



STL

STL Denver

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ANALYTICAL REPORT

Raton Basin Wells

Northfork Baseline Suite

Lot #: D6K220202

Gerald Jacob

Pioneer Natural Resources Co.
1401 17th Street
Suite 1200
Denver, CO 80202

STL DENVER

A handwritten signature in black ink, appearing to read "Linda L. Benkers".

Linda L. Benkers
Project Manager

December 4, 2006

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Standard Deliverables

Report Contents

Total Number of Pages

Standard Deliverables

The Cover Letter and the Report Cover page are considered integral parts of this Standard Deliverable package. This report is incomplete unless all pages indicated in this Table of Contents are included.



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Case Narrative

D6K220202

With 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. All laboratory quality control samples analyzed in conjunction with the samples in this project were within established control limits, with any exceptions noted.

This report may include data with reporting limits (RLs) less than STL Denver's standard reporting limits. These data and reporting limits are being used specifically to meet the needs of this project. Note that data are not customarily reported to these levels without qualifiers because they are inherently less reliable and potentially less defensible than the latest industry standards require.

The test results presented in this report meet all requirements of NELAC, and any exceptions are noted. This report shall not be reproduced, except in full, without written permission from the laboratory.

Sample Receiving

Two samples were received under chain of custody on November 22, 2006. The samples were received in good condition at a temperature of 4.6°C. Custody seals were not present on the cooler. Also, two trip blank VOA vials were received rather than one vial as noted on the chain of custody.

Sample aliquots for metals analyses by method 200.8 were sent to STL Savannah; 5102 LaRoche Avenue, Savannah GA, 31404. The analytical report is included in its entirety in this submittal.

Dissolved Gases, RSK-175

A MS/MSD associated with batch 6332274 was not requested and the laboratory could not designate one due to insufficient sample volume.

No anomalies were observed.

GC Volatiles, SW846 8021B

The MS/MSD performed on a sample from another client and/or lot was in control.

No anomalies were observed.

GC Semivolatiles – DRO, SW846 8015B

The Continuing Calibration Verification standard (CCV) demonstrated a recovery below the control limit for the surrogate o-terphenyl. The surrogate recovery for the associated sample was in control and no further corrective action was taken.

A MS/MSD associated with batch 6331048 was not requested and the laboratory could not designate one due to insufficient sample volume.

No other anomalies were observed.

Total Metals, SW846 6010B & MCAWW 200.7

The Continuing Calibration Verification standard (CCV) associated with the method blank demonstrated a recovery above the control limit for sodium. Sodium was not detected in the method blank and no further corrective action was taken.

The method 6010B MS/MSD performed on sample D6K220202-001 demonstrated a recovery above the control limit for iron.

The method 200.7 MS/MSD performed on a sample from another client and/or lot was in control.

No other anomalies were observed.

Dissolved Metals, MCAWW 200.7

The method 200.7 MS/MSD performed on sample D6K220202-001 was in control.

No anomalies were observed.

General Chemistry, Various Methods

Sample D6K220202-001 was analyzed at a dilution for sulfate due to high analyte concentration. The reporting limit is adjusted accordingly and the associated sample result is flagged "Q".

The MS/MSD performed on sample D6K220202-001 was in control for bromide, chloride, fluoride, nitrate and sulfate.

The MS/MSD for HEM was performed on a sample from another client and/or lot and was not in control.

The MS/MSD for total sulfide was performed on a sample from another client and/or lot and was in control.

The duplicate performed on sample D6K220202-001 was in control for pH.

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

No other anomalies were observed.

