005 20:33:15	**8.1**	**1.8**	
3/29/2005 20:33:30	**7.9**	**1.8**	
3/29/2005 20:33:45	**7.8**	**1.8**	
3/29/2005 20:34:00	**8.2**	**1.8**	
3/29/2005 20:34:15	**8.9**	**1.8**	
3/29/2005 20:34:30	**9.0**	**1.8**	
3/29/2005 20:34:45	**8.9**	**1.8**	
3/29/2005 20:35:00	**8.8**	**1.8**	
3/29/2005 20:35:15	**9.0**	**1.8**	
3/29/2005 20:35:30	**8.7**	**1.8**	
3/29/2005 20:35:45	**8.4**	**1.8**	
3/29/2005 20:36:00	**8.1**	**1.8**	
3/29/2005 20:36:15	**8.2**	**1.7**	
3/29/2005 20:36:30	**8.4**	**1.7**	
3/29/2005 20:36:45	**8.4**	**1.7**	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 20:37:00	8.2	1.7	
3/29/2005 20:37:15	8.1	1.7	
3/29/2005 20:37:30	8.1	1.7	
3/29/2005 20:37:45	8.9	1.7	
3/29/2005 20:38:00	9.4	1.7	
3/29/2005 20:38:15	9.2	1.7	
3/29/2005 20:38:30	8.7	1.7	
3/29/2005 20:38:45	8.6	1.7	
3/29/2005 20:39:00	8.7	1.7	
3/29/2005 20:39:15	8.7	1.6	
3/29/2005 20:39:30	8.5	1.6	
3/29/2005 20:39:45	8.3	1.6	
3/29/2005 20:40:00	8.3	1.6	
3/29/2005 20:40:15	8.4	1.6	
3/29/2005 20:40:30	8.3	1.6	
3/29/2005 20:40:45	8.2	1.6	
3/29/2005 20:41:00	8.0	1.6	
3/29/2005 20:41:15	8.4	1.6	
3/29/2005 20:41:30	9.0	1.6	
3/29/2005 20:41:45	9.1	1.6	
3/29/2005 20:42:00	8.9	1.6	
3/29/2005 20:42:15	8.9	1.5	
3/29/2005 20:42:30	9.0	1.5	
3/29/2005 20:42:45	9.0	1.5	
3/29/2005 20:43:00	8.9	1.5	
3/29/2005 20:43:15	8.7	1.5	
3/29/2005 20:43:30	8.5	1.5	
3/29/2005 20:43:45	8.5	1.5	
3/29/2005 20:44:00	8.5	1.5	
3/29/2005 20:44:15	8.3	1.5	
3/29/2005 20:44:30	8.0	1.5	
3/29/2005 20:44:45	7.8	1.5	
3/29/2005 20:45:00	8.6	1.5	
3/29/2005 20:45:15	9.5	1.3	
3/29/2005 20:45:30	9.4	1.3	
3/29/2005 20:45:45	9.1	1.3	
3/29/2005 20:46:00	8.9	1.3	
3/29/2005 20:46:15	9.1	1.3	
3/29/2005 20:46:30	9.0	1.3	
3/29/2005 20:46:45	8.7	1.3	
3/29/2005 20:47:00	8.4	1.3	
3/29/2005 20:47:15	8.4	1.3	
3/29/2005 20:47:30	8.4	1.3	
3/29/2005 20:47:45	8.3	1.3	
3/29/2005 20:48:00	8.1	1.3	
3/29/2005 20:48:15	8.1	1.1	
3/29/2005 20:48:30	8.2	1.1	
3/29/2005 20:48:45	9.1	1.1	
3/29/2005 20:49:00	9.2	1.1	
3/29/2005 20:49:15	9.1	1.1	
3/29/2005 20:49:30	8.9	1.1	
3/29/2005 20:49:45	9.0	1.1	
3/29/2005 20:50:00	9.1	1.1	
3/29/2005 20:50:15	8.9	1.1	
3/29/2005 20:50:30	8.5	1.1	
3/29/2005 20:50:45	8.2	1.1	
3/29/2005 20:51:00	8.3	1.1	
3/29/2005 20:51:15	8.6	1.0	
3/29/2005 20:51:30	8.4	1.0	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 20:51:45	**8.2**	**1.0**	
3/29/2005 20:52:00	**8.1**	**1.0**	
3/29/2005 20:52:15	**8.6**	**1.0**	
3/29/2005 20:52:30	**9.5**	**1.0**	
3/29/2005 20:52:45	**9.5**	**1.0**	
3/29/2005 20:53:00	**9.2**	**1.0**	
3/29/2005 20:53:15	**9.1**	**1.0**	
3/29/2005 20:53:30	**9.0**	**1.0**	
3/29/2005 20:53:45	**8.9**	**1.0**	
3/29/2005 20:54:00	**8.7**	**1.0**	
3/29/2005 20:54:15	**8.6**	**1.0**	
3/29/2005 20:54:30	**8.5**	**1.0**	
3/29/2005 20:54:45	**8.7**	**1.0**	
3/29/2005 20:55:00	8.7	1.0	**Change of Ports**
3/29/2005 20:55:15	8.5	1.0	
3/29/2005 20:55:30	8.4	1.0	
3/29/2005 20:55:45	8.5	1.0	
3/29/2005 20:56:00	9.4	1.0	
3/29/2005 20:56:15	9.9	1.0	
3/29/2005 20:56:30	5.3	1.0	
3/29/2005 20:56:45	1.9	1.0	
3/29/2005 20:57:00	1.0	1.0	
3/29/2005 20:57:15	1.0	0.9	
3/29/2005 20:57:30	1.6	0.9	
3/29/2005 20:57:45	1.4	0.9	
3/29/2005 20:58:00	1.0	0.9	
3/29/2005 20:58:15	0.8	0.9	
3/29/2005 20:58:30	0.7	0.9	
3/29/2005 20:58:45	1.0	0.9	
3/29/2005 20:59:00	0.7	0.9	
3/29/2005 20:59:15	1.1	0.9	
3/29/2005 20:59:30	0.8	0.9	
3/29/2005 20:59:45	0.7	0.9	
3/29/2005 21:00:00	0.5	0.9	
3/29/2005 21:00:15	2.9	0.9	
3/29/2005 21:00:30	6.6	0.9	
3/29/2005 21:00:45	7.5	0.9	
3/29/2005 21:01:00	7.6	0.9	
3/29/2005 21:01:15	7.4	0.9	
3/29/2005 21:01:30	7.2	0.9	
3/29/2005 21:01:45	7.1	0.9	**Resume Testing**
3/29/2005 21:02:00	**7.3**	**0.9**	
3/29/2005 21:02:15	**7.3**	**0.9**	
3/29/2005 21:02:30	**7.0**	**0.9**	
3/29/2005 21:02:45	**6.7**	**0.9**	
3/29/2005 21:03:00	**6.6**	**0.9**	
3/29/2005 21:03:15	**7.6**	**0.8**	
3/29/2005 21:03:30	**8.2**	**0.8**	
3/29/2005 21:03:45	**8.1**	**0.8**	
3/29/2005 21:04:00	**7.8**	**0.8**	
3/29/2005 21:04:15	**7.7**	**0.8**	
3/29/2005 21:04:30	**7.9**	**0.8**	
3/29/2005 21:04:45	**7.8**	**0.8**	
3/29/2005 21:05:00	**7.5**	**0.8**	
3/29/2005 21:05:15	**7.3**	**0.8**	
3/29/2005 21:05:30	**7.0**	**0.8**	
3/29/2005 21:05:45	**7.2**	**0.8**	
3/29/2005 21:06:00	**7.2**	**0.8**	
3/29/2005 21:06:15	**7.2**	**0.7**	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 21:06:30	7.0	0.7	
3/29/2005 21:06:45	7.1	0.7	
3/29/2005 21:07:00	8.0	0.7	
3/29/2005 21:07:15	8.2	0.7	
3/29/2005 21:07:30	8.2	0.7	
3/29/2005 21:07:45	7.9	0.7	
3/29/2005 21:08:00	7.9	0.7	
3/29/2005 21:08:15	8.1	0.7	
3/29/2005 21:08:30	7.7	0.7	
3/29/2005 21:08:45	7.4	0.7	
3/29/2005 21:09:00	7.2	0.7	
3/29/2005 21:09:15	7.4	0.7	
3/29/2005 21:09:30	7.5	0.7	
3/29/2005 21:09:45	7.3	0.7	
3/29/2005 21:10:00	7.1	0.7	
3/29/2005 21:10:15	7.0	0.7	
3/29/2005 21:10:30	7.5	0.7	
3/29/2005 21:10:45	8.4	0.7	
3/29/2005 21:11:00	8.3	0.7	
3/29/2005 21:11:15	8.0	0.7	
3/29/2005 21:11:30	7.7	0.7	
3/29/2005 21:11:45	7.7	0.7	
3/29/2005 21:12:00	7.7	0.7	
3/29/2005 21:12:15	7.6	0.6	
3/29/2005 21:12:30	7.4	0.6	
3/29/2005 21:12:45	7.2	0.6	
3/29/2005 21:13:00	7.4	0.6	
3/29/2005 21:13:15	7.4	0.6	
3/29/2005 21:13:30	7.3	0.6	
3/29/2005 21:13:45	7.1	0.6	
3/29/2005 21:14:00	7.0	0.6	
3/29/2005 21:14:15	7.8	0.6	
3/29/2005 21:14:30	8.0	0.6	
3/29/2005 21:14:45	8.0	0.6	
3/29/2005 21:15:00	7.8	0.6	
3/29/2005 21:15:15	7.9	0.6	
3/29/2005 21:15:30	8.0	0.6	
3/29/2005 21:15:45	7.9	0.6	
3/29/2005 21:16:00	7.6	0.6	
3/29/2005 21:16:15	7.4	0.6	
3/29/2005 21:16:30	7.3	0.6	
3/29/2005 21:16:45	7.4	0.6	
3/29/2005 21:17:00	7.3	0.6	
3/29/2005 21:17:15	7.1	0.6	
3/29/2005 21:17:30	6.8	0.6	
3/29/2005 21:17:45	7.1	0.6	
3/29/2005 21:18:00	8.1	0.6	
3/29/2005 21:18:15	8.3	0.6	
3/29/2005 21:18:30	8.1	0.6	
3/29/2005 21:18:45	7.9	0.6	
3/29/2005 21:19:00	8.0	0.6	
3/29/2005 21:19:15	8.0	0.6	
3/29/2005 21:19:30	7.8	0.6	
3/29/2005 21:19:45	7.5	0.6	
3/29/2005 21:20:00	7.3	0.6	
3/29/2005 21:20:15	7.4	0.6	
3/29/2005 21:20:30	7.2	0.6	
3/29/2005 21:20:45	7.1	0.6	
3/29/2005 21:21:00	7.0	0.6	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 21:21:15	7.3	0.7	
3/29/2005 21:21:30	8.0	0.7	
3/29/2005 21:21:45	8.4	0.7	
3/29/2005 21:22:00	8.2	0.7	
3/29/2005 21:22:15	8.1	0.7	
3/29/2005 21:22:30	8.0	0.7	
3/29/2005 21:22:45	8.2	0.7	
3/29/2005 21:23:00	8.1	0.7	
3/29/2005 21:23:15	7.8	0.7	
3/29/2005 21:23:30	7.3	0.7	
3/29/2005 21:23:45	7.2	0.7	
3/29/2005 21:24:00	7.4	0.7	
3/29/2005 21:24:15	7.5	0.7	
3/29/2005 21:24:30	7.5	0.7	
3/29/2005 21:24:45	7.7	0.7	
3/29/2005 21:25:00	7.8	0.7	
3/29/2005 21:25:15	8.3	0.7	
3/29/2005 21:25:30	8.3	0.7	
3/29/2005 21:25:45	8.1	0.7	
3/29/2005 21:26:00	8.0	0.7	
3/29/2005 21:26:15	8.0	0.7	
3/29/2005 21:26:30	8.0	0.7	
3/29/2005 21:26:45	7.8	0.7	
3/29/2005 21:27:00	7.5	0.7	
3/29/2005 21:27:15	7.5	0.7	
3/29/2005 21:27:30	7.5	0.7	
3/29/2005 21:27:45	7.7	0.7	
3/29/2005 21:28:00	8.0	0.7	
3/29/2005 21:28:15	8.2	0.7	
3/29/2005 21:28:30	8.1	0.7	
3/29/2005 21:28:45	8.3	0.7	
3/29/2005 21:29:00	8.4	0.7	
3/29/2005 21:29:15	8.1	0.7	
3/29/2005 21:29:30	7.6	0.7	
3/29/2005 21:29:45	7.4	0.7	
3/29/2005 21:30:00	7.6	0.7	
3/29/2005 21:30:15	7.8	0.7	
3/29/2005 21:30:30	7.6	0.7	
3/29/2005 21:30:45	7.5	0.7	
3/29/2005 21:31:00	7.4	0.7	
3/29/2005 21:31:15	8.0	0.7	
3/29/2005 21:31:30	8.3	0.7	
3/29/2005 21:31:45	8.2	0.7	
3/29/2005 21:32:00	8.0	0.7	**End Run No. WO-1-3 - Whiteburn Condition #1**
3/29/2005 21:32:15	7.8	0.7	
3/29/2005 21:32:30	7.8	0.7	
3/29/2005 21:32:45	7.8	0.7	
3/29/2005 21:33:00	8.1	0.7	
3/29/2005 21:33:15	9.8	0.8	
3/29/2005 21:33:30	36.5	0.8	
3/29/2005 21:33:45	48.1	0.8	
3/29/2005 21:34:00	49.9	0.8	
3/29/2005 21:34:15	50.3	0.8	
3/29/2005 21:34:30	50.6	0.8	
3/29/2005 21:34:45	50.7	0.8	
3/29/2005 21:35:00	50.8	0.8	
3/29/2005 21:35:15	50.9	0.8	
3/29/2005 21:35:30	51.0	0.8	
3/29/2005 21:35:45	51.1	0.8	**Calibration**

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 21:36:00	**51.2**	0.8	**51.4 50.0 ppm Propane/N_2**
3/29/2005 21:36:15	**51.4**	-0.1	
3/29/2005 21:36:30	**51.5**	-0.1	
3/29/2005 21:36:45	**51.5**	-0.1	
3/29/2005 21:37:00	44.1	-0.1	**Calibration - 1st Injection**
3/29/2005 21:37:15	8.1	**-0.1**	**-0.1 Zero Methane**
3/29/2005 21:37:30	0.1	**-0.1**	
3/29/2005 21:37:45	0.0	**-0.1**	
3/29/2005 21:38:00	0.0	**-0.1**	
3/29/2005 21:38:15	0.0	-0.1	**Calibration**
3/29/2005 21:38:30	**0.0**	-0.1	**0.0 Zero Propane/N_2**
3/29/2005 21:38:45	**0.0**	-0.1	
3/29/2005 21:39:00	**0.0**	-0.1	
3/29/2005 21:39:15	**0.0**	-0.1	
3/29/2005 21:39:30	0.0	-0.1	
3/29/2005 21:39:45	0.0	-0.1	
3/29/2005 21:40:00	0.0	-0.1	**Calibration - 2nd Injection**
3/29/2005 21:40:15	0.0	**-0.1**	**-0.1 Zero Methane**
3/29/2005 21:40:30	0.0	**-0.1**	
3/29/2005 21:40:45	0.0	**-0.1**	
3/29/2005 21:41:00	0.0	**-0.1**	
3/29/2005 21:41:15	0.0	-0.1	
3/29/2005 21:41:30	0.0	-0.1	
3/29/2005 21:41:45	0.0	-0.1	
3/29/2005 21:42:00	0.0	-0.1	
3/29/2005 21:42:15	0.0	0.1	
3/29/2005 21:42:30	0.0	0.1	
3/29/2005 21:42:45	0.0	0.1	
3/29/2005 21:43:00	0.0	0.1	**Calibration - 3rd Injection**
3/29/2005 21:43:15	0.0	**0.1**	**0.1 Zero Methane**
3/29/2005 21:43:30	0.0	**0.1**	
3/29/2005 21:43:45	2.3	**0.1**	
3/29/2005 21:44:00	66.0	**0.1**	
3/29/2005 21:44:15	26.3	0.1	**0.0 Average Zero Methane**
3/29/2005 21:44:30	17.6	0.1	
3/29/2005 21:44:45	17.0	0.1	
3/29/2005 21:45:00	16.5	0.1	
3/29/2005 21:45:15	16.6	51.3	
3/29/2005 21:45:30	16.5	51.3	
3/29/2005 21:45:45	16.5	51.3	
3/29/2005 21:46:00	16.4	51.3	**Calibration - 1st Injection**
3/29/2005 21:46:15	16.4	**51.3**	**51.3 50.0 ppm Methane**
3/29/2005 21:46:30	16.4	**51.3**	
3/29/2005 21:46:45	16.4	**51.3**	
3/29/2005 21:47:00	16.3	**51.3**	
3/29/2005 21:47:15	16.3	51.3	
3/29/2005 21:47:30	16.1	51.3	
3/29/2005 21:47:45	16.1	51.3	
3/29/2005 21:48:00	16.1	51.3	
3/29/2005 21:48:15	16.2	50.1	
3/29/2005 21:48:30	16.2	50.1	
3/29/2005 21:48:45	16.2	50.1	
3/29/2005 21:49:00	16.2	50.1	**Calibration - 2nd Injection**
3/29/2005 21:49:15	16.2	50.1	**50.1 50.0 ppm Methane**
3/29/2005 21:49:30	16.2	50.1	
3/29/2005 21:49:45	16.2	50.1	
3/29/2005 21:50:00	16.2	50.1	
3/29/2005 21:50:15	16.2	50.1	
3/29/2005 21:50:30	15.9	50.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/29/2005 21:50:45	15.9	50.1	
3/29/2005 21:51:00	15.9	50.1	
3/29/2005 21:51:15	16.1	50.0	
3/29/2005 21:51:30	16.1	50.0	
3/29/2005 21:51:45	16.1	50.0	
3/29/2005 21:52:00	16.1	50.0	**Calibration - 3rd Injection**
3/29/2005 21:52:15	16.1	50.0	**50.0 50.0 ppm Methane**
3/29/2005 21:52:30	16.1	50.0	
3/29/2005 21:52:45	16.1	50.0	
3/29/2005 21:53:00	16.1	50.0	
3/29/2005 21:53:15	16.0	50.0	**50.5 Average 50.0 ppm Methane**
3/29/2005 21:53:30	15.9	50.0	
3/29/2005 21:53:45	10.2	50.0	
3/29/2005 21:54:00	1.9	50.0	
3/29/2005 21:54:15	1.2	50.0	
3/29/2005 21:54:30	1.4	50.0	
3/29/2005 21:54:45	1.5	50.0	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 7:15:00	0.3	50.0	
3/30/2005 7:15:15	0.4	50.0	
3/30/2005 7:15:30	0.5	50.0	
3/30/2005 7:15:45	0.5	50.0	
3/30/2005 7:16:00	1.9	50.0	
3/30/2005 7:16:15	1.2	25.2	
3/30/2005 7:16:30	12.4	0.4	
3/30/2005 7:16:45	7.9	0.4	
3/30/2005 7:17:00	0.3	0.4	
3/30/2005 7:17:15	0.0	0.4	
3/30/2005 7:17:30	0.0	0.4	
3/30/2005 7:17:45	0.0	0.4	
3/30/2005 7:18:00	0.0	0.4	
3/30/2005 7:18:15	0.0	0.4	
3/30/2005 7:18:30	0.0	0.4	
3/30/2005 7:18:45	0.0	0.4	
3/30/2005 7:19:00	0.0	0.4	
3/30/2005 7:19:15	0.0	0.2	
3/30/2005 7:19:30	0.0	-0.1	
3/30/2005 7:19:45	0.0	-0.1	
3/30/2005 7:20:00	0.0	-0.1	
3/30/2005 7:20:15	0.0	-0.1	
3/30/2005 7:20:30	0.0	-0.1	**Calibration**
3/30/2005 7:20:45	**0.0**	-0.1	**0.0 Zero Propane/N_2**
3/30/2005 7:21:00	**0.0**	-0.1	
3/30/2005 7:21:15	**0.1**	-0.1	
3/30/2005 7:21:30	**0.0**	-0.1	
3/30/2005 7:21:45	0.0	-0.1	
3/30/2005 7:22:00	0.5	-0.1	
3/30/2005 7:22:15	17.3	-0.1	
3/30/2005 7:22:30	32.5	-0.1	
3/30/2005 7:22:45	43.1	-0.1	
3/30/2005 7:23:00	47.1	-0.1	
3/30/2005 7:23:15	48.1	-0.1	
3/30/2005 7:23:30	48.3	-0.1	
3/30/2005 7:23:45	48.5	-0.1	
3/30/2005 7:24:00	48.7	-0.1	**Calibration - 1st Injection**
3/30/2005 7:24:15	48.9	**-0.1**	**-0.1 Zero Methane**
3/30/2005 7:24:30	49.3	**-0.1**	
3/30/2005 7:24:45	49.9	**-0.1**	
3/30/2005 7:25:00	50.2	**-0.1**	
3/30/2005 7:25:15	50.4	0.1	
3/30/2005 7:25:30	50.6	0.2	
3/30/2005 7:25:45	50.7	0.2	**Calibration**
3/30/2005 7:26:00	**50.8**	**0.2**	**50.8 50.0 ppm Propane/N_2**
3/30/2005 7:26:15	**50.8**	**0.2**	
3/30/2005 7:26:30	**50.8**	**0.2**	
3/30/2005 7:26:45	**50.9**	**0.2**	
3/30/2005 7:27:00	43.5	0.2	**Calibration -2nd Injection**
3/30/2005 7:27:15	75.7	**0.2**	**0.2 Zero Methane**
3/30/2005 7:27:30	86.1	**0.2**	
3/30/2005 7:27:45	86.7	**0.2**	
3/30/2005 7:28:00	87.1	**0.2**	
3/30/2005 7:28:15	87.5	0.2	**Calibration**
3/30/2005 7:28:30	**87.9**	0.1	**88.2 85.0 ppm Propane/N_2**
3/30/2005 7:28:45	**88.1**	0.1	
3/30/2005 7:29:00	**88.2**	0.1	
3/30/2005 7:29:15	**88.4**	0.1	
3/30/2005 7:29:30	88.5	0.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 7:29:45	84.3	0.1	
3/30/2005 7:30:00	59.3	0.1	Calibration -3rd Injection
3/30/2005 7:30:15	28.6	**0.1**	**0.1 Zero Methane**
3/30/2005 7:30:30	26.4	**0.1**	
3/30/2005 7:30:45	26.1	**0.1**	
3/30/2005 7:31:00	26.0	**0.1**	
3/30/2005 7:31:15	26.0	0.1	**0.1 Average Zero Methane**
3/30/2005 7:31:30	26.1	0.2	
3/30/2005 7:31:45	26.1	0.2	Calibration
3/30/2005 7:32:00	**26.0**	0.2	**26.0 25.0 ppm Propane/N_2**
3/30/2005 7:32:15	**26.0**	0.2	
3/30/2005 7:32:30	**26.0**	0.2	
3/30/2005 7:32:45	**25.9**	0.2	
3/30/2005 7:33:00	21.3	0.2	
3/30/2005 7:33:15	74.1	0.2	
3/30/2005 7:33:30	22.0	0.2	
3/30/2005 7:33:45	17.6	0.2	
3/30/2005 7:34:00	16.8	0.2	
3/30/2005 7:34:15	16.6	26.3	
3/30/2005 7:34:30	16.6	52.5	
3/30/2005 7:34:45	16.5	52.5	
3/30/2005 7:35:00	16.4	52.5	
3/30/2005 7:35:15	16.4	52.5	
3/30/2005 7:35:30	16.4	52.5	
3/30/2005 7:35:45	16.3	52.5	
3/30/2005 7:36:00	16.3	52.5	
3/30/2005 7:36:15	16.3	52.5	
3/30/2005 7:36:30	16.2	52.5	
3/30/2005 7:36:45	16.0	52.5	
3/30/2005 7:37:00	16.0	52.5	
3/30/2005 7:37:15	16.1	51.4	Calibration - 1st Injection
3/30/2005 7:37:30	16.2	**50.3**	**50.3 50.0 ppm Methane**
3/30/2005 7:37:45	16.2	**50.3**	
3/30/2005 7:38:00	16.2	**50.3**	
3/30/2005 7:38:15	16.2	**50.3**	
3/30/2005 7:38:30	16.2	50.3	
3/30/2005 7:38:45	16.1	50.3	
3/30/2005 7:39:00	16.1	50.3	
3/30/2005 7:39:15	16.1	50.3	
3/30/2005 7:39:30	16.0	50.3	
3/30/2005 7:39:45	15.9	50.3	
3/30/2005 7:40:00	15.9	50.3	
3/30/2005 7:40:15	16.0	50.3	Calibration - 2nd Injection
3/30/2005 7:40:30	16.1	**50.3**	**50.3 50.0 ppm Methane**
3/30/2005 7:40:45	16.1	**50.3**	
3/30/2005 7:41:00	16.1	**50.3**	
3/30/2005 7:41:15	16.1	**50.3**	
3/30/2005 7:41:30	16.1	50.3	
3/30/2005 7:41:45	16.0	50.3	
3/30/2005 7:42:00	16.0	50.3	
3/30/2005 7:42:15	16.0	50.3	
3/30/2005 7:42:30	16.0	50.3	
3/30/2005 7:42:45	15.8	50.3	
3/30/2005 7:43:00	15.8	50.3	
3/30/2005 7:43:15	15.9	50.3	Calibration - 3rd Injection
3/30/2005 7:43:30	16.1	**50.2**	**50.2 50.0 ppm Methane**
3/30/2005 7:43:45	16.0	**50.2**	
3/30/2005 7:44:00	16.0	**50.2**	
3/30/2005 7:44:15	16.0	**50.2**	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 7:44:30	14.3	50.2	**50.3 Average 50.0 ppm Methane**
3/30/2005 7:44:45	15.7	50.2	
3/30/2005 7:45:00	25.5	50.2	
3/30/2005 7:45:15	26.1	50.2	
3/30/2005 7:45:30	26.0	50.2	
3/30/2005 7:45:45	25.9	50.2	
3/30/2005 7:46:00	25.9	50.2	
3/30/2005 7:46:15	26.0	67.7	**Calibration - 1st Injection**
3/30/2005 7:46:30	26.0	**85.3**	**85.3 84.2 ppm Methane**
3/30/2005 7:46:45	26.0	**85.3**	
3/30/2005 7:47:00	26.1	**85.3**	
3/30/2005 7:47:15	26.1	**85.3**	
3/30/2005 7:47:30	26.0	85.3	
3/30/2005 7:47:45	26.1	85.3	
3/30/2005 7:48:00	26.1	85.3	
3/30/2005 7:48:15	26.1	85.3	
3/30/2005 7:48:30	26.0	85.3	
3/30/2005 7:48:45	25.9	85.3	
3/30/2005 7:49:00	25.9	85.3	
3/30/2005 7:49:15	25.9	85.3	**Calibration - 2nd Injection**
3/30/2005 7:49:30	26.0	**85.3**	**85.3 84.2 ppm Methane**
3/30/2005 7:49:45	26.1	**85.3**	
3/30/2005 7:50:00	26.1	**85.3**	
3/30/2005 7:50:15	26.1	**85.3**	
3/30/2005 7:50:30	26.1	85.3	
3/30/2005 7:50:45	26.1	85.3	
3/30/2005 7:51:00	26.1	85.3	
3/30/2005 7:51:15	26.1	85.3	
3/30/2005 7:51:30	26.0	85.3	
3/30/2005 7:51:45	25.9	85.3	
3/30/2005 7:52:00	25.9	85.3	
3/30/2005 7:52:15	26.0	85.4	**Calibration - 3rd Injection**
3/30/2005 7:52:30	26.1	**85.5**	**85.5 84.2 ppm Methane**
3/30/2005 7:52:45	26.1	**85.5**	
3/30/2005 7:53:00	26.1	**85.5**	
3/30/2005 7:53:15	24.0	**85.5**	
3/30/2005 7:53:30	16.0	85.5	**85.3 Average 84.2 ppm Methane**
3/30/2005 7:53:45	8.8	85.5	
3/30/2005 7:54:00	8.4	85.5	
3/30/2005 7:54:15	8.3	85.5	
3/30/2005 7:54:30	8.2	85.5	
3/30/2005 7:54:45	8.1	85.5	
3/30/2005 7:55:00	8.1	85.5	
3/30/2005 7:55:15	8.2	55.4	**Calibration - 1st Injection**
3/30/2005 7:55:30	8.3	**25.3**	**25.3 25.0 ppm Methane**
3/30/2005 7:55:45	8.3	**25.3**	
3/30/2005 7:56:00	8.3	**25.3**	
3/30/2005 7:56:15	8.3	**25.3**	
3/30/2005 7:56:30	8.3	25.3	
3/30/2005 7:56:45	8.3	25.3	
3/30/2005 7:57:00	8.3	25.3	
3/30/2005 7:57:15	8.3	25.3	
3/30/2005 7:57:30	8.2	25.3	
3/30/2005 7:57:45	8.1	25.3	
3/30/2005 7:58:00	8.1	25.3	
3/30/2005 7:58:15	8.2	25.3	**Calibration - 2nd Injection**
3/30/2005 7:58:30	8.3	**25.4**	**25.4 25.0 ppm Methane**
3/30/2005 7:58:45	8.3	**25.4**	
3/30/2005 7:59:00	8.3	**25.3**	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 7:59:15	8.3	**25.3**	
3/30/2005 7:59:30	8.3	25.3	
3/30/2005 7:59:45	8.3	25.3	
3/30/2005 8:00:00	8.3	25.3	
3/30/2005 8:00:15	8.3	25.3	
3/30/2005 8:00:30	8.2	25.3	
3/30/2005 8:00:45	8.1	25.3	
3/30/2005 8:01:00	8.1	25.4	
3/30/2005 8:01:15	8.2	25.4	**Calibration - 3rd Injection**
3/30/2005 8:01:30	8.3	**25.4**	**25.4 25.0 ppm Methane**
3/30/2005 8:01:45	8.3	**25.4**	
3/30/2005 8:02:00	8.3	**25.4**	
3/30/2005 8:02:15	8.3	**25.4**	
3/30/2005 8:02:30	8.5	25.4	**25.3 Average 25.0 ppm Methane**
3/30/2005 8:02:45	8.5	25.4	
3/30/2005 8:03:00	1.2	25.4	
3/30/2005 8:03:15	0.6	25.4	
3/30/2005 8:03:30	0.5	25.4	
3/30/2005 8:03:45	0.4	25.4	
3/30/2005 8:04:00	0.4	25.4	
3/30/2005 8:04:15	0.5	12.9	
3/30/2005 8:04:30	0.6	0.4	
3/30/2005 8:04:45	0.6	0.4	
3/30/2005 8:05:00	0.6	0.4	
3/30/2005 8:05:15	0.6	0.4	
3/30/2005 8:05:30	0.6	0.4	
3/30/2005 8:05:45	0.6	0.4	
3/30/2005 8:06:00	0.6	0.4	
3/30/2005 8:06:15	0.6	0.4	
3/30/2005 8:06:30	0.5	0.4	
3/30/2005 8:06:45	0.4	0.4	
3/30/2005 8:07:00	0.3	0.4	
3/30/2005 8:07:15	0.4	0.6	
3/30/2005 8:07:30	0.5	0.7	
3/30/2005 8:07:45	0.5	0.7	
3/30/2005 8:08:00	0.5	0.7	
3/30/2005 8:08:15	0.5	0.7	
3/30/2005 8:08:30	0.5	0.7	
3/30/2005 8:08:45	0.5	0.7	
3/30/2005 8:09:00	0.5	0.7	
3/30/2005 8:09:15	5.4	0.7	
3/30/2005 8:09:30	10.2	0.7	
3/30/2005 8:09:45	10.1	0.7	
3/30/2005 8:10:00	9.7	0.7	
3/30/2005 8:10:15	9.3	2.0	
3/30/2005 8:10:30	9.0	3.2	
3/30/2005 8:10:45	8.8	3.2	
3/30/2005 8:11:00	8.9	3.2	
3/30/2005 8:11:15	8.7	3.2	
3/30/2005 8:11:30	8.4	3.2	
3/30/2005 8:11:45	8.1	3.2	
3/30/2005 8:12:00	8.0	3.2	
3/30/2005 8:12:15	9.0	3.2	
3/30/2005 8:12:30	9.4	3.2	
3/30/2005 8:12:45	9.1	3.2	
3/30/2005 8:13:00	8.8	3.2	
3/30/2005 8:13:15	8.7	3.1	
3/30/2005 8:13:30	8.9	3.0	
3/30/2005 8:13:45	8.8	3.0	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 8:14:00	8.5	3.0	
3/30/2005 8:14:15	8.3	3.0	
3/30/2005 8:14:30	8.2	3.0	
3/30/2005 8:14:45	8.3	3.0	
3/30/2005 8:15:00	8.4	3.0	
3/30/2005 8:15:15	8.3	3.0	
3/30/2005 8:15:30	8.2	3.0	
3/30/2005 8:15:45	8.4	3.0	
3/30/2005 8:16:00	8.8	3.0	
3/30/2005 8:16:15	8.9	2.9	
3/30/2005 8:16:30	8.8	2.8	
3/30/2005 8:16:45	8.6	2.8	
3/30/2005 8:17:00	8.6	2.8	
3/30/2005 8:17:15	8.8	2.8	
3/30/2005 8:17:30	8.7	2.8	
3/30/2005 8:17:45	8.5	2.8	
3/30/2005 8:18:00	8.4	2.8	
3/30/2005 8:18:15	8.6	2.8	
3/30/2005 8:18:30	8.9	2.8	
3/30/2005 8:18:45	8.8	2.8	
3/30/2005 8:19:00	8.6	2.8	
3/30/2005 8:19:15	8.5	2.9	
3/30/2005 8:19:30	8.7	2.9	
3/30/2005 8:19:45	9.0	2.9	
3/30/2005 8:20:00	9.1	2.9	
3/30/2005 8:20:15	8.9	2.9	
3/30/2005 8:20:30	8.5	2.9	
3/30/2005 8:20:45	8.9	2.9	
3/30/2005 8:21:00	8.7	2.9	
3/30/2005 8:21:15	8.5	2.9	
3/30/2005 8:21:30	8.2	2.9	
3/30/2005 8:21:45	7.8	2.9	
3/30/2005 8:22:00	7.8	2.9	
3/30/2005 8:22:15	8.1	2.9	
3/30/2005 8:22:30	8.4	2.9	
3/30/2005 8:22:45	8.5	2.9	
3/30/2005 8:23:00	8.6	2.9	
3/30/2005 8:23:15	9.0	2.9	
3/30/2005 8:23:30	9.1	2.9	
3/30/2005 8:23:45	8.9	2.9	
3/30/2005 8:24:00	8.7	2.9	
3/30/2005 8:24:15	8.5	2.9	
3/30/2005 8:24:30	8.6	2.9	
3/30/2005 8:24:45	8.6	2.9	
3/30/2005 8:25:00	8.5	2.9	
3/30/2005 8:25:15	8.6	3.0	
3/30/2005 8:25:30	8.7	3.1	
3/30/2005 8:25:45	9.0	3.1	
3/30/2005 8:26:00	9.1	3.1	
3/30/2005 8:26:15	8.9	3.1	
3/30/2005 8:26:30	8.7	3.1	
3/30/2005 8:26:45	8.5	3.1	
3/30/2005 8:27:00	8.6	3.1	
3/30/2005 8:27:15	8.7	3.1	
3/30/2005 8:27:30	8.3	3.1	
3/30/2005 8:27:45	8.0	3.1	
3/30/2005 8:28:00	7.9	3.1	
3/30/2005 8:28:15	8.1	3.0	
3/30/2005 8:28:30	8.7	3.0	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 8:28:45	8.9	3.0	
3/30/2005 8:29:00	9.1	3.0	
3/30/2005 8:29:15	9.0	3.0	
3/30/2005 8:29:30	9.3	3.0	
3/30/2005 8:29:45	9.3	3.0	
3/30/2005 8:30:00	9.0	3.0	
3/30/2005 8:30:15	8.7	3.0	
3/30/2005 8:30:30	8.4	3.0	
3/30/2005 8:30:45	8.5	3.0	
3/30/2005 8:31:00	8.5	3.0	
3/30/2005 8:31:15	8.5	3.0	
3/30/2005 8:31:30	8.6	3.1	
3/30/2005 8:31:45	8.6	3.1	
3/30/2005 8:32:00	9.2	3.1	
3/30/2005 8:32:15	9.3	3.1	
3/30/2005 8:32:30	9.1	3.1	
3/30/2005 8:32:45	8.8	3.1	
3/30/2005 8:33:00	8.8	3.1	
3/30/2005 8:33:15	9.0	3.1	
3/30/2005 8:33:30	8.8	3.1	
3/30/2005 8:33:45	8.5	3.1	
3/30/2005 8:34:00	8.3	3.1	
3/30/2005 8:34:15	8.4	3.2	
3/30/2005 8:34:30	8.8	3.3	
3/30/2005 8:34:45	8.7	3.3	
3/30/2005 8:35:00	8.7	3.3	
3/30/2005 8:35:15	8.7	3.3	
3/30/2005 8:35:30	8.7	3.3	
3/30/2005 8:35:45	9.0	3.3	
3/30/2005 8:36:00	8.9	3.3	
3/30/2005 8:36:15	8.6	3.3	
3/30/2005 8:36:30	8.3	3.3	
3/30/2005 8:36:45	8.2	3.3	
3/30/2005 8:37:00	8.5	3.3	
3/30/2005 8:37:15	8.4	3.3	
3/30/2005 8:37:30	8.3	3.4	
3/30/2005 8:37:45	8.2	3.4	
3/30/2005 8:38:00	8.4	3.4	
3/30/2005 8:38:15	8.9	3.4	
3/30/2005 8:38:30	9.0	3.4	
3/30/2005 8:38:45	8.9	3.4	
3/30/2005 8:39:00	8.8	3.4	
3/30/2005 8:39:15	8.8	3.4	
3/30/2005 8:39:30	8.9	3.4	
3/30/2005 8:39:45	8.6	3.4	
3/30/2005 8:40:00	8.3	3.4	
3/30/2005 8:40:15	8.2	3.4	
3/30/2005 8:40:30	8.3	3.4	
3/30/2005 8:40:45	8.6	3.4	
3/30/2005 8:41:00	8.7	3.4	
3/30/2005 8:41:15	8.9	3.4	
3/30/2005 8:41:30	8.8	3.4	
3/30/2005 8:41:45	9.0	3.4	
3/30/2005 8:42:00	9.1	3.4	
3/30/2005 8:42:15	9.0	3.4	
3/30/2005 8:42:30	8.6	3.4	
3/30/2005 8:42:45	8.3	3.4	**Begin Run No. WO-2-1 - Whiteburn Condition #2**
3/30/2005 8:43:00	**8.3**	**3.4**	
3/30/2005 8:43:15	**8.5**	**3.4**	

Marathon Ashland Petroleum, LLC
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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 8:43:30	8.4	3.3	
3/30/2005 8:43:45	8.1	3.3	
3/30/2005 8:44:00	8.0	3.3	
3/30/2005 8:44:15	8.2	3.3	
3/30/2005 8:44:30	9.1	3.3	
3/30/2005 8:44:45	9.2	3.3	
3/30/2005 8:45:00	9.0	3.3	
3/30/2005 8:45:15	8.9	3.3	
3/30/2005 8:45:30	8.9	3.3	
3/30/2005 8:45:45	8.8	3.3	
3/30/2005 8:46:00	8.6	3.3	
3/30/2005 8:46:15	8.3	3.3	
3/30/2005 8:46:30	8.2	3.4	
3/30/2005 8:46:45	8.3	3.4	
3/30/2005 8:47:00	8.3	3.4	
3/30/2005 8:47:15	8.2	3.4	
3/30/2005 8:47:30	8.2	3.4	
3/30/2005 8:47:45	8.3	3.4	
3/30/2005 8:48:00	8.9	3.4	
3/30/2005 8:48:15	9.3	3.4	
3/30/2005 8:48:30	9.0	3.4	
3/30/2005 8:48:45	8.6	3.4	
3/30/2005 8:49:00	8.4	3.4	
3/30/2005 8:49:15	8.7	3.4	
3/30/2005 8:49:30	8.8	3.5	
3/30/2005 8:49:45	8.6	3.5	
3/30/2005 8:50:00	8.4	3.5	
3/30/2005 8:50:15	8.2	3.5	
3/30/2005 8:50:30	8.4	3.5	
3/30/2005 8:50:45	8.7	3.5	
3/30/2005 8:51:00	9.0	3.5	
3/30/2005 8:51:15	9.0	3.5	
3/30/2005 8:51:30	8.8	3.5	
3/30/2005 8:51:45	8.9	3.5	
3/30/2005 8:52:00	8.8	3.5	
3/30/2005 8:52:15	8.7	3.6	
3/30/2005 8:52:30	8.5	3.6	
3/30/2005 8:52:45	8.3	3.6	
3/30/2005 8:53:00	8.5	3.6	
3/30/2005 8:53:15	8.4	3.6	
3/30/2005 8:53:30	8.2	3.6	
3/30/2005 8:53:45	8.0	3.6	
3/30/2005 8:54:00	8.0	3.6	
3/30/2005 8:54:15	8.9	3.6	
3/30/2005 8:54:30	9.2	3.6	
3/30/2005 8:54:45	9.0	3.6	
3/30/2005 8:55:00	8.7	3.6	
3/30/2005 8:55:15	8.7	3.6	
3/30/2005 8:55:30	9.0	3.6	
3/30/2005 8:55:45	8.8	3.6	
3/30/2005 8:56:00	8.6	3.6	
3/30/2005 8:56:15	8.3	3.6	
3/30/2005 8:56:30	8.2	3.6	
3/30/2005 8:56:45	8.4	3.6	
3/30/2005 8:57:00	8.3	3.6	
3/30/2005 8:57:15	8.0	3.6	
3/30/2005 8:57:30	7.7	3.6	
3/30/2005 8:57:45	7.7	3.6	
3/30/2005 8:58:00	8.6	3.6	

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 8:58:15	9.1	3.6	
3/30/2005 8:58:30	9.0	3.5	
3/30/2005 8:58:45	8.8	3.5	
3/30/2005 8:59:00	8.8	3.5	
3/30/2005 8:59:15	8.8	3.5	
3/30/2005 8:59:30	8.7	3.5	
3/30/2005 8:59:45	8.4	3.5	
3/30/2005 9:00:00	8.2	3.5	
3/30/2005 9:00:15	8.2	3.5	
3/30/2005 9:00:30	8.2	3.5	
3/30/2005 9:00:45	7.9	3.5	
3/30/2005 9:01:00	7.7	3.5	
3/30/2005 9:01:15	7.6	3.5	
3/30/2005 9:01:30	8.0	3.5	
3/30/2005 9:01:45	8.9	3.5	
3/30/2005 9:02:00	9.2	3.5	
3/30/2005 9:02:15	9.0	3.5	
3/30/2005 9:02:30	8.8	3.5	
3/30/2005 9:02:45	8.9	3.5	
3/30/2005 9:03:00	9.0	3.5	
3/30/2005 9:03:15	8.7	3.5	
3/30/2005 9:03:30	8.4	3.5	
3/30/2005 9:03:45	8.1	3.5	
3/30/2005 9:04:00	8.2	3.5	
3/30/2005 9:04:15	8.4	3.5	
3/30/2005 9:04:30	8.4	3.6	
3/30/2005 9:04:45	8.1	3.6	
3/30/2005 9:05:00	7.9	3.6	
3/30/2005 9:05:15	8.4	3.6	
3/30/2005 9:05:30	9.2	3.6	
3/30/2005 9:05:45	9.3	3.6	
3/30/2005 9:06:00	9.2	3.6	
3/30/2005 9:06:15	9.0	3.6	
3/30/2005 9:06:30	9.0	3.6	
3/30/2005 9:06:45	8.9	3.6	
3/30/2005 9:07:00	8.7	3.6	
3/30/2005 9:07:15	8.5	3.7	
3/30/2005 9:07:30	8.4	3.8	
3/30/2005 9:07:45	8.5	3.8	
3/30/2005 9:08:00	8.4	3.8	
3/30/2005 9:08:15	8.2	3.8	
3/30/2005 9:08:30	8.0	3.8	
3/30/2005 9:08:45	7.8	3.8	
3/30/2005 9:09:00	8.5	3.8	
3/30/2005 9:09:15	9.3	3.8	
3/30/2005 9:09:30	9.2	3.8	
3/30/2005 9:09:45	8.8	3.8	
3/30/2005 9:10:00	8.7	3.8	
3/30/2005 9:10:15	8.9	3.9	
3/30/2005 9:10:30	8.9	3.9	
3/30/2005 9:10:45	8.6	3.9	
3/30/2005 9:11:00	8.3	3.9	
3/30/2005 9:11:15	8.2	3.9	
3/30/2005 9:11:30	8.3	3.9	
3/30/2005 9:11:45	8.4	3.9	
3/30/2005 9:12:00	8.2	3.9	
3/30/2005 9:12:15	8.0	3.9	
3/30/2005 9:12:30	7.8	3.9	
3/30/2005 9:12:45	8.4	3.9	

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Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 9:13:00	8.9	3.9	Change of Ports
3/30/2005 9:13:15	9.1	3.8	
3/30/2005 9:13:30	9.0	3.8	
3/30/2005 9:13:45	8.8	3.8	
3/30/2005 9:14:00	4.0	3.8	
3/30/2005 9:14:15	2.7	3.8	
3/30/2005 9:14:30	2.0	3.8	
3/30/2005 9:14:45	1.7	3.8	
3/30/2005 9:15:00	1.7	3.8	
3/30/2005 9:15:15	1.7	3.8	
3/30/2005 9:15:30	1.5	3.8	
3/30/2005 9:15:45	2.1	3.8	
3/30/2005 9:16:00	1.4	3.8	
3/30/2005 9:16:15	1.6	4.0	
3/30/2005 9:16:30	1.6	4.3	
3/30/2005 9:16:45	3.1	4.3	
3/30/2005 9:17:00	8.0	4.3	
3/30/2005 9:17:15	8.6	4.3	
3/30/2005 9:17:30	8.6	4.3	
3/30/2005 9:17:45	8.8	4.3	Resume Testing
3/30/2005 9:18:00	**8.7**	**4.3**	
3/30/2005 9:18:15	**8.5**	**4.3**	
3/30/2005 9:18:30	**8.1**	**4.3**	
3/30/2005 9:18:45	**8.0**	**4.3**	
3/30/2005 9:19:00	**8.2**	**4.3**	
3/30/2005 9:19:15	**8.2**	**4.0**	
3/30/2005 9:19:30	**8.1**	**3.7**	
3/30/2005 9:19:45	**8.0**	**3.7**	
3/30/2005 9:20:00	**8.2**	**3.7**	
3/30/2005 9:20:15	**9.1**	**3.7**	
3/30/2005 9:20:30	**9.2**	**3.7**	
3/30/2005 9:20:45	**9.0**	**3.7**	
3/30/2005 9:21:00	**8.7**	**3.7**	
3/30/2005 9:21:15	**8.8**	**3.7**	
3/30/2005 9:21:30	**8.8**	**3.7**	
3/30/2005 9:21:45	**8.5**	**3.7**	
3/30/2005 9:22:00	**8.2**	**3.7**	
3/30/2005 9:22:15	**8.1**	**3.7**	
3/30/2005 9:22:30	**8.2**	**3.8**	
3/30/2005 9:22:45	**8.3**	**3.8**	
3/30/2005 9:23:00	**8.1**	**3.8**	
3/30/2005 9:23:15	**7.9**	**3.8**	
3/30/2005 9:23:30	**7.7**	**3.8**	
3/30/2005 9:23:45	**8.0**	**3.8**	
3/30/2005 9:24:00	**9.0**	**3.8**	
3/30/2005 9:24:15	**9.3**	**3.8**	
3/30/2005 9:24:30	**9.1**	**3.8**	
3/30/2005 9:24:45	**8.7**	**3.8**	
3/30/2005 9:25:00	**8.8**	**3.8**	
3/30/2005 9:25:15	**8.9**	**3.8**	
3/30/2005 9:25:30	**8.7**	**3.9**	
3/30/2005 9:25:45	**8.5**	**3.9**	
3/30/2005 9:26:00	**8.3**	**3.9**	
3/30/2005 9:26:15	**8.4**	**3.9**	
3/30/2005 9:26:30	**8.5**	**3.9**	
3/30/2005 9:26:45	**8.3**	**3.9**	
3/30/2005 9:27:00	**8.1**	**3.9**	
3/30/2005 9:27:15	**8.0**	**3.9**	
3/30/2005 9:27:30	**8.3**	**3.9**	

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 9:27:45	9.0	3.9	
3/30/2005 9:28:00	9.2	3.9	
3/30/2005 9:28:15	9.1	3.9	
3/30/2005 9:28:30	9.0	4.0	
3/30/2005 9:28:45	9.1	4.0	
3/30/2005 9:29:00	9.1	4.0	
3/30/2005 9:29:15	8.8	4.0	
3/30/2005 9:29:30	8.5	4.0	
3/30/2005 9:29:45	8.3	4.0	
3/30/2005 9:30:00	8.4	4.0	
3/30/2005 9:30:15	8.3	4.0	
3/30/2005 9:30:30	8.1	4.0	
3/30/2005 9:30:45	7.7	4.0	
3/30/2005 9:31:00	7.6	4.0	
3/30/2005 9:31:15	8.4	4.0	
3/30/2005 9:31:30	9.3	4.0	
3/30/2005 9:31:45	9.3	4.0	
3/30/2005 9:32:00	9.0	4.0	
3/30/2005 9:32:15	8.8	4.0	
3/30/2005 9:32:30	8.9	4.0	
3/30/2005 9:32:45	8.8	4.0	
3/30/2005 9:33:00	8.6	4.0	
3/30/2005 9:33:15	8.3	4.0	
3/30/2005 9:33:30	8.1	4.0	
3/30/2005 9:33:45	8.1	4.0	
3/30/2005 9:34:00	8.1	4.0	
3/30/2005 9:34:15	8.1	4.0	
3/30/2005 9:34:30	8.1	3.9	
3/30/2005 9:34:45	8.1	3.9	
3/30/2005 9:35:00	9.1	3.9	
3/30/2005 9:35:15	9.6	3.9	
3/30/2005 9:35:30	9.3	3.9	
3/30/2005 9:35:45	9.0	3.9	
3/30/2005 9:36:00	8.9	3.9	
3/30/2005 9:36:15	9.1	3.9	
3/30/2005 9:36:30	8.8	3.9	
3/30/2005 9:36:45	8.4	3.9	
3/30/2005 9:37:00	8.1	3.9	
3/30/2005 9:37:15	8.2	3.9	
3/30/2005 9:37:30	8.4	3.9	
3/30/2005 9:37:45	8.3	3.9	
3/30/2005 9:38:00	8.1	3.9	
3/30/2005 9:38:15	7.9	3.9	
3/30/2005 9:38:30	8.0	3.9	
3/30/2005 9:38:45	9.0	3.9	
3/30/2005 9:39:00	9.4	3.9	
3/30/2005 9:39:15	9.2	3.9	
3/30/2005 9:39:30	8.9	3.9	
3/30/2005 9:39:45	8.7	3.9	
3/30/2005 9:40:00	8.8	3.9	
3/30/2005 9:40:15	8.7	3.9	
3/30/2005 9:40:30	8.5	3.9	
3/30/2005 9:40:45	8.2	3.9	
3/30/2005 9:41:00	8.2	3.9	
3/30/2005 9:41:15	8.4	3.9	
3/30/2005 9:41:30	8.3	3.9	
3/30/2005 9:41:45	8.0	3.9	
3/30/2005 9:42:00	7.9	3.9	
3/30/2005 9:42:15	8.2	3.9	

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 9:42:30	**9.0**	**3.9**	
3/30/2005 9:42:45	**9.1**	**3.9**	
3/30/2005 9:43:00	**9.1**	**3.9**	
3/30/2005 9:43:15	**9.0**	**3.9**	
3/30/2005 9:43:30	**9.1**	**3.9**	
3/30/2005 9:43:45	**9.2**	**3.9**	
3/30/2005 9:44:00	**8.9**	**3.9**	
3/30/2005 9:44:15	**8.6**	**3.9**	
3/30/2005 9:44:30	**8.4**	**3.9**	
3/30/2005 9:44:45	**8.5**	**3.9**	
3/30/2005 9:45:00	**8.5**	**3.9**	
3/30/2005 9:45:15	**8.3**	**3.9**	
3/30/2005 9:45:30	**8.1**	**3.9**	
3/30/2005 9:45:45	**7.8**	**3.9**	
3/30/2005 9:46:00	**8.1**	**3.9**	
3/30/2005 9:46:15	**9.2**	**3.8**	
3/30/2005 9:46:30	**9.3**	**3.7**	
3/30/2005 9:46:45	**9.0**	**3.7**	
3/30/2005 9:47:00	**8.8**	**3.7**	
3/30/2005 9:47:15	**8.9**	**3.7**	
3/30/2005 9:47:30	**9.0**	**3.7**	
3/30/2005 9:47:45	**8.8**	**3.7**	
3/30/2005 9:48:00	8.5	3.7	**End Run No. WO-2-1 - Whiteburn Condition #2**
3/30/2005 9:48:15	8.3	3.7	
3/30/2005 9:48:30	8.4	3.7	
3/30/2005 9:48:45	8.3	3.7	
3/30/2005 9:49:00	8.1	3.7	
3/30/2005 9:49:15	8.0	3.7	
3/30/2005 9:49:30	8.0	3.7	
3/30/2005 9:49:45	8.5	3.7	
3/30/2005 9:50:00	9.0	3.7	
3/30/2005 9:50:15	9.1	3.7	
3/30/2005 9:50:30	9.0	3.7	
3/30/2005 9:50:45	8.8	3.7	
3/30/2005 9:51:00	9.0	3.7	
3/30/2005 9:51:15	8.9	3.7	
3/30/2005 9:51:30	8.6	3.7	
3/30/2005 9:51:45	8.2	3.7	
3/30/2005 9:52:00	8.0	3.7	
3/30/2005 9:52:15	12.8	3.6	
3/30/2005 9:52:30	32.9	3.6	
3/30/2005 9:52:45	3.6	3.6	
3/30/2005 9:53:00	1.5	3.6	
3/30/2005 9:53:15	1.5	3.6	
3/30/2005 9:53:30	1.7	3.6	
3/30/2005 9:53:45	1.2	3.6	
3/30/2005 9:54:00	1.0	3.6	
3/30/2005 9:54:15	0.9	3.6	
3/30/2005 9:54:30	0.8	3.6	
3/30/2005 9:54:45	0.6	3.6	
3/30/2005 9:55:00	0.6	3.6	
3/30/2005 9:55:15	0.7	2.5	
3/30/2005 9:55:30	0.8	1.5	
3/30/2005 9:55:45	0.7	1.5	
3/30/2005 9:56:00	0.7	1.5	
3/30/2005 9:56:15	0.7	1.5	
3/30/2005 9:56:30	0.7	1.5	
3/30/2005 9:56:45	0.7	1.5	
3/30/2005 9:57:00	0.7	1.5	

