

Sanchinaton
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STL

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Project 2009

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ANALYTICAL REPORT

Raton Basin Wells

Northfork Baseline Suite

Lot #: D6K200113

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

November 30, 2006

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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

D6K200113

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 20, 2006. The samples were received in good condition at a temperature of 0.9°C.

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

Sample D6K200113-001 was analyzed at a dilution due to high target compound concentrations. The reporting limits are adjusted accordingly.

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 sample D6K200113-001 was in control.

No anomalies were observed.

GC Semivolatiles – DRO, SW846 8015B

Sample D6K200113-001 is reported with a dilution factor other than one due to the sample volume that was extracted (greater than 1000mL). The reporting limit is adjusted accordingly.

A MS/MSD associated with batch 6324377 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 method 6010B MS/MSD performed on a sample from another client and/or lot was in control.

The method 200.7 MS/MSD performed on a sample from another client and/or lot was not in control.

Serial dilution of a digestate in analytical batch 6324447 indicates that physical and chemical interferences are present for zinc. The associated data is flagged "L".

No other anomalies were observed.

Dissolved Metals, MCAWW 200.7

The method 200.7 MS/MSD performed on sample D6K200113-001 was in control.

No anomalies were observed.

General Chemistry, Various Methods

Sample D6K200113-001 was received near the EPA recommended holding time of 48 hours for nitrate analysis. This sample was initially analyzed within holding time for nitrate but a bracketing Continuing Calibration Verification standard (CCV) did not meet QC criteria. This sample was reanalyzed for nitrate approximately one hour after the EPA recommended holding time had expired. Both results were similar and only the reanalysis result with acceptable QC is reported.

Sample D6K200113-001 was analyzed at a dilution for TSS 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 D6K200113-001 was in control for bromide, chloride, fluoride, nitrate, sulfate and total sulfide.

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

The duplicates performed on sample D6K200113-001 were in control for pH and resistivity.

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

D6K200113

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|-----------------------------------|---------|--------------------|----------|----------------------|
| SANCHINATOR MW 11/18/06 13:45 001 | | | | |
| Methane | 1400 | 50 | ug/L | RSK SOP-175 |
| Manganese - DISSOLVED | 0.12 | 0.010 | mg/L | MCAWW 200.7 |
| Zinc - DISSOLVED | 0.023 | 0.020 | mg/L | MCAWW 200.7 |
| Calcium | 3.1 | 0.20 | 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 |
| Calcium | 3.1 | 0.20 | mg/L | SW846 6010B |
| Iron | 12.5 | 0.10 | mg/L | SW846 6010B |
| Magnesium | 1.3 | 0.20 | mg/L | SW846 6010B |
| Sodium | 89.7 | 5.0 | mg/L | SW846 6010B |
| pH | 9.2 | 0.10 | No Units | MCAWW 150.1 |
| Total Dissolved Solids | 245 | 10.0 | mg/L | MCAWW 160.1 |
| Total Suspended Solids | 141 Q | 10.0 | mg/L | MCAWW 160.2 |
| Carbonate, as CaCO3 | 32.1 | 5.0 | mg/L | MCAWW 310.1 |
| Chloride | 8.0 | 1.0 | mg/L | MCAWW 300.0A |
| Fluoride | 8.3 | 0.20 | mg/L | MCAWW 300.0A |
| Bicarbonate, as CaCO3 | 138 | 5.0 | mg/L | MCAWW 310.1 |
| Total Alkalinity | 170 | 5.0 | mg/L | MCAWW 310.1 |
| Specific Gravity | 1.00 | 0.000100 | -- | ASTM D1429 |
| Resistivity | 26.0 | 0.00020 | ohm-m | MCAWW 120.1 |

METHODS SUMMARY

D6K200113

| 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

D6K200113

| 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 | Janel Motichka | 002862 |
| MCAWW 200.7 | Janel Motichka | 2862 |
| MCAWW 200.7 | Lynn-Anne Trudell | 006645 |
| MCAWW 200.7 | Lynn-Anne Trudell | 6645 |
| 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 | Lynn-Anne Trudell | 006645 |
| SW846 6010B | Lynn-Anne Trudell | 6645 |
| 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

D6K200113

| WO # | SAMPLE# | CLIENT SAMPLE ID | SAMPLED DATE | SAMP TIME |
|-------|---------|------------------|-----------------|--------------|
| JJ3X3 | 001 | SANCHINATOR MW | 11/18/06 | 13:45 |
| JJ3X8 | 002 | TRIP BLANK | 11/18/06 | |

