

State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax:(303)894-2109



SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry Information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

RECEIVED 9/7/2012

1. OGCC Operator Number: 96850	4. Contact Name Karolina Blaney
2. Name of Operator: WPX Energy Rocky Mountain LLC	Phone: 970-683-2295
3. Address: 1058 County Road 215	Fax:
City: Parachute State: CO Zip: 81635	
5. API Number 05- 045-07466	OGCC Facility ID Number 422335
6. Well/Facility Name: RMV 216-21	7. Well/Facility Number
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): SENW S21, T6S, R94W, 6 PM	
9. County: Garfield	10. Field Name: Rulison
11. Federal, Indian or State Lease Number:	

Complete the Attachment Checklist

OP OGCC

Survey Plat		
Directional Survey		
Surface Eqpmt Diagram		
Technical Info Page	x	
Other	x	

General Notice

☐ CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)

Change of Surface Footage from Exterior Section Lines:

Change of Surface Footage to Exterior Section Lines:

Change of Bottomhole Footage from Exterior Section Lines:

Change of Bottomhole Footage to Exterior Section Lines:

Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer

Latitude

Longitude

Ground Elevation

Distance to nearest property line

Distance to nearest lease line

Distance to nearest well same formation

Distance to nearest bldg, public rd, utility or RR

Is location in a High Density Area (rule 603b)? Yes/No

Surface owner consultation date:

attach directional survey

GPS DATA:

Date of Measurement

PDOP Reading

Instrument Operator's Name

☐ CHANGE SPACING UNIT

Formation

Formation Code

Spacing order number

Unit Acreage

Unit configuration

☐ Remove from surface bond

Signed surface use agreement attached

☐ CHANGE OF OPERATOR (prior to drilling):

Effective Date:

Plugging Bond: ☐ Blanket ☐ Individual

☐ CHANGE WELL NAME

From:

To:

Effective Date:

NUMBER

☐ ABANDONED LOCATION:

Was location ever built? ☐ Yes ☐ No

Is site ready for Inspection? ☐ Yes ☐ No

Date Ready for Inspection:

☐ NOTICE OF CONTINUED SHUT IN STATUS

Date well shut in or temporarily abandoned:

Has Production Equipment been removed from site? ☐ Yes ☐ No

MIT required if shut in longer than two years. Date of last MIT

☐ SPUD DATE:

☐ REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)

☐ SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK

*submit cbl and cement job summaries

Method used

Cementing tool setting/perf depth

Cement volume

Cement top

Cement bottom

Date

☐ RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004.

Final reclamation will commence on approximately

☐ Final reclamation is completed and site is ready for inspection.

Technical Engineering/Environmental Notice

☒ Notice of Intent

☐ Report of Work Done

Approximate Start Date: 5/7/2012

Date Work Completed:

Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)

☐ Intent to Recomplete (submit form 2)

☐ Request to Vent or Flare

☐ E&P Waste Disposal

☐ Change Drilling Plans

☐ Repair Well

☐ Beneficial Reuse of E&P Waste

☐ Gross Interval Changed?

☐ Rule 502 variance requested

☒ Status Update/Change of Remediation Plans

☐ Casing/Cementing Program Change

☐ Other:

for Spills and Releases

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: Karolina Blaney Date: 9/6/2012 Email: karolina.blaney@wpxenergy.com
Print Name: Karolina Blaney Title: Environmental Specialist

COGCC Approved: Title Date:

CONDITIONS OF APPROVAL, IF ANY:

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

1. OGCC Operator Number: _____ API Number: _____

2. Name of Operator: _____ OGCC Facility ID # _____

3. Well/Facility Name: _____ Well/Facility Number: _____

4. Location (QtrQtr, Sec, Twp, Rng, Meridian): _____

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5.

DESCRIBE PROPOSED OR COMPLETED OPERATIONS

DRAFT FINAL

**WPX Energy Rocky Mountain LLC
RMV 216-21 Pit
Environmental Site Investigation Summary Report
Garfield County, CO**

Prepared by:



**Weston Solutions, Inc.
1435 Garrison Street, Suite 100
Lakewood, CO 80215**

Project Number: 15023.002.001

August 2012

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LIST OF ACRONYMS

Accutest	Accutest Mountain States Laboratory
bgs	below ground surface
BOD	biochemical oxygen demand
BTEX	benzene, toluene, ethylbenzene, xylene
CDWR	Colorado Division of Water Resources
CO	Colorado
COC	constituent of concern
COGCC	Colorado Oil and Gas Conservation Commission
CSM	Conceptual Site Model
DRO	diesel range organics
E&P	Exploration and Production
EC	Electrical Conductivity
EPA	Environmental Protection Agency
ESC	ESC Laboratory Sciences
ft	feet
GRO	gasoline range organics
GW	groundwater
Himes Drilling	Himes Drilling Company, Inc.
IDW	Investigative Derived Waste
LNAPL	Light Non-Aqueous Phase Liquid
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
mmhos/cm	millimhos per centimeter
MS	matrix spike
MSD	matrix spike duplicate
Olsson	Olsson Associates
PAH	polynuclear aromatic hydrocarbons
PID	photo ionization detector
PLOE	primary line of evidence
QA	quality assurance
QC	quality control
rrus	relative response units
SAR	Sodium Adsorption Ratio
Site	RMV 216-21 Pit
SLOE	secondary line of evidence
SPLP	Synthetic Precipitation Leaching Procedure
su	standard unit
TD	total depth

LIST OF ACRONYMS (CONTINUED)

TDS	total dissolved solids
TN	Tennessee
TPH	total petroleum hydrocarbons
WESTON	Weston Solutions, Inc.
WP	Work Plan
WPX	WPX Energy Rocky Mountain LLC

1. INTRODUCTION

In May 2012, Weston Solutions, Inc. (WESTON®) conducted an environmental site investigation to delineate soil and groundwater impacts associated with the WPX Energy Rocky Mountain LLC (WPX) RMV 216-21 Pit (Site) as described in the Form 4 submitted to COGCC on April 30, 2012. The investigation was designed to mitigate data gaps identified in the Conceptual Site Model (CSM) for the Site subsequent to WESTON's evaluation of existing data (previously submitted to COGCC under remediation number 5168, presented in Appendix C) in order to delineate potential petroleum hydrocarbon impacts to soil and groundwater conditions. Results of this investigation will allow WPX, with the support of WESTON, to work with Colorado Oil and Gas Conservation Commission (COGCC) to finalize the cleanup goals as well as identify and evaluate remedial options in order to quickly and economically remediate the site.

1.1 PURPOSE AND SCOPE

The purpose of the site investigation was to fill in data gaps associated with soil and groundwater characterization and delineation conditions remaining from previous site investigations and to develop a complete and accurate CSM. The CSM will be used to evaluate future potential remedial actions to achieve eventual closure of the Site.

2. FIELD ACTIVITIES

Field activities for the WESTON Site investigation were conducted between May 7, 2012 and May 24, 2012. Field investigation activities included borehole drilling, surface and sub-surface soil sampling, monitoring well installation, groundwater sampling, and Investigative Derived Waste (IDW) management as described in the sections below. A total of 13 soil boreholes were installed to characterize and delineate the vertical and horizontal extent of the contaminated source soil. A total of three boreholes were installed and converted into groundwater monitoring wells. Casing advance air rotary drilling methods were used by the drilling contractor, Himes Drilling Company, Inc. (Himes Drilling), for each boring. Split spoons were pushed during drilling activities in order to collect representative soils from the boreholes. Soils collected from split spoon samples were subjected to semi-quantitative volatile organic compound screening using headspace analysis with a PID. All soil borings not completed as monitoring wells were abandoned with granular bentonite in accordance with Colorado Division of Water Resources (CDWR) to seal the boreholes and prevent any downward migration of fluids or vapors. Locations of the surface soil samples, soil borings, and groundwater monitoring wells are provided in Figure 1. Copies of the borehole logs and monitoring wells logs are presented in Appendix A. Subsequent to the WESTON field investigation in May 2012, Olsson Associates (Olsson) conducted groundwater sampling of Site monitoring wells occurring between July 18, 2012 through July 20, 2012 and on August 20, 2012. Results from the Olsson July and August 2012 groundwater sampling events have been incorporated into this report.

2.1 DRILLING ACTIVITIES

2.1.1 Contaminated Source Soil Characterization Borings

Two soil borings (BH09B and BH10) were installed inside the former pit to vertically delineate and characterize the contaminated soils identified in previous investigations. The borings were located in the vicinity of the highest known areas of contamination. The total depth (TD) of borings BH09B and BH10 were 61.5 feet (ft) below ground surface (bgs) and 66 ft bgs, respectively. Based upon field screening of the soil collected from split spoons, three discrete soil samples from each boring were collected and submitted for laboratory analysis of COGCC Table 910-1 "Organic Compounds in Soil" constituents. The first sample from each boring was collected between 0 to 7 ft bgs to determine suitability for potential use as backfill should excavation of contaminated soils be evaluated as a remedial option. The second sample from each boring was collected from the highest photo ionization detector (PID) reading between 25 ft bgs to TD of the boring. The third sample was collected at the TD of each boring. TD of both borings was determined when field screening procedures indicated that contamination is no longer present. The second and third samples collected from both borings were analyzed for COGCC Table 910-1 "Organic Compounds in Soil" constituents using Synthetic Precipitation Leaching Procedure (SPLP) method.

2.1.2 Contaminated Source Soil Delineation Borings

Eleven soil borings (BH11 to BH21) were installed around the perimeter of the former pit location to vertically and horizontally delineate the extent of contaminated source soil (Figure 1). With the exception of BH15, the TD of these borings ranged from 19 ft bgs (BH17) to 67.5 ft bgs (BH20). Boring BH15 was drilled to a depth of 95 ft bgs in order to encounter groundwater for a groundwater grab sample to be collected. Five of the eleven borings were pre-planned locations placed to delineate the eastern and western areas of contamination (BH11 to BH15). Borings BH11 and BH13 were located outside of the pit perimeter to delineate the eastern area of contamination to the north and south, respectively. Borings BH12 and BH14 were located outside of the pit perimeter to delineate the western area of contamination to the north and south, respectively. Boring BH15 was located to the southwest of the pit. However, due to evidence of contamination observed in the field during the installation of delineation borings BH11 through BH14, six additional “step out” boring locations were installed in order to vertically and horizontally delineate the contamination encountered (BH16 to BH21). The location and depths of these borings were determined in the field based on the evidence of impacts observed to the soil. Based upon field screening of the soil collected from split spoons, two to three discrete soil samples from each boring were collected and submitted for laboratory analysis of COGCC Table 910-1 “Organic Compounds in Soil” constituents. Generally, if field screening results indicated that contamination was not present (readings < 25 relative response units [rrus]), two discrete soil samples were collected and submitted for laboratory analysis. One sample was collected from the highest PID reading between 25 ft bgs to TD of the boring. A second sample was collected from the TD of the boring. If field screening results indicated that contamination was present (readings > 25 rrus), three discrete soil samples from each boring were collected and submitted for laboratory analysis. One sample was collected from the highest PID reading between 0 to 25 ft bgs. A second sample was collected from the highest PID reading between 25 ft bgs to TD of the boring. The third sample was collected at TD of the boring. TD of delineation borings BH11, BH12, BH13, BH16, BH18, and BH20 was determined when field screening procedures indicated that contamination was not present at or below the corresponding TD’s from characterization borings within the pit (BH09B and BH10). However, for initial delineation boring BH14 and “step out” borings BH17 and BH19, TD was reached prior to encountering clean soil due to additional “step out” borings required in order to delineate the contamination.

2.1.3 Monitoring Well Installation

Three groundwater monitoring wells (RMV 216-21 MW-7, RMV 216-21 MW-8, and RMV 216-21 MW-9) were installed at the Site located down-gradient and cross-gradient of wells RMV 216-21 MW-1, RMV 216-21 MW-5, and RMV 216-21 MW-6 where impacts to groundwater had previously been reported. These new wells were located to aid in delineating the extent of the contaminated/impacted groundwater plume. All three wells installed were constructed as 2-

inch Schedule 40 PVC wells with an approximate 3 foot stick up and concrete pad for surface completion. The monitoring wells were constructed and developed in accordance with CDWR guidance for well construction. Subsequent to well construction and development, groundwater was evaluated for the presence of light non-aqueous phase liquid (LNAPL) using an oil/water interface probe; however, no measurable LNAPL was detected in any of the three wells. Details for each of the well installations and subsequent activities are presented below.

2.1.3.1 RMV 216-21 MW-7

The boring for RMV 216-21 MW-7 was drilled into the alluvial aquifer to a depth of approximately 90 ft bgs. The boring was then allowed to recover for a fluid level measurement and was evaluated for the presence of LNAPL using an oil/water interface probe. The static water level reading in the borehole was measured to approximately 87.5 ft bgs and no free product was identified. The boring was then drilled an additional 5 ft (resulting in RMV 216-21 MW-7 TD = 95 ft bgs) to allow for a longer water column to be present once the well was installed. A 2-inch monitoring well (RMV 216-21 MW-7) was installed on May 9, 2012. The well was constructed with a 15 foot screen interval from 80 to 95 ft bgs. Complete details of the well construction are presented in the monitoring well log for RMV 216-21 MW-7 in Appendix A. The static water level measurement obtained for RMV 216-21 MW-7 during the fluid level sweep conducted on May 24, 2012 was 87.77 ft bgs.

2.1.3.2 RMV 216-21 MW-8

The boring for RMV 216-21 MW-8 was drilled into the alluvial aquifer to a depth of approximately 100 ft bgs. The boring was then allowed to recover for a fluid level measurement and was evaluated for the presence of LNAPL using an oil/water interface probe. The static water level reading in the borehole was measured to approximately 85.12 ft bgs and no free product was identified. A 2-inch monitoring well (RMV 216-21 MW-8) was installed on May 23, 2012. The well was constructed with a 15 foot screen interval from 80 to 95 ft bgs. Complete details of the well construction are presented in the monitoring well log for RMV 216-21 MW-8 in Appendix A. The static water level measurement obtained for RMV 216-21 MW-8 during the fluid level sweep conducted on May 24, 2012 was 85.06 ft bgs.

2.1.3.3 RMV 216-21 MW-9

The boring for RMV 216-21 MW-9 was drilled into the alluvial aquifer to a depth of approximately 100 ft bgs. The boring was then allowed to recover for a fluid level measurement and was evaluated for the presence of LNAPL using an oil/water interface probe. The static water level reading in the borehole was measured to approximately 78.55 ft bgs and no free product was identified. A 2-inch monitoring well (RMV 216-21 MW-9) was installed on May 22, 2012. The well was constructed with a 15 foot screen interval from 75 to 90 ft bgs. Complete details of the well construction are presented in the monitoring well log for RMV 216-

21 MW-9 in Appendix A. The static water level measurement obtained for RMV 216-21 MW-9 during the fluid level sweep conducted on May 24, 2012 was 78.90 ft bgs.

2.2 SAMPLE COLLECTION

2.2.1 Soil Samples

2.2.1.1 Headspace Vapor Sample Analysis

A total of 78 soil samples from all borings were collected and evaluated for headspace soil vapor analysis. Soil samples were collected during drilling activities utilizing a split spoon sampler 2 ft in length with a 3-inch inner diameter. Sampling intervals where split spoons were pushed were determined per boring in the field by WESTON field geologist, Mr. Greg Geras, P.G. This was based upon field observations and data from previous boreholes installed. However, in some instances, soil intervals were unable to be recovered due to refusal by the high amounts of gravel and hard rock (sandstone and/or shale) commonly encountered in the alluvial formation. Soils collected from split spoon samples were placed in plastic zip lock freezer bags and subjected to semi-quantitative volatile organic compound screening using headspace vapor analysis with a PID. For PID field screening, a reading of 25 rrus was used as the threshold to determine if contamination was present in soil (> 25 rrus indicated contamination was present and < 25 rrus indicated the soil was clean). Results of headspace analysis on samples collected are presented in Table 1.

2.2.1.2 Laboratory Sample Analysis

Discrete soil samples were selected for laboratory analysis based upon the field screening procedures, including PID readings and visual and olfactory observations. Soil samples selected were transferred into laboratory-supplied containers. Disposable gloves were used during sample collection procedures. The soil samples were labeled, placed in a cooler with ice (cooled to 4°C), prepared for shipment, and transported, accompanied by chain-of-custody documentation, to ESC Laboratory Sciences (ESC) in Mt. Juliet, Tennessee (TN) for laboratory analysis. In all, 36 total soil samples (surface soil, sub-surface soil, and field duplicates) were collected and sent for laboratory analysis. Details on the surface and sub-surface soil samples collected are discussed below.

Surface Soil (Topsoil) Samples

Three samples (Surface Soil #1, Surface Soil #2, and Surface Soil #3) were collected from the topsoil from within the pit boundaries. One sample was collected at each of the two contaminated source soil characterization boring locations (BH09B and BH10). The third sample was collected from the middle of the former pit next to the BH06 location. Surface soil samples collected were sent for laboratory analysis of COGCC Table 910-1 "Inorganics in Soil" analysis of Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR), and pH.

Sub-Surface Soil Sampling

A total of 33 sub-surface soil samples were collected from all borings installed. Of the 33 samples, 29 were analyzed for COGCC Table 910-1 "Organic Compounds in Soil" constituents. Of the 29 samples, three of the samples were quality assurance (QA)/quality control (QC) duplicate samples analyzed and two were selected for matrix spike (MS)/matrix spike duplicate (MSD) sample analysis. Of the 33 samples, four were analyzed for COGCC Table 910-1 "Organic Compounds in Soil" constituents using SPLP method.

2.2.2 Groundwater Samples

As part of the May 2012 field investigation, five groundwater samples were collected and sent for laboratory analysis. Groundwater samples were collected from each of the three newly installed wells (one duplicate sample was collected from RMV 216-21 MW-8) and a groundwater grab sample was collected from Boring BH15. On May 21, 2012, the groundwater grab sample was collected from BH15 prior to borehole abandonment. On May 24, 2012, groundwater samples were obtained from each of the three wells installed. Prior to sampling, the monitoring wells were developed to remove fine grained sediments from the well screen and ensure fresh water from the unit would be sampled. 10 gallons of groundwater were removed from RMV 216-21 MW-7 (approx. 9 well volumes); 13 gallons of groundwater were removed from RMV 216-21 MW-8 (approx. 8 well volumes); and 13 gallons of groundwater were removed from RMV 216-21 MW-9 (approx. 7 well volumes). Groundwater samples were collected using disposable bailers from which the groundwater was then transferred into laboratory-supplied containers with the preservative appropriate to the analysis requested. Disposable gloves were used during sample collection procedures. The groundwater samples were labeled, placed in a cooler with ice (cooled to 4°C), prepared for shipment, and transported, accompanied by chain-of-custody documentation, to ESC in Mt. Juliet, TN for laboratory analysis of BTEX and select metals and general chemistry constituents.

Between July 18, 2012 and July 20, 2012, 10 groundwater samples were collected and sent for laboratory analysis by Olsson. Groundwater samples were collected from each of the nine monitoring wells (RMV 216-21 MW-1 through RMV 216-21 MW-9) along with one duplicate sample collected from RMV 216-21 MW-1. The groundwater samples were sent to Accutest Mountain States Laboratory (Accutest) in Wheat Ridge, CO for laboratory analysis of BTEX and select metals and general chemistry constituents. On August 16, 2012, two additional groundwater samples were collected from RMV 216-21 MW-5 and RMV 216-21 MW-6, respectively. These groundwater samples were sent to Accutest in Wheat Ridge, CO for laboratory analysis of BTEX constituents.

2.2.3 Quality Assurance/Quality Control (QA/QC) Samples

The QA/QC samples collected during the investigation consisted of equipment blanks, shipping container trip blanks, field duplicate samples, and matrix spike/matrix spike duplicate (MS/MSD) samples. In general, QA/QC sample collection frequency was based upon the total number of soil and groundwater sample types collected. The number, type, and media of QA/QC samples collected during the May 2012 field investigation are presented below.

- Three (3) field duplicate samples for sub-surface soil samples (RMV 216-21 BH12 59-60'-FD, RMV 216-21 BH16 59-60.5'-FD, and RMV 216-21 BH18 50-51.5'-FD);
- Two (2) MS/MSD samples from sub-surface soil samples (RMV 216-21 BH14 24-26' and RMV 216-21 BH11 61-63');
- One (1) field duplicate sample for groundwater samples (RMV 216-21 MW-8 Dup);
- One (1) equipment blank sample from drill rig casing (RMV 216-21 EB - Casing);
- Three (3) laboratory supplied trip blanks in shipping containers (Trip Blank).

All QA/QC samples were labeled, placed in a cooler with ice (cooled to 4°C), prepared for shipment, and transported, accompanied by chain-of-custody documentation, to ESC in Mt. Juliet, TN for laboratory analysis associated with the sample type. No QA/QC samples were collected for on surface soil samples or SPLP soil samples.

In addition, one field duplicate sample for groundwater was collected during the July 2012 groundwater sampling event by Olsson (RMV 216-21 MW-1X). RMV 216-21 MW-1X was sent to Accutest in Wheat Ridge, CO for the associated groundwater laboratory analysis.

2.3 DECONTAMINATION PROCEDURES AND INVESTIGATIVE DERIVED WASTE (IDW) MANAGEMENT

2.3.1 Decontamination Procedures

Himes Drilling decontaminated the drill rig and all down-hole equipment prior to mobilization to the site for drilling activities and between drilling each boring by utilizing a pressure washer, biodegradable soap, and potable water source. A plastic lined temporary decontamination pit was constructed on-site by Himes Drilling prior to the start of drilling to conduct decontamination activities. All casing, drill pipe, core barrels, drill bits, split spoons, and non-disposable/non-dedicated equipment was decontaminated between borings by pressure washing and air drying. One equipment blank sample was collected on the borehole casing advanced as part of each boring and submitted for laboratory analysis.

2.3.2 Investigative Derived Waste (IDW) Management

All IDW generated during the site investigation (i.e., soil cuttings, decontamination water, and monitoring well development and purge water) was properly containerized at the site in a plastic lined temporary storage pit constructed by Himes Drilling to store IDW prior to generating any waste. Prior to de-mobilizing, no samples IDW samples were collected to characterize the waste for disposal. Subsequent to field investigation activities and after suspended solids had time to settle, WPX arranged for a vacuum truck to remove liquids from the temporary pit to be disposed of at their Centralized Exploration and Production (E&P) Waste Management Facility. The plastic lining with remaining solids has been covered to containerize and prevent exposure to the potentially contaminated solids and will continue to be temporarily stored on-site. It is the intent that disposal of the remaining solid waste will be completed during future remediation of the site.

3. SAMPLE RESULTS AND SCREENING LEVEL COMPARISON

Soil and groundwater sample results were compared to COC screening levels presented in COGCC Table 910-1, where applicable. Copies of the laboratory analytical reports are presented in Appendix B. Below is a summary of the sample results per media.

3.1 SOIL SAMPLES

3.1.1 Surface Soil (Topsoil) Samples

Surface soil samples were analyzed for EC by Environmental Protection Agency (EPA) Method 9045D (reported by laboratory as Specific Conductance), SAR by laboratory calculation, and pH by EPA Method 9050A MOD. Results of the laboratory analysis for surface soil samples are presented in Table 2. Below is a summary of the comparison between the sample results and the screening levels.

Results of the 3 surface soil samples analyzed indicated the following:

- Unknown exceedances for EC/Specific Conductance;
- 0 exceedances for SAR;
- 0 exceedances for pH.

Specific Conductance ranged from 1.6 millimhos per centimeter (mmhos/cm) (RMV 216-21 Surface Soil #2) to 3.5 mmhos/cm (RMV 216-21 Surface Soil #1). The COGCC comparison screening level is listed as <4x or 2x background. Due to no background comparison values being developed, it is not known if any exceedances were detected. SAR results (a unitless value) ranged from 9.5 (RMV 216-21 Surface Soil #2) to 12 (RMV 216-21 Surface Soil #1 and RMV 216-21 Surface Soil #3). Results for all three samples are below the COGCC comparison screening level of 125. Results for pH ranged from 7.9 T8 standard units (su) (RMV 216-21 Surface Soil #1) to 8.2 T8 su (RMV 216-21 Surface Soil #2 and RMV 216-21 Surface Soil #3). The results for all three samples were within the COGCC comparison screening level of 6 – 9 su.

In summary, results of the surface soil on top of the pit are favorable for the vegetation growth should the area be replanted. There is the potential that this soil may be removed regardless as part of remedial activities.

3.1.2 Sub-Surface Soil Sampling

Sub-surface soil samples were analyzed for BTEX constituents by EPA Method 8260B, total petroleum hydrocarbons (TPH) by EPA Method 8015D (low fraction – gasoline range organics [GRO]) and Method 3546 (high fraction – diesel range organics [DRO]), and polynuclear aromatic hydrocarbons (PAHs) by EPA Method 8270C – SIM. EPA Method 1312 extraction was conducted on the four sub-surface soil samples for SPLP analysis. Results of the laboratory analysis for sub-surface soil samples are presented in Table 3-1. Results of the laboratory

analysis for sub-surface soil samples analyzed using SPLP are presented in Table 3-2. Below is a summary of the comparison between the results and the screening levels.

3.1.2.1 Non-SPLP Samples

Results of the 29 sub-surface soil samples (including field duplicates) analyzed indicated the following:

- 3 exceedances for BTEX constituents;
- 10 exceedances for TPH constituent;
- 0 exceedance for PAH constituents.

Detections for one or more BTEX constituents were reported in 25 of the 29 samples; however, only three detections exceeded the associated COGCC comparison screening levels. Of the three exceedances for BTEX constituents, two of the exceedances were for benzene and one exceedance was for xylenes (total). The COGCC comparison screening level for benzene is 0.17 milligrams per kilogram (mg/kg). The benzene exceedances ranged from 0.30 mg/kg (RMV 216-21 BH11 5-7') to 5.3 mg/kg (RMV 216-21 BH10 4-6'). Benzene was detected in 8 of the remaining 27 samples; however, none of the detections exceeded the screening level. The COGCC comparison screening level for xylenes (total) is 175 mg/kg. The exceedance for xylenes (total) was reported in RMV 216-21 BH10 4-6' at 320 mg/kg. Xylenes (total) were detected in 27 of the remaining 31 samples; however, none of the detections exceeded the screening level. The COGCC comparison screening level for TPH is 500 mg/kg. The 10 TPH exceedances ranged from 500 mg/kg (RMV 216-21 BH14 14-16') to 9,900 mg/kg (RMV 216-21 BH10 4-6'). TPH was detected in 17 of the remaining 22 samples; however, none of the detections exceeded the screening level. Detections for one or more PAHs were reported in 21 of the 29 samples; however, none of the detections exceeded the screening level.