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 9:57:15	0.7	1.5	
3/30/2005 9:57:30	0.6	1.5	
3/30/2005 9:57:45	0.5	1.5	
3/30/2005 9:58:00	0.5	1.5	
3/30/2005 9:58:15	0.6	1.4	
3/30/2005 9:58:30	0.6	1.3	
3/30/2005 9:58:45	0.6	1.3	
3/30/2005 9:59:00	0.6	1.3	
3/30/2005 9:59:15	0.6	1.3	
3/30/2005 9:59:30	0.6	1.3	
3/30/2005 9:59:45	2.0	1.3	
3/30/2005 10:00:00	2.0	1.3	
3/30/2005 10:00:15	0.9	1.3	
3/30/2005 10:00:30	0.7	1.3	
3/30/2005 10:00:45	0.5	1.3	
3/30/2005 10:01:00	0.6	1.3	
3/30/2005 10:01:15	0.7	1.3	
3/30/2005 10:01:30	0.7	1.3	
3/30/2005 10:01:45	0.7	1.3	
3/30/2005 10:02:00	0.7	1.3	
3/30/2005 10:02:15	0.7	1.3	
3/30/2005 10:02:30	0.7	1.3	
3/30/2005 10:02:45	0.7	1.3	
3/30/2005 10:03:00	0.7	1.3	
3/30/2005 10:03:15	0.7	1.3	
3/30/2005 10:03:30	0.7	1.3	
3/30/2005 10:03:45	0.5	1.3	
3/30/2005 10:04:00	0.5	1.3	
3/30/2005 10:04:15	0.6	1.3	
3/30/2005 10:04:30	0.7	1.4	
3/30/2005 10:04:45	0.7	1.4	
3/30/2005 10:05:00	0.7	1.4	
3/30/2005 10:05:15	0.7	1.4	**Calibration**
3/30/2005 10:05:30	**0.7**	1.4	**0.7 Zero Propane/N_2**
3/30/2005 10:05:45	**0.7**	1.4	
3/30/2005 10:06:00	**0.7**	1.4	
3/30/2005 10:06:15	**0.7**	1.4	
3/30/2005 10:06:30	1.1	1.4	
3/30/2005 10:06:45	6.5	1.4	
3/30/2005 10:07:00	81.3	1.4	
3/30/2005 10:07:15	102.4	2.5	
3/30/2005 10:07:30	102.4	3.6	
3/30/2005 10:07:45	102.4	3.6	
3/30/2005 10:08:00	102.4	3.6	
3/30/2005 10:08:15	102.4	3.6	
3/30/2005 10:08:30	102.4	3.6	
3/30/2005 10:08:45	102.4	3.6	
3/30/2005 10:09:00	102.1	3.6	
3/30/2005 10:09:15	94.2	3.6	
3/30/2005 10:09:30	51.0	3.6	
3/30/2005 10:09:45	51.3	3.6	
3/30/2005 10:10:00	51.8	3.6	
3/30/2005 10:10:15	52.1	2.6	
3/30/2005 10:10:30	52.0	1.6	
3/30/2005 10:10:45	51.9	1.6	**Calibration**
3/30/2005 10:11:00	**51.8**	1.6	**51.7 50.0 ppm Propane/N_2**
3/30/2005 10:11:15	**51.8**	1.6	
3/30/2005 10:11:30	**51.7**	1.6	
3/30/2005 10:11:45	**51.6**	1.6	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 10:12:00	30.4	1.6	
3/30/2005 10:12:15	10.0	1.6	
3/30/2005 10:12:30	9.1	1.6	
3/30/2005 10:12:45	8.9	1.6	
3/30/2005 10:13:00	8.9	1.6	
3/30/2005 10:13:15	9.3	2.5	
3/30/2005 10:13:30	9.4	3.4	
3/30/2005 10:13:45	9.1	3.4	**Begin Run No. WO-2-2 - Whiteburn Condition #2**
3/30/2005 10:14:00	**8.9**	**3.4**	
3/30/2005 10:14:15	**8.8**	**3.4**	
3/30/2005 10:14:30	**9.1**	**3.4**	
3/30/2005 10:14:45	**9.0**	**3.4**	
3/30/2005 10:15:00	**8.8**	**3.4**	
3/30/2005 10:15:15	**8.9**	**3.4**	
3/30/2005 10:15:30	**8.9**	**3.4**	
3/30/2005 10:15:45	**9.0**	**3.4**	
3/30/2005 10:16:00	**8.9**	**3.4**	
3/30/2005 10:16:15	**8.7**	**3.3**	
3/30/2005 10:16:30	**8.6**	**3.3**	
3/30/2005 10:16:45	**8.5**	**3.3**	
3/30/2005 10:17:00	**8.9**	**3.3**	
3/30/2005 10:17:15	**9.0**	**3.3**	
3/30/2005 10:17:30	**9.0**	**3.3**	
3/30/2005 10:17:45	**8.8**	**3.3**	
3/30/2005 10:18:00	**8.7**	**3.3**	
3/30/2005 10:18:15	**8.9**	**3.3**	
3/30/2005 10:18:30	**8.7**	**3.3**	
3/30/2005 10:18:45	**8.3**	**3.3**	
3/30/2005 10:19:00	**8.0**	**3.3**	
3/30/2005 10:19:15	**8.1**	**3.2**	
3/30/2005 10:19:30	**8.7**	**3.1**	
3/30/2005 10:19:45	**9.0**	**3.1**	
3/30/2005 10:20:00	**9.0**	**3.1**	
3/30/2005 10:20:15	**8.8**	**3.1**	
3/30/2005 10:20:30	**8.9**	**3.1**	
3/30/2005 10:20:45	**9.0**	**3.1**	
3/30/2005 10:21:00	**8.8**	**3.1**	
3/30/2005 10:21:15	**8.6**	**3.1**	
3/30/2005 10:21:30	**8.3**	**3.1**	
3/30/2005 10:21:45	**8.1**	**3.1**	
3/30/2005 10:22:00	**8.2**	**3.1**	
3/30/2005 10:22:15	**8.1**	**3.1**	
3/30/2005 10:22:30	**8.3**	**3.0**	
3/30/2005 10:22:45	**8.5**	**3.0**	
3/30/2005 10:23:00	**8.8**	**3.0**	
3/30/2005 10:23:15	**8.9**	**3.0**	
3/30/2005 10:23:30	**8.8**	**3.0**	
3/30/2005 10:23:45	**8.6**	**3.0**	
3/30/2005 10:24:00	**8.5**	**3.0**	
3/30/2005 10:24:15	**8.6**	**3.0**	
3/30/2005 10:24:30	**8.6**	**3.0**	
3/30/2005 10:24:45	**8.3**	**3.0**	
3/30/2005 10:25:00	**8.0**	**3.0**	
3/30/2005 10:25:15	**7.9**	**3.0**	
3/30/2005 10:25:30	**8.3**	**3.0**	
3/30/2005 10:25:45	**9.3**	**3.0**	
3/30/2005 10:26:00	**9.4**	**3.0**	
3/30/2005 10:26:15	**9.2**	**3.0**	
3/30/2005 10:26:30	**9.0**	**3.0**	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 10:26:45	9.1	3.0	
3/30/2005 10:27:00	9.0	3.0	
3/30/2005 10:27:15	8.9	3.0	
3/30/2005 10:27:30	8.6	3.0	
3/30/2005 10:27:45	8.2	3.0	
3/30/2005 10:28:00	8.3	3.0	
3/30/2005 10:28:15	8.4	3.1	
3/30/2005 10:28:30	8.4	3.1	
3/30/2005 10:28:45	8.2	3.1	
3/30/2005 10:29:00	8.1	3.1	
3/30/2005 10:29:15	8.6	3.1	
3/30/2005 10:29:30	9.2	3.1	
3/30/2005 10:29:45	9.3	3.1	
3/30/2005 10:30:00	9.2	3.1	
3/30/2005 10:30:15	9.0	3.1	
3/30/2005 10:30:30	9.1	3.1	
3/30/2005 10:30:45	8.9	3.1	
3/30/2005 10:31:00	8.6	3.1	
3/30/2005 10:31:15	8.3	3.1	
3/30/2005 10:31:30	8.3	3.0	
3/30/2005 10:31:45	8.5	3.0	
3/30/2005 10:32:00	8.4	3.0	
3/30/2005 10:32:15	8.3	3.0	
3/30/2005 10:32:30	8.0	3.0	
3/30/2005 10:32:45	7.9	3.0	
3/30/2005 10:33:00	8.7	3.0	
3/30/2005 10:33:15	9.4	3.0	
3/30/2005 10:33:30	9.3	3.0	
3/30/2005 10:33:45	8.9	3.0	
3/30/2005 10:34:00	8.7	3.0	
3/30/2005 10:34:15	9.0	3.0	
3/30/2005 10:34:30	9.0	3.0	
3/30/2005 10:34:45	8.7	3.0	
3/30/2005 10:35:00	8.5	3.0	
3/30/2005 10:35:15	8.4	3.0	
3/30/2005 10:35:30	8.6	3.0	
3/30/2005 10:35:45	8.5	3.0	
3/30/2005 10:36:00	8.3	3.0	
3/30/2005 10:36:15	8.2	3.0	
3/30/2005 10:36:30	8.2	3.0	
3/30/2005 10:36:45	8.9	3.0	
3/30/2005 10:37:00	9.3	3.0	
3/30/2005 10:37:15	9.2	3.0	
3/30/2005 10:37:30	9.0	3.0	
3/30/2005 10:37:45	9.0	3.0	
3/30/2005 10:38:00	9.1	3.0	
3/30/2005 10:38:15	8.9	3.0	
3/30/2005 10:38:30	8.7	3.0	
3/30/2005 10:38:45	8.4	3.0	
3/30/2005 10:39:00	8.3	3.0	
3/30/2005 10:39:15	8.4	3.0	
3/30/2005 10:39:30	8.3	3.0	
3/30/2005 10:39:45	7.9	3.0	
3/30/2005 10:40:00	7.7	3.0	
3/30/2005 10:40:15	7.9	2.9	
3/30/2005 10:40:30	9.1	2.9	
3/30/2005 10:40:45	9.4	2.9	
3/30/2005 10:41:00	9.2	2.9	
3/30/2005 10:41:15	8.9	2.9	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 10:41:30	**8.9**	**2.9**	
3/30/2005 10:41:45	**9.0**	**2.9**	
3/30/2005 10:42:00	**8.8**	**2.9**	
3/30/2005 10:42:15	**8.6**	**2.9**	
3/30/2005 10:42:30	**8.3**	**2.9**	
3/30/2005 10:42:45	**8.3**	**2.9**	
3/30/2005 10:43:00	**8.4**	**2.9**	
3/30/2005 10:43:15	**8.2**	**2.9**	
3/30/2005 10:43:30	**8.1**	**2.9**	
3/30/2005 10:43:45	**7.9**	**2.9**	
3/30/2005 10:44:00	8.2	2.9	**Change of Ports**
3/30/2005 10:44:15	9.0	2.9	
3/30/2005 10:44:30	9.2	2.9	
3/30/2005 10:44:45	7.5	2.9	
3/30/2005 10:45:00	2.6	2.9	
3/30/2005 10:45:15	1.9	2.9	
3/30/2005 10:45:30	2.0	2.9	
3/30/2005 10:45:45	1.7	2.9	
3/30/2005 10:46:00	1.3	2.9	
3/30/2005 10:46:15	1.4	3.0	
3/30/2005 10:46:30	1.5	3.1	
3/30/2005 10:46:45	1.4	3.1	
3/30/2005 10:47:00	1.4	3.1	
3/30/2005 10:47:15	1.4	3.1	
3/30/2005 10:47:30	1.6	3.1	
3/30/2005 10:47:45	1.4	3.1	
3/30/2005 10:48:00	4.3	3.1	
3/30/2005 10:48:15	8.6	3.1	
3/30/2005 10:48:30	8.8	3.1	
3/30/2005 10:48:45	8.5	3.1	**Resume Testing**
3/30/2005 10:49:00	**8.7**	**3.1**	
3/30/2005 10:49:15	**8.7**	**3.0**	
3/30/2005 10:49:30	**8.6**	**3.0**	
3/30/2005 10:49:45	**8.4**	**3.0**	
3/30/2005 10:50:00	**8.2**	**3.0**	
3/30/2005 10:50:15	**8.3**	**3.0**	
3/30/2005 10:50:30	**8.3**	**3.0**	
3/30/2005 10:50:45	**8.1**	**3.0**	
3/30/2005 10:51:00	**7.9**	**3.0**	
3/30/2005 10:51:15	**7.8**	**3.0**	
3/30/2005 10:51:30	**8.4**	**3.0**	
3/30/2005 10:51:45	**9.1**	**3.0**	
3/30/2005 10:52:00	**9.0**	**3.0**	
3/30/2005 10:52:15	**8.8**	**2.9**	
3/30/2005 10:52:30	**8.8**	**2.9**	
3/30/2005 10:52:45	**9.0**	**2.9**	
3/30/2005 10:53:00	**8.9**	**2.9**	
3/30/2005 10:53:15	**8.7**	**2.9**	
3/30/2005 10:53:30	**8.4**	**2.9**	
3/30/2005 10:53:45	**8.3**	**2.9**	
3/30/2005 10:54:00	**8.4**	**2.9**	
3/30/2005 10:54:15	**8.4**	**2.9**	
3/30/2005 10:54:30	**8.2**	**2.9**	
3/30/2005 10:54:45	**7.9**	**2.9**	
3/30/2005 10:55:00	**8.0**	**2.9**	
3/30/2005 10:55:15	**9.0**	**2.9**	
3/30/2005 10:55:30	**9.6**	**3.0**	
3/30/2005 10:55:45	**9.4**	**3.0**	
3/30/2005 10:56:00	**9.1**	**3.0**	

Marathon Ashland Petroleum, LLC
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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 10:56:15	8.9	3.0	
3/30/2005 10:56:30	9.1	3.0	
3/30/2005 10:56:45	9.0	3.0	
3/30/2005 10:57:00	8.7	3.0	
3/30/2005 10:57:15	8.5	3.0	
3/30/2005 10:57:30	8.4	3.0	
3/30/2005 10:57:45	8.4	3.0	
3/30/2005 10:58:00	8.2	3.0	
3/30/2005 10:58:15	8.1	3.0	
3/30/2005 10:58:30	8.0	3.0	
3/30/2005 10:58:45	8.1	3.0	
3/30/2005 10:59:00	9.2	3.0	
3/30/2005 10:59:15	9.5	3.0	
3/30/2005 10:59:30	9.2	3.0	
3/30/2005 10:59:45	8.9	3.0	
3/30/2005 11:00:00	8.9	3.0	
3/30/2005 11:00:15	9.1	3.0	
3/30/2005 11:00:30	8.8	3.0	
3/30/2005 11:00:45	8.4	3.0	
3/30/2005 11:01:00	8.1	3.0	
3/30/2005 11:01:15	8.2	3.0	
3/30/2005 11:01:30	8.6	3.0	
3/30/2005 11:01:45	8.5	3.0	
3/30/2005 11:02:00	8.3	3.0	
3/30/2005 11:02:15	8.1	3.0	
3/30/2005 11:02:30	8.5	3.0	
3/30/2005 11:02:45	9.5	3.0	
3/30/2005 11:03:00	9.5	3.0	
3/30/2005 11:03:15	9.3	3.0	
3/30/2005 11:03:30	9.0	3.0	
3/30/2005 11:03:45	8.9	3.0	
3/30/2005 11:04:00	8.9	3.0	
3/30/2005 11:04:15	8.7	3.0	
3/30/2005 11:04:30	8.6	3.1	
3/30/2005 11:04:45	8.4	3.1	
3/30/2005 11:05:00	8.4	3.1	
3/30/2005 11:05:15	8.5	3.1	
3/30/2005 11:05:30	8.4	3.1	
3/30/2005 11:05:45	8.1	3.1	
3/30/2005 11:06:00	7.9	3.1	
3/30/2005 11:06:15	8.4	3.1	
3/30/2005 11:06:30	9.4	3.1	
3/30/2005 11:06:45	9.2	3.1	
3/30/2005 11:07:00	8.9	3.1	
3/30/2005 11:07:15	8.7	3.1	
3/30/2005 11:07:30	9.0	3.2	
3/30/2005 11:07:45	9.1	3.2	
3/30/2005 11:08:00	8.8	3.2	
3/30/2005 11:08:15	8.5	3.2	
3/30/2005 11:08:30	8.3	3.2	
3/30/2005 11:08:45	8.4	3.2	
3/30/2005 11:09:00	8.5	3.2	
3/30/2005 11:09:15	8.3	3.2	
3/30/2005 11:09:30	8.0	3.2	
3/30/2005 11:09:45	7.7	3.2	
3/30/2005 11:10:00	8.6	3.2	
3/30/2005 11:10:15	9.4	3.2	
3/30/2005 11:10:30	9.5	3.2	
3/30/2005 11:10:45	9.2	3.2	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 11:11:00	**9.0**	**3.2**	
3/30/2005 11:11:15	**9.2**	**3.2**	
3/30/2005 11:11:30	**9.2**	**3.2**	
3/30/2005 11:11:45	**8.9**	**3.2**	
3/30/2005 11:12:00	**8.6**	**3.2**	
3/30/2005 11:12:15	**8.4**	**3.2**	
3/30/2005 11:12:30	**8.5**	**3.2**	
3/30/2005 11:12:45	**8.4**	**3.2**	
3/30/2005 11:13:00	**8.1**	**3.2**	
3/30/2005 11:13:15	**7.9**	**3.3**	
3/30/2005 11:13:30	**8.1**	**3.5**	
3/30/2005 11:13:45	**9.1**	**3.5**	
3/30/2005 11:14:00	**9.7**	**3.5**	
3/30/2005 11:14:15	**9.6**	**3.5**	
3/30/2005 11:14:30	**9.3**	**3.5**	
3/30/2005 11:14:45	**9.1**	**3.5**	
3/30/2005 11:15:00	**9.3**	**3.5**	
3/30/2005 11:15:15	**9.1**	**3.5**	
3/30/2005 11:15:30	**8.9**	**3.5**	
3/30/2005 11:15:45	**8.4**	**3.5**	
3/30/2005 11:16:00	**8.3**	**3.5**	
3/30/2005 11:16:15	**8.5**	**3.5**	
3/30/2005 11:16:30	**8.6**	**3.6**	
3/30/2005 11:16:45	**8.4**	**3.6**	
3/30/2005 11:17:00	**8.2**	**3.6**	
3/30/2005 11:17:15	**8.2**	**3.6**	
3/30/2005 11:17:30	**9.1**	**3.6**	
3/30/2005 11:17:45	**9.6**	**3.6**	
3/30/2005 11:18:00	**9.4**	**3.6**	
3/30/2005 11:18:15	**9.1**	**3.6**	
3/30/2005 11:18:30	**9.0**	**3.6**	
3/30/2005 11:18:45	**9.0**	**3.6**	
3/30/2005 11:19:00	8.9	3.6	**End Run No. WO-2-2 - Whiteburn Condition #2**
3/30/2005 11:19:15	8.8	3.6	
3/30/2005 11:19:30	8.6	3.6	
3/30/2005 11:19:45	12.0	3.6	
3/30/2005 11:20:00	48.5	3.6	
3/30/2005 11:20:15	48.4	3.6	
3/30/2005 11:20:30	49.8	3.6	
3/30/2005 11:20:45	51.8	3.6	
3/30/2005 11:21:00	51.7	3.6	
3/30/2005 11:21:15	51.7	3.6	
3/30/2005 11:21:30	51.7	3.6	
3/30/2005 11:21:45	51.8	3.6	
3/30/2005 11:22:00	51.8	3.6	
3/30/2005 11:22:15	51.8	2.6	
3/30/2005 11:22:30	51.9	1.5	**Calibration**
3/30/2005 11:22:45	**51.9**	1.5	**51.9 50.0 ppm Propane/N_2**
3/30/2005 11:23:00	**51.9**	1.5	
3/30/2005 11:23:15	**51.9**	1.5	
3/30/2005 11:23:30	**51.9**	1.5	
3/30/2005 11:23:45	47.6	1.5	
3/30/2005 11:24:00	21.7	1.5	
3/30/2005 11:24:15	1.6	1.5	
3/30/2005 11:24:30	0.8	1.5	
3/30/2005 11:24:45	0.6	1.5	
3/30/2005 11:25:00	0.5	1.5	
3/30/2005 11:25:15	0.5	1.5	
3/30/2005 11:25:30	0.7	1.5	**Calibration**

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 11:25:45	**0.7**	1.5	**0.6 Zero Propane/N_2**
3/30/2005 11:26:00	**0.6**	1.5	
3/30/2005 11:26:15	**0.6**	1.5	
3/30/2005 11:26:30	**0.6**	1.5	
3/30/2005 11:26:45	5.1	1.5	
3/30/2005 11:27:00	8.4	1.5	
3/30/2005 11:27:15	8.7	1.5	
3/30/2005 11:27:30	8.7	1.5	
3/30/2005 11:27:45	8.4	1.5	
3/30/2005 11:28:00	8.1	1.5	
3/30/2005 11:28:15	8.0	2.3	
3/30/2005 11:28:30	8.8	3.5	
3/30/2005 11:28:45	9.4	3.5	
3/30/2005 11:29:00	9.3	3.5	
3/30/2005 11:29:15	8.1	3.5	
3/30/2005 11:29:30	72.0	3.5	
3/30/2005 11:29:45	6.6	3.5	
3/30/2005 11:30:00	5.0	3.5	
3/30/2005 11:30:15	8.5	3.5	
3/30/2005 11:30:30	4.2	3.5	
3/30/2005 11:30:45	6.0	3.5	
3/30/2005 11:31:00	8.2	3.5	
3/30/2005 11:31:15	8.3	3.5	
3/30/2005 11:31:30	8.2	3.5	
3/30/2005 11:31:45	8.0	3.5	
3/30/2005 11:32:00	7.9	3.5	
3/30/2005 11:32:15	8.8	3.5	
3/30/2005 11:32:30	9.5	3.5	
3/30/2005 11:32:45	9.5	3.5	
3/30/2005 11:33:00	9.3	3.5	
3/30/2005 11:33:15	9.1	3.5	
3/30/2005 11:33:30	9.2	3.5	
3/30/2005 11:33:45	8.9	3.5	
3/30/2005 11:34:00	8.7	3.5	
3/30/2005 11:34:15	8.4	3.6	
3/30/2005 11:34:30	8.5	3.8	
3/30/2005 11:34:45	8.6	3.8	
3/30/2005 11:35:00	8.5	3.8	
3/30/2005 11:35:15	8.3	3.8	
3/30/2005 11:35:30	8.2	3.8	
3/30/2005 11:35:45	8.4	3.8	
3/30/2005 11:36:00	9.4	3.8	
3/30/2005 11:36:15	9.7	3.8	
3/30/2005 11:36:30	9.4	3.8	
3/30/2005 11:36:45	9.0	3.8	
3/30/2005 11:37:00	9.0	3.8	
3/30/2005 11:37:15	9.2	3.9	
3/30/2005 11:37:30	9.2	3.9	
3/30/2005 11:37:45	8.8	3.9	
3/30/2005 11:38:00	8.6	3.9	
3/30/2005 11:38:15	8.5	3.9	
3/30/2005 11:38:30	8.7	3.9	
3/30/2005 11:38:45	7.8	3.9	
3/30/2005 11:39:00	7.2	3.9	
3/30/2005 11:39:15	4.0	3.9	
3/30/2005 11:39:30	1.5	3.9	
3/30/2005 11:39:45	1.1	3.9	
3/30/2005 11:40:00	1.0	3.9	
3/30/2005 11:40:15	1.0	3.4	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 11:40:30	1.1	2.0	
3/30/2005 11:40:45	1.1	2.0	
3/30/2005 11:41:00	1.1	2.0	
3/30/2005 11:41:15	1.1	2.0	
3/30/2005 11:41:30	1.1	2.0	
3/30/2005 11:41:45	1.1	2.0	
3/30/2005 11:42:00	1.0	2.0	
3/30/2005 11:42:15	2.1	2.0	
3/30/2005 11:42:30	7.9	2.0	
3/30/2005 11:42:45	8.4	2.0	**Begin Run No. WO-2-3 - Whiteburn Condition #2**
3/30/2005 11:43:00	**8.0**	**2.0**	
3/30/2005 11:43:15	**8.5**	**2.6**	
3/30/2005 11:43:30	**9.6**	**4.3**	
3/30/2005 11:43:45	**9.7**	**4.3**	
3/30/2005 11:44:00	**9.4**	**4.3**	
3/30/2005 11:44:15	**9.2**	**4.3**	
3/30/2005 11:44:30	**9.4**	**4.3**	
3/30/2005 11:44:45	**9.4**	**4.3**	
3/30/2005 11:45:00	**9.1**	**4.3**	
3/30/2005 11:45:15	**8.9**	**4.3**	
3/30/2005 11:45:30	**8.6**	**4.3**	
3/30/2005 11:45:45	**8.5**	**4.3**	
3/30/2005 11:46:00	**8.6**	**4.3**	
3/30/2005 11:46:15	**8.4**	**4.3**	
3/30/2005 11:46:30	**8.4**	**4.3**	
3/30/2005 11:46:45	**8.2**	**4.3**	
3/30/2005 11:47:00	**8.8**	**4.3**	
3/30/2005 11:47:15	**9.7**	**4.3**	
3/30/2005 11:47:30	**9.6**	**4.3**	
3/30/2005 11:47:45	**9.3**	**4.3**	
3/30/2005 11:48:00	**9.1**	**4.3**	
3/30/2005 11:48:15	**9.3**	**4.3**	
3/30/2005 11:48:30	**9.2**	**4.3**	
3/30/2005 11:48:45	**8.7**	**4.3**	
3/30/2005 11:49:00	**8.4**	**4.3**	
3/30/2005 11:49:15	**8.4**	**4.3**	
3/30/2005 11:49:30	**8.7**	**4.2**	
3/30/2005 11:49:45	**8.7**	**4.2**	
3/30/2005 11:50:00	**8.4**	**4.2**	
3/30/2005 11:50:15	**8.2**	**4.2**	
3/30/2005 11:50:30	**8.1**	**4.2**	
3/30/2005 11:50:45	**8.9**	**4.2**	
3/30/2005 11:51:00	**9.6**	**4.2**	
3/30/2005 11:51:15	**9.6**	**4.2**	
3/30/2005 11:51:30	**9.5**	**4.2**	
3/30/2005 11:51:45	**9.2**	**4.2**	
3/30/2005 11:52:00	**9.3**	**4.2**	
3/30/2005 11:52:15	**9.2**	**4.2**	
3/30/2005 11:52:30	**9.1**	**4.1**	
3/30/2005 11:52:45	**8.8**	**4.1**	
3/30/2005 11:53:00	**8.6**	**4.1**	
3/30/2005 11:53:15	**8.8**	**4.1**	
3/30/2005 11:53:30	**8.7**	**4.1**	
3/30/2005 11:53:45	**8.4**	**4.1**	
3/30/2005 11:54:00	**8.2**	**4.1**	
3/30/2005 11:54:15	**8.2**	**4.1**	
3/30/2005 11:54:30	**9.1**	**4.1**	
3/30/2005 11:54:45	**9.4**	**4.1**	
3/30/2005 11:55:00	**9.2**	**4.1**	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 11:55:15	9.0	4.1	
3/30/2005 11:55:30	9.0	4.0	
3/30/2005 11:55:45	9.2	4.0	
3/30/2005 11:56:00	9.1	4.0	
3/30/2005 11:56:15	8.8	4.0	
3/30/2005 11:56:30	8.5	4.0	
3/30/2005 11:56:45	8.5	4.0	
3/30/2005 11:57:00	8.7	4.0	
3/30/2005 11:57:15	8.7	4.0	
3/30/2005 11:57:30	8.5	4.0	
3/30/2005 11:57:45	8.2	4.0	
3/30/2005 11:58:00	8.4	4.0	
3/30/2005 11:58:15	9.5	4.0	
3/30/2005 11:58:30	10.0	3.9	
3/30/2005 11:58:45	9.7	3.9	
3/30/2005 11:59:00	9.3	3.9	
3/30/2005 11:59:15	9.3	3.9	
3/30/2005 11:59:30	9.4	3.9	
3/30/2005 11:59:45	9.2	3.9	
3/30/2005 12:00:00	8.9	3.9	
3/30/2005 12:00:15	8.7	3.9	
3/30/2005 12:00:30	8.6	3.9	
3/30/2005 12:00:45	8.5	3.9	
3/30/2005 12:01:00	8.4	3.9	
3/30/2005 12:01:15	8.2	3.9	
3/30/2005 12:01:30	8.2	4.0	
3/30/2005 12:01:45	8.5	4.0	
3/30/2005 12:02:00	9.6	4.0	
3/30/2005 12:02:15	9.9	4.0	
3/30/2005 12:02:30	9.7	4.0	
3/30/2005 12:02:45	9.4	4.0	
3/30/2005 12:03:00	9.4	4.0	
3/30/2005 12:03:15	9.4	4.0	
3/30/2005 12:03:30	9.1	4.0	
3/30/2005 12:03:45	8.7	4.0	
3/30/2005 12:04:00	8.5	4.0	
3/30/2005 12:04:15	8.5	4.0	
3/30/2005 12:04:30	8.8	4.0	
3/30/2005 12:04:45	8.6	4.0	
3/30/2005 12:05:00	8.3	4.0	
3/30/2005 12:05:15	8.1	4.0	
3/30/2005 12:05:30	8.6	4.0	
3/30/2005 12:05:45	9.6	4.0	
3/30/2005 12:06:00	9.6	4.0	
3/30/2005 12:06:15	9.3	4.0	
3/30/2005 12:06:30	9.0	4.0	
3/30/2005 12:06:45	9.0	4.0	
3/30/2005 12:07:00	9.0	4.0	
3/30/2005 12:07:15	8.8	4.0	
3/30/2005 12:07:30	8.7	4.0	
3/30/2005 12:07:45	8.5	4.0	
3/30/2005 12:08:00	8.6	4.0	
3/30/2005 12:08:15	8.6	4.0	
3/30/2005 12:08:30	8.4	4.0	
3/30/2005 12:08:45	8.2	4.0	
3/30/2005 12:09:00	8.1	4.0	
3/30/2005 12:09:15	8.8	4.0	
3/30/2005 12:09:30	9.5	4.0	
3/30/2005 12:09:45	9.3	4.0	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 12:10:00	**9.1**	**4.0**	
3/30/2005 12:10:15	**8.9**	**4.0**	
3/30/2005 12:10:30	**9.2**	**4.0**	
3/30/2005 12:10:45	**9.2**	**4.0**	
3/30/2005 12:11:00	**8.9**	**4.0**	
3/30/2005 12:11:15	**8.7**	**4.0**	
3/30/2005 12:11:30	**8.5**	**4.0**	
3/30/2005 12:11:45	**8.6**	**4.0**	
3/30/2005 12:12:00	**8.6**	**4.0**	
3/30/2005 12:12:15	**8.3**	**4.0**	
3/30/2005 12:12:30	**8.1**	**4.0**	
3/30/2005 12:12:45	**7.9**	**4.0**	
3/30/2005 12:13:00	8.7	4.0	**Change of Ports**
3/30/2005 12:13:15	9.4	4.0	
3/30/2005 12:13:30	9.5	3.9	
3/30/2005 12:13:45	9.3	3.9	
3/30/2005 12:14:00	7.1	3.9	
3/30/2005 12:14:15	2.6	3.9	
3/30/2005 12:14:30	2.1	3.9	
3/30/2005 12:14:45	2.0	3.9	
3/30/2005 12:15:00	1.8	3.9	
3/30/2005 12:15:15	2.2	3.9	
3/30/2005 12:15:30	1.9	3.9	
3/30/2005 12:15:45	1.4	3.9	
3/30/2005 12:16:00	1.4	3.9	
3/30/2005 12:16:15	1.6	3.9	
3/30/2005 12:16:30	5.9	4.1	
3/30/2005 12:16:45	8.7	4.1	
3/30/2005 12:17:00	9.3	4.1	
3/30/2005 12:17:15	9.2	4.1	
3/30/2005 12:17:30	9.0	4.1	
3/30/2005 12:17:45	9.0	4.1	**Resume Testing**
3/30/2005 12:18:00	**9.2**	**4.1**	
3/30/2005 12:18:15	**9.0**	**4.1**	
3/30/2005 12:18:30	**8.7**	**4.1**	
3/30/2005 12:18:45	**8.3**	**4.1**	
3/30/2005 12:19:00	**8.2**	**4.1**	
3/30/2005 12:19:15	**8.4**	**4.0**	
3/30/2005 12:19:30	**8.4**	**3.8**	
3/30/2005 12:19:45	**8.4**	**3.8**	
3/30/2005 12:20:00	**8.5**	**3.8**	
3/30/2005 12:20:15	**9.0**	**3.8**	
3/30/2005 12:20:30	**9.4**	**3.8**	
3/30/2005 12:20:45	**9.3**	**3.8**	
3/30/2005 12:21:00	**9.1**	**3.8**	
3/30/2005 12:21:15	**9.0**	**3.8**	
3/30/2005 12:21:30	**9.1**	**3.8**	
3/30/2005 12:21:45	**9.1**	**3.8**	
3/30/2005 12:22:00	**8.9**	**3.8**	
3/30/2005 12:22:15	**8.7**	**3.7**	
3/30/2005 12:22:30	**8.7**	**3.6**	
3/30/2005 12:22:45	**8.9**	**3.6**	
3/30/2005 12:23:00	**9.2**	**3.6**	
3/30/2005 12:23:15	**9.1**	**3.6**	
3/30/2005 12:23:30	**8.9**	**3.6**	
3/30/2005 12:23:45	**8.8**	**3.6**	
3/30/2005 12:24:00	**8.9**	**3.6**	
3/30/2005 12:24:15	**9.1**	**3.6**	
3/30/2005 12:24:30	**8.9**	**3.6**	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 12:24:45	8.6	3.6	
3/30/2005 12:25:00	8.4	3.6	
3/30/2005 12:25:15	8.7	3.6	
3/30/2005 12:25:30	8.8	3.5	
3/30/2005 12:25:45	8.6	3.5	
3/30/2005 12:26:00	8.3	3.5	
3/30/2005 12:26:15	8.1	3.5	
3/30/2005 12:26:30	8.3	3.5	
3/30/2005 12:26:45	8.7	3.5	
3/30/2005 12:27:00	9.1	3.5	
3/30/2005 12:27:15	9.1	3.5	
3/30/2005 12:27:30	9.0	3.5	
3/30/2005 12:27:45	9.1	3.5	
3/30/2005 12:28:00	9.0	3.5	
3/30/2005 12:28:15	8.7	3.5	
3/30/2005 12:28:30	8.6	3.5	
3/30/2005 12:28:45	8.4	3.5	
3/30/2005 12:29:00	8.6	3.5	
3/30/2005 12:29:15	8.6	3.5	
3/30/2005 12:29:30	8.7	3.5	
3/30/2005 12:29:45	8.7	3.5	
3/30/2005 12:30:00	8.8	3.5	
3/30/2005 12:30:15	9.4	3.5	
3/30/2005 12:30:30	9.6	3.5	
3/30/2005 12:30:45	9.1	3.5	
3/30/2005 12:31:00	8.8	3.5	
3/30/2005 12:31:15	8.7	3.5	
3/30/2005 12:31:30	9.1	3.4	
3/30/2005 12:31:45	9.0	3.4	
3/30/2005 12:32:00	8.7	3.4	
3/30/2005 12:32:15	8.5	3.4	
3/30/2005 12:32:30	8.5	3.4	
3/30/2005 12:32:45	9.0	3.4	
3/30/2005 12:33:00	9.1	3.4	
3/30/2005 12:33:15	9.1	3.4	
3/30/2005 12:33:30	8.9	3.4	
3/30/2005 12:33:45	8.7	3.4	
3/30/2005 12:34:00	8.9	3.4	
3/30/2005 12:34:15	8.9	3.4	
3/30/2005 12:34:30	8.8	3.3	
3/30/2005 12:34:45	8.5	3.3	
3/30/2005 12:35:00	8.4	3.3	
3/30/2005 12:35:15	8.5	3.3	
3/30/2005 12:35:30	8.5	3.3	
3/30/2005 12:35:45	9.0	3.3	
3/30/2005 12:36:00	9.2	3.3	
3/30/2005 12:36:15	9.3	3.3	
3/30/2005 12:36:30	9.6	3.3	
3/30/2005 12:36:45	9.1	3.3	
3/30/2005 12:37:00	8.7	3.3	
3/30/2005 12:37:15	8.5	3.3	
3/30/2005 12:37:30	8.6	3.3	
3/30/2005 12:37:45	8.8	3.3	
3/30/2005 12:38:00	8.8	3.3	
3/30/2005 12:38:15	8.5	3.3	
3/30/2005 12:38:30	8.4	3.3	
3/30/2005 12:38:45	8.6	3.3	
3/30/2005 12:39:00	9.4	3.3	
3/30/2005 12:39:15	9.5	3.3	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 12:39:30	**9.3**	**3.3**	
3/30/2005 12:39:45	**8.8**	**3.3**	
3/30/2005 12:40:00	**8.8**	**3.3**	
3/30/2005 12:40:15	**9.0**	**3.3**	
3/30/2005 12:40:30	**8.9**	**3.2**	
3/30/2005 12:40:45	**8.6**	**3.2**	
3/30/2005 12:41:00	**8.4**	**3.2**	
3/30/2005 12:41:15	**8.4**	**3.2**	
3/30/2005 12:41:30	**8.5**	**3.2**	
3/30/2005 12:41:45	**8.4**	**3.2**	
3/30/2005 12:42:00	**8.3**	**3.2**	
3/30/2005 12:42:15	**8.3**	**3.2**	
3/30/2005 12:42:30	**8.9**	**3.2**	
3/30/2005 12:42:45	**9.4**	**3.2**	
3/30/2005 12:43:00	**9.1**	**3.2**	
3/30/2005 12:43:15	**8.9**	**3.2**	
3/30/2005 12:43:30	**8.9**	**3.2**	
3/30/2005 12:43:45	**9.0**	**3.2**	
3/30/2005 12:44:00	**9.0**	**3.2**	
3/30/2005 12:44:15	**8.7**	**3.2**	
3/30/2005 12:44:30	**8.4**	**3.2**	
3/30/2005 12:44:45	**8.2**	**3.2**	
3/30/2005 12:45:00	**8.6**	**3.2**	
3/30/2005 12:45:15	**9.1**	**3.2**	
3/30/2005 12:45:30	**9.2**	**3.2**	
3/30/2005 12:45:45	**8.9**	**3.2**	
3/30/2005 12:46:00	**8.8**	**3.2**	
3/30/2005 12:46:15	**9.1**	**3.2**	
3/30/2005 12:46:30	**9.1**	**3.2**	
3/30/2005 12:46:45	**8.8**	**3.2**	
3/30/2005 12:47:00	**8.6**	**3.2**	
3/30/2005 12:47:15	**8.4**	**3.2**	
3/30/2005 12:47:30	**8.6**	**3.2**	
3/30/2005 12:47:45	**8.5**	**3.2**	
3/30/2005 12:48:00	8.3	3.2	**End Run No. WO-2-3 - Whiteburn Condition #2**
3/30/2005 12:48:15	8.2	3.2	
3/30/2005 12:48:30	8.2	3.2	
3/30/2005 12:48:45	8.9	3.2	
3/30/2005 12:49:00	9.4	3.2	
3/30/2005 12:49:15	9.2	3.2	
3/30/2005 12:49:30	9.1	3.1	
3/30/2005 12:49:45	9.1	3.1	
3/30/2005 12:50:00	9.9	3.1	
3/30/2005 12:50:15	5.6	3.1	
3/30/2005 12:50:30	1.1	3.1	
3/30/2005 12:50:45	0.8	3.1	
3/30/2005 12:51:00	0.8	3.1	
3/30/2005 12:51:15	0.7	3.1	
3/30/2005 12:51:30	0.6	3.1	
3/30/2005 12:51:45	0.5	3.1	
3/30/2005 12:52:00	0.4	3.1	**Calibration**
3/30/2005 12:52:15	**0.5**	2.6	**0.6 Zero Propane/N_2**
3/30/2005 12:52:30	**0.6**	1.1	
3/30/2005 12:52:45	**0.6**	1.1	
3/30/2005 12:53:00	**0.6**	1.1	
3/30/2005 12:53:15	4.0	1.1	**Calibration - 1st Injection**
3/30/2005 12:53:30	20.6	**1.1**	**1.1 Zero Methane**
3/30/2005 12:53:45	31.7	**1.1**	
3/30/2005 12:54:00	45.8	**1.1**	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 12:54:15	50.4	**1.1**	
3/30/2005 12:54:30	51.1	1.1	
3/30/2005 12:54:45	51.2	1.1	**Calibration**
3/30/2005 12:55:00	**51.4**	1.1	**51.6 50.0 ppm Propane/N_2**
3/30/2005 12:55:15	**51.5**	1.1	
3/30/2005 12:55:30	**51.6**	1.1	
3/30/2005 12:55:45	**51.6**	1.1	
3/30/2005 12:56:00	51.7	1.1	
3/30/2005 12:56:15	51.8	1.1	**Calibration - 2nd Injection**
3/30/2005 12:56:30	37.2	**1.1**	**1.1 Zero Methane**
3/30/2005 12:56:45	4.0	**1.1**	
3/30/2005 12:57:00	0.8	**1.1**	
3/30/2005 12:57:15	0.6	**1.1**	
3/30/2005 12:57:30	0.5	1.1	
3/30/2005 12:57:45	0.4	1.1	
3/30/2005 12:58:00	0.3	1.1	
3/30/2005 12:58:15	0.4	1.0	
3/30/2005 12:58:30	0.5	1.0	
3/30/2005 12:58:45	2.0	1.0	
3/30/2005 12:59:00	31.0	1.0	
3/30/2005 12:59:15	49.3	1.0	**Calibration - 3rd Injection**
3/30/2005 12:59:30	18.9	**1.0**	**1.0 Zero Methane**
3/30/2005 12:59:45	17.5	**1.0**	
3/30/2005 13:00:00	17.0	**1.0**	
3/30/2005 13:00:15	16.9	**1.0**	
3/30/2005 13:00:30	16.7	1.0	**1.0 Average Zero Methane**
3/30/2005 13:00:45	16.5	1.0	
3/30/2005 13:01:00	16.5	1.0	
3/30/2005 13:01:15	16.5	13.5	
3/30/2005 13:01:30	16.7	51.1	
3/30/2005 13:01:45	16.7	51.1	
3/30/2005 13:02:00	16.7	51.1	
3/30/2005 13:02:15	16.6	51.1	**Calibration - 1st Injection**
3/30/2005 13:02:30	16.6	**51.1**	**51.1 50.0 ppm Methane**
3/30/2005 13:02:45	16.6	**51.1**	
3/30/2005 13:03:00	16.6	**51.1**	
3/30/2005 13:03:15	16.6	**51.1**	
3/30/2005 13:03:30	16.5	51.1	
3/30/2005 13:03:45	16.3	51.1	
3/30/2005 13:04:00	16.3	51.1	
3/30/2005 13:04:15	16.3	51.1	
3/30/2005 13:04:30	16.5	51.2	
3/30/2005 13:04:45	16.5	51.2	
3/30/2005 13:05:00	16.5	51.2	
3/30/2005 13:05:15	16.5	51.2	**Calibration - 2nd Injection**
3/30/2005 13:05:30	16.5	**51.2**	**51.2 50.0 ppm Methane**
3/30/2005 13:05:45	16.4	**51.2**	
3/30/2005 13:06:00	16.4	**51.2**	
3/30/2005 13:06:15	16.4	**51.2**	
3/30/2005 13:06:30	16.4	51.2	
3/30/2005 13:06:45	16.2	51.2	
3/30/2005 13:07:00	16.2	51.2	
3/30/2005 13:07:15	16.2	51.2	
3/30/2005 13:07:30	16.4	51.2	
3/30/2005 13:07:45	16.4	51.2	
3/30/2005 13:08:00	16.4	51.2	
3/30/2005 13:08:15	16.4	51.2	**Calibration - 3rd Injection**
3/30/2005 13:08:30	13.2	**51.2**	**51.2 50.0 ppm Methane**
3/30/2005 13:08:45	8.6	**51.2**	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 13:09:00	1.3	**51.2**	
3/30/2005 13:09:15	0.9	**51.2**	
3/30/2005 13:09:30	0.8	51.2	**51.2 Average 50.0 ppm Methane**
3/30/2005 13:09:45	0.6	51.2	
3/30/2005 13:10:00	0.6	51.2	
3/30/2005 13:10:15	0.6	38.7	
3/30/2005 13:10:30	0.8	1.1	
3/30/2005 13:10:45	0.7	1.1	
3/30/2005 13:11:00	0.7	1.1	
3/30/2005 13:11:15	0.7	1.1	
3/30/2005 13:11:30	0.7	1.1	
3/30/2005 13:11:45	0.7	1.1	
3/30/2005 13:12:00	1.5	1.1	
3/30/2005 13:12:15	8.4	1.1	
3/30/2005 13:12:30	9.2	1.1	
3/30/2005 13:12:45	8.6	1.1	
3/30/2005 13:13:00	8.2	1.1	
3/30/2005 13:13:15	8.2	1.7	
3/30/2005 13:13:30	8.4	3.4	
3/30/2005 13:13:45	8.4	3.4	
3/30/2005 13:14:00	8.5	3.4	
3/30/2005 13:14:15	8.4	3.4	
3/30/2005 13:14:30	8.1	3.4	
3/30/2005 13:14:45	7.7	3.4	
3/30/2005 13:15:00	7.4	3.4	
3/30/2005 13:15:15	7.2	3.4	
3/30/2005 13:15:30	7.0	3.4	
3/30/2005 13:15:45	6.8	3.4	
3/30/2005 13:16:00	6.8	3.4	
3/30/2005 13:16:15	6.8	3.2	
3/30/2005 13:16:30	6.8	2.6	
3/30/2005 13:16:45	6.7	2.6	
3/30/2005 13:17:00	6.6	2.6	
3/30/2005 13:17:15	6.5	2.6	
3/30/2005 13:17:30	6.5	2.6	
3/30/2005 13:17:45	6.4	2.6	
3/30/2005 13:18:00	6.3	2.6	
3/30/2005 13:18:15	6.3	2.6	
3/30/2005 13:18:30	6.1	2.6	
3/30/2005 13:18:45	5.9	2.6	
3/30/2005 13:19:00	5.7	2.6	
3/30/2005 13:19:15	5.6	2.3	
3/30/2005 13:19:30	5.6	1.6	
3/30/2005 13:19:45	5.7	1.6	
3/30/2005 13:20:00	5.8	1.6	
3/30/2005 13:20:15	5.8	1.6	
3/30/2005 13:20:30	5.9	1.6	
3/30/2005 13:20:45	6.1	1.6	
3/30/2005 13:21:00	6.2	1.6	
3/30/2005 13:21:15	6.2	1.6	
3/30/2005 13:21:30	6.0	1.6	
3/30/2005 13:21:45	5.8	1.6	
3/30/2005 13:22:00	5.8	1.6	
3/30/2005 13:22:15	6.0	1.5	
3/30/2005 13:22:30	6.5	1.2	
3/30/2005 13:22:45	6.7	1.2	
3/30/2005 13:23:00	6.7	1.2	
3/30/2005 13:23:15	6.7	1.2	
3/30/2005 13:23:30	6.8	1.2	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 13:23:45	6.8	1.2	
3/30/2005 13:24:00	6.7	1.2	
3/30/2005 13:24:15	6.6	1.2	
3/30/2005 13:24:30	6.5	1.2	
3/30/2005 13:24:45	6.4	1.2	
3/30/2005 13:25:00	6.6	1.2	
3/30/2005 13:25:15	6.9	1.1	
3/30/2005 13:25:30	7.2	1.1	
3/30/2005 13:25:45	7.2	1.1	
3/30/2005 13:26:00	7.2	1.1	
3/30/2005 13:26:15	7.4	1.1	
3/30/2005 13:26:30	7.5	1.1	
3/30/2005 13:26:45	7.0	1.1	
3/30/2005 13:27:00	6.7	1.1	
3/30/2005 13:27:15	6.3	1.1	
3/30/2005 13:27:30	6.2	1.1	
3/30/2005 13:27:45	6.0	1.1	
3/30/2005 13:28:00	5.9	1.1	
3/30/2005 13:28:15	5.9	1.2	
3/30/2005 13:28:30	6.2	1.5	
3/30/2005 13:28:45	6.2	1.5	
3/30/2005 13:29:00	6.1	1.5	
3/30/2005 13:29:15	5.9	1.5	
3/30/2005 13:29:30	5.8	1.5	
3/30/2005 13:29:45	5.6	1.5	
3/30/2005 13:30:00	5.5	1.5	
3/30/2005 13:30:15	5.4	1.5	
3/30/2005 13:30:30	5.3	1.5	
3/30/2005 13:30:45	5.0	1.5	
3/30/2005 13:31:00	5.0	1.5	
3/30/2005 13:31:15	4.9	1.5	
3/30/2005 13:31:30	5.1	1.6	
3/30/2005 13:31:45	5.0	1.6	
3/30/2005 13:32:00	5.0	1.6	
3/30/2005 13:32:15	4.9	1.6	
3/30/2005 13:32:30	4.9	1.6	
3/30/2005 13:32:45	4.9	1.6	
3/30/2005 13:33:00	4.9	1.6	
3/30/2005 13:33:15	4.8	1.6	
3/30/2005 13:33:30	4.7	1.6	
3/30/2005 13:33:45	4.5	1.6	
3/30/2005 13:34:00	4.6	1.6	
3/30/2005 13:34:15	4.6	1.6	
3/30/2005 13:34:30	4.7	1.7	
3/30/2005 13:34:45	4.7	1.7	
3/30/2005 13:35:00	4.6	1.7	
3/30/2005 13:35:15	4.7	1.7	
3/30/2005 13:35:30	4.6	1.7	
3/30/2005 13:35:45	4.6	1.7	
3/30/2005 13:36:00	4.6	1.7	
3/30/2005 13:36:15	4.5	1.7	
3/30/2005 13:36:30	4.4	1.7	
3/30/2005 13:36:45	4.2	1.7	
3/30/2005 13:37:00	4.2	1.7	
3/30/2005 13:37:15	4.2	1.7	
3/30/2005 13:37:30	4.3	1.8	
3/30/2005 13:37:45	4.3	1.8	
3/30/2005 13:38:00	4.3	1.8	
3/30/2005 13:38:15	4.3	1.8	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 13:38:30	4.3	1.8	
3/30/2005 13:38:45	4.3	1.8	
3/30/2005 13:39:00	4.2	1.8	
3/30/2005 13:39:15	4.2	1.8	
3/30/2005 13:39:30	4.1	1.8	
3/30/2005 13:39:45	3.9	1.8	
3/30/2005 13:40:00	3.8	1.8	
3/30/2005 13:40:15	3.8	1.8	
3/30/2005 13:40:30	3.9	1.9	
3/30/2005 13:40:45	3.9	1.9	
3/30/2005 13:41:00	3.9	1.9	
3/30/2005 13:41:15	3.9	1.9	
3/30/2005 13:41:30	3.9	1.9	
3/30/2005 13:41:45	3.9	1.9	
3/30/2005 13:42:00	3.9	1.9	
3/30/2005 13:42:15	3.9	1.9	
3/30/2005 13:42:30	3.8	1.9	
3/30/2005 13:42:45	3.6	1.9	
3/30/2005 13:43:00	3.6	1.9	
3/30/2005 13:43:15	3.6	1.9	
3/30/2005 13:43:30	3.8	1.8	
3/30/2005 13:43:45	3.8	1.8	
3/30/2005 13:44:00	3.8	1.8	
3/30/2005 13:44:15	3.8	1.8	
3/30/2005 13:44:30	3.7	1.8	
3/30/2005 13:44:45	3.7	1.8	
3/30/2005 13:45:00	3.7	1.8	
3/30/2005 13:45:15	3.7	1.8	
3/30/2005 13:45:30	3.6	1.8	
3/30/2005 13:45:45	3.4	1.8	
3/30/2005 13:46:00	3.4	1.8	
3/30/2005 13:46:15	3.4	1.8	
3/30/2005 13:46:30	3.6	1.9	
3/30/2005 13:46:45	3.5	1.9	
3/30/2005 13:47:00	3.5	1.9	
3/30/2005 13:47:15	3.5	1.9	
3/30/2005 13:47:30	3.5	1.9	
3/30/2005 13:47:45	3.5	1.9	
3/30/2005 13:48:00	3.5	1.9	
3/30/2005 13:48:15	3.5	1.9	
3/30/2005 13:48:30	3.4	1.9	
3/30/2005 13:48:45	3.3	1.9	
3/30/2005 13:49:00	3.2	1.9	
3/30/2005 13:49:15	3.2	1.9	
3/30/2005 13:49:30	3.4	1.9	
3/30/2005 13:49:45	3.4	1.9	
3/30/2005 13:50:00	3.4	1.9	
3/30/2005 13:50:15	3.4	1.9	
3/30/2005 13:50:30	3.4	1.9	
3/30/2005 13:50:45	3.3	1.9	
3/30/2005 13:51:00	3.3	1.9	
3/30/2005 13:51:15	3.4	1.9	
3/30/2005 13:51:30	3.3	1.9	
3/30/2005 13:51:45	3.1	1.9	
3/30/2005 13:52:00	3.1	1.9	
3/30/2005 13:52:15	3.1	1.9	
3/30/2005 13:52:30	3.3	1.9	
3/30/2005 13:52:45	3.3	1.9	
3/30/2005 13:53:00	3.3	1.9	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 13:53:15	3.2	1.9	
3/30/2005 13:53:30	3.2	1.9	
3/30/2005 13:53:45	3.2	1.9	
3/30/2005 13:54:00	3.2	1.9	
3/30/2005 13:54:15	3.2	1.9	
3/30/2005 13:54:30	3.1	1.9	
3/30/2005 13:54:45	3.0	1.9	
3/30/2005 13:55:00	2.9	1.9	
3/30/2005 13:55:15	3.0	1.8	
3/30/2005 13:55:30	3.1	1.8	
3/30/2005 13:55:45	3.1	1.8	
3/30/2005 13:56:00	3.1	1.8	
3/30/2005 13:56:15	3.1	1.8	
3/30/2005 13:56:30	3.1	1.8	
3/30/2005 13:56:45	3.1	1.8	
3/30/2005 13:57:00	3.1	1.8	
3/30/2005 13:57:15	3.1	1.8	
3/30/2005 13:57:30	3.0	1.8	
3/30/2005 13:57:45	2.8	1.8	
3/30/2005 13:58:00	2.8	1.8	
3/30/2005 13:58:15	2.9	1.8	
3/30/2005 13:58:30	3.0	1.7	
3/30/2005 13:58:45	3.0	1.7	
3/30/2005 13:59:00	3.0	1.7	
3/30/2005 13:59:15	3.0	1.7	
3/30/2005 13:59:30	2.9	1.7	
3/30/2005 13:59:45	2.9	1.7	
3/30/2005 14:00:00	2.9	1.7	
3/30/2005 14:00:15	2.9	1.7	
3/30/2005 14:00:30	2.9	1.7	
3/30/2005 14:00:45	2.7	1.7	
3/30/2005 14:01:00	2.7	1.7	
3/30/2005 14:01:15	2.7	1.7	
3/30/2005 14:01:30	2.8	1.7	
3/30/2005 14:01:45	2.8	1.7	
3/30/2005 14:02:00	2.8	1.7	
3/30/2005 14:02:15	2.8	1.7	
3/30/2005 14:02:30	2.8	1.7	
3/30/2005 14:02:45	2.8	1.7	
3/30/2005 14:03:00	2.8	1.7	
3/30/2005 14:03:15	2.7	1.7	
3/30/2005 14:03:30	2.7	1.7	
3/30/2005 14:03:45	2.5	1.7	
3/30/2005 14:04:00	2.5	1.7	
3/30/2005 14:04:15	2.5	1.7	
3/30/2005 14:04:30	2.6	1.7	
3/30/2005 14:04:45	2.6	1.7	
3/30/2005 14:05:00	2.6	1.7	
3/30/2005 14:05:15	2.6	1.7	
3/30/2005 14:05:30	2.6	1.7	
3/30/2005 14:05:45	2.6	1.7	
3/30/2005 14:06:00	2.6	1.7	
3/30/2005 14:06:15	2.6	1.7	
3/30/2005 14:06:30	2.5	1.7	
3/30/2005 14:06:45	2.4	1.7	
3/30/2005 14:07:00	2.3	1.7	
3/30/2005 14:07:15	2.4	1.7	
3/30/2005 14:07:30	2.6	1.8	
3/30/2005 14:07:45	2.5	1.8	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 14:08:00	2.5	1.8	
3/30/2005 14:08:15	2.5	1.8	
3/30/2005 14:08:30	2.5	1.8	
3/30/2005 14:08:45	2.4	1.8	
3/30/2005 14:09:00	2.4	1.8	
3/30/2005 14:09:15	2.4	1.8	
3/30/2005 14:09:30	2.4	1.8	
3/30/2005 14:09:45	2.2	1.8	
3/30/2005 14:10:00	2.2	1.8	
3/30/2005 14:10:15	2.3	1.8	
3/30/2005 14:10:30	2.4	1.8	
3/30/2005 14:10:45	2.4	1.8	
3/30/2005 14:11:00	2.4	1.8	
3/30/2005 14:11:15	2.5	1.8	
3/30/2005 14:11:30	2.5	1.8	
3/30/2005 14:11:45	2.5	1.8	
3/30/2005 14:12:00	2.5	1.8	
3/30/2005 14:12:15	2.6	1.8	
3/30/2005 14:12:30	2.6	1.8	
3/30/2005 14:12:45	2.4	1.8	
3/30/2005 14:13:00	2.4	1.8	
3/30/2005 14:13:15	2.5	1.8	
3/30/2005 14:13:30	2.6	1.8	
3/30/2005 14:13:45	2.7	1.8	
3/30/2005 14:14:00	2.7	1.8	
3/30/2005 14:14:15	2.7	1.8	
3/30/2005 14:14:30	2.8	1.8	
3/30/2005 14:14:45	2.9	1.8	
3/30/2005 14:15:00	3.0	1.8	
3/30/2005 14:15:15	3.0	1.8	
3/30/2005 14:15:30	2.9	1.8	
3/30/2005 14:15:45	2.8	1.8	
3/30/2005 14:16:00	2.9	1.8	
3/30/2005 14:16:15	3.0	1.9	
3/30/2005 14:16:30	3.3	2.1	
3/30/2005 14:16:45	3.4	2.1	
3/30/2005 14:17:00	3.4	2.1	
3/30/2005 14:17:15	3.6	2.1	
3/30/2005 14:17:30	3.6	2.1	
3/30/2005 14:17:45	3.6	2.1	
3/30/2005 14:18:00	3.6	2.1	
3/30/2005 14:18:15	3.7	2.1	
3/30/2005 14:18:30	3.9	2.1	
3/30/2005 14:18:45	3.9	2.1	
3/30/2005 14:19:00	4.0	2.1	
3/30/2005 14:19:15	4.0	2.1	
3/30/2005 14:19:30	4.3	2.2	
3/30/2005 14:19:45	4.5	2.2	
3/30/2005 14:20:00	4.5	2.2	
3/30/2005 14:20:15	4.4	2.2	
3/30/2005 14:20:30	4.4	2.2	
3/30/2005 14:20:45	4.5	2.2	
3/30/2005 14:21:00	4.8	2.2	
3/30/2005 14:21:15	4.9	2.2	
3/30/2005 14:21:30	4.9	2.2	
3/30/2005 14:21:45	4.7	2.2	
3/30/2005 14:22:00	5.0	2.2	
3/30/2005 14:22:15	5.1	2.2	
3/30/2005 14:22:30	5.2	2.3	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 14:22:45	5.1	2.3	
3/30/2005 14:23:00	5.1	2.3	
3/30/2005 14:23:15	5.3	2.3	
3/30/2005 14:23:30	5.5	2.3	
3/30/2005 14:23:45	5.6	2.3	
3/30/2005 14:24:00	5.5	2.3	
3/30/2005 14:24:15	5.6	2.3	
3/30/2005 14:24:30	5.9	2.3	
3/30/2005 14:24:45	5.6	2.3	
3/30/2005 14:25:00	5.5	2.3	
3/30/2005 14:25:15	5.5	2.3	
3/30/2005 14:25:30	5.9	2.4	
3/30/2005 14:25:45	6.3	2.4	
3/30/2005 14:26:00	6.4	2.4	
3/30/2005 14:26:15	6.3	2.4	
3/30/2005 14:26:30	6.3	2.4	
3/30/2005 14:26:45	6.5	2.4	
3/30/2005 14:27:00	6.9	2.4	
3/30/2005 14:27:15	6.9	2.4	
3/30/2005 14:27:30	6.7	2.4	
3/30/2005 14:27:45	6.2	2.4	
3/30/2005 14:28:00	6.4	2.4	
3/30/2005 14:28:15	6.8	2.4	
3/30/2005 14:28:30	7.1	2.4	
3/30/2005 14:28:45	6.9	2.4	
3/30/2005 14:29:00	6.8	2.4	
3/30/2005 14:29:15	7.1	2.4	
3/30/2005 14:29:30	7.1	2.4	
3/30/2005 14:29:45	6.9	2.4	
3/30/2005 14:30:00	6.6	2.4	
3/30/2005 14:30:15	6.4	2.4	
3/30/2005 14:30:30	6.6	2.4	
3/30/2005 14:30:45	6.4	2.4	
3/30/2005 14:31:00	6.3	2.4	
3/30/2005 14:31:15	6.1	2.4	
3/30/2005 14:31:30	6.2	2.4	
3/30/2005 14:31:45	6.3	2.4	
3/30/2005 14:32:00	6.1	2.4	
3/30/2005 14:32:15	5.9	2.4	
3/30/2005 14:32:30	5.6	2.4	
3/30/2005 14:32:45	5.6	2.4	
3/30/2005 14:33:00	5.7	2.4	
3/30/2005 14:33:15	5.7	2.4	
3/30/2005 14:33:30	5.5	2.4	
3/30/2005 14:33:45	5.0	2.4	
3/30/2005 14:34:00	5.1	2.4	
3/30/2005 14:34:15	5.1	2.4	
3/30/2005 14:34:30	5.3	2.4	
3/30/2005 14:34:45	5.2	2.4	
3/30/2005 14:35:00	5.0	2.4	
3/30/2005 14:35:15	5.2	2.4	
3/30/2005 14:35:30	5.3	2.4	
3/30/2005 14:35:45	5.2	2.4	
3/30/2005 14:36:00	5.2	2.4	
3/30/2005 14:36:15	5.2	2.4	
3/30/2005 14:36:30	5.4	2.4	
3/30/2005 14:36:45	4.9	2.4	
3/30/2005 14:37:00	4.8	2.4	
3/30/2005 14:37:15	4.8	2.4	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 14:37:30	5.0	2.5	
3/30/2005 14:37:45	5.3	2.5	
3/30/2005 14:38:00	5.5	2.5	
3/30/2005 14:38:15	5.4	2.5	
3/30/2005 14:38:30	5.4	2.5	
3/30/2005 14:38:45	5.4	2.5	
3/30/2005 14:39:00	5.4	2.5	
3/30/2005 14:39:15	5.4	2.5	
3/30/2005 14:39:30	5.2	2.5	
3/30/2005 14:39:45	4.9	2.5	
3/30/2005 14:40:00	5.0	2.5	
3/30/2005 14:40:15	5.2	2.6	
3/30/2005 14:40:30	5.5	2.7	
3/30/2005 14:40:45	5.5	2.7	
3/30/2005 14:41:00	5.4	2.7	
3/30/2005 14:41:15	5.7	2.7	
3/30/2005 14:41:30	5.8	2.7	
3/30/2005 14:41:45	5.7	2.7	
3/30/2005 14:42:00	5.5	2.7	
3/30/2005 14:42:15	5.6	2.7	
3/30/2005 14:42:30	5.8	2.7	
3/30/2005 14:42:45	5.9	2.7	
3/30/2005 14:43:00	6.0	2.7	
3/30/2005 14:43:15	6.0	2.7	
3/30/2005 14:43:30	6.1	2.7	
3/30/2005 14:43:45	6.3	2.7	
3/30/2005 14:44:00	6.2	2.7	
3/30/2005 14:44:15	6.0	2.7	
3/30/2005 14:44:30	5.9	2.7	
3/30/2005 14:44:45	6.0	2.7	
3/30/2005 14:45:00	6.4	2.7	
3/30/2005 14:45:15	6.5	2.7	
3/30/2005 14:45:30	6.3	2.7	
3/30/2005 14:45:45	5.9	2.7	
3/30/2005 14:46:00	6.0	2.7	
3/30/2005 14:46:15	6.3	2.7	
3/30/2005 14:46:30	6.4	2.7	
3/30/2005 14:46:45	6.3	2.7	
3/30/2005 14:47:00	6.1	2.7	
3/30/2005 14:47:15	6.3	2.7	
3/30/2005 14:47:30	6.7	2.7	
3/30/2005 14:47:45	6.8	2.7	
3/30/2005 14:48:00	6.7	2.7	
3/30/2005 14:48:15	6.5	2.7	
3/30/2005 14:48:30	6.8	2.7	
3/30/2005 14:48:45	6.4	2.7	
3/30/2005 14:49:00	6.2	2.7	
3/30/2005 14:49:15	6.0	2.7	
3/30/2005 14:49:30	6.2	2.7	
3/30/2005 14:49:45	6.6	2.7	
3/30/2005 14:50:00	6.8	2.7	
3/30/2005 14:50:15	6.9	2.7	
3/30/2005 14:50:30	6.8	2.7	
3/30/2005 14:50:45	6.7	2.7	
3/30/2005 14:51:00	6.9	2.7	
3/30/2005 14:51:15	6.8	2.7	
3/30/2005 14:51:30	6.5	2.7	
3/30/2005 14:51:45	6.0	2.7	
3/30/2005 14:52:00	6.1	2.7	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 14:52:15	6.5	2.7	
3/30/2005 14:52:30	6.8	2.7	
3/30/2005 14:52:45	7.0	2.7	
3/30/2005 14:53:00	6.8	2.7	
3/30/2005 14:53:15	7.0	2.7	
3/30/2005 14:53:30	7.1	2.7	
3/30/2005 14:53:45	6.8	2.7	
3/30/2005 14:54:00	6.6	2.7	
3/30/2005 14:54:15	6.4	2.7	
3/30/2005 14:54:30	6.7	2.7	
3/30/2005 14:54:45	6.8	2.7	
3/30/2005 14:55:00	6.9	2.7	
3/30/2005 14:55:15	6.8	2.7	
3/30/2005 14:55:30	6.9	2.7	
3/30/2005 14:55:45	7.1	2.7	
3/30/2005 14:56:00	7.0	2.7	
3/30/2005 14:56:15	6.8	2.7	
3/30/2005 14:56:30	6.5	2.7	
3/30/2005 14:56:45	6.5	2.7	
3/30/2005 14:57:00	6.8	2.7	
3/30/2005 14:57:15	6.9	2.7	
3/30/2005 14:57:30	7.1	2.7	
3/30/2005 14:57:45	6.7	2.7	
3/30/2005 14:58:00	6.8	2.7	
3/30/2005 14:58:15	7.0	2.7	
3/30/2005 14:58:30	7.0	2.8	
3/30/2005 14:58:45	6.7	2.8	
3/30/2005 14:59:00	6.5	2.8	
3/30/2005 14:59:15	6.6	2.8	
3/30/2005 14:59:30	6.9	2.8	
3/30/2005 14:59:45	6.9	2.8	
3/30/2005 15:00:00	7.1	2.8	
3/30/2005 15:00:15	7.1	2.8	
3/30/2005 15:00:30	7.2	2.8	
3/30/2005 15:00:45	6.9	2.8	
3/30/2005 15:01:00	6.7	2.8	
3/30/2005 15:01:15	6.5	2.8	
3/30/2005 15:01:30	6.7	2.9	
3/30/2005 15:01:45	7.0	2.9	
3/30/2005 15:02:00	7.1	2.9	
3/30/2005 15:02:15	7.2	2.9	
3/30/2005 15:02:30	7.2	2.9	
3/30/2005 15:02:45	7.3	2.9	
3/30/2005 15:03:00	7.5	2.9	
3/30/2005 15:03:15	7.3	2.9	
3/30/2005 15:03:30	7.0	2.9	
3/30/2005 15:03:45	6.5	2.9	
3/30/2005 15:04:00	6.5	2.9	
3/30/2005 15:04:15	6.9	2.9	
3/30/2005 15:04:30	7.2	3.0	
3/30/2005 15:04:45	7.4	3.0	
3/30/2005 15:05:00	7.3	3.0	
3/30/2005 15:05:15	7.4	3.0	
3/30/2005 15:05:30	7.6	3.0	
3/30/2005 15:05:45	7.3	3.0	
3/30/2005 15:06:00	7.1	3.0	
3/30/2005 15:06:15	6.9	3.0	
3/30/2005 15:06:30	6.9	3.0	
3/30/2005 15:06:45	6.8	3.0	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 15:07:00	7.0	3.0	
3/30/2005 15:07:15	7.1	3.0	
3/30/2005 15:07:30	7.3	3.0	
3/30/2005 15:07:45	7.5	3.0	
3/30/2005 15:08:00	7.4	3.0	
3/30/2005 15:08:15	7.0	3.0	
3/30/2005 15:08:30	6.8	3.0	
3/30/2005 15:08:45	6.8	3.0	
3/30/2005 15:09:00	7.0	3.0	
3/30/2005 15:09:15	7.0	3.0	
3/30/2005 15:09:30	7.2	3.0	
3/30/2005 15:09:45	6.9	3.0	
3/30/2005 15:10:00	7.0	3.0	
3/30/2005 15:10:15	7.3	3.0	
3/30/2005 15:10:30	7.3	3.0	
3/30/2005 15:10:45	7.0	3.0	
3/30/2005 15:11:00	6.7	3.0	
3/30/2005 15:11:15	6.9	3.0	
3/30/2005 15:11:30	7.1	3.0	
3/30/2005 15:11:45	7.3	3.1	
3/30/2005 15:12:00	7.4	3.1	
3/30/2005 15:12:15	7.2	3.0	
3/30/2005 15:12:30	7.5	3.0	
3/30/2005 15:12:45	7.1	3.0	
3/30/2005 15:13:00	7.0	3.0	
3/30/2005 15:13:15	6.7	3.0	
3/30/2005 15:13:30	6.9	2.9	
3/30/2005 15:13:45	7.1	2.9	
3/30/2005 15:14:00	7.1	2.9	
3/30/2005 15:14:15	6.9	2.9	
3/30/2005 15:14:30	6.9	2.9	
3/30/2005 15:14:45	7.1	2.9	
3/30/2005 15:15:00	7.5	2.9	
3/30/2005 15:15:15	7.3	2.9	
3/30/2005 15:15:30	7.0	2.9	
3/30/2005 15:15:45	6.5	2.9	
3/30/2005 15:16:00	6.6	2.9	
3/30/2005 15:16:15	7.0	2.9	
3/30/2005 15:16:30	7.2	2.9	
3/30/2005 15:16:45	7.2	2.9	
3/30/2005 15:17:00	7.1	2.9	
3/30/2005 15:17:15	7.3	2.9	
3/30/2005 15:17:30	7.4	2.9	
3/30/2005 15:17:45	7.2	2.9	
3/30/2005 15:18:00	7.0	2.9	
3/30/2005 15:18:15	6.9	2.9	
3/30/2005 15:18:30	7.3	2.9	
3/30/2005 15:18:45	7.2	2.9	
3/30/2005 15:19:00	7.1	2.9	
3/30/2005 15:19:15	7.0	2.9	
3/30/2005 15:19:30	7.1	2.9	
3/30/2005 15:19:45	7.4	2.9	
3/30/2005 15:20:00	7.3	2.9	
3/30/2005 15:20:15	7.1	2.9	
3/30/2005 15:20:30	6.9	2.9	
3/30/2005 15:20:45	6.9	2.9	
3/30/2005 15:21:00	7.5	2.9	
3/30/2005 15:21:15	7.8	2.9	
3/30/2005 15:21:30	7.7	2.9	