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: SANCHINATOR MW

GC Volatiles

Lot-Sample #....: D6K200113-001 Work Order #....: JJ3X31AV Matrix.....: WATER
Date Sampled....: 11/18/06 13:45 Date Received...: 11/20/06
Prep Date.....: 11/27/06 Analysis Date...: 11/27/06
Prep Batch #....: 6332274 Analysis Time...: 15:02
Dilution Factor: 10
Method.....: RSK SOP-175

| PARAMETER | RESULT | REPORTING LIMIT | UNITS |
|-----------|--------|--------------------|-------|
| Methane | 1400 | 50 | ug/L |
| Ethane | ND | 50 | ug/L |
| Ethene | ND | 50 | ug/L |

Pioneer Natural Resources USA, Inc.

Client Sample ID: SANCHINATOR MW

GC Volatiles

Lot-Sample #....: D6K200113-001 Work Order #....: JJ3X31AC Matrix.....: WATER
Date Sampled....: 11/18/06 13:45 Date Received...: 11/20/06
Prep Date.....: 11/21/06 Analysis Date...: 11/22/06
Prep Batch #....: 6326512 Analysis Time...: 10:15
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) | 100 | (85 - 115) |

Pioneer Natural Resources USA, Inc.

Client Sample ID: SANCHINATOR MW

GC Semivolatiles

Lot-Sample #...: D6K200113-001 Work Order #...: JJ3X31AW Matrix.....: WATER
Date Sampled...: 11/18/06 13:45 Date Received...: 11/20/06
Prep Date.....: 11/20/06 Analysis Date...: 11/21/06
Prep Batch #...: 6324377 Analysis Time...: 23:54
Dilution Factor: 0.64

Method.....: SW846 8015B

| <u>PARAMETER</u> | <u>RESULT</u> | <u>REPORTING</u> | <u>UNITS</u> |
|-----------------------|---------------|------------------|--------------|
| Diesel Range Organics | ND | 0.16 | mg/L |

| <u>SURROGATE</u> | <u>PERCENT</u> | <u>RECOVERY</u> |
|------------------|-----------------|-----------------|
| | <u>RECOVERY</u> | <u>LIMITS</u> |
| o-Terphenyl | 78 | (48 - 117) |

Pioneer Natural Resources USA, Inc.

Client Sample ID: SANCHINATOR MW

TOTAL Metals

Lot-Sample #...: D6K200113-001

Matrix.....: WATER

Date Sampled...: 11/18/06 13:45 Date Received...: 11/20/06

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION- ANALYSIS DATE | WORK ORDER # |
|--------------------------|---------|--------------------|-------|-------------------------|-------------------------------|-----------------|
| Prep Batch #...: 6324447 | | | | | | |
| Silver | ND | 0.010 | mg/L | MCAWW 200.7 | 11/22-11/24/06 | JJ3X31CE |
| | | Dilution Factor: 1 | | Analysis Time...: 12:55 | | |
| Calcium | 3.1 | 0.20 | mg/L | MCAWW 200.7 | 11/22-11/24/06 | JJ3X31CF |
| | | Dilution Factor: 1 | | Analysis Time...: 12:55 | | |
| Cadmium | ND | 0.0050 | mg/L | MCAWW 200.7 | 11/22-11/24/06 | JJ3X31CG |
| | | Dilution Factor: 1 | | Analysis Time...: 12:55 | | |
| Chromium | 0.012 | 0.010 | mg/L | MCAWW 200.7 | 11/22-11/24/06 | JJ3X31CH |
| | | Dilution Factor: 1 | | Analysis Time...: 12:55 | | |
| Iron | 12.7 | 0.10 | mg/L | MCAWW 200.7 | 11/22-11/27/06 | JJ3X31CJ |
| | | Dilution Factor: 1 | | Analysis Time...: 14:13 | | |
| Magnesium | 1.3 | 0.20 | mg/L | MCAWW 200.7 | 11/22-11/24/06 | JJ3X31CK |
| | | Dilution Factor: 1 | | Analysis Time...: 12:55 | | |
| Manganese | 0.18 | 0.010 | mg/L | MCAWW 200.7 | 11/22-11/24/06 | JJ3X31CL |
| | | Dilution Factor: 1 | | Analysis Time...: 12:55 | | |
| Sodium | 95.6 | 5.0 | mg/L | MCAWW 200.7 | 11/22-11/25/06 | JJ3X31CM |
| | | Dilution Factor: 1 | | Analysis Time...: 17:22 | | |
| Zinc | 0.020 L | 0.020 | mg/L | MCAWW 200.7 | 11/22-11/24/06 | JJ3X31CN |
| | | Dilution Factor: 1 | | Analysis Time...: 12:55 | | |
| Prep Batch #...: 6325167 | | | | | | |
| Boron | ND | 0.050 | mg/L | SW846 6010B | 11/22/06 | JJ3X31A6 |
| | | Dilution Factor: 1 | | Analysis Time...: 18:31 | | |
| Calcium | 3.1 | 0.20 | mg/L | SW846 6010B | 11/22/06 | JJ3X31A7 |
| | | Dilution Factor: 1 | | Analysis Time...: 18:31 | | |
| Iron | 12.5 | 0.10 | mg/L | SW846 6010B | 11/22/06 | JJ3X31A8 |
| | | Dilution Factor: 1 | | Analysis Time...: 18:31 | | |
| Potassium | ND | 3.0 | mg/L | SW846 6010B | 11/22/06 | JJ3X31CA |
| | | Dilution Factor: 1 | | Analysis Time...: 18:31 | | |