EXECUTIVE SUMMARY - Detection Highlights

D6K220202

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
KEYSTONE MW 11/20/06 16:00 001				
Methane	460	5.0	ug/L	RSK SOP-175
Ethane	17	5.0	ug/L	RSK SOP-175
Benzene	0.93	0.50	ug/L	SW846 8021B
Manganese - DISSOLVED	0.26	0.010	mg/L	MCAWW 200.7
Calcium	36.5	0.20	mg/L	MCAWW 200.7
Iron	2.2	0.10	mg/L	MCAWW 200.7
Magnesium	4.9	0.20	mg/L	MCAWW 200.7
Manganese	0.27	0.010	mg/L	MCAWW 200.7
Sodium	57.1	5.0	mg/L	MCAWW 200.7
Calcium	32.3	0.20	mg/L	SW846 6010B
Iron	2.1	0.10	mg/L	SW846 6010B
Magnesium	4.4	0.20	mg/L	SW846 6010B
Sodium	49.6	5.0	mg/L	SW846 6010B
pH	7.8	0.10	No Units	MCAWW 150.1
Total Dissolved Solids	308	10.0	mg/L	MCAWW 160.1
Total Suspended Solids	32.0	4.0	mg/L	MCAWW 160.2
Chloride	3.9	1.0	mg/L	MCAWW 300.0A
Sulfate	85.8 Q	25.0	mg/L	MCAWW 300.0A
Fluoride	0.66	0.20	mg/L	MCAWW 300.0A
Bicarbonate, as CaCO3	134	5.0	mg/L	MCAWW 310.1
Total Alkalinity	134	5.0	mg/L	MCAWW 310.1
Specific Gravity	1.00	0.000100	--	ASTM D1429
Resistivity	21.3	0.00020	ohm-m	MCAWW 120.1

METHODS SUMMARY

D6K220202

PARAMETER	ANALYTICAL METHOD	PREPARATION METHOD
pH (Electrometric)	MCAWW 150.1	MCAWW 150.1
Alkalinity	MCAWW 310.1	MCAWW 310.1
Bicarbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Bromide	MCAWW 300.0A	MCAWW 300.0A
Carbonate Alkalinity	MCAWW 310.1	MCAWW 310.1
Chloride	MCAWW 300.0A	MCAWW 300.0A
Dissolved Gases in Water	RSK SOP-175	RSK RSKSOP-175
Extractable Petroleum Hydrocarbons	SW846 8015B	SW846 3510
Filterable Residue (TDS)	MCAWW 160.1	MCAWW 160.1
Fluoride	MCAWW 300.0A	MCAWW 300.0A
Hydroxide Alkalinity	MCAWW 310.1	MCAWW 310.1
Inductively Coupled Plasma (ICP) Metals	MCAWW 200.7	MCAWW 200.7
Inductively Coupled Plasma (ICP) Metals	MCAWW 200.7	STL-SOP Potenti
Inductively Coupled Plasma (ICP) Metals	SW846 6010B	SW846 3010A
N-Hexane Extractable Material (1664A)	CFR136A 1664A H	CFR136A 1664
Nitrate as N	MCAWW 300.0A	MCAWW 300.0A
Non-Filterable Residue (TSS)	MCAWW 160.2	MCAWW 160.2
Resistivity 120.1	MCAWW 120.1	
Specific Gravity	ASTM D1429	ASTM D1429
Sulfate	MCAWW 300.0A	MCAWW 300.0A
Sulfide (Colorimetric, MB)	MCAWW 376.2	MCAWW 376.2
Volatiles by GC	SW846 8021B	SW846 5030

References:

ASTM	Annual Book Of ASTM Standards.
CFR136A	"Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.
MCAWW	"Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.
RSK	Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab
SW846	"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

METHOD / ANALYST SUMMARY

D6K220202

ANALYTICAL METHOD	ANALYST	ANALYST ID
ASTM D1429	Christopher Grisdale	009582
CFR136A 1664A HEM	Christopher Grisdale	009582
MCAWW 120.1	Kim Bertha	007985
MCAWW 150.1	Danielle M. Fougere	006481
MCAWW 160.1	Christopher Grisdale	009582
MCAWW 160.2	Christopher Grisdale	009582
MCAWW 200.7	Lynn-Anne Trudell	6645
MCAWW 300.0A	Ewa Kudla	001167
MCAWW 300.0A	Ewa Kudla	1167
MCAWW 310.1	Bilikisu Davies-Moir	021821
MCAWW 376.2	Kim Bertha	007985
RSK SOP-175	Adam Pavlakovich	003128
SW846 6010B	Janel Motichka	002862
SW846 6010B	Janel Motichka	2862
SW846 8015B	Heather Dybas	038161
SW846 8021B	Adam Pavlakovich	003128

References:

ASTM Annual Book Of ASTM Standards.