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Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 15:21:45	7.1	2.9	
3/30/2005 15:22:00	7.2	2.9	
3/30/2005 15:22:15	7.6	2.9	
3/30/2005 15:22:30	7.6	3.0	
3/30/2005 15:22:45	7.4	3.0	
3/30/2005 15:23:00	7.1	3.0	
3/30/2005 15:23:15	7.3	3.0	
3/30/2005 15:23:30	9.8	3.0	
3/30/2005 15:23:45	1.7	3.0	
3/30/2005 15:24:00	1.0	3.0	
3/30/2005 15:24:15	0.9	3.0	
3/30/2005 15:24:30	0.9	3.0	
3/30/2005 15:24:45	0.6	3.0	
3/30/2005 15:25:00	5.4	3.0	
3/30/2005 15:25:15	6.8	2.6	
3/30/2005 15:25:30	7.0	1.5	
3/30/2005 15:25:45	7.3	1.5	
3/30/2005 15:26:00	5.5	1.5	
3/30/2005 15:26:15	1.3	1.5	
3/30/2005 15:26:30	0.9	1.5	
3/30/2005 15:26:45	0.8	1.5	
3/30/2005 15:27:00	0.8	1.5	
3/30/2005 15:27:15	0.7	1.5	
3/30/2005 15:27:30	0.7	1.5	
3/30/2005 15:27:45	0.4	1.5	
3/30/2005 15:28:00	0.4	1.5	
3/30/2005 15:28:15	0.5	1.5	
3/30/2005 15:28:30	0.7	1.5	
3/30/2005 15:28:45	0.7	1.5	
3/30/2005 15:29:00	0.7	1.5	
3/30/2005 15:29:15	0.7	1.5	
3/30/2005 15:29:30	0.7	1.5	
3/30/2005 15:29:45	0.7	1.5	
3/30/2005 15:30:00	0.7	1.5	
3/30/2005 15:30:15	0.6	1.5	
3/30/2005 15:30:30	0.6	1.5	
3/30/2005 15:30:45	0.3	1.5	
3/30/2005 15:31:00	0.3	1.5	
3/30/2005 15:31:15	0.4	1.5	
3/30/2005 15:31:30	0.6	1.5	
3/30/2005 15:31:45	0.6	1.5	
3/30/2005 15:32:00	0.6	1.5	
3/30/2005 15:32:15	0.6	1.5	
3/30/2005 15:32:30	0.6	1.5	**Calibration**
3/30/2005 15:32:45	**0.6**	1.5	**0.6 Zero Propane/N_2**
3/30/2005 15:33:00	**0.6**	1.5	
3/30/2005 15:33:15	**0.6**	1.5	
3/30/2005 15:33:30	**0.6**	1.5	
3/30/2005 15:33:45	0.3	1.5	
3/30/2005 15:34:00	0.3	1.5	
3/30/2005 15:34:15	6.3	1.5	
3/30/2005 15:34:30	30.1	1.6	
3/30/2005 15:34:45	40.2	1.6	
3/30/2005 15:35:00	49.5	1.6	
3/30/2005 15:35:15	50.2	1.6	
3/30/2005 15:35:30	50.7	1.6	
3/30/2005 15:35:45	50.9	1.6	
3/30/2005 15:36:00	51.0	1.6	
3/30/2005 15:36:15	51.1	1.6	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 15:36:30	50.8	1.6	Calibration
3/30/2005 15:36:45	**50.5**	1.6	50.7 50.0 ppm Propane/N_2
3/30/2005 15:37:00	**50.5**	1.6	
3/30/2005 15:37:15	**50.7**	1.6	
3/30/2005 15:37:30	**51.0**	1.6	
3/30/2005 15:37:45	51.0	1.6	
3/30/2005 15:38:00	19.3	1.6	
3/30/2005 15:38:15	8.1	1.6	
3/30/2005 15:38:30	7.7	1.6	
3/30/2005 15:38:45	7.4	1.6	
3/30/2005 15:39:00	7.7	1.6	
3/30/2005 15:39:15	7.6	1.6	
3/30/2005 15:39:30	7.3	1.6	
3/30/2005 15:39:45	6.6	1.6	
3/30/2005 15:40:00	6.4	1.6	
3/30/2005 15:40:15	6.8	2.1	
3/30/2005 15:40:30	7.3	3.5	
3/30/2005 15:40:45	7.4	3.5	
3/30/2005 15:41:00	7.3	3.5	
3/30/2005 15:41:15	7.2	3.5	
3/30/2005 15:41:30	7.6	3.5	
3/30/2005 15:41:45	7.5	3.5	Begin Run No. BO-1-1 - Blackburn Condition #1
3/30/2005 15:42:00	**7.2**	**3.5**	
3/30/2005 15:42:15	**6.9**	**3.5**	
3/30/2005 15:42:30	**6.8**	**3.5**	
3/30/2005 15:42:45	**6.8**	**3.5**	
3/30/2005 15:43:00	**7.0**	**3.5**	
3/30/2005 15:43:15	**7.2**	**3.5**	
3/30/2005 15:43:30	**7.3**	**3.5**	
3/30/2005 15:43:45	**7.3**	**3.5**	
3/30/2005 15:44:00	**7.5**	**3.5**	
3/30/2005 15:44:15	**7.3**	**3.5**	
3/30/2005 15:44:30	**7.1**	**3.5**	
3/30/2005 15:44:45	**6.8**	**3.5**	
3/30/2005 15:45:00	**6.9**	**3.5**	
3/30/2005 15:45:15	**7.2**	**3.5**	
3/30/2005 15:45:30	**7.1**	**3.5**	
3/30/2005 15:45:45	**6.9**	**3.5**	
3/30/2005 15:46:00	**6.9**	**3.5**	
3/30/2005 15:46:15	**7.3**	**3.5**	
3/30/2005 15:46:30	**7.7**	**3.6**	
3/30/2005 15:46:45	**7.4**	**3.6**	
3/30/2005 15:47:00	**7.1**	**3.6**	
3/30/2005 15:47:15	**6.9**	**3.6**	
3/30/2005 15:47:30	**7.0**	**3.6**	
3/30/2005 15:47:45	**7.3**	**3.6**	
3/30/2005 15:48:00	**7.5**	**3.6**	
3/30/2005 15:48:15	**7.5**	**3.6**	
3/30/2005 15:48:30	**7.3**	**3.6**	
3/30/2005 15:48:45	**7.2**	**3.6**	
3/30/2005 15:49:00	**7.1**	**3.6**	
3/30/2005 15:49:15	**6.9**	**3.6**	
3/30/2005 15:49:30	**6.9**	**3.7**	
3/30/2005 15:49:45	**6.8**	**3.7**	
3/30/2005 15:50:00	**7.0**	**3.7**	
3/30/2005 15:50:15	**7.2**	**3.7**	
3/30/2005 15:50:30	**7.5**	**3.7**	
3/30/2005 15:50:45	**7.5**	**3.7**	
3/30/2005 15:51:00	**7.4**	**3.7**	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 15:51:15	7.6	3.7	
3/30/2005 15:51:30	7.5	3.7	
3/30/2005 15:51:45	6.9	3.7	
3/30/2005 15:52:00	6.6	3.7	
3/30/2005 15:52:15	6.6	3.7	
3/30/2005 15:52:30	7.1	3.7	
3/30/2005 15:52:45	7.2	3.7	
3/30/2005 15:53:00	7.1	3.7	
3/30/2005 15:53:15	7.1	3.7	
3/30/2005 15:53:30	7.3	3.7	
3/30/2005 15:53:45	7.7	3.7	
3/30/2005 15:54:00	7.5	3.7	
3/30/2005 15:54:15	7.2	3.7	
3/30/2005 15:54:30	7.0	3.7	
3/30/2005 15:54:45	6.6	3.7	
3/30/2005 15:55:00	6.9	3.7	
3/30/2005 15:55:15	6.9	3.7	
3/30/2005 15:55:30	7.4	3.7	
3/30/2005 15:55:45	7.4	3.7	
3/30/2005 15:56:00	7.3	3.7	
3/30/2005 15:56:15	7.5	3.7	
3/30/2005 15:56:30	7.5	3.7	
3/30/2005 15:56:45	7.3	3.7	
3/30/2005 15:57:00	7.1	3.7	
3/30/2005 15:57:15	6.9	3.7	
3/30/2005 15:57:30	7.1	3.7	
3/30/2005 15:57:45	6.8	3.7	
3/30/2005 15:58:00	6.8	3.7	
3/30/2005 15:58:15	6.8	3.7	
3/30/2005 15:58:30	7.0	3.7	
3/30/2005 15:58:45	7.4	3.7	
3/30/2005 15:59:00	7.6	3.7	
3/30/2005 15:59:15	7.4	3.7	
3/30/2005 15:59:30	7.1	3.7	
3/30/2005 15:59:45	6.8	3.7	
3/30/2005 16:00:00	7.1	3.7	
3/30/2005 16:00:15	7.3	3.7	
3/30/2005 16:00:30	7.4	3.7	
3/30/2005 16:00:45	6.8	3.7	
3/30/2005 16:01:00	6.6	3.7	
3/30/2005 16:01:15	6.9	3.7	
3/30/2005 16:01:30	7.3	3.6	
3/30/2005 16:01:45	7.0	3.6	
3/30/2005 16:02:00	6.7	3.6	
3/30/2005 16:02:15	6.5	3.6	
3/30/2005 16:02:30	6.7	3.6	
3/30/2005 16:02:45	6.8	3.6	
3/30/2005 16:03:00	6.9	3.6	
3/30/2005 16:03:15	7.1	3.6	
3/30/2005 16:03:30	7.0	3.6	
3/30/2005 16:03:45	6.9	3.6	
3/30/2005 16:04:00	7.2	3.6	
3/30/2005 16:04:15	7.1	3.6	
3/30/2005 16:04:30	7.2	3.6	
3/30/2005 16:04:45	7.0	3.6	
3/30/2005 16:05:00	6.9	3.6	
3/30/2005 16:05:15	7.0	3.6	
3/30/2005 16:05:30	6.9	3.6	
3/30/2005 16:05:45	7.0	3.6	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 16:06:00	**7.0**	**3.6**	
3/30/2005 16:06:15	**7.1**	**3.6**	
3/30/2005 16:06:30	**7.4**	**3.6**	
3/30/2005 16:06:45	**7.0**	**3.6**	
3/30/2005 16:07:00	**6.8**	**3.6**	
3/30/2005 16:07:15	**6.6**	**3.6**	
3/30/2005 16:07:30	**6.9**	**3.6**	
3/30/2005 16:07:45	**7.2**	**3.6**	
3/30/2005 16:08:00	**7.2**	**3.6**	
3/30/2005 16:08:15	**7.2**	**3.6**	
3/30/2005 16:08:30	**7.0**	**3.6**	
3/30/2005 16:08:45	**7.0**	**3.6**	
3/30/2005 16:09:00	**7.3**	**3.6**	
3/30/2005 16:09:15	**7.1**	**3.6**	
3/30/2005 16:09:30	**7.0**	**3.6**	
3/30/2005 16:09:45	**6.5**	**3.6**	
3/30/2005 16:10:00	**6.4**	**3.6**	
3/30/2005 16:10:15	**6.8**	**3.6**	
3/30/2005 16:10:30	**7.3**	**3.5**	
3/30/2005 16:10:45	**7.3**	**3.5**	
3/30/2005 16:11:00	**7.1**	**3.5**	
3/30/2005 16:11:15	**7.0**	**3.5**	
3/30/2005 16:11:30	**7.3**	**3.5**	
3/30/2005 16:11:45	**7.2**	**3.5**	
3/30/2005 16:12:00	6.9	3.5	**Change of Ports**
3/30/2005 16:12:15	6.7	3.5	
3/30/2005 16:12:30	6.6	3.5	
3/30/2005 16:12:45	6.9	3.5	
3/30/2005 16:13:00	7.0	3.5	
3/30/2005 16:13:15	7.0	3.5	
3/30/2005 16:13:30	7.2	3.6	
3/30/2005 16:13:45	7.2	3.6	
3/30/2005 16:14:00	7.5	3.6	
3/30/2005 16:14:15	5.3	3.6	
3/30/2005 16:14:30	2.4	3.6	
3/30/2005 16:14:45	2.0	3.6	
3/30/2005 16:15:00	1.9	3.6	
3/30/2005 16:15:15	1.8	3.6	
3/30/2005 16:15:30	1.7	3.6	
3/30/2005 16:15:45	1.4	3.6	
3/30/2005 16:16:00	1.4	3.6	
3/30/2005 16:16:15	2.3	3.7	
3/30/2005 16:16:30	6.9	4.1	
3/30/2005 16:16:45	7.7	4.1	
3/30/2005 16:17:00	7.5	4.1	
3/30/2005 16:17:15	7.3	4.1	
3/30/2005 16:17:30	7.1	4.1	
3/30/2005 16:17:45	7.0	4.1	**Resume Testing**
3/30/2005 16:18:00	**7.3**	**4.1**	
3/30/2005 16:18:15	**7.3**	**4.1**	
3/30/2005 16:18:30	**7.6**	**4.1**	
3/30/2005 16:18:45	**7.3**	**4.1**	
3/30/2005 16:19:00	**7.1**	**4.1**	
3/30/2005 16:19:15	**7.5**	**4.0**	
3/30/2005 16:19:30	**7.7**	**3.9**	
3/30/2005 16:19:45	**7.5**	**3.9**	
3/30/2005 16:20:00	**7.3**	**3.9**	
3/30/2005 16:20:15	**7.1**	**3.9**	
3/30/2005 16:20:30	**7.4**	**3.9**	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 16:20:45	7.6	3.9	
3/30/2005 16:21:00	7.7	3.9	
3/30/2005 16:21:15	7.8	3.9	
3/30/2005 16:21:30	7.7	3.9	
3/30/2005 16:21:45	7.4	3.9	
3/30/2005 16:22:00	7.8	3.9	
3/30/2005 16:22:15	7.7	3.9	
3/30/2005 16:22:30	7.7	4.0	
3/30/2005 16:22:45	7.4	4.0	
3/30/2005 16:23:00	7.2	4.0	
3/30/2005 16:23:15	7.5	4.0	
3/30/2005 16:23:30	7.7	4.0	
3/30/2005 16:23:45	7.8	4.0	
3/30/2005 16:24:00	7.9	4.0	
3/30/2005 16:24:15	7.6	4.0	
3/30/2005 16:24:30	7.6	4.0	
3/30/2005 16:24:45	7.6	4.0	
3/30/2005 16:25:00	7.4	4.0	
3/30/2005 16:25:15	7.0	4.0	
3/30/2005 16:25:30	7.1	3.9	
3/30/2005 16:25:45	7.0	3.9	
3/30/2005 16:26:00	7.4	3.9	
3/30/2005 16:26:15	7.7	3.9	
3/30/2005 16:26:30	7.8	3.9	
3/30/2005 16:26:45	7.7	3.9	
3/30/2005 16:27:00	7.5	3.9	
3/30/2005 16:27:15	7.7	3.9	
3/30/2005 16:27:30	7.9	3.9	
3/30/2005 16:27:45	7.4	3.9	
3/30/2005 16:28:00	7.0	3.9	
3/30/2005 16:28:15	6.8	3.8	
3/30/2005 16:28:30	7.1	3.7	
3/30/2005 16:28:45	7.4	3.7	
3/30/2005 16:29:00	7.5	3.7	
3/30/2005 16:29:15	7.7	3.7	
3/30/2005 16:29:30	7.5	3.7	
3/30/2005 16:29:45	7.3	3.7	
3/30/2005 16:30:00	7.5	3.7	
3/30/2005 16:30:15	7.6	3.7	
3/30/2005 16:30:30	7.2	3.7	
3/30/2005 16:30:45	6.7	3.7	
3/30/2005 16:31:00	6.4	3.7	
3/30/2005 16:31:15	6.5	3.6	
3/30/2005 16:31:30	7.3	3.5	
3/30/2005 16:31:45	7.6	3.5	
3/30/2005 16:32:00	7.7	3.5	
3/30/2005 16:32:15	7.5	3.5	
3/30/2005 16:32:30	7.3	3.5	
3/30/2005 16:32:45	7.8	3.5	
3/30/2005 16:33:00	7.8	3.5	
3/30/2005 16:33:15	7.5	3.5	
3/30/2005 16:33:30	7.1	3.5	
3/30/2005 16:33:45	6.6	3.5	
3/30/2005 16:34:00	6.8	3.5	
3/30/2005 16:34:15	7.1	3.5	
3/30/2005 16:34:30	7.4	3.5	
3/30/2005 16:34:45	7.4	3.5	
3/30/2005 16:35:00	7.4	3.5	
3/30/2005 16:35:15	7.4	3.5	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 16:35:30	7.8	3.5	
3/30/2005 16:35:45	7.8	3.5	
3/30/2005 16:36:00	7.5	3.5	
3/30/2005 16:36:15	7.2	3.5	
3/30/2005 16:36:30	7.1	3.5	
3/30/2005 16:36:45	7.2	3.5	
3/30/2005 16:37:00	7.7	3.5	
3/30/2005 16:37:15	7.6	3.5	
3/30/2005 16:37:30	7.8	3.5	
3/30/2005 16:37:45	7.5	3.5	
3/30/2005 16:38:00	7.5	3.5	
3/30/2005 16:38:15	7.9	3.5	
3/30/2005 16:38:30	7.7	3.5	
3/30/2005 16:38:45	7.4	3.5	
3/30/2005 16:39:00	7.2	3.5	
3/30/2005 16:39:15	7.0	3.5	
3/30/2005 16:39:30	7.5	3.5	
3/30/2005 16:39:45	7.7	3.5	
3/30/2005 16:40:00	7.8	3.5	
3/30/2005 16:40:15	7.5	3.5	
3/30/2005 16:40:30	7.6	3.5	
3/30/2005 16:40:45	7.7	3.5	
3/30/2005 16:41:00	8.0	3.5	
3/30/2005 16:41:15	7.7	3.5	
3/30/2005 16:41:30	7.4	3.5	
3/30/2005 16:41:45	7.2	3.5	
3/30/2005 16:42:00	7.1	3.5	
3/30/2005 16:42:15	7.5	3.5	
3/30/2005 16:42:30	7.6	3.5	
3/30/2005 16:42:45	7.5	3.5	
3/30/2005 16:43:00	7.6	3.5	
3/30/2005 16:43:15	7.5	3.5	
3/30/2005 16:43:30	8.0	3.5	
3/30/2005 16:43:45	8.1	3.5	
3/30/2005 16:44:00	7.9	3.5	
3/30/2005 16:44:15	7.6	3.5	
3/30/2005 16:44:30	7.4	3.5	
3/30/2005 16:44:45	7.4	3.5	
3/30/2005 16:45:00	7.7	3.5	
3/30/2005 16:45:15	7.6	3.5	
3/30/2005 16:45:30	7.5	3.5	
3/30/2005 16:45:45	7.2	3.5	
3/30/2005 16:46:00	7.2	3.5	
3/30/2005 16:46:15	7.7	3.5	
3/30/2005 16:46:30	8.3	3.6	
3/30/2005 16:46:45	8.2	3.6	
3/30/2005 16:47:00	7.9	3.6	
3/30/2005 16:47:15	7.7	3.6	
3/30/2005 16:47:30	7.8	3.6	
3/30/2005 16:47:45	8.0	3.6	
3/30/2005 16:48:00	7.9	3.6	End Run No. BO-1-1 - Blackburn Condition #1
3/30/2005 16:48:15	7.8	3.6	
3/30/2005 16:48:30	7.7	3.6	
3/30/2005 16:48:45	7.4	3.6	
3/30/2005 16:49:00	7.9	3.6	
3/30/2005 16:49:15	8.1	3.6	
3/30/2005 16:49:30	8.2	3.6	
3/30/2005 16:49:45	8.0	3.6	
3/30/2005 16:50:00	7.8	3.6	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 16:50:15	32.2	3.6	
3/30/2005 16:50:30	48.2	3.6	
3/30/2005 16:50:45	47.7	3.6	
3/30/2005 16:51:00	50.3	3.6	
3/30/2005 16:51:15	50.6	3.6	
3/30/2005 16:51:30	50.8	3.6	
3/30/2005 16:51:45	51.0	3.6	
3/30/2005 16:52:00	51.4	3.6	
3/30/2005 16:52:15	51.3	3.3	
3/30/2005 16:52:30	51.5	2.2	**Calibration**
3/30/2005 16:52:45	**51.4**	2.2	**51.3 50.0 ppm Propane/N_2**
3/30/2005 16:53:00	**51.3**	2.2	
3/30/2005 16:53:15	**51.3**	2.2	
3/30/2005 16:53:30	**51.3**	2.2	
3/30/2005 16:53:45	47.7	2.2	
3/30/2005 16:54:00	14.5	2.2	
3/30/2005 16:54:15	1.6	2.2	
3/30/2005 16:54:30	1.1	2.2	
3/30/2005 16:54:45	0.7	2.2	
3/30/2005 16:55:00	0.7	2.2	
3/30/2005 16:55:15	0.7	2.2	
3/30/2005 16:55:30	1.0	2.1	
3/30/2005 16:55:45	1.0	2.1	
3/30/2005 16:56:00	1.0	2.1	
3/30/2005 16:56:15	1.0	2.1	
3/30/2005 16:56:30	0.9	2.1	
3/30/2005 16:56:45	0.9	2.1	
3/30/2005 16:57:00	0.9	2.1	
3/30/2005 16:57:15	0.9	2.1	**Calibration**
3/30/2005 16:57:30	**0.9**	2.1	**0.6 Zero Propane/N_2**
3/30/2005 16:57:45	**0.6**	2.1	
3/30/2005 16:58:00	**0.6**	2.1	
3/30/2005 16:58:15	**0.6**	2.1	
3/30/2005 16:58:30	0.9	2.2	
3/30/2005 16:58:45	1.4	2.2	
3/30/2005 16:59:00	7.1	2.2	
3/30/2005 16:59:15	8.0	2.2	
3/30/2005 16:59:30	8.2	2.2	
3/30/2005 16:59:45	8.5	2.2	
3/30/2005 17:00:00	8.3	2.2	
3/30/2005 17:00:15	22.4	2.2	
3/30/2005 17:00:30	46.5	2.2	
3/30/2005 17:00:45	5.1	2.2	
3/30/2005 17:01:00	2.2	2.2	
3/30/2005 17:01:15	1.4	2.2	
3/30/2005 17:01:30	1.5	2.2	
3/30/2005 17:01:45	1.4	2.2	
3/30/2005 17:02:00	1.4	2.2	
3/30/2005 17:02:15	1.3	2.2	
3/30/2005 17:02:30	1.3	2.2	
3/30/2005 17:02:45	1.3	2.2	
3/30/2005 17:03:00	1.3	2.2	
3/30/2005 17:03:15	1.3	2.2	
3/30/2005 17:03:30	1.2	2.2	
3/30/2005 17:03:45	0.9	2.2	
3/30/2005 17:04:00	0.9	2.2	
3/30/2005 17:04:15	0.8	2.2	
3/30/2005 17:04:30	1.2	2.2	
3/30/2005 17:04:45	1.2	2.2	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 17:05:00	1.1	2.2	
3/30/2005 17:05:15	1.1	2.2	
3/30/2005 17:05:30	1.1	2.2	
3/30/2005 17:05:45	1.1	2.2	
3/30/2005 17:06:00	1.1	2.2	
3/30/2005 17:06:15	1.1	2.2	
3/30/2005 17:06:30	1.1	2.2	
3/30/2005 17:06:45	0.8	2.2	
3/30/2005 17:07:00	0.7	2.2	
3/30/2005 17:07:15	0.7	2.2	
3/30/2005 17:07:30	1.1	2.3	
3/30/2005 17:07:45	1.0	2.3	
3/30/2005 17:08:00	1.0	2.3	
3/30/2005 17:08:15	1.0	2.3	
3/30/2005 17:08:30	1.0	2.3	
3/30/2005 17:08:45	1.0	2.3	
3/30/2005 17:09:00	5.0	2.3	
3/30/2005 17:09:15	8.8	2.3	
3/30/2005 17:09:30	8.8	2.3	
3/30/2005 17:09:45	8.1	2.3	
3/30/2005 17:10:00	7.9	2.3	
3/30/2005 17:10:15	8.3	2.6	
3/30/2005 17:10:30	8.6	3.9	
3/30/2005 17:10:45	8.4	3.9	**Begin Run No. BO-1-2 - Blackburn Condition #1**
3/30/2005 17:11:00	**8.2**	**3.9**	
3/30/2005 17:11:15	**8.0**	**3.9**	
3/30/2005 17:11:30	**8.5**	**3.9**	
3/30/2005 17:11:45	**8.8**	**3.9**	
3/30/2005 17:12:00	**8.8**	**3.9**	
3/30/2005 17:12:15	**8.6**	**3.9**	
3/30/2005 17:12:30	**8.3**	**3.9**	
3/30/2005 17:12:45	**8.1**	**3.9**	
3/30/2005 17:13:00	**8.5**	**3.9**	
3/30/2005 17:13:15	**8.2**	**3.9**	
3/30/2005 17:13:30	**8.6**	**3.9**	
3/30/2005 17:13:45	**8.4**	**3.9**	
3/30/2005 17:14:00	**8.3**	**3.9**	
3/30/2005 17:14:15	**8.8**	**3.9**	
3/30/2005 17:14:30	**8.8**	**3.9**	
3/30/2005 17:14:45	**8.7**	**3.9**	
3/30/2005 17:15:00	**8.5**	**3.9**	
3/30/2005 17:15:15	**8.4**	**3.9**	
3/30/2005 17:15:30	**8.7**	**3.9**	
3/30/2005 17:15:45	**8.6**	**3.9**	
3/30/2005 17:16:00	**8.5**	**3.9**	
3/30/2005 17:16:15	**8.3**	**3.9**	
3/30/2005 17:16:30	**8.4**	**3.9**	
3/30/2005 17:16:45	**8.5**	**3.9**	
3/30/2005 17:17:00	**9.0**	**3.9**	
3/30/2005 17:17:15	**9.1**	**3.9**	
3/30/2005 17:17:30	**9.2**	**3.9**	
3/30/2005 17:17:45	**8.8**	**3.9**	
3/30/2005 17:18:00	**8.6**	**3.9**	
3/30/2005 17:18:15	**9.1**	**3.9**	
3/30/2005 17:18:30	**9.2**	**3.9**	
3/30/2005 17:18:45	**8.8**	**3.9**	
3/30/2005 17:19:00	**8.6**	**3.9**	
3/30/2005 17:19:15	**8.3**	**3.9**	
3/30/2005 17:19:30	**9.0**	**3.9**	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 17:19:45	9.3	3.9	
3/30/2005 17:20:00	9.2	3.9	
3/30/2005 17:20:15	8.8	3.9	
3/30/2005 17:20:30	8.5	3.9	
3/30/2005 17:20:45	8.7	3.9	
3/30/2005 17:21:00	9.1	3.9	
3/30/2005 17:21:15	9.0	3.9	
3/30/2005 17:21:30	8.9	3.9	
3/30/2005 17:21:45	8.4	3.9	
3/30/2005 17:22:00	8.3	3.9	
3/30/2005 17:22:15	8.9	3.9	
3/30/2005 17:22:30	9.4	3.9	
3/30/2005 17:22:45	9.4	3.9	
3/30/2005 17:23:00	9.1	3.9	
3/30/2005 17:23:15	8.8	3.9	
3/30/2005 17:23:30	9.1	3.9	
3/30/2005 17:23:45	9.3	3.9	
3/30/2005 17:24:00	9.1	3.9	
3/30/2005 17:24:15	9.0	3.9	
3/30/2005 17:24:30	8.7	3.9	
3/30/2005 17:24:45	8.5	3.9	
3/30/2005 17:25:00	8.9	3.9	
3/30/2005 17:25:15	8.8	3.9	
3/30/2005 17:25:30	9.0	4.0	
3/30/2005 17:25:45	8.7	4.0	
3/30/2005 17:26:00	8.6	4.0	
3/30/2005 17:26:15	9.2	4.0	
3/30/2005 17:26:30	9.2	4.0	
3/30/2005 17:26:45	9.2	4.0	
3/30/2005 17:27:00	9.0	4.0	
3/30/2005 17:27:15	8.7	4.0	
3/30/2005 17:27:30	9.2	4.0	
3/30/2005 17:27:45	9.3	4.0	
3/30/2005 17:28:00	9.3	4.0	
3/30/2005 17:28:15	9.1	4.0	
3/30/2005 17:28:30	9.0	4.0	
3/30/2005 17:28:45	9.1	4.0	
3/30/2005 17:29:00	9.4	4.0	
3/30/2005 17:29:15	9.2	4.0	
3/30/2005 17:29:30	9.2	4.0	
3/30/2005 17:29:45	9.1	4.0	
3/30/2005 17:30:00	9.1	4.0	
3/30/2005 17:30:15	9.5	4.0	
3/30/2005 17:30:30	9.5	4.0	
3/30/2005 17:30:45	9.0	4.0	
3/30/2005 17:31:00	8.8	4.0	
3/30/2005 17:31:15	8.6	4.0	
3/30/2005 17:31:30	9.3	4.0	
3/30/2005 17:31:45	9.5	4.0	
3/30/2005 17:32:00	9.3	4.0	
3/30/2005 17:32:15	9.2	4.0	
3/30/2005 17:32:30	9.1	4.0	
3/30/2005 17:32:45	9.2	4.0	
3/30/2005 17:33:00	9.9	4.0	
3/30/2005 17:33:15	9.7	4.0	
3/30/2005 17:33:30	9.5	4.0	
3/30/2005 17:33:45	8.9	4.0	
3/30/2005 17:34:00	8.7	4.0	
3/30/2005 17:34:15	9.2	4.0	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 17:34:30	**9.5**	**4.1**	
3/30/2005 17:34:45	**9.3**	**4.1**	
3/30/2005 17:35:00	**9.1**	**4.1**	
3/30/2005 17:35:15	**8.8**	**4.1**	
3/30/2005 17:35:30	**9.2**	**4.1**	
3/30/2005 17:35:45	**9.4**	**4.1**	
3/30/2005 17:36:00	**9.2**	**4.1**	
3/30/2005 17:36:15	**9.0**	**4.1**	
3/30/2005 17:36:30	**8.8**	**4.1**	
3/30/2005 17:36:45	**8.7**	**4.1**	
3/30/2005 17:37:00	**9.2**	**4.1**	
3/30/2005 17:37:15	**9.2**	**4.1**	
3/30/2005 17:37:30	**9.3**	**4.0**	
3/30/2005 17:37:45	**9.0**	**4.0**	
3/30/2005 17:38:00	**9.0**	**4.0**	
3/30/2005 17:38:15	**9.6**	**4.0**	
3/30/2005 17:38:30	**9.8**	**4.0**	
3/30/2005 17:38:45	**9.7**	**4.0**	
3/30/2005 17:39:00	**9.4**	**4.0**	
3/30/2005 17:39:15	**9.1**	**4.0**	
3/30/2005 17:39:30	**9.6**	**4.0**	
3/30/2005 17:39:45	**9.5**	**4.0**	
3/30/2005 17:40:00	**9.3**	**4.0**	
3/30/2005 17:40:15	**9.1**	**4.0**	
3/30/2005 17:40:30	**9.1**	**4.1**	
3/30/2005 17:40:45	**9.1**	**4.1**	
3/30/2005 17:41:00	9.5	4.1	**Change of Ports**
3/30/2005 17:41:15	9.3	4.1	
3/30/2005 17:41:30	9.2	4.1	
3/30/2005 17:41:45	9.0	4.1	
3/30/2005 17:42:00	8.9	4.1	
3/30/2005 17:42:15	6.0	4.1	
3/30/2005 17:42:30	2.5	4.1	
3/30/2005 17:42:45	1.8	4.1	
3/30/2005 17:43:00	1.7	4.1	
3/30/2005 17:43:15	1.6	4.1	
3/30/2005 17:43:30	1.9	4.4	
3/30/2005 17:43:45	1.8	4.4	
3/30/2005 17:44:00	1.8	4.4	
3/30/2005 17:44:15	1.8	4.4	
3/30/2005 17:44:30	2.4	4.4	
3/30/2005 17:44:45	7.7	4.4	**Resume Testing**
3/30/2005 17:45:00	**9.5**	**4.4**	
3/30/2005 17:45:15	**9.7**	**4.4**	
3/30/2005 17:45:30	**9.4**	**4.4**	
3/30/2005 17:45:45	**8.8**	**4.4**	
3/30/2005 17:46:00	**8.8**	**4.4**	
3/30/2005 17:46:15	**9.2**	**4.4**	
3/30/2005 17:46:30	**9.5**	**4.1**	
3/30/2005 17:46:45	**9.4**	**4.1**	
3/30/2005 17:47:00	**9.2**	**4.1**	
3/30/2005 17:47:15	**9.0**	**4.1**	
3/30/2005 17:47:30	**9.4**	**4.1**	
3/30/2005 17:47:45	**9.4**	**4.1**	
3/30/2005 17:48:00	**9.3**	**4.1**	
3/30/2005 17:48:15	**9.3**	**4.1**	
3/30/2005 17:48:30	**9.1**	**4.1**	
3/30/2005 17:48:45	**9.2**	**4.1**	
3/30/2005 17:49:00	**9.4**	**4.1**	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 17:49:15	9.2	4.1	
3/30/2005 17:49:30	9.4	4.1	
3/30/2005 17:49:45	9.1	4.1	
3/30/2005 17:50:00	9.3	4.1	
3/30/2005 17:50:15	9.8	4.1	
3/30/2005 17:50:30	9.6	4.1	
3/30/2005 17:50:45	9.4	4.1	
3/30/2005 17:51:00	9.2	4.1	
3/30/2005 17:51:15	9.2	4.1	
3/30/2005 17:51:30	9.9	4.1	
3/30/2005 17:51:45	9.6	4.1	
3/30/2005 17:52:00	9.2	4.1	
3/30/2005 17:52:15	8.9	4.1	
3/30/2005 17:52:30	9.1	4.0	
3/30/2005 17:52:45	9.6	4.0	
3/30/2005 17:53:00	9.6	4.0	
3/30/2005 17:53:15	9.3	4.0	
3/30/2005 17:53:30	9.1	4.0	
3/30/2005 17:53:45	9.1	4.0	
3/30/2005 17:54:00	9.5	4.0	
3/30/2005 17:54:15	9.9	4.0	
3/30/2005 17:54:30	9.9	4.0	
3/30/2005 17:54:45	9.5	4.0	
3/30/2005 17:55:00	9.2	4.0	
3/30/2005 17:55:15	9.2	4.0	
3/30/2005 17:55:30	9.8	4.1	
3/30/2005 17:55:45	9.8	4.1	
3/30/2005 17:56:00	9.7	4.1	
3/30/2005 17:56:15	9.4	4.1	
3/30/2005 17:56:30	9.2	4.1	
3/30/2005 17:56:45	9.7	4.1	
3/30/2005 17:57:00	9.6	4.1	
3/30/2005 17:57:15	9.7	4.1	
3/30/2005 17:57:30	9.6	4.1	
3/30/2005 17:57:45	9.1	4.1	
3/30/2005 17:58:00	9.5	4.1	
3/30/2005 17:58:15	9.6	4.1	
3/30/2005 17:58:30	9.9	4.1	
3/30/2005 17:58:45	9.7	4.1	
3/30/2005 17:59:00	9.4	4.1	
3/30/2005 17:59:15	9.7	4.1	
3/30/2005 17:59:30	10.1	4.1	
3/30/2005 17:59:45	10.0	4.1	
3/30/2005 18:00:00	9.7	4.1	
3/30/2005 18:00:15	9.4	4.1	
3/30/2005 18:00:30	9.3	4.1	
3/30/2005 18:00:45	9.4	4.1	
3/30/2005 18:01:00	9.3	4.1	
3/30/2005 18:01:15	9.1	4.1	
3/30/2005 18:01:30	9.2	4.1	
3/30/2005 18:01:45	9.1	4.1	
3/30/2005 18:02:00	9.6	4.1	
3/30/2005 18:02:15	9.8	4.1	
3/30/2005 18:02:30	9.6	4.1	
3/30/2005 18:02:45	9.4	4.1	
3/30/2005 18:03:00	9.2	4.1	
3/30/2005 18:03:15	9.5	4.1	
3/30/2005 18:03:30	9.6	4.1	
3/30/2005 18:03:45	9.3	4.1	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 18:04:00	9.2	4.1	
3/30/2005 18:04:15	9.0	4.1	
3/30/2005 18:04:30	9.5	4.1	
3/30/2005 18:04:45	10.1	4.1	
3/30/2005 18:05:00	10.0	4.1	
3/30/2005 18:05:15	9.7	4.1	
3/30/2005 18:05:30	9.4	4.1	
3/30/2005 18:05:45	9.3	4.1	
3/30/2005 18:06:00	9.7	4.1	
3/30/2005 18:06:15	9.5	4.1	
3/30/2005 18:06:30	9.2	4.1	
3/30/2005 18:06:45	8.7	4.1	
3/30/2005 18:07:00	8.7	4.1	
3/30/2005 18:07:15	9.2	4.1	
3/30/2005 18:07:30	9.8	4.1	
3/30/2005 18:07:45	9.8	4.1	
3/30/2005 18:08:00	9.6	4.1	
3/30/2005 18:08:15	9.4	4.1	
3/30/2005 18:08:30	9.7	4.1	
3/30/2005 18:08:45	9.9	4.1	
3/30/2005 18:09:00	9.5	4.1	
3/30/2005 18:09:15	9.2	4.1	
3/30/2005 18:09:30	8.9	4.1	
3/30/2005 18:09:45	8.7	4.1	
3/30/2005 18:10:00	9.2	4.1	
3/30/2005 18:10:15	9.3	4.1	
3/30/2005 18:10:30	9.6	4.0	
3/30/2005 18:10:45	9.4	4.0	
3/30/2005 18:11:00	9.3	4.0	
3/30/2005 18:11:15	9.8	4.0	
3/30/2005 18:11:30	9.8	4.0	
3/30/2005 18:11:45	9.4	4.0	
3/30/2005 18:12:00	9.0	4.0	
3/30/2005 18:12:15	8.8	4.0	
3/30/2005 18:12:30	9.2	4.0	
3/30/2005 18:12:45	8.9	4.0	
3/30/2005 18:13:00	8.7	4.0	
3/30/2005 18:13:15	8.5	4.0	
3/30/2005 18:13:30	8.7	4.0	
3/30/2005 18:13:45	9.0	4.0	
3/30/2005 18:14:00	9.7	4.0	
3/30/2005 18:14:15	9.6	4.0	
3/30/2005 18:14:30	9.3	4.0	
3/30/2005 18:14:45	9.0	4.0	
3/30/2005 18:15:00	9.0	4.0	End Run No. BO-2-2 - Blackburn Condition #1
3/30/2005 18:15:15	9.3	4.0	
3/30/2005 18:15:30	9.3	4.0	
3/30/2005 18:15:45	8.7	4.0	
3/30/2005 18:16:00	8.4	4.0	
3/30/2005 18:16:15	8.3	4.0	
3/30/2005 18:16:30	8.8	4.1	
3/30/2005 18:16:45	2.0	4.1	
3/30/2005 18:17:00	1.3	4.1	
3/30/2005 18:17:15	6.6	4.1	
3/30/2005 18:17:30	8.7	4.1	
3/30/2005 18:17:45	8.2	4.1	
3/30/2005 18:18:00	7.5	4.1	
3/30/2005 18:18:15	9.0	4.1	
3/30/2005 18:18:30	7.8	4.1	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 18:18:45	1.8	4.1	
3/30/2005 18:19:00	0.9	4.1	
3/30/2005 18:19:15	0.8	4.1	
3/30/2005 18:19:30	1.0	2.9	
3/30/2005 18:19:45	1.0	2.9	
3/30/2005 18:20:00	1.0	2.9	
3/30/2005 18:20:15	1.0	2.9	
3/30/2005 18:20:30	0.9	2.9	
3/30/2005 18:20:45	0.9	2.9	
3/30/2005 18:21:00	0.9	2.9	
3/30/2005 18:21:15	0.9	2.9	
3/30/2005 18:21:30	0.9	2.9	**Calibration**
3/30/2005 18:21:45	**0.6**	2.9	**0.6 Zero Propane/N_2**
3/30/2005 18:22:00	**0.5**	2.9	
3/30/2005 18:22:15	**0.5**	2.9	
3/30/2005 18:22:30	**0.8**	11.9	
3/30/2005 18:22:45	0.8	11.9	
3/30/2005 18:23:00	1.6	11.9	
3/30/2005 18:23:15	22.8	11.9	
3/30/2005 18:23:30	34.9	11.9	
3/30/2005 18:23:45	48.0	11.9	
3/30/2005 18:24:00	50.8	11.9	
3/30/2005 18:24:15	51.1	11.9	
3/30/2005 18:24:30	51.1	11.9	**Calibration**
3/30/2005 18:24:45	**50.9**	11.9	**51.0 50.0 ppm Propane/N_2**
3/30/2005 18:25:00	**51.0**	11.9	
3/30/2005 18:25:15	**51.0**	11.9	
3/30/2005 18:25:30	**51.2**	2.6	
3/30/2005 18:25:45	47.2	2.6	
3/30/2005 18:26:00	13.8	2.6	
3/30/2005 18:26:15	9.2	2.6	
3/30/2005 18:26:30	8.7	2.6	
3/30/2005 18:26:45	24.4	2.6	
3/30/2005 18:27:00	3.9	2.6	
3/30/2005 18:27:15	1.2	2.6	
3/30/2005 18:27:30	1.0	2.6	
3/30/2005 18:27:45	0.7	2.6	
3/30/2005 18:28:00	0.6	2.6	
3/30/2005 18:28:15	0.6	2.6	
3/30/2005 18:28:30	0.9	0.4	
3/30/2005 18:28:45	0.9	0.4	
3/30/2005 18:29:00	0.9	0.4	
3/30/2005 18:29:15	0.8	0.4	
3/30/2005 18:29:30	0.8	0.4	
3/30/2005 18:29:45	0.8	0.4	
3/30/2005 18:30:00	0.8	0.4	
3/30/2005 18:30:15	0.8	0.4	
3/30/2005 18:30:30	0.8	0.4	
3/30/2005 18:30:45	0.5	0.4	
3/30/2005 18:31:00	0.5	0.4	
3/30/2005 18:31:15	0.5	0.4	
3/30/2005 18:31:30	0.8	0.1	
3/30/2005 18:31:45	0.8	0.1	
3/30/2005 18:32:00	0.8	0.1	
3/30/2005 18:32:15	0.8	0.1	
3/30/2005 18:32:30	0.8	0.1	
3/30/2005 18:32:45	0.8	0.1	
3/30/2005 18:33:00	0.8	0.1	
3/30/2005 18:33:15	0.8	0.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 18:33:30	0.7	0.1	
3/30/2005 18:33:45	0.4	0.1	
3/30/2005 18:34:00	0.4	0.1	
3/30/2005 18:34:15	0.4	0.1	
3/30/2005 18:34:30	0.8	0.1	
3/30/2005 18:34:45	0.7	0.1	
3/30/2005 18:35:00	4.6	0.1	
3/30/2005 18:35:15	8.0	0.1	
3/30/2005 18:35:30	8.0	0.1	
3/30/2005 18:35:45	7.8	0.1	**Begin Run No. BO-1-3 - Blackburn Condition #1**
3/30/2005 18:36:00	**8.5**	**0.1**	
3/30/2005 18:36:15	**8.6**	**0.1**	
3/30/2005 18:36:30	**8.4**	**0.1**	
3/30/2005 18:36:45	**8.0**	**0.1**	
3/30/2005 18:37:00	**7.8**	**0.1**	
3/30/2005 18:37:15	**8.0**	**0.1**	
3/30/2005 18:37:30	**8.5**	**1.7**	
3/30/2005 18:37:45	**8.4**	**1.7**	
3/30/2005 18:38:00	**8.3**	**1.7**	
3/30/2005 18:38:15	**8.0**	**1.7**	
3/30/2005 18:38:30	**8.1**	**1.7**	
3/30/2005 18:38:45	**8.6**	**1.7**	
3/30/2005 18:39:00	**8.6**	**1.7**	
3/30/2005 18:39:15	**8.4**	**1.7**	
3/30/2005 18:39:30	**8.1**	**1.7**	
3/30/2005 18:39:45	**7.8**	**1.7**	
3/30/2005 18:40:00	**8.2**	**1.7**	
3/30/2005 18:40:15	**8.2**	**1.7**	
3/30/2005 18:40:30	**8.3**	**1.8**	
3/30/2005 18:40:45	**8.2**	**1.8**	
3/30/2005 18:41:00	**8.1**	**1.8**	
3/30/2005 18:41:15	**8.4**	**1.8**	
3/30/2005 18:41:30	**8.4**	**1.8**	
3/30/2005 18:41:45	**8.3**	**1.8**	
3/30/2005 18:42:00	**8.0**	**1.8**	
3/30/2005 18:42:15	**7.8**	**1.8**	
3/30/2005 18:42:30	**8.2**	**1.8**	
3/30/2005 18:42:45	**8.2**	**1.8**	
3/30/2005 18:43:00	**8.2**	**1.8**	
3/30/2005 18:43:15	**8.1**	**1.8**	
3/30/2005 18:43:30	**8.2**	**1.8**	
3/30/2005 18:43:45	**8.5**	**1.8**	
3/30/2005 18:44:00	**8.6**	**1.8**	
3/30/2005 18:44:15	**8.4**	**1.8**	
3/30/2005 18:44:30	**8.2**	**1.8**	
3/30/2005 18:44:45	**8.0**	**1.8**	
3/30/2005 18:45:00	**8.1**	**1.8**	
3/30/2005 18:45:15	**8.5**	**1.8**	
3/30/2005 18:45:30	**8.4**	**1.8**	
3/30/2005 18:45:45	**8.0**	**1.8**	
3/30/2005 18:46:00	**7.9**	**1.8**	
3/30/2005 18:46:15	**7.9**	**1.8**	
3/30/2005 18:46:30	**8.7**	**1.9**	
3/30/2005 18:46:45	**8.7**	**1.9**	
3/30/2005 18:47:00	**8.3**	**1.9**	
3/30/2005 18:47:15	**8.0**	**1.9**	
3/30/2005 18:47:30	**7.8**	**1.9**	
3/30/2005 18:47:45	**8.3**	**1.9**	
3/30/2005 18:48:00	**8.4**	**1.9**	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 18:48:15	8.3	1.9	
3/30/2005 18:48:30	8.2	1.9	
3/30/2005 18:48:45	7.7	1.9	
3/30/2005 18:49:00	8.0	1.9	
3/30/2005 18:49:15	8.1	1.9	
3/30/2005 18:49:30	8.3	2.0	
3/30/2005 18:49:45	8.1	2.0	
3/30/2005 18:50:00	7.8	2.0	
3/30/2005 18:50:15	8.0	2.0	
3/30/2005 18:50:30	8.2	2.0	
3/30/2005 18:50:45	8.3	2.0	
3/30/2005 18:51:00	8.2	2.0	
3/30/2005 18:51:15	8.0	2.0	
3/30/2005 18:51:30	8.1	2.0	
3/30/2005 18:51:45	8.1	2.0	
3/30/2005 18:52:00	8.0	2.0	
3/30/2005 18:52:15	7.8	2.0	
3/30/2005 18:52:30	7.9	2.1	
3/30/2005 18:52:45	7.9	2.1	
3/30/2005 18:53:00	8.2	2.1	
3/30/2005 18:53:15	8.2	2.1	
3/30/2005 18:53:30	8.1	2.1	
3/30/2005 18:53:45	8.0	2.1	
3/30/2005 18:54:00	7.9	2.1	
3/30/2005 18:54:15	8.3	2.1	
3/30/2005 18:54:30	8.4	2.1	
3/30/2005 18:54:45	7.9	2.1	
3/30/2005 18:55:00	7.7	2.1	
3/30/2005 18:55:15	7.5	2.1	
3/30/2005 18:55:30	8.1	2.3	
3/30/2005 18:55:45	8.4	2.3	
3/30/2005 18:56:00	8.4	2.3	
3/30/2005 18:56:15	8.4	2.3	
3/30/2005 18:56:30	8.2	2.3	
3/30/2005 18:56:45	8.3	2.3	
3/30/2005 18:57:00	8.5	2.3	
3/30/2005 18:57:15	8.4	2.3	
3/30/2005 18:57:30	8.2	2.3	
3/30/2005 18:57:45	7.6	2.3	
3/30/2005 18:58:00	7.7	2.3	
3/30/2005 18:58:15	8.0	2.3	
3/30/2005 18:58:30	8.3	2.4	
3/30/2005 18:58:45	8.3	2.4	
3/30/2005 18:59:00	8.2	2.4	
3/30/2005 18:59:15	8.1	2.4	
3/30/2005 18:59:30	8.4	2.4	
3/30/2005 18:59:45	8.3	2.4	
3/30/2005 19:00:00	8.1	2.4	
3/30/2005 19:00:15	7.9	2.4	
3/30/2005 19:00:30	7.8	2.4	
3/30/2005 19:00:45	8.0	2.4	
3/30/2005 19:01:00	8.2	2.4	
3/30/2005 19:01:15	8.1	2.4	
3/30/2005 19:01:30	8.3	2.5	
3/30/2005 19:01:45	8.1	2.5	
3/30/2005 19:02:00	8.4	2.5	
3/30/2005 19:02:15	8.4	2.5	
3/30/2005 19:02:30	8.2	2.5	
3/30/2005 19:02:45	8.0	2.5	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 19:03:00	**7.8**	**2.5**	
3/30/2005 19:03:15	**8.1**	**2.5**	
3/30/2005 19:03:30	**8.2**	**2.5**	
3/30/2005 19:03:45	**7.7**	**2.5**	
3/30/2005 19:04:00	**7.7**	**2.5**	
3/30/2005 19:04:15	**7.6**	**2.5**	
3/30/2005 19:04:30	**7.9**	**2.5**	
3/30/2005 19:04:45	**8.3**	**2.5**	
3/30/2005 19:05:00	**8.3**	**2.5**	
3/30/2005 19:05:15	**8.2**	**2.5**	
3/30/2005 19:05:30	**8.0**	**2.5**	
3/30/2005 19:05:45	**8.0**	**2.5**	
3/30/2005 19:06:00	8.3	2.5	**Change of Ports**
3/30/2005 19:06:15	8.4	2.5	
3/30/2005 19:06:30	8.2	2.5	
3/30/2005 19:06:45	7.6	2.5	
3/30/2005 19:07:00	7.5	2.5	
3/30/2005 19:07:15	6.2	2.5	
3/30/2005 19:07:30	2.6	2.4	
3/30/2005 19:07:45	2.1	2.4	
3/30/2005 19:08:00	2.0	2.4	
3/30/2005 19:08:15	1.9	2.4	
3/30/2005 19:08:30	1.8	2.4	
3/30/2005 19:08:45	1.8	2.4	
3/30/2005 19:09:00	1.8	2.4	
3/30/2005 19:09:15	1.7	2.4	
3/30/2005 19:09:30	2.0	2.4	
3/30/2005 19:09:45	1.4	2.4	
3/30/2005 19:10:00	1.6	2.4	
3/30/2005 19:10:15	6.2	2.4	
3/30/2005 19:10:30	7.8	2.8	
3/30/2005 19:10:45	7.7	2.8	**Resume Testing**
3/30/2005 19:11:00	**7.8**	**2.8**	
3/30/2005 19:11:15	**8.0**	**2.8**	
3/30/2005 19:11:30	**8.1**	**2.8**	
3/30/2005 19:11:45	**8.0**	**2.8**	
3/30/2005 19:12:00	**7.8**	**2.8**	
3/30/2005 19:12:15	**7.7**	**2.8**	
3/30/2005 19:12:30	**8.1**	**2.8**	
3/30/2005 19:12:45	**7.9**	**2.8**	
3/30/2005 19:13:00	**7.9**	**2.8**	
3/30/2005 19:13:15	**7.7**	**2.8**	
3/30/2005 19:13:30	**7.8**	**2.3**	
3/30/2005 19:13:45	**8.1**	**2.3**	
3/30/2005 19:14:00	**8.1**	**2.3**	
3/30/2005 19:14:15	**8.1**	**2.3**	
3/30/2005 19:14:30	**7.9**	**2.3**	
3/30/2005 19:14:45	**7.7**	**2.3**	
3/30/2005 19:15:00	**8.0**	**2.3**	
3/30/2005 19:15:15	**8.2**	**2.3**	
3/30/2005 19:15:30	**8.1**	**2.3**	
3/30/2005 19:15:45	**7.6**	**2.3**	
3/30/2005 19:16:00	**7.4**	**2.3**	
3/30/2005 19:16:15	**7.5**	**2.3**	
3/30/2005 19:16:30	**8.1**	**2.2**	
3/30/2005 19:16:45	**8.1**	**2.2**	
3/30/2005 19:17:00	**8.1**	**2.2**	
3/30/2005 19:17:15	**8.0**	**2.2**	
3/30/2005 19:17:30	**7.9**	**2.2**	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 19:17:45	8.2	2.2	
3/30/2005 19:18:00	8.2	2.2	
3/30/2005 19:18:15	8.1	2.2	
3/30/2005 19:18:30	7.8	2.2	
3/30/2005 19:18:45	7.4	2.2	
3/30/2005 19:19:00	7.7	2.2	
3/30/2005 19:19:15	7.7	2.2	
3/30/2005 19:19:30	8.0	2.2	
3/30/2005 19:19:45	7.9	2.2	
3/30/2005 19:20:00	7.8	2.2	
3/30/2005 19:20:15	8.1	2.2	
3/30/2005 19:20:30	8.2	2.2	
3/30/2005 19:20:45	8.1	2.2	
3/30/2005 19:21:00	7.9	2.2	
3/30/2005 19:21:15	7.7	2.2	
3/30/2005 19:21:30	8.0	2.2	
3/30/2005 19:21:45	7.8	2.2	
3/30/2005 19:22:00	7.6	2.2	
3/30/2005 19:22:15	7.5	2.2	
3/30/2005 19:22:30	7.5	2.1	
3/30/2005 19:22:45	7.7	2.1	
3/30/2005 19:23:00	8.0	2.1	
3/30/2005 19:23:15	8.0	2.1	
3/30/2005 19:23:30	7.8	2.1	
3/30/2005 19:23:45	7.7	2.1	
3/30/2005 19:24:00	7.7	2.1	
3/30/2005 19:24:15	8.3	2.1	
3/30/2005 19:24:30	8.4	2.1	
3/30/2005 19:24:45	7.9	2.1	
3/30/2005 19:25:00	7.5	2.1	
3/30/2005 19:25:15	7.4	2.1	
3/30/2005 19:25:30	8.0	2.0	
3/30/2005 19:25:45	8.0	2.0	
3/30/2005 19:26:00	7.9	2.0	
3/30/2005 19:26:15	7.8	2.0	
3/30/2005 19:26:30	7.6	2.0	
3/30/2005 19:26:45	8.0	2.0	
3/30/2005 19:27:00	8.2	2.0	
3/30/2005 19:27:15	8.2	2.0	
3/30/2005 19:27:30	8.0	2.0	
3/30/2005 19:27:45	7.4	2.0	
3/30/2005 19:28:00	7.7	2.0	
3/30/2005 19:28:15	7.9	2.0	
3/30/2005 19:28:30	8.0	2.0	
3/30/2005 19:28:45	7.9	2.0	
3/30/2005 19:29:00	7.7	2.0	
3/30/2005 19:29:15	7.8	2.0	
3/30/2005 19:29:30	8.2	2.0	
3/30/2005 19:29:45	8.1	2.0	
3/30/2005 19:30:00	8.1	2.0	
3/30/2005 19:30:15	7.9	2.0	
3/30/2005 19:30:30	7.9	2.0	
3/30/2005 19:30:45	7.9	2.0	
3/30/2005 19:31:00	8.0	2.0	
3/30/2005 19:31:15	7.8	2.0	
3/30/2005 19:31:30	7.8	2.1	
3/30/2005 19:31:45	7.7	2.1	
3/30/2005 19:32:00	8.1	2.1	
3/30/2005 19:32:15	8.0	2.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 19:32:30	7.9	2.1	
3/30/2005 19:32:45	7.9	2.1	
3/30/2005 19:33:00	7.8	2.1	
3/30/2005 19:33:15	8.0	2.1	
3/30/2005 19:33:30	8.2	2.1	
3/30/2005 19:33:45	7.8	2.1	
3/30/2005 19:34:00	7.6	2.1	
3/30/2005 19:34:15	7.4	2.1	
3/30/2005 19:34:30	7.8	2.0	
3/30/2005 19:34:45	8.0	2.0	
3/30/2005 19:35:00	7.9	2.0	
3/30/2005 19:35:15	7.9	2.0	
3/30/2005 19:35:30	7.6	2.0	
3/30/2005 19:35:45	7.8	2.0	
3/30/2005 19:36:00	8.2	2.0	
3/30/2005 19:36:15	8.2	2.0	
3/30/2005 19:36:30	8.1	2.0	
3/30/2005 19:36:45	7.6	2.0	
3/30/2005 19:37:00	7.6	2.0	
3/30/2005 19:37:15	7.9	2.0	
3/30/2005 19:37:30	8.1	2.0	
3/30/2005 19:37:45	7.8	2.0	
3/30/2005 19:38:00	7.6	2.0	
3/30/2005 19:38:15	7.5	2.0	
3/30/2005 19:38:30	7.9	2.0	
3/30/2005 19:38:45	8.0	2.0	
3/30/2005 19:39:00	8.0	2.0	
3/30/2005 19:39:15	8.0	2.0	
3/30/2005 19:39:30	7.8	2.0	
3/30/2005 19:39:45	7.8	2.0	
3/30/2005 19:40:00	7.8	2.0	
3/30/2005 19:40:15	7.7	2.0	
3/30/2005 19:40:30	7.8	1.9	
3/30/2005 19:40:45	7.7	1.9	
3/30/2005 19:41:00	7.9	1.9	End Run No. BO-1-3 - Blackburn Condition #1
3/30/2005 19:41:15	8.1	1.9	
3/30/2005 19:41:30	8.0	1.9	
3/30/2005 19:41:45	8.1	1.9	
3/30/2005 19:42:00	8.6	1.9	
3/30/2005 19:42:15	2.5	1.9	
3/30/2005 19:42:30	1.2	1.9	
3/30/2005 19:42:45	0.8	1.9	
3/30/2005 19:43:00	0.7	1.9	
3/30/2005 19:43:15	0.7	1.9	Calibration - 1st Injection
3/30/2005 19:43:30	1.0	0.2	0.2 Zero Methane
3/30/2005 19:43:45	0.9	0.2	
3/30/2005 19:44:00	0.9	0.2	
3/30/2005 19:44:15	0.9	0.2	
3/30/2005 19:44:30	0.9	0.2	
3/30/2005 19:44:45	0.9	0.2	
3/30/2005 19:45:00	0.8	0.2	Calibration
3/30/2005 19:45:15	0.8	0.2	0.7 Zero Propane/N_2
3/30/2005 19:45:30	0.8	0.2	
3/30/2005 19:45:45	0.5	0.2	
3/30/2005 19:46:00	0.5	0.2	
3/30/2005 19:46:15	0.5	0.2	Calibration - 2nd Injection
3/30/2005 19:46:30	1.8	0.2	0.2 Zero Methane
3/30/2005 19:46:45	25.5	0.2	
3/30/2005 19:47:00	44.0	0.2	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 19:47:15	48.9	**0.2**	
3/30/2005 19:47:30	50.9	0.2	
3/30/2005 19:47:45	51.3	0.2	**Calibration**
3/30/2005 19:48:00	**51.5**	0.2	**51.4 50.0 ppm Propane/N_2**
3/30/2005 19:48:15	**51.5**	0.2	
3/30/2005 19:48:30	**51.5**	0.2	
3/30/2005 19:48:45	**51.2**	0.2	
3/30/2005 19:49:00	51.1	0.2	
3/30/2005 19:49:15	38.9	0.2	**Calibration - 3rd Injection**
3/30/2005 19:49:30	49.2	**0.2**	**0.2 Zero Methane**
3/30/2005 19:49:45	50.7	**0.2**	
3/30/2005 19:50:00	65.2	**0.2**	
3/30/2005 19:50:15	20.4	**0.2**	
3/30/2005 19:50:30	17.9	0.2	**0.2 Average Zero Methane**
3/30/2005 19:50:45	17.2	0.2	
3/30/2005 19:51:00	17.0	0.2	
3/30/2005 19:51:15	16.8	0.2	
3/30/2005 19:51:30	16.8	0.2	
3/30/2005 19:51:45	16.4	0.2	
3/30/2005 19:52:00	16.4	0.2	
3/30/2005 19:52:15	16.3	0.2	**Calibration - 1st Injection**
3/30/2005 19:52:30	16.6	**49.4**	**49.4 50.0 ppm Methane**
3/30/2005 19:52:45	16.6	**49.4**	
3/30/2005 19:53:00	16.5	**49.4**	
3/30/2005 19:53:15	16.5	**49.4**	
3/30/2005 19:53:30	16.5	49.4	
3/30/2005 19:53:45	16.4	49.4	
3/30/2005 19:54:00	16.4	49.4	
3/30/2005 19:54:15	16.4	49.4	
3/30/2005 19:54:30	16.4	49.4	
3/30/2005 19:54:45	16.1	49.4	
3/30/2005 19:55:00	16.1	49.4	
3/30/2005 19:55:15	16.0	49.4	**Calibration - 2nd Injection**
3/30/2005 19:55:30	16.3	**49.8**	**49.8 50.0 ppm Methane**
3/30/2005 19:55:45	16.3	**49.8**	
3/30/2005 19:56:00	16.3	**49.8**	
3/30/2005 19:56:15	16.3	**49.8**	
3/30/2005 19:56:30	16.2	49.8	
3/30/2005 19:56:45	16.2	49.8	
3/30/2005 19:57:00	16.2	49.8	
3/30/2005 19:57:15	16.2	49.8	
3/30/2005 19:57:30	16.2	49.8	
3/30/2005 19:57:45	15.9	49.8	
3/30/2005 19:58:00	15.9	49.8	
3/30/2005 19:58:15	15.9	49.8	**Calibration - 3rd Injection**
3/30/2005 19:58:30	16.2	**49.5**	**49.5 50.0 ppm Methane**
3/30/2005 19:58:45	16.2	**49.5**	
3/30/2005 19:59:00	16.1	**49.5**	
3/30/2005 19:59:15	16.1	**49.5**	
3/30/2005 19:59:30	12.3	49.5	**49.6 Average 50.0 ppm Methane**
3/30/2005 19:59:45	8.5	49.5	
3/30/2005 20:00:00	10.7	49.5	
3/30/2005 20:00:15	5.9	49.5	
3/30/2005 20:00:30	2.2	49.5	
3/30/2005 20:00:45	1.2	49.5	
3/30/2005 20:01:00	0.6	49.5	
3/30/2005 20:01:15	0.6	49.5	
3/30/2005 20:01:30	0.8	-0.1	
3/30/2005 20:01:45	0.8	-0.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/30/2005 20:02:00	0.8	-0.1	
3/30/2005 20:02:15	0.8	-0.1	
3/30/2005 20:02:30	0.8	-0.1	
3/30/2005 20:02:45	0.8	-0.1	
3/30/2005 20:03:00	0.8	-0.1	
3/30/2005 20:03:15	0.7	-0.1	
3/30/2005 20:03:30	0.7	-0.1	
3/30/2005 20:03:45	0.4	-0.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 7:08:00	0.2	-0.1	
3/31/2005 7:08:15	0.2	-0.1	
3/31/2005 7:08:30	0.2	-0.1	
3/31/2005 7:08:45	0.2	-0.1	
3/31/2005 7:09:00	0.4	-0.1	
3/31/2005 7:09:15	0.5	-0.1	
3/31/2005 7:09:30	0.5	-0.1	
3/31/2005 7:09:45	0.5	-0.1	
3/31/2005 7:10:00	0.5	-0.1	
3/31/2005 7:10:15	9.5	-0.1	
3/31/2005 7:10:30	5.2	-0.1	
3/31/2005 7:10:45	0.4	-0.1	
3/31/2005 7:11:00	0.1	-0.1	
3/31/2005 7:11:15	0.0	-0.1	
3/31/2005 7:11:30	0.0	-0.1	
3/31/2005 7:11:45	0.1	-0.1	**Calibration**
3/31/2005 7:12:00	**0.3**	-0.1	**0.4 Zero Propane/N_2**
3/31/2005 7:12:15	**0.4**	-0.1	
3/31/2005 7:12:30	**0.4**	-0.1	
3/31/2005 7:12:45	**0.4**	-0.1	
3/31/2005 7:13:00	0.4	-0.1	
3/31/2005 7:13:15	0.4	-0.1	
3/31/2005 7:13:30	13.5	-0.1	
3/31/2005 7:13:45	29.6	-0.1	
3/31/2005 7:14:00	43.3	-0.1	
3/31/2005 7:14:15	49.0	-0.1	
3/31/2005 7:14:30	49.9	-0.1	
3/31/2005 7:14:45	50.1	-0.1	
3/31/2005 7:15:00	50.4	-0.1	
3/31/2005 7:15:15	50.5	-0.1	
3/31/2005 7:15:30	50.8	-0.1	
3/31/2005 7:15:45	50.9	-0.1	
3/31/2005 7:16:00	50.7	-0.1	
3/31/2005 7:16:15	50.2	-0.1	
3/31/2005 7:16:30	50.3	-0.1	
3/31/2005 7:16:45	50.4	-0.1	
3/31/2005 7:17:00	50.5	-0.1	
3/31/2005 7:17:15	50.3	-0.1	
3/31/2005 7:17:30	39.8	-0.1	
3/31/2005 7:17:45	71.5	-0.1	**Calibration - 1st Injection**
3/31/2005 7:18:00	85.4	**0.1**	**0.1 Zero Methane**
3/31/2005 7:18:15	86.4	**0.1**	
3/31/2005 7:18:30	86.9	**0.1**	
3/31/2005 7:18:45	87.4	**0.1**	
3/31/2005 7:19:00	87.8	0.1	
3/31/2005 7:19:15	88.3	0.1	
3/31/2005 7:19:30	88.7	0.1	
3/31/2005 7:19:45	89.0	0.1	
3/31/2005 7:20:00	89.2	0.1	
3/31/2005 7:20:15	89.1	0.1	
3/31/2005 7:20:30	89.0	0.1	
3/31/2005 7:20:45	68.2	0.1	**Calibration - 2nd Injection**
3/31/2005 7:21:00	56.3	**0.1**	**0.1 Zero Methane**
3/31/2005 7:21:15	52.9	**0.1**	
3/31/2005 7:21:30	52.7	**0.1**	
3/31/2005 7:21:45	52.6	**0.1**	
3/31/2005 7:22:00	52.5	0.1	
3/31/2005 7:22:15	52.4	0.1	
3/31/2005 7:22:30	50.7	0.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 7:22:45	50.0	0.1	
3/31/2005 7:23:00	49.9	0.1	
3/31/2005 7:23:15	49.5	0.1	
3/31/2005 7:23:30	49.2	0.1	
3/31/2005 7:23:45	49.1	0.1	Calibration - 3rd Injection
3/31/2005 7:24:00	**49.3**	**0.1**	**0.1 Zero Methane**
3/31/2005 7:24:15	**49.6**	**0.1**	**49.4 50.0 ppm Propane/N_2**
3/31/2005 7:24:30	**49.5**	**0.1**	
3/31/2005 7:24:45	**49.4**	**0.1**	
3/31/2005 7:25:00	49.3	0.1	**0.1 Average Zero Methane**
3/31/2005 7:25:15	49.2	0.1	
3/31/2005 7:25:30	49.1	0.1	
3/31/2005 7:25:45	40.3	0.1	
3/31/2005 7:26:00	75.8	0.1	
3/31/2005 7:26:15	82.5	0.1	Calibration
3/31/2005 7:26:30	**82.5**	0.1	**82.6 84.2 ppm Propane/N_2**
3/31/2005 7:26:45	**82.5**	0.1	
3/31/2005 7:27:00	**82.6**	0.2	
3/31/2005 7:27:15	**82.6**	0.2	
3/31/2005 7:27:30	81.6	0.2	
3/31/2005 7:27:45	54.8	0.2	
3/31/2005 7:28:00	28.1	0.2	
3/31/2005 7:28:15	25.1	0.2	
3/31/2005 7:28:30	24.8	0.2	
3/31/2005 7:28:45	24.8	0.2	
3/31/2005 7:29:00	24.7	0.2	Calibration
3/31/2005 7:29:15	**24.5**	0.2	**24.4 25.0 ppm Propane/N_2**
3/31/2005 7:29:30	**24.4**	0.2	
3/31/2005 7:29:45	**24.4**	0.2	
3/31/2005 7:30:00	**24.5**	0.1	
3/31/2005 7:30:15	24.6	0.1	
3/31/2005 7:30:30	18.8	0.1	
3/31/2005 7:30:45	73.7	0.1	
3/31/2005 7:31:00	20.7	0.1	
3/31/2005 7:31:15	17.4	0.1	
3/31/2005 7:31:30	16.5	0.1	
3/31/2005 7:31:45	16.3	0.1	
3/31/2005 7:32:00	16.1	0.1	
3/31/2005 7:32:15	15.8	0.1	
3/31/2005 7:32:30	15.7	0.1	
3/31/2005 7:32:45	15.6	0.1	
3/31/2005 7:33:00	15.8	38.0	Calibration - 1st Injection
3/31/2005 7:33:15	15.9	**50.6**	**50.6 50.0 ppm Methane**
3/31/2005 7:33:30	15.8	**50.6**	
3/31/2005 7:33:45	15.8	**50.6**	
3/31/2005 7:34:00	15.8	**50.6**	
3/31/2005 7:34:15	15.8	50.6	
3/31/2005 7:34:30	15.8	50.6	
3/31/2005 7:34:45	15.7	50.6	
3/31/2005 7:35:00	15.8	50.6	
3/31/2005 7:35:15	15.5	50.6	
3/31/2005 7:35:30	15.4	50.6	
3/31/2005 7:35:45	15.4	50.6	
3/31/2005 7:36:00	15.6	50.5	Calibration - 2nd Injection
3/31/2005 7:36:15	15.7	**50.5**	**50.5 50.0 ppm Methane**
3/31/2005 7:36:30	15.7	**50.5**	
3/31/2005 7:36:45	15.7	**50.5**	
3/31/2005 7:37:00	15.7	**50.5**	
3/31/2005 7:37:15	15.7	50.5	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 7:37:30	15.7	50.5	
3/31/2005 7:37:45	15.6	50.5	
3/31/2005 7:38:00	15.6	50.5	
3/31/2005 7:38:15	15.4	50.5	
3/31/2005 7:38:30	15.4	50.5	
3/31/2005 7:38:45	15.3	50.5	
3/31/2005 7:39:00	15.6	50.6	**Calibration - 3rd Injection**
3/31/2005 7:39:15	15.6	**50.7**	**50.7 50.0 ppm Methane**
3/31/2005 7:39:30	15.6	**50.7**	
3/31/2005 7:39:45	15.6	**50.7**	
3/31/2005 7:40:00	11.8	**50.7**	
3/31/2005 7:40:15	20.8	50.7	**50.6 Average 50.0 ppm Methane**
3/31/2005 7:40:30	25.0	50.7	
3/31/2005 7:40:45	25.1	50.7	
3/31/2005 7:41:00	25.1	50.7	
3/31/2005 7:41:15	24.9	50.7	
3/31/2005 7:41:30	24.8	50.7	
3/31/2005 7:41:45	24.8	50.7	
3/31/2005 7:42:00	25.0	76.7	**Calibration - 1st Injection**
3/31/2005 7:42:15	25.1	**85.4**	**85.4 84.2 ppm Methane**
3/31/2005 7:42:30	25.1	**85.4**	
3/31/2005 7:42:45	25.1	**85.4**	
3/31/2005 7:43:00	25.1	**85.4**	
3/31/2005 7:43:15	25.1	85.4	
3/31/2005 7:43:30	25.1	85.4	
3/31/2005 7:43:45	25.1	85.4	
3/31/2005 7:44:00	25.0	85.4	
3/31/2005 7:44:15	24.8	85.4	
3/31/2005 7:44:30	24.8	85.4	
3/31/2005 7:44:45	24.8	85.4	
3/31/2005 7:45:00	25.0	85.4	**Calibration - 2nd Injection**
3/31/2005 7:45:15	25.1	**85.5**	**85.5 84.2 ppm Methane**
3/31/2005 7:45:30	25.1	**85.5**	
3/31/2005 7:45:45	25.1	**85.5**	
3/31/2005 7:46:00	25.0	**85.5**	
3/31/2005 7:46:15	25.1	85.5	
3/31/2005 7:46:30	25.1	85.5	
3/31/2005 7:46:45	25.1	85.5	
3/31/2005 7:47:00	25.1	85.5	
3/31/2005 7:47:15	24.9	85.5	
3/31/2005 7:47:30	24.8	85.5	
3/31/2005 7:47:45	24.8	85.5	
3/31/2005 7:48:00	25.0	85.3	**Calibration - 3rd Injection**
3/31/2005 7:48:15	25.1	**85.3**	**85.3 84.2 ppm Methane**
3/31/2005 7:48:30	25.1	**85.3**	
3/31/2005 7:48:45	20.8	**85.3**	
3/31/2005 7:49:00	10.8	**85.3**	
3/31/2005 7:49:15	8.4	85.3	**85.4 Average 84.2 ppm Methane**
3/31/2005 7:49:30	8.3	85.3	
3/31/2005 7:49:45	8.2	85.3	
3/31/2005 7:50:00	8.2	85.3	
3/31/2005 7:50:15	8.0	85.3	
3/31/2005 7:50:30	8.0	85.3	
3/31/2005 7:50:45	8.0	85.3	
3/31/2005 7:51:00	8.2	40.3	**Calibration - 1st Injection**
3/31/2005 7:51:15	8.2	**25.3**	**25.3 25.0 ppm Methane**
3/31/2005 7:51:30	8.2	**25.3**	
3/31/2005 7:51:45	8.2	**25.3**	
3/31/2005 7:52:00	8.2	**25.3**	