In summary, analysis of these results has allowed the extent of the contaminated source soil to be delineated. Additional discussion of these results as they relate to the overall CSM is presented in Section 4.

3.1.2.2 SPLP Samples

Results of the four soil samples analyzed indicated the following:

- 2 exceedances for BTEX constituents;
- 0 exceedances for TPH constituent;
- 0 exceedance for PAH constituents.

Results for the SPLP testing conducted on the four soil samples to aid in characterizing the contaminated source soil were compared to the COGCC Table 910-1 groundwater comparison screening levels, where applicable. Detections for one or more BTEX constituents were reported

in 3 of the 4 samples; however, only two detections exceeded the associated COGCC comparison screening levels. Of the two exceedances for BTEX constituents, both exceedances were for benzene. The COGCC comparison screening level for benzene in groundwater is 0.005 milligrams per liter (mg/L). The two exceedances reported for benzene were 0.0086 mg/L (RMV 216-21 BH09B 34-36') and 0.020 mg/L (RMV 216-21 BH10 39-40.5'). TPH was detected in two of the four samples; however, COGCC has not established a comparison screening level for TPH in groundwater. Detections for one or more PAHs were reported in two of the four samples; however, none of the detections exceeded the screening level.

In summary, data acquired from these samples indicates a slight leaching potential for benzene to groundwater from soils between approximately 30 – 40 ft bgs. Additional discussion of these results as they relate to the overall CSM is presented in Section 4.

3.2 GROUNDWATER SAMPLES

Groundwater samples were analyzed for one or more of the following constituents in accordance with the methods listed: BTEX by EPA Method 8260B or 8021B, TPH-GRO and TPH-DRO by EPA Method 8015B, PAHs by EPA Method 3510C, select metals by EPA Method 6010B or 6010C (calcium, iron, magnesium, manganese, potassium, selenium and sodium), and general chemistry constituents by EPA Method 9056 (bromide, chloride, fluoride, nitrate, nitrite, and sulfate), EPA Method 353.2 (nitrate-nitrite), EPA Method 2540C (total dissolved solids [TDS]), SM20 2320B (alkalinity), SM20 5210B (biochemical oxygen demand [BOD]), SM20 5220D (chemical oxygen demand), SM4500P-B/E (phosphorus, total), SM20 5310B (total organic carbon), and/or SM20 4500H B+ (pH). Results of the laboratory analysis for groundwater samples are presented in Table 4. Below is a summary of the comparison between the results and the screening levels.

Results of the 17 groundwater samples (including field duplicates) analyzed indicated the following:

- 1 exceedances for BTEX constituents;
- 0 exceedances for TPH-GRO and/or TPH-DRO constituents
- 0 exceedances for PAH constituents
- 0 exceedances for metals;
- 17 exceedances for general chemistry constituents.

One exceedance for BTEX constituents was reported from the July 2012 groundwater sampling event. The exceedance reported was for benzene in RMV 216-21 MW-6 (0.0243 mg/L). The COGCC comparison screening level for benzene in groundwater is 0.005 mg/L. Due to this exceedance reported, RMV 216-21 MW-6 was re-sampled in August 2012. Results from the August 2012 RMV-216-21 MW-6 sample reported non-detect for all BTEX constituents. Detections for BTEX constituents was reported in three of the 17 samples; however, none of the

detections exceeded the COGCC comparison screening level. The detections reported were for benzene in sample RMV 216-21 MW-9 at a value of 0.0046 mg/L from the May 2012 sampling event; benzene in RMV 216-21 MW-5 at a value of 0.00055 J mg/L from the July 2012 sampling event; and benzene in RMV 216-21 MW-5 at a value of 0.00044 J mg/L from the August 2012 sampling event. Though the value reported for RMV 216-21 MW-9 was not an exceedance, it was only slightly below the COGCC comparison screening level. The subsequent sample results for RMV 216-21 MW-9 from the July 2012 sampling event reported non-detect for all BTEX constituents. Though the detection reported for benzene in RMV 216-21 MW-5 was well below the COGCC standard, this well was re-sampled in August 2012. Results from the August 2012 RMV-216-21 MW-5 sample reported a benzene concentration of 0.00044 J mg/L; still well below the COGCC standard. The COGCC has not established any comparison screening levels for TPH-GRO or TPH-DRO in groundwater. No detections were reported for TPH-GRO in any samples in which this analysis was conducted. Three detections for TPH-DRO were reported for samples in which this analysis was conducted; however, the values reported were estimated values due to the very low level concentrations. The COGCC has not established any comparison screening levels for PAHs in groundwater. No detections for any PAHs were reported in any of the samples in which this analysis was conducted. Values were reported for each of the metals analyzed for in all 17 groundwater samples; however, COGCC has not established any comparison screening levels for metals in groundwater. Detections for one or more of the general chemistry constituents analyzed for were reported in all 17 samples; however, only detections for chloride and TDS exceeded the associated screening levels. COGCC has established comparison screening levels for three of the general chemistry constituents analyzed for in groundwater (chloride, sulfate, and TDS). The COGCC comparison screening level for each of these three constituents is 1.25 x background level. The background values used for comparison are based upon the July 18, 2012 sampling results of background well RMV 216-21 MW-2. Using the July 2012 criteria, the comparison screening value for chloride is 21.38 mg/L. Exceedances for chloride were reported in 13 of the 17 samples and ranged from 30.2 mg/L (RMV 216-21 MW-3) to 758 mg/L (RMV 216-21 MW-6). The comparison screening value for TDS is 3,525 mg/L. Exceedances for TDS were reported in four of the 17 samples and ranged from 3,600 mg/L (RMV 216-21 MW-8) to 4,460 mg/L (RMV 216-21 MW-6).

In summary, the analytical results from groundwater samples indicate impacts to groundwater are present; however, the only detection for primary line of evidence (PLOE) BTEX constituents that exceeded the COGCC comparison screening levels was subsequently reported as non-detect for all BTEX constituents when sampled the following month. The reported detection for benzene in RMV 216-21 MW-9 was 0.0004 mg/L below the comparison screening level; however, this well was subsequently reported as non-detect for all BTEX constituents when sampled the following month. The exceedances reported for secondary line of evidence (SLOE) constituents, chloride and TDS, are not considered indicative of contaminated groundwater

plume extending beyond the current monitoring well network in place. Additional discussion of these results as they relate to the overall CSM is presented in Section 4.

3.3 QA/QC SAMPLE RESULTS

QA/QC samples were analyzed for the associated COCs appropriate based upon the correlating type of sample and media. Results of the laboratory analysis for soil field duplicate samples are reported in Table 3-1. Results of the laboratory analysis of the groundwater duplicate sample are presented in Table 4. Results of the laboratory analysis of the equipment blank sample are presented in Table 5. Below is a summary of the comparison between the results and the screening levels.

Results of the QA/QC samples analyzed indicated the following:

- 0 anomalous results for field duplicate soil samples;
- 0 anomalous results for field duplicate groundwater sample;
- 0 exceedances for equipment blank sample;
- 0 results for laboratory quality and shipping container samples indicating results are invalid for use.

Results for soil and groundwater field duplicate samples closely correspond with the values reported for the original samples. Results for the equipment blank sample collected and analyzed indicated that decontamination procedures were effective and cross contamination did not occur. Results for MS/MSD and trip blanks analyzed are generally acceptable. In summary, all QA/QC samples indicate that results are generally valid for use.

4. CONCEPTUAL SITE MODEL (CSM)

The CSM for soil and groundwater at the Site presented below is based upon data collected from the May 2012 field investigation in conjunction with data acquired from the July 2012 and August 2012 groundwater sampling events and previous investigations. The data obtained from this site investigation indicates that previous data gaps identified in the CSM have been filled. Information presented in this section indicates that the extent of contaminated source soil has been delineated vertically and horizontally, contaminated source soils have been characterized at depths below 25 ft bgs, and down-gradient impacts to groundwater below COGCC Table 910-1 standards have been delineated based upon Site conditions as of August 2012.

4.1 SOIL

Results of the drilling and sampling activities conducted at the Site have filled the previous data gaps identified in soil at the Site. Based upon a combination of field observations, field screening procedures, and results reported for samples submitted for laboratory analysis, the current data set indicates that the contaminated source soil has been both vertically and horizontally delineated. In addition, the data set for the Site contains supplementary characterization information of the contaminated source soil at depths below 25 ft bgs.

4.1.1 Vertical and Horizontal Delineation of Contaminated Source Soil

As illustrated in cross sections A – A' (Figure 2) and B – B' (Figure 3), contaminated source soil impacts above COGCC Table 910-1 standards have been vertically and horizontally delineated to the north and south of the pit. In cross section C – C' (Figure 4), contaminated source soil has been vertically delineated across the original inferred pit boundary. Though the exact extent of contamination to the east-west across the pit is not known, use of information in the C – C' cross section in conjunction with observations during the previous installation of RMV 216-21 MW-3 and RMV 216-21 MW-4 provides horizontal delineation east-west across the pit. A discussion of each cross section is provided below.

Cross section A – A' (Figure 2) transects boreholes installed north-south across the western portion of the pit to delineate known contaminated soils. Through a combination of PID headspace reading sample results and laboratory sample analysis results, contaminated source soil to the north is delineated vertically and horizontally between borings BH21 and BH12. The western contaminated source soil beneath the pit is delineated vertically by PID headspace reading sample results and laboratory sample analysis results from borings BH12, BH10, BH14, and BH16. Contaminated source soil to the south is delineated vertically and horizontally by laboratory and headspace reading samples in BH10, BH14, and BH16. Contamination above the COGCC Table 910-1 standard for TPH were reported in sample RMV 216-2 BH16 35-37'; however, based upon sample RMV 216-21 BH14 24-26', field observation during BH16 drilling, and the PID headspace readings from BH16 above and below the 35-37' interval, the

contamination in this sample is not believed to be contaminated source soil, but rather residual contamination from a preferred contaminated groundwater (GW) flow pathway, when water is present. Additional discussion in regards to the sub-surface geology beneath the pit and contaminated groundwater flow pathways is presented in Section 4.1.3.

Cross section B – B' (Figure 3) transects boreholes installed north-south across the eastern portion of the pit to delineate known contaminated soils. Through a combination of PID headspace reading sample results and laboratory sample analysis results, contaminated source soil to the north is delineated vertically and horizontally by BH20 and BH11. The eastern contaminated source soil beneath the pit is delineated vertically by PID headspace reading sample results and laboratory sample analysis results from borings BH11, BH09B, and BH13. Contaminated source soil to the south is delineated vertically and horizontally by laboratory and headspace reading samples in BH13 and BH18. Though contamination above the COGCC Table 910-1 standard for benzene or TPH was not reported in samples from BH18, an anomalous elevation in PID headspace reading for RMV 216-21 BH18 50-51.5' was obtained during drilling. This reading was inconsistent with the PID headspace readings in BH18 above and below the 50-51.5' interval. The impact noted in this sample is not believed to be contaminated source soil, but rather residual contamination from a preferred contaminated GW flow pathway, when water is present. Additional discussion in regards to the sub-surface geology beneath the pit and contaminated groundwater flow pathways is presented in Section 4.1.3.

Cross section C – C' (Figure 4) transects boreholes installed east-west across the pit to delineate the known contaminated soils. Through a combination of PID headspace reading sample results and laboratory sample analysis results from the May 2012 investigation and previous investigations at the Site, contaminated source soil is delineated vertically by borings BH10, BH06, BH09B, and BH07. Though the exact extent of contamination above the COGCC Table 910-1 standards to the east and west of the pit is not known, use of observations during the previous installation of RMV 216-21 MW-3 and RMV 216-21 MW-4 provides horizontal delineation east-west across the pit based upon each wells location. Based upon a conversation that the WESTON field geologist, Mr. Greg Geras, P.G., had with the Himes driller whom installed RMV 216-21 MW-3, the extent of contaminated source soil to the east and west sides of the pit extends beyond the pit boundaries derived from historic aerial photographs. As reported by the Himes driller whom installed RMV 216-21 MW-3, the first attempt to install the well was initially drilled east of the BH07 location but west of the RMV 216-21 MW-3 current location. This boring was abandoned due to impacts encountered in the soil and the well borehole was re-located further to the east where RMV 216-21 MW-3 is currently located. It is believed that contamination between would be present only in the upper portions of the soil on the east side between RMV 216-21 MW-3 and BH09B and on the west side between RMV 216-21 MW-4 and BH07 at distances closer to the wells and then slope down to depths consistent with impacts encountered during drilling of borings within the pit. This inference is

substantiated based upon pit construction figures and as observed by the number and distance of “step out” locations required to delineate contaminated source soil to north and south of the pit.

4.1.2 Contaminated Source Soil Characterization

As observed in the cross sections transecting the pit (Figures 2, 3, and 4), the areas of highest contamination in the pit are observed generally between 0 to 25 ft bgs. As well as to vertically delineate contamination, soil borings RMV 216-21 BH09B and RMV 216-21 BH10 were installed at locations within the known east and west areas of contaminated soils in order to characterize the contaminated source soil at depths below 25 ft bgs for leaching potential to groundwater. SPLP analysis was conducted on samples collected from the depths of 34-36’ bgs and 60-61’ bgs in boring BH09B and from 39-40.5’ bgs and 65-66’ ft bgs in boring BH10. Results from the bottom sample in each boring indicates no leaching potential for COCs above the COGCC groundwater comparison screening levels and that the depth of contamination does not go beyond 60 ft in BH09B and 65 ft bgs in BH10. This data indicates that impacts to groundwater by the contaminated source soil do not occur by vertical downward migration. Only the upper sample collected from each boring indicated a potential for contaminant leaching to groundwater. In addition, benzene was the only contaminant that exceeded its COGCC groundwater standard. Since SPLP analysis was conducted on soil with the highest PID headspace vapor reading encountered, this data is considered the worst case scenario of the highest contaminated localized soils beneath 0 to 25 ft bgs. This information, previously unknown, will be taken into consideration when negotiating clean up goals and determining remedial action through a variance with the COGCC.

4.1.3 Site Specific Geology

As observed during borehole drilling, sub-surface geology beneath the Site consists generally of unconsolidated boulders, cobbles, gravel, sand, silt, and clay. This leads to groundwater flow pathways in the alluvial material beneath the pit to be erratic due to the sediment size range and non-uniform deposition of material.

Based upon sub-surface soil conditions observed during drilling activities, a non-uniform low permeability, predominately clay lens (consisting of silty clays, sandy clays, gravelly clays, and clayey silts) was encountered generally between 40 to 60 ft bgs in the soil characterization and delineation borings installed in and around the pit. The locations of where this lens was encountered in applicable borings are presented in the cross sections in Figures 2, 3, and 4. This clay lens was not observed during the logging of RMV 216-21 MW-7, RMV 216-21 MW-8, and RMV 216-21 MW-9 well boring installations.

Based upon the laboratory results for soil samples collected at the TD of borings installed, contamination in soil is generally absent no deeper than 50 ft bgs. This data indicates that

contaminant migration into groundwater from the contaminated source soil does not occur by direct migration through vertical flow paths straight down from the pit into groundwater.

Based upon the general sub-surface geology of the area, sub-surface soil conditions encountered during borehole drilling, and conditions substantiated by laboratory analysis of soil sample results reported by the laboratory, it is believed that the low permeability clay lens observed between 40 to 60 ft bgs affects groundwater flow. It is believed that water infiltrating through the contaminated source soil (e.g., rain water or perched water from up-gradient groundwater flow pathways that interconnect with the unconsolidated soils of the pit) migrates diagonally down through the unconsolidated soil until it reaches the top of this low permeable clay lens. At this point, the impacted groundwater partially horizontally across the top of the clay lens as perched water until the lens truncates and impacted water is allowed to continue its vertical migration until it reaches the true groundwater aquifer beneath the Site at approximately 80 to 90 ft bgs.

Evidence supporting this model was observed in borings BH16 and BH18 installed on the southern end of the pit boundary. These borings are located down-gradient of the pit in relation to groundwater flow as observed in the potentiometric groundwater gradient map (Figure 5). As observed in cross section A – A' (Figure 2), elevated PID headspace vapor readings were observed and laboratory result exceedances for TPH and elevated benzene results slightly below COGCC standard were reported in RMV 216-21 BH16 35-37'. Elevated PID headspace vapor readings were also observed in RMV BH18 50-51.5' (though TPH and benzene were detected in this sample, neither exceeded COGCC standards). When compared to the lack of impacts observed from soils above and below these intervals (i.e., no soil staining observed, low PID screening results, etc), it is inferred that the anomalous increase in sample results/PID readings is due to residual contamination left from impacted groundwater flowing through the soil at these intervals. For example, in BH16 impacts are only observed from approx. 30 to 40 ft bgs. Portions of the soil between these depths are predominately sandy. Only approx. 2 inches of soil was observed to be stained black in the 35-37' bgs interval. The lack of contamination characteristics in soils above and below these intervals indicates that the impacts observed are due to a residual contact in the preferential down-gradient contaminated groundwater flow pathway that was encountered during drilling.

4.2 GROUNDWATER

The Site is located in the alluvial deposits of the Piceance Basin which is part of the upper Colorado River basin. The sediment types associated with the alluvial deposits in this area generally consist of unconsolidated boulders, cobbles, gravel, sand, silt, and clay. Thickness of the alluvium can be extremely variable depending on location (R. Topper, K.L. Spray, W.H. Bellis, J.L. Hamilton, and P.E. Barkmann, 2003). Groundwater is encountered in the permeable sands and gravels of the alluvial aquifer underlying the Site generally between 80 to 90 ft bgs.

The potentiometric groundwater gradient map (Figure 5) was constructed based upon conditions encountered during the fluid level sweep conducted at the Site on May 24, 2012. This map illustrates groundwater flows in a generally southwest direction across the site; however, some localized groundwater direction variances occur slightly south of the pit. Groundwater samples collected from the May 2012, July 2012, and August 2012 investigations indicate that the previous BTEX groundwater impacts have been delineated.

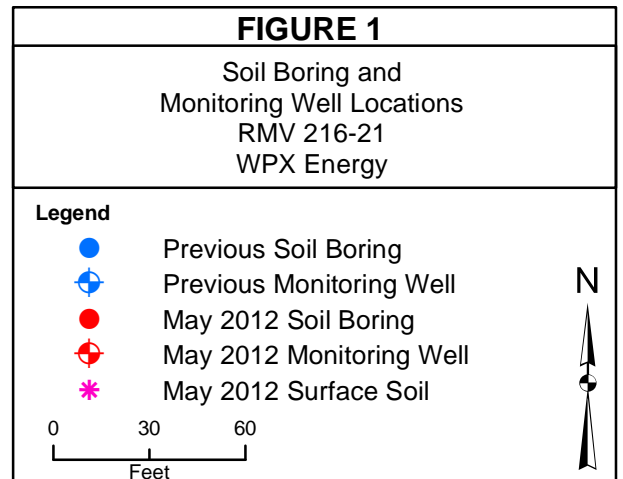
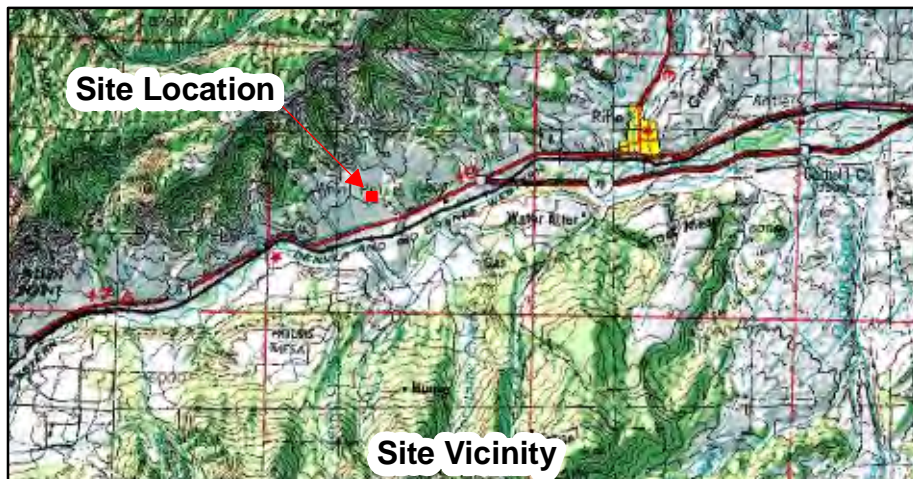
5. CONCLUSIONS

In May 2012, WESTON conducted an environmental site investigation to delineate soil and groundwater impacts associated with the WPX Site. The investigation was designed to fill in data gaps identified in the CSM for the Site subsequent to WESTON's evaluation of previous existing data in order to delineate potential petroleum hydrocarbon impacts to soil and groundwater. Results of this investigation, along with the subsequent groundwater sampling events by Olsson, indicate that both soil and groundwater contamination at the Site has been delineated. This will allow WPX, with the support of WESTON, to work with COGCC to finalize the cleanup goals as well as identify and evaluate remedial options in order to quickly and economically remediate the site. Once the final remediation plan is finalized, it will be submitted to the COGCC with a subsequent Form 4.

6. REFERENCES

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- Williams Production RMT Company, 2010. *Form 19 – Spill/Release Report, Clough RMV 216-21*, February 2010.
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FIGURES



