

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.

TestAmerica Denver

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Tel: (303)736-0100

TestAmerica Job ID: 280-19286-1

Client Project/Site: Quarterly, AP Wellhead

For:

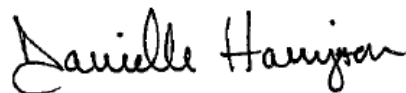
Pioneer Natural Resources USA, Inc.

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Attn: David Castro



Authorized for release by:

08/31/2011 02:35:14 PM

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Project Manager I

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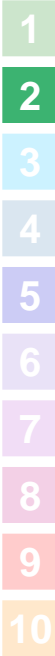


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Definitions/Glossary

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is 4 times greater than the matrix spike concentration; therefore, control limits are not applicable.
F	MS or MSD exceeds the control limits

General Chemistry

Qualifier	Qualifier Description
HF	Field parameter with a holding time of 15 minutes

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
EDL	Estimated Detection Limit (Dioxin)
EPA	United States Environmental Protection Agency
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or method detection limit if shown)
PQL	Practical Quantitation Limit
RL	Reporting Limit
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Job ID: 280-19286-1

Laboratory: TestAmerica Denver

Narrative

CASE NARRATIVE

Client: Pioneer Natural Resources

Project: AP Wellhead & Quarterly

Report Number: 280-19286-1

With the exceptions noted as flags or footnotes, standard analytical protocols were followed in the analysis of the samples and no problems were encountered or anomalies observed. In addition all laboratory quality control samples were within established control limits, with any exceptions noted below. Each sample was analyzed to achieve the lowest possible reporting limit within the constraints of the method. In some cases, due to interference or analytes present at high concentrations, samples were diluted. For diluted samples, the reporting limits are adjusted relative to the dilution required.

This report may include reporting limits (RLs) less than TestAmerica's standard reporting limit. The reported sample results and associated reporting limits are being used specifically to meet the needs of this project. Note that data are not normally reported to these levels without qualification because they are inherently less reliable and potentially less defensible than required by the latest industry standards.

Receipt

Three samples were received on 08/18/2011 with a cooler temperature 3.2C.

All sample bottles were received in acceptable condition.

GC Volatiles, SW846 8021B

The method 8021B MS/MSD was performed on samples RED BUD 44-7 and a laboratory generated sample were within control limits for batches 280-83146 and 280-83635.

No anomalies were observed.

Total Metals, SW846 6010B, MCAWW 200.8, and MCAWW 200.7

Percent recoveries and RPD data could not be calculated for the Sodium MS/MSD performed on sample LICKITY SPLIT 43-12, due to the sample concentration reading greater than four times the spike amount.

The method 200.7 MS/MSD performed on samples LICKITY SPLIT 43-12 was outside control limits in batch 280-82562 for Boron.

Percent recoveries and RPD data could not be calculated for the Iron MS/MSD performed on sample RED BUD 44-7, due to the sample concentration reading greater than four times the spike amount.

The method 200.8 MS/MSD performed on sample RED BUD 44-7 was within control limits in batch 280-82462.

No other anomalies were observed.

Dissolved Metals, MCAWW 200.7 and SW846 6010B

Percent recoveries and RPD data could not be calculated for the Sodium MS/MSD performed on sample RED BUD 44-7, due to the sample concentration reading greater than four times the spike amount.

The method 200.7 MS/MSD performed on samples RED BUD 44-7 was within control limits in batch 280-82560.

No other anomalies were observed.

Case Narrative

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Job ID: 280-19286-1 (Continued)

Laboratory: TestAmerica Denver (Continued)

General Chemistry, Various Methods

Due to a LIMS limitation, the RL does not print for specific Gravity. The RL for specific gravity is 0.0001.

Each sample is analyzed to achieve the lowest possible reporting limits within the constraints of the method. Due to matrix interference or high analyte concentration, sample RED BUD 44-7 was analyzed at a dilution for various analyses. The reporting limits have been adjusted relative to the dilution required.

The MS/MSDs were performed on sample LICKITY SPLIT 43-12 and were in control for Chloride in batch 280-82877.

All other MS/MSDs were performed on samples from other clients and/or lots and were in control.