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3/31/2005 7:52:15	8.2	25.3	
3/31/2005 7:52:30	8.2	25.3	
3/31/2005 7:52:45	8.2	25.3	
3/31/2005 7:53:00	8.2	25.3	
3/31/2005 7:53:15	8.0	25.3	
3/31/2005 7:53:30	7.9	25.3	
3/31/2005 7:53:45	7.9	25.3	
3/31/2005 7:54:00	8.1	25.5	**Calibration - 2nd Injection**
3/31/2005 7:54:15	8.2	**25.5**	**25.5 25.0 ppm Methane**
3/31/2005 7:54:30	8.2	**25.5**	
3/31/2005 7:54:45	8.2	**25.5**	
3/31/2005 7:55:00	8.2	**25.5**	
3/31/2005 7:55:15	8.2	25.5	
3/31/2005 7:55:30	8.2	25.5	
3/31/2005 7:55:45	8.2	25.5	
3/31/2005 7:56:00	8.2	25.5	
3/31/2005 7:56:15	8.0	25.5	
3/31/2005 7:56:30	7.9	25.5	
3/31/2005 7:56:45	7.9	25.5	
3/31/2005 7:57:00	8.2	25.5	**Calibration - 3rd Injection**
3/31/2005 7:57:15	8.2	**25.5**	**25.5 25.0 ppm Methane**
3/31/2005 7:57:30	8.2	**25.5**	
3/31/2005 7:57:45	8.2	**25.5**	
3/31/2005 7:58:00	8.2	**25.5**	
3/31/2005 7:58:15	7.9	25.5	**25.5 Average 25.0 ppm Methane**
3/31/2005 7:58:30	7.8	25.5	
3/31/2005 7:58:45	7.0	25.5	
3/31/2005 7:59:00	3.3	25.5	
3/31/2005 7:59:15	0.6	25.5	
3/31/2005 7:59:30	0.4	25.5	
3/31/2005 7:59:45	0.4	25.5	
3/31/2005 8:00:00	0.6	6.8	
3/31/2005 8:00:15	0.6	0.6	
3/31/2005 8:00:30	0.7	0.6	
3/31/2005 8:00:45	0.6	0.6	
3/31/2005 8:01:00	0.6	0.6	
3/31/2005 8:01:15	0.6	0.6	
3/31/2005 8:01:30	0.6	0.6	
3/31/2005 8:01:45	0.6	0.6	
3/31/2005 8:02:00	0.6	0.6	
3/31/2005 8:02:15	0.3	0.6	
3/31/2005 8:02:30	0.3	0.6	
3/31/2005 8:02:45	0.3	0.6	
3/31/2005 8:03:00	0.5	0.5	
3/31/2005 8:03:15	0.5	0.4	
3/31/2005 8:03:30	1.7	0.4	
3/31/2005 8:03:45	7.6	0.4	
3/31/2005 8:04:00	5.2	0.4	
3/31/2005 8:04:15	1.2	0.4	
3/31/2005 8:04:30	0.7	0.4	
3/31/2005 8:04:45	0.6	0.4	
3/31/2005 8:05:00	0.6	0.4	
3/31/2005 8:05:15	0.3	0.4	
3/31/2005 8:05:30	0.3	0.4	
3/31/2005 8:05:45	0.2	0.4	
3/31/2005 8:06:00	0.4	0.7	
3/31/2005 8:06:15	0.5	0.8	
3/31/2005 8:06:30	0.5	0.8	
3/31/2005 8:06:45	0.5	0.8	

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3/31/2005 8:07:00	0.5	0.8	
3/31/2005 8:07:15	5.8	0.8	
3/31/2005 8:07:30	26.8	0.8	
3/31/2005 8:07:45	2.2	0.8	
3/31/2005 8:08:00	0.7	0.8	
3/31/2005 8:08:15	0.4	0.8	
3/31/2005 8:08:30	0.2	0.8	
3/31/2005 8:08:45	0.3	0.8	
3/31/2005 8:09:00	0.4	0.7	
3/31/2005 8:09:15	0.5	0.7	
3/31/2005 8:09:30	0.5	0.7	
3/31/2005 8:09:45	1.5	0.7	
3/31/2005 8:10:00	7.1	0.7	
3/31/2005 8:10:15	7.9	0.7	
3/31/2005 8:10:30	7.9	0.7	
3/31/2005 8:10:45	8.3	0.7	
3/31/2005 8:11:00	8.6	0.7	
3/31/2005 8:11:15	8.4	0.7	
3/31/2005 8:11:30	8.2	0.7	
3/31/2005 8:11:45	8.1	0.7	
3/31/2005 8:12:00	8.7	1.9	
3/31/2005 8:12:15	8.8	2.4	
3/31/2005 8:12:30	8.6	2.4	
3/31/2005 8:12:45	8.4	2.4	**Begin Run No. BO-2-1 - Blackburn Condition #2**
3/31/2005 8:13:00	**8.2**	**2.4**	
3/31/2005 8:13:15	**8.5**	**2.4**	
3/31/2005 8:13:30	**8.8**	**2.4**	
3/31/2005 8:13:45	**8.6**	**2.4**	
3/31/2005 8:14:00	**8.4**	**2.4**	
3/31/2005 8:14:15	**8.0**	**2.4**	
3/31/2005 8:14:30	**8.0**	**2.4**	
3/31/2005 8:14:45	**8.3**	**2.4**	
3/31/2005 8:15:00	**8.3**	**2.3**	
3/31/2005 8:15:15	**8.1**	**2.3**	
3/31/2005 8:15:30	**7.9**	**2.3**	
3/31/2005 8:15:45	**8.0**	**2.3**	
3/31/2005 8:16:00	**8.5**	**2.3**	
3/31/2005 8:16:15	**8.6**	**2.3**	
3/31/2005 8:16:30	**8.9**	**2.3**	
3/31/2005 8:16:45	**8.7**	**2.3**	
3/31/2005 8:17:00	**8.5**	**2.3**	
3/31/2005 8:17:15	**8.6**	**2.3**	
3/31/2005 8:17:30	**8.5**	**2.3**	
3/31/2005 8:17:45	**8.2**	**2.3**	
3/31/2005 8:18:00	**8.1**	**2.2**	
3/31/2005 8:18:15	**8.0**	**2.2**	
3/31/2005 8:18:30	**8.3**	**2.2**	
3/31/2005 8:18:45	**8.6**	**2.2**	
3/31/2005 8:19:00	**8.4**	**2.2**	
3/31/2005 8:19:15	**8.5**	**2.2**	
3/31/2005 8:19:30	**8.3**	**2.2**	
3/31/2005 8:19:45	**8.4**	**2.2**	
3/31/2005 8:20:00	**8.7**	**2.2**	
3/31/2005 8:20:15	**8.4**	**2.2**	
3/31/2005 8:20:30	**8.0**	**2.2**	
3/31/2005 8:20:45	**7.9**	**2.2**	
3/31/2005 8:21:00	**8.1**	**2.2**	
3/31/2005 8:21:15	**8.7**	**2.2**	
3/31/2005 8:21:30	**8.9**	**2.2**	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 8:21:45	8.8	2.2	
3/31/2005 8:22:00	8.6	2.2	
3/31/2005 8:22:15	8.3	2.2	
3/31/2005 8:22:30	8.6	2.2	
3/31/2005 8:22:45	8.6	2.2	
3/31/2005 8:23:00	8.3	2.2	
3/31/2005 8:23:15	7.9	2.2	
3/31/2005 8:23:30	7.6	2.2	
3/31/2005 8:23:45	8.0	2.2	
3/31/2005 8:24:00	8.6	2.2	
3/31/2005 8:24:15	8.6	2.2	
3/31/2005 8:24:30	8.4	2.2	
3/31/2005 8:24:45	8.2	2.2	
3/31/2005 8:25:00	8.2	2.2	
3/31/2005 8:25:15	8.8	2.2	
3/31/2005 8:25:30	8.7	2.2	
3/31/2005 8:25:45	8.4	2.2	
3/31/2005 8:26:00	8.1	2.2	
3/31/2005 8:26:15	7.9	2.2	
3/31/2005 8:26:30	8.2	2.2	
3/31/2005 8:26:45	8.5	2.2	
3/31/2005 8:27:00	8.9	2.2	
3/31/2005 8:27:15	8.8	2.2	
3/31/2005 8:27:30	8.5	2.2	
3/31/2005 8:27:45	8.9	2.2	
3/31/2005 8:28:00	8.9	2.2	
3/31/2005 8:28:15	8.7	2.2	
3/31/2005 8:28:30	8.4	2.2	
3/31/2005 8:28:45	8.1	2.2	
3/31/2005 8:29:00	8.1	2.2	
3/31/2005 8:29:15	8.4	2.2	
3/31/2005 8:29:30	8.4	2.2	
3/31/2005 8:29:45	8.6	2.2	
3/31/2005 8:30:00	8.9	2.1	
3/31/2005 8:30:15	8.8	2.1	
3/31/2005 8:30:30	9.2	2.1	
3/31/2005 8:30:45	9.0	2.1	
3/31/2005 8:31:00	8.7	2.1	
3/31/2005 8:31:15	8.4	2.1	
3/31/2005 8:31:30	8.2	2.1	
3/31/2005 8:31:45	8.6	2.1	
3/31/2005 8:32:00	8.9	2.1	
3/31/2005 8:32:15	8.9	2.1	
3/31/2005 8:32:30	8.8	2.1	
3/31/2005 8:32:45	8.5	2.1	
3/31/2005 8:33:00	9.0	2.2	
3/31/2005 8:33:15	9.3	2.2	
3/31/2005 8:33:30	9.0	2.2	
3/31/2005 8:33:45	8.7	2.2	
3/31/2005 8:34:00	8.4	2.2	
3/31/2005 8:34:15	8.4	2.2	
3/31/2005 8:34:30	8.7	2.2	
3/31/2005 8:34:45	8.7	2.2	
3/31/2005 8:35:00	8.8	2.2	
3/31/2005 8:35:15	8.6	2.2	
3/31/2005 8:35:30	8.4	2.2	
3/31/2005 8:35:45	8.8	2.2	
3/31/2005 8:36:00	8.9	2.2	
3/31/2005 8:36:15	8.5	2.2	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 8:36:30	8.3	2.2	
3/31/2005 8:36:45	8.2	2.2	
3/31/2005 8:37:00	8.4	2.2	
3/31/2005 8:37:15	8.7	2.2	
3/31/2005 8:37:30	8.8	2.2	
3/31/2005 8:37:45	9.0	2.2	
3/31/2005 8:38:00	8.8	2.2	
3/31/2005 8:38:15	8.9	2.2	
3/31/2005 8:38:30	8.9	2.2	
3/31/2005 8:38:45	8.8	2.2	
3/31/2005 8:39:00	8.7	2.3	
3/31/2005 8:39:15	8.4	2.3	
3/31/2005 8:39:30	8.4	2.3	
3/31/2005 8:39:45	8.8	2.3	
3/31/2005 8:40:00	8.8	2.3	
3/31/2005 8:40:15	8.9	2.3	
3/31/2005 8:40:30	8.8	2.3	
3/31/2005 8:40:45	8.7	2.3	
3/31/2005 8:41:00	8.9	2.3	
3/31/2005 8:41:15	8.8	2.3	
3/31/2005 8:41:30	8.3	2.3	
3/31/2005 8:41:45	8.0	2.3	
3/31/2005 8:42:00	8.1	2.3	
3/31/2005 8:42:15	8.6	2.3	
3/31/2005 8:42:30	9.0	2.3	
3/31/2005 8:42:45	9.0	2.3	
3/31/2005 8:43:00	8.9	2.3	Change of Ports
3/31/2005 8:43:15	8.6	2.3	
3/31/2005 8:43:30	8.7	2.3	
3/31/2005 8:43:45	9.0	2.3	
3/31/2005 8:44:00	8.8	2.3	
3/31/2005 8:44:15	6.4	2.3	
3/31/2005 8:44:30	1.7	2.3	
3/31/2005 8:44:45	1.2	2.3	
3/31/2005 8:45:00	1.3	2.5	
3/31/2005 8:45:15	1.3	2.6	
3/31/2005 8:45:30	1.3	2.6	
3/31/2005 8:45:45	1.2	2.6	
3/31/2005 8:46:00	1.3	2.6	
3/31/2005 8:46:15	3.0	2.6	
3/31/2005 8:46:30	7.9	2.6	
3/31/2005 8:46:45	8.2	2.6	Resume Testing
3/31/2005 8:47:00	8.0	2.6	
3/31/2005 8:47:15	7.6	2.6	
3/31/2005 8:47:30	7.8	2.6	
3/31/2005 8:47:45	8.3	2.6	
3/31/2005 8:48:00	9.0	2.3	
3/31/2005 8:48:15	9.1	2.2	
3/31/2005 8:48:30	8.8	2.2	
3/31/2005 8:48:45	8.8	2.2	
3/31/2005 8:49:00	9.1	2.2	
3/31/2005 8:49:15	8.9	2.2	
3/31/2005 8:49:30	8.6	2.2	
3/31/2005 8:49:45	8.3	2.2	
3/31/2005 8:50:00	8.2	2.2	
3/31/2005 8:50:15	8.5	2.2	
3/31/2005 8:50:30	8.5	2.2	
3/31/2005 8:50:45	8.7	2.2	
3/31/2005 8:51:00	8.9	2.2	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 8:51:15	8.7	2.2	
3/31/2005 8:51:30	9.0	2.2	
3/31/2005 8:51:45	9.1	2.2	
3/31/2005 8:52:00	8.8	2.2	
3/31/2005 8:52:15	8.4	2.2	
3/31/2005 8:52:30	8.2	2.2	
3/31/2005 8:52:45	8.3	2.2	
3/31/2005 8:53:00	8.6	2.2	
3/31/2005 8:53:15	8.5	2.2	
3/31/2005 8:53:30	8.7	2.2	
3/31/2005 8:53:45	8.7	2.2	
3/31/2005 8:54:00	8.8	2.2	
3/31/2005 8:54:15	9.1	2.2	
3/31/2005 8:54:30	8.9	2.2	
3/31/2005 8:54:45	8.6	2.2	
3/31/2005 8:55:00	8.2	2.2	
3/31/2005 8:55:15	8.1	2.2	
3/31/2005 8:55:30	8.5	2.2	
3/31/2005 8:55:45	8.7	2.2	
3/31/2005 8:56:00	8.8	2.2	
3/31/2005 8:56:15	8.7	2.2	
3/31/2005 8:56:30	8.4	2.2	
3/31/2005 8:56:45	8.7	2.2	
3/31/2005 8:57:00	8.9	2.3	
3/31/2005 8:57:15	8.7	2.3	
3/31/2005 8:57:30	8.4	2.3	
3/31/2005 8:57:45	8.1	2.3	
3/31/2005 8:58:00	8.2	2.3	
3/31/2005 8:58:15	8.5	2.3	
3/31/2005 8:58:30	8.8	2.3	
3/31/2005 8:58:45	9.1	2.3	
3/31/2005 8:59:00	9.0	2.3	
3/31/2005 8:59:15	8.8	2.3	
3/31/2005 8:59:30	9.0	2.3	
3/31/2005 8:59:45	8.8	2.3	
3/31/2005 9:00:00	8.6	2.4	
3/31/2005 9:00:15	8.3	2.5	
3/31/2005 9:00:30	8.1	2.5	
3/31/2005 9:00:45	8.5	2.5	
3/31/2005 9:01:00	8.5	2.5	
3/31/2005 9:01:15	8.6	2.5	
3/31/2005 9:01:30	8.7	2.5	
3/31/2005 9:01:45	8.5	2.5	
3/31/2005 9:02:00	8.9	2.5	
3/31/2005 9:02:15	8.9	2.5	
3/31/2005 9:02:30	8.5	2.5	
3/31/2005 9:02:45	8.1	2.5	
3/31/2005 9:03:00	8.0	2.4	
3/31/2005 9:03:15	8.2	2.3	
3/31/2005 9:03:30	8.4	2.3	
3/31/2005 9:03:45	8.4	2.3	
3/31/2005 9:04:00	8.4	2.3	
3/31/2005 9:04:15	8.4	2.3	
3/31/2005 9:04:30	8.4	2.3	
3/31/2005 9:04:45	9.2	2.3	
3/31/2005 9:05:00	9.3	2.3	
3/31/2005 9:05:15	8.7	2.3	
3/31/2005 9:05:30	8.3	2.3	
3/31/2005 9:05:45	8.1	2.3	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 9:06:00	8.6	2.3	
3/31/2005 9:06:15	8.9	2.3	
3/31/2005 9:06:30	8.8	2.3	
3/31/2005 9:06:45	8.6	2.3	
3/31/2005 9:07:00	8.4	2.3	
3/31/2005 9:07:15	8.6	2.3	
3/31/2005 9:07:30	8.8	2.3	
3/31/2005 9:07:45	8.6	2.3	
3/31/2005 9:08:00	8.4	2.3	
3/31/2005 9:08:15	8.1	2.3	
3/31/2005 9:08:30	8.1	2.3	
3/31/2005 9:08:45	8.5	2.3	
3/31/2005 9:09:00	8.5	2.3	
3/31/2005 9:09:15	8.6	2.3	
3/31/2005 9:09:30	8.4	2.3	
3/31/2005 9:09:45	8.3	2.3	
3/31/2005 9:10:00	8.9	2.3	
3/31/2005 9:10:15	8.9	2.3	
3/31/2005 9:10:30	8.6	2.3	
3/31/2005 9:10:45	8.4	2.3	
3/31/2005 9:11:00	8.2	2.3	
3/31/2005 9:11:15	8.4	2.3	
3/31/2005 9:11:30	8.6	2.3	
3/31/2005 9:11:45	8.8	2.3	
3/31/2005 9:12:00	8.8	2.3	
3/31/2005 9:12:15	8.6	2.3	
3/31/2005 9:12:30	8.7	2.3	
3/31/2005 9:12:45	9.0	2.3	
3/31/2005 9:13:00	8.8	2.3	
3/31/2005 9:13:15	8.7	2.3	
3/31/2005 9:13:30	8.5	2.3	
3/31/2005 9:13:45	8.4	2.3	
3/31/2005 9:14:00	8.8	2.3	
3/31/2005 9:14:15	8.8	2.3	
3/31/2005 9:14:30	8.6	2.3	
3/31/2005 9:14:45	8.4	2.3	
3/31/2005 9:15:00	8.3	2.3	
3/31/2005 9:15:15	8.7	2.3	
3/31/2005 9:15:30	8.8	2.3	
3/31/2005 9:15:45	8.6	2.3	
3/31/2005 9:16:00	8.3	2.3	
3/31/2005 9:16:15	8.0	2.3	
3/31/2005 9:16:30	8.3	2.3	
3/31/2005 9:16:45	8.5	2.3	
3/31/2005 9:17:00	8.7	2.3	End Run No. BO-2-1 - Blackburn Condition #2
3/31/2005 9:17:15	8.7	2.3	
3/31/2005 9:17:30	8.4	2.3	
3/31/2005 9:17:45	8.6	2.3	
3/31/2005 9:18:00	9.1	2.4	
3/31/2005 9:18:15	9.0	2.4	
3/31/2005 9:18:30	8.8	2.4	
3/31/2005 9:18:45	8.4	2.4	
3/31/2005 9:19:00	8.4	2.4	
3/31/2005 9:19:15	8.8	2.4	
3/31/2005 9:19:30	8.7	2.4	
3/31/2005 9:19:45	8.6	2.4	
3/31/2005 9:20:00	8.8	2.4	
3/31/2005 9:20:15	4.7	2.4	
3/31/2005 9:20:30	1.4	2.4	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 9:20:45	0.9	2.4	
3/31/2005 9:21:00	0.9	1.2	
3/31/2005 9:21:15	1.0	0.8	
3/31/2005 9:21:30	0.9	0.8	Calibration
3/31/2005 9:21:45	**0.9**	0.8	**0.8 Zero Propane/N_2**
3/31/2005 9:22:00	**0.8**	0.8	
3/31/2005 9:22:15	**0.8**	0.8	
3/31/2005 9:22:30	**0.8**	0.8	
3/31/2005 9:22:45	2.0	0.8	
3/31/2005 9:23:00	16.5	0.8	
3/31/2005 9:23:15	41.7	0.8	
3/31/2005 9:23:30	46.7	0.8	
3/31/2005 9:23:45	47.6	0.8	
3/31/2005 9:24:00	47.9	0.7	
3/31/2005 9:24:15	48.2	0.7	
3/31/2005 9:24:30	48.4	0.7	
3/31/2005 9:24:45	48.6	0.7	Calibration
3/31/2005 9:25:00	**48.6**	0.7	**48.6 50.0 ppm Propane/N_2**
3/31/2005 9:25:15	**48.6**	0.7	
3/31/2005 9:25:30	**48.6**	0.7	
3/31/2005 9:25:45	**48.6**	0.7	
3/31/2005 9:26:00	23.9	0.7	
3/31/2005 9:26:15	9.1	0.7	
3/31/2005 9:26:30	8.3	0.7	
3/31/2005 9:26:45	8.1	0.7	
3/31/2005 9:27:00	8.3	2.0	
3/31/2005 9:27:15	26.6	2.5	
3/31/2005 9:27:30	57.5	2.5	
3/31/2005 9:27:45	5.3	2.5	
3/31/2005 9:28:00	2.4	2.5	
3/31/2005 9:28:15	1.5	2.5	
3/31/2005 9:28:30	1.3	2.5	
3/31/2005 9:28:45	1.2	2.5	
3/31/2005 9:29:00	1.2	2.5	
3/31/2005 9:29:15	1.0	2.5	
3/31/2005 9:29:30	0.8	2.5	
3/31/2005 9:29:45	0.8	2.5	
3/31/2005 9:30:00	0.9	1.2	
3/31/2005 9:30:15	1.0	0.8	
3/31/2005 9:30:30	1.0	0.8	
3/31/2005 9:30:45	1.0	0.8	
3/31/2005 9:31:00	1.0	0.8	
3/31/2005 9:31:15	1.0	0.8	
3/31/2005 9:31:30	0.9	0.8	
3/31/2005 9:31:45	0.9	0.8	
3/31/2005 9:32:00	0.9	0.8	
3/31/2005 9:32:15	0.8	0.8	
3/31/2005 9:32:30	0.6	0.8	
3/31/2005 9:32:45	0.6	0.8	
3/31/2005 9:33:00	1.0	0.8	
3/31/2005 9:33:15	3.7	0.8	
3/31/2005 9:33:30	54.7	0.8	
3/31/2005 9:33:45	8.7	0.8	
3/31/2005 9:34:00	4.4	0.8	
3/31/2005 9:34:15	3.9	0.8	
3/31/2005 9:34:30	3.7	0.8	
3/31/2005 9:34:45	3.6	0.8	
3/31/2005 9:35:00	3.7	0.8	
3/31/2005 9:35:15	3.6	0.8	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 9:35:30	3.5	0.8	
3/31/2005 9:35:45	3.5	0.8	
3/31/2005 9:36:00	3.6	1.4	
3/31/2005 9:36:15	3.7	1.6	
3/31/2005 9:36:30	3.8	1.6	
3/31/2005 9:36:45	3.8	1.6	
3/31/2005 9:37:00	3.7	1.6	
3/31/2005 9:37:15	3.6	1.6	
3/31/2005 9:37:30	3.6	1.6	
3/31/2005 9:37:45	3.7	1.6	
3/31/2005 9:38:00	3.8	1.6	
3/31/2005 9:38:15	3.6	1.6	
3/31/2005 9:38:30	3.5	1.6	
3/31/2005 9:38:45	3.3	1.6	
3/31/2005 9:39:00	3.6	1.5	
3/31/2005 9:39:15	3.7	1.5	
3/31/2005 9:39:30	3.6	1.5	
3/31/2005 9:39:45	3.5	1.5	
3/31/2005 9:40:00	5.8	1.5	
3/31/2005 9:40:15	4.0	1.5	
3/31/2005 9:40:30	3.6	1.5	
3/31/2005 9:40:45	3.7	1.5	
3/31/2005 9:41:00	3.6	1.5	
3/31/2005 9:41:15	3.4	1.5	
3/31/2005 9:41:30	3.3	1.5	
3/31/2005 9:41:45	3.4	1.5	
3/31/2005 9:42:00	3.5	1.6	
3/31/2005 9:42:15	3.5	1.6	
3/31/2005 9:42:30	3.4	1.6	
3/31/2005 9:42:45	3.4	1.6	
3/31/2005 9:43:00	3.5	1.6	
3/31/2005 9:43:15	3.6	1.6	
3/31/2005 9:43:30	3.6	1.6	
3/31/2005 9:43:45	3.6	1.6	
3/31/2005 9:44:00	3.5	1.6	
3/31/2005 9:44:15	3.4	1.6	
3/31/2005 9:44:30	3.3	1.6	
3/31/2005 9:44:45	3.3	1.6	
3/31/2005 9:45:00	3.3	1.5	
3/31/2005 9:45:15	3.4	1.5	
3/31/2005 9:45:30	4.8	1.5	
3/31/2005 9:45:45	8.4	1.5	
3/31/2005 9:46:00	8.8	1.5	
3/31/2005 9:46:15	8.7	1.5	
3/31/2005 9:46:30	8.5	1.5	
3/31/2005 9:46:45	8.5	1.5	
3/31/2005 9:47:00	8.9	1.5	
3/31/2005 9:47:15	8.7	1.5	
3/31/2005 9:47:30	8.4	1.5	
3/31/2005 9:47:45	8.2	1.5	**Begin Run No. BO-2-2 - Blackburn Condition #2**
3/31/2005 9:48:00	**8.2**	**2.3**	
3/31/2005 9:48:15	**8.9**	**2.5**	
3/31/2005 9:48:30	**9.0**	**2.5**	
3/31/2005 9:48:45	**8.9**	**2.5**	
3/31/2005 9:49:00	**8.6**	**2.5**	
3/31/2005 9:49:15	**8.3**	**2.5**	
3/31/2005 9:49:30	**8.7**	**2.5**	
3/31/2005 9:49:45	**8.8**	**2.5**	
3/31/2005 9:50:00	**8.6**	**2.5**	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 9:50:15	8.3	2.5	
3/31/2005 9:50:30	8.0	2.5	
3/31/2005 9:50:45	8.3	2.5	
3/31/2005 9:51:00	8.8	2.5	
3/31/2005 9:51:15	8.9	2.5	
3/31/2005 9:51:30	8.6	2.5	
3/31/2005 9:51:45	8.3	2.5	
3/31/2005 9:52:00	8.3	2.5	
3/31/2005 9:52:15	8.6	2.5	
3/31/2005 9:52:30	8.5	2.5	
3/31/2005 9:52:45	8.3	2.5	
3/31/2005 9:53:00	8.0	2.5	
3/31/2005 9:53:15	7.7	2.5	
3/31/2005 9:53:30	8.2	2.5	
3/31/2005 9:53:45	8.6	2.5	
3/31/2005 9:54:00	8.8	2.5	
3/31/2005 9:54:15	8.7	2.5	
3/31/2005 9:54:30	8.5	2.5	
3/31/2005 9:54:45	8.9	2.5	
3/31/2005 9:55:00	9.0	2.5	
3/31/2005 9:55:15	8.7	2.5	
3/31/2005 9:55:30	8.4	2.5	
3/31/2005 9:55:45	8.2	2.5	
3/31/2005 9:56:00	8.3	2.5	
3/31/2005 9:56:15	8.6	2.5	
3/31/2005 9:56:30	8.4	2.5	
3/31/2005 9:56:45	8.4	2.5	
3/31/2005 9:57:00	8.5	2.5	
3/31/2005 9:57:15	8.7	2.5	
3/31/2005 9:57:30	9.0	2.5	
3/31/2005 9:57:45	8.9	2.5	
3/31/2005 9:58:00	8.7	2.5	
3/31/2005 9:58:15	8.4	2.5	
3/31/2005 9:58:30	8.2	2.5	
3/31/2005 9:58:45	8.6	2.5	
3/31/2005 9:59:00	9.1	2.5	
3/31/2005 9:59:15	9.0	2.5	
3/31/2005 9:59:30	8.6	2.5	
3/31/2005 9:59:45	8.3	2.5	
3/31/2005 10:00:00	8.7	2.5	
3/31/2005 10:00:15	9.1	2.5	
3/31/2005 10:00:30	8.8	2.5	
3/31/2005 10:00:45	8.4	2.5	
3/31/2005 10:01:00	8.0	2.5	
3/31/2005 10:01:15	8.1	2.5	
3/31/2005 10:01:30	8.4	2.5	
3/31/2005 10:01:45	8.3	2.5	
3/31/2005 10:02:00	8.4	2.5	
3/31/2005 10:02:15	8.1	2.5	
3/31/2005 10:02:30	7.9	2.5	
3/31/2005 10:02:45	8.2	2.5	
3/31/2005 10:03:00	8.3	2.5	
3/31/2005 10:03:15	8.2	2.5	
3/31/2005 10:03:30	7.8	2.5	
3/31/2005 10:03:45	7.7	2.5	
3/31/2005 10:04:00	8.0	2.5	
3/31/2005 10:04:15	8.1	2.5	
3/31/2005 10:04:30	8.2	2.5	
3/31/2005 10:04:45	8.4	2.5	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 10:05:00	8.3	2.5	
3/31/2005 10:05:15	8.3	2.5	
3/31/2005 10:05:30	8.3	2.5	
3/31/2005 10:05:45	8.1	2.5	
3/31/2005 10:06:00	7.9	2.5	
3/31/2005 10:06:15	7.9	2.4	
3/31/2005 10:06:30	7.9	2.4	
3/31/2005 10:06:45	8.2	2.4	
3/31/2005 10:07:00	8.1	2.4	
3/31/2005 10:07:15	8.4	2.4	
3/31/2005 10:07:30	8.4	2.4	
3/31/2005 10:07:45	8.3	2.4	
3/31/2005 10:08:00	8.6	2.4	
3/31/2005 10:08:15	8.4	2.4	
3/31/2005 10:08:30	7.8	2.4	
3/31/2005 10:08:45	7.5	2.4	
3/31/2005 10:09:00	7.5	2.4	
3/31/2005 10:09:15	7.9	2.4	
3/31/2005 10:09:30	8.0	2.4	
3/31/2005 10:09:45	7.9	2.4	
3/31/2005 10:10:00	7.7	2.4	
3/31/2005 10:10:15	7.6	2.4	
3/31/2005 10:10:30	8.0	2.4	
3/31/2005 10:10:45	8.6	2.4	
3/31/2005 10:11:00	8.7	2.4	
3/31/2005 10:11:15	8.3	2.4	
3/31/2005 10:11:30	7.8	2.4	
3/31/2005 10:11:45	7.7	2.4	
3/31/2005 10:12:00	8.2	2.4	
3/31/2005 10:12:15	8.3	2.4	
3/31/2005 10:12:30	8.1	2.4	
3/31/2005 10:12:45	7.9	2.4	
3/31/2005 10:13:00	7.9	2.4	
3/31/2005 10:13:15	7.9	2.4	
3/31/2005 10:13:30	8.2	2.4	
3/31/2005 10:13:45	8.1	2.4	
3/31/2005 10:14:00	8.4	2.4	
3/31/2005 10:14:15	8.4	2.4	
3/31/2005 10:14:30	8.3	2.4	
3/31/2005 10:14:45	8.6	2.4	
3/31/2005 10:15:00	8.4	2.4	
3/31/2005 10:15:15	7.8	2.4	
3/31/2005 10:15:30	7.5	2.4	
3/31/2005 10:15:45	7.5	2.4	
3/31/2005 10:16:00	7.9	2.4	
3/31/2005 10:16:15	8.0	2.4	
3/31/2005 10:16:30	7.9	2.4	
3/31/2005 10:16:45	7.7	2.4	
3/31/2005 10:17:00	7.6	2.4	
3/31/2005 10:17:15	8.0	2.4	
3/31/2005 10:17:30	8.6	2.5	
3/31/2005 10:17:45	7.9	2.5	
3/31/2005 10:18:00	7.7	2.5	Change of Ports
3/31/2005 10:18:15	7.6	2.5	
3/31/2005 10:18:30	5.0	2.5	
3/31/2005 10:18:45	2.6	2.5	
3/31/2005 10:19:00	0.9	2.5	
3/31/2005 10:19:15	0.9	2.5	
3/31/2005 10:19:30	0.8	2.5	