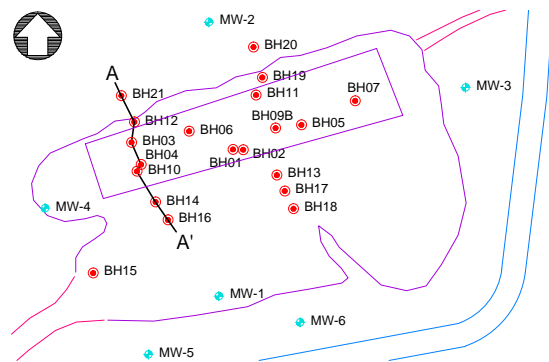
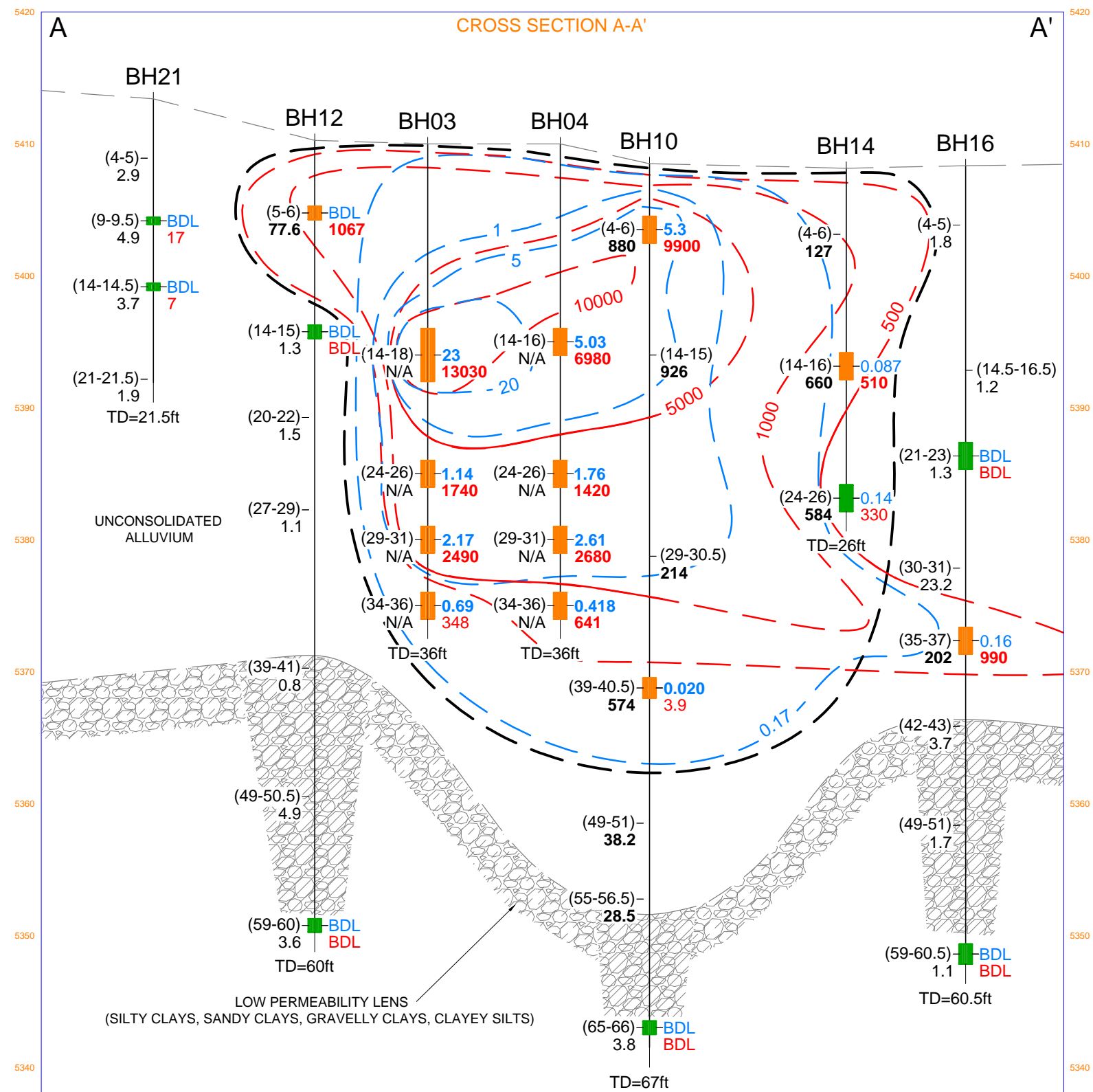
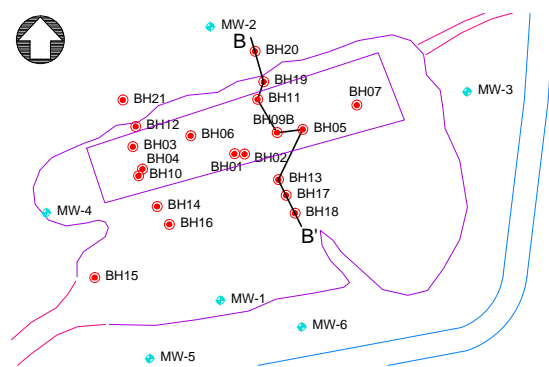
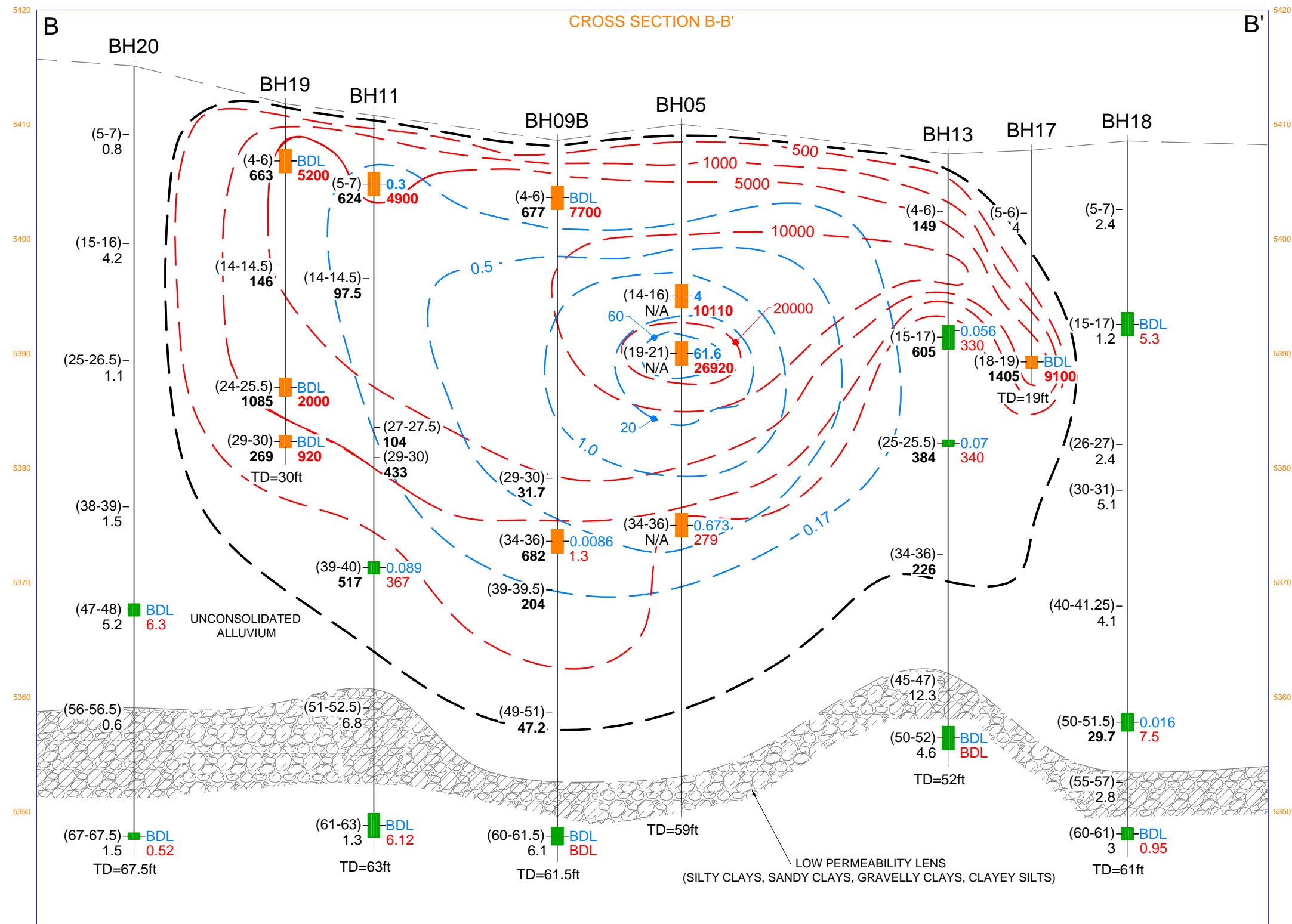
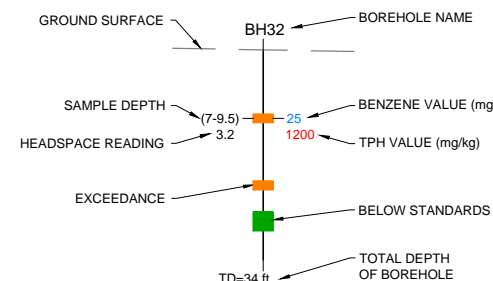


FIGURE 2
CROSS SECTION A-A'
RMV 216-21
WPX ENERGY

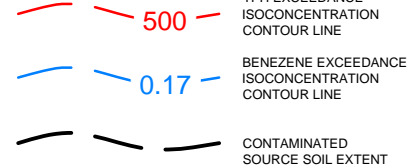
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LEGEND



COGCC Table 910-1 Standard
Benzene = 0.17 mg/kg
TPH = 500 mg/kg



mg/L = milligrams per liter
SPLP = Synthetic Precipitation Leaching Procedure
mg/kg = milligrams per kilogram
BDL = Below Detection Limit
N/A = Not Available
rru = Relative Response Unit
Bold = Value exceeds Standard

BH09B (34-36) and (60-61.5) are
SPLP results.
COGCC Table 910-1 Groundwater
Standard for Benzene = 0.005 mg/L.
No standard established for TPH.

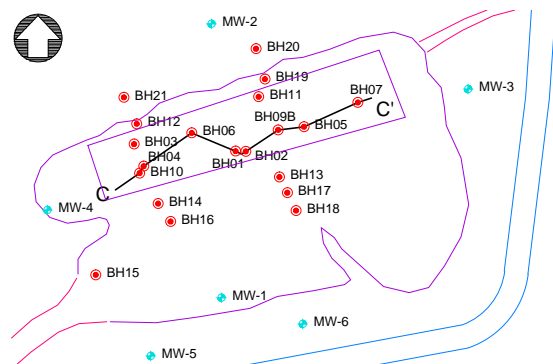
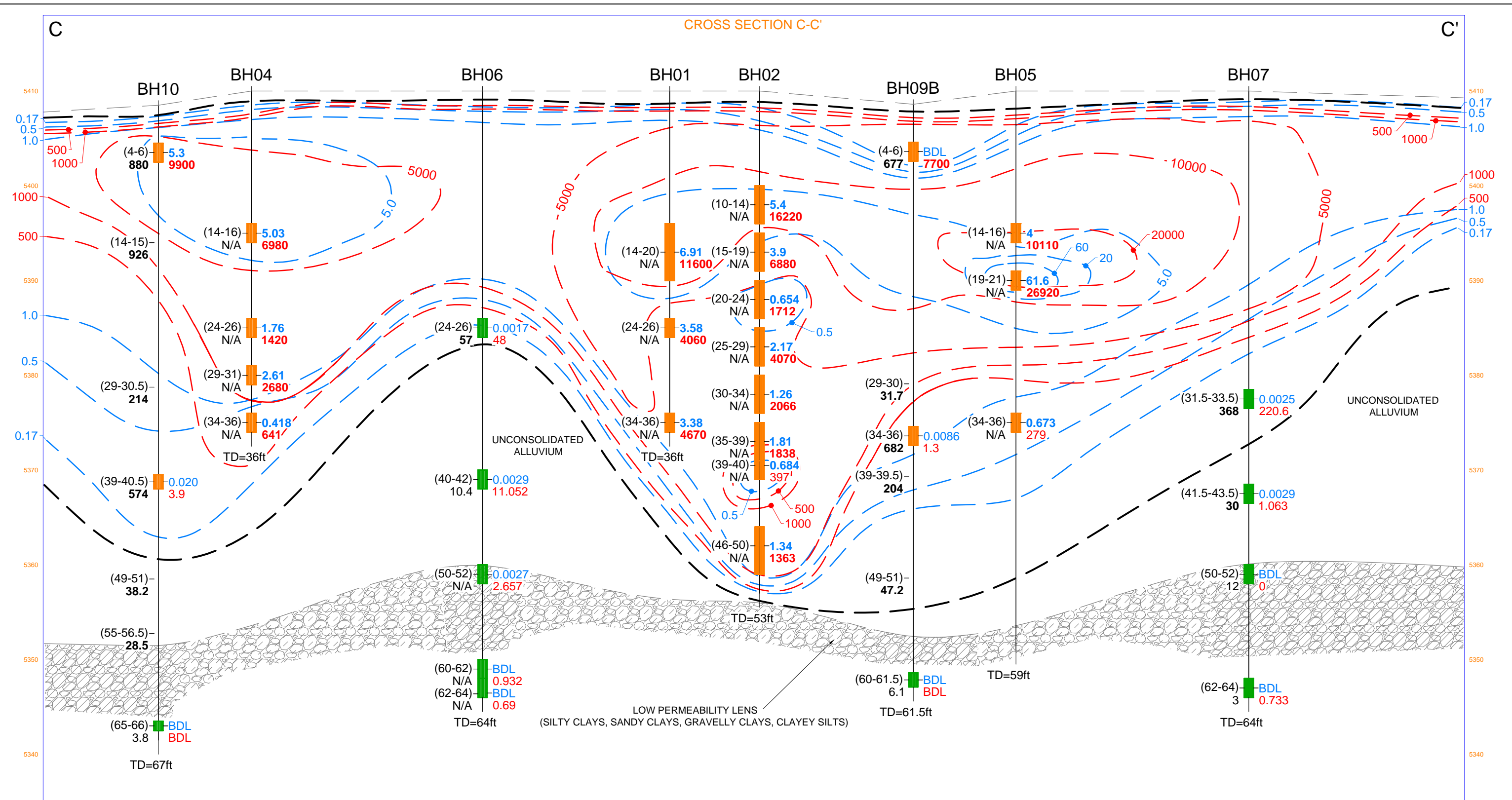
Headspace Comparison
Threshold = 25 rru's



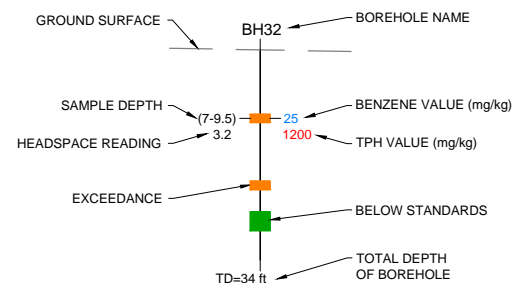
FIGURE 3
CROSS SECTION B-B'
RMV 216-21
WPX ENERGY

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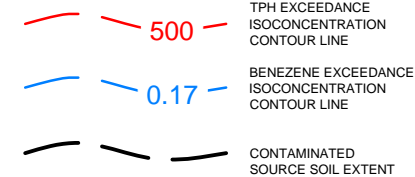
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LEGEND



COGCC Table 910-1 Standard
Benzene = 0.17 mg/kg
TPH = 500 mg/kg



mg/L = milligrams per liter
SPLP = Synthetic Precipitation Leaching Procedure
mg/kg = milligrams per kilogram
BDL = Below Detection Limit
N/A = Not Available
rru = Relative Response Unit
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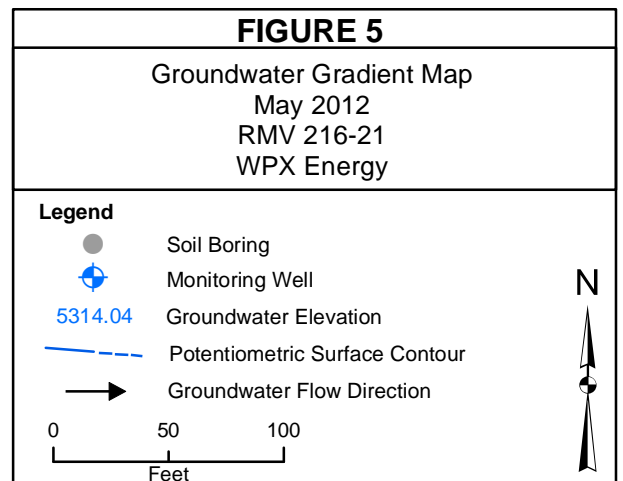
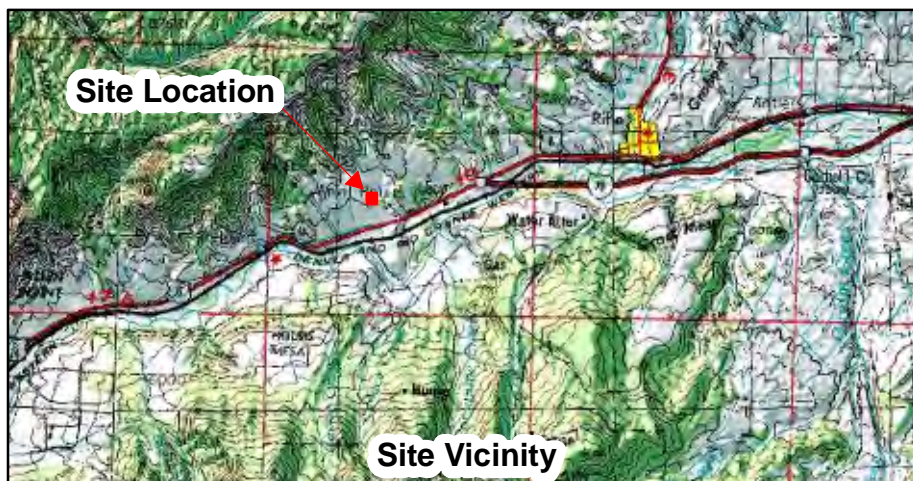
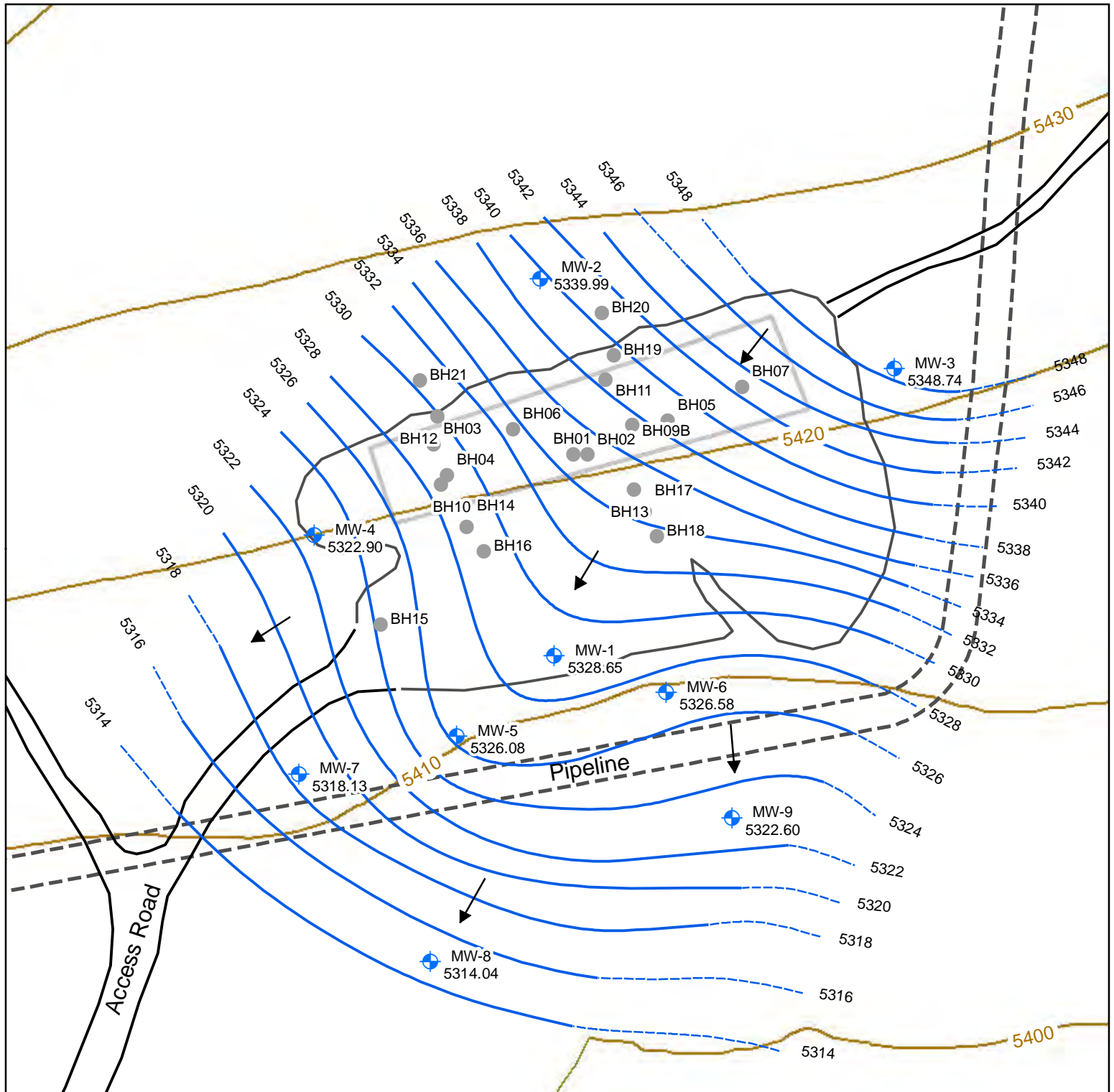
BH09B (34-36) and (60-61.5) are SPLP results.
BH10 (39-40.5) and (65-66) are SPLP results.
COGCC Table 910-1 Groundwater Standard for Benzene = 0.005 mg/L.
No standard established for TPH.

Headspace Comparison
Threshold = 25 rru's



FIGURE 4
CROSS SECTION C-C'
RMV 216-21
WPX ENERGY

DATE: JUN12
W.O. # 15023.002.001



TABLES

**Headspace Vapor Sample Results
Sub-surface Soil Samples
RMV 216-21**

Table 1

Soil Boring ID	Date	Sample Depth (ft bgs)	Concentration (rrus)
BH09B	5/10/2012	4 - 6	677.0
	5/10/2012	29 - 30	31.7
	5/10/2012	34 - 36	682.0
	5/10/2012	39 - 39.5	204.0
	5/10/2012	49 - 51	47.2
	5/10/2012	60 - 61.5	6.1
BH10	5/11/2012	4 - 6	880.0
	5/11/2012	14 - 15	926.0
	5/11/2012	29 - 30.5	214.0
	5/11/2012	39 - 40.5	574.0
	5/11/2012	49 - 51	38.2
	5/11/2012	55 - 56.5	28.5
BH11	5/11/2012	65 - 66	3.8
	5/16/2012	5 - 7	624.0
	5/16/2012	14 - 14.5	97.5
	5/16/2012	27 - 27.5	104.0
	5/16/2012	29 - 30	433.0
	5/16/2012	39 - 40	517.0
BH12	5/16/2012	51 - 52.5	6.8
	5/16/2012	61 - 63	1.3
	5/17/2012	5 - 6	77.6
	5/17/2012	14 - 15	1.3
	5/17/2012	20 - 22	1.5
	5/17/2012	27 - 29	1.1
BH13	5/17/2012	39 - 41	0.8
	5/18/2012	49 - 50.5	4.9
	5/18/2012	59 - 60	3.6
	5/15/2012	4 - 6	149.0
	5/15/2012	15 - 17	605.0
	5/15/2012	25 - 25.5	384.0
BH14	5/15/2012	34 - 36	226.0
	5/15/2012	45 - 47	12.3
	5/15/2012	50 - 52	4.6
	5/14/2012	4 - 6	127.0
	5/14/2012	14 - 16	660.0
	5/14/2012	24 - 26	584.0
BH15	5/18/2012	4 - 4.5	1.3
	5/18/2012	10 - 10.5	2.7
	5/18/2012	22 - 22.5	2.9
	5/18/2012	40 - 40.5	3.7
	5/18/2012	49 - 49.5	1.8
	5/18/2012	61 - 61.5	2.3
BH16	5/18/2012	69 - 71	4.7
	5/18/2012	79 - 79.5	3.7
	5/18/2012	84 - 85	2.9
	5/14/2012	4 - 5	1.8
	5/14/2012	14.5 - 16.5	1.2
	5/14/2012	21 - 23	1.3
BH17	5/14/2012	30 - 31	23.2
	5/14/2012	35 - 37	202.0
	5/14/2012	42 - 43	3.7
	5/14/2012	49 - 51	1.7
	5/14/2012	59 - 60.5	1.1
	5/15/2012	5 - 6	4.0
BH18	5/15/2012	18 - 19	1405.0
	5/15/2012	5 - 7	2.4
	5/15/2012	15 - 17	1.2
	5/15/2012	26 - 27	2.4
	5/15/2012	30 - 31	5.1
	5/15/2012	40 - 41.25	4.1
BH19	5/15/2012	50 - 51.5	29.7
	5/15/2012	55 - 57	2.8
	5/15/2012	60 - 61	3.0
	5/17/2012	4 - 6	663.0
	5/17/2012	14 - 14.5	146.0
	5/17/2012	24 - 25.5	1085.0
BH20	5/17/2012	29 - 30	269.0
	5/17/2012	5 - 7	0.8
	5/17/2012	15 - 16	4.2
	5/17/2012	25 - 26.5	1.1
	5/17/2012	38 - 39	1.5
	5/17/2012	47 - 48	5.2
BH21	5/17/2012	56 - 56.5	0.6
	5/17/2012	67 - 67.5	1.5
	5/21/2012	4 - 5	2.9
	5/21/2012	9 - 9.5	4.9
	5/21/2012	14 - 14.5	3.7
	5/21/2012	21 - 21.5	1.9

Notes:

Bold - Results greater than 25 rrus

Soil interval sent for laboratory analysis

bgs - below ground surface

ft - feet

rru - relative response unit

**Laboratory Analytical Results
Surface Soil Samples
RMV 216-21**

Table 2

Sample Identification: Sample Depth (feet): Sample Date:	Reporting Units	COGCC Table 910-1 Standards	RMV 216-21 Surface Soil #1	RMV 216-21 Surface Soil #2	RMV 216-21 Surface Soil #3
			0-0.5	0-0.5	0-0.5
			5/11/2012	5/11/2012	5/11/2012
			Result	Result	Result
General Chemistry					
pH	su	6-9	7.9 T8	8.2 T8	8.2 T8
Sodium Absorption Ratio	--	<125	12	9.5	12
Specific Conductance	mmhos/cm	<4 or 2x background	3.5	1.6	2.4

Notes:

-- Not established

cm - centimeter

mmhos - millimhos

su - standard units

T8 - Sample received past/too close to holding time expiration

Laboratory Analytical Results
Sub-surface Soil Samples
RMV 216-21

Table 3-1

Sample Identification: Sample Depth (feet): Sample Date:	Reporting Units	COGCC Table 910-1 Standards	RMV 216-21 BH09B	RMV 216-21 BH10	RMV 216-21 BH11	RMV 216-21 BH11	RMV 216-21 BH11	RMV 216-21 BH12	RMV 216-21 BH12	RMV 216-21 BH12	RMV 216-21 BH12 FD	RMV 216-21 BH13	RMV 216-21 BH13
			4-6	4-6	5-7	39-40	61-63	5-6	14-15	59-60	59-60	15-17	25-25.5
			5/10/2012	5/11/2012	5/16/2012	5/16/2012	5/16/2012	5/17/2012	5/17/2012	5/17/2012	5/18/2012	5/15/2012	5/15/2012
			Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
TPH													
TPH (DRO+GRO)	mg/kg	500	7700	9900	4900	367	6.12	1067	4.9	BDL	BDL	330	340
VOCs													
Benzene	mg/kg	0.17	BDL	5.3	0.30	0.089	BDL	BDL	BDL	BDL	BDL	0.056	0.070
Toluene	mg/kg	85	BDL	40	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	mg/kg	100	2.5	18	1.3	0.84	BDL	0.055	BDL	BDL	BDL	1.1	0.70
Xylenes (Total)	mg/kg	175	37	320	32	3.9	BDL	1.4	BDL	0.10	BDL	12	2.8
PAH													
Acenaphthene	mg/kg	1000	0.30	0.45	0.15	0.022	BDL	0.046	BDL	BDL	BDL	0.015	0.028
Acenaphthylene	mg/kg	1000	0.12	0.18	BDL	BDL	BDL	0.013	BDL	BDL	BDL	BDL	BDL
Anthracene	mg/kg	--	0.28	0.23	0.16	0.022	BDL	0.042	BDL	BDL	BDL	0.0069	0.014
Benzo (A) anthracene	mg/kg	0.22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo (A) pyrene	mg/kg	0.022	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo (B) fluoranthene	mg/kg	0.22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo (g,h,i) perylene	mg/kg	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo (K) fluoranthene	mg/kg	2.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chrysene	mg/kg	22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dibenz (A,H) anthracene	mg/kg	0.022	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluoranthene	mg/kg	1000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluorene	mg/kg	1000	1.1	1.4	0.90	0.062	BDL	0.16	BDL	BDL	BDL	0.028	0.060
Indeno(1,2,3-cd)pyrene	mg/kg	0.22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	mg/kg	23	6.1	14	3.2	0.018	0.018	0.44	0.013	BDL	BDL	0.41	0.6
Phenanthrene	mg/kg	--	0.86	1.0	0.67	0.045	BDL	0.099	BDL	BDL	BDL	0.017	0.036
Pyrene	mg/kg	1000	0.19	0.16	0.12	BDL	BDL	0.022	BDL	BDL	BDL	BDL	BDL
1-Methylnaphthalene	mg/kg	--	4.2	6.0	3.1	0.17	BDL	0.48	BDL	BDL	BDL	0.24	0.45
2-Methylnaphthalene	mg/kg	--	15	22	12	0.76	0.015	1.5	0.013	BDL	BDL	0.81	1.4
2-Chloronaphthalene	mg/kg	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Notes:
-- No standard established
Value exceeds the COGCC Standard
BDL - Below Detection Limit (Practical Quantitation Limit [PQL])
DRO - Diesel Range Organics
GRO - Gasoline Range Organics
J3 - The associated quality control (QC) sample was outside of the laboratory QC limits
J5 - Matrix interference; one or more of the spiked results is high
mg/kg - milligrams per kilogram
PAH - Polynuclear Aromatic Hydrocarbons
TPH Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds

Laboratory Analytical Results
Sub-surface Soil Samples
RMV 216-21

Table 3-1

Sample Identification: Sample Depth (feet): Sample Date:	Reporting Units	COGCC Table 910-1 Standards	RMV 216-21 BH13	RMV 216-21 BH14	RMV 216-21 BH14	RMV 216-21 BH15	RMV 216-21 BH15	RMV 216-21 BH16	RMV 216-21 BH16	RMV 216-21 BH16	RMV 216-21 BH16 FD	RMV 216-21 BH17	RMV 216-21 BH18
50-52			14-16	24-26	69-71	79-79.5	21-23	35-37	59-60.5	59-60.5	18-19	15-17	
5/15/2012			5/14/2012	5/14/2012	5/18/2012	5/18/2012	5/14/2012	5/14/2012	5/14/2012	5/14/2012	5/15/2012	5/15/2012	
Result			Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
TPH													
TPH (DRO+GRO)	mg/kg	500	BDL	510	330 J5J3	5.0	16.70	BDL J5	990	0.58	BDL	9100	5.3
VOCs													
Benzene	mg/kg	0.17	BDL	0.087	0.14	BDL	BDL	BDL	0.16	BDL	BDL	BDL	BDL
Toluene	mg/kg	85	BDL	0.61	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	mg/kg	100	0.0077	1.6	0.62	BDL	0.021	0.0050	1.3	0.0070	0.0085	17	0.025
Xylenes (Total)	mg/kg	175	0.073	24	5.6	0.015	0.19	0.044	16	0.76	0.088	170	0.25
PAH													
Acenaphthene	mg/kg	1000	BDL	0.042	0.024 J5	BDL	BDL	BDL	0.067	BDL	BDL	BDL	BDL
Acenaphthylene	mg/kg	1000	BDL	0.0096	BDL	BDL	BDL	BDL	0.059	BDL	BDL	BDL	BDL
Anthracene	mg/kg	--	BDL	0.038	0.015	BDL	BDL	BDL	0.042	BDL	BDL	0.36	BDL
Benzo (A) anthracene	mg/kg	0.22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo (A) pyrene	mg/kg	0.022	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo (B) fluoranthene	mg/kg	0.22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo (g,h,i) perylene	mg/kg	--	BDL	BDL	BDL J3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo (K) fluoranthene	mg/kg	2.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chrysene	mg/kg	22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dibenz (A,H) anthracene	mg/kg	0.022	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluoranthene	mg/kg	1000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluorene	mg/kg	1000	BDL	0.15	0.053 J5	BDL	BDL	BDL	0.20	BDL	BDL	1.6	BDL
Indeno(1,2,3-cd)pyrene	mg/kg	0.22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	mg/kg	23	BDL	0.87	0.44	BDL	0.036	BDL	0.72	0.0061	BDL	9.8	BDL
Phenanthrene	mg/kg	--	BDL	0.041	0.033 J5J3	BDL	BDL	BDL	0.084	BDL	BDL	0.89	BDL
Pyrene	mg/kg	1000	BDL	BDL	BDL	BDL	BDL	BDL	0.010	BDL	BDL	BDL	BDL
1-Methylnaphthalene	mg/kg	--	BDL	0.60	0.28	BDL	BDL	BDL	0.67	BDL	BDL	5.4	BDL
2-Methylnaphthalene	mg/kg	--	BDL	1.8	0.90	BDL	0.0085	BDL	2.1	0.0077	BDL	27	BDL
2-Chloronaphthalene	mg/kg	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Notes:
-- No standard established
Value exceeds the COGCC Standard
BDL - Below Detection Limit (Practical Quantitation Limit [PQL])
DRO - Diesel Range Organics
GRO - Gasoline Range Organics
J3 - The associated quality control (QC) sample was outside of the laboratory QC limits
J5 - Matrix interference; one or more of the spiked results is high
mg/kg - milligrams per kilogram
PAH - Polynuclear Aromatic Hydrocarbons
TPH Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds

Laboratory Analytical Results
Sub-surface Soil Samples
RMV 216-21

Table 3-1

Sample Identification: Sample Depth (feet): Sample Date:	Reporting Units	COGCC Table 910- 1 Standards	RMV 216-21 BH18	RMV 216-21 BH18 FD	RMV 216-21 BH18	RMV 216-21 BH19	RMV 216-21 BH19	RMV 216-21 BH19	RMV 216-21 BH20	RMV 216-21 BH20	RMV 216-21 BH21	RMV 216-21 BH21
			50-51.5	50-51.5	60-61	4-6	24-25.5	29-30	47-48	67-67.5	9-9.5	14-14.5
			5/15/2012	5/15/2012	5/15/2012	5/17/2012	5/17/2012	5/17/2012	5/17/2012	5/17/2012	5/21/2012	5/21/2012
			Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
TPH												
TPH (DRO+GRO)	mg/kg	500	2.4	7.5	0.95	5200	2000	920	6.3	0.52	17	7
VOCs												
Benzene	mg/kg	0.17	0.016	0.017	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	mg/kg	85	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	mg/kg	100	0.016	0.020	0.013	3.9	2.2	0.99	0.0073	0.016	BDL	BDL
Xylenes (Total)	mg/kg	175	0.19	0.23	0.13	73	44	18	0.43 J5J3	0.092	BDL	BDL
PAH												
Acenaphthene	mg/kg	1000	BDL	BDL	BDL	0.17	BDL	BDL	BDL	BDL	BDL	BDL
Acenaphthylene	mg/kg	1000	BDL	BDL	BDL	0.10	BDL	BDL	BDL	BDL	BDL	BDL
Anthracene	mg/kg	--	BDL	BDL	BDL	0.22	0.048	BDL	BDL	BDL	BDL	BDL
Benzo (A) anthracene	mg/kg	0.22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo (A) pyrene	mg/kg	0.022	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo (B) fluoranthene	mg/kg	0.22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo (g,h,i) perylene	mg/kg	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo (K) fluoranthene	mg/kg	2.2	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chrysene	mg/kg	22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dibenz (A,H) anthracene	mg/kg	0.022	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluoranthene	mg/kg	1000	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluorene	mg/kg	1000	BDL	BDL	BDL	0.89	0.28	0.12	BDL	BDL	BDL	BDL
Indeno(1,2,3-cd)pyrene	mg/kg	0.22	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	mg/kg	23	BDL	BDL	BDL	5.3	1.7	1.0	0.025	0.0091	BDL	BDL
Phenanthrene	mg/kg	--	BDL	BDL	BDL	0.62	0.13	0.074	BDL	BDL	BDL	BDL
Pyrene	mg/kg	1000	BDL	BDL	BDL	0.11	BDL	BDL	BDL	BDL	BDL	BDL
1-Methylnaphthalene	mg/kg	--	BDL	BDL	BDL	3.9	1.4	0.84	0.0084	0.0072	BDL	BDL
2-Methylnaphthalene	mg/kg	--	BDL	0.0064	BDL	12	4.2	2.8	0.026	0.0094	BDL	BDL
2-Chloronaphthalene	mg/kg	--	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Notes:
-- No standard established
Value exceeds the COGCC Standard
BDL - Below Detection Limit (Practical Quantitation Limit [PQL])
DRO - Diesel Range Organics
GRO - Gasoline Range Organics
J3 - The associated quality control (QC) sample was outside of the laboratory QC limits
J5 - Matrix interference; one or more of the spiked results is high
mg/kg - milligrams per kilogram
PAH - Polynuclear Aromatic Hydrocarbons
TPH Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds

**Laboratory Analytical Results
SPLP Sub-surface Soil Samples
RMV 216-21**

Table 3-2

Sample Identification: Sample Depth (feet): Sample Date:	Reporting Units	COGCC Table 910-1 Standards	RMV 216-21 BH10	RMV 216-21 BH10	RMV 216-21 BH09B	RMV 216-21 BH09B
			39-40.5	65-66	34-36	60-61.5
			5/11/2012	5/11/2012	5/10/2012	5/10/2012
			Result	Result	Result	Result
TPH						
TPH (DRO+GRO)	mg/l	--	3.9	BDL	1.3	BDL J5
VOCs						
Benzene	mg/l	0.005	0.020	BDL	0.0086	BDL
Toluene	mg/l	0.7	0.12	BDL	BDL	BDL
Ethylbenzene	mg/l	1	0.053	BDL	0.032	BDL
Xylenes (Total)	mg/l	10	0.82	0.0031	0.12	BDL
PAH						
Anthracene	mg/l	2.1 ¹	BDL	BDL	BDL	BDL
Acenaphthene	mg/l	0.42 ¹	BDL	BDL	BDL	BDL
Acenaphthylene	mg/l	--	0.00010	0.000054	BDL	BDL
Benzo (A) anthracene	mg/l	0.0000048 ¹	BDL	BDL	BDL	BDL
Benzo (A) pyrene	mg/l	0.0000048 ¹	BDL	BDL	BDL	BDL
Benzo (B) fluoranthene	mg/l	0.0000048 ¹	BDL	BDL	BDL	BDL
Benzo (g,h,i) perylene	mg/l	--	BDL	BDL	BDL	BDL
Benzo (K) fluoranthene	mg/l	0.0000048 ¹	BDL	BDL	BDL	BDL
Chrysene	mg/l	0.0000048 ¹	BDL	BDL	BDL	BDL
Dibenz (A,H) anthracene	mg/l	0.0000048 ¹	BDL	BDL	BDL	BDL
Fluoranthene	mg/l	0.28 ¹	BDL	BDL	BDL	BDL
Fluorene	mg/l	0.28 ¹	0.00010	BDL	BDL	BDL
Indeno(1,2,3-cd)pyrene	mg/l	0.0000048 ¹	BDL	BDL	BDL	BDL
Naphthalene	mg/l	0.14 ¹	0.0023	BDL	BDL	BDL
Phenanthrene	mg/l	--	0.00012	BDL	BDL	BDL
Pyrene	mg/l	0.21 ¹	BDL	0.000073	BDL	BDL
1-Methylnaphthalene	mg/l	0.012 ¹	0.00084	BDL	BDL	BDL
2-Methylnaphthalene	mg/l	0.028 ¹	0.0018	BDL	BDL	BDL
2-Chloronaphthalene	mg/l	--	BDL	BDL	BDL	BDL

Notes:

¹ Standard is from Colorado Department of Public Health and the Environment (CDPHE) Hazardous Materials and Waste Management Division (HMWMD) Table 1 Colorado Soil Evaluation Values (CSEV), July 2011 (available at <http://www.cdphe.state.co.us/hm/csev.pdf>)

-- No standard established

Value exceeds the COGCC Standard

BDL - Below Detection Limit (Practical Quantitation Limit [PQL])

DRO - Diesel Range Organics

GRO - Gasoline Range Organics

J5 - Matrix interference; spiked DRO result is high

mg/l - milligrams per liter

PAH - Polynuclear Aromatic Hydrocarbons

SPLP - Synthetic Precipitation Leaching Procedure

TPH - Total Petroleum Hydrocarbons

VOCs - Volatile Organic Compounds

Laboratory Analytical Results
Groundwater Samples
RMV 216-21

Table 4

Sample Identification:	Reporting Units	COGCC Table 910-1 Standards	RMV 216-21 MW1	RMV 216-21 MW1X	RMV 216-21 MW2	RMV 216-21 MW3	RMV 216-21 MW4	RMV 216-21 MW5	RMV 216-21 MW5	RMV 216-21 MW6	RMV 216-21 MW6	RMV 216-21 MW7	RMV 216-21 MW7	RMV 216-21 MW8	RMV 216-21 MW8 DUP	RMV 216-21 MW8	RMV 216-21 MW9	RMV 216-21 MW9	RMV 216-21 BH15
Sample Date:			7/18/2012 Result	7/18/2012 Result	7/18/2012 Result	7/18/2012 Result	7/18/2012 Result	7/18/2012 Result	8/16/2012 Result	7/19/2012 Result	8/16/2012 Result	5/24/2012 Result	7/19/2012 Result	5/24/2012 Result	5/24/2012 Result	7/20/2012 Result	5/24/2012 Result	7/19/2012 Result	5/21/2012 Result
TPH																			
GRO (C6-C10)	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
DRO (C10-C-28)	mg/l	--	0.263 J	0.269 J	ND	ND	ND	ND	-	0.295 J	-	-	ND	-	-	ND	-	ND	-
VOCs																			
Benzene	mg/l	0.005	0.001	0.00077 J	ND	ND	ND	0.00055 J	0.00044 J	0.0243	ND	BDL	ND	BDL	BDL	ND	0.0046	ND	BDL
Ethylbenzene	mg/l	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	BDL	ND	BDL	BDL	ND	BDL	ND	BDL
Toluene	mg/l	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	BDL	ND	BDL	BDL	ND	BDL	ND	BDL
Xylene (total)	mg/l	10	ND	ND	ND	ND	ND	ND	ND	ND	ND	BDL	ND	BDL	BDL	ND	BDL	ND	BDL
PAHs																			
Acenaphthene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Acenaphthylene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Anthracene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Benzo (A) anthracene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Benzo (A) pyrene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Benzo (B) fluoranthene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Benzo (g,h,i) perylene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Benzo (K) fluoranthene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Chrysene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Dibenz (A,H) anthracene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Fluoranthene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Fluorene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Indeno(1,2,3-cd)pyrene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
1-Methylnaphthalene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
2-Methylnaphthalene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Naphthalene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Phenanthrene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Pyrene	mg/l	--	ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Metals																			
Calcium	mg/l	--	643	445	572	316	347	277	-	440	-	820	842	240	380	256	740	746	280
Iron	mg/l	--	168	389	82.4	34.2	37.1	11.2	-	70.9	-	200	257	27	90	20.4	120	128	63
Magnesium	mg/l	--	313	260	236	209	218	259	-	339	-	340	340	260	280	283	330	351	210
Manganese	mg/l	--	3.29	1.62	2.49	1.03	0.767	0.385	-	1.36	-	5.6	6.36	0.60	2.0	0.393	3.5	3.47	1.1
Potassium	mg/l	--	25.3	11.2	16.8	11.7	12.4	8.09	-	17.4	-	29	36	9.2	17	9.55	19	21.4	15
Selenium	mg/l	--	0.051	ND	ND	ND	ND	ND	-	-	-	-	-	-	-	-	-	-	-
Sodium	mg/l	--	378	400	301	326	323	465	-	633	-	460	342	490	480	466	460	384	380 B
General Chemistry																			
Alkalinity, Bicarbonate as CaCO3	mg/l	--	1050	1080	1320	611	713	579	-	1050	-	-	2130	-	-	568	-	2600	-
Alkalinity, Carbonate	mg/l		ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Alkalinity, Total as CaCO3	mg/l		1050	1080	1320	611	713	579	-	1050	-	-	2130	-	-	568	-	2600	-
BOD, 5 Day	mg/l		ND	ND	ND	ND	ND	ND	-	ND	-	-	ND	-	-	ND	-	ND	-
Bromide	mg/l	--	1.1	1.2	ND	ND	ND	1.6	-	3.2	-	BDL	1.2	BDL	BDL	1.6	BDL	1.5	BDL
Chemical Oxygen Demand	mg/l		16.2	19.9	17.9	13.2	14.8	15.2	-	18.9	-	-	28.3	-	-	14.5	-	18.2	-
Chloride	mg/l	21.38 *	250	262	17.1	30.2	15.6	364	-	758	-	260	281	340	350	367	270	338	150
Fluoride	mg/l	--	1.2	1.2	1.1	1.2	1.1	1.2	-	0.78	-	0.56	0.82	0.59	0.58	0.82	0.51	0.75	0.44
Nitrate	mg/l	--	29.2	30.2	26	44.9	19	31.7	-	36.7	-	25	26.6	31	31	36	45	52.5	22
Nitrite	mg/l	--	0.2	0.22	ND	0.053	ND	ND	-	6.6	-	0.10	ND	BDL	BDL	ND	1.8	1.6	0.16
Nitrate-Nitrite	mg/l	--							-		-	26		34	33		48		26
Phosphorus, Total	mg/l		4.6	4.0	6.9	1.8	2.2	0.74	-	2.6	-	-	11.9	-	-	0.6	-	5.6	-
Sulfate	mg/l	1612.5 *	1340	1360	1290	1360	1390	1390	-	1600	-	1400	1550	1400	1400	1540	1500	1580	1200
Total Dissolved Solids	mg/l	3,525 *	3310	3350	2820	2980	3000	3660	-	4460	-	3300	3510	3400	3400	3600	3400	3890	2700
Total Organic Carbon	mg/l		6.4	6.4	7.3	5.5	5.2	6.2	-	8.4	-	-	9.1	-	-	6.3	-	8.8	-
pH	su		7.29	7.29	7.24	7.29	7.25	7.18	-	7	-	-	7.18	-	-	7.05	-	7.05	-

Notes:
Value exceeds the COGCC Standard
* = COGCC Table 910-1 Standaard is 1.25 x background. Listed value is based upon 7/18/2012 sampling results of background well MW-2
-- Not Established
- not analyzed for
B - Analyte was identified in the associated method blank
BDL - Below Detection Limit
BOD - Biochemical Oxygen Demand
J - Estimated value
mg/l - milligramas per liter
ND - Not detected
PAH - Polynuclear Aromatic Hydrocarbons
TPH - Total Petroleum Hydrocarbons
VOCs - Volatile Organic Compounds

**Laboratory Analytical Results
Equipment Blank Sample
RMV 216-21**

Table 5

Sample Identification: Sample Date:	Reporting Units	COGCC Table 910-1 Standards	RMV 216-21 EB Casing
			5/22/2012
			Result
VOCs			
Benzene	mg/l	0.005	BDL
Toluene	mg/l	0.7	BDL
Ethylbenzene	mg/l	1	BDL
Xylenes (Total)	mg/l	10	BDL
Inorganics			
Bromide	mg/l	--	BDL
Chloride	mg/l	21.25 *	BDL
Fluoride	mg/l	--	BDL
Nitrate	mg/l	--	BDL
Nitrite	mg/l	--	BDL
Sulfate	mg/l	1750 *	BDL
Nitrate-Nitrite	mg/l	--	BDL
Dissolved Solids	mg/l	3,375 *	BDL
Metals			
Calcium	mg/l	--	1.0
Iron	mg/l	--	0.20
Magnesium	mg/l	--	0.16
Manganese	mg/l	--	BDL
Potassium	mg/l	--	BDL
Sodium	mg/l	--	0.66

Notes:

* = COGCC Table 910-1 Standard is 1.25 x background. Listed value is based upon 11/8/201

¹ Standard is from Colorado Department of Public Health and the Environment (CDPHE)

Hazardous Materials and Waste Management Division (HMWMD) Table 1

Colorado Soil Evaluation Values (CSEV), July 2011

(available at <http://www.cdphe.state.co.us/hm/csev.pdf>)

-- No standard established

BDL - Below Detection Limit (Practical Quantitation Limit [PQL])

mg/l - milligrams per liter

APPENDIX A
BOREHOLE AND MONITORING WELL LOGS

Boring Name: BH09B

Project Name: WPX RMV 216-21 Pit Site Investigation
 Client: WPX Energy
 Site Location: Garfield County, CO
 Weston WO#: 15023.002.001.0002
 Geologist: G. Geras, P.G.

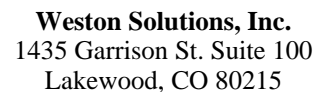
Well Name: N/A
 Start Date: 5/10/2012
 Completion Date: 5/10/2012
 Driller: Himes Drilling
 Drilling Method: Casing Advance Air Rotary



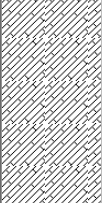

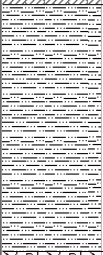



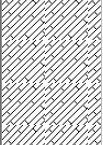

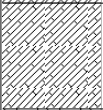





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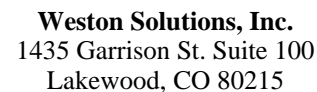
SAMPLE		SUBSURFACE PROFILE					Comment
Sample	Organic Vapors (rru)	Elevation	Depth	USCS	Lithology	Lithologic Description	
		0	-5			Ground Surface	
		-4	0	ML		Sandy Silt, light yellowish brown, fine grained, some rocks and gravel, dry, no odor	
677			5			Silty Clay with gravel and cobbles, stained black, med. plasticity, dry, very soft, strong hydrocarbon odor	
			10				
			15				
			20				Increase in percent gravel
			25				
31.7		-30	30			Hard rock and gravel, with cobbles	Rock and cobbles encountered from 23 to 27.4 ft bgs
		-32					
682			35			Silty clay with sand, gravel and few cobbles, Yellowish brown mottled with black staining (50%), soft, low plas., slightly moist, strong hydrocarbon odor	Alternating layers of gravel and soft materials from 36 to 39 ft bgs
		-39					
204			40			Sandy clay with gravel, few cobbles, (90%) stained black, low plas., high percent sands, slightly moist, strong hydrocarbon odor	Gravel with cobbles, primarily sandstone, size range between 0.25 and 2 inches, angular, slightly moist, faint hydrocarbon odor from 39 to 39.5 ft bgs
			45				
		-49					
47.2			50			Sandy clay with silt, yellowish brown with very slight rust, orange mottling (>1%), some (15-25%) black staining, low plas., soft, dry, hydrocarbon odor	
		-56					
			55				
		-60				Hard rock and cobbles, few alternating clays, thickest rocks are ~8 inches	
			60				
6.1						Sandy clay, little gravel, yellowish brown, nod. stiff to soft, high percent sand, slight rust colored mottling, fine grained, low plas., no odor	Maroon in color from 60.75 to bottom of split spoon at 61.5 ft bgs
		-65					
			65				
Northing: 1621029.1		Borehole Diameter: 4"		Water Bearing Zone: N/A		Sand: N/A	
Easting: 2324619.7		Borehole Total Depth: 61.5 ft		Static Water Level: N/A		Bentonite: N/A	
Ground Elevation: 5408.6		Well Diameter: N/A		Screen Interval: N/A		Screen Slot: N/A	
TOC Elevation: N/A		Well Total Depth: N/A		PVC: N/A		Sheet: 1 of 1	

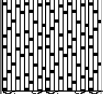


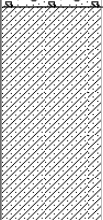
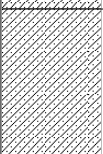
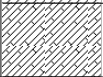
Project Name: WPX RMV 216-21 Pit Site Investigation	Well Name: N/A
Client: WPX Energy	Start Date: 5/11/2012
Site Location: Garfield County, CO	Completion Date: 5/11/2012
Weston WO#: 15023.002.001.0002	Driller: Himes Drilling
Geologist: G. Geras, P.G.	Drilling Method: Casing Advance Air Rotary



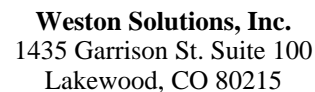
SAMPLE		SUBSURFACE PROFILE					
Sample	Organic Vapors (ru)	Elevation	Depth	USCS	Lithology	Lithologic Description	Comment
			-5				
		0	0			Ground Surface	
		-3		ML		Gravel and Rocks	
	880		5			Sandy clay, some gravel, light yellowish brown, heavily stained black (85%), fine grained, very soft, dry strong hydrocarbon odor, sheen on sample	
			10				
	926	-15	15			Hard rock interbeded with soft clays	
			20				Hard rock from 18 to 20 ft bgs
			25				
	214	-29	30			Gravel with cobbles, multicolored gravel with dark grey stained clay, size range 0.25" to approx. 3.5", dry, strong hydrocarbon odor	
			35				
	574	-41	40			Sandy clay with silt. few cobbles, gravel increasing with depth (1% at top, 20% at bottom, brown slightly mottled orange, mod. stiff to soft, high percent fine grained sand, dry, low plas, no odor	
			45				
	38.2	-49	50			Sandy clay with gravel and cobbles, yellowish brown slightly mottled orange, sandstone and shale layers throughout, low plas., soft to med. stiff, dry, fine grained sand, no odor	
			55				
	28.5	-55				Hard rock with small layers of sands, clays and gravels. yellowish brown with orange mottling, fine to very fine grained, slighly moist, no odor	
			60				
	3.8	-66	65				
Northing: 1620993.1		Borehole Diameter: 4"		Water Bearing Zone: N/A		Sand: N/A	
Easting: 2324504.3		Borehole Total Depth: 66 ft		Static Water Level: N/A		Bentonite: N/A	
Ground Elevation: 5408.5		Well Diameter: N/A		Screen Interval: N/A		Screen Slot: N/A	
TOC Elevation: N/A		Well Total Depth: N/A		PVC: N/A		Sheet: 1 of 1	

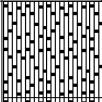

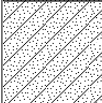

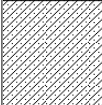
Project Name: WPX RMV 216-21 Pit Site Investigation	Well Name: N/A
Client: WPX Energy	Start Date: 5/16/2012
Site Location: Garfield County, CO	Completion Date: 5/16/2012
Weston WO#: 15023.002.001.0002	Driller: Himes Drilling
Geologist: G. Geras, P.G.	Drilling Method: Casing Advance Air Rotary



SAMPLE		SUBSURFACE PROFILE					
Sample	Organic Vapors (ru)	Elevation	Depth	USCS	Lithology	Lithologic Description	Comment
		0	0			Ground Surface	
	624	-5	5	ML		Silt with gravel, light yellowish brown, fine grained, dry, no odor	
	97.5	-14	10			Clay, gravel and cobbles	
	104 433	-39	15			Gravel with cobbles and sandy clay, sandy clay stained black, fine grained, dry, hydrocarbon odor	
	517	-51	20			Sandy clay yellowish brown slightly mottled orange, ~ 60% stained black, some gravel and cobbles, fine grained, med. plas., soft to very soft, dry, strong hydrocarbon odor	
	6.8	-59	25			Sandy clay with gravel and cobbles, brown slightly mottled rust orange, fine grained, slightly moist, no odor	
	1.3	-63	30			Clayey silt, reddish brown, very fine grained, slightly moist, no odor	
<div> <div> <p> Northing: 1621056.7 Easting: 2324603.5 Ground Elevation: 5410.8 TOC Elevation: N/A </p> </div> <div> <p> Borehole Diameter: 4" Borehole Total Depth: 63 Well Diameter: N/A Well Total Depth: N/A </p> </div> <div> <p> Water Bearing Zone: N/A Static Water Level: N/A Screen Interval: N/A PVC: N/A </p> </div> <div> <p> Sand: N/A Bentonite: N/A Screen Slot: N/A Sheet: 1 of 1 </p> </div> </div>							

Project Name: WPX RMV 216-21 Pit Site Investigation	Well Name: N/A
Client: WPX Energy	Start Date: 5/17/2012
Site Location: Garfield County, CO	Completion Date: 5/18/2012
Weston WO#: 15023.002.001.0002	Driller: Himes Drilling
Geologist: G. Geras, P.G.	Drilling Method: Casing Advance Air Rotary



SAMPLE		SUBSURFACE PROFILE					
Sample	Organic Vapors (ru)	Elevation	Depth	USCS	Lithology	Lithologic Description	Comment
			-5				
		0	0			Ground Surface	
	77.6	-5	5	ML		Silt with gravel, light yellowish brown, fine grained, dry, no odor	
			10			Silty, sandy, gravel, tan to brown, fine grained, dry, slightly stained, faint odor	
		-14	15			Sandy clay with gravel, yellowish brown to brown, fine grained, slightly moist to dry, no odor	
			20				
	1.3		25				
	1.5		30				
	1.1	-32	35			sandy clays with gravel, brown slightly mottled orange, low plas., mod stiff, fine grained, slightly moist, no odor	
	0.8		40				
	4.9		45				
			50				
			55				
	3.6	-60	60				
Northing: 1621034.2 Borehole Diameter: 4" Water Bearing Zone: N/A Sand: N/A							
Easting: 2324502.0 Borehole Total Depth: 60 Static Water Level: N/A Bentonite: N/A							
Ground Elevation: 5410.3 Well Diameter: N/A Screen Interval: N/A Screen Slot: N/A							
TOC Elevation: N/A Well Total Depth: N/A PVC: N/A Sheet: 1 of 1							

Boring Name: BH13

Project Name: WPX RMV 216-21 Pit Site Investigation

Well Name: N/A

Client: WPX Energy

Start Date: 5/15/2012

Site Location: Garfield County, CO

Completion Date: 5/15/2012

Weston WO#: 15023.002.001.0002

Driller: Himes Drilling

Geologist: G. Geras, P.G.