CFR136A "Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater", 40CFR, Part 136, Appendix A, October 26, 1984 and subsequent revisions.

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

RSK Sample Prep and Calculations for Dissolved Gas Analysis in Water Samples Using a GC Headspace Equilibration Technique, RSKSOP-175, REV. 0, 8/11/94, USEPA Research Lab

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

D6K220202

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
JJ80J	001	KEYSTONE MW	11/20/06	16:00
JJ80V	002	TRIP BLANK	11/20/06	

NOTE(S) :

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

Pioneer Natural Resources USA, Inc.

Client Sample ID: KEYSTONE MW

GC Volatiles

Lot-Sample #...: D6K220202-001 Work Order #...: JJ80J1AV Matrix.....: WATER
Date Sampled...: 11/20/06 16:00 Date Received...: 11/22/06
Prep Date.....: 11/27/06 Analysis Date...: 11/27/06
Prep Batch #...: 6332274 Analysis Time...: 13:29
Dilution Factor: 1
Method.....: RSK SOP-175

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methane	460	5.0	ug/L
Ethane	17	5.0	ug/L
Ethene	ND	5.0	ug/L

Pioneer Natural Resources USA, Inc.

Client Sample ID: KEYSTONE MW

GC Volatiles

Lot-Sample #...: D6K220202-001 Work Order #...: JJ80J1AC Matrix.....: WATER
Date Sampled...: 11/20/06 16:00 Date Received...: 11/22/06
Prep Date.....: 11/24/06 Analysis Date...: 11/24/06
Prep Batch #...: 6331159 Analysis Time...: 14:37
Dilution Factor: 1
Method.....: SW846 8021B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>
Benzene	0.93	0.50	ug/L
Ethylbenzene	ND	0.50	ug/L
Toluene	ND	0.50	ug/L
Xylenes (total)	ND	0.50	ug/L

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
a,a,a-Trifluorotoluene (TFT)	96	(85 - 115)

Pioneer Natural Resources USA, Inc.

Client Sample ID: KEYSTONE MW

GC Semivolatiles

Lot-Sample #....: D6K220202-001 Work Order #....: JJ80J1AW Matrix.....: WATER
Date Sampled....: 11/20/06 16:00 Date Received...: 11/22/06
Prep Date.....: 11/27/06 Analysis Date...: 11/28/06
Prep Batch #....: 6331048 Analysis Time...: 14:38
Dilution Factor: 1
Method.....: SW846 8015B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>
Diesel Range Organics	ND	0.25	mg/L

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
o-Terphenyl	103	(48 - 117)

Pioneer Natural Resources USA, Inc.

