

Monitoring Well Installation Summary

The groundwater monitoring well near the Sanchinator 11-36 well pad was drilled beginning November 9, 2006, and completed on November 11, 2006. The Sanchinator well pad is located on top of a ridge just east of the eastern boundary of the North Fork Ranch at an elevation of 8380 feet above mean sea level. No groundwater was encountered until a depth of 350 feet was reached. The well was drilled to a depth of 600 feet and completed with 20 feet of screen from 565 to 585 feet. Although there are no water wells within one-quarter mile of the Sanchinator pad, the well was completed with a screened interval corresponding to the elevation of the water-producing interval of the nearest water well, located approximately one-half mile to the south-southwest.

The well was drilled using air rotary drilling methods and the well was developed with air lift from the drilling rig. The well was constructed in accordance with the Work Plan for Groundwater Monitoring and Sampling and Analysis Plan for the North Fork Ranch Area. After completion the well was gauged and a water level of 381 feet was determined.

The monitoring well near the Keystone 11-35 well pad was drilled beginning November 13, 2006 and completed November 15, 2006. The well pad is located on the mountainside above the drainage of the Left Hand Canyon in the North Fork Ranch. The monitoring well is located about 500 feet south of the well pad in the direction of the nearest water well which is approximately one-quarter mile south-southeast. The first significant groundwater was encountered in a coarse sandstone/conglomerate at a depth of 100 feet. The monitoring well was completed with 20 feet of screen from 100 to 120 feet.

The well was drilled and completed in accordance with the Work Plan for Groundwater Monitoring and the Sampling and Analysis Plan for the North Fork Ranch Area. After completion the well was gauged and the depth to water was determined to be 28 feet.

The monitoring well near the Niagara 23-35 well pad was drilled beginning on November 16th and completed on November 18, 2006. The well is located just off the well pad on the northeast side in the direction of the nearest water well, located about one-quarter mile to the northeast. The well and well pad are on top of a ridge approximately 200 feet above the drainage of the Left Hand Canyon in the North Fork Ranch.

No groundwater was encountered during the drilling of the Niagara monitoring well. Once the sandstone caprock was penetrated the lithology consisted of interbedded sandstone and shale to the total drilled depth of 316 feet. Drilling was halted at a depth that was lower than the elevation of the bottom of the nearest water well. The monitoring well was completed in a coarse sandstone with 20 feet of screen from 240 to 260 feet. The screened interval corresponded in elevation to the upper part of the perforated interval of the nearest water well.

After completion the well was gauged but no water was detected.

Baseline Groundwater Sampling Summary

Water samples were taken from the Keystone and Sanchinator monitoring wells. Samples could not be retrieved from the Niagara due to lack of water in the wellbore. Samples were submitted to Severn-Trent Laboratories for analysis. Copies of the preliminary data are attached to this report. The analyses indicate no unusual levels of constituents that would compromise the wells' function as monitoring wells. Results are generally consistent from samples taken other water wells in the area.

Groundwater Level Measurement

The Keystone monitoring well was equipped with a downhole pressure transducer to record potentiometric head on December 1st. The transducer was programmed to record data at 6-hour intervals. Transducers to record potentiometric head and barometric pressure were planned to be installed in the Sanchinator monitoring well on December 4th, however, an unanticipated change in water level will delay installation and calibration of the transducers until December 5th.



STL

ANALYTICAL REPORT

Job Number: 680-22159-1

Job Description: D6K200113 - 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", written over a horizontal line.

Abbie Page
Project Manager I
apage@stl-inc.com
11/29/2006

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: 680-22159-1

Method	Analyst	Analyst ID
EPA 200.8	Eaton, Cliff	CE

SAMPLE SUMMARY

Client: Severn Trent Laboratories, Inc.

Job Number: 680-22159-1

Lab Sample ID	Client Sample ID	Client Matrix	Date/Time Sampled	Date/Time Received
680-22159-1	SANCHINATOR MW	Water	11/18/2006 1345	11/21/2006 0919

Analytical Data

Client: Severn Trent Laboratories, Inc.

Job Number: 680-22159-1

Client Sample ID: SANCHINATOR MW

Lab Sample ID: 680-22159-1
Client Matrix: Water

Date Sampled: 11/18/2006 1345
Date Received: 11/21/2006 0919

200.8 ICPMS Metals by 200.8 CWA-Total Recoverable

Method:	200.8	Analysis Batch:	680-61047	Instrument ID:	ICP MS
Preparation:	4.1.4	Prep Batch:	680-60684	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/24/2006 1501			Final Weight/Volume:	250 mL
Date Prepared:	11/22/2006 0959				

Analyte	Result (ug/L)	Qualifier	RL
Arsenic	8.1		2.5
Barium	170		5.0
Boron	100	U	100
Lead	3.6		1.5
Potassium	1900		250
Selenium	2.5	U	2.5

Method:	200.8	Analysis Batch:	680-61047	Instrument ID:	ICP MS
Preparation:	4.1.4	Prep Batch:	680-60684	Lab File ID:	N/A
Dilution:	1.0			Initial Weight/Volume:	50 mL
Date Analyzed:	11/25/2006 1557			Final Weight/Volume:	250 mL
Date Prepared:	11/22/2006 0959				

Analyte	Result (ug/L)	Qualifier	RL
Copper	8.2		5.0

DATA REPORTING QUALIFIERS

Client: Severn Trent Laboratories, Inc.