The sample duplicates were performed on sample LICKITY SPLIT 43-12 and were in control for Specific Gravity and Total Dissolved Solids in batches 280-82799 and 280-82177.

All other sample duplicates were performed on samples from other clients and/or lots and were in control.

No other anomalies were observed.

Detection Summary

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Client Sample ID: LICKITY SPLIT 43-12

Lab Sample ID: 280-19286-1

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	8.19				SU	1		Field Sampling	Total/NA
Field Conductivity	1474				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	23.2				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	4.3		0.50		ug/L	1		8021B	Total/NA
Toluene	2.7		0.50		ug/L	1		8021B	Total/NA
Xylenes, Total	1.5		0.50		ug/L	1		8021B	Total/NA
Boron	0.068		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	7.0		0.10		mg/L	1		200.7 Rev 4.4	Total/NA
Iron	2.1		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	1.3		0.10		mg/L	1		200.7 Rev 4.4	Total/NA
Manganese	0.037		0.010		mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	490		2.0		mg/L	1		200.7 Rev 4.4	Total/NA
Iron	2.0		0.050		mg/L	1		200.7 Rev 4.4	Total Recovers
Bromide	0.37		0.20		mg/L	1		300.0	Total/NA
Total Alkalinity	1000		5.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	940		5.0		mg/L	1		SM 2320B	Total/NA
Carbonate Alkalinity as CaCO3	53		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	1100		10		mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	4.8		4.0		mg/L	1		SM 2540D	Total/NA
Chloride	64		2.5		mg/L	1		SM 4500 Cl- E	Total/NA
Sulfide	0.059		0.050		mg/L	1		SM 4500 S2 D	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Gravity	1.0011				No Unit	1		D1429-03	Total/NA
Specific Conductance	1700		1.0		umhos/cm	1		SM 2510B	Total/NA
pH	8.42	HF	0.100		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: RED BUD 44-7

Lab Sample ID: 280-19286-2

Analyte	Result	Qualifier	NONE	NONE	Unit	Dil Fac	D	Method	Prep Type
Field pH	7.46				SU	1		Field Sampling	Total/NA
Field Conductivity	5460				umhos/cm	1		Field Sampling	Total/NA
Field Temperature	18.9				Degrees C	1		Field Sampling	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	14		0.50		ug/L	1		8021B	Total/NA
Ethylbenzene	5.8		0.50		ug/L	1		8021B	Total/NA
Toluene	9.5		0.50		ug/L	1		8021B	Total/NA
Xylenes, Total	72		0.50		ug/L	1		8021B	Total/NA
Boron	0.55		0.050		mg/L	1		200.7 Rev 4.4	Total/NA
Calcium	25		0.20		mg/L	1		200.7 Rev 4.4	Total/NA
Potassium	9.7		3.0		mg/L	1		200.7 Rev 4.4	Total/NA
Magnesium	3.6		0.10		mg/L	1		200.7 Rev 4.4	Total/NA
Sodium	1400		5.0		mg/L	1		200.7 Rev 4.4	Total/NA
Copper	0.043		0.010		mg/L	1		200.7 Rev 4.4	Total Recovers
Iron	16		0.050		mg/L	1		200.7 Rev 4.4	Total Recovers
Zinc	0.023		0.020		mg/L	1		200.7 Rev 4.4	Total Recovers
Calcium	24		0.20		mg/L	1		200.7 Rev 4.4	Dissolved
Magnesium	3.5		0.10		mg/L	1		200.7 Rev 4.4	Dissolved
Sodium	1400		5.0		mg/L	1		200.7 Rev 4.4	Dissolved
Copper	0.056		0.015		mg/L	1		200.7 Rev 4.4	Potentially Diss
Manganese	0.20		0.010		mg/L	1		200.7 Rev 4.4	Potentially Diss
Zinc	0.047		0.020		mg/L	1		200.7 Rev 4.4	Potentially Diss
Bromide	11		1.0		mg/L	5		300.0	Total/NA

Detection Summary

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Client Sample ID: RED BUD 44-7 (Continued)