Drilling Method: Casing Advance Air Rotary



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SAMPLE		SUBSURFACE PROFILE					Comment
Sample	Organic Vapors (rru)	Elevation	Depth	USCS	Lithology	Lithologic Description	
			-5				
		0	0			Ground Surface	
				ML			
		-4	0			Silt with gravel, light yellowish brown, fine grained, dry, no odor	
149			5			Silty clay with little gravel and cobbles. stained black, med. plas., soft ot very soft, dry, strong hydrocarbon odor	
			10				
		-15	15			Sandy clay with gravel, some cobbles, brown mottled with black staining(60%), fine grained, dry, strong hydrocarbon odor, low plas., soft to very soft	
605			20				
		-25	25			Silty clay with gravel, percent gravel decreasing with depth, brown with heavy black staining, med. plas., mod. stiff to stiff, dry strong hydrocarbon odor, slight yellowish mottling	
384			30				
		-34	35			silty clay, brown with slight orange mottling, some cobbles, med. plas., stiff, some sand, fine grained, dry, no odor	
226			40				
		-45	45			Silty clay with little cobbles, brown, slightly mottled orange, med. plas., stiff, dr, no odor	
12.3			50				
		-52					
4.6							
			-55				
Northing: 1620989.9		Borehole Diameter: 4"		Water Bearing Zone: N/A		Sand: N/A	
Easting: 2324620.8		Borehole Total Depth: 52 ft		Static Water Level: N/A		Bentonite: N/A	
Ground Elevation: 5407.4		Well Diameter: N/A		Screen Interval: N/A		Screen Slot: N/A	
TOC Elevation: N/A		Well Total Depth: N/A		PVC: N/A		Sheet: 1 of 1	

Boring Name: BH14

Project Name: WPX RMV 216-21 Pit Site Investigation

Well Name: N/A

Client: WPX Energy

Start Date: 5/14/2012

Site Location: Garfield County, CO

Completion Date: 5/14/2012

Weston WO#: 15023.002.001.0002

Driller: Himes Drilling

Geologist: G. Geras, P.G.

Drilling Method: Casing Advance Air Rotary



Weston Solutions, Inc.
1435 Garrison St. Suite 100
Lakewood, CO 80215

SAMPLE		SUBSURFACE PROFILE					Comment
Sample	Organic Vapors (rru)	Elevation	Depth	USCS	Lithology	Lithologic Description	
		0	0			Ground Surface	
		-3		ML		Silt with gravel, light yellowish brown, fine grained, dry, no odor	
127		-6	5			Silty sand, with gravel, some cobbles, high percent silty sand (35-40%), clay sand stained black, dry hydrocarbon odor. Shale and sandstone cobbles	
		-14	10			Gravelly sand, some rocks	
660		-24	15			Silty clay, brown mottled with heavy black staining (40%), little sand, little gravel, few cobbles, low plas., fine grained, dry, strong hydrocarbon odor	
		-26	25			Sandy clay with gravel starting at 25.5 feet, brown mottled with heavy black staining (40%), fine grained, slightly moist, low las., strong hydrocarbon odor	
Northing: 1620967.6		Borehole Diameter: 4"		Water Bearing Zone: N/A		Sand: N/A	
Easting: 2324519.8		Borehole Total Depth: 26 ft		Static Water Level: N/A		Bentonite: N/A	
Ground Elevation: 5408.2		Well Diameter: N/A		Screen Interval: N/A		Screen Slot: N/A	
TOC Elevation: N/A		Well Total Depth: N/A		PVC: N/A		Sheet: 1 of 1	

Boring Name: BH15

Project Name: WPX RMV 216-21 Pit Site Investigation

Well Name: N/A

Client: WPX Energy

Start Date: 5/18/2012

Site Location: Garfield County, CO

Completion Date: 5/18/2012

Weston WO#: 15023.002.001.0002

Driller: Himes Drilling

Geologist: G. Geras, P.G.

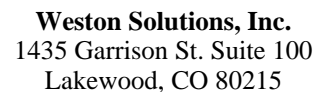
Drilling Method: Casing Advance Air Rotary


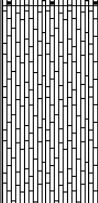
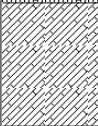


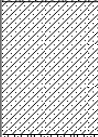
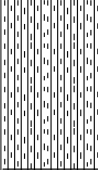


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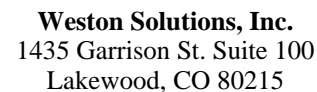
SAMPLE		SUBSURFACE PROFILE					Comment
Sample	Organic Vapors (rru)	Elevation	Depth	USCS	Lithology	Lithologic Description	
		0	-5			Ground Surface	
		-4	0	ML		Silt with gravel, light yellowish brown, fine grained, dry, no odor	Shale fragments within split spoon
1.3		-5	5			gravel with sand, some cobbles, brown, fine grained, dry, no odor	
2.7		-10	10			clayey sand with gravel and cobbles, find to med. grained, slightly moist, light yellowish brown, no odor	
		-22	15				
			20				
2.9			25			Sandy clay with gravel, brown with slight mottled orange, fine grained low plas, soft, dry, no odor	
			30				
			35				
3.7			40				
			45				
1.8			50				
			55				
			60				
2.3			65				
			70				
4.7			75				
		-79	80				
3.7		-84	85			Sandy silt with clay and gravel. light yellowish brown and reddish brown, very fine to fine grained, slightly moist, no odor	
2.9			90			sandy clay with gravel and cobbles, yellowish brown, fine grained low plas., soft, slightly moist, no odor	
		-95	95				
Northing: 1620908.4		Borehole Diameter: 4"		Water Bearing Zone: Alluvium		Sand: N/A	
Easting: 2324467.8		Borehole Total Depth: 95		Static Water Level: Approx. 84 ft bgs		Bentonite: N/A	
Ground Elevation: 5408.5		Well Diameter: N/A		Screen Interval: N/A		Screen Slot: N/A	
TOC Elevation: N/A		Well Total Depth: N/A		PVC: N/A		Sheet: 1 of 1	

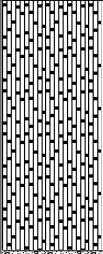


Project Name: WPX RMV 216-21 Pit Site Investigation	Well Name: N/A
Client: WPX Energy	Start Date: 5/14/2012
Site Location: Garfield County, CO	Completion Date: 5/14/2012
Weston WO#: 15023.002.001.0002	Driller: Himes Drilling
Geologist: G. Geras, P.G.	Drilling Method: Casing Advance Air Rotary



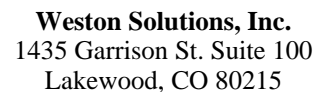
SAMPLE		SUBSURFACE PROFILE					
Sample	Organic Vapors (ru)	Elevation	Depth	USCS	Lithology	Lithologic Description	Comment
			-5				
		0	0			Ground Surface	
	1.8	-4	0	ML		Silt with gravel, light yellowish brown, fine grained, dry, no odor	30.5 to 30.75 ft bgs has stained black clayey sand with hydrocarbon odor
			5			Silty sand, with gravel, and cobbles, little clay, brown, fine grained, slightly moist, no odor	
		10					
	1.2	-15	15			Sandy clay with gravel, some shale and sandstone cobbles, brown, fine grained, mod. stiff, slightly moist, no odor	
			20				
	1.3	-21	25			Sandy clay, brown with slight rust orange mottling, slightly moist, fine grained, no odor	
			30				
	23.2		35			Sandy clay with gravel, (25%), brown mottled orange, fine grained sand, slightly moist, strong hydrocarbon odor (no staining)	
			40				
	3.7	-42	45			Silty sand with gravel, little clay, brown slightly mottled rust orange, fine grained, slightly moist, no odor	
			50				
	1.7	-51	55		Silty Clay with little sand and gravel, brown slightly mottled orange, fine grained, low plas., mod. stiff, dry, no odor		
			60				
	1.1	-61					
Northing: 1620952.7 Borehole Diameter: 4" Water Bearing Zone: N/A Sand: N/A							
Easting: 2324530.1 Borehole Total Depth: 60.5 ft Static Water Level: N/A Bentonite: N/A							
Ground Elevation: 5408.3 Well Diameter: N/A Screen Interval: N/A Screen Slot: N/A							
TOC Elevation: N/A Well Total Depth: N/A PVC: N/A Sheet: 1 of 1							

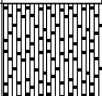
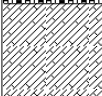
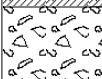
Project Name: WPX RMV 216-21 Pit Site Investigation	Well Name: N/A
Client: WPX Energy	Start Date: 5/15/2012
Site Location: Garfield County, CO	Completion Date: 5/15/2012
Weston WO#: 15023.002.001.0002	Driller: Himes Drilling
Geologist: G. Geras, P.G.	Drilling Method: Casing Advance Air Rotary



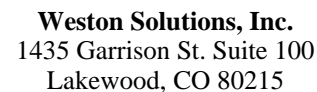
SAMPLE		SUBSURFACE PROFILE					
Sample	Organic Vapors (rru)	Elevation	Depth	USCS	Lithology	Lithologic Description	Comment
			-5				
		0	0			Ground Surface	
	149	-5	5	ML		Silt with gravel, light yellowish brown, fine grained, dry, no odor	
	605	-15	10			Sandy clay, some gravel, shale fragments, sandstone fragments, brown, fine grained, low plas., soft, dry, no odor	
		-18					Hard rock from 14 to 18 ft bgs
		-19				Silty clay with gravel and some cobbles, stained black, increase percent gravel (35%), dry, soft to very soft, med. plas., strong hydrocarbon odor	
			-20				
Northing: 1620976.8		Borehole Diameter: 4"		Water Bearing Zone: N/A		Sand: N/A	
Easting: 2324627.3		Borehole Total Depth: 19 ft		Static Water Level: N/A		Bentonite: N/A	
Ground Elevation: 5407.7		Well Diameter: N/A		Screen Interval: N/A		Screen Slot: N/A	
TOC Elevation: N/A		Well Total Depth: N/A		PVC: N/A		Sheet: 1 of 1	

Project Name: WPX RMV 216-21 Pit Site Investigation	Well Name: N/A
Client: WPX Energy	Start Date: 5/15/2012
Site Location: Garfield County, CO	Completion Date: 5/15/2012
Weston WO#: 15023.002.001.0002	Driller: Himes Drilling
Geologist: G. Geras, P.G.	Drilling Method: Casing Advance Air Rotary



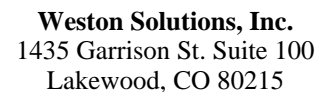
SAMPLE		SUBSURFACE PROFILE						
Sample	Organic Vapors (ru)	Elevation	Depth	USCS	Lithology	Lithologic Description	Comment	
			-5					
		0	0			Ground Surface		
	2.4	-5	5	ML		Silt with gravel, light yellowish brown, fine grained, dry, no odor		
								Clayey silt, light brown, some gravel and cobbles, very fine grained, dry, no odor
		-10						Hard rock from 10 to 14 ft bgs
	1.2	-15	15				sandy clay with gravel, yellowish brown with slight orange mottling, fine grained, dry, no odor	
			-20					
		-26	25					
	2.4	-30	30				Gravel and cobbles, little clayey sand, brown, fine graned, predominantly shale and sandstone fragments and cobbles	
	5.1						Clayey sand with gravel and cobbles, brown with slight orange mottling, fine grained, slight moisture, no odor	
		-35						
		-40	40					
	4.1					Sandy clay with gravel, few cobbles (shale and sandstone fragments), brown slightly mottled orange, low plas., mod. stiff, fine grained, dry, no odor		
			-45					
		-50	50					
	29.7					Sandy clay with gravel and cobbles, brown with slight orange mottling, increase percent sand, gravel and cobbles, slightly moist, fine grained, soft to very soft, med. plas., hydrocarbon odor		
		-55	55					
	2.8					Sandy clay with gravel and cobbles, brown slightly mottled orange, fine grained, med. plas.,mod. stiff, dry, no odor		
		-61	60					
	3.0							
Northing: 1620961.9 Easting: 2324634.7 Ground Elevation: 5408.6 TOC Elevation: N/A								
Borehole Diameter: 4" Borehole Total Depth: 61 Well Diameter: N/A Well Total Depth: N/A								
Water Bearing Zone: N/A Static Water Level: N/A Screen Interval: N/A PVC: N/A								
Sand: N/A Bentonite: N/A Screen Slot: N/A Sheet: 1 of 1								

Project Name: WPX RMV 216-21 Pit Site Investigation	Well Name: N/A
Client: WPX Energy	Start Date: 5/17/2012
Site Location: Garfield County, CO	Completion Date: 5/17/2012
Weston WO#: 15023.002.001.0002	Driller: Himes Drilling
Geologist: G. Geras, P.G.	Drilling Method: Casing Advance Air Rotary



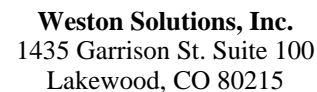
SAMPLE		SUBSURFACE PROFILE					Comment
Sample	Organic Vapors (ru)	Elevation	Depth	USCS	Lithology	Lithologic Description	
		0	0			Ground Surface	
	663	-4	5	ML		Silt with gravel, light yellowish brown, fine grained, dry, no odor	
	146	-14	15			Silty clay with gravel, stained black, high plas., very soft, dry, strong hydrocarbon odor	
	1085	-24	25			gravel with sitly sand and cobbles, stained black, fine to very fine grained sandstone cobbles ranging from 0.02 to 0.025' in size, slighly moist, strong hydrocarbon odor	
	269	-30	30			sandy clay with decreasing amount of gravel and cobbles, brown, fine grained slightly moist, faint hydrocarbon odor.	
Northing: 1621071.3 Easting: 2324608.6 Ground Elevation: 5411.8 TOC Elevation: N/A		Borehole Diameter: 4" Borehole Total Depth: 30 Well Diameter: N/A Well Total Depth: N/A		Water Bearing Zone: N/A Static Water Level: N/A Screen Interval: N/A PVC: N/A		Sand: N/A Bentonite: N/A Screen Slot: N/A Sheet: 1 of 1	

Project Name: WPX RMV 216-21 Pit Site Investigation	Well Name: N/A
Client: WPX Energy	Start Date: 5/17/2012
Site Location: Garfield County, CO	Completion Date: 5/17/2012
Weston WO#: 15023.002.001.0002	Driller: Himes Drilling
Geologist: G. Geras, P.G.	Drilling Method: Casing Advance Air Rotary



SAMPLE		SUBSURFACE PROFILE					
Sample	Organic Vapors (ru)	Elevation	Depth	USCS	Lithology	Lithologic Description	Comment
		0	0			Ground Surface	
	0.8	-5	5	ML		Silt with gravel, light yellowish brown, fine grained, dry, no odor	Split spoon sample lost during retrieval or no recovery
	4.2		10			Silty, sandy, gravel, tan to brown, fine grained, dry, no odor	
	1.1	-25	25			Sandy clay with gravel, brown slightly mottled orange, med to low plas., nod. stiff, fine grained sand, dry, no odor	
	1.5	-38	40			gravel with sands and cobbles, brown, sandstone and shale rocks, fine grained, slightly moist, no odor	
	5.2	-47	45			silty sand with little gravel, brown, very fine grained, slightly moist, shale fragments increasing, no odor.	
	0.6	-56	55			sandy clay with gravel, cobbles, brown slightly mottled orange, fine grained, low plas., soft, sry, no odor	
	1.5	-68	60				
			65				
Northing: 1621096.7		Borehole Diameter: 4"		Water Bearing Zone: N/A		Sand: N/A	
Easting: 2324601.3		Borehole Total Depth: 67.5		Static Water Level: N/A		Bentonite: N/A	
Ground Elevation: 5415.1		Well Diameter: N/A		Screen Interval: N/A		Screen Slot: N/A	
TOC Elevation: N/A		Well Total Depth: N/A		PVC: N/A		Sheet: 1 of 1	

Project Name: WPX RMV 216-21 Pit Site Investigation	Well Name: N/A
Client: WPX Energy	Start Date: 5/21/2012
Site Location: Garfield County, CO	Completion Date: 5/21/2012
Weston WO#: 15023.002.001.0002	Driller: Himes Drilling
Geologist: G. Geras, P.G.	Drilling Method: Casing Advance Air Rotary



SAMPLE		SUBSURFACE PROFILE					Comment
Sample	Organic Vapors (rru)	Elevation	Depth	USCS	Lithology	Lithologic Description	
			-5				
		0	0			Ground Surface	
				ML		Silt with gravel, light yellowish brown, fine grained, dry, no odor	
	2.9	-4	5			clayey sand with gravel and cobbles, brown, fine grained sand, dry, no odor	
	4.9	-9	10			clayey sand with gravel, brown slightly mottled orange, fine grained, dry no odor	
	3.7	-14	15			Silty clay with gravel, brown, fine grained, dry, no odor	
	1.9	-22	20				
Northing: 1621056.2 Borehole Diameter: 4" Water Bearing Zone: N/A Sand: N/A							
Easting: 2324491.3 Borehole Total Depth: 21.5 Static Water Level: N/A Bentonite: N/A							
Ground Elevation: 5413.4 Well Diameter: N/A Screen Interval: N/A Screen Slot: N/A							
TOC Elevation: N/A Well Total Depth: N/A PVC: N/A Sheet: 1 of 1							

Well Name: MW-7

Project Name: WPX RMV 216-21 Pit Site Investigation

Client: WPX Energy

Site Location: Garfield County, CO

Weston WO#: 15023.002.001.0002

Geologist: G. Geras, P.G.

Boring Name: MW-7

Start Date: 5/08/2012

Completion Date: 5/09/2012

Driller: Himes Drilling

Drilling Method: Casing Advance Air Rotary



Weston Solutions, Inc.
1435 Garrison St. Suite 100
Lakewood, CO 80215

SAMPLE		SUBSURFACE PROFILE					Comment	Well Completion Details
Sample	Organic Vapors (rru)	Elevation	Depth	USCS	Lithology	Lithologic Description		
		5406	-5			Ground Surface		
			0			Gravelly sand and clay, light brown, course grained		
			5					
			10					
			15					
		5386	20			Gravelly sand, light brown, course grained		
			25					
			30					
			35					
			40					
			45					
			50					
			55					
		5346	60			Silty sand and gravel, light brown, course grained		
			65					
			70					
			75					
			80					
			85					
			90					
		5311	95					
			100					
			105					

Concrete Seal

Bentonite

2" Sch. 40 PVC Riser

10/20 Silica Sand

0.010" Slotted Screen

Northing: 4377762

Easting: 251131

Ground Elevation: 5405.87

TOC Elevation: 5405.87

Borehole Diameter: 4"

Borehole Total Depth: 95 ft

Well Diameter: 2"

Well Total Depth: 95 ft

Water Bearing Zone: Alluvial

Static Water Level: 87 ft

Screen Interval: 80-95 ft

PVC: 0-80 ft

Sand: 77-95 ft

Bentonite: 2-77 ft

Screen Slot: 80-95 ft

Sheet: 1 of 1

Well Name: MW-8

Project Name: WPX RMV 216-21 Pit Site Investigation

Client: WPX Energy

Site Location: Garfield County, CO

Weston WO#: 15023.002.001.0002

Geologist: G. Geras, P.G.

Boring Name: MW-8

Start Date: 5/22/2012

Completion Date: 5/23/2012

Driller: Himes Drilling

Drilling Method: Casing Advance Air Rotary



Weston Solutions, Inc.
1435 Garrison St. Suite 100
Lakewood, CO 80215

SAMPLE		SUBSURFACE PROFILE					Comment	Well Completion Details
Sample	Organic Vapors (rru)	Elevation	Depth	USCS	Lithology	Lithologic Description		
		5399	-5			Ground Surface		
			0			Silt with gravel and cobbles, tan fine grained		
			5					
		5383	15					
		5381				Clay and rock, tan, fine grained		
		5379	20			Hard Rock, tan, fine grained		
			25			Clay and rock, tan, fine grained		
		5374				Gravel with clay and sand, tan, course grained		
		5369	30			Gravelly sand, tan, course grained		
			35					
		5361				Clayey gravel, tan, course grained		
			40					
		5353	45			Clay with sand and gravel, tan, course grained		
			50					
		5347				Gravelly clay, tan, course grained		
		5345	55			Clay with gravel and rock, tan, course grained		
			60					
			65					
		5327	70			Gravel and sand, tan, course grained		
			75					
			80					
		5313	85			Sand, tan, course grained		
		5311				Clay and gravel, tan, course grained		
		5308	90			Sand and gravel, tan, course grained		
			95					
		5299	100					
			105					

Concrete Seal

Bentonite

2" Sch. 40 PVC Riser

0.010" Slotted Screen

10/20 Silica Sand

Northing: 4377727

Easting: 251155

Ground Elevation: 5399.09

TOC Elevation: 5399.09

Borehole Diameter: 4"

Borehole Total Depth: 100 ft

Well Diameter: 2"

Well Total Depth: 95 ft

Water Bearing Zone: Alluvial

Static Water Level: 85 ft

Screen Interval: 80-95 ft

PVC: 0-80 ft

Sand: 77-100 ft

Bentonite: 2-77 ft

Screen Slot: 80-95 ft

Sheet: 1 of 1

Well Name: MW-9

Project Name: WPX RMV 216-21 Pit Site Investigation

Client: WPX Energy

Site Location: Garfield County, CO

Weston WO#: 15023.002.001.0002

Geologist: G. Geras, P.G.