Job Number: 680-22159-1

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

Laboratory

STL Savannah
5102 LaRoche Avenue
Savannah, GA

31404

Client Code: 417126

Sample I.D.
D6K200113-1

Work Order Number
JJ3X3

Client Sample ID
SANCHINATOR MW

Severn Trent Laboratory, Inc.
SAMPLE ANALYSIS ACQUISITION

Lab Request SR087285

Report Package:

STL Standard Report

Need Analytical Report

2006-11-27

Project Manager:

LYNN BENKERS

Sampling Date
2006-11-18 13:45

Analysis Required
WATER, 200.8 TR Metals (7)-STL Savannah

Please use Client Sample ID for report
Call LYNN 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: 11/20/06 1600

Relinquished by:

KC

Date/Time:

Date/Time: 11/21/06 0919

Received for lab by:

PLEASE RETURN ORIGINAL SAMPLE ANALYSIS REQUISITION

TEMP: _____

680-22159

Shipping Method:

FEDEX

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 #: D6K200113 Pioneer Natural Resources USA, Inc. PAGE 1
Raton Basin Wells Date Reported: 11/30/06
Project Number: 35000210
REPORTING ANALYTICAL
PARAMETER RESULT LIMIT UNITS METHOD

Client Sample ID: SANCHINATOR MW

Sample #: 001 Date Sampled: 11/18/06 13:45 Date Received: 11/20/06 Matrix: WATER

Inductively Coupled Plasma (ICP) Metals Reviewed

Silver	ND	0.010	mg/L	MCAWW 200.7
Calcium	3.1	0.20	mg/L	MCAWW 200.7
Cadmium	ND	0.0050	mg/L	MCAWW 200.7
Chromium	0.012	0.010	mg/L	MCAWW 200.7
Iron	12.7	0.10	mg/L	MCAWW 200.7
Magnesium	1.3	0.20	mg/L	MCAWW 200.7
Manganese	0.18	0.010	mg/L	MCAWW 200.7
Sodium	95.6	5.0	mg/L	MCAWW 200.7
Zinc	0.020 L	0.020	mg/L	MCAWW 200.7
Copper	Dissolved ND	0.010	mg/L	MCAWW 200.7
Manganese	Dissolved 0.12	0.010	mg/L	MCAWW 200.7
Zinc	Dissolved 0.023	0.020	mg/L	MCAWW 200.7

Inductively Coupled Plasma (ICP) Metals Reviewed

Boron	ND	0.050	mg/L	SW846 6010B
Calcium	3.1	0.20	mg/L	SW846 6010B
Iron	12.5	0.10	mg/L	SW846 6010B
Potassium	ND	3.0	mg/L	SW846 6010B
Magnesium	1.3	0.20	mg/L	SW846 6010B
Sodium	89.7	5.0	mg/L	SW846 6010B

L Serial dilution of a digestate in the analytical batch indicates that physical and chemical interferences are present.

Dissolved Gases in Water Reviewed

Methane	1400	50	ug/L	RSK SOP-175
Ethane	ND	50	ug/L	RSK SOP-175
Ethene	ND	50	ug/L	RSK SOP-175

Extractable Petroleum Hydrocarbons Reviewed

Diesel Range Organics	ND	0.16	mg/L	SW846 8015B
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Volatiles by GC Reviewed

Benzene	ND	0.50	ug/L	SW846 8021B
Ethylbenzene	ND	0.50	ug/L	SW846 8021B

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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 #: D6K200113 Pioneer Natural Resources USA, Inc. PAGE 2
Raton Basin Wells Date Reported: 11/30/06
Project Number: 35000210

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

Sample #: 001 Date Sampled: 11/18/06 13:45 Date Received: 11/20/06 Matrix: WATER

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

Inorganic Analysis					Reviewed
Carbonate Alkalinity	32.1	5.0	mg/L	MCAWW 310.1	
Bicarbonate Alkalinity	138	5.0	mg/L	MCAWW 310.1	
Hydroxide Alkalinity	ND	5.0	mg/L	MCAWW 310.1	
Alkalinity	170	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	8.0	1.0	mg/L	MCAWW 300.0A	
Fluoride	8.3	0.20	mg/L	MCAWW 300.0A	
Nitrate as N	ND	0.10	mg/L	MCAWW 300.0A	
Sulfate	ND	5.0	mg/L	MCAWW 300.0A	
pH (Electrometric)	9.2	0.10	No Units	MCAWW 150.1	
Sulfide (Colorimetric,MB)	ND	0.050	mg/L	MCAWW 376.2	
Filterable Residue (TDS)	245	10.0	mg/L	MCAWW 160.1	
Non-Filterable Residue (TSS)	141 Q	10.0	mg/L	MCAWW 160.2	
Resistivity	26.0	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: 11/18/06 13:45 Date Received: 11/20/06 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	

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. Raton Basin Wells Date Reported: 12/04/06 PAGE 1
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
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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

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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	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