Lab Sample ID: 280-19286-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Alkalinity	1100		5.0		mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	1100		5.0		mg/L	1		SM 2320B	Total/NA
Total Dissolved Solids	3500		40		mg/L	1		SM 2540C	Total/NA
Total Suspended Solids	68		4.0		mg/L	1		SM 2540D	Total/NA
Chloride	1500		50		mg/L	20		SM 4500 Cl- E	Total/NA
Analyte	Result	Qualifier	RL	RL	Unit	Dil Fac	D	Method	Prep Type
Specific Gravity	1.0029				No Unit	1		D1429-03	Total/NA
Specific Conductance	6300		1.0		umhos/cm	1		SM 2510B	Total/NA
pH	7.80	HF	0.100		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-19286-3

No Detections

Method Summary

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Method	Method Description	Protocol	Laboratory
8021B	Volatile Organic Compounds (GC)	SW846	TAL DEN
200.7 Rev 4.4	Metals (ICP)	EPA	TAL DEN
200.8	Metals (ICP/MS)	EPA	TAL DEN
300.0	Anions by IC	EPA	TAL DEN
300.0	Anions by Ion Chromatography	MCAWW	TAL DEN
D1429-03	Specific Gravity	ASTM	TAL DEN
SM 2320B	Alkalinity	SM	TAL DEN
SM 2510B	Conductivity, Specific Conductance	SM	TAL DEN
SM 2540C	Solids, Total Dissolved (TDS)	SM	TAL DEN
SM 2540D	Solids, Total Suspended (TSS)	SM	TAL DEN
SM 4500 Cl- E	Chloride, Total	SM	TAL DEN
SM 4500 H+ B	pH	SM	TAL DEN
SM 4500 S2 D	Sulfide, Total	SM	TAL DEN
Field Sampling	Field Sampling	EPA	TAL DEN

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

MCAWW = "Methods For Chemical Analysis Of Water And Wastes", EPA-600/4-79-020, March 1983 And Subsequent Revisions.

SM = "Standard Methods For The Examination Of Water And Wastewater",

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL DEN = TestAmerica Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Sample Summary

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-19286-1	LICKITY SPLIT 43-12	Water	08/17/11 13:15	08/18/11 10:00
280-19286-2	RED BUD 44-7	Water	08/17/11 15:32	08/18/11 10:00
280-19286-3	TRIP BLANK	Water	08/17/11 13:15	08/18/11 10:00

Client Sample Results

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Client Sample ID: LICKITY SPLIT 43-12

Lab Sample ID: 280-19286-1

Date Collected: 08/17/11 13:15

Matrix: Water

Date Received: 08/18/11 10:00

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4.3		0.50		ug/L			08/29/11 17:01	1
Ethylbenzene	ND		0.50		ug/L			08/29/11 17:01	1
Toluene	2.7		0.50		ug/L			08/29/11 17:01	1
Xylenes, Total	1.5		0.50		ug/L			08/29/11 17:01	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	90		85 - 115					08/29/11 17:01	1

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050		mg/L		08/19/11 14:00	08/22/11 12:35	1
Boron	0.068		0.050		mg/L		08/19/11 14:00	08/22/11 18:45	1
Calcium	7.0		0.10		mg/L		08/19/11 14:00	08/22/11 12:35	1
Chromium	ND		0.010		mg/L		08/19/11 14:00	08/22/11 12:35	1
Copper	ND		0.010		mg/L		08/19/11 14:00	08/22/11 12:35	1
Iron	2.1		0.050		mg/L		08/19/11 14:00	08/22/11 12:35	1
Potassium	ND		5.0		mg/L		08/19/11 14:00	08/22/11 12:35	1
Magnesium	1.3		0.10		mg/L		08/19/11 14:00	08/22/11 12:35	1
Manganese	0.037		0.010		mg/L		08/19/11 14:00	08/22/11 12:35	1
Sodium	490		2.0		mg/L		08/19/11 14:00	08/22/11 12:35	1
Selenium	ND		0.015		mg/L		08/19/11 14:00	08/22/11 12:35	1