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ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 10:19:45	0.9	2.5	
3/31/2005 10:20:00	0.9	2.5	
3/31/2005 10:20:15	1.0	2.5	
3/31/2005 10:20:30	5.8	1.2	
3/31/2005 10:20:45	3.7	2.5	
3/31/2005 10:21:00	7.5	2.7	
3/31/2005 10:21:15	8.0	2.7	
3/31/2005 10:21:30	8.2	2.7	
3/31/2005 10:21:45	8.4	2.7	Resume Testing
3/31/2005 10:22:00	**8.3**	**2.7**	
3/31/2005 10:22:15	**8.3**	**2.7**	
3/31/2005 10:22:30	**8.5**	**2.7**	
3/31/2005 10:22:45	**8.3**	**2.7**	
3/31/2005 10:23:00	**7.9**	**2.7**	
3/31/2005 10:23:15	**7.4**	**2.7**	
3/31/2005 10:23:30	**7.3**	**2.7**	
3/31/2005 10:23:45	**7.7**	**2.7**	
3/31/2005 10:24:00	**8.1**	**2.5**	
3/31/2005 10:24:15	**8.3**	**2.5**	
3/31/2005 10:24:30	**8.3**	**2.5**	
3/31/2005 10:24:45	**8.1**	**2.5**	
3/31/2005 10:25:00	**8.5**	**2.5**	
3/31/2005 10:25:15	**8.6**	**2.5**	
3/31/2005 10:25:30	**8.8**	**2.5**	
3/31/2005 10:25:45	**8.1**	**2.5**	
3/31/2005 10:26:00	**7.6**	**2.5**	
3/31/2005 10:26:15	**7.7**	**2.5**	
3/31/2005 10:26:30	**7.7**	**2.5**	
3/31/2005 10:26:45	**8.2**	**2.5**	
3/31/2005 10:27:00	**8.4**	**2.6**	
3/31/2005 10:27:15	**8.4**	**2.6**	
3/31/2005 10:27:30	**8.1**	**2.6**	
3/31/2005 10:27:45	**8.5**	**2.6**	
3/31/2005 10:28:00	**8.4**	**2.6**	
3/31/2005 10:28:15	**8.0**	**2.6**	
3/31/2005 10:28:30	**7.7**	**2.6**	
3/31/2005 10:28:45	**7.6**	**2.6**	
3/31/2005 10:29:00	**8.0**	**2.6**	
3/31/2005 10:29:15	**8.0**	**2.6**	
3/31/2005 10:29:30	**8.3**	**2.6**	
3/31/2005 10:29:45	**8.2**	**2.6**	
3/31/2005 10:30:00	**8.3**	**2.5**	
3/31/2005 10:30:15	**8.6**	**2.5**	
3/31/2005 10:30:30	**8.7**	**2.5**	
3/31/2005 10:30:45	**8.4**	**2.5**	
3/31/2005 10:31:00	**8.0**	**2.5**	
3/31/2005 10:31:15	**7.8**	**2.5**	
3/31/2005 10:31:30	**7.9**	**2.5**	
3/31/2005 10:31:45	**8.2**	**2.5**	
3/31/2005 10:32:00	**8.1**	**2.5**	
3/31/2005 10:32:15	**8.2**	**2.5**	
3/31/2005 10:32:30	**8.2**	**2.5**	
3/31/2005 10:32:45	**8.2**	**2.5**	
3/31/2005 10:33:00	**9.0**	**2.5**	
3/31/2005 10:33:15	**8.9**	**2.5**	
3/31/2005 10:33:30	**8.6**	**2.5**	
3/31/2005 10:33:45	**8.3**	**2.5**	
3/31/2005 10:34:00	**8.1**	**2.5**	
3/31/2005 10:34:15	**8.5**	**2.5**	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 10:34:30	8.5	2.5	
3/31/2005 10:34:45	8.4	2.5	
3/31/2005 10:35:00	8.4	2.5	
3/31/2005 10:35:15	8.2	2.5	
3/31/2005 10:35:30	8.5	2.5	
3/31/2005 10:35:45	8.7	2.5	
3/31/2005 10:36:00	8.7	2.5	
3/31/2005 10:36:15	8.3	2.5	
3/31/2005 10:36:30	8.1	2.5	
3/31/2005 10:36:45	8.2	2.5	
3/31/2005 10:37:00	8.5	2.5	
3/31/2005 10:37:15	8.7	2.5	
3/31/2005 10:37:30	9.1	2.5	
3/31/2005 10:37:45	8.9	2.5	
3/31/2005 10:38:00	8.9	2.5	
3/31/2005 10:38:15	9.0	2.5	
3/31/2005 10:38:30	8.8	2.5	
3/31/2005 10:38:45	8.5	2.5	
3/31/2005 10:39:00	8.6	2.6	
3/31/2005 10:39:15	8.5	2.6	
3/31/2005 10:39:30	8.9	2.6	
3/31/2005 10:39:45	9.2	2.6	
3/31/2005 10:40:00	9.3	2.6	
3/31/2005 10:40:15	9.2	2.6	
3/31/2005 10:40:30	9.0	2.6	
3/31/2005 10:40:45	9.3	2.6	
3/31/2005 10:41:00	9.5	2.6	
3/31/2005 10:41:15	9.1	2.6	
3/31/2005 10:41:30	8.7	2.6	
3/31/2005 10:41:45	8.5	2.6	
3/31/2005 10:42:00	8.8	2.6	
3/31/2005 10:42:15	9.3	2.6	
3/31/2005 10:42:30	9.4	2.6	
3/31/2005 10:42:45	9.7	2.6	
3/31/2005 10:43:00	9.5	2.6	
3/31/2005 10:43:15	9.5	2.6	
3/31/2005 10:43:30	9.9	2.6	
3/31/2005 10:43:45	9.8	2.6	
3/31/2005 10:44:00	9.4	2.6	
3/31/2005 10:44:15	8.9	2.6	
3/31/2005 10:44:30	8.6	2.6	
3/31/2005 10:44:45	9.1	2.6	
3/31/2005 10:45:00	9.5	2.5	
3/31/2005 10:45:15	9.6	2.5	
3/31/2005 10:45:30	9.8	2.5	
3/31/2005 10:45:45	9.7	2.5	
3/31/2005 10:46:00	10.0	2.5	
3/31/2005 10:46:15	10.0	2.5	
3/31/2005 10:46:30	9.6	2.5	
3/31/2005 10:46:45	9.3	2.5	
3/31/2005 10:47:00	9.1	2.5	
3/31/2005 10:47:15	9.1	2.5	
3/31/2005 10:47:30	9.1	2.5	
3/31/2005 10:47:45	9.1	2.5	
3/31/2005 10:48:00	9.7	2.5	
3/31/2005 10:48:15	9.6	2.5	
3/31/2005 10:48:30	9.7	2.5	
3/31/2005 10:48:45	9.9	2.5	
3/31/2005 10:49:00	9.7	2.5	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 10:49:15	**9.4**	**2.5**	
3/31/2005 10:49:30	**9.2**	**2.5**	
3/31/2005 10:49:45	**9.2**	**2.5**	
3/31/2005 10:50:00	**9.5**	**2.5**	
3/31/2005 10:50:15	**9.2**	**2.5**	
3/31/2005 10:50:30	**9.1**	**2.5**	
3/31/2005 10:50:45	**9.1**	**2.5**	
3/31/2005 10:51:00	**9.3**	**2.5**	
3/31/2005 10:51:15	**9.7**	**2.5**	
3/31/2005 10:51:30	**9.6**	**2.5**	
3/31/2005 10:51:45	**9.3**	**2.5**	
3/31/2005 10:52:00	9.3	2.5	**End Run No. BO-2-2 - Blackburn Condition #2**
3/31/2005 10:52:15	9.2	2.5	
3/31/2005 10:52:30	9.4	2.5	
3/31/2005 10:52:45	9.6	2.5	
3/31/2005 10:53:00	9.4	2.5	
3/31/2005 10:53:15	9.2	2.5	
3/31/2005 10:53:30	8.9	2.5	
3/31/2005 10:53:45	9.1	2.5	
3/31/2005 10:54:00	9.5	2.6	
3/31/2005 10:54:15	9.4	2.6	
3/31/2005 10:54:30	9.0	2.6	
3/31/2005 10:54:45	8.8	2.6	
3/31/2005 10:55:00	7.7	2.6	
3/31/2005 10:55:15	2.7	2.6	
3/31/2005 10:55:30	1.7	2.6	
3/31/2005 10:55:45	1.4	2.6	
3/31/2005 10:56:00	1.3	2.6	
3/31/2005 10:56:15	1.0	2.6	
3/31/2005 10:56:30	0.9	2.6	**Calibration**
3/31/2005 10:56:45	**0.8**	2.6	**0.9 Zero Propane/N_2**
3/31/2005 10:57:00	**1.0**	0.9	
3/31/2005 10:57:15	**1.0**	0.9	
3/31/2005 10:57:30	**1.0**	0.9	
3/31/2005 10:57:45	2.0	0.9	
3/31/2005 10:58:00	5.3	0.9	
3/31/2005 10:58:15	34.6	0.9	
3/31/2005 10:58:30	45.6	0.9	
3/31/2005 10:58:45	47.3	0.9	
3/31/2005 10:59:00	47.8	0.9	
3/31/2005 10:59:15	47.8	0.9	
3/31/2005 10:59:30	47.9	0.9	
3/31/2005 10:59:45	48.1	0.9	
3/31/2005 11:00:00	48.5	0.9	
3/31/2005 11:00:15	48.5	0.9	
3/31/2005 11:00:30	48.6	0.9	
3/31/2005 11:00:45	48.8	0.9	
3/31/2005 11:01:00	48.9	0.9	**Calibration**
3/31/2005 11:01:15	**49.0**	0.9	**49.1 50.0 ppm Propane/N_2**
3/31/2005 11:01:30	**49.1**	0.9	
3/31/2005 11:01:45	**49.1**	0.9	
3/31/2005 11:02:00	**49.1**	0.9	
3/31/2005 11:02:15	35.9	0.9	
3/31/2005 11:02:30	66.8	0.9	
3/31/2005 11:02:45	21.9	0.9	
3/31/2005 11:03:00	3.4	2.4	
3/31/2005 11:03:15	1.8	2.4	
3/31/2005 11:03:30	1.5	2.4	
3/31/2005 11:03:45	1.3	2.4	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 11:04:00	1.8	2.4	
3/31/2005 11:04:15	6.1	2.4	
3/31/2005 11:04:30	6.3	2.4	
3/31/2005 11:04:45	53.0	2.4	
3/31/2005 11:05:00	17.8	2.4	
3/31/2005 11:05:15	7.0	2.4	
3/31/2005 11:05:30	6.1	2.4	
3/31/2005 11:05:45	6.1	2.4	
3/31/2005 11:06:00	6.4	2.1	
3/31/2005 11:06:15	6.4	2.1	
3/31/2005 11:06:30	6.3	2.1	
3/31/2005 11:06:45	6.4	2.1	
3/31/2005 11:07:00	6.5	2.1	
3/31/2005 11:07:15	6.3	2.1	
3/31/2005 11:07:30	6.0	2.1	
3/31/2005 11:07:45	5.8	2.1	
3/31/2005 11:08:00	5.7	2.1	
3/31/2005 11:08:15	5.8	2.1	
3/31/2005 11:08:30	5.6	2.1	
3/31/2005 11:08:45	5.7	2.1	
3/31/2005 11:09:00	6.0	2.0	
3/31/2005 11:09:15	6.1	2.0	
3/31/2005 11:09:30	6.3	2.0	
3/31/2005 11:09:45	6.2	2.0	
3/31/2005 11:10:00	6.0	2.0	
3/31/2005 11:10:15	5.8	2.0	
3/31/2005 11:10:30	5.7	2.0	
3/31/2005 11:10:45	5.9	2.0	
3/31/2005 11:11:00	6.0	2.0	
3/31/2005 11:11:15	5.8	2.0	
3/31/2005 11:11:30	5.9	2.0	
3/31/2005 11:11:45	5.8	2.0	
3/31/2005 11:12:00	6.2	2.0	
3/31/2005 11:12:15	6.3	2.0	
3/31/2005 11:12:30	6.2	2.0	
3/31/2005 11:12:45	6.0	2.0	
3/31/2005 11:13:00	5.8	2.0	
3/31/2005 11:13:15	7.6	2.0	
3/31/2005 11:13:30	8.2	2.0	
3/31/2005 11:13:45	8.1	2.0	**Begin Run No. BO-2-3 - Blackburn Condition #2**
3/31/2005 11:14:00	**8.3**	**2.0**	
3/31/2005 11:14:15	**8.0**	**2.0**	
3/31/2005 11:14:30	**8.0**	**2.0**	
3/31/2005 11:14:45	**8.4**	**2.0**	
3/31/2005 11:15:00	**8.6**	**2.5**	
3/31/2005 11:15:15	**8.4**	**2.5**	
3/31/2005 11:15:30	**8.0**	**2.5**	
3/31/2005 11:15:45	**7.8**	**2.5**	
3/31/2005 11:16:00	**8.2**	**2.5**	
3/31/2005 11:16:15	**8.2**	**2.5**	
3/31/2005 11:16:30	**8.4**	**2.5**	
3/31/2005 11:16:45	**8.5**	**2.5**	
3/31/2005 11:17:00	**8.3**	**2.5**	
3/31/2005 11:17:15	**8.5**	**2.5**	
3/31/2005 11:17:30	**8.5**	**2.5**	
3/31/2005 11:17:45	**8.2**	**2.5**	
3/31/2005 11:18:00	**8.1**	**2.6**	
3/31/2005 11:18:15	**7.8**	**2.6**	
3/31/2005 11:18:30	**8.1**	**2.6**	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 11:18:45	8.3	2.6	
3/31/2005 11:19:00	8.1	2.6	
3/31/2005 11:19:15	8.1	2.6	
3/31/2005 11:19:30	8.0	2.6	
3/31/2005 11:19:45	8.1	2.6	
3/31/2005 11:20:00	8.5	2.6	
3/31/2005 11:20:15	8.2	2.6	
3/31/2005 11:20:30	7.9	2.6	
3/31/2005 11:20:45	7.6	2.6	
3/31/2005 11:21:00	7.7	2.5	
3/31/2005 11:21:15	8.2	2.5	
3/31/2005 11:21:30	8.1	2.5	
3/31/2005 11:21:45	8.3	2.5	
3/31/2005 11:22:00	8.3	2.5	
3/31/2005 11:22:15	8.3	2.5	
3/31/2005 11:22:30	8.6	2.5	
3/31/2005 11:22:45	8.6	2.5	
3/31/2005 11:23:00	8.3	2.5	
3/31/2005 11:23:15	7.8	2.5	
3/31/2005 11:23:30	7.6	2.5	
3/31/2005 11:23:45	8.0	2.5	
3/31/2005 11:24:00	8.2	2.5	
3/31/2005 11:24:15	8.1	2.5	
3/31/2005 11:24:30	8.2	2.5	
3/31/2005 11:24:45	8.2	2.5	
3/31/2005 11:25:00	8.5	2.5	
3/31/2005 11:25:15	8.5	2.5	
3/31/2005 11:25:30	8.2	2.5	
3/31/2005 11:25:45	8.0	2.5	
3/31/2005 11:26:00	7.8	2.5	
3/31/2005 11:26:15	8.0	2.5	
3/31/2005 11:26:30	8.3	2.5	
3/31/2005 11:26:45	8.3	2.5	
3/31/2005 11:27:00	8.3	2.5	
3/31/2005 11:27:15	8.2	2.5	
3/31/2005 11:27:30	8.4	2.5	
3/31/2005 11:27:45	8.6	2.5	
3/31/2005 11:28:00	8.5	2.5	
3/31/2005 11:28:15	8.1	2.5	
3/31/2005 11:28:30	8.0	2.5	
3/31/2005 11:28:45	8.2	2.5	
3/31/2005 11:29:00	8.4	2.5	
3/31/2005 11:29:15	8.2	2.5	
3/31/2005 11:29:30	8.3	2.5	
3/31/2005 11:29:45	8.1	2.5	
3/31/2005 11:30:00	8.4	2.3	
3/31/2005 11:30:15	8.9	2.3	
3/31/2005 11:30:30	8.7	2.3	
3/31/2005 11:30:45	8.3	2.3	
3/31/2005 11:31:00	8.0	2.3	
3/31/2005 11:31:15	8.0	2.3	
3/31/2005 11:31:30	8.4	2.3	
3/31/2005 11:31:45	8.4	2.3	
3/31/2005 11:32:00	8.5	2.3	
3/31/2005 11:32:15	8.4	2.3	
3/31/2005 11:32:30	8.1	2.3	
3/31/2005 11:32:45	8.5	2.3	
3/31/2005 11:33:00	8.8	2.1	
3/31/2005 11:33:15	8.6	2.1	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 11:33:30	**8.2**	**2.1**	
3/31/2005 11:33:45	**7.9**	**2.1**	
3/31/2005 11:34:00	**8.3**	**2.1**	
3/31/2005 11:34:15	**8.4**	**2.1**	
3/31/2005 11:34:30	**8.7**	**2.1**	
3/31/2005 11:34:45	**8.8**	**2.1**	
3/31/2005 11:35:00	**8.5**	**2.1**	
3/31/2005 11:35:15	**8.6**	**2.1**	
3/31/2005 11:35:30	**8.7**	**2.1**	
3/31/2005 11:35:45	**8.4**	**2.1**	
3/31/2005 11:36:00	**8.3**	**2.2**	
3/31/2005 11:36:15	**8.0**	**2.2**	
3/31/2005 11:36:30	**8.1**	**2.2**	
3/31/2005 11:36:45	**8.4**	**2.2**	
3/31/2005 11:37:00	**8.2**	**2.2**	
3/31/2005 11:37:15	**8.2**	**2.2**	
3/31/2005 11:37:30	**8.1**	**2.2**	
3/31/2005 11:37:45	**8.2**	**2.2**	
3/31/2005 11:38:00	**8.9**	**2.2**	
3/31/2005 11:38:15	**8.8**	**2.2**	
3/31/2005 11:38:30	**8.4**	**2.2**	
3/31/2005 11:38:45	**8.1**	**2.2**	
3/31/2005 11:39:00	**8.2**	**2.0**	
3/31/2005 11:39:15	**8.7**	**2.0**	
3/31/2005 11:39:30	**8.6**	**2.0**	
3/31/2005 11:39:45	**8.4**	**2.0**	
3/31/2005 11:40:00	**8.2**	**2.0**	
3/31/2005 11:40:15	**8.1**	**2.0**	
3/31/2005 11:40:30	**8.6**	**2.0**	
3/31/2005 11:40:45	**8.6**	**2.0**	
3/31/2005 11:41:00	**8.4**	**2.0**	
3/31/2005 11:41:15	**8.0**	**2.0**	
3/31/2005 11:41:30	**7.9**	**2.0**	
3/31/2005 11:41:45	**8.6**	**2.0**	
3/31/2005 11:42:00	**9.0**	**1.9**	
3/31/2005 11:42:15	**8.8**	**1.9**	
3/31/2005 11:42:30	**8.4**	**1.9**	
3/31/2005 11:42:45	**8.2**	**1.9**	
3/31/2005 11:43:00	**8.5**	**1.9**	
3/31/2005 11:43:15	**8.5**	**1.9**	
3/31/2005 11:43:30	**8.3**	**1.9**	
3/31/2005 11:43:45	**8.1**	**1.9**	
3/31/2005 11:44:00	7.9	1.9	**Change of Ports**
3/31/2005 11:44:15	8.1	1.9	
3/31/2005 11:44:30	8.3	1.9	
3/31/2005 11:44:45	8.3	1.9	
3/31/2005 11:45:00	6.3	1.9	
3/31/2005 11:45:15	2.3	1.9	
3/31/2005 11:45:30	1.7	1.9	
3/31/2005 11:45:45	1.6	1.9	
3/31/2005 11:46:00	1.5	1.9	
3/31/2005 11:46:15	1.4	1.9	
3/31/2005 11:46:30	1.4	1.9	
3/31/2005 11:46:45	1.3	1.9	
3/31/2005 11:47:00	2.7	1.9	
3/31/2005 11:47:15	10.4	1.9	
3/31/2005 11:47:30	11.7	1.9	
3/31/2005 11:47:45	9.4	1.9	
3/31/2005 11:48:00	8.9	1.9	

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Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 11:48:15	9.1	1.9	
3/31/2005 11:48:30	8.8	1.9	
3/31/2005 11:48:45	8.4	1.9	Resume Testing
3/31/2005 11:49:00	8.0	1.9	
3/31/2005 11:49:15	7.9	1.9	
3/31/2005 11:49:30	8.2	1.9	
3/31/2005 11:49:45	8.3	1.9	
3/31/2005 11:50:00	8.5	1.9	
3/31/2005 11:50:15	8.2	1.9	
3/31/2005 11:50:30	7.9	1.9	
3/31/2005 11:50:45	8.3	1.9	
3/31/2005 11:51:00	8.5	1.7	
3/31/2005 11:51:15	8.3	1.7	
3/31/2005 11:51:30	8.1	1.7	
3/31/2005 11:51:45	7.9	1.7	
3/31/2005 11:52:00	8.2	1.7	
3/31/2005 11:52:15	8.2	1.7	
3/31/2005 11:52:30	8.2	1.7	
3/31/2005 11:52:45	8.0	1.7	
3/31/2005 11:53:00	7.9	1.7	
3/31/2005 11:53:15	8.1	1.7	
3/31/2005 11:53:30	8.2	1.7	
3/31/2005 11:53:45	8.1	1.7	
3/31/2005 11:54:00	8.0	1.7	
3/31/2005 11:54:15	7.8	1.7	
3/31/2005 11:54:30	7.9	1.7	
3/31/2005 11:54:45	8.3	1.7	
3/31/2005 11:55:00	8.3	1.7	
3/31/2005 11:55:15	8.4	1.7	
3/31/2005 11:55:30	8.2	1.7	
3/31/2005 11:55:45	8.4	1.7	
3/31/2005 11:56:00	8.6	1.7	
3/31/2005 11:56:15	8.3	1.7	
3/31/2005 11:56:30	8.0	1.7	
3/31/2005 11:56:45	7.8	1.7	
3/31/2005 11:57:00	8.0	1.7	
3/31/2005 11:57:15	8.5	1.7	
3/31/2005 11:57:30	8.4	1.7	
3/31/2005 11:57:45	8.3	1.7	
3/31/2005 11:58:00	8.1	1.7	
3/31/2005 11:58:15	8.2	1.7	
3/31/2005 11:58:30	8.6	1.7	
3/31/2005 11:58:45	8.5	1.7	
3/31/2005 11:59:00	8.1	1.7	
3/31/2005 11:59:15	7.6	1.7	
3/31/2005 11:59:30	7.5	1.7	
3/31/2005 11:59:45	7.8	1.7	
3/31/2005 12:00:00	8.1	1.7	
3/31/2005 12:00:15	8.4	1.7	
3/31/2005 12:00:30	8.3	1.7	
3/31/2005 12:00:45	8.2	1.7	
3/31/2005 12:01:00	8.6	1.7	
3/31/2005 12:01:15	8.6	1.7	
3/31/2005 12:01:30	8.4	1.7	
3/31/2005 12:01:45	8.1	1.7	
3/31/2005 12:02:00	7.8	1.7	
3/31/2005 12:02:15	7.9	1.7	
3/31/2005 12:02:30	7.9	1.7	
3/31/2005 12:02:45	7.9	1.7	

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 12:03:00	8.2	1.7	
3/31/2005 12:03:15	8.1	1.7	
3/31/2005 12:03:30	8.3	1.7	
3/31/2005 12:03:45	8.6	1.7	
3/31/2005 12:04:00	8.5	1.7	
3/31/2005 12:04:15	8.2	1.7	
3/31/2005 12:04:30	8.0	1.7	
3/31/2005 12:04:45	8.0	1.7	
3/31/2005 12:05:00	8.3	1.7	
3/31/2005 12:05:15	8.1	1.7	
3/31/2005 12:05:30	8.1	1.7	
3/31/2005 12:05:45	8.0	1.7	
3/31/2005 12:06:00	8.3	1.7	
3/31/2005 12:06:15	8.9	1.7	
3/31/2005 12:06:30	8.8	1.7	
3/31/2005 12:06:45	8.5	1.7	
3/31/2005 12:07:00	8.1	1.7	
3/31/2005 12:07:15	8.0	1.7	
3/31/2005 12:07:30	8.4	1.7	
3/31/2005 12:07:45	8.6	1.7	
3/31/2005 12:08:00	8.6	1.7	
3/31/2005 12:08:15	8.2	1.7	
3/31/2005 12:08:30	8.0	1.7	
3/31/2005 12:08:45	8.4	1.7	
3/31/2005 12:09:00	8.7	1.8	
3/31/2005 12:09:15	8.5	1.8	
3/31/2005 12:09:30	8.2	1.8	
3/31/2005 12:09:45	7.9	1.8	
3/31/2005 12:10:00	8.3	1.8	
3/31/2005 12:10:15	8.5	1.8	
3/31/2005 12:10:30	8.6	1.8	
3/31/2005 12:10:45	8.5	1.8	
3/31/2005 12:11:00	8.2	1.8	
3/31/2005 12:11:15	8.3	1.8	
3/31/2005 12:11:30	8.4	1.8	
3/31/2005 12:11:45	8.4	1.8	
3/31/2005 12:12:00	8.3	1.8	
3/31/2005 12:12:15	8.0	1.8	
3/31/2005 12:12:30	8.3	1.8	
3/31/2005 12:12:45	8.5	1.8	
3/31/2005 12:13:00	8.4	1.8	
3/31/2005 12:13:15	8.4	1.8	
3/31/2005 12:13:30	8.2	1.8	
3/31/2005 12:13:45	8.5	1.8	
3/31/2005 12:14:00	8.7	1.8	
3/31/2005 12:14:15	8.3	1.8	
3/31/2005 12:14:30	7.9	1.8	
3/31/2005 12:14:45	7.6	1.8	
3/31/2005 12:15:00	7.9	1.8	
3/31/2005 12:15:15	8.3	1.8	
3/31/2005 12:15:30	8.3	1.8	
3/31/2005 12:15:45	8.4	1.8	
3/31/2005 12:16:00	8.4	1.8	
3/31/2005 12:16:15	8.4	1.8	
3/31/2005 12:16:30	9.0	1.8	
3/31/2005 12:16:45	8.9	1.8	
3/31/2005 12:17:00	8.7	1.8	
3/31/2005 12:17:15	8.2	1.8	
3/31/2005 12:17:30	8.0	1.8	

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 12:17:45	**8.4**	**1.8**	
3/31/2005 12:18:00	**8.5**	**1.9**	
3/31/2005 12:18:15	**8.4**	**1.9**	
3/31/2005 12:18:30	**8.3**	**1.9**	
3/31/2005 12:18:45	**8.2**	**1.9**	
3/31/2005 12:19:00	8.6	1.9	**End Run No. BO-2-3 - Blackburn Condition #2**
3/31/2005 12:19:15	8.5	1.9	
3/31/2005 12:19:30	8.2	1.9	
3/31/2005 12:19:45	8.0	1.9	
3/31/2005 12:20:00	7.8	1.9	
3/31/2005 12:20:15	7.9	1.9	
3/31/2005 12:20:30	6.5	1.9	
3/31/2005 12:20:45	5.8	1.9	
3/31/2005 12:21:00	5.9	1.5	
3/31/2005 12:21:15	5.8	1.5	
3/31/2005 12:21:30	5.8	1.5	
3/31/2005 12:21:45	1.6	1.5	
3/31/2005 12:22:00	1.0	1.5	
3/31/2005 12:22:15	0.9	1.5	
3/31/2005 12:22:30	0.8	1.5	**Calibration**
3/31/2005 12:22:45	**0.8**	1.5	**0.7 Zero Propane/N_2**
3/31/2005 12:23:00	**0.8**	1.5	
3/31/2005 12:23:15	**0.6**	1.5	
3/31/2005 12:23:30	**0.5**	1.5	
3/31/2005 12:23:45	0.5	1.5	**Calibration - 1st Injection**
3/31/2005 12:24:00	0.7	**0.3**	**0.3 Zero Methane**
3/31/2005 12:24:15	0.7	**0.3**	
3/31/2005 12:24:30	0.7	**0.3**	
3/31/2005 12:24:45	0.7	**0.3**	
3/31/2005 12:25:00	0.7	0.3	
3/31/2005 12:25:15	0.7	0.3	
3/31/2005 12:25:30	0.6	0.3	
3/31/2005 12:25:45	0.7	0.3	
3/31/2005 12:26:00	1.3	0.3	
3/31/2005 12:26:15	2.7	0.3	
3/31/2005 12:26:30	28.3	0.3	
3/31/2005 12:26:45	44.2	0.3	**Calibration - 2nd Injection**
3/31/2005 12:27:00	47.3	**0.5**	**0.5 Zero Methane**
3/31/2005 12:27:15	48.1	**0.5**	
3/31/2005 12:27:30	48.4	**0.5**	
3/31/2005 12:27:45	48.7	**0.5**	
3/31/2005 12:28:00	48.8	0.5	**Calibration**
3/31/2005 12:28:15	**48.7**	0.5	**48.9 50.0 ppm Propane/N_2**
3/31/2005 12:28:30	**48.9**	0.5	
3/31/2005 12:28:45	**49.0**	0.5	
3/31/2005 12:29:00	**49.1**	0.5	
3/31/2005 12:29:15	48.9	0.5	
3/31/2005 12:29:30	48.9	0.5	
3/31/2005 12:29:45	48.9	0.5	**Calibration - 3rd Injection**
3/31/2005 12:30:00	44.4	**0.2**	**0.2 Zero Methane**
3/31/2005 12:30:15	47.9	**0.2**	
3/31/2005 12:30:30	49.3	**0.2**	
3/31/2005 12:30:45	49.3	**0.2**	
3/31/2005 12:31:00	49.3	0.2	**0.3 Average Zero Methane**
3/31/2005 12:31:15	49.4	0.2	
3/31/2005 12:31:30	30.6	0.2	
3/31/2005 12:31:45	76.3	0.2	
3/31/2005 12:32:00	24.5	0.2	
3/31/2005 12:32:15	17.3	0.2	

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 12:32:30	16.3	0.2	
3/31/2005 12:32:45	15.9	0.2	
3/31/2005 12:33:00	16.1	49.3	**Calibration - 1st Injection**
3/31/2005 12:33:15	16.1	**51.4**	**51.4 50.0 ppm Methane**
3/31/2005 12:33:30	16.0	**51.4**	
3/31/2005 12:33:45	16.0	**51.4**	
3/31/2005 12:34:00	15.9	**51.4**	
3/31/2005 12:34:15	15.9	51.4	
3/31/2005 12:34:30	15.9	51.4	
3/31/2005 12:34:45	15.8	51.4	
3/31/2005 12:35:00	15.8	51.4	
3/31/2005 12:35:15	15.6	51.4	
3/31/2005 12:35:30	15.5	51.4	
3/31/2005 12:35:45	15.5	51.4	
3/31/2005 12:36:00	15.7	51.0	**Calibration - 2nd Injection**
3/31/2005 12:36:15	15.7	**50.9**	**50.9 50.0 ppm Methane**
3/31/2005 12:36:30	15.7	**50.9**	
3/31/2005 12:36:45	15.7	**50.9**	
3/31/2005 12:37:00	15.7	**50.9**	
3/31/2005 12:37:15	15.7	50.9	
3/31/2005 12:37:30	15.6	50.9	
3/31/2005 12:37:45	15.6	50.9	
3/31/2005 12:38:00	15.6	50.9	
3/31/2005 12:38:15	15.4	50.9	
3/31/2005 12:38:30	15.3	50.9	
3/31/2005 12:38:45	15.3	50.9	
3/31/2005 12:39:00	15.5	50.9	**Calibration - 3rd Injection**
3/31/2005 12:39:15	15.5	**50.9**	**50.9 50.0 ppm Methane**
3/31/2005 12:39:30	15.5	**50.9**	
3/31/2005 12:39:45	15.5	**50.9**	
3/31/2005 12:40:00	15.5	**50.9**	
3/31/2005 12:40:15	15.5	50.9	**51.1 Average 50.0 ppm Methane**
3/31/2005 12:40:30	15.5	50.9	
3/31/2005 12:40:45	15.5	50.9	
3/31/2005 12:41:00	15.4	50.9	
3/31/2005 12:41:15	4.8	50.9	
3/31/2005 12:41:30	5.0	50.9	
3/31/2005 12:41:45	25.5	50.9	
3/31/2005 12:42:00	26.5	21.0	
3/31/2005 12:42:15	2.9	17.4	
3/31/2005 12:42:30	1.4	17.4	
3/31/2005 12:42:45	1.3	17.4	
3/31/2005 12:43:00	1.5	17.4	
3/31/2005 12:43:15	1.1	17.4	
3/31/2005 12:43:30	1.0	17.4	
3/31/2005 12:43:45	1.0	17.4	
3/31/2005 12:44:00	1.0	17.4	
3/31/2005 12:44:15	0.7	17.4	
3/31/2005 12:44:30	0.7	17.4	
3/31/2005 12:44:45	0.7	17.4	
3/31/2005 12:45:00	0.9	3.9	
3/31/2005 12:45:15	4.1	1.5	
3/31/2005 12:45:30	5.3	1.5	
3/31/2005 12:45:45	5.3	1.5	
3/31/2005 12:46:00	5.5	1.5	
3/31/2005 12:46:15	5.7	1.5	
3/31/2005 12:46:30	5.5	1.5	
3/31/2005 12:46:45	5.2	1.5	
3/31/2005 12:47:00	5.2	1.5	

Marathon Ashland Petroleum, LLC
Platformer CRU Scrubber Outlet
ARI Reference Method Monitoring Data

Date/Time	VOC as C_3 ppmv wb	CH_4 ppmv wb	Comments
3/31/2005 12:47:15	5.2	1.5	
3/31/2005 12:47:30	5.5	1.5	
3/31/2005 12:47:45	5.5	1.5	
3/31/2005 12:48:00	5.6	1.3	
3/31/2005 12:48:15	5.5	1.2	
3/31/2005 12:48:30	5.7	1.2	

APPENDIX E

Calibration Data

CEMS CALIBRATION DATA

Plant	MAPLLC	Plant Rep.	Wendy Gram	Analyzer Span Values (% or ppm)	
Location	Robinson, IL	Team Leader	Dan Fitzgerald	THC	100 ppm
Source	Platformer Scrubber Outlet	CEM Operator	Dan Fitzgerald	CH_4	100 ppm
Date	3/29/2005				

Run Number: WO-1-1 Start Time: 17:04 Stop Time: 18:08

	CALIBRATION ERROR - 9:21 hrs				SYSTEM BIAS CHECK					Calibration
					Pretest: 16:54 hrs			18:11 hrs		
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Difference (% of Span)	System Response	Syst. Bias (% of Span)	System Response	Syst. Bias (% of Span)	Drift (% of Span)	Correction Factors
THC Zero	0.0		0.3	0.3	0.0	0.0	0.0	0.0	0.0	Co=
THC Low	25.0	Propane/N_2	25.5	2.0						**0.00**
THC Mid	50.0	ALM047794	50.5	1.0	49.1	-1.8	48.9	-2.2	-0.2	Cm=
THC High	85.0	1,004 ppm	85.9	1.1						**49.00**
CH_4 Zero	0.0		0.5	0.5						Co=
CH_4 Low	25.0	Methane/Air	24.1	-3.6						
CH_4 Mid	50.0	ALM048846	49.6	-0.8						Cm=
CH_4 High	84.2	84.2 ppm	84.4	0.2						

Run Number: WO-1-2 Start Time: 18:54 Stop Time: 19:58

	CALIBRATION ERROR - 9:21 hrs				SYSTEM BIAS CHECK					Calibration
					Pretest: 18:11 hrs			20:01 hrs		
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Difference (% of Span)	System Response	Syst. Bias (% of Span)	System Response	Syst. Bias (% of Span)	Drift (% of Span)	Correction Factors
THC Zero	0.0		0.3	0.3	0.0	0.0	0.0	0.0	0.0	Co=
THC Low	25.0	Propane/N_2	25.5	2.0						**0.00**
THC Mid	50.0	ALM047794	50.5	1.0	48.9	-2.2	51.1	2.2	2.2	Cm=
THC High	85.0	1,004 ppm	85.9	1.1						**50.00**
CH_4 Zero	0.0		0.5	0.5						Co=
CH_4 Low	25.0	Methane/Air	24.1	-3.6						
CH_4 Mid	50.0	ALM048846	49.6	-0.8						Cm=
CH_4 High	84.2	84.2 ppm	84.4	0.2						

Run Number: WO-1-3 Start Time: 20:25 Stop Time: 21:32

	CALIBRATION ERROR - 9:21 hrs				SYSTEM BIAS CHECK					Calibration
					Pretest: 20:01 hrs			21:36 hrs		
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Difference (% of Span)	System Response	Syst. Bias (% of Span)	System Response	Syst. Bias (% of Span)	Drift (% of Span)	Correction Factors
THC Zero	0.0		0.3	0.3	0.0	0.0	0.0	0.0	0.0	Co=
THC Low	25.0	Propane/N_2	25.5	2.0						**0.00**
THC Mid	50.0	ALM047794	50.5	1.0	51.1	2.2	51.4	2.8	0.3	Cm=
THC High	85.0	1,004 ppm	85.9	1.1						**51.25**
CH_4 Zero	0.0		0.5	0.5			0.0	-0.5		Co=
CH_4 Low	25.0	Methane/Air	24.1	-3.6						
CH_4 Mid	50.0	ALM048846	49.6	-0.8			50.5	0.9		Cm=
CH_4 High	84.2	84.2 ppm	84.4	0.2						

CEMS CALIBRATION DATA

Plant	MAPLLC	Plant Rep.	Wendy Gram	Analyzer Span Values (% or ppm)	
Location	Robinson, IL	Team Leader	Dan Fitzgerald	THC	100 ppm
Source	Platformer Scrubber Outlet	CEM Operator	Dan Fitzgerald	CH_4	100 ppm
Date	3/30/2005				

Run Number: WO-2-1 Start Time: 8:43 Stop Time: 9:48

	CALIBRATION ERROR - 7:20 hrs				SYSTEM BIAS CHECK					Calibration
					Pretest: 7:20 hrs			18:11 hrs		
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Difference (% of Span)	System Response	Syst. Bias (% of Span)	System Response	Syst. Bias (% of Span)	Drift (% of Span)	Correction Factors
THC Zero	0.0		0.0	0.0	0.0	0.0	0.7	0.7	0.7	Co=
THC Low	25.0	Propane/N_2	26.0	4.0						**0.35**
THC Mid	50.0	ALM047794	50.8	1.6	50.8	1.6	51.7	3.4	0.9	Cm=
THC High	85.0	1,004 ppm	88.2	3.8						**51.25**
CH_4 Zero	0.0		0.1	0.1						Co=
CH_4 Low	25.0	Methane/Air	25.3	1.2						
CH_4 Mid	50.0	ALM048846	50.3	0.6						Cm=
CH_4 High	84.2	84.2 ppm	85.3	1.3						

Run Number: WO-2-2 Start Time: 10:14 Stop Time: 11:19

	CALIBRATION ERROR - 7:20 hrs				SYSTEM BIAS CHECK					Calibration
					Pretest: 18:11 hrs			11:22 hrs		
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Difference (% of Span)	System Response	Syst. Bias (% of Span)	System Response	Syst. Bias (% of Span)	Drift (% of Span)	Correction Factors
THC Zero	0.0		0.0	0.0	0.7	0.7	0.6	0.6	-0.1	Co=
THC Low	25.0	Propane/N_2	26.0	4.0						**0.65**
THC Mid	50.0	ALM047794	50.8	1.6	51.7	3.4	51.9	3.8	0.2	Cm=
THC High	85.0	1,004 ppm	88.2	3.8						**51.80**
CH_4 Zero	0.0		0.1	0.1						Co=
CH_4 Low	25.0	Methane/Air	25.3	1.2						
CH_4 Mid	50.0	ALM048846	50.3	0.6						Cm=
CH_4 High	84.2	84.2 ppm	85.3	1.3						

Run Number: WO-2-3 Start Time: 11:43 Stop Time: 12:48

	CALIBRATION ERROR - 7:20 hrs				SYSTEM BIAS CHECK					Calibration
					Pretest: 11:22 hrs			12:52 hrs		
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Difference (% of Span)	System Response	Syst. Bias (% of Span)	System Response	Syst. Bias (% of Span)	Drift (% of Span)	Correction Factors
THC Zero	0.0		0.0	0.0	0.6	0.6	0.6	0.6	0.0	Co=
THC Low	25.0	Propane/N_2	26.0	4.0						**0.60**
THC Mid	50.0	ALM047794	50.8	1.6	51.9	3.8	51.6	3.2	-0.3	Cm=
THC High	85.0	1,004 ppm	88.2	3.8						**51.75**
CH_4 Zero	0.0		0.1	0.1			1.0	0.9		Co=
CH_4 Low	25.0	Methane/Air	25.3	1.2						
CH_4 Mid	50.0	ALM048846	50.3	0.6			51.2	0.9		Cm=
CH_4 High	84.2	84.2 ppm	85.3	1.3						

CEMS CALIBRATION DATA

Plant	MAPLLC	Plant Rep.	Wendy Gram	Analyzer Span Values (% or ppm)	
Location	Robinson, IL	Team Leader	Dan Fitzgerald	THC	100 ppm
Source	Platformer Scrubber Outlet	CEM Operator	Dan Fitzgerald	CH_4	100 ppm
Date	3/30/2005				

Run Number: BO-1-1 Start Time: 15:42 Stop Time: 16:48

	CALIBRATION ERROR - 7:20 hrs				SYSTEM BIAS CHECK					Calibration
					Pretest: 15:32 hrs		16:52 hrs			Correction
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Difference (% of Span)	System Response	Syst. Bias (% of Span)	System Response	Syst. Bias (% of Span)	Drift (% of Span)	Factors
THC Zero	0.0		0.0	0.0	0.6	0.6	0.6	0.6	0.0	Co=
THC Low	25.0	Propane/N_2	26.0	4.0						**0.60**
THC Mid	50.0	ALM047794	50.8	1.6	50.7	1.4	51.3	2.6	0.6	Cm=
THC High	85.0	1,004 ppm	88.2	3.8						**51.00**
CH_4 Zero	0.0		0.1	0.1						Co=
CH_4 Low	25.0	Methane/Air	25.3	1.2						
CH_4 Mid	50.0	ALM048846	50.3	0.6						Cm=
CH_4 High	84.2	84.2 ppm	85.3	1.3						

Run Number: BO-1-2 Start Time: 17:11 Stop Time: 18:15

	CALIBRATION ERROR - 7:20 hrs				SYSTEM BIAS CHECK					Calibration
					Pretest: 16:52 hrs		18:21 hrs			Correction
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Difference (% of Span)	System Response	Syst. Bias (% of Span)	System Response	Syst. Bias (% of Span)	Drift (% of Span)	Factors
THC Zero	0.0		0.0	0.0	0.6	0.6	0.6	0.6	0.0	Co=
THC Low	25.0	Propane/N_2	26.0	4.0						**0.60**
THC Mid	50.0	ALM047794	50.8	1.6	51.3	2.6	51.0	2.0	-0.3	Cm=
THC High	85.0	1,004 ppm	88.2	3.8						**51.15**
CH_4 Zero	0.0		0.1	0.1						Co=
CH_4 Low	25.0	Methane/Air	25.3	1.2						
CH_4 Mid	50.0	ALM048846	50.3	0.6						Cm=
CH_4 High	84.2	84.2 ppm	85.3	1.3						

Run Number: BO-1-3 Start Time: 18:36 Stop Time: 19:41

	CALIBRATION ERROR - 7:20 hrs				SYSTEM BIAS CHECK					Calibration
					Pretest: 18:21 hrs		19:43 hrs			Correction
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Difference (% of Span)	System Response	Syst. Bias (% of Span)	System Response	Syst. Bias (% of Span)	Drift (% of Span)	Factors
THC Zero	0.0		0.0	0.0	0.6	0.6	0.7	0.7	0.1	Co=
THC Low	25.0	Propane/N_2	26.0	4.0						**0.65**
THC Mid	50.0	ALM047794	50.8	1.6	51.0	2.0	51.4	2.8	0.4	Cm=
THC High	85.0	1,004 ppm	88.2	3.8						**51.20**
CH_4 Zero	0.0		0.1	0.1			0.2	0.1		Co=
CH_4 Low	25.0	Methane/Air	25.3	1.2						
CH_4 Mid	50.0	ALM048846	50.3	0.6			49.6	-0.7		Cm=
CH_4 High	84.2	84.2 ppm	85.3	1.3						

CEMS CALIBRATION DATA

Plant	MAPLLC	Plant Rep.	Wendy Gram	Analyzer Span Values (% or ppm)	
Location	Robinson, IL	Team Leader	Dan Fitzgerald	THC	100 ppm
Source	Platformer Scrubber Outlet	CEM Operator	Dan Fitzgerald	CH_4	100 ppm
Date	3/31/2005				

Run Number: BO-2-1 Start Time: 8:13 Stop Time: 9:17

	CALIBRATION ERROR - 7:12 hrs				SYSTEM BIAS CHECK					Calibration
					Pretest: 7:12 hrs		9:21 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Difference (% of Span)	System Response	Syst. Bias (% of Span)	System Response	Syst. Bias (% of Span)	Drift (% of Span)	Correction Factors
THC Zero	0.0		0.4	0.4	0.4	0.4	0.8	0.8	0.4	Co=
THC Low	25.0	Propane/N_2	24.4	-2.4						**0.60**
THC Mid	50.0	ALM047794	49.4	-1.2	49.4	-1.2	48.6	-2.8	-0.8	Cm=
THC High	85.0	1,004 ppm	82.6	-2.8						**49.00**
CH_4 Zero	0.0		0.1	0.1						Co=
CH_4 Low	25.0	Methane/Air	25.5	2.0						
CH_4 Mid	50.0	ALM048846	50.6	1.2						Cm=
CH_4 High	84.2	84.2 ppm	85.4	1.4						

Run Number: BO-2-2 Start Time: 9:48 Stop Time: 10:52

	CALIBRATION ERROR - 7:12 hrs				SYSTEM BIAS CHECK					Calibration
					Pretest: 9:21 hrs		10:56 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Difference (% of Span)	System Response	Syst. Bias (% of Span)	System Response	Syst. Bias (% of Span)	Drift (% of Span)	Correction Factors
THC Zero	0.0		0.3	0.3	0.8	0.8	0.9	0.9	0.1	Co=
THC Low	25.0	Propane/N_2	25.5	2.0						**0.85**
THC Mid	50.0	ALM047794	50.5	1.0	48.6	-2.8	49.1	-1.8	0.5	Cm=
THC High	85.0	1,004 ppm	85.9	1.1						**48.85**
CH_4 Zero	0.0		0.5	0.5						Co=
CH_4 Low	25.0	Methane/Air	24.1	-3.6						
CH_4 Mid	50.0	ALM048846	49.6	-0.8						Cm=
CH_4 High	84.2	84.2 ppm	84.4	0.2						

Run Number: BO-2-3 Start Time: 11:14 Stop Time: 12:19

	CALIBRATION ERROR - 7:12 hrs				SYSTEM BIAS CHECK					Calibration
					Pretest: 10:56 hrs		12:22 hrs			
	Cylinder Value (% or ppm)	Cylinder Number	Analyzer Calibration Response	Difference (% of Span)	System Response	Syst. Bias (% of Span)	System Response	Syst. Bias (% of Span)	Drift (% of Span)	Correction Factors
THC Zero	0.0		0.3	0.3	0.9	0.9	0.7	0.7	-0.2	Co=
THC Low	25.0	Propane/N_2	25.5	2.0						**0.80**
THC Mid	50.0	ALM047794	50.5	1.0	49.1	-1.8	48.9	-2.2	-0.2	Cm=
THC High	85.0	1,004 ppm	85.9	1.1						**49.00**
CH_4 Zero	0.0		0.5	0.5			0.3	-0.2		Co=
CH_4 Low	25.0	Methane/Air	24.1	-3.6						
CH_4 Mid	50.0	ALM048846	49.6	-0.8			51.1	1.5		Cm=
CH_4 High	84.2	84.2 ppm	84.4	0.2						

Instrument: 2325 MFC: 1

MAX Flow: 5,000.00 CCM
Cal Date: 08/02/2004 , 09:03:22
Reference Gas: NITROGEN
Description: Factory MFC #1 Calibration Table

Set Flow	True Flow - Table is selected
250.00	299.66
500.00	568.37
1,000.00	1,103.44
1,500.00	1,634.20
2,000.00	2,162.74
2,500.00	2,693.64
3,000.00	3,217.92
3,500.00	3,743.61
4,000.00	4,265.71
4,500.00	4,788.38
5,000.00	5,310.08

Instrument: 2325 MFC: 2

MAX Flow: 5,000.00 CCM
Cal Date: 08/02/2004 , 09:19:59
Reference Gas: NITROGEN
Description: Factory MFC #2 Calibration Table

Set Flow	True Flow - Table is selected
250.00	253.07
500.00	513.63
1,000.00	1,035.06
1,500.00	1,553.24
2,000.00	2,072.28
2,500.00	2,588.15
3,000.00	3,104.43
3,500.00	3,620.62
4,000.00	4,133.79
4,500.00	4,673.88
5,000.00	5,160.06

Instrument: 2325 MFC: 3

MAX Flow: 500.00 CCM
Cal Date: 08/02/2004 , 09:05:02
Reference Gas: NITROGEN
Description: Factory MFC #3 Calibration Table

Set Flow	True Flow - Table is selected
25.00	26.64
50.00	52.86

100.00	105.18
150.00	156.91
200.00	208.96
250.00	260.40
300.00	312.20
350.00	363.89
400.00	416.15
450.00	467.87
500.00	520.74

Instrument: 2325 **MFC: 4**

MAX Flow: 50.00 CCM
Cal Date: 08/02/2004 , 09:05:45
Reference Gas: NITROGEN
Description: Factory MFC #4 Calibration Table

Set Flow	True Flow - Table is selected
2.50	2.77
5.00	5.54
10.00	10.98
15.00	16.33
20.00	21.63
25.00	26.87
30.00	32.05
35.00	37.21
40.00	42.33
45.00	47.45
50.00	52.50

ARI REFERENCE METHOD CEMS DATA
USEPA METHOD 205
DILUTION SYSTEM VERIFICATION

Company: MAPLLC
Location: Robinson, IL
Dilution System ID: 2325
Dilution Flow Rate: 4.6 LPM
Verification date: 3/31/2005

Analyzer Info

Monitor type: Servomex 1440
Monitor range: 25 %
Monitor Serial No.: 1420C/2738

Initial Calibration Data

Calibration Concentration		Calibration results		% Difference	
Zero:	0.00	Zero:	0.06	Zero:	0.00
Low:	6.00	Low:	6.05	Low:	0.20
Mid:	12.50	Mid:	12.49	Mid:	0.04
High:	22.30	High:	22.44	High:	0.56

Dilution System Verification

Mid level gas type: USEPA Protocol 1
Mid level concentration: 12.48
Mid level tank serial #: ALM041566

High level dilution gas type: USEPA Protocol 1
High level concentration: 22.30
High level tank serial #: AAL9140
Target concentration No. 1: 12.48
Target concentration No. 2: 6.50

Dilution System Results

Target Concentration No. 1			Target Concentration No. 2		
	Instrument Response	% difference from average*		Instrument Response	% difference from average*
Trial No. 1:	12.48	0.24	Trial No. 1:	6.54	0.15
Trial No. 2:	12.47	0.16	Trial No. 2:	6.53	0.00
Trial No. 3:	12.40	0.40	Trial No. 3:	6.52	0.15
Average:	12.450		Average:	6.530	

% Difference from target concentration: 0.24%

% Difference from target concentration: 0.46%

Mid Level Calibration Gas Results

	Instrument Response
Trial No. 1:	12.53
Trial No. 2:	12.55
Trial No. 3:	12.54

Mid Level calibration gas concentration: 12.48
Average analyzer response: 12.54
Percent difference: 0.48 *

* Must be less than 2 %

USEPA Method 205 - Gas Dilution System Verification
ARI Reference Method Monitoring Data

Date/Time	O_2 % vol, db	Comments
3/31/2005 8:41:00	0.10	
3/31/2005 8:41:15	0.08	
3/31/2005 8:41:30	0.07	
3/31/2005 8:41:45	0.07	
3/31/2005 8:42:00	0.07	
3/31/2005 8:42:15	0.06	
3/31/2005 8:42:30	0.06	
3/31/2005 8:42:45	0.06	
3/31/2005 8:43:00	0.06	
3/31/2005 8:43:15	0.06	**Calibration Error**
3/31/2005 8:43:30	**0.06**	**0.06 Zero O_2**
3/31/2005 8:43:45	**0.06**	
3/31/2005 8:44:00	**0.06**	
3/31/2005 8:44:15	**0.06**	
3/31/2005 8:44:30	0.54	
3/31/2005 8:44:45	3.56	
3/31/2005 8:45:00	7.22	
3/31/2005 8:45:15	9.77	
3/31/2005 8:45:30	11.32	
3/31/2005 8:45:45	12.13	
3/31/2005 8:46:00	12.45	
3/31/2005 8:46:15	12.51	
3/31/2005 8:46:30	12.51	
3/31/2005 8:46:45	12.49	
3/31/2005 8:47:00	12.49	
3/31/2005 8:47:15	12.49	
3/31/2005 8:47:30	12.49	**Calibration Error**
3/31/2005 8:47:45	**12.49**	**12.49 12.50% O_2**
3/31/2005 8:48:00	**12.49**	
3/31/2005 8:48:15	**12.49**	
3/31/2005 8:48:30	**12.49**	
3/31/2005 8:48:45	12.49	
3/31/2005 8:49:00	12.85	
3/31/2005 8:49:15	15.03	
3/31/2005 8:49:30	17.63	
3/31/2005 8:49:45	19.74	
3/31/2005 8:50:00	21.19	
3/31/2005 8:50:15	22.00	
3/31/2005 8:50:30	22.31	
3/31/2005 8:50:45	22.38	
3/31/2005 8:51:00	22.41	
3/31/2005 8:51:15	22.42	
3/31/2005 8:51:30	22.41	
3/31/2005 8:51:45	22.43	
3/31/2005 8:52:00	22.43	
3/31/2005 8:52:15	22.42	
3/31/2005 8:52:30	22.43	
3/31/2005 8:52:45	22.43	**Calibration Error**
3/31/2005 8:53:00	**22.43**	**22.44 22.30% O_2**
3/31/2005 8:53:15	**22.44**	
3/31/2005 8:53:30	**22.44**	
3/31/2005 8:53:45	**22.44**	
3/31/2005 8:54:00	22.42	
3/31/2005 8:54:15	20.85	
3/31/2005 8:54:30	16.89	
3/31/2005 8:54:45	13.20	
3/31/2005 8:55:00	10.31	
3/31/2005 8:55:15	8.21	
3/31/2005 8:55:30	6.86	
3/31/2005 8:55:45	6.23	
3/31/2005 8:56:00	6.07	
3/31/2005 8:56:15	6.05	
3/31/2005 8:56:30	6.04	
3/31/2005 8:56:45	6.05	
3/31/2005 8:57:00	6.05	
3/31/2005 8:57:15	6.05	
3/31/2005 8:57:30	6.04	
3/31/2005 8:57:45	6.04	
3/31/2005 8:58:00	6.05	
3/31/2005 8:58:15	6.05	**Calibration Error**

USEPA Method 205 - Gas Dilution System Verification
ARI Reference Method Monitoring Data

Date/Time	O_2 % vol, db	Comments
3/31/2005 8:58:30	**6.05**	**6.05 6.00% O_2**
3/31/2005 8:58:45	**6.05**	
3/31/2005 8:59:00	**6.04**	
3/31/2005 8:59:15	**6.05**	
3/31/2005 8:59:30	6.05	
3/31/2005 8:59:45	6.09	
3/31/2005 9:00:00	7.12	
3/31/2005 9:00:15	9.09	
3/31/2005 9:00:30	10.77	
3/31/2005 9:00:45	11.84	
3/31/2005 9:01:00	12.32	
3/31/2005 9:01:15	12.45	
3/31/2005 9:01:30	12.48	
3/31/2005 9:01:45	12.48	**Target Concentration #1; Trial #1**
3/31/2005 9:02:00	**12.48**	**12.48 12.48% O_2**
3/31/2005 9:02:15	**12.48**	
3/31/2005 9:02:30	**12.48**	
3/31/2005 9:02:45	**12.48**	
3/31/2005 9:03:00	12.27	
3/31/2005 9:03:15	10.23	
3/31/2005 9:03:30	7.94	
3/31/2005 9:03:45	7.00	
3/31/2005 9:04:00	6.66	**Target Concentration #2; Trial #1**
3/31/2005 9:04:15	**6.55**	**6.54 6.50% O_2**
3/31/2005 9:04:30	**6.54**	
3/31/2005 9:04:45	**6.53**	
3/31/2005 9:05:00	**6.54**	
3/31/2005 9:05:15	6.54	
3/31/2005 9:05:30	6.54	
3/31/2005 9:05:45	6.58	
3/31/2005 9:06:00	7.05	
3/31/2005 9:06:15	6.70	
3/31/2005 9:06:30	4.37	
3/31/2005 9:06:45	2.22	
3/31/2005 9:07:00	1.22	
3/31/2005 9:07:15	1.65	
3/31/2005 9:07:30	5.67	
3/31/2005 9:07:45	9.12	
3/31/2005 9:08:00	11.09	
3/31/2005 9:08:15	12.10	
3/31/2005 9:08:30	12.46	**Mid-Level Concentration; Trial #1**
3/31/2005 9:08:45	**12.52**	**12.53 12.48% O_2**
3/31/2005 9:09:00	**12.53**	
3/31/2005 9:09:15	**12.54**	
3/31/2005 9:09:30	**12.54**	
3/31/2005 9:09:45	12.54	
3/31/2005 9:10:00	12.54	
3/31/2005 9:10:15	12.54	
3/31/2005 9:10:30	12.53	
3/31/2005 9:10:45	12.45	
3/31/2005 9:11:00	12.43	
3/31/2005 9:11:15	12.46	
3/31/2005 9:11:30	12.48	
3/31/2005 9:11:45	12.48	
3/31/2005 9:12:00	12.47	**Target Concentration #1; Trial #2**
3/31/2005 9:12:15	**12.47**	**12.47 12.48% O_2**
3/31/2005 9:12:30	**12.47**	
3/31/2005 9:12:45	**12.47**	
3/31/2005 9:13:00	**12.47**	
3/31/2005 9:13:15	12.47	
3/31/2005 9:13:30	11.99	
3/31/2005 9:13:45	10.28	
3/31/2005 9:14:00	8.54	
3/31/2005 9:14:15	7.32	
3/31/2005 9:14:30	6.73	
3/31/2005 9:14:45	6.57	
3/31/2005 9:15:00	6.53	**Target Concentration #2; Trial #2**
3/31/2005 9:15:15	**6.53**	**6.53 6.50% O_2**
3/31/2005 9:15:30	**6.53**	
3/31/2005 9:15:45	**6.53**	

USEPA Method 205 - Gas Dilution System Verification
ARI Reference Method Monitoring Data

Date/Time	O_2 % vol, db	Comments
3/31/2005 9:16:00	**6.53**	
3/31/2005 9:16:15	6.54	
3/31/2005 9:16:30	6.53	
3/31/2005 9:16:45	6.60	
3/31/2005 9:17:00	7.89	
3/31/2005 9:17:15	10.22	
3/31/2005 9:17:30	11.65	
3/31/2005 9:17:45	12.31	
3/31/2005 9:18:00	12.51	
3/31/2005 9:18:15	12.54	
3/31/2005 9:18:30	12.55	
3/31/2005 9:18:45	12.55	**Mid-Level Concentration; Trial #2**
3/31/2005 9:19:00	**12.55**	**12.55 12.48% O_2**
3/31/2005 9:19:15	**12.55**	
3/31/2005 9:19:30	**12.55**	
3/31/2005 9:19:45	**12.55**	
3/31/2005 9:20:00	12.55	
3/31/2005 9:20:15	12.54	
3/31/2005 9:20:30	11.62	
3/31/2005 9:20:45	8.62	
3/31/2005 9:21:00	5.83	
3/31/2005 9:21:15	4.43	
3/31/2005 9:21:30	3.85	
3/31/2005 9:21:45	3.19	
3/31/2005 9:22:00	2.49	
3/31/2005 9:22:15	1.78	
3/31/2005 9:22:30	1.18	
3/31/2005 9:22:45	0.81	
3/31/2005 9:23:00	0.60	
3/31/2005 9:23:15	0.47	
3/31/2005 9:23:30	0.40	
3/31/2005 9:23:45	0.37	
3/31/2005 9:24:00	0.39	
3/31/2005 9:24:15	0.41	
3/31/2005 9:24:30	0.40	
3/31/2005 9:24:45	0.37	
3/31/2005 9:25:00	0.34	
3/31/2005 9:25:15	0.33	
3/31/2005 9:25:30	0.32	
3/31/2005 9:25:45	0.32	
3/31/2005 9:26:00	0.31	
3/31/2005 9:26:15	0.30	
3/31/2005 9:26:30	0.30	
3/31/2005 9:26:45	0.30	
3/31/2005 9:27:00	0.32	
3/31/2005 9:27:15	0.43	
3/31/2005 9:27:30	0.54	
3/31/2005 9:27:45	0.64	
3/31/2005 9:28:00	0.71	
3/31/2005 9:28:15	0.73	
3/31/2005 9:28:30	0.69	
3/31/2005 9:28:45	0.62	
3/31/2005 9:29:00	0.52	
3/31/2005 9:29:15	0.43	
3/31/2005 9:29:30	0.35	
3/31/2005 9:29:45	0.32	
3/31/2005 9:30:00	0.30	
3/31/2005 9:30:15	0.29	
3/31/2005 9:30:30	0.29	
3/31/2005 9:30:45	0.29	
3/31/2005 9:31:00	0.29	
3/31/2005 9:31:15	0.28	
3/31/2005 9:31:30	0.28	
3/31/2005 9:31:45	0.28	
3/31/2005 9:32:00	0.28	
3/31/2005 9:32:15	0.27	
3/31/2005 9:32:30	0.28	
3/31/2005 9:32:45	0.28	
3/31/2005 9:33:00	0.28	
3/31/2005 9:33:15	0.28	

USEPA Method 205 - Gas Dilution System Verification
ARI Reference Method Monitoring Data

Date/Time	O_2 % vol, db	Comments
3/31/2005 9:33:30	0.28	
3/31/2005 9:33:45	0.28	
3/31/2005 9:34:00	0.27	
3/31/2005 9:34:15	0.30	
3/31/2005 9:34:30	0.36	
3/31/2005 9:34:45	0.42	
3/31/2005 9:35:00	0.45	
3/31/2005 9:35:15	0.45	
3/31/2005 9:35:30	0.45	
3/31/2005 9:35:45	0.45	
3/31/2005 9:36:00	0.45	
3/31/2005 9:36:15	0.45	
3/31/2005 9:36:30	0.45	
3/31/2005 9:36:45	0.45	
3/31/2005 9:37:00	0.45	
3/31/2005 9:37:15	0.45	
3/31/2005 9:37:30	0.45	
3/31/2005 9:37:45	0.44	
3/31/2005 9:38:00	0.45	
3/31/2005 9:38:15	0.45	
3/31/2005 9:38:30	0.45	
3/31/2005 9:38:45	0.45	
3/31/2005 9:39:00	0.45	
3/31/2005 9:39:15	0.45	
3/31/2005 9:39:30	0.45	
3/31/2005 9:39:45	0.45	
3/31/2005 9:40:00	0.45	
3/31/2005 9:40:15	0.45	
3/31/2005 9:40:30	0.45	
3/31/2005 9:40:45	0.45	
3/31/2005 9:41:00	0.46	
3/31/2005 9:41:15	0.49	
3/31/2005 9:41:30	0.51	
3/31/2005 9:41:45	0.50	
3/31/2005 9:42:00	0.47	
3/31/2005 9:42:15	0.46	
3/31/2005 9:42:30	0.45	
3/31/2005 9:42:45	0.45	
3/31/2005 9:43:00	0.46	
3/31/2005 9:43:15	0.45	
3/31/2005 9:43:30	0.45	
3/31/2005 9:43:45	0.45	
3/31/2005 9:44:00	0.45	
3/31/2005 9:44:15	0.45	
3/31/2005 9:44:30	0.45	
3/31/2005 9:44:45	0.42	
3/31/2005 9:45:00	0.45	
3/31/2005 9:45:15	0.45	
3/31/2005 9:45:30	0.45	
3/31/2005 9:45:45	0.45	
3/31/2005 9:46:00	0.44	
3/31/2005 9:46:15	0.44	
3/31/2005 9:46:30	0.44	
3/31/2005 9:46:45	0.49	
3/31/2005 9:47:00	0.58	
3/31/2005 9:47:15	0.66	
3/31/2005 9:47:30	0.70	
3/31/2005 9:47:45	0.74	
3/31/2005 9:48:00	0.75	
3/31/2005 9:48:15	0.76	
3/31/2005 9:48:30	0.76	
3/31/2005 9:48:45	0.76	
3/31/2005 9:49:00	0.78	
3/31/2005 9:49:15	1.26	
3/31/2005 9:49:30	4.66	
3/31/2005 9:49:45	8.51	
3/31/2005 9:50:00	10.65	
3/31/2005 9:50:15	11.65	
3/31/2005 9:50:30	11.98	
3/31/2005 9:50:45	12.06	

USEPA Method 205 - Gas Dilution System Verification
ARI Reference Method Monitoring Data

Date/Time	O_2 % vol, db	Comments
3/31/2005 9:51:00	12.08	
3/31/2005 9:51:15	12.09	
3/31/2005 9:51:30	12.10	
3/31/2005 9:51:45	12.13	
3/31/2005 9:52:00	12.19	
3/31/2005 9:52:15	12.23	
3/31/2005 9:52:30	12.24	
3/31/2005 9:52:45	12.25	
3/31/2005 9:53:00	12.27	
3/31/2005 9:53:15	12.28	
3/31/2005 9:53:30	12.30	
3/31/2005 9:53:45	12.31	
3/31/2005 9:54:00	12.32	
3/31/2005 9:54:15	12.33	
3/31/2005 9:54:30	12.34	
3/31/2005 9:54:45	12.35	
3/31/2005 9:55:00	12.36	
3/31/2005 9:55:15	12.37	
3/31/2005 9:55:30	12.37	
3/31/2005 9:55:45	12.38	
3/31/2005 9:56:00	12.38	
3/31/2005 9:56:15	12.39	
3/31/2005 9:56:30	12.39	
3/31/2005 9:56:45	12.40	**Target Concentration #1; Trial #3**
3/31/2005 9:57:00	**12.40**	**12.40 12.48% O_2**
3/31/2005 9:57:15	**12.40**	
3/31/2005 9:57:30	**12.41**	
3/31/2005 9:57:45	**12.41**	
3/31/2005 9:58:00	11.93	
3/31/2005 9:58:15	10.22	
3/31/2005 9:58:30	8.50	
3/31/2005 9:58:45	7.30	
3/31/2005 9:59:00	6.71	
3/31/2005 9:59:15	6.55	
3/31/2005 9:59:30	6.51	
3/31/2005 9:59:45	6.51	
3/31/2005 10:00:00	6.51	
3/31/2005 10:00:15	6.52	
3/31/2005 10:00:30	6.51	**Target Concentration #2; Trial #3**
3/31/2005 10:00:45	**6.52**	**6.52 6.50% O_2**
3/31/2005 10:01:00	**6.52**	
3/31/2005 10:01:15	**6.51**	
3/31/2005 10:01:30	**6.52**	
3/31/2005 10:01:45	6.81	
3/31/2005 10:02:00	8.78	
3/31/2005 10:02:15	10.83	
3/31/2005 10:02:30	11.95	
3/31/2005 10:02:45	12.40	
3/31/2005 10:03:00	12.51	
3/31/2005 10:03:15	12.53	
3/31/2005 10:03:30	12.53	
3/31/2005 10:03:45	12.53	
3/31/2005 10:04:00	12.53	
3/31/2005 10:04:15	12.53	
3/31/2005 10:04:30	12.54	
3/31/2005 10:04:45	12.53	**Mid-Level Concentration; Trial #3**
3/31/2005 10:05:00	**12.54**	**12.54 12.48% O_2**
3/31/2005 10:05:15	**12.54**	
3/31/2005 10:05:30	**12.54**	
3/31/2005 10:05:45	**12.54**	
3/31/2005 10:06:00	11.76	
3/31/2005 10:06:15	8.81	
3/31/2005 10:06:30	5.69	
3/31/2005 10:06:45	3.43	
3/31/2005 10:07:00	2.17	
3/31/2005 10:07:15	1.65	
3/31/2005 10:07:30	1.42	