Client Sample ID: KEYSTONE MW

TOTAL Metals

Lot-Sample #...: D6K220202-001

Matrix.....: WATER

Date Sampled...: 11/20/06 16:00 Date Received...: 11/22/06

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #....: 6326233						
Silver	ND	0.010	mg/L	MCAWW 200.7	11/27/06	JJ80J1CE
		Dilution Factor: 1		Analysis Time...: 17:31		
Calcium	36.5	0.20	mg/L	MCAWW 200.7	11/27/06	JJ80J1CF
		Dilution Factor: 1		Analysis Time...: 17:31		
Cadmium	ND	0.0050	mg/L	MCAWW 200.7	11/27/06	JJ80J1CG
		Dilution Factor: 1		Analysis Time...: 17:31		
Chromium	ND	0.010	mg/L	MCAWW 200.7	11/27/06	JJ80J1CH
		Dilution Factor: 1		Analysis Time...: 17:31		
Iron	2.2	0.10	mg/L	MCAWW 200.7	11/27-11/29/06	JJ80J1CJ
		Dilution Factor: 1		Analysis Time...: 12:46		
Magnesium	4.9	0.20	mg/L	MCAWW 200.7	11/27/06	JJ80J1CK
		Dilution Factor: 1		Analysis Time...: 17:31		
Manganese	0.27	0.010	mg/L	MCAWW 200.7	11/27/06	JJ80J1CL
		Dilution Factor: 1		Analysis Time...: 17:31		
Sodium	57.1	5.0	mg/L	MCAWW 200.7	11/27-11/29/06	JJ80J1CM
		Dilution Factor: 1		Analysis Time...: 12:46		
Zinc	ND	0.020	mg/L	MCAWW 200.7	11/27/06	JJ80J1CN
		Dilution Factor: 1		Analysis Time...: 17:31		
Prep Batch #....: 6330031						
Boron	ND	0.050	mg/L	SW846 6010B	11/27-11/28/06	JJ80J1A6
		Dilution Factor: 1		Analysis Time...: 12:09		
Calcium	32.3	0.20	mg/L	SW846 6010B	11/27-11/28/06	JJ80J1A7
		Dilution Factor: 1		Analysis Time...: 12:09		
Iron	2.1	0.10	mg/L	SW846 6010B	11/27-11/28/06	JJ80J1A8
		Dilution Factor: 1		Analysis Time...: 12:09		
Potassium	ND	3.0	mg/L	SW846 6010B	11/27-11/28/06	JJ80J1CA
		Dilution Factor: 1		Analysis Time...: 12:09		

(Continued on next page)

Pioneer Natural Resources USA, Inc.

Client Sample ID: KEYSTONE MW

TOTAL Metals

Lot-Sample #...: D6K220202-001

Matrix.....: WATER

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING LIMIT</u>	<u>UNITS</u>	<u>METHOD</u>	<u>PREPARATION- ANALYSIS DATE</u>	<u>WORK ORDER #</u>
Magnesium	4.4	0.20	mg/L	SW846 6010B	11/27-11/28/06	JJ80J1A9
		Dilution Factor: 1		Analysis Time...: 12:09		
Sodium	49.6	5.0	mg/L	SW846 6010B	11/27-11/28/06	JJ80J1CC
		Dilution Factor: 1		Analysis Time...: 12:09		

Pioneer Natural Resources USA, Inc.

Client Sample ID: KEYSTONE MW

DISSOLVED Metals

Lot-Sample #...: D6K220202-001

Matrix.....: WATER

Date Sampled...: 11/20/06 16:00 Date Received...: 11/22/06

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 6330032						
Copper	ND	0.010	mg/L	MCAWW 200.7	11/27/06	JJ80J1A3
		Dilution Factor: 1		Analysis Time...: 16:46		
Manganese	0.26	0.010	mg/L	MCAWW 200.7	11/27/06	JJ80J1A4
		Dilution Factor: 1		Analysis Time...: 16:46		
Zinc	ND	0.020	mg/L	MCAWW 200.7	11/27/06	JJ80J1A5
		Dilution Factor: 1		Analysis Time...: 16:46		

Pioneer Natural Resources USA, Inc.

Client Sample ID: KEYSTONE MW

General Chemistry

Lot-Sample #...: D6K220202-001 Work Order #...: JJ80J Matrix.....: WATER
Date Sampled...: 11/20/06 16:00 Date Received...: 11/22/06