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	2.0		0.050		mg/L		08/19/11 14:00	08/22/11 13:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.37		0.20		mg/L			08/18/11 21:02	1
Sulfate	ND		5.0		mg/L			08/18/11 21:02	1
Total Alkalinity	1000		5.0		mg/L			08/19/11 11:43	1
Bicarbonate Alkalinity as CaCO3	940		5.0		mg/L			08/19/11 11:43	1
Carbonate Alkalinity as CaCO3	53		5.0		mg/L			08/19/11 11:43	1
Hydroxide Alkalinity	ND		5.0		mg/L			08/19/11 11:43	1
Total Dissolved Solids	1100		10		mg/L			08/19/11 09:13	1
Total Suspended Solids	4.8		4.0		mg/L			08/24/11 14:45	1
Chloride	64		2.5		mg/L			08/24/11 13:11	1
Sulfide	0.059		0.050		mg/L			08/23/11 12:36	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Gravity	1.0011				No Unit			08/24/11 09:43	1
Specific Conductance	1700		1.0		umhos/cm			08/23/11 12:34	1
pH	8.42	HF	0.100		SU			08/18/11 13:29	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	8.19				SU			08/17/11 13:15	1
Field Conductivity	1474				umhos/cm			08/17/11 13:15	1
Field Temperature	23.2				Degrees C			08/17/11 13:15	1

Client Sample Results

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Client Sample ID: RED BUD 44-7

Lab Sample ID: 280-19286-2

Date Collected: 08/17/11 15:32

Matrix: Water

Date Received: 08/18/11 10:00

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	14		0.50		ug/L			08/29/11 17:32	1
Ethylbenzene	5.8		0.50		ug/L			08/29/11 17:32	1
Toluene	9.5		0.50		ug/L			08/29/11 17:32	1
Xylenes, Total	72		0.50		ug/L			08/29/11 17:32	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	86		85 - 115					08/29/11 17:32	1

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015		mg/L		08/19/11 14:00	08/22/11 12:44	1
Boron	0.55		0.050		mg/L		08/19/11 14:00	08/22/11 18:55	1
Calcium	25		0.20		mg/L		08/19/11 14:00	08/22/11 12:44	1
Chromium	ND		0.010		mg/L		08/19/11 14:00	08/22/11 12:44	1
Potassium	9.7		3.0		mg/L		08/19/11 14:00	08/22/11 12:44	1
Magnesium	3.6		0.10		mg/L		08/19/11 14:00	08/22/11 12:44	1
Sodium	1400		5.0		mg/L		08/19/11 14:00	08/22/11 12:44	1

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.043		0.010		mg/L		08/19/11 14:00	08/22/11 13:03	1
Iron	16		0.050		mg/L		08/19/11 14:00	08/22/11 13:03	1
Zinc	0.023		0.020		mg/L		08/19/11 14:00	08/22/11 13:03	1

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	24		0.20		mg/L		08/22/11 14:00	08/23/11 15:17	1
Magnesium	3.5		0.10		mg/L		08/22/11 14:00	08/23/11 15:17	1
Sodium	1400		5.0		mg/L		08/22/11 14:00	08/23/11 15:17	1

Method: 200.7 Rev 4.4 - Metals (ICP) - Potentially Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.056		0.015		mg/L		08/19/11 14:00	08/22/11 13:30	1
Manganese	0.20		0.010		mg/L		08/19/11 14:00	08/22/11 13:30	1
Zinc	0.047		0.020		mg/L		08/19/11 14:00	08/22/11 13:30	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.0040		mg/L		08/19/11 14:00	08/20/11 00:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	11		1.0		mg/L			08/18/11 21:52	5
Sulfate	ND		25		mg/L			08/18/11 21:52	5
Total Alkalinity	1100		5.0		mg/L			08/19/11 11:56	1
Bicarbonate Alkalinity as CaCO3	1100		5.0		mg/L			08/19/11 11:56	1
Carbonate Alkalinity as CaCO3	ND		5.0		mg/L			08/19/11 11:56	1
Hydroxide Alkalinity	ND		5.0		mg/L			08/19/11 11:56	1
Total Dissolved Solids	3500		40		mg/L			08/19/11 09:13	1
Total Suspended Solids	68		4.0		mg/L			08/24/11 14:45	1
Chloride	1500		50		mg/L			08/24/11 13:15	20
Sulfide	ND		0.050		mg/L			08/23/11 12:36	1

Client Sample Results

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Client Sample ID: RED BUD 44-7