(Continued on next page)

Pioneer Natural Resources USA, Inc.

Client Sample ID: SANCHINATOR MW

TOTAL Metals

Lot-Sample #...: D6K200113-001

Matrix.....: WATER

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION- ANALYSIS DATE | WORK ORDER # |
|-----------|--------|--------------------|-------|-------------------------|-------------------------------|-----------------|
| Magnesium | 1.3 | 0.20 | mg/L | SW846 6010B | 11/22/06 | JJ3X31A9 |
| | | Dilution Factor: 1 | | Analysis Time...: 18:31 | | |
| Sodium | 89.7 | 5.0 | mg/L | SW846 6010B | 11/22/06 | JJ3X31CC |
| | | Dilution Factor: 1 | | Analysis Time...: 18:31 | | |

NOTE(S) :

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

Pioneer Natural Resources USA, Inc.

Client Sample ID: SANCHINATOR MW

DISSOLVED Metals

Lot-Sample #...: D6K200113-001

Matrix.....: WATER

Date Sampled...: 11/18/06 13:45 Date Received...: 11/20/06

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD | PREPARATION- ANALYSIS DATE | WORK ORDER # |
|--------------------------|--------|--------------------|-------|-------------------------|-------------------------------|-----------------|
| Prep Batch #...: 6325161 | | | | | | |
| Copper | ND | 0.010 | mg/L | MCAWW 200.7 | 11/22/06 | JJ3X31A3 |
| | | Dilution Factor: 1 | | Analysis Time...: 16:50 | | |
| Manganese | 0.12 | 0.010 | mg/L | MCAWW 200.7 | 11/22/06 | JJ3X31A4 |
| | | Dilution Factor: 1 | | Analysis Time...: 16:50 | | |
| Zinc | 0.023 | 0.020 | mg/L | MCAWW 200.7 | 11/22/06 | JJ3X31A5 |
| | | Dilution Factor: 1 | | Analysis Time...: 16:50 | | |

Pioneer Natural Resources USA, Inc.

Client Sample ID: SANCHINATOR MW

General Chemistry

Lot-Sample #...: D6K200113-001 Work Order #...: JJ3X3 Matrix.....: WATER
Date Sampled...: 11/18/06 13:45 Date Received...: 11/20/06