Boring Name: MW-9

Start Date: 5/21/2012

Completion Date: 5/22/2012

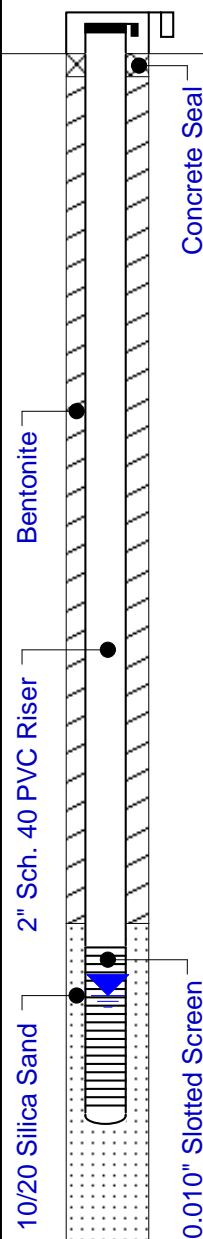
Driller: Himes Drilling

Drilling Method: Casing Advance Air Rotary



Weston Solutions, Inc.
1435 Garrison St. Suite 100
Lakewood, CO 80215

SAMPLE		SUBSURFACE PROFILE					Comment	Well Completion Details
Sample	Organic Vapors (rru)	Elevation	Depth	USCS	Lithology	Lithologic Description		
		5401	-5			Ground Surface		
			0			Silty sand and gravel, course grained, tan		
			5					
			10					
			15					
			20					
			25					
			30					
			35					
			40					
			45					
			50					
			55					
			60					
			65					
			70					
			75					
			80					
			85					
			90					
			95					
		5301	100					
<div> <div> <p> Northing: 4377753 Easting: 251221 Ground Elevation: 5401.49 TOC Elevation: 5401.49 </p> </div> <div> <p> Borehole Diameter: 4" Borehole Total Depth: 100 ft Well Diameter: 2" Well Total Depth: 90 ft </p> </div> <div> <p> Water Bearing Zone: Alluvial Static Water Level: 79 ft Screen Interval: 75-90 ft PVC: 0-75 ft </p> </div> <div> <p> Sand: 73-100 ft Bentonite: 2-73 ft Screen Slot: 75-90 ft Sheet: 1 of 1 </p> </div> </div>								



APPENDIX B
LABORATORY ANALYTICAL REPORTS



12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

Report Summary

Wednesday May 23, 2012

Report Number: L574882

Samples Received: 05/11/12

Client Project:

Description: Clough Pit RMV 216-21

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 23, 2012

Date Received : May 11, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV216-21 SURFACE SOIL 1 0-0.5FT
Collected By : Greg Geras
Collection Date : 05/07/12 10:34

ESC Sample # : L574882-01

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH	7.9		su	9045D	05/15/12	1
Sodium Adsorption Ratio	12.			Calc.	05/20/12	1
Specific Conductance	3500		umhos/cm	9050AMod	05/15/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/23/12 14:13 Printed: 05/23/12 14:14
L574882-01 (PH) - 7.9@21.3c



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 23, 2012

Date Received : May 11, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV216-21 SURFACE SOIL 2 0-0.5FT
Collected By : Greg Geras
Collection Date : 05/07/12 15:20

ESC Sample # : L574882-02

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH	8.2		su	9045D	05/15/12	1
Sodium Adsorption Ratio	9.5			Calc.	05/20/12	1
Specific Conductance	1600		umhos/cm	9050AMod	05/15/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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L574882-02 (PH) - 8.2@21.0c



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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 23, 2012

Date Received : May 11, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV216-21 SURFACE SOIL 3 0-0.5FT
Collected By : Greg Geras
Collection Date : 05/07/12 15:30

ESC Sample # : L574882-03

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
pH	8.2		su	9045D	05/15/12	1
Sodium Adsorption Ratio	12.			Calc.	05/20/12	1
Specific Conductance	2400		umhos/cm	9050AMod	05/15/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/23/12 14:13 Printed: 05/23/12 14:14
L574882-03 (PH) - 8.2@21.0c

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 23, 2012

Date Received : May 11, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV216-21 BH09B 4-6FT
Collected By : Greg Geras
Collection Date : 05/10/12 08:40

ESC Sample # : L574882-04

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	2200	50.	mg/kg	8015D/GRO	05/15/12	500
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	90.7		% Rec.	602/8015	05/15/12	500
Benzene	BDL	1.0	mg/kg	8260B	05/15/12	1000
Toluene	BDL	5.0	mg/kg	8260B	05/15/12	1000
Ethylbenzene	2.5	1.0	mg/kg	8260B	05/15/12	1000
Total Xylenes	37.	3.0	mg/kg	8260B	05/15/12	1000
Surrogate Recovery						
Toluene-d8	96.2		% Rec.	8260B	05/15/12	1000
Dibromofluoromethane	101.		% Rec.	8260B	05/15/12	1000
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	05/15/12	1000
4-Bromofluorobenzene	122.		% Rec.	8260B	05/15/12	1000
TPH (GC/FID) High Fraction	5500	80.	mg/kg	3546/DRO	05/16/12	20
Surrogate recovery(%)						
o-Terphenyl	154.		% Rec.	3546/DRO	05/16/12	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.28	0.12	mg/kg	8270C-SIM	05/21/12	20
Acenaphthene	0.30	0.12	mg/kg	8270C-SIM	05/21/12	20
Acenaphthylene	0.12	0.12	mg/kg	8270C-SIM	05/21/12	20
Benzo(a)anthracene	BDL	0.12	mg/kg	8270C-SIM	05/21/12	20
Benzo(a)pyrene	BDL	0.12	mg/kg	8270C-SIM	05/21/12	20
Benzo(b)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	05/21/12	20
Benzo(g,h,i)perylene	BDL	0.12	mg/kg	8270C-SIM	05/21/12	20
Benzo(k)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	05/21/12	20
Chrysene	BDL	0.12	mg/kg	8270C-SIM	05/21/12	20
Dibenz(a,h)anthracene	BDL	0.12	mg/kg	8270C-SIM	05/21/12	20
Fluoranthene	BDL	0.12	mg/kg	8270C-SIM	05/21/12	20
Fluorene	1.1	0.12	mg/kg	8270C-SIM	05/21/12	20
Indeno(1,2,3-cd)pyrene	BDL	0.12	mg/kg	8270C-SIM	05/21/12	20
Naphthalene	6.1	0.12	mg/kg	8270C-SIM	05/21/12	20
Phenanthrene	0.86	0.12	mg/kg	8270C-SIM	05/21/12	20
Pyrene	0.19	0.12	mg/kg	8270C-SIM	05/21/12	20
1-Methylnaphthalene	4.2	0.12	mg/kg	8270C-SIM	05/21/12	20
2-Methylnaphthalene	15.	0.60	mg/kg	8270C-SIM	05/22/12	100
2-Chloronaphthalene	BDL	0.12	mg/kg	8270C-SIM	05/21/12	20
Surrogate Recovery						
Nitrobenzene-d5	8990		% Rec.	8270C-SIM	05/21/12	20
2-Fluorobiphenyl	141.		% Rec.	8270C-SIM	05/21/12	20
p-Terphenyl-d14	119.		% Rec.	8270C-SIM	05/21/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 23, 2012

Date Received : May 11, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV216-21 BH09B 34-36FT
Collected By : Greg Geras
Collection Date : 05/10/12 11:00

ESC Sample # : L574882-05

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
SPLP ZHE Extraction	-			1312	05/17/12	1
SPLP Extraction	-			1312	05/16/12	1
TPH (GC/FID) Low Fraction	1.3	0.10	mg/l	8015D/GRO	05/17/12	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	111.		% Rec.	8015D/GRO	05/17/12	1
Benzene	0.0086	0.0010	mg/l	8260B	05/17/12	1
Toluene	BDL	0.0050	mg/l	8260B	05/17/12	1
Ethylbenzene	0.032	0.0010	mg/l	8260B	05/17/12	1
Total Xylenes	0.12	0.0030	mg/l	8260B	05/17/12	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	05/17/12	1
Dibromofluoromethane	98.8		% Rec.	8260B	05/17/12	1
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	05/17/12	1
4-Bromofluorobenzene	104.		% Rec.	8260B	05/17/12	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3510C / DRO	05/22/12	1
Surrogate recovery(%) o-Terphenyl	80.2		% Rec.	3510C / DRO	05/22/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Acenaphthene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Acenaphthylene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Benzo(a)anthracene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Benzo(a)pyrene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Benzo(b)fluoranthene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Benzo(g,h,i)perylene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Benzo(k)fluoranthene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Chrysene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Dibenz(a,h)anthracene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Fluoranthene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Fluorene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Naphthalene	BDL	0.00025	mg/l	8270 C-SIM	05/21/12	1
Phenanthrene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Pyrene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
1-Methylnaphthalene	BDL	0.00025	mg/l	8270 C-SIM	05/21/12	1
2-Methylnaphthalene	BDL	0.00025	mg/l	8270 C-SIM	05/21/12	1
2-Chloronaphthalene	BDL	0.00025	mg/l	8270 C-SIM	05/21/12	1
Surrogate Recovery						
Nitrobenzene-d5	90.5		% Rec.	8270 C-SIM	05/21/12	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)



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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 23, 2012

Date Received : May 11, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV216-21 BH09B 34-36FT
Collected By : Greg Geras
Collection Date : 05/10/12 11:00

ESC Sample # : L574882-05

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Fluorobiphenyl	86.4		% Rec.	8270 C-SIM	05/21/12	1
p-Terphenyl-d14	82.1		% Rec.	8270 C-SIM	05/21/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 23, 2012

Date Received : May 11, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV216-21 BH09B 60-61.5FT
Collected By : Greg Geras
Collection Date : 05/10/12 14:00

ESC Sample # : L574882-06

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
SPLP ZHE Extraction	-			1312	05/17/12	1
SPLP Extraction	-			1312	05/16/12	1
TPH (GC/FID) Low Fraction	BDL	0.10	mg/l	8015D/GRO	05/17/12	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	111.		% Rec.	8015D/GRO	05/17/12	1
Benzene	BDL	0.0010	mg/l	8260B	05/17/12	1
Toluene	BDL	0.0050	mg/l	8260B	05/17/12	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	05/17/12	1
Total Xylenes	BDL	0.0030	mg/l	8260B	05/17/12	1
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	05/17/12	1
Dibromofluoromethane	99.6		% Rec.	8260B	05/17/12	1
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	05/17/12	1
4-Bromofluorobenzene	102.		% Rec.	8260B	05/17/12	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3510C / DRO	05/22/12	1
Surrogate recovery(%) o-Terphenyl	76.9		% Rec.	3510C / DRO	05/22/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Acenaphthene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Acenaphthylene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Benzo(a)anthracene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Benzo(a)pyrene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Benzo(b)fluoranthene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Benzo(g,h,i)perylene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Benzo(k)fluoranthene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Chrysene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Dibenz(a,h)anthracene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Fluoranthene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Fluorene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Naphthalene	BDL	0.00025	mg/l	8270 C-SIM	05/21/12	1
Phenanthrene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
Pyrene	BDL	0.000050	mg/l	8270 C-SIM	05/21/12	1
1-Methylnaphthalene	BDL	0.00025	mg/l	8270 C-SIM	05/21/12	1
2-Methylnaphthalene	BDL	0.00025	mg/l	8270 C-SIM	05/21/12	1
2-Chloronaphthalene	BDL	0.00025	mg/l	8270 C-SIM	05/21/12	1
Surrogate Recovery						
Nitrobenzene-d5	81.8		% Rec.	8270 C-SIM	05/21/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)



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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 23, 2012

Date Received : May 11, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV216-21 BH09B 60-61.5FT
Collected By : Greg Geras
Collection Date : 05/10/12 14:00

ESC Sample # : L574882-06

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Fluorobiphenyl	79.4		% Rec.	8270 C-SIM	05/21/12	1
p-Terphenyl-d14	77.4		% Rec.	8270 C-SIM	05/21/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L574882-01	WG592481	SAMP	pH	R2171394	T8
L574882-02	WG592481	SAMP	pH	R2171394	T8
L574882-03	WG592481	SAMP	pH	R2171394	T8
L574882-04	WG593729	SAMP	Nitrobenzene-d5	R2177134	J7
	WG593729	SAMP	2-Fluorobiphenyl	R2177134	J7
	WG593729	SAMP	p-Terphenyl-d14	R2177134	J7
	WG592920	SAMP	o-Terphenyl	R2172213	J7
L574882-06	WG593264	SAMP	TPH (GC/FID) Low Fraction	R2174593	J5

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
T8	(ESC) - Additional method/sample information: Sample(s) received past/too close to holding time expiration.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
05/23/12 at 14:14:29

TSR Signing Reports: 364
R5 - Desired TAT

for 910-1 List log BTEXGRO, DRO and PAHSIM to separate dash number. \$100 min invoice removed
per Rodney Mann 9/19/11 TAH, no energy surcharge per Rodney Mann 10/26/11 TAH

Sample: L574882-01 Account: WILPCO Received: 05/11/12 09:00 Due Date: 05/21/12 00:00 RPT Date: 05/23/12 14:13

Sample: L574882-02 Account: WILPCO Received: 05/11/12 09:00 Due Date: 05/21/12 00:00 RPT Date: 05/23/12 14:13

Sample: L574882-03 Account: WILPCO Received: 05/11/12 09:00 Due Date: 05/21/12 00:00 RPT Date: 05/23/12 14:13

Sample: L574882-04 Account: WILPCO Received: 05/11/12 09:00 Due Date: 05/21/12 00:00 RPT Date: 05/23/12 14:13

Sample: L574882-05 Account: WILPCO Received: 05/11/12 09:00 Due Date: 05/21/12 00:00 RPT Date: 05/23/12 14:13
Rotate for V8260BTEX, GRO, DRO, 8270PAHSIM

Sample: L574882-06 Account: WILPCO Received: 05/11/12 09:00 Due Date: 05/21/12 00:00 RPT Date: 05/23/12 14:13
Rotate for V8260BTEX, GRO, DRO, 8270PAHSIM



WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L574882

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Tax I.D. 62-0814289

Est. 1970

May 23, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG592827	05/15/12 16:11
a,a,a-Trifluorotoluene(FID)		% Rec.	105.4	59-128	WG592827	05/15/12 16:11
Specific Conductance	2.36	umhos/cm			WG592720	05/15/12 16:36
pH	5.09	su			WG592481	05/15/12 16:20
Benzene	< .001	mg/kg			WG592800	05/15/12 14:21
Ethylbenzene	< .001	mg/kg			WG592800	05/15/12 14:21
Toluene	< .005	mg/kg			WG592800	05/15/12 14:21
Total Xylenes	< .003	mg/kg			WG592800	05/15/12 14:21
4-Bromofluorobenzene		% Rec.	113.9	67-133	WG592800	05/15/12 14:21
Dibromofluoromethane		% Rec.	98.83	72-135	WG592800	05/15/12 14:21
Toluene-d8		% Rec.	99.04	90-113	WG592800	05/15/12 14:21
a,a,a-Trifluorotoluene		% Rec.	106.6	89-115	WG592800	05/15/12 14:21
TPH (GC/FID) High Fraction	< 4	ppm			WG592920	05/15/12 22:29
o-Terphenyl		% Rec.	66.36	50-150	WG592920	05/15/12 22:29
Benzene	< .001	mg/l			WG593261	05/17/12 12:25
Ethylbenzene	< .001	mg/l			WG593261	05/17/12 12:25
Toluene	< .005	mg/l			WG593261	05/17/12 12:25
Total Xylenes	< .003	mg/l			WG593261	05/17/12 12:25
4-Bromofluorobenzene		% Rec.	102.4	82-120	WG593261	05/17/12 12:25
Dibromofluoromethane		% Rec.	98.80	82-126	WG593261	05/17/12 12:25
Toluene-d8		% Rec.	101.6	92-112	WG593261	05/17/12 12:25
a,a,a-Trifluorotoluene		% Rec.	106.0	90-116	WG593261	05/17/12 12:25
TPH (GC/FID) Low Fraction	< .1	mg/l			WG593264	05/17/12 14:22
a,a,a-Trifluorotoluene(FID)		% Rec.	112.0	62-128	WG593264	05/17/12 14:22
1-Methylnaphthalene	< .006	mg/kg			WG593729	05/20/12 01:35
2-Chloronaphthalene	< .006	mg/kg			WG593729	05/20/12 01:35
2-Methylnaphthalene	< .006	mg/kg			WG593729	05/20/12 01:35
Acenaphthene	< .006	mg/kg			WG593729	05/20/12 01:35
Acenaphthylene	< .006	mg/kg			WG593729	05/20/12 01:35
Anthracene	< .006	mg/kg			WG593729	05/20/12 01:35
Benzo(a)anthracene	< .006	mg/kg			WG593729	05/20/12 01:35
Benzo(a)pyrene	< .006	mg/kg			WG593729	05/20/12 01:35
Benzo(b)fluoranthene	< .006	mg/kg			WG593729	05/20/12 01:35
Benzo(g,h,i)perylene	< .006	mg/kg			WG593729	05/20/12 01:35
Benzo(k)fluoranthene	< .006	mg/kg			WG593729	05/20/12 01:35
Chrysene	< .006	mg/kg			WG593729	05/20/12 01:35
Dibenz(a,h)anthracene	< .006	mg/kg			WG593729	05/20/12 01:35
Fluoranthene	< .006	mg/kg			WG593729	05/20/12 01:35
Fluorene	< .006	mg/kg			WG593729	05/20/12 01:35
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG593729	05/20/12 01:35
Naphthalene	< .006	mg/kg			WG593729	05/20/12 01:35
Phenanthrene	< .006	mg/kg			WG593729	05/20/12 01:35
Pyrene	< .006	mg/kg			WG593729	05/20/12 01:35
2-Fluorobiphenyl		% Rec.	81.48	34-129	WG593729	05/20/12 01:35
Nitrobenzene-d5		% Rec.	78.66	14-141	WG593729	05/20/12 01:35

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



WPX Energy
Karolina Blaney
1058 County Road 215
Parachute, CO 81635

Quality Assurance Report
Level II

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Tax I.D. 62-0814289

Est. 1970

May 23, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
p-Terphenyl-d14		% Rec.	105.7	25-139		05/20/12 01:35
1-Methylnaphthalene	< .00025	mg/l			WG593628	05/20/12 19:49
2-Chloronaphthalene	< .00025	mg/l			WG593628	05/20/12 19:49
2-Methylnaphthalene	< .00025	mg/l			WG593628	05/20/12 19:49
Acenaphthene	< .00005	mg/l			WG593628	05/20/12 19:49
Acenaphthylene	< .00005	mg/l			WG593628	05/20/12 19:49
Anthracene	< .00005	mg/l			WG593628	05/20/12 19:49
Benzo(a)anthracene	< .00005	mg/l			WG593628	05/20/12 19:49
Benzo(a)pyrene	< .00005	mg/l			WG593628	05/20/12 19:49
Benzo(b)fluoranthene	< .00005	mg/l			WG593628	05/20/12 19:49
Benzo(g,h,i)perylene	< .00005	mg/l			WG593628	05/20/12 19:49
Benzo(k)fluoranthene	< .00005	mg/l			WG593628	05/20/12 19:49
Chrysene	< .00005	mg/l			WG593628	05/20/12 19:49
Dibenz(a,h)anthracene	< .00005	mg/l			WG593628	05/20/12 19:49
Fluoranthene	< .00005	mg/l			WG593628	05/20/12 19:49
Fluorene	< .00005	mg/l			WG593628	05/20/12 19:49
Indeno(1,2,3-cd)pyrene	< .00005	mg/l			WG593628	05/20/12 19:49
Naphthalene	< .00025	mg/l			WG593628	05/20/12 19:49
Phenanthrene	< .00005	mg/l			WG593628	05/20/12 19:49
Pyrene	< .00005	mg/l			WG593628	05/20/12 19:49
2-Fluorobiphenyl		% Rec.	89.74	44-123		WG593628 05/20/12 19:49
Nitrobenzene-d5		% Rec.	89.42	36-136		WG593628 05/20/12 19:49
p-Terphenyl-d14		% Rec.	84.26	38-132		WG593628 05/20/12 19:49
TPH (GC/FID) High Fraction	< .1	ppm			WG593212	05/22/12 07:55
o-Terphenyl		% Rec.	80.61	50-150		WG593212 05/22/12 07:55

Analyte	Units	Result	Duplicate		Limit	Ref Samp	Batch
			Duplicate	RPD			
Specific Conductance	umhos/cm	2900	2800	4.54	20	L574611-01	WG592720
pH	su	7.00	7.00	0.143	1	L574561-01	WG592481
pH	su	3.50	3.40	2.90*	1	L574931-06	WG592481

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.30	114.	67-135	WG592827
a,a,a-Trifluorotoluene(FID)				103.9	59-128	WG592827
Specific Conductance	umhos/cm	495	485.	98.0	85-115	WG592720
pH	su	5.7	5.65	99.1	98-101	WG592481
Benzene	mg/kg	.025	0.0214	85.5	72-120	WG592800
Ethylbenzene	mg/kg	.025	0.0249	99.5	76-126	WG592800
Toluene	mg/kg	.025	0.0210	83.9	74-155	WG592800
Total Xylenes	mg/kg	.075	0.0752	100.	76-126	WG592800
4-Bromofluorobenzene				110.5	67-133	WG592800
Dibromofluoromethane				101.5	72-135	WG592800
Toluene-d8				98.06	90-113	WG592800
a,a,a-Trifluorotoluene				105.2	89-115	WG592800

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YOUR LAB OF CHOICE

WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L574882

12065 Lebanon Rd.
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 23, 2012

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
TPH (GC/FID) High Fraction	ppm	60	39.0	65.0	50-150	WG592920
o-Terphenyl				71.66	50-150	WG592920
Benzene	mg/l	.025	0.0192	76.8	72-119	WG593261
Ethylbenzene	mg/l	.025	0.0220	87.9	77-124	WG593261
Toluene	mg/l	.025	0.0204	81.7	75-114	WG593261
Total Xylenes	mg/l	.075	0.0666	88.8	77-123	WG593261
4-Bromofluorobenzene				100.4	82-120	WG593261
Dibromofluoromethane				99.38	82-126	WG593261
Toluene-d8				100.4	92-112	WG593261
a,a,a-Trifluorotoluene				106.7	90-116	WG593261
TPH (GC/FID) Low Fraction	mg/l	5.5	6.43	117.	70-124	WG593264
a,a,a-Trifluorotoluene (FID)				119.8	62-128	WG593264
1-Methylnaphthalene	mg/kg	.033	0.0258	78.3	48-113	WG593729
2-Chloronaphthalene	mg/kg	.033	0.0255	77.2	51-114	WG593729
2-Methylnaphthalene	mg/kg	.033	0.0260	78.7	44-109	WG593729
Acenaphthene	mg/kg	.033	0.0253	76.7	52-108	WG593729
Acenaphthylene	mg/kg	.033	0.0264	79.9	51-110	WG593729
Anthracene	mg/kg	.033	0.0283	85.8	58-120	WG593729
Benzo(a)anthracene	mg/kg	.033	0.0269	81.4	54-110	WG593729
Benzo(a)pyrene	mg/kg	.033	0.0286	86.7	56-118	WG593729
Benzo(b)fluoranthene	mg/kg	.033	0.0282	85.4	55-114	WG593729
Benzo(g,h,i)perylene	mg/kg	.033	0.0289	87.7	48-130	WG593729
Benzo(k)fluoranthene	mg/kg	.033	0.0286	86.7	55-122	WG593729
Chrysene	mg/kg	.033	0.0297	90.1	57-118	WG593729
Dibenz(a,h)anthracene	mg/kg	.033	0.0288	87.2	53-122	WG593729
Fluoranthene	mg/kg	.033	0.0277	83.9	58-118	WG593729
Fluorene	mg/kg	.033	0.0263	79.6	54-109	WG593729
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0287	87.0	51-125	WG593729
Naphthalene	mg/kg	.033	0.0249	75.5	45-105	WG593729
Phenanthrene	mg/kg	.033	0.0278	84.3	53-114	WG593729
Pyrene	mg/kg	.033	0.0291	88.2	53-121	WG593729
2-Fluorobiphenyl				74.70	34-129	WG593729
Nitrobenzene-d5				75.81	14-141	WG593729
p-Terphenyl-d14				104.7	25-139	WG593729
1-Methylnaphthalene	mg/l	.002	0.00148	73.9	48-126	WG593628
2-Chloronaphthalene	mg/l	.002	0.00157	78.5	47-129	WG593628
2-Methylnaphthalene	mg/l	.002	0.00141	70.5	43-126	WG593628
Acenaphthene	mg/l	.002	0.00151	75.6	51-121	WG593628
Acenaphthylene	mg/l	.002	0.00142	70.8	50-125	WG593628
Anthracene	mg/l	.002	0.00152	75.9	61-133	WG593628
Benzo(a)anthracene	mg/l	.002	0.00166	83.1	58-123	WG593628
Benzo(a)pyrene	mg/l	.002	0.00166	82.8	58-132	WG593628
Benzo(b)fluoranthene	mg/l	.002	0.00178	89.0	53-131	WG593628
Benzo(g,h,i)perylene	mg/l	.002	0.00162	80.8	54-139	WG593628
Benzo(k)fluoranthene	mg/l	.002	0.00163	81.3	55-137	WG593628
Chrysene	mg/l	.002	0.00166	83.0	58-132	WG593628
Dibenz(a,h)anthracene	mg/l	.002	0.00158	79.2	57-131	WG593628
Fluoranthene	mg/l	.002	0.00159	79.4	57-134	WG593628
Fluorene	mg/l	.002	0.00147	73.5	52-125	WG593628
Indeno(1,2,3-cd)pyrene	mg/l	.002	0.00161	80.7	57-133	WG593628

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May 23, 2012

Analyte	Units	Laboratory Control		Sample	% Rec	Limit	Batch
		Known Val	Result	Result			
Naphthalene	mg/l	.002	0.00148		74.1	41-122	WG593628
Phenanthrene	mg/l	.002	0.00159		79.5	54-127	WG593628
Pyrene	mg/l	.002	0.00150		75.1	55-135	WG593628
2-Fluorobiphenyl					78.50	44-123	WG593628
Nitrobenzene-d5					77.06	36-136	WG593628
p-Terphenyl-d14					77.29	38-132	WG593628
TPH (GC/FID) High Fraction	ppm	1.5	1.45		96.4	50-150	WG593212
o-Terphenyl					87.52	50-150	WG593212

Analyte	Units	Laboratory Control		Sample	%Rec	Limit	RPD	Limit	Batch
		Result	Ref	Duplicate					
TPH (GC/FID) Low Fraction	mg/kg	6.34	6.30	115.		67-135	0.680	20	WG592827
a,a,a-Trifluorotoluene(FID)				103.4		59-128			WG592827
Specific Conductance	umhos/	485.	485.	98.0		85-115	0	20	WG592720
pH	su	5.66	5.65	99.0		98-101	0.177	20	WG592481
Benzene	mg/kg	0.0206	0.0214	82.0		72-120	3.53	20	WG592800
Ethylbenzene	mg/kg	0.0246	0.0249	98.0		76-126	0.940	20	WG592800
Toluene	mg/kg	0.0209	0.0210	84.0		74-155	0.170	20	WG592800
Total Xylenes	mg/kg	0.0722	0.0752	96.0		76-126	4.01	20	WG592800
4-Bromofluorobenzene				109.8		67-133			WG592800
Dibromofluoromethane				101.2		72-135			WG592800
Toluene-d8				99.16		90-113			WG592800
a,a,a-Trifluorotoluene				104.4		89-115			WG592800
TPH (GC/FID) High Fraction	ppm	42.4	39.0	71.0		50-150	8.38	25	WG592920
o-Terphenyl				77.17		50-150			WG592920
Benzene	mg/l	0.0195	0.0192	78.0		72-119	1.73	20	WG593261
Ethylbenzene	mg/l	0.0234	0.0220	93.0		77-124	6.13	20	WG593261
Toluene	mg/l	0.0216	0.0204	86.0		75-114	5.41	20	WG593261
Total Xylenes	mg/l	0.0716	0.0666	95.0		77-123	7.19	20	WG593261
4-Bromofluorobenzene				99.08		82-120			WG593261
Dibromofluoromethane				99.82		82-126			WG593261
Toluene-d8				102.8		92-112			WG593261
a,a,a-Trifluorotoluene				107.7		90-116			WG593261
TPH (GC/FID) Low Fraction	mg/l	6.46	6.43	118.		70-124	0.580	20	WG593264
a,a,a-Trifluorotoluene(FID)				119.7		62-128			WG593264
1-Methylnaphthalene	mg/kg	0.0276	0.0258	84.0		48-113	6.51	24	WG593729
2-Chloronaphthalene	mg/kg	0.0283	0.0255	86.0		51-114	10.4	24	WG593729
2-Methylnaphthalene	mg/kg	0.0280	0.0260	85.0		44-109	7.61	24	WG593729
Acenaphthene	mg/kg	0.0264	0.0253	80.0		52-108	4.09	22	WG593729
Acenaphthylene	mg/kg	0.0272	0.0264	82.0		51-110	3.04	21	WG593729
Anthracene	mg/kg	0.0301	0.0283	91.0		58-120	5.93	20	WG593729
Benzo(a)anthracene	mg/kg	0.0285	0.0269	86.0		54-110	5.85	22	WG593729