Lab Sample ID: 280-19286-2

Date Collected: 08/17/11 15:32

Matrix: Water

Date Received: 08/18/11 10:00

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Gravity	1.0029				No Unit			08/24/11 09:43	1
Specific Conductance	6300		1.0		umhos/cm			08/23/11 12:34	1
pH	7.80	HF	0.100		SU			08/18/11 13:36	1
Method: Field Sampling - Field Sampling									
Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.46				SU			08/17/11 15:32	1
Field Conductivity	5460				umhos/cm			08/17/11 15:32	1
Field Temperature	18.9				Degrees C			08/17/11 15:32	1

Client Sample Results

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Client Sample ID: TRIP BLANK

Date Collected: 08/17/11 13:15

Date Received: 08/18/11 10:00

Lab Sample ID: 280-19286-3

Matrix: Water

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			08/23/11 19:12	1
Ethylbenzene	ND		0.50		ug/L			08/23/11 19:12	1
Toluene	ND		0.50		ug/L			08/23/11 19:12	1
Xylenes, Total	ND		0.50		ug/L			08/23/11 19:12	1

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	91		85 - 115		08/23/11 19:12	1

Surrogate Summary

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Method: 8021B - Volatile Organic Compounds (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)	
Lab Sample ID	Client Sample ID	TFT (85-115)	
280-19286-1	LICKITY SPLIT 43-12	90	
280-19286-2	RED BUD 44-7	86	
280-19286-2 MS	RED BUD 44-7	92	
280-19286-2 MSD	RED BUD 44-7	88	
280-19286-3	TRIP BLANK	91	
280-19324-D-2 MS - DL2	Matrix Spike	90	
280-19324-D-2 MSD - DL2	Matrix Spike Duplicate	91	
LCS 280-83146/2	Lab Control Sample	91	
LCS 280-83635/2	Lab Control Sample	97	
LCSD 280-83146/3	Lab Control Sample Dup	96	
LCSD 280-83635/3	Lab Control Sample Dup	92	
MB 280-83146/4	Method Blank	92	
MB 280-83635/4	Method Blank	88	

Surrogate Legend

TFT = a,a,a-Trifluorotoluene

Summary Report

Sample Summary

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
280-19286-1	LICKITY SPLIT 43-12	Water	08/17/11 13:15	08/18/11 10:00
280-19286-2	RED BUD 44-7	Water	08/17/11 15:32	08/18/11 10:00
280-19286-3	TRIP BLANK	Water	08/17/11 13:15	08/18/11 10:00

Preliminary Data



Client Sample Results

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Client Sample ID: LICKITY SPLIT 43-12

Lab Sample ID: 280-19286-1

Date Collected: 08/17/11 13:15

Matrix: Water

Date Received: 08/18/11 10:00

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	4.3		0.50		ug/L			08/29/11 17:01	1
Ethylbenzene	ND		0.50		ug/L			08/29/11 17:01	1
Toluene	2.7		0.50		ug/L			08/29/11 17:01	1
Xylenes, Total	1.5		0.50		ug/L			08/29/11 17:01	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	90		85 - 115					08/29/11 17:01	1

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.050		mg/L		08/19/11 14:00	08/22/11 12:35	1
Boron	0.068		0.050		mg/L		08/19/11 14:00	08/22/11 18:45	1
Calcium	7.0		0.10		mg/L		08/19/11 14:00	08/22/11 12:35	1
Chromium	ND		0.010		mg/L		08/19/11 14:00	08/22/11 12:35	1
Copper	ND		0.010		mg/L		08/19/11 14:00	08/22/11 12:35	1
Iron	2.1		0.050		mg/L		08/19/11 14:00	08/22/11 12:35	1
Potassium	ND		5.0		mg/L		08/19/11 14:00	08/22/11 12:35	1
Magnesium	1.3		0.10		mg/L		08/19/11 14:00	08/22/11 12:35	1
Manganese	0.037		0.010		mg/L		08/19/11 14:00	08/22/11 12:35	1
Sodium	490		2.0		mg/L		08/19/11 14:00	08/22/11 12:35	1
Selenium	ND		0.015		mg/L		08/19/11 14:00	08/22/11 12:35	1