| PARAMETER | RESULT | RL | UNITS | METHOD | PREPARATION- ANALYSIS DATE | PREP BATCH # |
|-----------------------------------|--------|--------------------|----------|-------------------------|-------------------------------|-----------------|
| pH | 9.2 | 0.10 | No Units | MCAWW 150.1 | 11/21/06 | 6325595 |
| | | Dilution Factor: 1 | | Analysis Time...: 14:31 | | |
| Bicarbonate, as CaCO ₃ | 138 | 5.0 | mg/L | MCAWW 310.1 | 11/22/06 | 6328233 |
| | | Dilution Factor: 1 | | Analysis Time...: 12:30 | | |
| Bromide | ND | 0.20 | mg/L | MCAWW 300.0A | 11/20/06 | 6325584 |
| | | Dilution Factor: 1 | | Analysis Time...: 15:41 | | |
| Carbonate, as CaCO ₃ | 32.1 | 5.0 | mg/L | MCAWW 310.1 | 11/22/06 | 6328236 |
| | | Dilution Factor: 1 | | Analysis Time...: 12:30 | | |
| Chloride | 8.0 | 1.0 | mg/L | MCAWW 300.0A | 11/20/06 | 6325582 |
| | | Dilution Factor: 1 | | Analysis Time...: 15:41 | | |
| Fluoride | 8.3 | 0.20 | mg/L | MCAWW 300.0A | 11/20/06 | 6325581 |
| | | Dilution Factor: 1 | | Analysis Time...: 15:41 | | |
| Hydroxide, as CaCO ₃ | ND | 5.0 | mg/L | MCAWW 310.1 | 11/22/06 | 6328241 |
| | | Dilution Factor: 1 | | Analysis Time...: 12:30 | | |
| 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 | 11/20/06 | 6325580 |
| | | Dilution Factor: 1 | | Analysis Time...: 15:41 | | |
| Resistivity | 26.0 | 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 | ND | 5.0 | mg/L | MCAWW 300.0A | 11/20/06 | 6325583 |
| | | Dilution Factor: 1 | | Analysis Time...: 15:41 | | |
| Total Alkalinity | 170 | 5.0 | mg/L | MCAWW 310.1 | 11/22/06 | 6328227 |
| | | Dilution Factor: 1 | | Analysis Time...: 12:30 | | |
| Total Dissolved Solids | 245 | 10.0 | mg/L | MCAWW 160.1 | 11/21/06 | 6325572 |
| | | Dilution Factor: 1 | | Analysis Time...: 16:00 | | |

(Continued on next page)

Pioneer Natural Resources USA, Inc.

Client Sample ID: SANCHINATOR MW

General Chemistry

Lot-Sample #...: D6K200113-001

Work Order #...: JJ3X3

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 | 141 Q | 10.0 | mg/L | MCAWW 160.2 | 11/21/06 | 6325574 |
| | | Dilution Factor: 2.5 | | Analysis Time...: 16:00 | | |

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 #....: D6K200113-002 Work Order #....: JJ3X81AA Matrix.....: WATER
Date Sampled....: 11/18/06 Date Received...: 11/20/06
Prep Date.....: 11/21/06 Analysis Date...: 11/21/06
Prep Batch #....: 6326512 Analysis Time...: 15:37
Dilution Factor: 1
Method.....: SW846 8021B

| <u>PARAMETER</u> | <u>RESULT</u> | <u>REPORTING 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 RECOVERY</u> | <u>RECOVERY LIMITS</u> |
|------------------------------|-----------------------------|----------------------------|
| a,a,a-Trifluorotoluene (TFT) | 98 | (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 #: D6K200113 Pioneer Natural Resources USA, Inc. PAGE 1
Raton Basin Wells Date Reported: 11/30/06
Project Number: 35000210

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL 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 | |

| Volatiles by GC | | | | | Reviewed |
|-----------------|----|------|------|-------------|----------|
| Benzene | ND | 0.50 | ug/L | SW846 8021B | |
| Ethylbenzene | 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.

Pioneer Natural Resources USA, Inc.

PAGE 2

Lot #: D6K200113

Raton Basin Wells

Date Reported: 11/30/06

Project Number: 35000210

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | ANALYTICAL METHOD |
|-----------|--------|--------------------|-------|----------------------|
|-----------|--------|--------------------|-------|----------------------|

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 120.1 | 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 |

OK 200113

SEVERN
TRENT
Severn Trent

ST

20

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



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

Date Sampled: 11/18/2006 1345

Client Matrix: Water

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 L. Arnette Avenue
Savannah, GA

31404

Client Code: 417126

Sample ID:
D6K200113-1

Work Order Number
JJ3X3

Client Sample ID
SANCHINATOR MW

Severn Trent Laboratory Inc.
SAMPLE ANALYSIS DIVISION
Lab Request
SR087285

Report Package:
Need Analytical Report

STL Standard 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

TEMP: 680-22159

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 report at completion of analysis

Relinquished by:

Relinquished by:

Received for lab by:

[Signature]

Date/Time: 11/20/06 1600

Date/Time:

Date/Time: 11/21/06 0919

Shipping Method:

FEDEX

PLEASE RETURN ORIGINAL SAMPLE ANALYSIS REQUESTION