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
pH	7.8	0.10	No Units	MCAWW 150.1	11/22/06	6326600
		Dilution Factor: 1		Analysis Time...: 12:52		
Bicarbonate, as CaCO ₃	134	5.0	mg/L	MCAWW 310.1	11/24/06	6331128
		Dilution Factor: 1		Analysis Time...: 12:00		
Bromide	ND	0.20	mg/L	MCAWW 300.0A	11/22/06	6328414
		Dilution Factor: 1		Analysis Time...: 11:58		
Carbonate, as CaCO ₃	ND	5.0	mg/L	MCAWW 310.1	11/24/06	6331134
		Dilution Factor: 1		Analysis Time...: 12:00		
Chloride	3.9	1.0	mg/L	MCAWW 300.0A	11/22/06	6328417
		Dilution Factor: 1		Analysis Time...: 11:58		
Fluoride	0.66	0.20	mg/L	MCAWW 300.0A	11/22/06	6328416
		Dilution Factor: 1		Analysis Time...: 11:58		
Hydroxide, as CaCO ₃	ND	5.0	mg/L	MCAWW 310.1	11/24/06	6331138
		Dilution Factor: 1		Analysis Time...: 12:00		
HEM (Oil and Grease)	ND	5.0	mg/L	CFR136A 1664A HEM	11/24/06	6328439
		Dilution Factor: 1		Analysis Time...: 12:15		
Nitrate	ND	0.10	mg/L	MCAWW 300.0A	11/22/06	6328415
		Dilution Factor: 1		Analysis Time...: 11:58		
Resistivity	21.3	0.00020	ohm-m	MCAWW 120.1	11/24/06	6328294
		Dilution Factor: 1		Analysis Time...: 12:00		
Specific Gravity	1.00	0.00010	--	ASTM D1429	11/27/06	6331528
		Dilution Factor: 1		Analysis Time...: 17:30		
Sulfate	85.8 Q	25.0	mg/L	MCAWW 300.0A	11/22/06	6328418
		Dilution Factor: 5		Analysis Time...: 16:41		
Total Alkalinity	134	5.0	mg/L	MCAWW 310.1	11/24/06	6331119
		Dilution Factor: 1		Analysis Time...: 12:00		
Total Dissolved Solids	308	10.0	mg/L	MCAWW 160.1	11/24/06	6328444
		Dilution Factor: 1		Analysis Time...: 11:30		

(Continued on next page)

Pioneer Natural Resources USA, Inc.

Client Sample ID: KEYSTONE MW

General Chemistry

Lot-Sample #...: D6K220202-001

Work Order #...: JJ80J

Matrix.....: WATER

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION- ANALYSIS DATE	PREP BATCH #
Total Sulfide	ND	0.050	mg/L	MCAWW 376.2	11/24/06	6328392
		Dilution Factor: 1		Analysis Time...: 14:00		
Total Suspended Solids	32.0	4.0	mg/L	MCAWW 160.2	11/24/06	6328441
		Dilution Factor: 1		Analysis Time...: 13:30		

NOTE(S) :

RL Reporting Limit

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

Pioneer Natural Resources USA, Inc.

Client Sample ID: TRIP BLANK

GC Volatiles

Lot-Sample #...: D6K220202-002 Work Order #...: JJ80V1AA Matrix.....: WATER
Date Sampled...: 11/20/06 Date Received...: 11/22/06
Prep Date.....: 11/24/06 Analysis Date...: 11/24/06
Prep Batch #...: 6331159 Analysis Time...: 15:13
Dilution Factor: 1
Method.....: SW846 8021B

<u>PARAMETER</u>	<u>RESULT</u>	<u>REPORTING</u> <u>LIMIT</u>	<u>UNITS</u>
Benzene	ND	0.50	ug/L
Ethylbenzene	ND	0.50	ug/L
Toluene	ND	0.50	ug/L
Xylenes (total)	ND	0.50	ug/L

<u>SURROGATE</u>	<u>PERCENT</u> <u>RECOVERY</u>	<u>RECOVERY</u> <u>LIMITS</u>
a,a,a-Trifluorotoluene (TFT)	93	(85 - 115)

Summary Report

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: D6K220202 Pioneer Natural Resources USA, Inc. PAGE 1
Raton Basin Wells Date Reported: 12/04/06
Project Number: 35000210

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
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Client Sample ID: KEYSTONE MW