ARI ENVIRONMENTAL, INC.
EPA Method 5
Model 522 Meter Box Calibration
Post-Test Orifice Method
English Volume Units, English K' Factor

Model #: APEX
Serial #: 81006

Date: 4/11/2005
Barometric Pressure: 29.20 **in Hg**

DRY GAS METER READINGS						CALIBRATION ORIFICE READING								
						Temperature						Ambient Temperature		
ΔH (in H20)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)		Tmi Inlet (deg F)	Tmo Outlet (deg F)	Orifice Serial No	K' FACTOR (number)	Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
2.10	10.0	970.514	978.683	8.169	Initial>	71	71	63	0.6235	21.000	70	71	70.500
					Final >	74	73						
2.10	10.0	978.683	986.910	8.227	Initial>	74	73	63	0.6235	21.000	71	71	71.000
					Final >	78	73						
2.10	10.0	986.910	995.148	8.238	Initial>	77	73	63	0.6235	21.000	71	71	71.000
					Final >	81	74						

METER CALIBRATION

METER FLOW (cu ft)	ORIFICE FLOW (cu ft)	FACTOR, Yc (number)	ΔH@ (in H2O)
7.9474	7.90	0.995	1.94
7.9701	7.90	0.991	1.94
7.9547	7.90	0.993	1.94

AVERAGE METER CALIBRATION FACTOR, Yc **0.993**
FULL TEST CALIBRATION FACTOR, Yd 1.002 ***% DIFFERENCE:*** 0.9 *(+or- 5.0% allowable)*

ARI Environmental, Inc.
Gas Meter Thermometer Calibration Data Form
Post Test

Meter Box: APEX 81006
Calibrator: MEL
Date: 4/11/05
Barometric: 29.20
Ambient Temp 67.00
Reference Thermometer: Altek Thermocouple Source

Reference Temperature	Thermometer Temperature	Difference (%) mean	Thermometer Temperature	Difference (%) mean	Thermometer Temperature	Difference (%) mean
Altek	Inlet	Inlet	Outlet	Outlet	Probe	Probe
0.00	1.00	0.22	1.00	0.22	1.00	0.22
100.00	99.00	-0.18	99.00	-0.18	99.00	-0.18
200.00	202.00	0.30	202.00	0.30	202.00	0.30
300.00	302.00	0.26	302.00	0.26	302.00	0.26
400.00	398.00	-0.23	398.00	-0.23	399.00	-0.12
500.00	499.00	-0.10	499.00	-0.10	499.00	-0.10

Reference Temperature	Thermometer Temperature	Difference (%) mean	Thermometer Temperature	Difference (%) mean	Thermometer Temperature	Difference (%) mean
Altek	Filter	Filter	Exit	Exit	Aux	Aux
0.00	1.00	0.22	1.00	0.22	1.00	0.22
100.00	101.00	0.18	100.00	0.00	100.00	0.00
200.00	203.00	0.45	203.00	0.45	203.00	0.45
300.00	303.00	0.39	302.00	0.26	302.00	0.26
400.00	399.00	-0.12	399.00	-0.12	399.00	-0.12
500.00	501.00	0.10	500.00	0.00	500.00	0.00

Reference Temperature	Thermometer Temperature	Difference (%) mean
Altek	Stack	Stack
0.00	1.00	0.22
100.00	100.00	0.00
200.00	202.00	0.30
300.00	302.00	0.26
400.00	399.00	-0.12
500.00	499.00	-0.10

ARI ENVIRONMENTAL, INC
EPA Method 5
Model 522 Meter Box Calibration
Pre-Test Orifice Method
English Volume Units, English K' Factor

Model #: APEX
Serial #: 81006

Date: 12/6/04
Barometric Pressur 29.09 **in Hg**

		DRY GAS METER READINGS				CALIBRATION ORIFICE READING							
						Temperature					Ambient Temperature		
ΔH (in H20)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)		Tmi Inlet (deg F)	Tmo Outlet (deg F)	Orifice Serial No	K' FACTOF (number)	Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
0.50	10.0	903.512	907.734	4.222	Initial>	71	66	47	0.327	16.000	63	63	63.000
					Final >	66	66						
1.00	10.0	969.015	975.022	6.007	Initial>	73	70	55	0.450	19.000	63	63	63.000
					Final >	71	69						
2.00	10.0	879.014	887.002	7.988	Initial>	59	59	63	0.624	16.000	64	62	63.000
					Final >	64	62						
3.10	10.0	975.919	986.065	10.146	Initial>	70	69	73	0.778	11.000	64	64	64.000
					Final >	75	69						
4.40	10.0	956.235	968.315	12.080	Initial>	73	70	81	0.935	10.000	64	64	64.000
					Final >	79	70						

METER CALIBRATION

METER FLOW (cu ft)	ORIFICE FLOW (cu ft)	FACTOR, Yc (number)	ΔH@ (in H2O)
4.1143	4.16	1.011	1.65
5.8225	5.72	0.983	1.74
7.9074	7.93	1.003	1.81
9.8864	9.89	1.000	1.81
11.7594	11.88	1.010	1.78
AVERAGE METER CALIBRATION FACTOR,		1.002	1.76

ARI Environmental, Inc.
Gas Meter Thermometer Calibration Data Form
PRE-TEST

Meter Box: APEX 81006
Calibrator: MEL
Date: 12/6/04
Barometric: 29.09
Ambient Temp 63.00
Reference Thermometer: Altek Thermocouple Source

Reference Temperature	Thermometer Temperature	Difference (%) mean	Thermometer Temperature	Difference (%) mean	Thermometer Temperature	Difference (%) mean
Altek	Inlet	Inlet	Outlet	Outlet	Probe	Probe
0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	99.00	-0.18	99.00	-0.18	99.00	-0.18
200.00	201.00	0.15	201.00	0.15	201.00	0.15
300.00	301.00	0.13	301.00	0.13	301.00	0.13
400.00	397.00	-0.35	397.00	-0.35	397.00	-0.35
500.00	499.00	-0.10	499.00	-0.10	499.00	-0.10

Reference Temperature	Thermometer Temperature	Difference (%) mean	Thermometer Temperature	Difference (%) mean	Thermometer Temperature	Difference (%) mean
Altek	Filter	Filter	Exit	Exit	Aux	Aux
0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	99.00	-0.18	99.00	-0.18	99.00	-0.18
200.00	201.00	0.15	201.00	0.15	201.00	0.15
300.00	301.00	0.13	301.00	0.13	301.00	0.13
400.00	397.00	-0.35	397.00	-0.35	397.00	-0.35
500.00	499.00	-0.10	499.00	-0.10	499.00	-0.10

Reference Temperature	Thermometer Temperature	Difference (%) mean
Altek	Stack	Stack
0.00	0.00	0.00
100.00	99.00	-0.18
200.00	201.00	0.15
300.00	301.00	0.13
400.00	397.00	-0.35
500.00	499.00	-0.10

ARI ENVIRONMENTAL, INC.
EPA Method 5
Model 522 Meter Box Calibration
Post-Test Orifice Method
English Volume Units, English K' Factor

Model #: APEX
Serial #: 503002

Date: 4/4/05
Barometric Pressu 29.24 **in Hg**

		DRY GAS METER READINGS				CALIBRATION ORIFICE READING							
						Temperature					Ambient Temperature		
ΔH (in H20)	Time (min)	Volume Initial (cu ft)	Volume Final (cu ft)	Volume Total (cu ft)		Tmi Inlet (deg F)	Tmo Outlet (deg F)	Orifice Serial No	K' FACTOR (number)	Vacuum (in Hg)	Initial (deg F)	Final (deg F)	Average (deg F)
2.10	10.0	44.690	52.775	8.085	Initial>	68	68	63	0.6235	13.000	67	67	67.000
					Final >	69	69						
2.10	10.0	52.775	60.910	8.135	Initial>	69	69	63	0.6235	13.000	67	67	67.000
					Final >	70	70						
2.10	10.0	60.910	69.028	8.118	Initial>	70	70	63	0.6235	13.000	67	68	67.500
					Final >	70	70						

METER CALIBRATION

METER FLOW (cu ft)	ORIFICE FLOW (cu ft)	FACTOR, Yc (number)	ΔH@ (in H2O)
7.9323	7.94	1.001	1.90
7.9663	7.94	0.997	1.90
7.9421	7.94	0.999	1.91

AVERAGE METER CALIBRATION FACTOR, Yc **0.999**
FULL TEST CALIBRATION FACTOR, Yd 1.006 ***% DIFFERENCE:*** 0.7 *(+or- 5.0% allowable)*

ARI Environmental, Inc.
Gas Meter Thermometer Calibration Data Form
POST TEST

Meter Box: Apex 0503002
Calibrator: Mel
Date: 4/4/05
Barometric: 29.25
Ambient Temp: 68
Reference Thermometer: Altek Thermocouple Source

Reference Temperature	Thermometer Temperature	Difference (%) mean	Thermometer Temperature	Difference (%) mean	Thermometer Temperature	Difference (%) mean	Thermometer Temperature	Difference (%) mean
Altek	Inlet	Inlet	Oulet	Oulet	Probe	Probe	Stack	Stack
0	2	0.43	2	0.43	2	0.43	2	0.43
100	100	0.00	100	0.00	100	0.00	101	0.18
200	203	0.45	203	0.45	203	0.45	203	0.45
300	303	0.39	303	0.39	303	0.39	303	0.39
400	399	-0.12	399	-0.12	399	-0.12	399	-0.12
500	500	0.00	500	0.00	500	0.00	501	0.10

Reference Temperature	Thermometer Temperature	Difference (%) mean	Thermometer Temperature	Difference (%) mean	Thermometer Temperature	Difference (%) mean
Altek	Filter	Filter	Exit	Exit	Aux	Aux
0	2	0.43	2	0.43	2	0.43
100	101	0.18	101	0.18	101	0.18
200	203	0.45	203	0.45	203	0.45
300	303	0.39	303	0.39	303	0.39
400	399	-0.12	399	-0.12	399	-0.12
500	501	0.10	501	0.10	501	0.10

APEX INSTRUMENTS METHOD 5 PRE-TEST CONSOLE CALIBRATION
USING WET-TEST METER #11AE6
5-POINT ENGLISH UNITS

Meter Console Information	
Console Model Number	MC522
Console Serial Number	0503002
DGM Model Number	S110
DGM Serial Number	1505952

Calibration Conditions			
Date	Time	15-Mar-05	10:10
Barometric Pressure		29.8	in Hg
Calibration Technician		RM	
Calibration Meter Gamma		1.0000	unitless

Factors/Conversions		
Std Temp	528	°R
Std Press	29.92	in Hg
K_1	17.647	oR/in Hg

Calibration Data

Run Time	Metering Console						Calibration Meter			
Elapsed	DGM Orifice ΔH	Volume Initial	Volume Final	Sample Volume	Outlet Temp Initial	Outlet Temp Final	Volume Initial	Volume Final	Outlet Temp Initial	Outlet Temp Final
(Θ)	(P_m)	(V_{mi})	(V_{mf})	(V_m)	(t_{mi})	(t_{mf})	(Vw_i)	(Vw_f)	(t_{wi})	(t_{wf})
min	in H_2O	cubic feet	cubic feet	cubic feet	°F	°F	cubic feet	cubic feet	°F	°F
6.00	5.0	25.930	33.456	7.526	80	81	750.825	758.365	75	75
6.00	3.0	33.456	39.282	5.827	81	81	758.365	764.195	75	75
7.00	2.0	39.282	44.716	5.434	81	81	764.195	769.616	75	75
10.00	1.0	44.716	50.213	5.497	81	81	769.616	775.115	75	75
15.00	0.5	50.213	56.029	5.816	81	81	775.115	780.935	75	75

Results

Standardized Data				Dry Gas Meter				
				Calibration Factor		Flowrate	ΔH @	
Dry Gas Meter		Calibration Meter		Value	Variation	Std & Corr	0.75 SCFM	Variation
($V_{m(std)}$)	($Q_{m(std)}$)	($Vw_{(std)}$)	($Qw_{(std)}$)	(Y)	(ΔY)	($Q_{m(std)(corr)}$)	(ΔH@)	(ΔΔH@)
cubic feet	cfm	cubic feet	cfm			cfm	in H2O	
7.400	1.233	7.405	1.234	1.001	-0.006	1.234	1.839	-0.029
5.696	0.949	5.726	0.954	1.005	-0.001	0.954	1.826	-0.042
5.299	0.757	5.324	0.761	1.005	-0.002	0.761	1.908	0.040
5.348	0.535	5.401	0.540	1.010	0.004	0.540	1.882	0.014
5.651	0.377	5.716	0.381	1.012	0.005	0.381	1.886	0.017
				1.006	Y Average		1.868	ΔH@ Average

Note: 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.

Note: For $\Delta H_@$, orifice pressure differential that equates to 0.75cfm (0.0212m^3/min) at standard temperature and pressure, acceptable tolerance of individual values from the average is +-0.2inches (5.1mm) H_2O.

I certify that the above Dry Gas Meter was calibrated in accordance with USEPA Methods, CFR 40 Part 60, using the Precision Wet Test Meter # 11AE6, which in turn was calibrated using the American Bell Prover # 3785, certificate # F107, which is traceable to the National Bureau of Standards (N.I.S.T.).

Signature _____ Date 03-15-05

APEX SOURCE TESTING EQUIPMENT
INSTRUMENTS

APEX INSTRUMENTS METERING CONSOLE CHECK LIST

MODEL: MC522 **S/N:** 05022002

DATE: 3-14-05 **INITIALS:** AP

VOLTAGE:
- ☑ 120VAC
- ☐ 220VAC

PUMP:
- ☐ MOTOR OPERATION
- ☑ PNEUMATIC

PROBE:
- ☑ TC SIMULATOR
- ☐ LIGHT ASSEMBLY

OVEN:
- ☑ TC SIMULATOR
- ☑ LIGHT ASSEMBLY

AUX:
- ☐ TC SIMULATOR N/A
- ☐ LIGHT ASSEMBLY

TEMP DISPLAY:
- ☐ C°
- ☑ F°

TIMER:
- ☑ COUNTS W/SWITCH ON
- ☑ STOPS W/SWITCH OFF
- ☑ ZERO RESET
- ☑ H/M/S
- ☑ MIN/MIN

MANOMETER:
- ☑ SOLENOIDS ACTIVATE

SCALE:
- ☑ ENGLISH
- ☐ METRIC

TC CONNECTIONS:
- ☑ METER (DIRECT READ)
- ☑ STACK (SIMULATOR)
- ☑ AUXILLARY (SIMULATOR)
- ☑ EXIT (SIMULATOR)

ORSAT (OPTIONAL):
- ☐ MOTOR N/A
- ☐ PNEUMATIC

220V OPERATION / NOT APPLICABLE
- ☐ PWR. CORD
- ☐ 220V LABEL N/A
- ☐ FAN
- ☐ FUSES
- ☐ PUMP
- ☐ SOLENOIDS

Thermocouple Simulator: Model Altek Series 22Type K, Range 0-2100° F

Serial Number:

Thermocouple Simulator Setting		Meter Box Channel Temperature Reading				
C°	F°	Probe	Stack	Filter	Exit	Aux
-18	0	0	0	0	0	0
38	100	100	100	100	100	100
93	200	202	202	202		202
149	300	303	303	302		302
260	500		500			
371	700		703			
482	900		903			
593	1100		1103			
816	1500		1503			
1038	1900		1903			

Tolerance Range

Stack	1.5 % +/- Absolute
Filter	5.4° F +/-
Meter	5.4° F +/-
Exit	2.0° F +/-

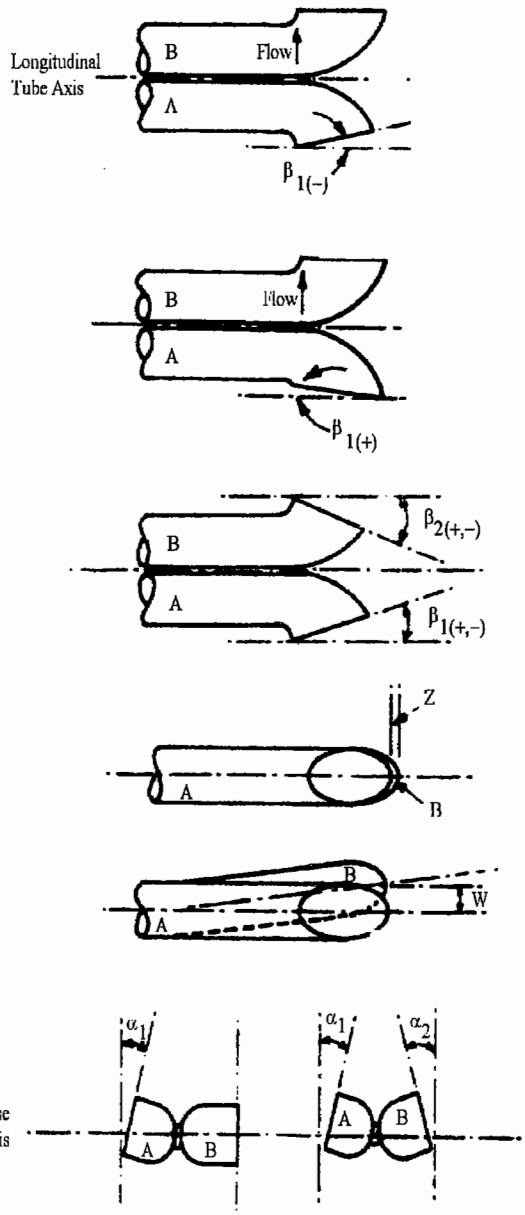
Ice Water 32° F	Meter TC Reading
32	32

Pitot Tube Inspection Data

Client Name: MAPLLC Platformer

Pre-Sample Date: 3/24/05

Post-Sample Date: 4/18/05



Pre-Sample		Post-Sample
Y	**level?**	Y
N	**obstructions?**	N
N	**damaged?**	N
1	**$-10° < \alpha_1 < +10°$**	0
1	**$-10° < \alpha_2 < +10°$**	1
1	**$-5° < \beta_1 < +5°$**	1
1	**$-5° < \beta_2 < +5°$**	1
0	**γ**	0
1	**θ**	0
0.98	**A**	0.98
0.48	**0.39375 $< P_A <$ 0.5625**	0.48
0.50	**0.39375 $< P_B <$ 0.5625**	0.5
0.375	**3/16" </= D_t </= 3/8"**	0.375
0.000	**A tan γ < 0.125"**	0.000
0.00000	**A tan θ < 0.03125"**	0.00000
TRUE	**$P_A = P_B$ +/- 0.063**	TRUE

Comments: S-type pitot tube with k-type thermocouple attached to 3' glass-lined M5 probe.

Pitot tube/probe number 414 meets or exceeds all specifications and criteria and/or applicable design features (per 40CFR60 Appendix A; Method 2) and is hereby assigned a pitot tube calibration factor of 0.84.

Signature:

Date: April 18, 2005

ARI Environmental Inc.
Thermocouple Calibration Data Form

Calibrator: B. Crane
Thermocouple ID. 414

	pretest	posttest
Date:	3/24/05	4/18/05

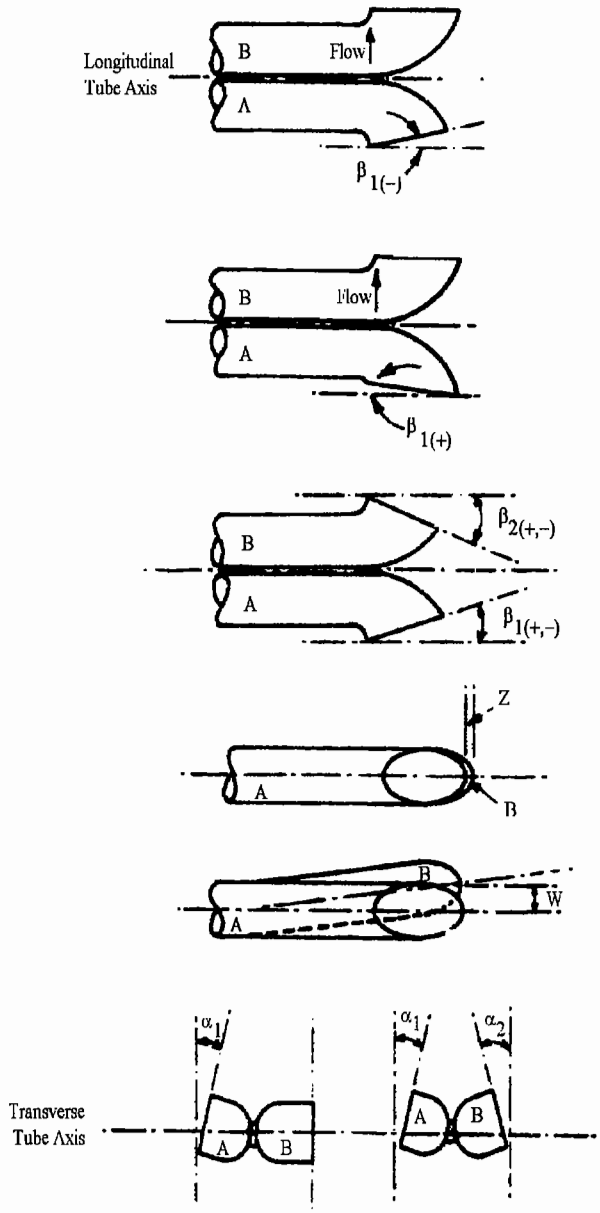
Barometric:
Reference Thermometer = Mercury in glass

	Reference Point Number	Source	Reference Thermometer Temperature	Meter Readout Temperature	Temperature Difference (%)a
Pre-Test	T.C	Ice Water	35.0	35.6	-0.12
		Anmbient	72.0	72.8	-0.15
		Hot Water	210.0	211.0	0.00
Post-Test	T.C	Ice Water	35.0	37.2	-0.44
		Ambient	71.0	72.4	-0.26
		Hot Water	209.0	210.0	-0.15

a (temp. diff.) = (ref.temp + 460) - (Thermo. temp. + 460) / (ref. temp. +460) x 10(
Where -1.5 < a < 1.5

Pitot Tube Inspection Data

Client Name: MAPLLC Platformer



Pre-Sample		Post-Sample
Date: 3/24/05		**Date:** 4/18/05
YES	**level?**	YES
NO	**obstructions?**	NO
NO	**damaged?**	NO
0	**$-10° < \alpha_1 < +10°$**	0
1	**$-10° < \alpha_2 < +10°$**	1
0	**$-5° < \beta_1 < +5°$**	0
1	**$-5° < \beta_2 < +5°$**	1
1	**γ**	1
0	**θ**	1
0.748	**A**	0.75
0.374	**$0.2625 < P_A < 0.375$**	0.375
0.374	**$0.2625 < P_B < 0.375$**	0.375
0.25	**$3/16" <= D_t <= 3/8"$**	0.25
0.013	**A tan γ < 0.125"**	0.013
0.00653	**A tan θ < 0.03125"**	0.00654
TRUE	**$P_A = P_B$ +/- 0.063**	TRUE

Comments: S-type pitot tube with k-type thermocouple, enclosed in 1" diameter pressure sealed s.s. sheath, 4' effective length.

Pitot tube/probe number 832 meets or exceeds all specifications and criteria and/or applicable design features (per 40CFR60 Appendix A; Method 2) and is heareby assigned a pitot tube calibration factor of 0.84.

Signature:

Date: Sept 8, 2005

ARI Environmental Inc.
Thermocouple Calibration Data Form

Calibrator: B. Crane
Thermocouple ID. 832

	pretest	posttest
Date:	3/24/05	4/18/05

Barometric:
Reference Thermometer = Mercury in glass

	Reference Point Number	Source		Meter Readout Temperature	
Pre Test	T.C	Ice Water	35.0	36.0	-0.20
		Ambient	72.0	72.6	-0.12
		Hot Water	210.0	210.8	0.00
Post Test	T.C	Ice Water	34.0	34.6	-0.12
		Ambient	71.0	71.8	-0.15
		Hot Water	209.0	209.8	-0.12

a (temp. diff.) = (ref.temp + 460) - (Thermo. temp. + 460) / (ref. temp. +460) x 10(

Where -1.5 < a < 1.5

APPENDIX F

Process Data

Summary of Platformer MACT UUU Performance Test Data

	Upper Regen Air	Lower Regen Air	Vent Gas Flow	Total Wash Water Flow	Total Wash Water Flow	Make-up Condensate Flow	Vent Gas Pressure	Vent Gas Temperature	Vent Gas Temperature	L/G Ratio	L/G Ratio	L/G Ratio	L/G Ratio	pH Analyzer	pH Analyzer	Conductivity Analyzer
	16FC1630 MSCFH	16FC1610 MSCFH	16FI0980 MSCFH	16FI1121 GPM	16FI1122 GPM	16FC1130 GPM	16PC1300 In. of H2O	16TI0800 Degrees F	K	16FI1121, 16FC1130, 16FI0980 GPM/MSCFH	16FI1122, 16FC1130, 16FI0980 GPM/MSCFH	16FI1121, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	16FI1122, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	16AI0170 pH units	16AI0180 pH units	16AI0190
White Burn Condition 1 Average	12.6493	12.0400	35.0821	35.4140	34.0822	3.7579	2.5025	435	497	1.1168	1.0788	0.9353	0.9035	3.30	3.11	5,805
White Burn Condition 2 Average	11.0832	12.0615	33.2673	48.5301	48.1704	3.4404	2.4609	429	494	1.5625	1.5516	1.3332	1.3240	4.14	4.05	5,823
Black Burn Condition 1 Average	24.3866	7.9954	45.1630	29.5294	28.7833	3.9836	4.6873	465	513	0.7431	0.7265	0.5924	0.5794	2.06	1.94	8,197
Black Burn Condition 2 Average	23.4197	7.9916	41.1601	43.1801	42.4936	3.8478	4.7034	472	517	1.1429	1.1262	0.8480	0.8357	4.07	4.01	598

Platformer Vent Gas Scrubber MACT UUU Performance Test Data

White Burn Condition #1 Run #1 Date/Time	Upper Regen Air 16FC1630 MSCFH	Lower Regen Air 16FC1610 MSCFH	Vent Gas Flow 16FI0980 MSCFH	Total Wash Water Flow 16FI1121 GPM	Total Wash Water Flow 16FI1122 GPM	Make-up Condensate Flow 16FC1130 GPM	Vent Gas Pressure 16PC1300 In. of H2O	Vent Gas Temperature 16TI0800 Degrees F	Vent Gas Temperature K	L/G Ratio 16FI1121, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1122, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1121, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	L/G Ratio 16FI1122, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	pH Analyzer 16AI0170 pH units	pH Analyzer 16AI0180 pH units	Conductivity Analyzer 16AI0190
3/29/2005 17:04	12.9949	11.9469	35.0857	35.2457	33.5904	3.7549	2.4639	433	496	1.1116	1.0644	0.9236	0.8844	3.15	2.93	5,443
3/29/2005 17:05	12.9411	12.0305	35.3046	35.2469	33.5957	3.7549	2.4631	433	496	1.1047	1.0580	0.9226	0.8835	3.15	2.93	5,502
3/29/2005 17:06	12.8874	12.0270	35.2627	35.2482	33.6011	3.7549	2.4623	433	496	1.1061	1.0594	0.9247	0.8856	3.16	2.93	5,507
3/29/2005 17:07	12.7710	12.0590	34.9625	35.2494	33.6064	3.7549	2.4614	433	496	1.1156	1.0686	0.9278	0.8888	3.16	2.94	5,512
3/29/2005 17:08	12.7770	12.0508	35.5495	35.2507	33.6118	3.7550	2.4606	433	496	1.0972	1.0511	0.9279	0.8890	3.16	2.94	5,518
3/29/2005 17:09	12.7849	12.0136	35.4705	35.2519	33.6172	3.7550	2.4598	433	496	1.0997	1.0536	0.9291	0.8901	3.16	2.95	5,523
3/29/2005 17:10	12.7697	11.9998	34.9469	35.2531	33.6225	3.7550	2.4590	433	496	1.1162	1.0696	0.9302	0.8913	3.17	2.95	5,528
3/29/2005 17:11	12.7545	11.9553	34.6579	35.2544	33.6279	3.7550	2.4581	433	496	1.1256	1.0786	0.9324	0.8935	3.17	2.95	5,533
3/29/2005 17:12	12.7211	11.9639	34.3458	35.2556	33.6333	3.7551	2.4573	433	496	1.1358	1.0886	0.9334	0.8946	3.17	2.96	5,538
3/29/2005 17:13	12.9295	12.0961	34.4194	35.2569	33.6386	3.7551	2.4565	433	496	1.1334	1.0864	0.9207	0.8825	3.18	2.96	5,544
3/29/2005 17:14	12.8663	12.0914	34.5203	35.2581	33.6440	3.7551	2.4557	433	496	1.1302	1.0834	0.9232	0.8850	3.18	2.96	5,549
3/29/2005 17:15	12.8030	12.1583	35.2501	35.2593	33.6494	3.7551	2.4548	433	496	1.1068	1.0611	0.9231	0.8850	3.18	2.97	5,554
3/29/2005 17:16	12.7397	12.1200	35.2407	35.2606	33.6547	3.7551	2.4540	433	496	1.1071	1.0616	0.9269	0.8887	3.18	2.97	5,559
3/29/2005 17:17	12.6104	12.0896	34.9606	35.2618	33.6601	3.7552	2.4532	433	496	1.1160	1.0702	0.9329	0.8946	3.19	2.98	5,564
3/29/2005 17:18	12.6297	12.2001	34.8985	35.2631	33.6655	3.7552	2.4524	433	496	1.1181	1.0723	0.9280	0.8900	3.19	2.98	5,570
3/29/2005 17:19	12.6661	12.0356	34.8152	35.2643	33.6708	3.7552	2.4515	433	496	1.1208	1.0750	0.9329	0.8948	3.19	2.98	5,575
3/29/2005 17:20	12.6782	11.9581	34.8688	35.2656	33.6762	3.7552	2.4507	433	496	1.1191	1.0735	0.9353	0.8972	3.20	2.99	5,580
3/29/2005 17:21	12.6903	11.9067	34.8216	35.2668	33.6816	3.7553	2.4499	433	496	1.1206	1.0751	0.9369	0.8988	3.20	2.99	5,585
3/29/2005 17:22	12.6417	11.9639	34.6507	35.2680	33.6869	3.7553	2.4491	433	496	1.1262	1.0806	0.9365	0.8986	3.20	2.99	5,591
3/29/2005 17:23	12.8072	11.9006	34.7110	35.2693	33.6923	3.7553	2.4482	433	496	1.1243	1.0788	0.9327	0.8950	3.20	3.00	5,596
3/29/2005 17:24	12.7473	11.9285	34.7097	35.2705	33.6977	3.7553	2.4474	433	496	1.1243	1.0790	0.9339	0.8963	3.21	3.00	5,601
3/29/2005 17:25	12.6874	12.0613	35.1631	35.2718	33.7030	3.7553	2.4466	433	496	1.1099	1.0653	0.9312	0.8937	3.21	3.01	5,606
3/29/2005 17:26	12.6275	12.0581	35.1611	35.2730	33.7084	3.7554	2.4458	433	496	1.1100	1.0655	0.9336	0.8961	3.21	3.01	5,611
3/29/2005 17:27	12.5024	12.0336	34.9233	35.2742	33.7137	3.7554	2.4449	434	496	1.1176	1.0729	0.9393	0.9017	3.22	3.01	5,617
3/29/2005 17:28	12.5221	12.0219	34.6611	35.2755	33.7191	3.7554	2.4441	434	496	1.1261	1.0812	0.9390	0.9015	3.22	3.02	5,622
3/29/2005 17:29	12.5361	11.9131	34.7052	35.2767	33.7245	3.7554	2.4433	434	496	1.1247	1.0800	0.9426	0.9052	3.22	3.02	5,627
3/29/2005 17:30	12.5255	11.9273	35.0745	35.2780	33.7298	3.7555	2.4425	434	496	1.1129	1.0687	0.9425	0.9051	3.23	3.02	5,632
3/29/2005 17:31	12.5149	11.9416	34.9830	35.2792	33.7352	3.7555	2.4416	434	496	1.1158	1.0717	0.9424	0.9051	3.23	3.03	5,637
3/29/2005 17:32	12.4331	11.9997	34.2493	35.2804	33.7406	3.7555	2.4408	434	496	1.1398	1.0948	0.9433	0.9061	3.23	3.03	5,643
3/29/2005 17:33	12.5925	12.1584	34.2676	35.2817	33.7459	3.7555	2.4400	434	496	1.1392	1.0944	0.9312	0.8946	3.23	3.04	5,648
3/29/2005 17:38	12.5287	12.1982	34.6535	35.2879	33.7728	3.7556	2.4359	434	496	1.1267	1.0830	0.9322	0.8960	3.25	3.05	5,674
3/29/2005 17:39	12.5443	12.0530	34.9532	35.2891	33.7781	3.7557	2.4350	434	496	1.1171	1.0738	0.9371	0.9009	3.25	3.05	5,679
3/29/2005 17:40	12.5355	12.0490	34.8897	35.2904	33.7835	3.7557	2.4342	434	496	1.1191	1.0759	0.9376	0.9014	3.25	3.05	5,684
3/29/2005 17:41	12.5268	12.0456	34.7743	35.2916	33.7889	3.7557	2.4334	434	496	1.1229	1.0797	0.9381	0.9020	3.26	3.05	5,690
3/29/2005 17:42	12.4333	12.0798	34.3930	35.2929	33.7942	3.7557	2.4326	434	496	1.1354	1.0918	0.9404	0.9043	3.26	3.06	5,695
3/29/2005 17:43	12.5099	12.1748	34.7927	35.2941	33.7996	3.7557	2.4317	434	496	1.1224	1.0794	0.9339	0.8981	3.26	3.06	5,700
3/29/2005 17:44	12.4859	12.1177	34.7326	35.2953	33.8049	3.7558	2.4309	434	496	1.1243	1.0814	0.9370	0.9012	3.27	3.06	5,702
3/29/2005 17:45	12.4619	12.0605	34.8505	35.2966	33.8103	3.7558	2.4301	434	496	1.1206	1.0779	0.9401	0.9043	3.27	3.06	5,705
3/29/2005 17:46	12.4378	12.0033	34.9716	35.2978	33.8157	3.7558	2.4293	434	496	1.1167	1.0743	0.9432	0.9074	3.27	3.06	5,708
3/29/2005 17:47	12.3778	11.9987	34.7020	35.2991	33.8210	3.7558	2.4284	434	496	1.1254	1.0828	0.9457	0.9099	3.27	3.06	5,710
3/29/2005 17:48	12.3937	12.2451	34.7858	35.3003	33.8264	3.7559	2.4276	434	496	1.1228	1.0804	0.9357	0.9004	3.28	3.07	5,713
3/29/2005 17:49	12.3979	12.1757	35.2644	35.3015	33.8318	3.7559	2.4268	434	496	1.1076	1.0659	0.9382	0.9029	3.28	3.07	5,716
3/29/2005 17:50	12.3883	12.1211	35.2378	35.3028	33.8371	3.7559	2.4260	434	496	1.1084	1.0668	0.9406	0.9054	3.28	3.07	5,718
3/29/2005 17:51	12.3788	12.0533	34.9039	35.3040	33.8425	3.7559	2.4251	434	496	1.1191	1.0772	0.9436	0.9083	3.29	3.07	5,721
3/29/2005 17:52	12.3017	12.0422	34.5873	35.3053	33.8479	3.7559	2.4243	434	496	1.1293	1.0872	0.9471	0.9117	3.29	3.07	5,724
3/29/2005 17:53	12.4949	11.8837	34.9712	35.3065	33.8532	3.7560	2.4235	434	496	1.1170	1.0754	0.9457	0.9106	3.29	3.07	5,726
3/29/2005 17:54	12.4763	11.8805	35.2459	35.3077	33.8586	3.7560	2.4227	434	496	1.1083	1.0672	0.9466	0.9115	3.29	3.08	5,729
3/29/2005 17:55	12.4577	11.9952	34.8600	35.3090	33.8640	3.7560	2.4218	434	496	1.1206	1.0792	0.9429	0.9080	3.30	3.08	5,732
3/29/2005 17:56	12.4391	12.0002	34.5938	35.3102	33.8687	3.7560	2.4210	434	496	1.1293	1.0876	0.9434	0.9086	3.30	3.08	5,734
3/29/2005 17:57	12.3594	12.0394	34.4085	35.3115	33.8716	3.7561	2.4202	434	496	1.1354	1.0936	0.9450	0.9102	3.31	3.08	5,737
3/29/2005 17:58	12.4010	12.0689	34.2742	35.3127	33.8744	3.7561	2.4194	434	496	1.1399	1.0979	0.9423	0.9076	3.31	3.09	5,740
3/29/2005 17:59	12.4080	11.9386	34.5839	35.3139	33.8772	3.7561	2.4185	434	496	1.1297	1.0882	0.9471	0.9122	3.32	3.09	5,742
3/29/2005 18:00	12.3912	11.9120	34.8071	35.3152	33.8799	3.7561	2.4177	434	496	1.1225	1.0813	0.9488	0.9139	3.32	3.10	5,745
3/29/2005 18:01	12.3745	11.8952	34.6719	35.3164	33.8827	3.7561	2.4169	434	496	1.1269	1.0856	0.9501	0.9152	3.33	3.11	5,748
3/29/2005 18:02	12.2916	12.0499	34.4847	35.3177	33.8855	3.7562	2.4160	434	496	1.1331	1.0915	0.9473	0.9126	3.33	3.11	5,750
3/29/2005 18:03	12.4642	12.1529	34.4231	35.3189	33.8882	3.7562	2.4152	434	496	1.1351	1.0936	0.9367	0.9024	3.34	3.12	5,753
3/29/2005 18:04	12.4324	12.1238	34.5823	35.3201	33.8910	3.7562	2.4144	434	497	1.1300	1.0886	0.9391	0.9047	3.34	3.13	5,756
3/29/2005 18:05	12.4006	12.1001	34.7465	35.3214	33.8938	3.7562	2.4136	434	497	1.1246	1.0836	0.9412	0.9068	3.34	3.13	5,757
3/29/2005 18:06	12.3688	12.0765	34.8285	35.3226	33.8966	3.7563	2.4127	434	497	1.1220	1.0811	0.9434	0.9089	3.35	3.14	5,758
3/29/2005 18:07	12.2664	12.0770	34.7465	35.3239	33.8993	3.7563	2.4119	434	497	1.1247	1.0837	0.9473	0.9128	3.35	3.14	5,759
Average	**12.5647**	**12.0370**	**34.8227**	**35.2848**	**33.7564**	**3.7556**	**2.4379**	**434**	**496**	**1.1212**	**1.0773**	**0.9370**	**0.9003**	**3.24**	**3.03**	**5,647**

Platformer Vent Gas Scrubber MACT UUU Performance Test Data

	Upper Regen Air	Lower Regen Air	Vent Gas Flow	Total Wash Water Flow	Total Wash Water Flow	Make-up Condensate Flow	Vent Gas Pressure	Vent Gas Temperature	Vent Gas Temperature	L/G Ratio	L/G Ratio	L/G Ratio	L/G Ratio	pH Analyzer	pH Analyzer	Conductivity Analyzer
White Burn Condition #1 Run #2	16FC1630	16FC1610	16FI0980	16FI1121	16FI1122	16FC1130	16PC1300	16TI0800		16FI1121, 16FC1130, 16FI0980	16FI1122, 16FC1130, 16FI0980	16FI1121, 16FC1130, 16FC1630, 16FC1610	16FI1122, 16FC1130, 16FC1630, 16FC1610	16AI0170	16AI0180	16AI0190
Date/Time	MSCFH	MSCFH	MSCFH	GPM	GPM	GPM	In. of H2O	Degrees F	K	GPM/MSCFH	GPM/MSCFH	GPM/MACFH	GPM/MACFH	pH units	pH units	
3/29/2005 18:54	12.1759	11.8731	34.4438	35.3822	34.0296	3.7573	2.4357	435	497	1.1363	1.0971	0.9597	0.9265	3.50	3.30	5,790
3/29/2005 18:55	12.1693	11.9482	34.8727	35.3834	34.0324	3.7573	2.4373	435	497	1.1224	1.0836	0.9569	0.9239	3.50	3.30	5,790
3/29/2005 18:56	12.1627	12.0077	34.8888	35.3847	34.0351	3.7574	2.4390	435	497	1.1219	1.0832	0.9549	0.9219	3.50	3.30	5,790
3/29/2005 18:57	12.1095	12.0403	34.6359	35.3859	34.0379	3.7574	2.4407	435	497	1.1301	1.0912	0.9557	0.9228	3.50	3.30	5,789
3/29/2005 18:58	12.1211	12.1307	34.5730	35.3871	34.0407	3.7574	2.4423	435	497	1.1322	1.0933	0.9517	0.9190	3.50	3.30	5,789
3/29/2005 18:59	12.1455	11.9863	34.3403	35.3884	34.0435	3.7574	2.4440	435	497	1.1399	1.1008	0.9564	0.9236	3.50	3.30	5,789
3/29/2005 19:00	12.1538	12.0047	34.3101	35.3896	34.0462	3.7575	2.4457	435	497	1.1410	1.1018	0.9554	0.9226	3.49	3.29	5,788
3/29/2005 19:01	12.1620	12.0454	34.7956	35.3909	34.0490	3.7575	2.4473	435	497	1.1251	1.0865	0.9535	0.9208	3.49	3.29	5,788
3/29/2005 19:02	12.1702	12.2054	35.0650	35.3921	34.0518	3.7575	2.4490	435	497	1.1165	1.0783	0.9469	0.9145	3.49	3.29	5,788
3/29/2005 19:03	12.1785	12.2468	34.9774	35.3934	34.0546	3.7575	2.4507	435	497	1.1193	1.0810	0.9450	0.9127	3.49	3.29	5,787
3/29/2005 19:04	12.1867	12.1901	34.8462	35.3946	34.0573	3.7575	2.4523	435	497	1.1236	1.0852	0.9469	0.9146	3.49	3.29	5,787
3/29/2005 19:05	12.1950	12.0725	34.6736	35.3958	34.0601	3.7576	2.4540	435	497	1.1292	1.0907	0.9512	0.9187	3.49	3.29	5,789
3/29/2005 19:06	12.2032	11.9760	34.4983	35.3971	34.0629	3.7576	2.4557	435	497	1.1350	1.0963	0.9547	0.9221	3.48	3.29	5,791
3/29/2005 19:07	12.1750	11.9580	34.4589	35.3983	34.0656	3.7576	2.4573	435	497	1.1363	1.0976	0.9565	0.9240	3.48	3.29	5,794
3/29/2005 19:08	12.3432	11.9422	34.6564	35.3996	34.0684	3.7576	2.4590	435	497	1.1299	1.0915	0.9505	0.9182	3.48	3.28	5,796
3/29/2005 19:09	12.3303	11.9022	34.6037	35.4008	34.0712	3.7577	2.4607	435	497	1.1316	1.0932	0.9526	0.9203	3.48	3.28	5,799
3/29/2005 19:10	12.2948	11.9995	34.7604	35.4020	34.0740	3.7577	2.4623	435	497	1.1266	1.0884	0.9502	0.9180	3.48	3.28	5,801
3/29/2005 19:11	12.2594	12.0606	34.6439	35.4033	34.0767	3.7577	2.4640	435	497	1.1304	1.0921	0.9492	0.9171	3.48	3.28	5,804
3/29/2005 19:12	12.1728	12.1618	34.4294	35.4045	34.0795	3.7577	2.4656	435	497	1.1375	1.0990	0.9487	0.9166	3.48	3.28	5,806
3/29/2005 19:13	12.2470	12.0582	35.0290	35.4058	34.0823	3.7577	2.4673	435	497	1.1180	1.0802	0.9498	0.9177	3.47	3.28	5,809
3/29/2005 19:14	12.2546	11.9829	34.7934	35.4070	34.0850	3.7578	2.4690	435	497	1.1256	1.0876	0.9525	0.9204	3.47	3.28	5,811
3/29/2005 19:15	12.2622	11.9041	34.6035	35.4082	34.0878	3.7578	2.4706	435	497	1.1319	1.0937	0.9553	0.9231	3.47	3.28	5,814
3/29/2005 19:16	12.2698	11.8928	34.4477	35.4095	34.0906	3.7578	2.4723	435	497	1.1370	1.0987	0.9555	0.9233	3.47	3.27	5,816
3/29/2005 19:17	12.2295	11.9636	34.3860	35.4107	34.0934	3.7578	2.4740	435	497	1.1391	1.1008	0.9543	0.9222	3.47	3.27	5,819
3/29/2005 19:18	12.4622	12.2098	34.5909	35.4120	34.0961	3.7579	2.4756	435	497	1.1324	1.0943	0.9358	0.9044	3.47	3.27	5,821
3/29/2005 19:19	12.4350	12.1193	34.8706	35.4132	34.0989	3.7579	2.4773	435	497	1.1233	1.0856	0.9403	0.9087	3.47	3.27	5,824
3/29/2005 19:20	12.3848	12.0819	34.8367	35.4144	34.1017	3.7579	2.4790	435	497	1.1245	1.0868	0.9437	0.9120	3.46	3.27	5,826
3/29/2005 19:21	12.3346	12.0445	34.5887	35.4157	34.1044	3.7579	2.4806	435	497	1.1326	1.0946	0.9471	0.9154	3.46	3.27	5,829
3/29/2005 19:22	12.2694	12.1019	34.3679	35.4169	34.1072	3.7579	2.4823	435	497	1.1399	1.1018	0.9474	0.9157	3.46	3.27	5,831
3/29/2005 19:23	12.4486	12.0188	34.6007	35.4182	34.1100	3.7580	2.4840	435	497	1.1322	1.0944	0.9437	0.9122	3.46	3.26	5,834
3/29/2005 19:28	12.3809	12.2380	34.6495	35.4244	34.1238	3.7581	2.4923	435	497	1.1308	1.0933	0.9380	0.9068	3.45	3.26	5,839
3/29/2005 19:29	12.3974	11.9143	34.7707	35.4256	34.1266	3.7581	2.4940	435	497	1.1269	1.0896	0.9498	0.9183	3.45	3.26	5,840
3/29/2005 19:30	12.3972	11.9173	34.7815	35.4269	34.1294	3.7581	2.4956	435	497	1.1266	1.0893	0.9497	0.9183	3.45	3.26	5,841
3/29/2005 19:31	12.3970	11.9560	34.8778	35.4281	34.1322	3.7581	2.4973	435	497	1.1235	1.0864	0.9482	0.9169	3.45	3.25	5,841
3/29/2005 19:32	12.3841	12.1004	34.5383	35.4293	34.1349	3.7582	2.4989	435	497	1.1346	1.0971	0.9432	0.9120	3.45	3.25	5,842
3/29/2005 19:33	12.5989	12.1637	34.5567	35.4306	34.1377	3.7582	2.5006	435	497	1.1340	1.0966	0.9326	0.9018	3.44	3.25	5,842
3/29/2005 19:34	12.5754	12.1205	34.9257	35.4318	34.1405	3.7582	2.5023	435	497	1.1221	1.0851	0.9351	0.9043	3.44	3.25	5,843
3/29/2005 19:35	12.5520	12.0935	35.1203	35.4331	34.1432	3.7582	2.5039	435	497	1.1159	1.0792	0.9371	0.9062	3.44	3.25	5,844
3/29/2005 19:36	12.5285	12.0666	35.0874	35.4343	34.1460	3.7583	2.5056	435	497	1.1170	1.0803	0.9390	0.9081	3.44	3.25	5,844
3/29/2005 19:37	12.4712	12.0712	34.9141	35.4355	34.1488	3.7583	2.5073	435	497	1.1226	1.0857	0.9410	0.9101	3.44	3.25	5,845
3/29/2005 19:38	12.4792	12.1819	34.8728	35.4368	34.1516	3.7583	2.5089	435	497	1.1239	1.0871	0.9365	0.9058	3.43	3.24	5,846
3/29/2005 19:39	12.4517	11.8705	34.9493	35.4380	34.1543	3.7583	2.5106	435	497	1.1215	1.0848	0.9496	0.9185	3.43	3.24	5,846
3/29/2005 19:40	12.4145	11.8975	34.9279	35.4393	34.1571	3.7583	2.5123	435	497	1.1222	1.0855	0.9500	0.9189	3.43	3.24	5,847
3/29/2005 19:41	12.3772	11.9294	34.9956	35.4405	34.1599	3.7584	2.5139	435	497	1.1201	1.0835	0.9502	0.9192	3.42	3.24	5,847
3/29/2005 19:42	12.3938	12.1224	34.8060	35.4417	34.1626	3.7584	2.5156	435	497	1.1262	1.0895	0.9421	0.9114	3.42	3.24	5,848
3/29/2005 19:43	12.6850	12.2047	35.2475	35.4430	34.1654	3.7584	2.5173	435	497	1.1122	1.0759	0.9280	0.8977	3.41	3.23	5,849
3/29/2005 19:44	12.6514	12.1384	35.0317	35.4442	34.1682	3.7584	2.5189	435	497	1.1191	1.0826	0.9317	0.9014	3.41	3.23	5,849
3/29/2005 19:45	12.6178	12.0961	35.2349	35.4455	34.1710	3.7585	2.5206	435	497	1.1126	1.0765	0.9346	0.9042	3.41	3.23	5,851
3/29/2005 19:46	12.5843	12.0538	35.5434	35.4467	34.1737	3.7585	2.5223	435	497	1.1030	1.0672	0.9375	0.9071	3.40	3.23	5,853
3/29/2005 19:47	12.5507	12.0404	35.6479	35.4479	34.1765	3.7585	2.5239	436	497	1.0998	1.0642	0.9393	0.9088	3.40	3.22	5,855
3/29/2005 19:48	12.5489	12.1453	34.9005	35.4492	34.1793	3.7585	2.5256	436	497	1.1234	1.0870	0.9354	0.9051	3.40	3.22	5,857
3/29/2005 19:49	12.6020	11.8324	34.5225	35.4504	34.1820	3.7585	2.5273	436	497	1.1358	1.0990	0.9454	0.9148	3.39	3.22	5,860
3/29/2005 19:50	12.6562	11.8974	34.5546	35.4517	34.1848	3.7586	2.5289	436	497	1.1347	1.0981	0.9408	0.9104	3.39	3.22	5,862
3/29/2005 19:51	12.7103	11.9639	34.6488	35.4529	34.1876	3.7586	2.5306	436	497	1.1317	1.0952	0.9362	0.9060	3.38	3.22	5,864
3/29/2005 19:52	12.6978	12.1175	34.7705	35.4542	34.1904	3.7586	2.5322	436	497	1.1278	1.0914	0.9309	0.9009	3.38	3.21	5,866
3/29/2005 19:53	12.8259	12.1774	35.1620	35.4554	34.1931	3.7586	2.5339	436	497	1.1152	1.0793	0.9239	0.8942	3.38	3.21	5,868
3/29/2005 19:54	12.8149	12.1450	35.1077	35.4566	34.1959	3.7587	2.5356	436	497	1.1170	1.0811	0.9255	0.8958	3.37	3.21	5,870
3/29/2005 19:55	12.8038	12.1378	35.1940	35.4579	34.1987	3.7587	2.5372	436	497	1.1143	1.0785	0.9262	0.8965	3.37	3.21	5,873
3/29/2005 19:56	12.7928	12.1307	35.2493	35.4591	34.2015	3.7587	2.5389	436	497	1.1126	1.0769	0.9269	0.8972	3.36	3.20	5,875
3/29/2005 19:57	12.7220	12.1436	35.5103	35.4604	34.2042	3.7587	2.5406	436	497	1.1044	1.0691	0.9291	0.8993	3.36	3.20	5,877
Average	12.4062	12.0500	34.8115	35.4213	34.1169	3.7580	2.4881	435	497	1.1256	1.0881	0.9443	0.9128	3.45	3.26	5,828

	Upper Regen Air	Lower Regen Air	Vent Gas Flow	Total Wash Water Flow	Total Wash Water Flow	Make-up Condensate Flow	Vent Gas Pressure	Vent Gas Temperature	Vent Gas Temperature	L/G Ratio	L/G Ratio	L/G Ratio	L/G Ratio	pH Analyzer	pH Analyzer	Conductivity Analyzer
White Burn Condition #1 Run #3	16FC1630	16FC1610	16FI0980	16FI1121	16FI1122	16FC1130	16PC1300	16TI0800		16FI1121, 16FC1130, 16FI0980	16FI1122, 16FC1130, 16FI0980	16FI1121, 16FC1130, 16FC1630, 16FC1610	16FI1122, 16FC1130, 16FC1630, 16FC1610	16AI0170	16AI0180	16AI0190
Date/Time	MSCFH	MSCFH	MSCFH	GPM	GPM	GPM	In. of H2O	Degrees F	K	GPM/MSCFH	GPM/MSCFH	GPM/MACFH	GPM/MACFH	pH units	pH units	
3/29/2005 20:25	13.0215	12.0442	35.4027	35.4951	34.2818	3.7593	2.5667	436	498	1.1088	1.0745	0.9221	0.8936	3.26	3.09	5,914
3/29/2005 20:26	13.0136	12.0547	35.6232	35.4963	34.2846	3.7594	2.5672	436	498	1.1020	1.0680	0.9220	0.8936	3.25	3.08	5,915
3/29/2005 20:27	12.9379	12.1099	35.6187	35.4976	34.2874	3.7594	2.5676	436	498	1.1021	1.0682	0.9228	0.8943	3.25	3.08	5,916
3/29/2005 20:28	12.9935	12.1272	35.2974	35.4988	34.2901	3.7594	2.5681	436	498	1.1122	1.0780	0.9201	0.8918	3.24	3.07	5,917
3/29/2005 20:29	13.0060	11.9047	35.4506	35.5001	34.2929	3.7594	2.5685	436	498	1.1074	1.0734	0.9279	0.8994	3.24	3.07	5,918
3/29/2005 20:30	12.9923	11.9674	35.6367	35.5013	34.2957	3.7595	2.5690	436	498	1.1017	1.0679	0.9261	0.8976	3.24	3.07	5,919
3/29/2005 20:31	12.9785	11.9835	35.5986	35.5025	34.2985	3.7595	2.5695	436	498	1.1029	1.0691	0.9260	0.8976	3.23	3.06	5,921
3/29/2005 20:32	12.9019	12.1067	35.6641	35.5038	34.3012	3.7595	2.5699	436	498	1.1009	1.0672	0.9243	0.8960	3.23	3.06	5,922
3/29/2005 20:33	13.0418	12.2044	36.0041	35.5050	34.3040	3.7595	2.5704	436	498	1.0906	1.0572	0.9156	0.8876	3.23	3.05	5,923
3/29/2005 20:34	13.0230	12.1244	35.8764	35.5063	34.3068	3.7595	2.5709	436	498	1.0945	1.0610	0.9192	0.8912	3.22	3.05	5,924
3/29/2005 20:35	13.0042	12.0542	36.2626	35.5075	34.3095	3.7596	2.5713	436	498	1.0829	1.0498	0.9225	0.8944	3.22	3.05	5,925
3/29/2005 20:36	12.9854	12.0274	35.4592	35.5087	34.3123	3.7596	2.5718	436	498	1.1074	1.0737	0.9242	0.8960	3.21	3.04	5,926
3/29/2005 20:37	12.9068	12.0402	35.2657	35.5100	34.3151	3.7596	2.5722	436	498	1.1135	1.0797	0.9267	0.8985	3.21	3.04	5,927
3/29/2005 20:38	13.0933	12.0330	35.5280	35.5112	34.3179	3.7596	2.5727	436	498	1.1053	1.0718	0.9201	0.8921	3.21	3.04	5,928
3/29/2005 20:39	13.0676	11.8638	35.4072	35.5125	34.3206	3.7597	2.5732	436	498	1.1092	1.0755	0.9273	0.8991	3.21	3.03	5,929
3/29/2005 20:40	13.0364	11.8954	35.2831	35.5137	34.3234	3.7597	2.5736	436	498	1.1131	1.0794	0.9273	0.8992	3.20	3.03	5,930
3/29/2005 20:41	13.0052	11.9270	35.4712	35.5150	34.3262	3.7597	2.5741	436	498	1.1072	1.0737	0.9273	0.8992	3.20	3.03	5,931
3/29/2005 20:42	12.9088	12.0499	35.2653	35.5162	34.3289	3.7597	2.5745	436	498	1.1137	1.0801	0.9263	0.8983	3.20	3.03	5,932
3/29/2005 20:43	13.0592	12.2397	35.8833	35.5174	34.3317	3.7597	2.5750	436	498	1.0946	1.0615	0.9139	0.8863	3.20	3.03	5,933
3/29/2005 20:44	13.0408	12.1369	35.8129	35.5187	34.3345	3.7598	2.5755	436	498	1.0968	1.0637	0.9183	0.8906	3.20	3.03	5,934
3/29/2005 20:45	13.0224	12.1049	35.7076	35.5199	34.3373	3.7598	2.5759	436	498	1.1000	1.0669	0.9201	0.8924	3.19	3.03	5,935
3/29/2005 20:46	13.0039	12.0729	35.5587	35.5212	34.3400	3.7598	2.5764	436	498	1.1047	1.0715	0.9220	0.8943	3.19	3.03	5,936
3/29/2005 20:47	12.9199	12.0598	35.5857	35.5224	34.3428	3.7598	2.5768	436	498	1.1039	1.0707	0.9256	0.8978	3.19	3.02	5,937
3/29/2005 20:48	13.0291	12.1515	35.6736	35.5236	34.3456	3.7599	2.5773	436	498	1.1012	1.0682	0.9182	0.8907	3.19	3.02	5,938
3/29/2005 20:49	13.0294	11.9183	35.8153	35.5249	34.3484	3.7599	2.5778	436	498	1.0969	1.0640	0.9268	0.8991	3.19	3.02	5,939
3/29/2005 20:50	13.0002	11.9270	35.9022	35.5261	34.3511	3.7599	2.5782	436	498	1.0943	1.0615	0.9276	0.8999	3.18	3.02	5,940
3/29/2005 20:51	12.9710	11.9455	35.8971	35.5274	34.3539	3.7599	2.5787	436	498	1.0944	1.0618	0.9280	0.9003	3.18	3.02	5,941
3/29/2005 20:52	12.9261	12.0492	35.2410	35.5286	34.3567	3.7599	2.5791	436	498	1.1149	1.0816	0.9258	0.8982	3.18	3.02	5,942
3/29/2005 20:53	13.1433	12.2341	35.8257	35.5298	34.3594	3.7600	2.5796	436	498	1.0967	1.0640	0.9112	0.8840	3.18	3.02	5,943
3/29/2005 20:54	13.0896	12.0976	36.0548	35.5311	34.3622	3.7600	2.5801	436	498	1.0898	1.0573	0.9181	0.8908	3.18	3.01	5,944
3/29/2005 21:02	12.9655	12.1105	35.8104	35.5410	34.3844	3.7602	2.5838	437	498	1.0975	1.0652	0.9223	0.8951	3.17	3.01	5,952
3/29/2005 21:03	13.0668	12.2336	35.5916	35.5423	34.3872	3.7602	2.5842	437	498	1.1043	1.0718	0.9141	0.8872	3.17	3.02	5,953
3/29/2005 21:04	13.0449	12.1509	35.3666	35.5435	34.3899	3.7602	2.5847	437	498	1.1113	1.0787	0.9179	0.8910	3.17	3.02	5,955
3/29/2005 21:05	13.0230	12.0618	35.4952	35.5447	34.3927	3.7602	2.5851	437	498	1.1073	1.0749	0.9220	0.8950	3.17	3.02	5,955
3/29/2005 21:06	13.0010	11.9735	35.3684	35.5460	34.3955	3.7603	2.5856	437	498	1.1113	1.0788	0.9261	0.8990	3.17	3.02	5,955
3/29/2005 21:07	12.9332	11.9977	35.2681	35.5472	34.3982	3.7603	2.5861	437	498	1.1145	1.0820	0.9277	0.9006	3.17	3.02	5,955
3/29/2005 21:08	13.0917	11.9608	35.1908	35.5485	34.4010	3.7603	2.5865	437	498	1.1170	1.0844	0.9232	0.8963	3.17	3.02	5,954
3/29/2005 21:09	13.0897	11.9729	35.5392	35.5497	34.4038	3.7603	2.5870	437	498	1.1061	1.0739	0.9229	0.8960	3.18	3.02	5,954
3/29/2005 21:10	13.0622	11.9250	35.7750	35.5509	34.4066	3.7603	2.5874	437	498	1.0988	1.0669	0.9257	0.8987	3.18	3.02	5,953
3/29/2005 21:11	13.0347	11.9281	35.5248	35.5522	34.4093	3.7604	2.5879	437	498	1.1066	1.0745	0.9266	0.8996	3.18	3.02	5,953
3/29/2005 21:12	12.9509	12.0072	35.1521	35.5534	34.4121	3.7604	2.5884	437	498	1.1184	1.0859	0.9268	0.8999	3.18	3.02	5,953
3/29/2005 21:13	13.1425	12.1937	35.6498	35.5547	34.4149	3.7604	2.5888	437	498	1.1028	1.0708	0.9130	0.8865	3.18	3.02	5,952
3/29/2005 21:14	13.0768	12.1321	35.3419	35.5559	34.4176	3.7604	2.5893	437	498	1.1125	1.0802	0.9176	0.8910	3.18	3.02	5,952
3/29/2005 21:15	13.0111	12.1031	35.5760	35.5571	34.4204	3.7605	2.5898	437	498	1.1052	1.0732	0.9211	0.8944	3.18	3.03	5,951
3/29/2005 21:16	12.9453	12.0742	35.9916	35.5584	34.4232	3.7605	2.5902	437	498	1.0924	1.0609	0.9246	0.8979	3.18	3.03	5,951
3/29/2005 21:17	12.8120	12.0601	36.0465	35.5596	34.4260	3.7605	2.5907	437	498	1.0908	1.0594	0.9301	0.9032	3.18	3.03	5,950
3/29/2005 21:18	12.8208	11.8706	35.7460	35.5609	34.4287	3.7605	2.5911	437	498	1.1000	1.0683	0.9369	0.9099	3.18	3.03	5,950
3/29/2005 21:19	12.8570	11.8563	35.6494	35.5621	34.4315	3.7605	2.5916	437	498	1.1030	1.0713	0.9361	0.9091	3.18	3.03	5,949
3/29/2005 21:20	12.8689	11.9377	35.5416	35.5633	34.4343	3.7606	2.5921	437	498	1.1064	1.0747	0.9326	0.9058	3.18	3.03	5,949
3/29/2005 21:21	12.8808	11.9974	35.6447	35.5646	34.4370	3.7606	2.5925	437	498	1.1033	1.0716	0.9299	0.9032	3.18	3.03	5,948
3/29/2005 21:22	12.7920	11.9128	35.5019	35.5658	34.4398	3.7606	2.5930	437	498	1.1077	1.0760	0.9364	0.9096	3.18	3.03	5,948
3/29/2005 21:23	12.9132	11.9731	36.0295	35.5671	34.4426	3.7606	2.5934	437	498	1.0915	1.0603	0.9296	0.9030	3.18	3.03	5,947
3/29/2005 21:24	12.9038	12.1386	36.5086	35.5683	34.4454	3.7607	2.5939	437	498	1.0773	1.0465	0.9238	0.8975	3.18	3.03	5,947
3/29/2005 21:25	12.8922	12.0769	36.1608	35.5695	34.4481	3.7607	2.5944	437	498	1.0876	1.0566	0.9266	0.9001	3.19	3.03	5,946
3/29/2005 21:26	12.8806	11.9712	35.3611	35.5708	34.4509	3.7607	2.5948	437	498	1.1123	1.0806	0.9309	0.9044	3.19	3.03	5,946
3/29/2005 21:27	12.8107	11.9497	35.1174	35.5720	34.4537	3.7607	2.5951	437	498	1.1200	1.0882	0.9344	0.9078	3.19	3.04	5,946
3/29/2005 21:28	12.9556	11.9944	35.3352	35.5733	34.4564	3.7607	2.5935	437	498	1.1132	1.0816	0.9273	0.9010	3.19	3.04	5,945
3/29/2005 21:29	12.9234	12.0043	35.4937	35.5745	34.4592	3.7608	2.5915	437	498	1.1082	1.0768	0.9282	0.9018	3.19	3.04	5,945
3/29/2005 21:30	12.8821	11.9897	35.4270	35.5758	34.4620	3.7608	2.5895	437	498	1.1104	1.0789	0.9303	0.9039	3.19	3.04	5,944
3/29/2005 21:31	12.8409	11.9633	35.4456	35.5770	34.4648	3.7608	2.5875	437	498	1.1098	1.0784	0.9328	0.9064	3.19	3.04	5,944
Average	12.9771	12.0329	35.6121	35.5360	34.3733	3.7601	2.5815	437	498	1.1035	1.0709	0.9247	0.8973	3.20	3.03	5,940