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	2.0		0.050		mg/L		08/19/11 14:00	08/22/11 13:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	0.37		0.20		mg/L			08/18/11 21:02	1
Sulfate	ND		5.0		mg/L			08/18/11 21:02	1
Total Alkalinity	1000		5.0		mg/L			08/19/11 11:43	1
Bicarbonate Alkalinity as CaCO3	940		5.0		mg/L			08/19/11 11:43	1
Carbonate Alkalinity as CaCO3	53		5.0		mg/L			08/19/11 11:43	1
Hydroxide Alkalinity	ND		5.0		mg/L			08/19/11 11:43	1
Total Dissolved Solids	1100		10		mg/L			08/19/11 09:13	1
Total Suspended Solids	4.8		4.0		mg/L			08/24/11 14:45	1
Chloride	64		2.5		mg/L			08/24/11 13:11	1
Sulfide	0.059		0.050		mg/L			08/23/11 12:36	1
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Gravity	1.0011				No Unit			08/24/11 09:43	1
Specific Conductance	1700		1.0		umhos/cm			08/23/11 12:34	1
pH	8.42	HF	0.100		SU			08/18/11 13:29	1

Method: Field Sampling - Field Sampling

Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	8.19				SU			08/17/11 13:15	1
Field Conductivity	1474				umhos/cm			08/17/11 13:15	1
Field Temperature	23.2				Degrees C			08/17/11 13:15	1

Client Sample Results

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Client Sample ID: RED BUD 44-7

Lab Sample ID: 280-19286-2

Date Collected: 08/17/11 15:32

Matrix: Water

Date Received: 08/18/11 10:00

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	14		0.50		ug/L			08/29/11 17:32	1
Ethylbenzene	5.8		0.50		ug/L			08/29/11 17:32	1
Toluene	9.5		0.50		ug/L			08/29/11 17:32	1
Xylenes, Total	72		0.50		ug/L			08/29/11 17:32	1
Surrogate	% Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	86		85 - 115					08/29/11 17:32	1

Method: 200.7 Rev 4.4 - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.015		mg/L		08/19/11 14:00	08/22/11 12:44	1
Boron	0.55		0.050		mg/L		08/19/11 14:00	08/22/11 18:55	1
Calcium	25		0.20		mg/L		08/19/11 14:00	08/22/11 12:44	1
Chromium	ND		0.010		mg/L		08/19/11 14:00	08/22/11 12:44	1
Potassium	9.7		3.0		mg/L		08/19/11 14:00	08/22/11 12:44	1
Magnesium	3.6		0.10		mg/L		08/19/11 14:00	08/22/11 12:44	1
Sodium	1400		5.0		mg/L		08/19/11 14:00	08/22/11 12:44	1

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.043		0.010		mg/L		08/19/11 14:00	08/22/11 13:03	1
Iron	16		0.050		mg/L		08/19/11 14:00	08/22/11 13:03	1
Zinc	0.023		0.020		mg/L		08/19/11 14:00	08/22/11 13:03	1

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	24		0.20		mg/L		08/22/11 14:00	08/23/11 15:17	1
Magnesium	3.5		0.10		mg/L		08/22/11 14:00	08/23/11 15:17	1
Sodium	1400		5.0		mg/L		08/22/11 14:00	08/23/11 15:17	1

Method: 200.7 Rev 4.4 - Metals (ICP) - Potentially Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	0.056		0.015		mg/L		08/19/11 14:00	08/22/11 13:30	1
Manganese	0.20		0.010		mg/L		08/19/11 14:00	08/22/11 13:30	1
Zinc	0.047		0.020		mg/L		08/19/11 14:00	08/22/11 13:30	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	ND		0.0040		mg/L		08/19/11 14:00	08/20/11 00:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	11		1.0		mg/L			08/18/11 21:52	5
Sulfate	ND		25		mg/L			08/18/11 21:52	5
Total Alkalinity	1100		5.0		mg/L			08/19/11 11:56	1
Bicarbonate Alkalinity as CaCO3	1100		5.0		mg/L			08/19/11 11:56	1
Carbonate Alkalinity as CaCO3	ND		5.0		mg/L			08/19/11 11:56	1
Hydroxide Alkalinity	ND		5.0		mg/L			08/19/11 11:56	1
Total Dissolved Solids	3500		40		mg/L			08/19/11 09:13	1
Total Suspended Solids	68		4.0		mg/L			08/24/11 14:45	1
Chloride	1500		50		mg/L			08/24/11 13:15	20
Sulfide	ND		0.050		mg/L			08/23/11 12:36	1