Sample #: 001 Date Sampled: 11/20/06 16:00 Date Received: 11/22/06 Matrix: WATER

Inductively Coupled Plasma (ICP) Metals					Reviewed
Silver	ND	0.010	mg/L	MCAWW 200.7	
Calcium	36.5	0.20	mg/L	MCAWW 200.7	
Cadmium	ND	0.0050	mg/L	MCAWW 200.7	
Chromium	ND	0.010	mg/L	MCAWW 200.7	
Iron	2.2	0.10	mg/L	MCAWW 200.7	
Magnesium	4.9	0.20	mg/L	MCAWW 200.7	
Manganese	0.27	0.010	mg/L	MCAWW 200.7	
Sodium	57.1	5.0	mg/L	MCAWW 200.7	
Zinc	ND	0.020	mg/L	MCAWW 200.7	
Copper	Dissolved ND	0.010	mg/L	MCAWW 200.7	
Manganese	Dissolved 0.26	0.010	mg/L	MCAWW 200.7	
Zinc	Dissolved ND	0.020	mg/L	MCAWW 200.7	

Inductively Coupled Plasma (ICP) Metals					Reviewed
Boron	ND	0.050	mg/L	SW846 6010B	
Calcium	32.3	0.20	mg/L	SW846 6010B	
Iron	2.1	0.10	mg/L	SW846 6010B	
Potassium	ND	3.0	mg/L	SW846 6010B	
Magnesium	4.4	0.20	mg/L	SW846 6010B	
Sodium	49.6	5.0	mg/L	SW846 6010B	

Dissolved Gases in Water					Reviewed
Methane	460	5.0	ug/L	RSK SOP-175	
Ethane	17	5.0	ug/L	RSK SOP-175	
Ethene	ND	5.0	ug/L	RSK SOP-175	

Extractable Petroleum Hydrocarbons					Reviewed
Diesel Range Organics	ND	0.25	mg/L	SW846 8015B	

Volatiles by GC					Reviewed
Benzene	0.93	0.50	ug/L	SW846 8021B	
Ethylbenzene	ND	0.50	ug/L	SW846 8021B	
Toluene	ND	0.50	ug/L	SW846 8021B	
Xylenes (total)	ND	0.50	ug/L	SW846 8021B	

(Continued on next page)

SEVERN TRENT LABORATORIES, INC.

PRELIMINARY DATA SUMMARY

The results shown below may still require additional laboratory review and are subject to change. Actions taken based on these results are the responsibility of the data user.

Lot #: D6K220202 Pioneer Natural Resources USA, Inc. PAGE 2
Raton Basin Wells Date Reported: 12/04/06
Project Number: 35000210

PARAMETER	RESULT	REPORTING LIMIT	UNITS	ANALYTICAL METHOD
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Client Sample ID: KEYSTONE MW

Sample #: 001 Date Sampled: 11/20/06 16:00 Date Received: 11/22/06 Matrix: WATER

Inorganic Analysis				Reviewed
Carbonate Alkalinity	ND	5.0	mg/L	MCAWW 310.1
Bicarbonate Alkalinity	134	5.0	mg/L	MCAWW 310.1
Hydroxide Alkalinity	ND	5.0	mg/L	MCAWW 310.1
Alkalinity	134	5.0	mg/L	MCAWW 310.1
N-Hexane Extractable Material (1664A)	ND	5.0	mg/L	CFR136A 1664A HEM
Bromide	ND	0.20	mg/L	MCAWW 300.0A
Chloride	3.9	1.0	mg/L	MCAWW 300.0A
Fluoride	0.66	0.20	mg/L	MCAWW 300.0A
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A
Sulfate	85.8 Q	25.0	mg/L	MCAWW 300.0A
pH (Electrometric)	7.8	0.10	No Units	MCAWW 150.1
Sulfide (Colorimetric, MB)	ND	0.050	mg/L	MCAWW 376.2
Filterable Residue (TDS)	308	10.0	mg/L	MCAWW 160.1
Non-Filterable Residue (TSS)	32.0	4.0	mg/L	MCAWW 160.2
Resistivity 120.1	21.3	0.00020	ohm-m	MCAWW 120.1
Specific Gravity	1.00	0.000100	--	ASTM D1429

Q Elevated reporting limit. The reporting limit is elevated due to high analyte levels.