Platformer Vent Gas Scrubber MACT UUU Performance Test Data

White Burn Condition #2 Run #1 Date/Time	Upper Regen Air 16FC1630 MSCFH	Lower Regen Air 16FC1610 MSCFH	Vent Gas Flow 16FI0980 MSCFH	Total Wash Water Flow 16FI1121 GPM	Total Wash Water Flow 18FI1122 GPM	Make-up Condensate Flow 16FC1130 GPM	Vent Gas Pressure 16PC1300 In. of H2O	Vent Gas Temperature 16TI0800 Degrees F	Vent Gas Temperature K	L/G Ratio 16FI1121, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1122, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1121, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	L/G Ratio 16FI1122, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	pH Analyzer 18AI0170 pH units	pH Analyzer 16AI0180 pH units	Conductivity Analyzer 16AI0190
3/30/2005 8:43	11.4958	11.9114	33.6166	49.5880	49.2727	3.6842	2.5786	430	494	1.5847	1.5753	1.3487	1.3408	2.91	2.76	5,878
3/30/2005 8:44	11.5014	11.9606	33.5077	49.5794	49.2637	3.6822	2.5769	430	494	1.5895	1.5801	1.3453	1.3374	2.90	2.76	5,883
3/30/2005 8:45	11.5071	12.0050	33.6598	49.5707	49.2547	3.6802	2.5751	430	494	1.5727	1.5634	1.3422	1.3343	2.89	2.75	5,888
3/30/2005 8:46	11.5127	12.0029	34.1018	49.5621	49.2457	3.6782	2.5734	430	494	1.5612	1.5519	1.3418	1.3338	2.89	2.74	5,893
3/30/2005 8:47	11.4537	12.0818	33.9282	49.5534	49.2367	3.6762	2.5717	430	494	1.5689	1.5596	1.3404	1.3324	2.88	2.74	5,898
3/30/2005 8:48	11.4564	12.1500	33.8013	49.5448	49.2277	3.6742	2.5700	430	494	1.5745	1.5651	1.3361	1.3282	2.87	2.73	5,903
3/30/2005 8:49	11.4540	12.0794	33.7065	49.5361	49.2187	3.6722	2.5683	430	494	1.5786	1.5692	1.3400	1.3320	2.87	2.72	5,906
3/30/2005 8:50	11.4488	12.0646	33.6241	49.5275	49.2097	3.6702	2.5666	430	494	1.5821	1.5727	1.3409	1.3329	2.86	2.72	5,909
3/30/2005 8:51	11.4436	12.0498	33.5705	49.5188	49.2006	3.6682	2.5649	430	494	1.5843	1.5749	1.3418	1.3338	2.86	2.71	5,911
3/30/2005 8:52	11.3593	12.0944	33.5180	49.5102	49.1916	3.6662	2.5632	430	494	1.5865	1.5770	1.3438	1.3358	2.86	2.71	5,913
3/30/2005 8:53	11.4153	11.8278	33.4844	49.5015	49.1826	3.6642	2.5615	430	494	1.5878	1.5783	1.3557	1.3476	2.86	2.70	5,915
3/30/2005 8:54	11.3934	11.9202	33.4838	49.4929	49.1736	3.6623	2.5598	430	494	1.5875	1.5780	1.3514	1.3433	2.85	2.69	5,917
3/30/2005 8:55	11.3716	12.0142	33.5190	49.4842	49.1646	3.6603	2.5581	430	494	1.5855	1.5760	1.3470	1.3389	2.85	2.69	5,920
3/30/2005 8:56	11.3498	12.0070	33.6133	49.4756	49.1556	3.6583	2.5564	430	494	1.5807	1.5712	1.3484	1.3403	2.85	2.68	5,922
3/30/2005 8:57	11.2782	12.0389	33.7016	49.4669	49.1466	3.6563	2.5547	430	494	1.5763	1.5668	1.3504	1.3423	2.84	2.68	5,924
3/30/2005 8:58	11.3967	12.1545	33.7890	49.4583	49.1376	3.6543	2.5529	430	494	1.5719	1.5624	1.3368	1.3287	2.84	2.67	5,926
3/30/2005 8:59	11.3456	12.1623	33.8567	49.4497	49.1286	3.6523	2.5512	430	494	1.5684	1.5589	1.3390	1.3309	2.84	2.66	5,928
3/30/2005 9:00	11.2902	12.2249	33.9110	49.4410	49.1195	3.6503	2.5495	430	494	1.5656	1.5561	1.3383	1.3302	2.83	2.66	5,931
3/30/2005 9:01	11.2348	12.1304	33.8013	49.4324	49.1105	3.6483	2.5478	430	494	1.5704	1.5609	1.3466	1.3385	2.83	2.66	5,933
3/30/2005 9:02	11.1057	12.0401	33.3735	49.4237	49.1015	3.6463	2.5461	430	494	1.5902	1.5805	1.3592	1.3509	2.83	2.65	5,935
3/30/2005 9:03	11.1616	11.8167	33.1941	49.4151	49.0925	3.6443	2.5444	430	494	1.5985	1.5887	1.3688	1.3605	2.82	2.65	5,937
3/30/2005 9:04	11.1647	11.9302	33.5812	49.4064	49.0835	3.6423	2.5427	430	494	1.5797	1.5701	1.3616	1.3534	2.82	2.64	5,939
3/30/2005 9:05	11.1678	12.0520	33.7218	49.3978	49.0745	3.6403	2.5410	430	494	1.5728	1.5632	1.3541	1.3458	2.82	2.64	5,941
3/30/2005 9:06	11.1709	12.0187	33.4426	49.3891	49.0655	3.6383	2.5393	430	494	1.5856	1.5759	1.3556	1.3473	2.81	2.63	5,944
3/30/2005 9:07	11.0939	12.0786	33.8471	49.3805	49.0565	3.6364	2.5376	430	494	1.5664	1.5568	1.3563	1.3480	2.81	2.63	5,946
3/30/2005 9:08	11.1697	12.0435	33.9569	49.3718	49.0475	3.6344	2.5359	430	494	1.5610	1.5514	1.3537	1.3454	2.81	2.63	5,948
3/30/2005 9:09	11.1580	11.9482	33.7048	49.3632	49.0384	3.6324	2.5342	430	494	1.5723	1.5627	1.3597	1.3514	2.80	2.62	5,951
3/30/2005 9:10	11.1418	11.9137	33.4393	49.3545	49.0294	3.6304	2.5324	430	494	1.5845	1.5748	1.3624	1.3541	2.80	2.62	5,956
3/30/2005 9:11	11.1255	11.9106	33.1528	49.3459	49.0204	3.6284	2.5307	430	494	1.5979	1.5881	1.3633	1.3550	2.79	2.61	5,961
3/30/2005 9:12	11.0885	12.0828	33.1178	49.3372	49.0114	3.6264	2.5290	430	494	1.5993	1.5894	1.3551	1.3468	2.79	2.61	5,966
3/30/2005 9:18	10.9904	12.1565	33.6346	49.2853	48.9574	3.6144	2.5188	430	494	1.5728	1.5630	1.3550	1.3466	2.75	2.58	5,997
3/30/2005 9:19	11.0123	11.8922	33.1325	49.2767	48.9483	3.6124	2.5171	430	494	1.5963	1.5864	1.3691	1.3606	2.75	2.58	6,002
3/30/2005 9:20	11.0311	11.9777	33.2038	49.2681	48.9393	3.6104	2.5154	430	494	1.5925	1.5826	1.3627	1.3542	2.74	2.57	6,007
3/30/2005 9:21	11.0498	12.0433	33.4626	49.2594	48.9303	3.6085	2.5137	430	494	1.5799	1.5701	1.3574	1.3490	2.74	2.57	6,012
3/30/2005 9:22	10.9956	12.1614	33.4909	49.2508	48.9213	3.6065	2.5120	430	494	1.5783	1.5684	1.3534	1.3450	2.73	2.56	6,017
3/30/2005 9:23	11.0203	12.1959	33.2674	49.2421	48.9123	3.6045	2.5102	430	494	1.5885	1.5786	1.3497	1.3413	2.73	2.56	6,022
3/30/2005 9:24	10.9846	12.1669	33.2134	49.2335	48.9033	3.6025	2.5085	430	494	1.5908	1.5809	1.3532	1.3448	2.72	2.55	6,028
3/30/2005 9:25	10.9489	12.0956	33.1888	49.2248	48.8943	3.6005	2.5068	430	494	1.5917	1.5817	1.3593	1.3508	2.71	2.55	6,033
3/30/2005 9:26	10.9132	11.9520	33.1790	49.2162	48.8853	3.5985	2.5051	430	494	1.5918	1.5818	1.3697	1.3611	2.71	2.55	6,038
3/30/2005 9:27	10.8185	11.9634	33.2446	49.2075	48.8763	3.5965	2.5034	430	494	1.5883	1.5784	1.3744	1.3658	2.70	2.54	6,043
3/30/2005 9:28	10.8318	11.9524	32.7871	49.1989	48.8672	3.5945	2.5017	430	494	1.6102	1.6001	1.3740	1.3654	2.70	2.54	6,048
3/30/2005 9:29	10.8373	11.9370	33.1220	49.1902	48.8582	3.5925	2.5000	430	494	1.5936	1.5836	1.3744	1.3657	2.69	2.53	6,051
3/30/2005 9:30	10.8399	11.9887	33.2685	49.1816	48.8492	3.5905	2.4983	430	494	1.5862	1.5763	1.3708	1.3622	2.69	2.53	6,052
3/30/2005 9:31	10.8424	12.0516	33.4150	49.1729	48.8402	3.5885	2.4966	430	494	1.5790	1.5690	1.3667	1.3580	2.69	2.52	6,053
3/30/2005 9:32	10.7543	12.1554	33.5338	49.1643	48.8312	3.5865	2.4949	430	494	1.5731	1.5631	1.3655	1.3568	2.69	2.52	6,054
3/30/2005 9:33	10.8004	12.2007	33.3495	49.1556	48.8222	3.5845	2.4932	430	494	1.5814	1.5714	1.3598	1.3512	2.69	2.52	6,055
3/30/2005 9:34	10.7995	12.1306	33.0778	49.1470	48.8132	3.5826	2.4915	430	494	1.5941	1.5840	1.3637	1.3551	2.69	2.51	6,055
3/30/2005 9:35	10.7986	12.0710	32.8055	49.1383	48.8042	3.5806	2.4897	430	494	1.6070	1.5968	1.3671	1.3584	2.69	2.51	6,056
3/30/2005 9:36	10.7977	11.9539	32.5733	49.1297	48.7952	3.5786	2.4880	430	494	1.6181	1.6079	1.3739	1.3652	2.69	2.50	6,057
3/30/2005 9:37	10.7969	12.0131	32.6967	49.1210	48.7861	3.5766	2.4863	430	494	1.6117	1.6015	1.3702	1.3614	2.68	2.50	6,058
3/30/2005 9:38	10.7960	11.8841	32.9235	49.1124	48.7771	3.5746	2.4846	430	494	1.6003	1.5901	1.3777	1.3690	2.68	2.49	6,059
3/30/2005 9:39	10.7951	11.9267	33.0707	49.1037	48.7681	3.5726	2.4829	430	494	1.5928	1.5827	1.3749	1.3662	2.68	2.49	6,060
3/30/2005 9:40	10.7942	12.0089	33.1087	49.0951	48.7591	3.5706	2.4812	430	494	1.5907	1.5805	1.3698	1.3610	2.68	2.50	6,061
3/30/2005 9:41	10.7933	12.0113	33.0836	49.0864	48.7501	3.5686	2.4795	430	494	1.5916	1.5814	1.3694	1.3607	2.68	2.50	6,061
3/30/2005 9:42	10.7229	12.1213	32.9770	49.0778	48.7411	3.5666	2.4778	430	494	1.5964	1.5862	1.3668	1.3581	2.68	2.50	6,062
3/30/2005 9:43	10.7178	12.1235	33.4387	49.0692	48.7321	3.5646	2.4770	430	494	1.5740	1.5640	1.3667	1.3580	2.68	2.50	6,063
3/30/2005 9:44	10.7090	12.1146	32.9792	49.0605	48.7231	3.5626	2.4784	430	494	1.5956	1.5854	1.3675	1.3588	2.68	2.50	6,064
3/30/2005 9:45	10.7002	12.0724	33.0216	49.0519	48.7141	3.5606	2.4798	430	494	1.5933	1.5830	1.3703	1.3615	2.67	2.50	6,065
3/30/2005 9:46	10.6914	12.0027	32.6707	49.0432	48.7050	3.5586	2.4812	430	494	1.6101	1.5997	1.3748	1.3660	2.67	2.50	6,066
3/30/2005 9:47	10.6826	11.9876	32.1089	49.0346	48.6960	3.5567	2.4827	429	494	1.6379	1.6274	1.3760	1.3671	2.67	2.50	6,067
Average	**11.0754**	**12.0338**	**33.3659**	**49.3113**	**48.9844**	**3.6204**	**2.5245**	**430**	**494**	**1.5866**	**1.5768**	**1.3581**	**1.3498**	**2.77**	**2.60**	**5,985**

Platformer Vent Gas Scrubber MACT UUU Performance Test Data

White Burn Condition #2 Run #2 Date/Time	Upper Regen Air 16FC1630 MSCFH	Lower Regen Air 16FC1610 MSCFH	Vent Gas Flow 16FI0980 MSCFH	Total Wash Water Flow 16FI1121 GPM	Total Wash Water Flow 16FI1122 GPM	Make-up Condensate Flow 16FC1130 GPM	Vent Gas Pressure 16PC1300 In. of H2O	Vent Gas Temperature 16TI0800 Degrees F	Vent Gas Temperature K	L/G Ratio 16FI1121, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1122, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1121, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	L/G Ratio 16FI1122, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	pH Analyzer 16AI0170 pH units	pH Analyzer 16AI0180 pH units	Conductivity Analyzer 16AI0190
3/30/2005 10:14	10.6590	12.1348	32.8203	48.8011	48.4527	3.5029	2.4828	429	494	1.5936	1.5830	1.3616	1.3525	2.87	2.67	5,873
3/30/2005 10:15	10.6466	12.1167	32.8289	48.7924	48.4437	3.5009	2.4822	429	494	1.5929	1.5823	1.3631	1.3540	2.88	2.69	5,861
3/30/2005 10:16	10.6343	11.9806	32.7124	48.7838	48.4347	3.4989	2.4816	429	494	1.5983	1.5876	1.3718	1.3627	2.90	2.71	5,848
3/30/2005 10:17	10.5677	12.0369	32.6942	48.7751	48.4257	3.4969	2.4810	429	494	1.5988	1.5881	1.3722	1.3630	2.92	2.74	5,834
3/30/2005 10:18	10.5203	11.9065	32.6971	48.7665	48.4167	3.4949	2.4804	429	494	1.5983	1.5877	1.3828	1.3735	2.93	2.76	5,820
3/30/2005 10:19	10.6923	11.9094	32.6144	48.7578	48.4077	3.4929	2.4798	429	494	1.6021	1.5913	1.3718	1.3626	2.96	2.79	5,806
3/30/2005 10:20	10.7147	12.0022	32.4862	48.7492	48.3987	3.4909	2.4792	429	494	1.6081	1.5973	1.3646	1.3555	2.98	2.81	5,792
3/30/2005 10:21	10.7310	12.0522	32.5082	48.7405	48.3897	3.4889	2.4786	429	494	1.6067	1.5959	1.3604	1.3513	3.01	2.84	5,778
3/30/2005 10:22	10.6774	11.9520	32.6194	48.7319	48.3807	3.4869	2.4780	429	494	1.6009	1.5901	1.3694	1.3602	3.04	2.87	5,765
3/30/2005 10:23	10.6835	11.8045	32.9858	48.7232	48.3716	3.4849	2.4774	429	494	1.5827	1.5721	1.3777	1.3684	3.07	2.89	5,753
3/30/2005 10:24	10.6673	11.9839	33.1748	48.7146	48.3626	3.4829	2.4767	429	494	1.5734	1.5628	1.3675	1.3583	3.10	2.92	5,745
3/30/2005 10:25	10.6511	12.0922	32.9822	48.7060	48.3536	3.4809	2.4761	429	494	1.5823	1.5716	1.3617	1.3525	3.12	2.94	5,736
3/30/2005 10:26	10.6350	12.0454	32.7846	48.6973	48.3446	3.4789	2.4755	429	494	1.5915	1.5807	1.3653	1.3560	3.15	2.97	5,728
3/30/2005 10:27	10.5702	12.0730	32.7235	48.6887	48.3356	3.4769	2.4749	429	494	1.5941	1.5833	1.3672	1.3580	3.18	2.99	5,720
3/30/2005 10:28	10.6234	12.3503	32.1707	48.6800	48.3266	3.4750	2.4743	429	494	1.6212	1.6102	1.3473	1.3382	3.21	3.04	5,712
3/30/2005 10:29	10.6587	12.1185	32.9758	48.6714	48.3176	3.4730	2.4737	429	494	1.5813	1.5706	1.3587	1.3495	3.24	3.08	5,704
3/30/2005 10:30	10.6925	11.9321	32.8885	48.6627	48.3086	3.4710	2.4731	429	494	1.5852	1.5744	1.3676	1.3583	3.28	3.13	5,696
3/30/2005 10:31	10.7263	11.9217	33.1254	48.6541	48.2996	3.4690	2.4725	429	494	1.5735	1.5628	1.3659	1.3566	3.34	3.17	5,688
3/30/2005 10:32	10.6594	12.1350	33.1866	48.6454	48.2906	3.4670	2.4719	429	494	1.5703	1.5596	1.3569	1.3476	3.39	3.22	5,680
3/30/2005 10:33	10.6380	12.1938	33.2295	48.6368	48.2815	3.4650	2.4713	429	494	1.5679	1.5572	1.3544	1.3452	3.42	3.26	5,672
3/30/2005 10:34	10.7476	12.1553	33.2724	48.6281	48.2725	3.4630	2.4707	429	494	1.5656	1.5549	1.3499	1.3407	3.46	3.31	5,663
3/30/2005 10:35	10.7351	12.1580	33.1077	48.6195	48.2635	3.4610	2.4690	429	494	1.5731	1.5623	1.3503	1.3410	3.50	3.35	5,655
3/30/2005 10:36	10.7205	12.0059	32.7610	48.6108	48.2545	3.4590	2.4659	429	494	1.5894	1.5785	1.3599	1.3506	3.55	3.41	5,647
3/30/2005 10:37	10.6610	12.0245	32.6841	48.6022	48.2455	3.4570	2.4628	429	494	1.5928	1.5819	1.3621	1.3528	3.60	3.47	5,644
3/30/2005 10:38	10.7196	12.3299	32.6879	48.5935	48.2365	3.4550	2.4597	429	494	1.5923	1.5814	1.3403	1.3311	3.68	3.56	5,643
3/30/2005 10:39	10.8828	12.1512	32.7560	48.5849	48.2275	3.4530	2.4566	429	494	1.5887	1.5777	1.3410	1.3318	3.79	3.69	5,643
3/30/2005 10:40	10.8619	11.9888	32.8504	48.5762	48.2185	3.4510	2.4535	429	494	1.5838	1.5729	1.3515	1.3422	3.91	3.80	5,642
3/30/2005 10:41	10.8410	11.9553	32.9448	48.5676	48.2095	3.4491	2.4504	429	494	1.5789	1.5680	1.3544	1.3451	3.99	3.90	5,641
3/30/2005 10:42	10.7518	12.1348	33.0393	48.5589	48.2004	3.4471	2.4473	429	494	1.5741	1.5632	1.3488	1.3395	4.08	4.01	5,641
3/30/2005 10:43	10.8214	12.0311	33.1111	48.5503	48.1914	3.4451	2.4442	429	494	1.5703	1.5595	1.3506	1.3413	4.16	4.08	5,640
3/30/2005 10:49	10.9394	11.9442	32.9193	48.4984	48.1374	3.4331	2.4256	429	494	1.5775	1.5666	1.3472	1.3378	4.56	4.50	5,636
3/30/2005 10:50	10.9080	12.0479	32.9079	48.4898	48.1284	3.4311	2.4225	429	494	1.5778	1.5668	1.3427	1.3334	4.60	4.55	5,636
3/30/2005 10:51	10.8765	12.0689	32.8637	48.4811	48.1193	3.4291	2.4194	429	494	1.5796	1.5686	1.3431	1.3337	4.65	4.59	5,635
3/30/2005 10:52	10.7762	12.1729	33.1714	48.4725	48.1103	3.4271	2.4163	429	494	1.5646	1.5537	1.3426	1.3332	4.69	4.64	5,634
3/30/2005 10:53	10.8624	12.0458	32.8946	48.4638	48.1013	3.4251	2.4132	429	494	1.5774	1.5664	1.3447	1.3354	4.73	4.68	5,634
3/30/2005 10:54	10.8837	12.0819	33.0878	48.4552	48.0923	3.4232	2.4101	429	494	1.5679	1.5569	1.3411	1.3317	4.76	4.72	5,633
3/30/2005 10:55	10.9050	12.1454	33.0733	48.4465	48.0833	3.4212	2.4070	429	494	1.5683	1.5573	1.3359	1.3266	4.79	4.75	5,632
3/30/2005 10:56	10.9263	12.0088	32.8639	48.4379	48.0743	3.4192	2.4039	429	494	1.5779	1.5669	1.3424	1.3330	4.82	4.79	5,632
3/30/2005 10:57	10.8760	12.0452	32.6544	48.4292	48.0653	3.4172	2.4008	429	494	1.5877	1.5766	1.3429	1.3335	4.85	4.82	5,631
3/30/2005 10:58	10.9607	12.3748	32.5336	48.4206	48.0563	3.4152	2.3977	429	493	1.5933	1.5821	1.3189	1.3096	4.88	4.84	5,633
3/30/2005 10:59	10.9754	12.0987	32.9015	48.4119	48.0473	3.4132	2.3946	429	493	1.5752	1.5641	1.3335	1.3242	4.91	4.87	5,635
3/30/2005 11:00	10.9860	11.9941	33.1609	48.4033	48.0382	3.4112	2.3915	429	493	1.5625	1.5515	1.3387	1.3293	4.93	4.89	5,637
3/30/2005 11:01	10.9966	12.1129	33.2637	48.3946	48.0292	3.4092	2.3884	429	493	1.5574	1.5464	1.3310	1.3216	4.96	4.91	5,640
3/30/2005 11:02	10.9474	12.2676	32.9758	48.3860	48.0202	3.4072	2.3853	429	493	1.5706	1.5596	1.3247	1.3153	4.98	4.94	5,642
3/30/2005 11:03	11.0107	12.4290	32.8427	48.3773	48.0112	3.4052	2.3822	429	493	1.5767	1.5655	1.3117	1.3025	5.01	4.96	5,645
3/30/2005 11:04	11.0308	12.1193	32.8989	48.3687	48.0022	3.4032	2.3791	429	493	1.5737	1.5625	1.3279	1.3185	5.03	4.99	5,647
3/30/2005 11:05	11.0510	12.0636	32.9809	48.3600	47.9932	3.4012	2.3760	429	493	1.5694	1.5583	1.3297	1.3202	5.05	5.01	5,650
3/30/2005 11:06	11.0712	12.0795	32.8314	48.3514	47.9842	3.3992	2.3729	429	493	1.5763	1.5651	1.3273	1.3179	5.07	5.03	5,652
3/30/2005 11:07	11.0316	12.1634	33.0757	48.3428	47.9752	3.3972	2.3698	429	493	1.5643	1.5532	1.3246	1.3151	5.09	5.06	5,655
3/30/2005 11:08	11.0659	12.5309	32.8419	48.3341	47.9662	3.3953	2.3667	428	493	1.5751	1.5639	1.3018	1.2925	5.11	5.08	5,657
3/30/2005 11:09	11.0838	12.2485	32.8549	48.3255	47.9571	3.3933	2.3636	428	493	1.5742	1.5629	1.3163	1.3069	5.13	5.10	5,659
3/30/2005 11:10	11.0988	12.0629	33.0775	48.3168	47.9481	3.3913	2.3605	428	493	1.5632	1.5521	1.3257	1.3162	5.15	5.13	5,662
3/30/2005 11:11	11.1138	12.1096	33.3507	48.3082	47.9391	3.3893	2.3574	428	493	1.5501	1.5390	1.3219	1.3125	5.17	5.14	5,664
3/30/2005 11:12	11.1101	12.2157	33.1521	48.2995	47.9301	3.3873	2.3543	428	493	1.5591	1.5479	1.3159	1.3065	5.19	5.15	5,667
3/30/2005 11:13	11.0865	11.9121	33.2173	48.2909	47.9211	3.3853	2.3512	428	493	1.5557	1.5446	1.3343	1.3248	5.20	5.16	5,669
3/30/2005 11:14	11.1069	11.9773	33.3224	48.2822	47.9121	3.3833	2.3481	428	493	1.5505	1.5394	1.3291	1.3196	5.21	5.17	5,672
3/30/2005 11:15	11.1273	12.0024	33.3504	48.2736	47.9031	3.3813	2.3450	428	493	1.5489	1.5377	1.3263	1.3167	5.21	5.18	5,674
3/30/2005 11:16	11.1477	11.9659	33.3611	48.2649	47.8941	3.3793	2.3419	428	493	1.5480	1.5369	1.3269	1.3174	5.22	5.19	5,677
3/30/2005 11:17	11.1011	11.9478	33.1691	48.2563	47.8851	3.3773	2.3388	428	493	1.5567	1.5455	1.3304	1.3208	5.23	5.21	5,679
3/30/2005 11:18	11.2464	12.0547	33.0852	48.2476	47.8761	3.3753	2.3357	428	493	1.5603	1.5491	1.3157	1.3063	5.24	5.22	5,681
Average	10.8516	12.0828	32.9351	48.5244	48.1644	3.4391	2.4257	429	494	1.5779	1.5669	1.3452	1.3359	4.15	4.06	5,686

Platformer Vent Gas Scrubber MACT UUU Performance Test Data

White Burn Condition #2 Run #3 Date/Time	Upper Regen Air 16FC1630 MSCFH	Lower Regen Air 16FC1610 MSCFH	Vent Gas Flow 16FI0980 MSCFH	Total Wash Water Flow 16FI1121 GPM	Total Wash Water Flow 16FI1122 GPM	Make-up Condensate Flow 16FC1130 GPM	Vent Gas Pressure 16PC1300 In. of H2O	Vent Gas Temperature 16TI0800 Degrees F	Vent Gas Temperature K	L/G Ratio 16FI1121, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1122, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1121, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	L/G Ratio 16FI1122, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	pH Analyzer 16AI0170 pH units	pH Analyzer 16AI0180 pH units	Conductivity Analyzer 16AI0190
3/30/2005 11:43	11.2595	12.0417	33.5135	48.0314	47.6508	3.3255	2.4071	428	493	1.5324	1.5211	1.3094	1.2997	5.41	5.41	5,741
3/30/2005 11:44	11.2369	12.0176	33.5145	48.0228	47.6418	3.3235	2.4076	428	493	1.5321	1.5207	1.3118	1.3020	5.42	5.42	5,743
3/30/2005 11:45	11.2142	12.0638	33.4912	48.0141	47.6328	3.3215	2.4080	428	493	1.5328	1.5214	1.3102	1.3005	5.42	5.42	5,744
3/30/2005 11:46	11.1915	12.0129	33.3825	48.0055	47.6238	3.3195	2.4084	428	493	1.5375	1.5260	1.3141	1.3043	5.43	5.42	5,746
3/30/2005 11:47	11.1879	12.0689	33.4368	47.9968	47.6147	3.3175	2.4089	428	493	1.5347	1.5232	1.3109	1.3011	5.43	5.42	5,748
3/30/2005 11:48	11.4172	12.4487	33.5415	47.9882	47.6057	3.3156	2.4093	428	493	1.5296	1.5182	1.2772	1.2677	5.44	5.43	5,750
3/30/2005 11:49	11.3731	12.0116	33.6462	47.9795	47.5967	3.3136	2.4097	428	493	1.5245	1.5131	1.3032	1.2935	5.44	5.43	5,751
3/30/2005 11:50	11.3265	12.0282	34.0874	47.9709	47.5877	3.3116	2.4102	428	493	1.5044	1.4932	1.3046	1.2949	5.45	5.43	5,753
3/30/2005 11:51	11.2798	12.0251	33.8516	47.9622	47.5787	3.3096	2.4106	428	493	1.5146	1.5033	1.3072	1.2974	5.45	5.43	5,755
3/30/2005 11:52	11.2207	12.1871	32.9777	47.9536	47.5697	3.3076	2.4112	428	493	1.5544	1.5428	1.3012	1.2914	5.45	5.44	5,757
3/30/2005 11:53	11.3212	12.0271	32.9586	47.9450	47.5607	3.3056	2.4121	428	493	1.5550	1.5433	1.3042	1.2945	5.45	5.44	5,758
3/30/2005 11:54	11.3216	12.0671	33.3321	47.9363	47.5517	3.3036	2.4131	428	493	1.5373	1.5257	1.3017	1.2920	5.46	5.44	5,760
3/30/2005 11:55	11.3220	12.0821	33.5340	47.9277	47.5427	3.3016	2.4142	428	493	1.5277	1.5162	1.3006	1.2908	5.46	5.45	5,762
3/30/2005 11:56	11.3223	12.0420	33.5048	47.9190	47.5336	3.2996	2.4152	428	493	1.5287	1.5172	1.3026	1.2928	5.46	5.45	5,764
3/30/2005 11:57	11.3227	12.0961	33.3761	47.9104	47.5246	3.2976	2.4162	428	493	1.5343	1.5227	1.2993	1.2895	5.46	5.45	5,765
3/30/2005 11:58	11.3231	12.3064	33.2589	47.9017	47.5156	3.2956	2.4172	428	493	1.5394	1.5278	1.2875	1.2778	5.47	5.45	5,767
3/30/2005 11:59	11.3235	11.9262	33.2929	47.8931	47.5066	3.2936	2.4182	428	493	1.5375	1.5259	1.3082	1.2984	5.47	5.46	5,769
3/30/2005 12:00	11.3239	12.0378	33.4838	47.8844	47.4976	3.2916	2.4192	428	493	1.5284	1.5168	1.3017	1.2919	5.47	5.46	5,771
3/30/2005 12:01	11.3243	12.0442	33.7169	47.8758	47.4886	3.2897	2.4202	428	493	1.5175	1.5060	1.3011	1.2912	5.48	5.46	5,772
3/30/2005 12:02	11.3247	12.2134	33.7942	47.8671	47.4796	3.2877	2.4212	428	493	1.5137	1.5022	1.2915	1.2817	5.48	5.46	5,774
3/30/2005 12:03	11.3254	12.0279	33.7336	47.8585	47.4706	3.2857	2.4222	428	493	1.5161	1.5046	1.3014	1.2916	5.48	5.47	5,776
3/30/2005 12:04	11.3262	12.0677	33.6729	47.8498	47.4616	3.2837	2.4232	428	493	1.5185	1.5070	1.2989	1.2891	5.48	5.47	5,778
3/30/2005 12:05	11.3269	12.0600	33.9572	47.8412	47.4525	3.2817	2.4242	428	493	1.5055	1.4941	1.2991	1.2892	5.49	5.47	5,779
3/30/2005 12:06	11.3277	11.9866	33.8091	47.8325	47.4435	3.2797	2.4252	428	493	1.5118	1.5003	1.3028	1.2929	5.49	5.47	5,781
3/30/2005 12:07	11.3284	12.0847	33.2687	47.8239	47.4345	3.2777	2.4262	428	493	1.5360	1.5243	1.2971	1.2872	5.49	5.48	5,783
3/30/2005 12:08	11.3292	12.4037	32.8431	47.8152	47.4255	3.2757	2.4272	428	493	1.5556	1.5437	1.2794	1.2696	5.49	5.48	5,785
3/30/2005 12:09	11.3299	11.9601	33.7238	47.8066	47.4165	3.2737	2.4283	428	493	1.5147	1.5031	1.3034	1.2935	5.50	5.48	5,786
3/30/2005 12:10	11.3306	12.0033	33.7120	47.7979	47.4075	3.2717	2.4293	428	493	1.5149	1.5033	1.3007	1.2908	5.50	5.48	5,788
3/30/2005 12:11	11.3314	12.0184	33.6037	47.7893	47.3985	3.2697	2.4303	428	493	1.5194	1.5078	1.2996	1.2897	5.50	5.49	5,790
3/30/2005 12:12	11.3323	12.2058	33.3993	47.7807	47.3895	3.2677	2.4313	428	493	1.5284	1.5167	1.2890	1.2791	5.50	5.49	5,792
3/30/2005 12:18	11.3450	12.4690	33.1842	47.7288	47.3354	3.2558	2.4373	428	493	1.5364	1.5246	1.2725	1.2627	5.52	5.50	5,802
3/30/2005 12:19	11.3471	12.1128	33.4791	47.7201	47.3264	3.2538	2.4383	428	493	1.5226	1.5108	1.2915	1.2815	5.52	5.51	5,804
3/30/2005 12:20	11.3493	11.9982	33.4929	47.7115	47.3174	3.2518	2.4393	428	493	1.5216	1.5098	1.2975	1.2874	5.52	5.51	5,806
3/30/2005 12:21	11.3514	12.0437	33.5697	47.7028	47.3084	3.2498	2.4403	428	493	1.5178	1.5061	1.2946	1.2845	5.53	5.51	5,807
3/30/2005 12:22	11.3533	12.2077	33.5253	47.6942	47.2994	3.2478	2.4414	428	493	1.5195	1.5077	1.2852	1.2752	5.53	5.52	5,809
3/30/2005 12:23	11.3525	12.0891	33.5535	47.6855	47.2904	3.2458	2.4424	428	493	1.5179	1.5061	1.2915	1.2815	5.53	5.52	5,811
3/30/2005 12:24	11.3512	12.1276	33.6576	47.6769	47.2813	3.2438	2.4434	428	493	1.5129	1.5012	1.2892	1.2792	5.54	5.52	5,813
3/30/2005 12:25	11.3498	12.1290	33.5939	47.6682	47.2723	3.2418	2.4444	428	493	1.5155	1.5037	1.2889	1.2789	5.54	5.52	5,814
3/30/2005 12:26	11.3485	12.0551	33.4105	47.6596	47.2633	3.2398	2.4454	428	493	1.5235	1.5116	1.2928	1.2828	5.54	5.52	5,816
3/30/2005 12:27	11.3471	11.9844	33.2913	47.6509	47.2543	3.2378	2.4464	428	493	1.5286	1.5167	1.2966	1.2865	5.54	5.52	5,818
3/30/2005 12:28	11.3450	11.9883	33.2257	47.6423	47.2453	3.2359	2.4474	428	493	1.5313	1.5193	1.2962	1.2861	5.55	5.52	5,820
3/30/2005 12:29	11.3416	11.9487	33.3240	47.6336	47.2363	3.2339	2.4484	428	493	1.5265	1.5145	1.2984	1.2882	5.55	5.52	5,821
3/30/2005 12:30	11.3381	11.9318	33.5029	47.6250	47.2273	3.2319	2.4494	427	493	1.5180	1.5061	1.2992	1.2891	5.55	5.53	5,823
3/30/2005 12:31	11.3346	11.9553	33.6848	47.6163	47.2183	3.2299	2.4504	427	493	1.5095	1.4977	1.2979	1.2877	5.55	5.53	5,825
3/30/2005 12:32	11.3312	12.1845	33.8099	47.6077	47.2093	3.2279	2.4514	427	493	1.5036	1.4918	1.2852	1.2751	5.55	5.53	5,827
3/30/2005 12:33	11.3277	12.1066	33.8409	47.5990	47.2002	3.2259	2.4524	427	493	1.5019	1.4901	1.2894	1.2793	5.55	5.53	5,828
3/30/2005 12:34	11.3242	12.1435	33.8653	47.5904	47.1912	3.2239	2.4534	427	493	1.5005	1.4887	1.2873	1.2772	5.55	5.53	5,830
3/30/2005 12:35	11.3208	12.1571	33.9073	47.5818	47.1822	3.2219	2.4544	427	493	1.4983	1.4865	1.2865	1.2764	5.55	5.53	5,832
3/30/2005 12:36	11.3173	12.0488	34.2633	47.5731	47.1732	3.2199	2.4555	427	493	1.4824	1.4708	1.2924	1.2822	5.55	5.53	5,834
3/30/2005 12:37	11.3138	11.9966	33.0707	47.5645	47.1642	3.2179	2.4564	427	493	1.5356	1.5235	1.2952	1.2850	5.55	5.53	5,835
3/30/2005 12:38	11.3135	12.0759	32.9020	47.5558	47.1552	3.2159	2.4556	427	493	1.5431	1.5309	1.2906	1.2804	5.55	5.53	5,837
3/30/2005 12:39	11.3185	12.0358	33.2524	47.5472	47.1462	3.2139	2.4540	427	493	1.5265	1.5145	1.2923	1.2821	5.55	5.53	5,839
3/30/2005 12:40	11.3237	12.0043	33.3122	47.5385	47.1372	3.2119	2.4523	427	493	1.5235	1.5114	1.2935	1.2832	5.55	5.53	5,841
3/30/2005 12:41	11.3288	12.0026	33.3720	47.5299	47.1282	3.2100	2.4506	427	493	1.5204	1.5084	1.2930	1.2828	5.56	5.53	5,842
3/30/2005 12:42	11.3339	12.1533	33.5040	47.5212	47.1191	3.2080	2.4489	427	493	1.5141	1.5021	1.2842	1.2740	5.56	5.53	5,844
3/30/2005 12:43	11.3391	11.8545	33.4923	47.5126	47.1101	3.2060	2.4473	427	493	1.5143	1.5023	1.3002	1.2899	5.56	5.53	5,844
3/30/2005 12:44	11.3442	11.9166	33.6780	47.5039	47.1011	3.2040	2.4456	427	493	1.5057	1.4937	1.2962	1.2859	5.56	5.53	5,845
3/30/2005 12:45	11.3493	11.9461	33.4427	47.4953	47.0921	3.2020	2.4439	427	493	1.5159	1.5039	1.2940	1.2837	5.56	5.54	5,845
3/30/2005 12:46	11.3545	11.9151	33.2998	47.4866	47.0831	3.2000	2.4423	427	493	1.5221	1.5100	1.2952	1.2849	5.56	5.54	5,846
3/30/2005 12:47	11.3342	11.9269	33.1279	47.4780	47.0741	3.1980	2.4406	427	493	1.5297	1.5175	1.2954	1.2851	5.56	5.54	5,847
Average	**11.3226**	**12.0679**	**33.5009**	**47.7547**	**47.3624**	**3.2618**	**2.4324**	**428**	**493**	**1.5229**	**1.5112**	**1.2964**	**1.2864**	**5.51**	**5.49**	**5,797**

Platformer Vent Gas Scrubber MACT UUU Performance Test Data

Black Burn Condition #1 Run #1 Date/Time	Upper Regen Air 16FC1630 MSCFH	Lower Regen Air 16FC1610 MSCFH	Vent Gas Flow 16FI0980 MSCFH	Total Wash Water Flow 16FI1121 GPM	Total Wash Water Flow 16FI1122 GPM	Make-up Condensate Flow 16FC1130 GPM	Vent Gas Pressure 16PC1300 In. of H2O	Vent Gas Temperature 16TI0800 Degrees F	Vent Gas Temperature K	L/G Ratio 16FI1121, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1122, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1121, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	L/G Ratio 16FI1122, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	pH Analyzer 16AI0170 pH units	pH Analyzer 16AI0180 pH units	Conductivity Analyzer 16AI0190
3/30/2005 15:42	21.3979	7.9993	42.7507	30.5771	30.1631	3.6566	3.9460	435	497	0.8008	0.7911	0.6866	0.6783	2.28	2.11	6,305
3/30/2005 15:43	21.4887	7.9989	42.8752	30.5683	30.1516	3.6593	3.9614	435	497	0.7983	0.7886	0.6842	0.6759	2.27	2.10	6,344
3/30/2005 15:44	21.5514	7.9986	42.7504	30.5596	30.1400	3.6620	3.9768	435	497	0.8005	0.7907	0.6824	0.6741	2.27	2.10	6,383
3/30/2005 15:45	21.6121	7.8892	42.5403	30.5508	30.1285	3.6648	3.9922	436	497	0.8043	0.7944	0.6833	0.6748	2.27	2.10	6,421
3/30/2005 15:46	21.6728	7.6132	41.9820	30.5420	30.1170	3.6675	4.0076	436	497	0.8149	0.8047	0.6880	0.6794	2.27	2.10	6,464
3/30/2005 15:47	21.7335	7.8304	42.2952	30.5333	30.1055	3.6702	4.0230	436	498	0.8087	0.7986	0.6812	0.6727	2.26	2.09	6,510
3/30/2005 15:48	21.7945	7.8861	42.2851	30.5245	30.0939	3.6730	4.0384	436	498	0.8087	0.7986	0.6782	0.6697	2.26	2.09	6,554
3/30/2005 15:49	26.1607	8.0783	46.6353	30.5158	30.0824	3.6757	4.7332	437	498	0.7332	0.7239	0.5876	0.5802	2.25	2.09	6,588
3/30/2005 15:50	23.2536	8.2194	45.2995	30.5070	30.0709	3.6784	4.5330	437	498	0.7547	0.7450	0.6390	0.6308	2.24	2.09	6,622
3/30/2005 15:51	19.4882	8.2889	41.7024	30.4983	30.0593	3.6812	3.9976	437	498	0.8196	0.8091	0.7237	0.7144	2.23	2.09	6,666
3/30/2005 15:52	22.4106	8.1568	42.8015	30.4895	30.0478	3.6839	4.0813	437	498	0.7984	0.7881	0.6573	0.6488	2.23	2.08	6,743
3/30/2005 15:53	23.9829	8.0317	45.0585	30.4808	30.0363	3.6866	4.3759	438	498	0.7583	0.7484	0.6273	0.6192	2.22	2.08	6,797
3/30/2005 15:54	24.2262	7.9980	45.5996	30.4720	30.0247	3.6894	4.4487	438	499	0.7492	0.7394	0.6230	0.6148	2.21	2.08	6,834
3/30/2005 15:55	24.1611	7.9743	45.6930	30.4633	30.0132	3.6921	4.5215	438	499	0.7475	0.7376	0.6244	0.6162	2.20	2.08	6,873
3/30/2005 15:56	21.9823	7.9505	44.1080	30.4545	30.0017	3.6948	4.4111	438	499	0.7742	0.7640	0.6701	0.6612	2.20	2.07	6,929
3/30/2005 15:57	17.3244	7.9268	38.1187	30.4457	29.9902	3.6976	3.3619	439	499	0.8957	0.8838	0.7939	0.7833	2.19	2.07	6,986
3/30/2005 15:58	22.5663	7.8860	42.6549	30.4370	29.9786	3.7003	4.1842	439	499	0.8003	0.7896	0.6580	0.6492	2.18	2.07	7,013
3/30/2005 15:59	22.1903	7.7016	42.3724	30.4282	29.9671	3.7030	4.2600	439	499	0.8055	0.7946	0.6701	0.6610	2.18	2.07	7,037
3/30/2005 16:00	22.3914	7.7771	42.7394	30.4195	29.9556	3.7058	4.2902	439	499	0.7984	0.7876	0.6636	0.6546	2.17	2.07	7,060
3/30/2005 16:01	22.6219	8.0224	43.3140	30.4107	29.9440	3.7085	4.3204	440	500	0.7877	0.7769	0.6530	0.6441	2.16	2.06	7,084
3/30/2005 16:02	23.0207	8.1672	44.6750	30.4020	29.9325	3.7112	4.3507	440	500	0.7636	0.7531	0.6413	0.6325	2.15	2.06	7,114
3/30/2005 16:03	23.2070	8.1404	44.6341	30.3932	29.9210	3.7140	4.3809	440	500	0.7642	0.7536	0.6378	0.6290	2.15	2.06	7,157
3/30/2005 16:04	21.9675	8.1135	43.3159	30.3845	29.9094	3.7167	4.2826	440	500	0.7873	0.7763	0.6643	0.6551	2.14	2.06	7,199
3/30/2005 16:05	18.1257	7.7914	37.5273	30.3757	29.8979	3.7194	3.2139	441	500	0.9085	0.8958	0.7707	0.7599	2.13	2.05	7,250
3/30/2005 16:06	22.0839	7.7600	42.3862	30.3670	29.8864	3.7222	3.9410	441	500	0.8043	0.7929	0.6690	0.6596	2.12	2.05	7,299
3/30/2005 16:07	22.2866	7.9150	42.4811	30.3582	29.8748	3.7249	4.1377	441	500	0.8023	0.7909	0.6608	0.6514	2.12	2.05	7,321
3/30/2005 16:08	22.8867	7.8755	43.0851	30.3494	29.8633	3.7276	4.2417	441	501	0.7909	0.7796	0.6485	0.6392	2.11	2.05	7,338
3/30/2005 16:09	22.9889	7.9642	43.4438	30.3407	29.8518	3.7304	4.3456	442	501	0.7843	0.7730	0.6442	0.6349	2.11	2.05	7,355
3/30/2005 16:10	23.0519	8.1804	43.8026	30.3319	29.8403	3.7331	4.4496	442	501	0.7777	0.7665	0.6381	0.6289	2.11	2.04	7,372
3/30/2005 16:11	23.1149	8.3344	44.2992	30.3232	29.8287	3.7358	4.5535	442	501	0.7688	0.7577	0.6334	0.6242	2.11	2.04	7,388
3/30/2005 16:18	26.1356	7.9972	48.7437	30.2619	29.7480	3.7550	4.9797	444	502	0.6979	0.6873	0.5818	0.5730	2.09	2.03	7,661
3/30/2005 16:19	26.1310	7.9882	48.5073	30.2531	29.7365	3.7577	4.9554	444	502	0.7011	0.6905	0.5817	0.5729	2.08	2.02	7,718
3/30/2005 16:20	26.1264	7.9180	48.2630	30.2444	29.7249	3.7604	4.9311	444	502	0.7046	0.6938	0.5828	0.5739	2.08	2.02	7,775
3/30/2005 16:21	26.1217	7.6774	47.9729	30.2356	29.7134	3.7632	4.9068	445	502	0.7087	0.6978	0.5867	0.5777	2.08	2.02	7,830
3/30/2005 16:22	26.1171	7.7794	47.6529	30.2269	29.7019	3.7659	4.8824	445	502	0.7133	0.7023	0.5848	0.5757	2.07	2.02	7,877
3/30/2005 16:23	25.3459	8.0736	47.1731	30.2181	29.6904	3.7686	4.8574	445	503	0.7205	0.7093	0.5929	0.5836	2.07	2.01	7,923
3/30/2005 16:24	23.1415	8.1184	45.6366	30.2094	29.6788	3.7714	4.8062	445	503	0.7446	0.7330	0.6335	0.6236	2.07	2.01	7,968
3/30/2005 16:25	23.1390	8.0882	44.0622	30.2006	29.6673	3.7741	4.7416	446	503	0.7711	0.7590	0.6339	0.6239	2.06	2.01	8,014
3/30/2005 16:26	23.1677	8.0579	44.0844	30.1919	29.6558	3.7768	4.6769	446	503	0.7705	0.7584	0.6336	0.6236	2.06	2.01	8,052
3/30/2005 16:27	23.2504	8.0277	44.2794	30.1831	29.6442	3.7796	4.6122	446	503	0.7670	0.7548	0.6323	0.6223	2.06	2.01	8,071
3/30/2005 16:28	23.3342	8.0042	44.2374	30.1743	29.6327	3.7823	4.5475	446	503	0.7676	0.7554	0.6308	0.6207	2.06	2.00	8,088
3/30/2005 16:29	23.4179	8.0013	44.3457	30.1656	29.6212	3.7850	4.4913	447	503	0.7656	0.7533	0.6289	0.6188	2.05	2.00	8,106
3/30/2005 16:30	23.5017	7.9998	44.3870	30.1568	29.6096	3.7878	4.5017	447	504	0.7647	0.7524	0.6270	0.6169	2.05	2.00	8,124
3/30/2005 16:31	23.5854	7.9983	44.4125	30.1481	29.5981	3.7905	4.5266	447	504	0.7642	0.7518	0.6250	0.6149	2.05	2.00	8,142
3/30/2005 16:32	23.6692	7.9968	44.5502	30.1393	29.5866	3.7932	4.5514	447	504	0.7617	0.7493	0.6231	0.6130	2.04	1.99	8,173
3/30/2005 16:33	23.7529	7.9953	44.9003	30.1306	29.5750	3.7960	4.5762	448	504	0.7556	0.7432	0.6212	0.6111	2.04	1.99	8,213
3/30/2005 16:34	23.8367	7.9939	45.0805	30.1218	29.5635	3.7987	4.6011	448	504	0.7524	0.7401	0.6194	0.6092	2.04	1.99	8,251
3/30/2005 16:35	23.9204	7.9141	44.8837	30.1131	29.5520	3.8014	4.6259	448	504	0.7556	0.7431	0.6190	0.6088	2.03	1.99	8,279
3/30/2005 16:36	24.0042	7.6218	44.4900	30.1043	29.5405	3.8042	4.6507	448	504	0.7622	0.7495	0.6228	0.6124	2.03	1.99	8,305
3/30/2005 16:37	24.0879	7.7843	44.4347	30.0956	29.5289	3.8069	4.6755	449	505	0.7630	0.7502	0.6177	0.6074	2.03	1.98	8,331
3/30/2005 16:38	24.1717	7.8840	44.4151	30.0868	29.5174	3.8096	4.7004	449	505	0.7632	0.7504	0.6139	0.6036	2.03	1.98	8,356
3/30/2005 16:39	24.2554	8.1854	45.0942	30.0780	29.5059	3.8124	4.7252	449	505	0.7515	0.7389	0.6063	0.5961	2.02	1.98	8,375
3/30/2005 16:40	24.3392	8.1655	45.6796	30.0693	29.4943	3.8151	4.7500	449	505	0.7418	0.7292	0.6049	0.5946	2.02	1.98	8,392
3/30/2005 16:41	24.4229	8.2786	46.1126	30.0605	29.4828	3.8178	4.7741	450	505	0.7347	0.7222	0.6010	0.5907	2.02	1.97	8,409
3/30/2005 16:42	24.5204	8.1557	46.2872	30.0518	29.4713	3.8206	4.7838	450	505	0.7318	0.7192	0.6012	0.5909	2.01	1.97	8,426
3/30/2005 16:43	24.8793	8.0647	46.3612	30.0430	29.4597	3.8233	4.7880	450	505	0.7305	0.7179	0.5960	0.5857	2.01	1.97	8,444
3/30/2005 16:44	25.0702	8.0472	46.4345	30.0343	29.4482	3.8260	4.7921	450	506	0.7292	0.7166	0.5926	0.5824	2.01	1.97	8,487
3/30/2005 16:45	25.1216	8.0326	46.5077	30.0255	29.4367	3.8288	4.7963	451	506	0.7279	0.7153	0.5917	0.5814	2.01	1.97	8,498
3/30/2005 16:46	25.1730	8.0180	46.5809	30.0168	29.4251	3.8315	4.8004	451	506	0.7267	0.7140	0.5908	0.5804	2.00	1.96	8,508
3/30/2005 16:47	25.2244	8.0035	46.6685	30.0080	29.4136	3.8342	4.8046	451	506	0.7252	0.7124	0.5898	0.5795	2.00	1.96	8,519
Average	23.3285	7.9890	44.4244	30.2925	29.7884	3.7454	4.4529	443	501	0.7681	0.7567	0.6375	0.6281	2.12	2.03	7,539