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Est. 1970

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Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Benzo(a)pyrene	mg/kg	0.0295	0.0286	89.0		56-118	2.97	21	WG593729
Benzo(b)fluoranthene	mg/kg	0.0308	0.0282	93.0		55-114	9.00	20	WG593729
Benzo(g,h,i)perylene	mg/kg	0.0306	0.0289	93.0		48-130	5.42	20	WG593729
Benzo(k)fluoranthene	mg/kg	0.0292	0.0286	89.0		55-122	2.19	25	WG593729
Chrysene	mg/kg	0.0308	0.0297	93.0		57-118	3.54	20	WG593729
Dibenz(a,h)anthracene	mg/kg	0.0301	0.0288	91.0		53-122	4.40	20	WG593729
Fluoranthene	mg/kg	0.0302	0.0277	91.0		58-118	8.59	20	WG593729
Fluorene	mg/kg	0.0272	0.0263	82.0		54-109	3.40	20	WG593729
Indeno(1,2,3-cd)pyrene	mg/kg	0.0298	0.0287	90.0		51-125	3.75	21	WG593729
Naphthalene	mg/kg	0.0268	0.0249	81.0		45-105	7.12	24	WG593729
Phenanthrene	mg/kg	0.0291	0.0278	88.0		53-114	4.51	20	WG593729
Pyrene	mg/kg	0.0303	0.0291	92.0		53-121	3.95	20	WG593729
2-Fluorobiphenyl				81.85		34-129			WG593729
Nitrobenzene-d5				83.07		14-141			WG593729
p-Terphenyl-d14				108.1		25-139			WG593729
1-Methylnaphthalene	mg/l	0.00168	0.00148	84.0		48-126	12.5	21	WG593628
2-Chloronaphthalene	mg/l	0.00179	0.00157	89.0		47-129	13.1	21	WG593628
2-Methylnaphthalene	mg/l	0.00159	0.00141	80.0		43-126	12.3	21	WG593628
Acenaphthene	mg/l	0.00172	0.00151	86.0		51-121	12.9	20	WG593628
Acenaphthylene	mg/l	0.00161	0.00142	80.0		50-125	12.7	20	WG593628
Anthracene	mg/l	0.00170	0.00152	85.0		61-133	11.2	20	WG593628
Benzo(a)anthracene	mg/l	0.00184	0.00166	92.0		58-123	10.2	20	WG593628
Benzo(a)pyrene	mg/l	0.00180	0.00166	90.0		58-132	8.64	20	WG593628
Benzo(b)fluoranthene	mg/l	0.00198	0.00178	99.0		53-131	10.6	20	WG593628
Benzo(g,h,i)perylene	mg/l	0.00176	0.00162	88.0		54-139	8.41	20	WG593628
Benzo(k)fluoranthene	mg/l	0.00178	0.00163	89.0		55-137	9.03	20	WG593628
Chrysene	mg/l	0.00183	0.00166	92.0		58-132	9.84	20	WG593628
Dibenz(a,h)anthracene	mg/l	0.00173	0.00158	86.0		57-131	8.66	20	WG593628
Fluoranthene	mg/l	0.00177	0.00159	88.0		57-134	10.6	20	WG593628
Fluorene	mg/l	0.00168	0.00147	84.0		52-125	13.3	20	WG593628
Indeno(1,2,3-cd)pyrene	mg/l	0.00173	0.00161	86.0		57-133	6.76	20	WG593628
Naphthalene	mg/l	0.00168	0.00148	84.0		41-122	12.6	21	WG593628
Phenanthrene	mg/l	0.00179	0.00159	89.0		54-127	11.7	20	WG593628
Pyrene	mg/l	0.00162	0.00150	81.0		55-135	7.59	20	WG593628
2-Fluorobiphenyl				92.49		44-123			WG593628
Nitrobenzene-d5				88.50		36-136			WG593628
p-Terphenyl-d14				84.67		38-132			WG593628
TPH (GC/FID) High Fraction	ppm	1.32	1.45	88.0		50-150	9.39	25	WG593212
o-Terphenyl				80.40		50-150			WG593212

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
TPH (GC/FID) Low Fraction	mg/kg	28.4	0	5.5	103.	55-109	L575162-01	WG592827
a,a,a-Trifluorotoluene(FID)					102.1	59-128		WG592827
Benzene	mg/kg	1.47	0.360	.025	82.5	44-131	L574983-11	WG592800
Ethylbenzene	mg/kg	2.36	1.00	.025	101.	38-139	L574983-11	WG592800
Toluene	mg/kg	1.67	0.530	.025	84.4	43-127	L574983-11	WG592800
Total Xylenes	mg/kg	7.80	3.80	.075	98.7	38-137	L574983-11	WG592800
4-Bromofluorobenzene					108.6	67-133		WG592800
Dibromofluoromethane					100.0	72-135		WG592800
Toluene-d8					97.58	90-113		WG592800
a,a,a-Trifluorotoluene					103.2	89-115		WG592800

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Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
TPH (GC/FID) High Fraction	ppm	614.	440.	60	58.0	50-150	L574674-10	WG592920
o-Terphenyl					82.31	50-150		WG592920
Benzene	mg/l	0.0279	0.00860	.025	77.4	51-134	L574882-05	WG593261
Ethylbenzene	mg/l	0.0569	0.0320	.025	99.6	64-135	L574882-05	WG593261
Toluene	mg/l	0.0203	0	.025	81.2	61-126	L574882-05	WG593261
Total Xylenes	mg/l	0.204	0.120	.075	112.	64-133	L574882-05	WG593261
4-Bromofluorobenzene					101.5	82-120		WG593261
Dibromofluoromethane					99.29	82-126		WG593261
Toluene-d8					102.6	92-112		WG593261
a,a,a-Trifluorotoluene					105.3	90-116		WG593261
TPH (GC/FID) Low Fraction	mg/l	6.70	0	5.5	122.*	55-109	L574882-06	WG593264
a,a,a-Trifluorotoluene(FID)					119.8	62-128		WG593264
1-Methylnaphthalene	mg/kg	0.0288	0	.033	87.3	25-155	L575957-09	WG593729
2-Chloronaphthalene	mg/kg	0.0285	0	.033	86.3	31-153	L575957-09	WG593729
2-Methylnaphthalene	mg/kg	0.0314	0	.033	95.2	22-172	L575957-09	WG593729
Acenaphthene	mg/kg	0.0273	0	.033	82.7	43-133	L575957-09	WG593729
Acenaphthylene	mg/kg	0.0285	0	.033	86.4	42-146	L575957-09	WG593729
Anthracene	mg/kg	0.0294	0	.033	89.1	38-153	L575957-09	WG593729
Benzo(a)anthracene	mg/kg	0.0294	0	.033	89.0	31-142	L575957-09	WG593729
Benzo(a)pyrene	mg/kg	0.0312	0	.033	94.5	26-152	L575957-09	WG593729
Benzo(b)fluoranthene	mg/kg	0.0318	0	.033	96.5	10-188	L575957-09	WG593729
Benzo(g,h,i)perylene	mg/kg	0.0332	0	.033	101.	10-176	L575957-09	WG593729
Benzo(k)fluoranthene	mg/kg	0.0292	0	.033	88.5	22-163	L575957-09	WG593729
Chrysene	mg/kg	0.0314	0	.033	95.2	26-146	L575957-09	WG593729
Dibenz(a,h)anthracene	mg/kg	0.0347	0	.033	105.	10-160	L575957-09	WG593729
Fluoranthene	mg/kg	0.0288	0	.033	87.3	23-160	L575957-09	WG593729
Fluorene	mg/kg	0.0288	0	.033	87.2	44-143	L575957-09	WG593729
Indeno(1,2,3-cd)pyrene	mg/kg	0.0329	0	.033	99.6	10-157	L575957-09	WG593729
Naphthalene	mg/kg	0.0264	0	.033	79.9	22-156	L575957-09	WG593729
Phenanthrene	mg/kg	0.0283	0	.033	85.7	23-164	L575957-09	WG593729
Pyrene	mg/kg	0.0311	0	.033	94.4	12-170	L575957-09	WG593729
2-Fluorobiphenyl					88.54	34-129		WG593729
Nitrobenzene-d5					79.05	14-141		WG593729
p-Terphenyl-d14					115.1	25-139		WG593729

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	24.6	28.4	89.4	55-109	14.5	20	L575162-01	WG592827
a,a,a-Trifluorotoluene(FID)				102.7	59-128				WG592827
Benzene	mg/kg	1.54	1.47	87.6	44-131	4.52	21	L574983-11	WG592800
Ethylbenzene	mg/kg	2.42	2.36	105.	38-139	2.43	27	L574983-11	WG592800
Toluene	mg/kg	1.73	1.67	89.2	43-127	3.82	21	L574983-11	WG592800
Total Xylenes	mg/kg	7.96	7.80	103.	38-137	2.08	26	L574983-11	WG592800
4-Bromofluorobenzene				107.1	67-133				WG592800
Dibromofluoromethane				99.83	72-135				WG592800
Toluene-d8				98.63	90-113				WG592800
a,a,a-Trifluorotoluene				104.1	89-115				WG592800
TPH (GC/FID) High Fraction	ppm	654.	614.	71.3	50-150	6.31	25	L574674-10	WG592920

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



WPX Energy
Karolina Blaney
1058 County Road 215
Parachute, CO 81635

Quality Assurance Report
Level II

L574882

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 23, 2012

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
o-Terphenyl				88.53	50-150					
Benzene	mg/l	0.0283	0.0279	78.6	51-134	1.09	20	L574882-05		WG593261
Ethylbenzene	mg/l	0.0575	0.0569	102.	64-135	1.00	20	L574882-05		WG593261
Toluene	mg/l	0.0212	0.0203	84.8	61-126	4.31	20	L574882-05		WG593261
Total Xylenes	mg/l	0.201	0.204	108.	64-133	1.43	20	L574882-05		WG593261
4-Bromofluorobenzene				102.8	82-120					WG593261
Dibromofluoromethane				100.2	82-126					WG593261
Toluene-d8				101.9	92-112					WG593261
a,a,a-Trifluorotoluene				106.1	90-116					WG593261
TPH (GC/FID) Low Fraction	mg/l	6.35	6.70	115.*	55-109	5.40	20	L574882-06		WG593264
a,a,a-Trifluorotoluene(FID)				117.2	62-128					WG593264
1-Methylnaphthalene	mg/kg	0.0305	0.0288	92.5	25-155	5.78	27	L575957-09		WG593729
2-Chloronaphthalene	mg/kg	0.0284	0.0285	86.1	31-153	0.233	22	L575957-09		WG593729
2-Methylnaphthalene	mg/kg	0.0308	0.0314	93.4	22-172	1.86	29	L575957-09		WG593729
Acenaphthene	mg/kg	0.0278	0.0273	84.3	43-133	1.91	26	L575957-09		WG593729
Acenaphthylene	mg/kg	0.0290	0.0285	87.8	42-146	1.69	22	L575957-09		WG593729
Anthracene	mg/kg	0.0300	0.0294	90.8	38-153	1.93	27	L575957-09		WG593729
Benzo(a)anthracene	mg/kg	0.0309	0.0294	93.7	31-142	5.12	31	L575957-09		WG593729
Benzo(a)pyrene	mg/kg	0.0322	0.0312	97.6	26-152	3.23	32	L575957-09		WG593729
Benzo(b)fluoranthene	mg/kg	0.0323	0.0318	97.8	10-188	1.44	33	L575957-09		WG593729
Benzo(g,h,i)perylene	mg/kg	0.0342	0.0332	104.	10-176	2.76	30	L575957-09		WG593729
Benzo(k)fluoranthene	mg/kg	0.0312	0.0292	94.6	22-163	6.60	29	L575957-09		WG593729
Chrysene	mg/kg	0.0325	0.0314	98.5	26-146	3.37	30	L575957-09		WG593729
Dibenz(a,h)anthracene	mg/kg	0.0353	0.0347	107.	10-160	1.78	39	L575957-09		WG593729
Fluoranthene	mg/kg	0.0296	0.0288	89.6	23-160	2.52	22	L575957-09		WG593729
Fluorene	mg/kg	0.0289	0.0288	87.7	44-143	0.561	23	L575957-09		WG593729
Indeno(1,2,3-cd)pyrene	mg/kg	0.0338	0.0329	102.	10-157	2.66	40	L575957-09		WG593729
Naphthalene	mg/kg	0.0253	0.0264	76.8	22-156	4.03	27	L575957-09		WG593729
Phenanthrene	mg/kg	0.0280	0.0283	84.9	23-164	0.923	25	L575957-09		WG593729
Pyrene	mg/kg	0.0330	0.0311	100.	12-170	5.75	24	L575957-09		WG593729
2-Fluorobiphenyl				80.32	34-129					WG593729
Nitrobenzene-d5				77.72	14-141					WG593729
p-Terphenyl-d14				120.6	25-139					WG593729

Batch number /Run number / Sample number cross reference

WG592827: R2171093: L574882-04
WG592481: R2171394: L574882-01 02 03
WG592720: R2171433: L574882-01 02 03
WG592800: R2171754: L574882-04
WG592920: R2172213: L574882-04
WG592848: R2172713: L574882-05 06
WG592851: R2174395: L574882-05 06
WG593261: R2174473: L574882-05 06
WG593264: R2174593: L574882-05 06
WG593729: R2177134: L574882-04
WG593628: R2177635: L574882-05 06
WG592568: R2177694: L574882-01 02 03
WG593212: R2179714: L574882-05 06

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

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May 23, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

WPX Energy 1058 County Road 215 Parachute, CO 81635			Billing Information: Leo Braun 1058 County Rd. 215 Parachute, CO 81635			Analysis/Container/Preservative							Chain of Custody Page 1 of 1				
			Report to: Karolina Blaney/Greg Geras Email to: karolina.blaney@wpx.com greg.geras@wpxsolutions.com			<div style="display: flex; flex-direction: row-reverse;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> PH (2oz Clr - No Pres) SAR, SPCON (4oz Clr - No Pres) BTEX (SW-846 Method 8260) TPH (GRO/DRO) PAHs (SV8270PAHSIM) SPLP Ext. BTEX SPLP Ext. TPH (GRO/DRO) SPLP Ext. PAHs </div> </div>							 ESC L.A.B S.C.I.E.N.C.E.S 12065 Lebanon Road Mt. Juliet, TN 37122 Phone: (800) 767-5859 Phone: (615) 758-5858 Fax: (615) 758-5859				
Project Description: Rmv 216-21 Site Investigation			City/State Collected: CO														
Phone: (970) 683-2295		Client Project #: 5274		Lab Project #: WILPCO-RMV 216,21													
Collected by: Greg Geras		Site/Facility ID#: Rmv 216-21		P.O.#: ---													
Collected by (signature):		Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day.....200% <input type="checkbox"/> Next Day.....100% <input type="checkbox"/> Two Day.....50%		Date Results Needed: Email? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes FAX? <input type="checkbox"/> No <input type="checkbox"/> Yes											No. of Cntrs		CoCode: _____ (lab use only) Template/Prelogin: _____ Shipped Via: _____
Immediately Packed on Ice: N <input checked="" type="checkbox"/> Y <input type="checkbox"/>																	
Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs								Remarks/Contaminant	Sample # (lab only)		
RMV 216-21 Surface Soil 1	Grab	SS	0-0.5'	5/7/12	1034	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									L 574882-02
↓ - Surface Soil 2	↓	↓	↓	↓	1520	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									L 574882-02
↓ - Surface Soil 3	↓	↓	↓	↓	1530	2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>									-03
RMV 216-21 BHA B 4-6'	Grab	SS	4-6'	5/10/12	0840	3	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						-04
RMV 216-21 BHA B 34-36'	↓	↓	34-36'	↓	1100	2						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		-05
↓ - 60-61.5'	↓	↓	60-61.5'	↓	1400	2						<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		-06

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

pH _____ Temp _____

Remarks:

Relinquished by: (Signature)	Date: 5/10/12	Time: 1600	Received by: (Signature) _____	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier		Condition: JF (lab use only)
	Date:	Time:		Temp: 3.2	Bottles Received: 13	
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Date: 5-11-12	Time: 0900	pH Checked: _____
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	NCF: _____		



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Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

Report Summary

Wednesday May 23, 2012

Report Number: L575211

Samples Received: 05/15/12

Client Project:

Description: Clough Pit RMV 216-21

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 23, 2012

Date Received : May 15, 2012
Description : Clough Pit RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH 10 4-6 FT
Collected By : Greg Geras
Collection Date : 05/11/12 07:45

ESC Sample # : L575211-01

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	5200	100	mg/kg	8015D/GRO	05/16/12	1000
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	103.		% Rec.	602/8015	05/16/12	1000
Benzene	5.3	5.0	mg/kg	8260B	05/16/12	5000
Toluene	40.	25.	mg/kg	8260B	05/16/12	5000
Ethylbenzene	18.	5.0	mg/kg	8260B	05/16/12	5000
Total Xylenes	320	15.	mg/kg	8260B	05/16/12	5000
Surrogate Recovery						
Toluene-d8	108.		% Rec.	8260B	05/16/12	5000
Dibromofluoromethane	101.		% Rec.	8260B	05/16/12	5000
a,a,a-Trifluorotoluene	112.		% Rec.	8260B	05/16/12	5000
4-Bromofluorobenzene	106.		% Rec.	8260B	05/16/12	5000
TPH (GC/FID) High Fraction	4700	200	mg/kg	3546/DRO	05/16/12	50
Surrogate recovery(%)						
o-Terphenyl	104.		% Rec.	3546/DRO	05/16/12	50
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.23	0.12	mg/kg	8270C-SIM	05/22/12	20
Acenaphthene	0.45	0.12	mg/kg	8270C-SIM	05/22/12	20
Acenaphthylene	0.18	0.12	mg/kg	8270C-SIM	05/22/12	20
Benzo(a)anthracene	BDL	0.12	mg/kg	8270C-SIM	05/22/12	20
Benzo(a)pyrene	BDL	0.12	mg/kg	8270C-SIM	05/22/12	20
Benzo(b)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	05/22/12	20
Benzo(g,h,i)perylene	BDL	0.12	mg/kg	8270C-SIM	05/22/12	20
Benzo(k)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	05/22/12	20
Chrysene	BDL	0.12	mg/kg	8270C-SIM	05/22/12	20
Dibenz(a,h)anthracene	BDL	0.12	mg/kg	8270C-SIM	05/22/12	20
Fluoranthene	BDL	0.12	mg/kg	8270C-SIM	05/22/12	20
Fluorene	1.4	0.12	mg/kg	8270C-SIM	05/22/12	20
Indeno(1,2,3-cd)pyrene	BDL	0.12	mg/kg	8270C-SIM	05/22/12	20
Naphthalene	14.	0.60	mg/kg	8270C-SIM	05/22/12	100
Phenanthrene	1.0	0.12	mg/kg	8270C-SIM	05/22/12	20
Pyrene	0.16	0.12	mg/kg	8270C-SIM	05/22/12	20
1-Methylnaphthalene	6.0	0.12	mg/kg	8270C-SIM	05/22/12	20
2-Methylnaphthalene	22.	0.60	mg/kg	8270C-SIM	05/22/12	100
2-Chloronaphthalene	BDL	0.12	mg/kg	8270C-SIM	05/22/12	20
Surrogate Recovery						
Nitrobenzene-d5	19800		% Rec.	8270C-SIM	05/22/12	20
2-Fluorobiphenyl	347.		% Rec.	8270C-SIM	05/22/12	20
p-Terphenyl-d14	127.		% Rec.	8270C-SIM	05/22/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/23/12 14:25 Printed: 05/23/12 14:26

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 23, 2012

Date Received : May 15, 2012
Description : Clough Pit RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH 10 39-40.5 FT
Collected By : Greg Geras
Collection Date : 05/11/12 10:15

ESC Sample # : L575211-02

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
SPLP ZHE Extraction	-			1312	05/17/12	1
SPLP Extraction	-			1312	05/16/12	1
TPH (GC/FID) Low Fraction	3.9	0.10	mg/l	8015D/GRO	05/17/12	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	96.4		% Rec.	8015D/GRO	05/17/12	1
Benzene	0.020	0.010	mg/l	8260B	05/17/12	10
Toluene	0.12	0.050	mg/l	8260B	05/17/12	10
Ethylbenzene	0.053	0.010	mg/l	8260B	05/17/12	10
Total Xylenes	0.82	0.030	mg/l	8260B	05/17/12	10
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	05/17/12	10
Dibromofluoromethane	98.1		% Rec.	8260B	05/17/12	10
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	05/17/12	10
4-Bromofluorobenzene	103.		% Rec.	8260B	05/17/12	10
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3510C / DRO	05/22/12	1
Surrogate recovery(%) o-Terphenyl	75.5		% Rec.	3510C / DRO	05/22/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.000050	mg/l	8270C-SIM	05/20/12	1
Acenaphthene	BDL	0.000050	mg/l	8270C-SIM	05/20/12	1
Acenaphthylene	0.00010	0.000050	mg/l	8270C-SIM	05/20/12	1
Benzo(a)anthracene	BDL	0.000050	mg/l	8270C-SIM	05/20/12	1
Benzo(a)pyrene	BDL	0.000050	mg/l	8270C-SIM	05/20/12	1
Benzo(b)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	05/20/12	1
Benzo(g,h,i)perylene	BDL	0.000050	mg/l	8270C-SIM	05/20/12	1
Benzo(k)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	05/20/12	1
Chrysene	BDL	0.000050	mg/l	8270C-SIM	05/20/12	1
Dibenz(a,h)anthracene	BDL	0.000050	mg/l	8270C-SIM	05/20/12	1
Fluoranthene	BDL	0.000050	mg/l	8270C-SIM	05/20/12	1
Fluorene	0.00010	0.000050	mg/l	8270C-SIM	05/20/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.000050	mg/l	8270C-SIM	05/20/12	1
Naphthalene	0.0023	0.00025	mg/l	8270C-SIM	05/20/12	1
Phenanthrene	0.00012	0.000050	mg/l	8270C-SIM	05/20/12	1
Pyrene	BDL	0.000050	mg/l	8270C-SIM	05/20/12	1
1-Methylnaphthalene	0.00084	0.00025	mg/l	8270C-SIM	05/20/12	1
2-Methylnaphthalene	0.0018	0.00025	mg/l	8270C-SIM	05/20/12	1
2-Chloronaphthalene	BDL	0.00025	mg/l	8270C-SIM	05/20/12	1
Surrogate Recovery						
Nitrobenzene-d5	85.1		% Rec.	8270C-SIM	05/20/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)



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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 23, 2012

Date Received : May 15, 2012
Description : Clough Pit RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH 10 39-40.5 FT
Collected By : Greg Geras
Collection Date : 05/11/12 10:15

ESC Sample # : L575211-02

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Fluorobiphenyl	76.4		% Rec.	8270C-SIM	05/20/12	1
p-Terphenyl-d14	76.7		% Rec.	8270C-SIM	05/20/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/23/12 14:25 Printed: 05/23/12 14:26



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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 23, 2012

Date Received : May 15, 2012
Description : Clough Pit RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH 10 65-66 FT
Collected By : Greg Geras
Collection Date : 05/11/12 15:45

ESC Sample # : L575211-03

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
SPLP ZHE Extraction	-			1312	05/17/12	1
SPLP Extraction	-			1312	05/16/12	1
TPH (GC/FID) Low Fraction	BDL	0.10	mg/l	8015D/GRO	05/17/12	1
Surrogate Recovery-% a,a,a-Trifluorotoluene(FID)	112.		% Rec.	8015D/GRO	05/17/12	1
Benzene	BDL	0.0010	mg/l	8260B	05/17/12	1
Toluene	BDL	0.0050	mg/l	8260B	05/17/12	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	05/17/12	1
Total Xylenes	0.0031	0.0030	mg/l	8260B	05/17/12	1
Surrogate Recovery						
Toluene-d8	103.		% Rec.	8260B	05/17/12	1
Dibromofluoromethane	99.4		% Rec.	8260B	05/17/12	1
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	05/17/12	1
4-Bromofluorobenzene	103.		% Rec.	8260B	05/17/12	1
TPH (GC/FID) High Fraction	BDL	0.10	mg/l	3510C / DRO	05/22/12	1
Surrogate recovery(%) o-Terphenyl	63.7		% Rec.	3510C / DRO	05/22/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.000050	mg/l	8270C-SIM	05/21/12	1
Acenaphthene	BDL	0.000050	mg/l	8270C-SIM	05/21/12	1
Acenaphthylene	0.000054	0.000050	mg/l	8270C-SIM	05/21/12	1
Benzo(a)anthracene	BDL	0.000050	mg/l	8270C-SIM	05/21/12	1
Benzo(a)pyrene	BDL	0.000050	mg/l	8270C-SIM	05/21/12	1
Benzo(b)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	05/21/12	1
Benzo(g,h,i)perylene	BDL	0.000050	mg/l	8270C-SIM	05/21/12	1
Benzo(k)fluoranthene	BDL	0.000050	mg/l	8270C-SIM	05/21/12	1
Chrysene	BDL	0.000050	mg/l	8270C-SIM	05/21/12	1
Dibenz(a,h)anthracene	BDL	0.000050	mg/l	8270C-SIM	05/21/12	1
Fluoranthene	BDL	0.000050	mg/l	8270C-SIM	05/21/12	1
Fluorene	BDL	0.000050	mg/l	8270C-SIM	05/21/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.000050	mg/l	8270C-SIM	05/21/12	1
Naphthalene	BDL	0.000025	mg/l	8270C-SIM	05/21/12	1
Phenanthrene	BDL	0.000050	mg/l	8270C-SIM	05/21/12	1
Pyrene	0.000073	0.000050	mg/l	8270C-SIM	05/21/12	1
1-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	05/21/12	1
2-Methylnaphthalene	BDL	0.00025	mg/l	8270C-SIM	05/21/12	1
2-Chloronaphthalene	BDL	0.00025	mg/l	8270C-SIM	05/21/12	1
Surrogate Recovery						
Nitrobenzene-d5	74.7		% Rec.	8270C-SIM	05/21/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)



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Est. 1970

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 23, 2012

Date Received : May 15, 2012
Description : Clough Pit RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH 10 65-66 FT
Collected By : Greg Geras
Collection Date : 05/11/12 15:45

ESC Sample # : L575211-03

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
2-Fluorobiphenyl	73.3		% Rec.	8270C-SIM	05/21/12	1
p-Terphenyl-d14	72.9		% Rec.	8270C-SIM	05/21/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

This report shall not be reproduced, except in full, without the written approval from ESC.