Client Sample ID: TRIP BLANK

Sample #: 002 Date Sampled: 11/20/06 16:00 Date Received: 11/22/06 Matrix: WATER

Volatiles by GC				Reviewed
Benzene	ND	0.50	ug/L	SW846 8021B
Ethylbenzene	ND	0.50	ug/L	SW846 8021B
Toluene	ND	0.50	ug/L	SW846 8021B
Xylenes (total)	ND	0.50	ug/L	SW846 8021B



STL

ANALYTICAL REPORT

Job Number: 680-22216-1

Job Description: D6K220202 - Pioneer Northfork Suite

For:
Severn Trent Laboratories, Inc.
4955 Yarrow Street
Arvada, CO 80002

Attention: Ms. Lyn Benkers

A handwritten signature in black ink, appearing to read "Abbie Page".

Abbie Page
Project Manager I
apage@stl-inc.com
12/04/2006

Project Manager: Abbie Page

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory. All questions regarding this report should be directed to the STL Project Manager who signed this report.

Severn Trent Laboratories, Inc.
STL Savannah 5102 LaRoche Avenue, Savannah, GA 31404
Tel (912) 354-7858 Fax (912) 351-3673 www.stl-inc.com



METHOD / ANALYST SUMMARY

Client: Severn Trent Laboratories, Inc.

Job Number: 680-22216-1

Method	Analyst	Analyst ID
EPA 200.8	Boyuk, Brian	BB

SAMPLE SUMMARY

Client: Severn Trent Laboratories, Inc.

Job Number: 680-22216-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-22216-1	KEYSTONE MW	Water	11/20/2006 1600	11/24/2006 0917

Analytical Data

Client: Severn Trent Laboratories, Inc.

Job Number: 680-22216-1

Client Sample ID: KEYSTONE MW

Lab Sample ID: 680-22216-1

Date Sampled: 11/20/2006 1600

Client Matrix: Water

Date Received: 11/24/2006 0917

200.8 ICPMS Metals by 200.8 CWA-Total Recoverable

Method:	200.8	Analysis Batch:	680-61537	Instrument ID:	ICP MS
Preparation:	4.1.4	Prep Batch:	680-61106	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	12/02/2006 2211			Final Weight/Volume:	250 mL
Date Prepared:	11/29/2006 1046				

Analyte	Result (ug/L)	Qualifier	RL
Arsenic	2.5	U	2.5
Barium	210		5.0
Boron	100	U	100
Copper	5.0	U	5.0
Lead	1.5	U	1.5
Potassium	2500		250
Selenium	2.5	U	2.5

DATA REPORTING QUALIFIERS

Client: Severn Trent Laboratories, Inc.

Job Number: 680-22216-1

Lab Section	Qualifier	Description
Metals	U	Indicates the analyte was analyzed for but not detected.

Laboratory

J. L. SL Savannah
5102 LaRoche Avenue

Savannah, GA

31404

Savannah Trent Labora' Inc.

SAMPLE ANALYSIS POSITION

Lab Request SR087378

Report Package: STL Standard Report

Need Analytical Report 2006-11-28

Client Code: 417126

Project Manager: LYN BENKERS

Sample I.D.

D6K220202-1

Work Order Number

JJ80J

Client Sample ID

KEYSTONE MW

Analysis Required

2006-11-20 16:00

WATER, 200.8 TR Metals (7)-STL Savannah

TEMP.: 9.8°C
1015# 680-22216

Please use Client Sample ID for report

Call LYN BENKERS with questions at 303-736-0100

Please send electronic reports. No hardcopy needed.

Need detection limit and analysis date included in report.

Please send a signed copy of this form with the report at completion of analysis.

Relinquished by: [Signature] Date/Time: 11/22/2006

Relinquished by: [Signature] Date/Time: 09/17 24/10/2006

Received for lab by: [Signature] Date/Time: 09/17 24/10/2006

Shipping Method: FEDEX

PLEASE RETURN ORIGINAL SAMPLE ANALYSIS REQUISITION