Client Sample Results

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Client Sample ID: RED BUD 44-7

Lab Sample ID: 280-19286-2

Date Collected: 08/17/11 15:32

Matrix: Water

Date Received: 08/18/11 10:00

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Specific Gravity	1.0029				No Unit			08/24/11 09:43	1
Specific Conductance	6300		1.0		umhos/cm			08/23/11 12:34	1
pH	7.80	HF	0.100		SU			08/18/11 13:36	1
Method: Field Sampling - Field Sampling									
Analyte	Result	Qualifier	NONE	NONE	Unit	D	Prepared	Analyzed	Dil Fac
Field pH	7.46				SU			08/17/11 15:32	1
Field Conductivity	5460				umhos/cm			08/17/11 15:32	1
Field Temperature	18.9				Degrees C			08/17/11 15:32	1

Preliminary Data



Client Sample Results

Client: Pioneer Natural Resources USA, Inc.
Project/Site: Quarterly, AP Wellhead

TestAmerica Job ID: 280-19286-1

Client Sample ID: TRIP BLANK

Lab Sample ID: 280-19286-3

Date Collected: 08/17/11 13:15

Matrix: Water

Date Received: 08/18/11 10:00

Method: 8021B - Volatile Organic Compounds (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			08/23/11 19:12	1
Ethylbenzene	ND		0.50		ug/L			08/23/11 19:12	1
Toluene	ND		0.50		ug/L			08/23/11 19:12	1
Xylenes, Total	ND		0.50		ug/L			08/23/11 19:12	1

Surrogate	% Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
a,a,a-Trifluorotoluene	91		85 - 115		08/23/11 19:12	1

Preliminary Data

Chain of Custody Record

Sampler ID SP1
 Temperature on Receipt 32°F
 Drinking Water? Yes ☐ No ☒ 8/1/18

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

TAL-4124-280 (05/05)

Client

Project Manager

Date

Chain of Custody Number

Address Pioneer Air Resources

Telephone Number (Area Code)/Fax Number 303-291-1100

Lab Number

Page 1 of 1

City Denver State CO Zip Code 80206

Site Contact Bill Ward

Lab Contact

Analysis (Attach list if more space is needed)

Project Name and Location (State) Antero Energy Co

Carrier/Waybill Number

Containers & Preservatives

Soil Test Site As by 6020 Es, pH, SAR

Special Instructions/ Conditions of Receipt

Contract/Purchase Order/Quote No.

Sample I.D. No. and Description (Containers for each sample may be combined on one line)

Date

Time

Matrix

Containers & Preservatives

Analysis (Attach list if more space is needed)

Lickity Split 43-12

8/14/11

13:15

X

2

1

3

1

X

X

X

X

X

X

X

X

X

Tipple Creek

8/17

14:18

X

25

52

1

X

X

X

X

X

X

X

X

X

X

X

Buzzard 41-8 Top of P.t

8/17

14:21

X

1

1

X

X

X

X

X

X

X

X

X

X

X

X

Buzzard 41-8 Bottom of P.t

8/17

14:28

X

1

1

X

X

X

X

X

X

X

X

X

X

X

X

Buzzard 41-8 Native North

8/17

14:30

X

1

1

X

X

X

X

X

X

X

X

X

X

X

X

Buzzard 41-8 Native South

8/17

14:32

X

1

1

X

X

X

X

X

X

X

X

X

X

X

X

Buzzard 41-8 Native West

8/17

14:34

X

1

1

X

X

X

X

X

X

X

X

X

X

X

X

Red Bud 44-7

8/17

15:32

X

2

2

3

1

X

X

X

X

X

X

X

X

X

X

Red Bud 44-7

8/17

15:32

X

2

2

3

1

X

X

X

X

X

X

X

X

X

X

Comments

DISTRIBUTION: WHITE - Returned to Client with Report; CANARY - Stays with the Sample; PINK - Field Copy