Platformer Vent Gas Scrubber MACT UUU Performance Test Data

Black Burn Condition #1 Run #2	Upper Regen Air	Lower Regen Air	Vent Gas Flow	Total Wash Water Flow	Total Wash Water Flow	Make-up Condensate Flow	Vent Gas Pressure	Vent Gas Temperature	Vent Gas Temperature	L/G Ratio	L/G Ratio	L/G Ratio	L/G Ratio	pH Analyzer	pH Analyzer	Conductivity Analyzer
										16FI1121, 16FC1130, 16FI0980	16FI1122, 16FC1130, 16FI0980	16FI1121, 16FC1130, 16FC1630, 16FC1810	16FI1122, 16FC1130, 16FC1630, 18FC1610			
Date/Time	16FC1630 MSCFH	16FC1610 MSCFH	16FI0980 MSCFH	16FI1121 GPM	16FI1122 GPM	16FC1130 GPM	16PC1300 In. of H2O	16TI0800 Degrees F	K	GPM/MSCFH	GPM/MSCFH	GPM/MACFH	GPM/MACFH	16AI0170 pH units	16AI0180 pH units	16AI0190
3/30/2005 17:11	24.2876	8.0800	46.1696	29.7979	29.1369	3.8998	4.6433	457	509	0.7299	0.7156	0.5990	0.5872	1.98	1.92	8,775
3/30/2005 17:12	24.3440	7.9969	46.0834	29.7891	29.1253	3.9025	4.6720	457	509	0.7311	0.7167	0.5992	0.5874	1.98	1.91	8,782
3/30/2005 17:13	24.4004	7.9855	46.1937	29.7804	29.1138	3.9053	4.7007	457	510	0.7292	0.7148	0.5981	0.5863	1.97	1.91	8,789
3/30/2005 17:14	24.4568	7.9766	46.2446	29.7716	29.1023	3.9080	4.7293	458	510	0.7283	0.7138	0.5970	0.5851	1.97	1.91	8,798
3/30/2005 17:15	24.5131	7.9677	46.2166	29.7629	29.0908	3.9107	4.7580	458	510	0.7286	0.7141	0.5958	0.5839	1.97	1.91	8,809
3/30/2005 17:16	24.5695	7.9570	46.1127	29.7541	29.0792	3.9135	4.7867	458	510	0.7301	0.7155	0.5947	0.5828	1.97	1.91	8,820
3/30/2005 17:17	24.6259	7.7945	45.9655	29.7454	29.0677	3.9162	4.8004	458	510	0.7323	0.7176	0.5964	0.5844	1.97	1.91	8,831
3/30/2005 17:18	24.6822	7.7568	46.0459	29.7366	29.0562	3.9189	4.7957	459	510	0.7309	0.7161	0.5958	0.5838	1.97	1.91	8,842
3/30/2005 17:19	24.7386	7.9629	46.2114	29.7279	29.0446	3.9217	4.7910	459	510	0.7282	0.7134	0.5908	0.5788	1.97	1.91	8,853
3/30/2005 17:20	24.7950	8.1449	46.7099	29.7191	29.0331	3.9244	4.7863	459	510	0.7203	0.7056	0.5862	0.5743	1.97	1.91	8,864
3/30/2005 17:21	24.8513	8.1108	47.0306	29.7103	29.0216	3.9271	4.7816	459	511	0.7152	0.7006	0.5856	0.5736	1.97	1.90	8,875
3/30/2005 17:22	24.9077	8.0767	46.5846	29.7016	29.0100	3.9299	4.7769	460	511	0.7219	0.7071	0.5849	0.5729	1.97	1.90	8,886
3/30/2005 17:23	24.9641	8.0426	46.4348	29.6928	28.9985	3.9326	4.7722	460	511	0.7241	0.7092	0.5842	0.5722	1.97	1.90	8,897
3/30/2005 17:24	25.0204	8.0139	46.5039	29.6841	28.9870	3.9353	4.7675	460	511	0.7229	0.7079	0.5835	0.5714	1.97	1.90	8,908
3/30/2005 17:25	25.0768	8.0076	46.5167	29.6753	28.9755	3.9381	4.7628	460	511	0.7226	0.7076	0.5823	0.5702	1.96	1.90	8,919
3/30/2005 17:26	25.1332	8.0037	46.5234	29.6666	28.9639	3.9408	4.7581	461	511	0.7224	0.7073	0.5812	0.5690	1.96	1.90	8,930
3/30/2005 17:27	25.1896	7.9998	46.5301	29.6578	28.9524	3.9435	4.7534	461	511	0.7221	0.7070	0.5800	0.5678	1.96	1.90	8,941
3/30/2005 17:28	25.2418	7.9958	46.5587	29.6491	28.9409	3.9463	4.7487	461	512	0.7216	0.7064	0.5789	0.5667	1.96	1.90	8,952
3/30/2005 17:29	25.2611	7.9919	46.6774	29.6403	28.9293	3.9490	4.7440	461	512	0.7196	0.7044	0.5783	0.5661	1.96	1.90	8,963
3/30/2005 17:30	25.2733	7.9880	46.8058	29.6315	28.9178	3.9517	4.7393	462	512	0.7175	0.7023	0.5779	0.5657	1.96	1.89	8,974
3/30/2005 17:31	25.2855	7.9841	46.6792	29.6228	28.9063	3.9545	4.7346	462	512	0.7193	0.7040	0.5775	0.5652	1.96	1.89	8,985
3/30/2005 17:32	25.2977	7.6071	46.2433	29.6140	28.8947	3.9572	4.7299	462	512	0.7260	0.7104	0.5837	0.5712	1.96	1.89	8,996
3/30/2005 17:33	25.3099	7.7894	45.8923	29.6053	28.8832	3.9599	4.7252	462	512	0.7314	0.7157	0.5800	0.5675	1.96	1.89	9,010
3/30/2005 17:34	25.3221	7.8973	46.2675	29.5965	28.8717	3.9627	4.7251	463	512	0.7253	0.7097	0.5776	0.5652	1.96	1.89	9,025
3/30/2005 17:35	25.3343	8.1788	47.1334	29.5878	28.8601	3.9654	4.7590	463	513	0.7119	0.6964	0.5723	0.5599	1.96	1.89	9,041
3/30/2005 17:36	25.3465	8.0826	46.7416	29.5790	28.8486	3.9681	4.7997	463	513	0.7177	0.7021	0.5735	0.5610	1.95	1.89	9,056
3/30/2005 17:37	25.3587	8.1958	47.0394	29.5703	28.8371	3.9709	4.8405	463	513	0.7130	0.6975	0.5711	0.5586	1.95	1.89	9,072
3/30/2005 17:38	25.3709	8.1552	47.0325	29.5615	28.8256	3.9736	4.8813	464	513	0.7130	0.6974	0.5713	0.5588	1.95	1.88	9,087
3/30/2005 17:39	25.3832	8.0823	47.0424	29.5528	28.8140	3.9763	4.9220	464	513	0.7127	0.6970	0.5721	0.5595	1.95	1.88	9,103
3/30/2005 17:40	25.3954	8.0543	47.0562	29.5440	28.8025	3.9791	4.9628	464	513	0.7124	0.6966	0.5721	0.5595	1.95	1.88	9,130
3/30/2005 17:45	25.4564	7.7018	47.1335	29.5002	28.7448	3.9927	4.9797	465	514	0.7106	0.6946	0.5758	0.5629	1.95	1.88	9,196
3/30/2005 17:46	25.4686	7.7888	46.9849	29.4915	28.7333	3.9955	4.9618	466	514	0.7127	0.6966	0.5739	0.5609	1.95	1.88	9,187
3/30/2005 17:47	25.4808	8.0990	47.1483	29.4827	28.7218	3.9982	4.9438	466	514	0.7101	0.6940	0.5681	0.5552	1.95	1.87	9,179
3/30/2005 17:48	25.4930	8.1420	47.5056	29.4740	28.7102	4.0009	4.9259	466	514	0.7047	0.6886	0.5669	0.5540	1.94	1.87	9,171
3/30/2005 17:49	25.5052	8.1094	47.1243	29.4652	28.6987	4.0037	4.9079	466	515	0.7102	0.6940	0.5670	0.5540	1.94	1.87	9,162
3/30/2005 17:50	25.5174	8.0767	46.7963	29.4565	28.6872	4.0064	4.8900	467	515	0.7151	0.6986	0.5671	0.5541	1.94	1.87	9,154
3/30/2005 17:51	25.5296	8.0440	47.0286	29.4477	28.6757	4.0091	4.8720	467	515	0.7114	0.6950	0.5672	0.5541	1.94	1.87	9,146
3/30/2005 17:52	25.5419	8.0169	47.0173	29.4389	28.6641	4.0119	4.8541	467	515	0.7115	0.6950	0.5672	0.5541	1.95	1.87	9,137
3/30/2005 17:53	25.5539	8.0125	47.0093	29.4302	28.6526	4.0146	4.8361	467	515	0.7115	0.6949	0.5668	0.5536	1.95	1.87	9,129
3/30/2005 17:54	25.5513	8.0105	47.0257	29.4214	28.6411	4.0173	4.8182	468	515	0.7111	0.6945	0.5666	0.5534	1.95	1.87	9,121
3/30/2005 17:55	25.5386	8.0086	46.8784	29.4127	28.6295	4.0201	4.8002	468	515	0.7132	0.6965	0.5666	0.5534	1.96	1.87	9,112
3/30/2005 17:56	25.5259	8.0066	46.9307	29.4039	28.6180	4.0228	4.7823	468	515	0.7123	0.6955	0.5666	0.5533	1.96	1.86	9,099
3/30/2005 17:57	25.5132	8.0047	47.0311	29.3952	28.6065	4.0255	4.7643	468	516	0.7106	0.6938	0.5666	0.5532	1.96	1.86	9,086
3/30/2005 17:58	25.5005	8.0027	46.8201	29.3864	28.5949	4.0283	4.7464	469	516	0.7137	0.6968	0.5666	0.5532	1.96	1.86	9,072
3/30/2005 17:59	25.4878	7.9485	46.5341	29.3777	28.5834	4.0310	4.7284	469	516	0.7179	0.7009	0.5675	0.5540	1.97	1.86	9,059
3/30/2005 18:00	25.4751	7.6850	46.1358	29.3689	28.5719	4.0337	4.7105	469	516	0.7240	0.7067	0.5720	0.5583	1.97	1.86	9,046
3/30/2005 18:01	25.4624	7.8656	45.9510	29.3602	28.5603	4.0365	4.7092	469	516	0.7268	0.7094	0.5688	0.5552	1.97	1.86	9,032
3/30/2005 18:02	25.4497	7.9402	46.2439	29.3514	28.5488	4.0392	4.7466	470	516	0.7221	0.7047	0.5675	0.5539	1.97	1.86	9,019
3/30/2005 18:03	25.4370	8.1766	46.7733	29.3426	28.5373	4.0419	4.7855	470	516	0.7138	0.6965	0.5635	0.5499	1.98	1.86	9,005
3/30/2005 18:04	25.4243	8.0439	46.2868	29.3339	28.5258	4.0447	4.8243	470	517	0.7211	0.7037	0.5657	0.5520	1.98	1.86	8,988
3/30/2005 18:05	25.4116	8.2493	46.5096	29.3251	28.5142	4.0474	4.8632	470	517	0.7175	0.7001	0.5622	0.5485	1.98	1.86	8,971
3/30/2005 18:06	25.3989	8.1560	46.5280	29.3164	28.5027	4.0501	4.9021	471	517	0.7171	0.6996	0.5637	0.5500	1.99	1.86	8,953
3/30/2005 18:07	25.3862	8.0644	46.3523	29.3076	28.4912	4.0529	4.9410	471	517	0.7197	0.7021	0.5652	0.5514	1.99	1.86	8,936
3/30/2005 18:08	25.3735	8.0407	46.1765	29.2989	28.4796	4.0556	4.9780	471	517	0.7223	0.7046	0.5656	0.5517	1.99	1.86	8,918
3/30/2005 18:09	25.3608	8.0275	46.0026	29.2901	28.4681	4.0583	4.9787	471	517	0.7249	0.7071	0.5658	0.5518	1.99	1.86	8,899
3/30/2005 18:10	25.3481	8.0143	45.8358	29.2814	28.4566	4.0611	4.9652	472	517	0.7274	0.7094	0.5659	0.5519	2.00	1.86	8,875
3/30/2005 18:11	25.3355	8.0011	45.6697	29.2726	28.4450	4.0638	4.9518	472	518	0.7299	0.7118	0.5661	0.5521	2.00	1.86	8,851
3/30/2005 18:12	25.3228	7.7880	45.5322	29.2638	28.4335	4.0665	4.9383	472	518	0.7320	0.7138	0.5697	0.5555	2.00	1.86	8,827
3/30/2005 18:13	25.3101	7.7257	45.7323	29.2551	28.4220	4.0693	4.9249	472	518	0.7287	0.7105	0.5708	0.5565	2.00	1.86	8,804
3/30/2005 18:14	25.2974	7.8468	46.0305	29.2463	28.4104	4.0720	4.9114	473	518	0.7238	0.7057	0.5687	0.5544	2.01	1.86	8,786
Average	**25.2199**	**7.9913**	**46.5329**	**29.5221**	**28.7737**	**3.9859**	**4.8182**	**465**	**514**	**0.7202**	**0.7041**	**0.5757**	**0.5629**	**1.97**	**1.88**	**8,981**

Platformer Vent Gas Scrubber MACT UUU Performance Test Data

Black Burn Condition #1 Run #3 Date/Time	Upper Regen Air 16FC1630 MSCFH	Lower Regen Air 16FC1610 MSCFH	Vent Gas Flow 16FI0980 MSCFH	Total Wash Water Flow 16FI1121 GPM	Total Wash Water Flow 16FI1122 GPM	Make-up Condensate Flow 16FC1130 GPM	Vent Gas Pressure 16PC1300 In. of H2O	Vent Gas Temperature 16TI0800 Degrees F	Vent Gas Temperature K	L/G Ratio 16FI1121, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1122, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1121, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	L/G Ratio 16FI1122, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	pH Analyzer 16AI0170 pH units	pH Analyzer 16AI0180 pH units	Conductivity Analyzer 16AI0190
3/30/2005 18:36	25.0180	8.0368	45.2094	29.0537	28.1568	4.1321	4.9400	478	521	0.7340	0.7142	0.5646	0.5493	2.06	1.89	8,413
3/30/2005 18:37	25.0053	7.9257	45.0096	29.0450	28.1452	4.1348	4.9395	478	521	0.7372	0.7172	0.5665	0.5511	2.06	1.89	8,399
3/30/2005 18:38	24.9926	7.7295	44.8015	29.0362	28.1337	4.1376	4.9391	479	521	0.7405	0.7203	0.5698	0.5543	2.06	1.89	8,386
3/30/2005 18:39	24.9799	7.8358	44.7410	29.0275	28.1222	4.1403	4.9387	479	521	0.7413	0.7211	0.5680	0.5525	2.07	1.89	8,375
3/30/2005 18:40	24.9672	7.9300	45.1227	29.0187	28.1106	4.1430	4.9382	479	522	0.7349	0.7148	0.5663	0.5508	2.07	1.89	8,364
3/30/2005 18:41	24.9545	8.1612	45.0916	29.0100	28.0991	4.1458	4.9378	479	522	0.7353	0.7151	0.5623	0.5469	2.07	1.89	8,354
3/30/2005 18:42	24.9418	8.1434	44.8953	29.0012	28.0876	4.1485	4.9374	480	522	0.7384	0.7180	0.5626	0.5471	2.07	1.89	8,344
3/30/2005 18:43	24.9291	8.0867	44.9155	28.9924	28.0761	4.1512	4.9369	480	522	0.7379	0.7175	0.5635	0.5479	2.07	1.89	8,334
3/30/2005 18:44	24.9164	8.0317	44.8657	28.9837	28.0645	4.1540	4.9365	480	522	0.7386	0.7181	0.5644	0.5488	2.07	1.89	8,324
3/30/2005 18:45	24.9037	8.0114	44.8039	28.9749	28.0530	4.1567	4.9361	480	522	0.7395	0.7189	0.5647	0.5490	2.07	1.89	8,313
3/30/2005 18:46	24.8910	8.0046	44.7733	28.9662	28.0415	4.1594	4.9356	481	522	0.7399	0.7192	0.5648	0.5490	2.07	1.89	8,303
3/30/2005 18:47	24.8783	7.8659	44.6914	28.9574	28.0299	4.1622	4.9352	481	523	0.7411	0.7203	0.5672	0.5513	2.08	1.90	8,293
3/30/2005 18:48	24.8656	7.7540	44.4413	28.9487	28.0184	4.1649	4.9348	481	523	0.7451	0.7242	0.5691	0.5531	2.08	1.90	8,283
3/30/2005 18:49	24.8529	7.8597	44.2005	28.9399	28.0069	4.1676	4.9343	481	523	0.7490	0.7279	0.5672	0.5512	2.08	1.90	8,271
3/30/2005 18:50	24.8402	8.0893	44.5290	28.9312	27.9953	4.1704	4.9339	482	523	0.7434	0.7224	0.5632	0.5473	2.08	1.90	8,259
3/30/2005 18:51	24.8275	8.0734	44.7768	28.9224	27.9838	4.1731	4.9335	482	523	0.7391	0.7182	0.5635	0.5475	2.08	1.90	8,246
3/30/2005 18:52	24.8148	8.0546	44.9388	28.9137	27.9723	4.1758	4.9330	482	523	0.7363	0.7154	0.5637	0.5477	2.08	1.90	8,234
3/30/2005 18:53	24.8021	8.0358	45.0799	28.9049	27.9608	4.1786	4.9326	482	523	0.7339	0.7129	0.5640	0.5479	2.08	1.90	8,222
3/30/2005 18:54	24.7894	7.9784	44.8143	28.8961	27.9492	4.1813	4.9322	483	523	0.7381	0.7170	0.5650	0.5488	2.08	1.90	8,209
3/30/2005 18:55	24.7767	7.7997	44.5522	28.8874	27.9377	4.1840	4.9317	483	524	0.7423	0.7210	0.5681	0.5517	2.08	1.90	8,197
3/30/2005 18:56	24.7640	7.8910	44.4978	28.8786	27.9262	4.1868	4.9313	483	524	0.7431	0.7217	0.5664	0.5501	2.08	1.90	8,185
3/30/2005 18:57	24.7513	7.9082	44.4191	28.8699	27.9146	4.1895	4.9309	483	524	0.7443	0.7228	0.5661	0.5497	2.08	1.90	8,173
3/30/2005 18:58	24.7386	8.0597	44.1425	28.8611	27.9031	4.1922	4.9304	484	524	0.7488	0.7271	0.5635	0.5471	2.08	1.91	8,160
3/30/2005 18:59	24.7259	7.8719	44.4812	28.8524	27.8916	4.1950	4.9300	484	524	0.7430	0.7214	0.5667	0.5502	2.08	1.91	8,148
3/30/2005 19:00	24.7132	8.1557	44.5644	28.8436	27.8800	4.1977	4.9295	484	524	0.7414	0.7198	0.5617	0.5454	2.08	1.91	8,136
3/30/2005 19:01	24.7005	8.1043	44.8315	28.8349	27.8685	4.2004	4.9291	484	524	0.7369	0.7153	0.5626	0.5461	2.08	1.91	8,123
3/30/2005 19:02	24.6878	8.1846	45.0450	28.8261	27.8570	4.2032	4.9287	485	525	0.7333	0.7117	0.5612	0.5447	2.08	1.91	8,111
3/30/2005 19:03	24.6751	8.1509	45.0638	28.8174	27.8454	4.2059	4.9283	485	525	0.7328	0.7112	0.5617	0.5452	2.08	1.91	8,099
3/30/2005 19:04	24.6624	8.1076	44.9855	28.8086	27.8339	4.2086	4.9280	485	525	0.7340	0.7123	0.5624	0.5458	2.08	1.91	8,086
3/30/2005 19:05	24.6497	8.0643	44.8784	28.7998	27.8224	4.2114	4.9277	485	525	0.7356	0.7138	0.5631	0.5465	2.08	1.91	8,074
3/30/2005 19:11	24.5735	7.8310	44.6171	28.7473	27.7532	4.2278	4.9259	487	526	0.7391	0.7168	0.5670	0.5499	2.08	1.92	8,020
3/30/2005 19:12	24.5608	8.1348	44.8562	28.7386	27.7417	4.2305	4.9256	487	526	0.7350	0.7128	0.5617	0.5447	2.08	1.92	8,011
3/30/2005 19:13	24.5481	8.1365	45.0303	28.7298	27.7301	4.2332	4.9083	487	526	0.7320	0.7098	0.5617	0.5446	2.08	1.92	8,002
3/30/2005 19:14	24.5354	8.1008	45.1359	28.7211	27.7186	4.2360	4.8537	488	526	0.7302	0.7080	0.5622	0.5451	2.09	1.92	7,993
3/30/2005 19:15	24.5227	8.0650	44.7897	28.7123	27.7071	4.2387	4.7978	488	526	0.7357	0.7132	0.5628	0.5456	2.09	1.92	7,984
3/30/2005 19:16	24.5100	8.0293	44.6125	28.7035	27.6955	4.2414	4.7419	488	527	0.7385	0.7159	0.5634	0.5462	2.09	1.92	7,975
3/30/2005 19:17	24.4973	8.0045	44.5625	28.6948	27.6840	4.2442	4.6860	488	527	0.7392	0.7165	0.5638	0.5465	2.09	1.92	7,966
3/30/2005 19:18	24.4846	8.0035	44.5124	28.6860	27.6725	4.2469	4.6301	489	527	0.7399	0.7171	0.5638	0.5464	2.09	1.92	7,958
3/30/2005 19:19	24.4719	8.0034	44.4674	28.6773	27.6610	4.2496	4.5741	489	527	0.7405	0.7176	0.5638	0.5464	2.09	1.93	7,949
3/30/2005 19:20	24.4593	8.0032	44.5205	28.6685	27.6494	4.2524	4.5182	489	527	0.7395	0.7166	0.5637	0.5463	2.09	1.93	7,940
3/30/2005 19:21	24.4466	7.8164	44.0799	28.6598	27.6379	4.2551	4.4623	489	527	0.7467	0.7235	0.5670	0.5494	2.09	1.93	7,931
3/30/2005 19:22	24.4339	7.5716	43.3086	28.6510	27.6264	4.2578	4.4429	490	527	0.7599	0.7362	0.5713	0.5535	2.09	1.93	7,922
3/30/2005 19:23	24.4212	7.8364	43.6260	28.6423	27.6148	4.2606	4.4706	490	528	0.7542	0.7307	0.5666	0.5489	2.09	1.93	7,913
3/30/2005 19:24	24.4085	8.0728	43.9221	28.6335	27.6033	4.2633	4.4985	490	528	0.7490	0.7255	0.5624	0.5448	2.09	1.93	7,904
3/30/2005 19:25	24.3958	8.2112	44.8000	28.6247	27.5918	4.2660	4.5264	490	528	0.7342	0.7111	0.5600	0.5424	2.09	1.93	7,896
3/30/2005 19:26	24.3831	8.0221	44.6759	28.6160	27.5802	4.2688	4.5543	491	528	0.7361	0.7129	0.5632	0.5455	2.09	1.93	7,887
3/30/2005 19:27	24.3704	8.2418	44.4336	28.6072	27.5687	4.2715	4.5822	491	528	0.7400	0.7166	0.5594	0.5417	2.09	1.93	7,878
3/30/2005 19:28	24.3577	8.1402	44.2012	28.5985	27.5572	4.2742	4.6100	491	528	0.7437	0.7201	0.5611	0.5433	2.09	1.93	7,869
3/30/2005 19:29	24.3450	8.0555	44.1325	28.5897	27.5456	4.2770	4.6379	491	528	0.7447	0.7211	0.5626	0.5447	2.09	1.93	7,861
3/30/2005 19:30	24.3323	8.0406	44.0579	28.5810	27.5341	4.2797	4.6646	492	528	0.7459	0.7221	0.5628	0.5449	2.09	1.94	7,853
3/30/2005 19:31	24.3196	7.8185	43.8283	28.5722	27.5226	4.2824	4.6681	492	529	0.7496	0.7257	0.5666	0.5485	2.09	1.94	7,846
3/30/2005 19:32	24.3069	7.8005	43.6262	28.5635	27.5111	4.2852	4.6627	492	529	0.7530	0.7288	0.5669	0.5488	2.09	1.94	7,838
3/30/2005 19:33	24.2942	7.9441	43.8989	28.5547	27.4995	4.2879	4.6572	492	529	0.7481	0.7241	0.5644	0.5462	2.09	1.94	7,830
3/30/2005 19:34	24.2815	8.1598	44.0670	28.5460	27.4880	4.2906	4.6517	493	529	0.7452	0.7211	0.5606	0.5425	2.09	1.94	7,823
3/30/2005 19:35	24.2688	8.1589	44.3284	28.5372	27.4765	4.2934	4.6463	493	529	0.7406	0.7167	0.5606	0.5425	2.09	1.94	7,815
3/30/2005 19:36	24.2552	8.1126	44.3628	28.5284	27.4649	4.2961	4.6408	493	529	0.7399	0.7159	0.5614	0.5432	2.09	1.94	7,808
3/30/2005 19:37	24.2412	8.0663	44.2250	28.5197	27.4534	4.2988	4.6354	493	529	0.7421	0.7180	0.5622	0.5439	2.09	1.94	7,800
3/30/2005 19:38	24.2273	8.0365	44.0425	28.5109	27.4419	4.3016	4.6299	494	530	0.7450	0.7207	0.5627	0.5443	2.09	1.94	7,793
3/30/2005 19:39	24.2133	8.0221	43.9491	28.5022	27.4303	4.3043	4.6244	494	530	0.7465	0.7221	0.5629	0.5445	2.09	1.94	7,785
3/30/2005 19:40	24.1993	8.0077	44.0615	28.4934	27.4188	4.3070	4.6190	494	530	0.7444	0.7200	0.5632	0.5447	2.09	1.95	7,778
Average	**24.6113**	**8.0059**	**44.5316**	**28.7736**	**27.7878**	**4.2196**	**4.7910**	**486**	**525**	**0.7409**	**0.7188**	**0.5641**	**0.5472**	**2.08**	**1.92**	**8,071**

Platformer Vent Gas Scrubber MACT UUU Performance Test Data

Black Burn Condition #2 Run #1 Date/Time	Upper Regen Air 16FC1630 MSCFH	Lower Regen Air 16FC1610 MSCFH	Vent Gas Flow 16FI0980 MSCFH	Total Wash Water Flow 16FI1121 GPM	Total Wash Water Flow 16FI1122 GPM	Make-up Condensate Flow 16FC1130 GPM	Vent Gas Pressure 16PC1300 In. of H2O	Vent Gas Temperature 16TI0800 Degrees F	Vent Gas Temperature K	L/G Ratio 16FI1121, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1122, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1121, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	L/G Ratio 16FI1122, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	pH Analyzer 16AI0170 pH units	pH Analyzer 16AI0180 pH units	Conductivity Analyzer 16AI0190
3/31/2005 8:13	23.5326	8.1006	42.0093	43.9078	43.0086	3.4260	4.8690	476	520	1.1267	1.1053	0.8437	0.8277	5.36	5.30	5,308
3/31/2005 8:14	23.5331	8.1155	42.1569	43.9019	43.0045	3.4294	4.8348	476	520	1.1227	1.1015	0.8433	0.8273	5.38	5.32	5,310
3/31/2005 8:15	23.5336	8.0493	41.9805	43.8960	43.0003	3.4328	4.8062	476	520	1.1274	1.1061	0.8450	0.8290	5.40	5.34	5,311
3/31/2005 8:16	23.5341	8.0364	41.8041	43.8901	42.9961	3.4362	4.7903	476	520	1.1321	1.1107	0.8453	0.8294	5.42	5.35	5,313
3/31/2005 8:17	23.5346	8.0256	41.7640	43.8842	42.9920	3.4396	4.7748	476	520	1.1331	1.1118	0.8456	0.8297	5.44	5.36	5,314
3/31/2005 8:18	23.5351	8.0149	41.8394	43.8783	42.9878	3.4431	4.7594	476	520	1.1310	1.1097	0.8459	0.8299	5.46	5.37	5,316
3/31/2005 8:19	23.5355	8.0040	41.7605	43.8725	42.9837	3.4465	4.7440	475	520	1.1331	1.1118	0.8461	0.8302	5.47	5.39	5,317
3/31/2005 8:20	23.5360	7.7613	41.7484	43.8666	42.9795	3.4499	4.7285	475	520	1.1334	1.1121	0.8527	0.8367	5.48	5.40	5,319
3/31/2005 8:21	23.5365	7.9606	41.4528	43.8607	42.9753	3.4533	4.7131	475	519	1.1414	1.1200	0.8472	0.8314	5.49	5.41	5,320
3/31/2005 8:22	23.5370	7.8540	41.9835	43.8548	42.9712	3.4567	4.7411	475	519	1.1269	1.1059	0.8501	0.8342	5.50	5.42	5,322
3/31/2005 8:23	23.5375	7.8975	42.4547	43.8489	42.9670	3.4601	4.8097	475	519	1.1143	1.0936	0.8489	0.8331	5.51	5.43	5,324
3/31/2005 8:24	23.5380	7.9630	42.4904	43.8430	42.9628	3.4635	4.8691	475	519	1.1133	1.0926	0.8471	0.8313	5.52	5.45	1,956
3/31/2005 8:25	23.5385	8.0285	41.9186	43.8372	42.9587	3.4669	4.8606	475	519	1.1285	1.1075	0.8453	0.8296	5.53	5.46	0
3/31/2005 8:26	23.5390	8.0513	41.7470	43.8313	42.9545	3.4703	4.8384	475	519	1.1331	1.1121	0.8447	0.8290	5.54	5.47	0
3/31/2005 8:27	23.5395	8.0340	41.7570	43.8254	42.9503	3.4738	4.8163	475	519	1.1327	1.1118	0.8451	0.8295	5.55	5.48	0
3/31/2005 8:28	23.5400	8.0167	41.4896	43.8195	42.9462	3.4772	4.7941	475	519	1.1400	1.1189	0.8455	0.8299	5.56	5.50	212
3/31/2005 8:29	23.5404	7.9002	41.4777	43.8136	42.9420	3.4806	4.7719	475	519	1.1402	1.1192	0.8486	0.8330	5.57	5.51	67
3/31/2005 8:30	23.5409	7.7912	41.6245	43.8077	42.9378	3.4840	4.7498	475	519	1.1362	1.1153	0.8516	0.8359	5.58	5.53	0
3/31/2005 8:31	23.5414	7.9850	41.5361	43.8019	42.9337	3.4874	4.7306	475	519	1.1385	1.1176	0.8463	0.8308	5.59	5.54	54
3/31/2005 8:32	23.5419	7.9090	41.3339	43.7960	42.9295	3.4908	4.7339	475	519	1.1440	1.1231	0.8483	0.8328	5.60	5.55	87
3/31/2005 8:33	23.5424	8.0017	41.6506	43.7901	42.9254	3.4942	4.7418	475	519	1.1353	1.1145	0.8458	0.8303	5.61	5.57	0
3/31/2005 8:34	23.5429	7.9627	41.4357	43.7842	42.9212	3.4976	4.7498	475	519	1.1411	1.1203	0.8468	0.8314	5.62	5.58	0
3/31/2005 8:35	23.5434	7.8779	41.3963	43.7783	42.9170	3.5010	4.7716	475	519	1.1421	1.1213	0.8491	0.8336	5.63	5.60	0
3/31/2005 8:36	23.5439	7.9292	41.6262	43.7724	42.9129	3.5044	4.8017	475	519	1.1357	1.1151	0.8477	0.8323	5.64	5.61	22
3/31/2005 8:37	23.5444	7.9881	41.4799	43.7665	42.9087	3.5079	4.8318	475	519	1.1397	1.1190	0.8461	0.8307	5.65	5.65	298
3/31/2005 8:38	23.5449	7.9881	41.4298	43.7607	42.9045	3.5113	4.8619	475	519	1.1410	1.1203	0.8460	0.8307	5.66	5.66	297
3/31/2005 8:39	23.5453	8.0067	41.4488	43.7548	42.9004	3.5147	4.8920	475	519	1.1404	1.1198	0.8455	0.8302	5.67	5.67	295
3/31/2005 8:40	23.5458	8.2014	41.8079	43.7489	42.8962	3.5181	4.9207	475	519	1.1306	1.1102	0.8403	0.8251	5.68	5.68	294
3/31/2005 8:41	23.5463	8.1284	41.9917	43.7430	42.8920	3.5215	4.8946	475	519	1.1256	1.1053	0.8422	0.8270	5.69	5.69	292
3/31/2005 8:42	23.5468	7.7916	41.4858	43.7371	42.8879	3.5249	4.8403	475	519	1.1392	1.1188	0.8512	0.8359	5.70	5.70	291
3/31/2005 8:47	23.5493	8.0688	41.5898	43.7077	42.8670	3.5420	4.8283	475	519	1.1361	1.1159	0.8436	0.8286	5.75	5.74	284
3/31/2005 8:48	23.5497	8.0453	41.1139	43.7018	42.8629	3.5454	4.8131	475	519	1.1492	1.1288	0.8442	0.8292	5.76	5.75	282
3/31/2005 8:49	23.5502	8.0206	41.6475	43.6959	42.8587	3.5488	4.7979	475	519	1.1344	1.1143	0.8449	0.8299	5.77	5.76	281
3/31/2005 8:50	23.5507	7.9960	41.5958	43.6900	42.8545	3.5522	4.7827	474	519	1.1357	1.1157	0.8455	0.8305	5.78	5.77	279
3/31/2005 8:51	23.5512	7.9379	41.5504	43.6842	42.8504	3.5556	4.7681	474	519	1.1369	1.1169	0.8470	0.8321	5.78	5.78	278
3/31/2005 8:52	23.5517	7.8161	41.1206	43.6783	42.8462	3.5590	4.7558	474	519	1.1488	1.1285	0.8503	0.8353	5.79	5.79	277
3/31/2005 8:53	23.5522	7.9255	41.5005	43.6724	42.8421	3.5624	4.7435	474	519	1.1382	1.1182	0.8473	0.8324	5.80	5.80	275
3/31/2005 8:54	23.5527	8.0500	41.6551	43.6665	42.8379	3.5658	4.7313	474	519	1.1339	1.1140	0.8439	0.8291	5.80	5.81	274
3/31/2005 8:55	23.5532	8.1128	41.7514	43.6606	42.8337	3.5692	4.7191	474	519	1.1312	1.1114	0.8422	0.8275	5.81	5.82	272
3/31/2005 8:56	23.5537	8.0739	41.6759	43.6547	42.8296	3.5727	4.7069	474	519	1.1332	1.1134	0.8432	0.8285	5.81	5.83	271
3/31/2005 8:57	23.5542	8.0351	41.5884	43.6489	42.8254	3.5761	4.6946	474	519	1.1355	1.1157	0.8442	0.8295	5.82	5.84	269
3/31/2005 8:58	23.5546	8.0078	41.5009	43.6430	42.8212	3.5795	4.6824	474	519	1.1379	1.1181	0.8449	0.8302	5.83	5.85	269
3/31/2005 8:59	23.5551	8.0007	41.4772	43.6371	42.8171	3.5829	4.6702	474	519	1.1385	1.1187	0.8451	0.8304	5.83	5.86	268
3/31/2005 9:00	23.5556	7.9938	41.6007	43.6312	42.8129	3.5863	4.6580	474	519	1.1350	1.1153	0.8453	0.8306	5.84	5.87	268
3/31/2005 9:01	23.5561	7.9870	41.7261	43.6253	42.8087	3.5897	4.6457	474	519	1.1315	1.1120	0.8454	0.8308	5.85	5.88	268
3/31/2005 9:02	23.5566	7.7730	41.3724	43.6194	42.8046	3.5931	4.6355	474	519	1.1412	1.1215	0.8512	0.8365	5.85	5.88	268
3/31/2005 9:03	23.5571	7.8705	41.1890	43.6135	42.8004	3.5965	4.6494	474	519	1.1462	1.1264	0.8485	0.8339	5.86	5.89	268
3/31/2005 9:04	23.5576	7.7969	41.2104	43.6077	42.7962	3.5999	4.6703	474	519	1.1455	1.1258	0.8505	0.8358	5.87	5.90	268
3/31/2005 9:05	23.5581	7.9553	41.0304	43.6018	42.7921	3.6034	4.6912	474	519	1.1505	1.1308	0.8462	0.8316	5.87	5.91	268
3/31/2005 9:06	23.5586	8.0897	41.0898	43.5959	42.7879	3.6068	4.7121	474	519	1.1488	1.1291	0.8425	0.8281	5.88	5.92	267
3/31/2005 9:07	23.5591	8.2385	41.4470	43.5900	42.7838	3.6102	4.7329	474	519	1.1388	1.1194	0.8386	0.8242	5.89	5.93	267
3/31/2005 9:08	23.5595	8.2228	42.0791	43.5841	42.7796	3.6136	4.7538	474	519	1.1216	1.1025	0.8390	0.8247	5.89	5.94	267
3/31/2005 9:09	23.5606	8.0834	41.6275	43.5782	42.7754	3.6170	4.7747	474	519	1.1338	1.1145	0.8426	0.8283	5.90	5.95	267
3/31/2005 9:10	23.5647	8.0082	41.1106	43.5724	42.7713	3.6204	4.7879	474	519	1.1479	1.1285	0.8445	0.8302	5.90	5.95	267
3/31/2005 9:11	23.5694	7.9933	41.0073	43.5665	42.7671	3.6238	4.7832	474	519	1.1508	1.1313	0.8448	0.8304	5.91	5.96	267
3/31/2005 9:12	23.5740	7.9783	41.1520	43.5606	42.7629	3.6272	4.7777	474	519	1.1467	1.1273	0.8450	0.8307	5.91	5.96	267
3/31/2005 9:13	23.5786	7.8441	41.1447	43.5547	42.7588	3.6306	4.7723	474	519	1.1468	1.1275	0.8485	0.8342	5.91	5.96	266
3/31/2005 9:14	23.5833	7.8122	40.7673	43.5488	42.7546	3.6340	4.7669	474	519	1.1574	1.1379	0.8492	0.8349	5.92	5.97	266
3/31/2005 9:15	23.5879	7.9033	41.0501	43.5429	42.7504	3.6375	4.7615	474	519	1.1493	1.1300	0.8466	0.8324	5.92	5.97	266
3/31/2005 9:16	23.5925	8.0500	41.3184	43.5371	42.7463	3.6409	4.7561	474	518	1.1418	1.1227	0.8425	0.8284	5.92	5.97	266
Average	**23.5500**	**7.9844**	**41.5629**	**43.7224**	**42.8775**	**3.5334**	**4.7677**	**475**	**519**	**1.1370**	**1.1167**	**0.8459**	**0.8308**	**5.70**	**5.69**	**1,179**

Platformer Vent Gas Scrubber MACT UUU Performance Test Data

Black Burn Condition #2 Run #2 Date/Time	Upper Regen Air 16FC1630 MSCFH	Lower Regen Air 16FC1610 MSCFH	Vent Gas Flow 16FI0980 MSCFH	Total Wash Water Flow 16FI1121 GPM	Total Wash Water Flow 16FI1122 GPM	Make-up Condensate Flow 16FC1130 GPM	Vent Gas Pressure 16PC1300 In. of H2O	Vent Gas Temperature 16TI0800 Degrees F	Vent Gas Temperature K	L/G Ratio 16FI1121, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1122, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1121, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	L/G Ratio 16FI1122, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	pH Analyzer 16AI0170 pH units	pH Analyzer 16AI0180 pH units	Conductivity Analyzer 16AI0190
3/31/2005 9:48	23.7407	7.7027	41.0890	43.3488	42.6130	3.7500	5.0098	473	518	1.1463	1.1284	0.8474	0.8342	5.99	6.03	261
3/31/2005 9:49	23.7454	8.0220	41.6353	43.3429	42.6088	3.7534	5.0482	473	518	1.1312	1.1135	0.8388	0.8257	5.99	6.03	261
3/31/2005 9:50	23.7500	8.0968	41.7458	43.3370	42.6047	3.7568	4.9931	472	518	1.1281	1.1106	0.8367	0.8236	5.99	6.03	261
3/31/2005 9:51	23.7546	8.1563	42.2901	43.3311	42.6005	3.7602	4.9233	472	518	1.1135	1.0963	0.8350	0.8220	5.99	6.02	261
3/31/2005 9:52	23.7592	8.1176	42.2695	43.3252	42.5963	3.7636	4.8565	472	518	1.1140	1.0968	0.8358	0.8229	5.98	6.02	260
3/31/2005 9:53	23.7639	8.0790	41.7409	43.3193	42.5922	3.7671	4.8240	472	518	1.1281	1.1106	0.8367	0.8238	5.97	6.01	260
3/31/2005 9:54	23.7685	8.0403	41.7785	43.3134	42.5880	3.7705	4.8014	472	518	1.1270	1.1096	0.8376	0.8247	5.97	6.00	260
3/31/2005 9:55	23.7731	8.0016	41.8094	43.3076	42.5839	3.7739	4.7789	472	518	1.1261	1.1088	0.8385	0.8256	5.96	5.99	260
3/31/2005 9:56	23.7778	7.9515	41.4935	43.3017	42.5797	3.7773	4.7564	472	518	1.1346	1.1172	0.8397	0.8268	5.95	5.98	260
3/31/2005 9:57	23.7824	7.8149	40.9440	43.2958	42.5755	3.7807	4.7338	472	518	1.1498	1.1322	0.8432	0.8303	5.94	5.97	260
3/31/2005 9:58	23.7870	7.7562	40.6769	43.2899	42.5714	3.7841	4.7127	472	518	1.1573	1.1396	0.8446	0.8317	5.93	5.96	260
3/31/2005 9:59	23.7917	7.8751	41.0778	43.2840	42.5672	3.7875	4.7022	472	518	1.1459	1.1285	0.8413	0.8285	5.92	5.95	259
3/31/2005 10:00	23.7963	7.9395	41.5455	43.2781	42.5630	3.7909	4.6951	472	518	1.1330	1.1157	0.8394	0.8267	5.91	5.94	259
3/31/2005 10:01	23.8009	8.0783	41.7833	43.2723	42.5589	3.7943	4.6939	472	518	1.1264	1.1094	0.8356	0.8230	5.90	5.93	259
3/31/2005 10:02	23.8056	8.2784	41.8756	43.2664	42.5547	3.7978	4.6937	472	518	1.1239	1.1069	0.8303	0.8177	5.89	5.93	259
3/31/2005 10:03	23.8102	8.1717	41.9768	43.2605	42.5505	3.8012	4.6934	472	518	1.1211	1.1042	0.8329	0.8204	5.88	5.92	259
3/31/2005 10:04	23.8148	8.0618	41.9339	43.2546	42.5464	3.8046	4.6932	472	518	1.1222	1.1053	0.8357	0.8231	5.88	5.91	259
3/31/2005 10:05	23.8195	7.9850	41.5852	43.2487	42.5422	3.8080	4.6929	472	518	1.1316	1.1146	0.8375	0.8250	5.87	5.90	258
3/31/2005 10:06	23.8241	7.9846	41.6203	43.2428	42.5380	3.8114	4.6927	472	518	1.1306	1.1136	0.8374	0.8249	5.86	5.89	258
3/31/2005 10:07	23.8287	7.9872	41.4177	43.2369	42.5339	3.8148	4.6924	472	518	1.1360	1.1191	0.8372	0.8247	5.85	5.88	258
3/31/2005 10:08	23.8333	7.9898	42.0457	43.2311	42.5297	3.8182	4.6958	472	518	1.1190	1.1023	0.8370	0.8245	5.84	5.87	258
3/31/2005 10:09	23.8380	7.9925	41.7408	43.2252	42.5255	3.8216	4.7708	472	518	1.1271	1.1104	0.8368	0.8244	5.81	5.83	258
3/31/2005 10:10	23.8426	7.7683	41.4050	43.2193	42.5214	3.8250	4.8741	472	518	1.1362	1.1193	0.8426	0.8301	5.77	5.80	258
3/31/2005 10:11	23.8472	7.8520	41.1816	43.2134	42.5172	3.8284	4.9896	472	517	1.1423	1.1254	0.8402	0.8278	5.74	5.77	258
3/31/2005 10:12	23.8519	7.8674	41.6582	43.2075	42.5131	3.8319	5.0615	472	517	1.1292	1.1125	0.8397	0.8273	5.70	5.73	257
3/31/2005 10:13	23.8565	8.1122	42.0837	43.2016	42.5089	3.8353	5.1081	472	517	1.1177	1.1012	0.8331	0.8209	5.66	5.69	257
3/31/2005 10:14	23.8611	8.1140	42.4903	43.1958	42.5047	3.8387	5.1241	472	517	1.1069	1.0907	0.8329	0.8207	5.61	5.64	257
3/31/2005 10:15	23.8658	8.0705	41.7917	43.1899	42.5006	3.8421	5.0459	472	517	1.1254	1.1089	0.8339	0.8217	5.56	5.60	257
3/31/2005 10:16	23.8704	8.0328	41.6027	43.1840	42.4964	3.8455	4.9610	472	517	1.1304	1.1139	0.8348	0.8226	5.50	5.54	257
3/31/2005 10:17	23.8750	8.0115	41.4138	43.1781	42.4922	3.8489	4.8762	472	517	1.1355	1.1190	0.8352	0.8230	5.44	5.48	257
3/31/2005 10:22	23.8823	7.9819	41.9766	43.1487	42.4714	3.8660	4.7993	471	517	1.1200	1.1039	0.8357	0.8237	4.65	4.74	259
3/31/2005 10:23	23.8808	7.9758	41.6684	43.1428	42.4672	3.8694	4.7958	471	517	1.1282	1.1120	0.8359	0.8239	4.14	4.28	260
3/31/2005 10:24	23.8793	7.7837	41.3656	43.1369	42.4631	3.8728	4.7924	471	517	1.1364	1.1202	0.8410	0.8290	3.80	4.00	261
3/31/2005 10:25	23.8778	7.8400	41.5031	43.1310	42.4589	3.8762	4.7889	471	517	1.1326	1.1164	0.8395	0.8275	3.63	3.85	263
3/31/2005 10:26	23.8763	7.9108	41.2871	43.1251	42.4548	3.8796	4.7855	471	517	1.1385	1.1222	0.8377	0.8257	3.50	3.72	264
3/31/2005 10:27	23.8748	7.9863	41.2171	43.1193	42.4506	3.8830	4.7820	471	517	1.1404	1.1241	0.8357	0.8238	3.37	3.58	265
3/31/2005 10:28	23.8734	8.0912	41.4111	43.1134	42.4464	3.8864	4.7786	471	517	1.1350	1.1189	0.8330	0.8212	3.26	3.40	267
3/31/2005 10:29	23.8719	8.2292	41.5103	43.1075	42.4423	3.8898	4.7751	471	517	1.1322	1.1162	0.8295	0.8177	3.15	3.22	268
3/31/2005 10:30	23.8704	8.1899	41.5401	43.1016	42.4381	3.8932	4.7717	471	517	1.1313	1.1153	0.8305	0.8188	3.04	3.05	269
3/31/2005 10:31	23.8689	8.0736	41.6082	43.0957	42.4339	3.8967	4.7682	471	517	1.1294	1.1135	0.8336	0.8218	2.95	2.91	271
3/31/2005 10:32	23.8674	8.0320	41.7011	43.0898	42.4298	3.9001	4.7606	471	517	1.1268	1.1110	0.8347	0.8229	2.86	2.82	272
3/31/2005 10:33	23.8659	8.0268	41.7940	43.0840	42.4256	3.9035	4.7460	471	517	1.1243	1.1085	0.8348	0.8231	2.81	2.75	273
3/31/2005 10:34	23.8644	8.0216	41.8491	43.0781	42.4214	3.9069	4.7314	471	517	1.1227	1.1070	0.8350	0.8233	2.76	2.69	274
3/31/2005 10:35	23.8629	8.0163	41.8673	43.0722	42.4173	3.9103	4.7167	471	517	1.1222	1.1065	0.8351	0.8235	2.71	2.63	276
3/31/2005 10:36	23.8615	8.0111	41.8880	43.0663	42.4131	3.9137	4.7021	471	517	1.1216	1.1060	0.8353	0.8237	2.68	2.59	277
3/31/2005 10:37	23.8600	7.7823	41.3466	43.0604	42.4089	3.9171	4.6937	471	517	1.1362	1.1204	0.8414	0.8297	2.65	2.56	278
3/31/2005 10:38	23.8585	7.8309	41.0542	43.0545	42.4048	3.9205	4.7182	471	517	1.1442	1.1284	0.8401	0.8285	2.63	2.52	280
3/31/2005 10:39	23.8570	7.9366	41.3070	43.0486	42.4006	3.9239	4.7475	471	517	1.1372	1.1215	0.8373	0.8258	2.60	2.49	281
3/31/2005 10:40	23.8555	8.1365	41.9289	43.0428	42.3964	3.9274	4.7768	471	517	1.1202	1.1048	0.8321	0.8207	2.57	2.46	282
3/31/2005 10:41	23.8540	8.1113	41.9623	43.0369	42.3923	3.9308	4.8056	471	517	1.1193	1.1039	0.8328	0.8214	2.55	2.44	284
3/31/2005 10:42	23.8525	8.0860	41.8171	43.0310	42.3881	3.9342	4.8251	471	517	1.1231	1.1077	0.8335	0.8221	2.53	2.42	285
3/31/2005 10:43	23.8511	8.0608	41.6719	43.0251	42.3839	3.9376	4.8410	471	517	1.1270	1.1116	0.8342	0.8228	2.52	2.41	286
3/31/2005 10:44	23.8496	8.0356	41.5334	43.0192	42.3798	3.9410	4.8569	471	517	1.1307	1.1153	0.8349	0.8235	2.51	2.39	287
3/31/2005 10:45	23.8481	8.0107	41.4448	43.0133	42.3756	3.9444	4.8728	471	517	1.1330	1.1176	0.8355	0.8242	2.49	2.37	289
3/31/2005 10:46	23.8466	7.9989	41.3662	43.0075	42.3715	3.9478	4.8888	471	517	1.1351	1.1197	0.8359	0.8245	2.48	2.35	290
3/31/2005 10:47	23.8451	7.9939	41.3065	43.0016	42.3673	3.9512	4.8837	471	517	1.1367	1.1213	0.8360	0.8247	2.46	2.33	291
3/31/2005 10:48	23.8436	7.9889	41.5210	42.9957	42.3631	3.9546	4.8302	471	517	1.1308	1.1155	0.8362	0.8249	2.45	2.31	293
3/31/2005 10:49	23.8421	7.9839	41.6725	42.9898	42.3590	3.9580	4.7748	471	517	1.1266	1.1115	0.8363	0.8251	2.44	2.30	294
3/31/2005 10:50	23.8349	7.9789	41.6066	42.9839	42.3548	3.9615	4.7194	471	517	1.1283	1.1132	0.8366	0.8254	2.42	2.29	295
3/31/2005 10:51	23.8177	7.8050	41.2471	42.9780	42.3506	3.9649	4.6665	470	517	1.1381	1.1229	0.8417	0.8304	2.41	2.27	297
Average	**23.8338**	**7.9970**	**41.6113**	**43.1634**	**42.4818**	**3.8574**	**4.8098**	**472**	**517**	**1.1301**	**1.1137**	**0.8367**	**0.8245**	**4.37**	**4.37**	**268**

Platformer Vent Gas Scrubber MACT UUU Performance Test Data

Black Burn Condition #2 Run #3 Date/Time	Upper Regen Air 16FC1630 MSCFH	Lower Regen Air 16FC1610 MSCFH	Vent Gas Flow 16FI0980 MSCFH	Total Wash Water Flow 16FI1121 GPM	Total Wash Water Flow 16FI1122 GPM	Make-up Condensate Flow 16FC1130 GPM	Vent Gas Pressure 16PC1300 In. of H2O	Vent Gas Temperature 16TI0800 Degrees F	Vent Gas Temperature K	L/G Ratio 16FI1121, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1122, 16FC1130, 16FI0980 GPM/MSCFH	L/G Ratio 16FI1121, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	L/G Ratio 16FI1122, 16FC1130, 16FC1630, 16FC1610 GPM/MACFH	pH Analyzer 16AI0170 pH units	pH Analyzer 16AI0180 pH units	Conductivity Analyzer 16AI0190
3/31/2005 11:14	23.4188	8.0004	41.1768	42.8427	42.2548	4.0433	4.6627	470	516	1.1387	1.1244	0.8468	0.8362	2.22	2.07	327
3/31/2005 11:15	23.4015	7.9833	41.1265	42.8368	42.2507	4.0467	4.6318	470	516	1.1400	1.1257	0.8477	0.8371	2.22	2.06	328
3/31/2005 11:16	23.3842	7.9662	41.1058	42.8309	42.2465	4.0501	4.6010	470	516	1.1405	1.1263	0.8486	0.8381	2.22	2.05	329
3/31/2005 11:17	23.3668	7.9491	41.0393	42.8250	42.2424	4.0535	4.5702	470	516	1.1423	1.1281	0.8495	0.8390	2.21	2.05	330
3/31/2005 11:18	23.3495	7.8425	40.9137	42.8192	42.2382	4.0570	4.5393	470	516	1.1457	1.1315	0.8529	0.8423	2.21	2.04	332
3/31/2005 11:19	23.3321	7.7449	40.7932	42.8133	42.2340	4.0604	4.5314	470	516	1.1491	1.1349	0.8560	0.8455	2.21	2.03	333
3/31/2005 11:20	23.3148	7.8813	40.7752	42.8074	42.2299	4.0638	4.5449	470	516	1.1495	1.1353	0.8528	0.8423	2.20	2.03	334
3/31/2005 11:21	23.2974	8.0311	40.7968	42.8015	42.2257	4.0672	4.5585	470	516	1.1488	1.1347	0.8491	0.8387	2.20	2.02	336
3/31/2005 11:22	23.2801	8.1740	40.7844	42.7956	42.2215	4.0706	4.5721	469	516	1.1491	1.1350	0.8457	0.8354	2.20	2.02	337
3/31/2005 11:23	23.2628	8.0695	40.7736	42.7897	42.2174	4.0740	4.5856	469	516	1.1494	1.1353	0.8490	0.8386	2.19	2.02	338
3/31/2005 11:24	23.2454	8.2125	41.2433	42.7838	42.2132	4.0774	4.5992	469	516	1.1362	1.1224	0.8456	0.8353	2.19	2.01	338
3/31/2005 11:25	23.2281	8.1137	41.2750	42.7780	42.2090	4.0808	4.6127	469	516	1.1353	1.1215	0.8487	0.8384	2.19	2.01	339
3/31/2005 11:26	23.2107	8.0368	41.1253	42.7721	42.2049	4.0842	4.6263	469	516	1.1394	1.1256	0.8513	0.8410	2.18	2.01	339
3/31/2005 11:27	23.1934	8.0270	40.7695	42.7662	42.2007	4.0876	4.6398	469	516	1.1492	1.1354	0.8520	0.8417	2.18	2.01	339
3/31/2005 11:28	23.1760	8.0220	40.7784	42.7603	42.1965	4.0911	4.6534	469	516	1.1489	1.1351	0.8526	0.8423	2.18	2.01	340
3/31/2005 11:29	23.1587	8.0169	40.8273	42.7544	42.1924	4.0945	4.6669	469	516	1.1475	1.1337	0.8532	0.8430	2.17	2.00	340
3/31/2005 11:30	23.1413	8.0118	40.7472	42.7485	42.1882	4.0979	4.6805	469	516	1.1497	1.1359	0.8538	0.8436	2.17	2.00	341
3/31/2005 11:31	23.1240	7.8023	40.5465	42.7427	42.1841	4.1013	4.6940	469	516	1.1553	1.1415	0.8600	0.8498	2.17	2.00	341
3/31/2005 11:32	23.1067	7.7987	40.3905	42.7368	42.1799	4.1047	4.7076	469	516	1.1597	1.1459	0.8606	0.8504	2.16	2.00	342
3/31/2005 11:33	23.0893	7.9740	40.5670	42.7309	42.1757	4.1081	4.7211	469	516	1.1546	1.1409	0.8562	0.8461	2.16	1.99	342
3/31/2005 11:34	23.0720	8.1473	40.9198	42.7250	42.1716	4.1115	4.7117	469	516	1.1446	1.1311	0.8519	0.8419	2.16	1.99	342
3/31/2005 11:35	23.0546	8.1125	41.2498	42.7191	42.1674	4.1149	4.6743	469	516	1.1354	1.1220	0.8533	0.8433	2.15	1.99	343
3/31/2005 11:36	23.0373	8.0771	40.7160	42.7132	42.1632	4.1183	4.6369	469	516	1.1502	1.1367	0.8548	0.8447	2.15	1.99	343
3/31/2005 11:37	23.0199	7.8267	40.3507	42.7073	42.1591	4.1218	4.5995	469	516	1.1606	1.1470	0.8622	0.8521	2.15	1.98	344
3/31/2005 11:38	23.0026	7.8318	40.0290	42.7015	42.1549	4.1252	4.5621	469	516	1.1698	1.1562	0.8625	0.8524	2.14	1.98	344
3/31/2005 11:39	22.9853	8.0366	39.8310	42.6956	42.1507	4.1286	4.5246	469	516	1.1756	1.1619	0.8573	0.8473	2.14	1.98	345
3/31/2005 11:40	22.9679	7.9449	39.8298	42.6897	42.1466	4.1320	4.4872	469	516	1.1755	1.1619	0.8603	0.8503	2.14	1.98	345
3/31/2005 11:41	22.9506	7.8926	39.9669	42.6838	42.1424	4.1354	4.4561	469	516	1.1714	1.1579	0.8622	0.8522	2.13	1.97	345
3/31/2005 11:42	22.9332	8.0422	39.8669	42.6779	42.1382	4.1388	4.4753	469	516	1.1743	1.1608	0.8585	0.8486	2.13	1.97	346
3/31/2005 11:43	22.9159	8.0299	40.4902	42.6720	42.1341	4.1422	4.5053	469	516	1.1562	1.1429	0.8593	0.8494	2.13	1.97	346
3/31/2005 11:49	22.8118	8.0344	40.1573	42.6367	42.1091	4.1627	4.5577	469	516	1.1654	1.1523	0.8620	0.8523	2.11	1.96	349
3/31/2005 11:50	22.7945	8.0182	39.9108	42.6308	42.1049	4.1661	4.5600	469	516	1.1725	1.1594	0.8629	0.8532	2.11	1.95	349
3/31/2005 11:51	22.7771	8.0019	40.3428	42.6250	42.1008	4.1695	4.5622	469	516	1.1599	1.1469	0.8639	0.8542	2.10	1.95	350
3/31/2005 11:52	22.7598	7.9857	40.4398	42.6191	42.0966	4.1729	4.5645	468	516	1.1571	1.1442	0.8648	0.8551	2.10	1.95	350
3/31/2005 11:53	22.7424	7.8294	40.0362	42.6132	42.0924	4.1763	4.5667	468	516	1.1687	1.1557	0.8697	0.8600	2.10	1.95	351
3/31/2005 11:54	22.7251	7.8521	39.5471	42.6073	42.0883	4.1797	4.5690	468	516	1.1831	1.1699	0.8695	0.8599	2.10	1.94	351
3/31/2005 11:55	22.7078	7.9263	39.7707	42.6014	42.0841	4.1831	4.5712	468	516	1.1764	1.1634	0.8678	0.8582	2.10	1.94	351
3/31/2005 11:56	22.6904	8.1601	40.0025	42.5955	42.0799	4.1866	4.5734	468	516	1.1695	1.1566	0.8618	0.8523	2.10	1.94	352
3/31/2005 11:57	22.6731	8.1149	40.8295	42.5897	42.0758	4.1900	4.5637	468	516	1.1457	1.1331	0.8635	0.8540	2.09	1.94	352
3/31/2005 11:58	22.6557	8.0696	40.2790	42.5838	42.0716	4.1934	4.5458	468	516	1.1613	1.1486	0.8653	0.8558	2.09	1.94	353
3/31/2005 11:59	22.6384	8.0279	39.8223	42.5779	42.0674	4.1968	4.5279	468	516	1.1746	1.1618	0.8669	0.8574	2.09	1.93	353
3/31/2005 12:00	22.6210	8.0139	39.7307	42.5720	42.0633	4.2002	4.5101	468	516	1.1772	1.1644	0.8678	0.8583	2.09	1.93	354
3/31/2005 12:01	22.6037	8.0059	39.9605	42.5661	42.0591	4.2036	4.4922	468	515	1.1704	1.1577	0.8685	0.8591	2.09	1.93	354
3/31/2005 12:02	22.5864	7.9979	40.0183	42.5602	42.0549	4.2070	4.4743	468	515	1.1686	1.1560	0.8692	0.8598	2.09	1.93	354
3/31/2005 12:03	22.5690	7.9899	40.1375	42.5544	42.0508	4.2104	4.4565	468	515	1.1651	1.1526	0.8699	0.8605	2.09	1.92	355
3/31/2005 12:04	22.5517	7.9819	40.2337	42.5485	42.0466	4.2138	4.4386	468	515	1.1623	1.1498	0.8706	0.8613	2.09	1.92	355
3/31/2005 12:05	22.5343	7.9739	40.0534	42.5426	42.0425	4.2172	4.4207	468	515	1.1674	1.1549	0.8713	0.8620	2.08	1.92	356
3/31/2005 12:06	22.5170	7.9659	39.7929	42.5367	42.0383	4.2207	4.4029	468	515	1.1750	1.1625	0.8720	0.8627	2.08	1.92	356
3/31/2005 12:07	22.4996	7.9579	39.5051	42.5308	42.0341	4.2241	4.3850	468	515	1.1835	1.1709	0.8727	0.8635	2.08	1.92	357
3/31/2005 12:08	22.4873	7.7211	39.1699	42.5249	42.0300	4.2275	4.3671	468	515	1.1936	1.1809	0.8799	0.8706	2.08	1.92	357
3/31/2005 12:09	22.4813	7.8041	39.0152	42.5190	42.0258	4.2309	4.3493	468	515	1.1982	1.1856	0.8777	0.8684	2.08	1.92	357
3/31/2005 12:10	22.4754	7.8842	39.2500	42.5132	42.0216	4.2343	4.3314	468	515	1.1910	1.1785	0.8755	0.8663	2.08	1.92	358
3/31/2005 12:11	22.4694	8.0096	39.5161	42.5073	42.0175	4.2377	4.3291	468	515	1.1829	1.1705	0.8721	0.8629	2.08	1.92	358
3/31/2005 12:12	22.4635	8.2238	39.8622	42.5014	42.0133	4.2411	4.3470	468	515	1.1726	1.1604	0.8661	0.8571	2.08	1.92	359
3/31/2005 12:13	22.4576	8.0873	40.0168	42.4955	42.0091	4.2445	4.3649	468	515	1.1680	1.1559	0.8701	0.8611	2.08	1.91	359
3/31/2005 12:14	22.4516	8.1816	40.4544	42.4896	42.0050	4.2479	4.3828	468	515	1.1553	1.1433	0.8676	0.8586	2.07	1.91	360
3/31/2005 12:15	22.4457	8.0958	40.1253	42.4837	42.0008	4.2514	4.4007	468	515	1.1647	1.1527	0.8702	0.8612	2.07	1.91	360
3/31/2005 12:16	22.4398	8.0321	39.8964	42.4779	41.9966	4.2548	4.4187	468	515	1.1713	1.1593	0.8722	0.8632	2.07	1.91	360
3/31/2005 12:17	22.4338	8.0294	39.9091	42.4720	41.9925	4.2582	4.4366	468	515	1.1709	1.1589	0.8724	0.8635	2.07	1.91	361
3/31/2005 12:18	22.4279	8.0277	39.7794	42.4661	41.9883	4.2616	4.4609	468	515	1.1747	1.1627	0.8726	0.8637	2.07	1.91	361
Average	**22.8752**	**7.9934**	**40.3062**	**42.6544**	**42.1216**	**4.1524**	**4.5327**	**469**	**516**	**1.1615**	**1.1483**	**0.8615**	**0.8517**	**2.13**	**1.97**	**347**