Reported: 05/23/12 14:25 Printed: 05/23/12 14:26

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L575211-01	WG592880	SAMP	Nitrobenzene-d5	R2177674	J7
	WG592880	SAMP	2-Fluorobiphenyl	R2177674	J7
	WG592880	SAMP	p-Terphenyl-d14	R2177674	J7
	WG592879	SAMP	o-Terphenyl	R2172293	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
05/23/12 at 14:26:03

TSR Signing Reports: 364
R5 - Desired TAT

for 910-1 List log BTEXGRO, DRO and PAHSIM to separate dash number. \$100 min invoice removed
per Rodney Mann 9/19/11 TAH, no energy surcharge per Rodney Mann 10/26/11 TAH

Sample: L575211-01 Account: WILPCO Received: 05/15/12 09:00 Due Date: 05/22/12 00:00 RPT Date: 05/23/12 14:25

Sample: L575211-02 Account: WILPCO Received: 05/15/12 09:00 Due Date: 05/22/12 00:00 RPT Date: 05/23/12 14:25
Rotate for V8260BTEX, GRO/DRO, SV8270PAHSIM.

Sample: L575211-03 Account: WILPCO Received: 05/15/12 09:00 Due Date: 05/22/12 00:00 RPT Date: 05/23/12 14:25
Rotate for V8260BTEX, GRO/DRO, SV8270PAHSIM.



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .001	mg/kg			WG592945	05/16/12 01:14
Ethylbenzene	< .001	mg/kg			WG592945	05/16/12 01:14
Toluene	< .005	mg/kg			WG592945	05/16/12 01:14
Total Xylenes	< .003	mg/kg			WG592945	05/16/12 01:14
4-Bromofluorobenzene		% Rec.	105.8	67-133	WG592945	05/16/12 01:14
Dibromofluoromethane		% Rec.	99.59	72-135	WG592945	05/16/12 01:14
Toluene-d8		% Rec.	106.4	90-113	WG592945	05/16/12 01:14
a,a,a-Trifluorotoluene		% Rec.	109.0	89-115	WG592945	05/16/12 01:14
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG592960	05/15/12 23:47
a,a,a-Trifluorotoluene(FID)		% Rec.	99.46	59-128	WG592960	05/15/12 23:47
TPH (GC/FID) High Fraction	< 4	ppm			WG592879	05/16/12 10:42
o-Terphenyl		% Rec.	63.56	50-150	WG592879	05/16/12 10:42
Benzene	< .001	mg/l			WG593261	05/17/12 12:25
Ethylbenzene	< .001	mg/l			WG593261	05/17/12 12:25
Toluene	< .005	mg/l			WG593261	05/17/12 12:25
Total Xylenes	< .003	mg/l			WG593261	05/17/12 12:25
4-Bromofluorobenzene		% Rec.	102.4	82-120	WG593261	05/17/12 12:25
Dibromofluoromethane		% Rec.	98.80	82-126	WG593261	05/17/12 12:25
Toluene-d8		% Rec.	101.6	92-112	WG593261	05/17/12 12:25
a,a,a-Trifluorotoluene		% Rec.	106.0	90-116	WG593261	05/17/12 12:25
TPH (GC/FID) Low Fraction	< .1	mg/l			WG593264	05/17/12 14:22
a,a,a-Trifluorotoluene(FID)		% Rec.	112.0	62-128	WG593264	05/17/12 14:22
1-Methylnaphthalene	< .00025	mg/l			WG593628	05/20/12 19:49
2-Chloronaphthalene	< .00025	mg/l			WG593628	05/20/12 19:49
2-Methylnaphthalene	< .00025	mg/l			WG593628	05/20/12 19:49
Acenaphthene	< .00005	mg/l			WG593628	05/20/12 19:49
Acenaphthylene	< .00005	mg/l			WG593628	05/20/12 19:49
Anthracene	< .00005	mg/l			WG593628	05/20/12 19:49
Benzo(a)anthracene	< .00005	mg/l			WG593628	05/20/12 19:49
Benzo(a)pyrene	< .00005	mg/l			WG593628	05/20/12 19:49
Benzo(b)fluoranthene	< .00005	mg/l			WG593628	05/20/12 19:49
Benzo(g,h,i)perylene	< .00005	mg/l			WG593628	05/20/12 19:49
Benzo(k)fluoranthene	< .00005	mg/l			WG593628	05/20/12 19:49
Chrysene	< .00005	mg/l			WG593628	05/20/12 19:49
Dibenz(a,h)anthracene	< .00005	mg/l			WG593628	05/20/12 19:49
Fluoranthene	< .00005	mg/l			WG593628	05/20/12 19:49
Fluorene	< .00005	mg/l			WG593628	05/20/12 19:49
Indeno(1,2,3-cd)pyrene	< .00005	mg/l			WG593628	05/20/12 19:49
Naphthalene	< .00025	mg/l			WG593628	05/20/12 19:49
Phenanthrene	< .00005	mg/l			WG593628	05/20/12 19:49
Pyrene	< .00005	mg/l			WG593628	05/20/12 19:49
2-Fluorobiphenyl		% Rec.	89.74	44-123	WG593628	05/20/12 19:49
Nitrobenzene-d5		% Rec.	89.42	36-136	WG593628	05/20/12 19:49
p-Terphenyl-d14		% Rec.	84.26	38-132	WG593628	05/20/12 19:49
1-Methylnaphthalene	< .006	mg/kg			WG592880	05/19/12 04:26
2-Chloronaphthalene	< .006	mg/kg			WG592880	05/19/12 04:26
2-Methylnaphthalene	< .006	mg/kg			WG592880	05/19/12 04:26

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Acenaphthene	< .006	mg/kg			WG592880	05/19/12 04:26
Acenaphthylene	< .006	mg/kg			WG592880	05/19/12 04:26
Anthracene	< .006	mg/kg			WG592880	05/19/12 04:26
Benzo(a)anthracene	< .006	mg/kg			WG592880	05/19/12 04:26
Benzo(a)pyrene	< .006	mg/kg			WG592880	05/19/12 04:26
Benzo(b)fluoranthene	< .006	mg/kg			WG592880	05/19/12 04:26
Benzo(g,h,i)perylene	< .006	mg/kg			WG592880	05/19/12 04:26
Benzo(k)fluoranthene	< .006	mg/kg			WG592880	05/19/12 04:26
Chrysene	< .006	mg/kg			WG592880	05/19/12 04:26
Dibenz(a,h)anthracene	< .006	mg/kg			WG592880	05/19/12 04:26
Fluoranthene	< .006	mg/kg			WG592880	05/19/12 04:26
Fluorene	< .006	mg/kg			WG592880	05/19/12 04:26
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG592880	05/19/12 04:26
Naphthalene	< .006	mg/kg			WG592880	05/19/12 04:26
Phenanthrene	< .006	mg/kg			WG592880	05/19/12 04:26
Pyrene	< .006	mg/kg			WG592880	05/19/12 04:26
2-Fluorobiphenyl		% Rec.	87.90	34-129	WG592880	05/19/12 04:26
Nitrobenzene-d5		% Rec.	87.10	14-141	WG592880	05/19/12 04:26
p-Terphenyl-d14		% Rec.	116.7	25-139	WG592880	05/19/12 04:26
TPH (GC/FID) High Fraction	< .1	ppm			WG593212	05/22/12 07:55
o-Terphenyl		% Rec.	80.61	50-150	WG593212	05/22/12 07:55

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.025	0.0251	100.	72-120	WG592945
Ethylbenzene	mg/kg	.025	0.0239	95.4	76-126	WG592945
Toluene	mg/kg	.025	0.0240	96.1	74-155	WG592945
Total Xylenes	mg/kg	.075	0.0714	95.3	76-126	WG592945
4-Bromofluorobenzene				105.5	67-133	WG592945
Dibromofluoromethane				104.9	72-135	WG592945
Toluene-d8				106.6	90-113	WG592945
a,a,a-Trifluorotoluene				104.9	89-115	WG592945
TPH (GC/FID) Low Fraction	mg/kg	5.5	7.27	132.	67-135	WG592960
a,a,a-Trifluorotoluene(FID)				106.5	59-128	WG592960
TPH (GC/FID) High Fraction	ppm	60	35.9	59.9	50-150	WG592879
o-Terphenyl				63.47	50-150	WG592879
Benzene	mg/l	.025	0.0192	76.8	72-119	WG593261
Ethylbenzene	mg/l	.025	0.0220	87.9	77-124	WG593261
Toluene	mg/l	.025	0.0204	81.7	75-114	WG593261
Total Xylenes	mg/l	.075	0.0666	88.8	77-123	WG593261
4-Bromofluorobenzene				100.4	82-120	WG593261
Dibromofluoromethane				99.38	82-126	WG593261
Toluene-d8				100.4	92-112	WG593261
a,a,a-Trifluorotoluene				106.7	90-116	WG593261
TPH (GC/FID) Low Fraction	mg/l	5.5	6.43	117.	70-124	WG593264
a,a,a-Trifluorotoluene(FID)				119.8	62-128	WG593264

* Performance of this Analyte is outside of established criteria.
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Analyte	Units	Laboratory Control		Sample	% Rec	Limit	Batch
		Known Val	Result				
1-Methylnaphthalene	mg/l	.002	0.00148		73.9	48-126	WG593628
2-Chloronaphthalene	mg/l	.002	0.00157		78.5	47-129	WG593628
2-Methylnaphthalene	mg/l	.002	0.00141		70.5	43-126	WG593628
Acenaphthene	mg/l	.002	0.00151		75.6	51-121	WG593628
Acenaphthylene	mg/l	.002	0.00142		70.8	50-125	WG593628
Anthracene	mg/l	.002	0.00152		75.9	61-133	WG593628
Benzo(a)anthracene	mg/l	.002	0.00166		83.1	58-123	WG593628
Benzo(a)pyrene	mg/l	.002	0.00166		82.8	58-132	WG593628
Benzo(b)fluoranthene	mg/l	.002	0.00178		89.0	53-131	WG593628
Benzo(g,h,i)perylene	mg/l	.002	0.00162		80.8	54-139	WG593628
Benzo(k)fluoranthene	mg/l	.002	0.00163		81.3	55-137	WG593628
Chrysene	mg/l	.002	0.00166		83.0	58-132	WG593628
Dibenz(a,h)anthracene	mg/l	.002	0.00158		79.2	57-131	WG593628
Fluoranthene	mg/l	.002	0.00159		79.4	57-134	WG593628
Fluorene	mg/l	.002	0.00147		73.5	52-125	WG593628
Indeno(1,2,3-cd)pyrene	mg/l	.002	0.00161		80.7	57-133	WG593628
Naphthalene	mg/l	.002	0.00148		74.1	41-122	WG593628
Phenanthrene	mg/l	.002	0.00159		79.5	54-127	WG593628
Pyrene	mg/l	.002	0.00150		75.1	55-135	WG593628
2-Fluorobiphenyl					78.50	44-123	WG593628
Nitrobenzene-d5					77.06	36-136	WG593628
p-Terphenyl-d14					77.29	38-132	WG593628
1-Methylnaphthalene	mg/kg	.033	0.0272		82.4	48-113	WG592880
2-Chloronaphthalene	mg/kg	.033	0.0263		79.6	51-114	WG592880
2-Methylnaphthalene	mg/kg	.033	0.0274		83.1	44-109	WG592880
Acenaphthene	mg/kg	.033	0.0251		75.9	52-108	WG592880
Acenaphthylene	mg/kg	.033	0.0260		78.8	51-110	WG592880
Anthracene	mg/kg	.033	0.0295		89.2	58-120	WG592880
Benzo(a)anthracene	mg/kg	.033	0.0279		84.6	54-110	WG592880
Benzo(a)pyrene	mg/kg	.033	0.0290		88.0	56-118	WG592880
Benzo(b)fluoranthene	mg/kg	.033	0.0296		89.8	55-114	WG592880
Benzo(g,h,i)perylene	mg/kg	.033	0.0297		90.0	48-130	WG592880
Benzo(k)fluoranthene	mg/kg	.033	0.0280		84.8	55-122	WG592880
Chrysene	mg/kg	.033	0.0296		89.8	57-118	WG592880
Dibenz(a,h)anthracene	mg/kg	.033	0.0290		87.8	53-122	WG592880
Fluoranthene	mg/kg	.033	0.0296		89.6	58-118	WG592880
Fluorene	mg/kg	.033	0.0260		78.7	54-109	WG592880
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0294		89.1	51-125	WG592880
Naphthalene	mg/kg	.033	0.0259		78.5	45-105	WG592880
Phenanthrene	mg/kg	.033	0.0268		81.3	53-114	WG592880
Pyrene	mg/kg	.033	0.0294		89.1	53-121	WG592880
2-Fluorobiphenyl					79.80	34-129	WG592880
Nitrobenzene-d5					84.20	14-141	WG592880
p-Terphenyl-d14					107.2	25-139	WG592880
TPH (GC/FID) High Fraction	ppm	1.5	1.45		96.4	50-150	WG593212
o-Terphenyl					87.52	50-150	WG593212

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0244	0.0251	98.0	72-120	2.72	20	WG592945
Ethylbenzene	mg/kg	0.0246	0.0239	98.0	76-126	3.24	20	WG592945
Toluene	mg/kg	0.0237	0.0240	95.0	74-155	1.13	20	WG592945
Total Xylenes	mg/kg	0.0724	0.0714	96.0	76-126	1.37	20	WG592945
4-Bromofluorobenzene				102.4	67-133			WG592945

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Analyte	Laboratory Control Sample Duplicate				Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
Dibromofluoromethane				102.4	72-135			
Toluene-d8				106.4	90-113			
a,a,a-Trifluorotoluene				106.4	89-115			
TPH (GC/FID) Low Fraction	mg/kg	7.37	7.27	134.	67-135	1.49	20	WG592960
a,a,a-Trifluorotoluene(FID)				106.6	59-128			WG592960
TPH (GC/FID) High Fraction	ppm	34.2	35.9	57.0	50-150	5.02	25	WG592879
o-Terphenyl				62.75	50-150			WG592879
Benzene	mg/l	0.0195	0.0192	78.0	72-119	1.73	20	WG593261
Ethylbenzene	mg/l	0.0234	0.0220	93.0	77-124	6.13	20	WG593261
Toluene	mg/l	0.0216	0.0204	86.0	75-114	5.41	20	WG593261
Total Xylenes	mg/l	0.0716	0.0666	95.0	77-123	7.19	20	WG593261
4-Bromofluorobenzene				99.08	82-120			WG593261
Dibromofluoromethane				99.82	82-126			WG593261
Toluene-d8				102.8	92-112			WG593261
a,a,a-Trifluorotoluene				107.7	90-116			WG593261
TPH (GC/FID) Low Fraction	mg/l	6.46	6.43	118.	70-124	0.580	20	WG593264
a,a,a-Trifluorotoluene(FID)				119.7	62-128			WG593264
1-Methylnaphthalene	mg/l	0.00168	0.00148	84.0	48-126	12.5	21	WG593628
2-Chloronaphthalene	mg/l	0.00179	0.00157	89.0	47-129	13.1	21	WG593628
2-Methylnaphthalene	mg/l	0.00159	0.00141	80.0	43-126	12.3	21	WG593628
Acenaphthene	mg/l	0.00172	0.00151	86.0	51-121	12.9	20	WG593628
Acenaphthylene	mg/l	0.00161	0.00142	80.0	50-125	12.7	20	WG593628
Anthracene	mg/l	0.00170	0.00152	85.0	61-133	11.2	20	WG593628
Benzo(a)anthracene	mg/l	0.00184	0.00166	92.0	58-123	10.2	20	WG593628
Benzo(a)pyrene	mg/l	0.00180	0.00166	90.0	58-132	8.64	20	WG593628
Benzo(b)fluoranthene	mg/l	0.00198	0.00178	99.0	53-131	10.6	20	WG593628
Benzo(g,h,i)perylene	mg/l	0.00176	0.00162	88.0	54-139	8.41	20	WG593628
Benzo(k)fluoranthene	mg/l	0.00178	0.00163	89.0	55-137	9.03	20	WG593628
Chrysene	mg/l	0.00183	0.00166	92.0	58-132	9.84	20	WG593628
Dibenz(a,h)anthracene	mg/l	0.00173	0.00158	86.0	57-131	8.66	20	WG593628
Fluoranthene	mg/l	0.00177	0.00159	88.0	57-134	10.6	20	WG593628
Fluorene	mg/l	0.00168	0.00147	84.0	52-125	13.3	20	WG593628
Indeno(1,2,3-cd)pyrene	mg/l	0.00173	0.00161	86.0	57-133	6.76	20	WG593628
Naphthalene	mg/l	0.00168	0.00148	84.0	41-122	12.6	21	WG593628
Phenanthrene	mg/l	0.00179	0.00159	89.0	54-127	11.7	20	WG593628
Pyrene	mg/l	0.00162	0.00150	81.0	55-135	7.59	20	WG593628
2-Fluorobiphenyl				92.49	44-123			WG593628
Nitrobenzene-d5				88.50	36-136			WG593628
p-Terphenyl-d14				84.67	38-132			WG593628
1-Methylnaphthalene	mg/kg	0.0286	0.0272	87.0	48-113	5.27	24	WG592880
2-Chloronaphthalene	mg/kg	0.0280	0.0263	85.0	51-114	6.31	24	WG592880
2-Methylnaphthalene	mg/kg	0.0289	0.0274	87.0	44-109	5.17	24	WG592880
Acenaphthene	mg/kg	0.0271	0.0251	82.0	52-108	7.92	22	WG592880
Acenaphthylene	mg/kg	0.0274	0.0260	83.0	51-110	5.12	21	WG592880
Anthracene	mg/kg	0.0315	0.0295	95.0	58-120	6.73	20	WG592880
Benzo(a)anthracene	mg/kg	0.0287	0.0279	87.0	54-110	2.79	22	WG592880
Benzo(a)pyrene	mg/kg	0.0303	0.0290	92.0	56-118	4.25	21	WG592880
Benzo(b)fluoranthene	mg/kg	0.0315	0.0296	96.0	55-114	6.25	20	WG592880
Benzo(g,h,i)perylene	mg/kg	0.0309	0.0297	94.0	48-130	3.93	20	WG592880

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



WPX Energy
Karolina Blaney
1058 County Road 215
Parachute, CO 81635

Quality Assurance Report
Level II

L575211

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 23, 2012

Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Benzo(k)fluoranthene	mg/kg	0.0289	0.0280	88.0		55-122	3.19	25	WG592880
Chrysene	mg/kg	0.0306	0.0296	92.0		57-118	3.03	20	WG592880
Dibenz(a,h)anthracene	mg/kg	0.0302	0.0290	92.0		53-122	4.18	20	WG592880
Fluoranthene	mg/kg	0.0311	0.0296	94.0		58-118	5.13	20	WG592880
Fluorene	mg/kg	0.0276	0.0260	84.0		54-109	5.95	20	WG592880
Indeno(1,2,3-cd)pyrene	mg/kg	0.0311	0.0294	94.0		51-125	5.72	21	WG592880
Naphthalene	mg/kg	0.0272	0.0259	82.0		45-105	5.02	24	WG592880
Phenanthrene	mg/kg	0.0302	0.0268	92.0		53-114	11.8	20	WG592880
Pyrene	mg/kg	0.0298	0.0294	90.0		53-121	1.17	20	WG592880
2-Fluorobiphenyl				82.32		34-129			WG592880
Nitrobenzene-d5				84.04		14-141			WG592880
p-Terphenyl-d14				113.2		25-139			WG592880
TPH (GC/FID) High Fraction	ppm	1.32	1.45	88.0		50-150	9.39	25	WG593212
o-Terphenyl				80.40		50-150			WG593212

Analyte	Units	MS Res	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
			Ref Res						
Benzene	mg/kg	0.117	0.00510	.025	89.8		44-131	L575297-10	WG592945
Ethylbenzene	mg/kg	0.115	0.00750	.025	86.3		38-139	L575297-10	WG592945
Toluene	mg/kg	0.125	0	.025	99.9		43-127	L575297-10	WG592945
Total Xylenes	mg/kg	0.353	0.0350	.075	84.9		38-137	L575297-10	WG592945
4-Bromofluorobenzene					98.09		67-133		WG592945
Dibromofluoromethane					105.4		72-135		WG592945
Toluene-d8					106.4		90-113		WG592945
a,a,a-Trifluorotoluene					106.7		89-115		WG592945
TPH (GC/FID) Low Fraction	mg/kg	16.5	0	5.5	60.2		55-109	L575232-05	WG592960
a,a,a-Trifluorotoluene(FID)					103.2		59-128		WG592960
Benzene	mg/l	0.0279	0.00860	.025	77.4		51-134	L574882-05	WG593261
Ethylbenzene	mg/l	0.0569	0.0320	.025	99.6		64-135	L574882-05	WG593261
Toluene	mg/l	0.0203	0	.025	81.2		61-126	L574882-05	WG593261
Total Xylenes	mg/l	0.204	0.120	.075	112.		64-133	L574882-05	WG593261
4-Bromofluorobenzene					101.5		82-120		WG593261
Dibromofluoromethane					99.29		82-126		WG593261
Toluene-d8					102.6		92-112		WG593261
a,a,a-Trifluorotoluene					105.3		90-116		WG593261
TPH (GC/FID) Low Fraction	mg/l	6.70	0	5.5	122.*		55-109	L574882-06	WG593264
a,a,a-Trifluorotoluene(FID)					119.8		62-128		WG593264
1-Methylnaphthalene	mg/kg	0.0973	0.0270	.033	213.*		25-155	L575198-05	WG592880
2-Methylnaphthalene	mg/kg	0.101	0.0280	.033	221.*		22-172	L575198-05	WG592880
Benzo(a)anthracene	mg/kg	0.0369	0.00100	.033	109.		31-142	L575198-05	WG592880
Benzo(a)pyrene	mg/kg	0.0387	0	.033	117.		26-152	L575198-05	WG592880
Benzo(b)fluoranthene	mg/kg	0.0399	0	.033	121.		10-188	L575198-05	WG592880
Benzo(g,h,i)perylene	mg/kg	0.0388	0	.033	118.		10-176	L575198-05	WG592880
Benzo(k)fluoranthene	mg/kg	0.0369	0	.033	112.		22-163	L575198-05	WG592880
Chrysene	mg/kg	0.0385	0	.033	117.		26-146	L575198-05	WG592880
Dibenz(a,h)anthracene	mg/kg	0.0407	0	.033	123.		10-160	L575198-05	WG592880
Indeno(1,2,3-cd)pyrene	mg/kg	0.0390	0	.033	118.		10-157	L575198-05	WG592880
Naphthalene	mg/kg	0.0583	0.00960	.033	147.		22-156	L575198-05	WG592880

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Tax I.D. 62-0814289

Est. 1970

May 23, 2012

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Pyrene	mg/kg	0.0550	0.00710	.033	145.	12-170	L575198-05	WG592880
Nitrobenzene-d5					123.5	14-141		WG592880
p-Terphenyl-d14					146.0*	25-139		WG592880
2-Chloronaphthalene	mg/kg	0.0404	0	.033	122.	31-153	L575198-05	WG592880
Acenaphthene	mg/kg	0.0556	0.00640	.033	149.*	43-133	L575198-05	WG592880
Acenaphthylene	mg/kg	0.0455	0.000650	.033	136.	42-146	L575198-05	WG592880
Anthracene	mg/kg	0.0464	0.00610	.033	122.	38-153	L575198-05	WG592880
Fluoranthene	mg/kg	0.0380	0	.033	115.	23-160	L575198-05	WG592880
Fluorene	mg/kg	0.0530	0.00780	.033	137.	44-143	L575198-05	WG592880
Phenanthrene	mg/kg	0.0617	0.0110	.033	154.	23-164	L575198-05	WG592880
2-Fluorobiphenyl					100.9	34-129		WG592880

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.122	0.117	93.4	44-131	3.80	21	L575297-10	WG592945
Ethylbenzene	mg/kg	0.120	0.115	90.0	38-139	4.01	27	L575297-10	WG592945
Toluene	mg/kg	0.131	0.125	105.	43-127	4.90	21	L575297-10	WG592945
Total Xylenes	mg/kg	0.371	0.353	89.7	38-137	4.96	26	L575297-10	WG592945
4-Bromofluorobenzene				92.41	67-133				WG592945
Dibromofluoromethane				104.0	72-135				WG592945
Toluene-d8				105.4	90-113				WG592945
a,a,a-Trifluorotoluene				107.9	89-115				WG592945
TPH (GC/FID) Low Fraction	mg/kg	12.6	16.5	46.0*	55-109	26.7*	20	L575232-05	WG592960
a,a,a-Trifluorotoluene(FID)				102.3	59-128				WG592960
Benzene	mg/l	0.0283	0.0279	78.6	51-134	1.09	20	L574882-05	WG593261
Ethylbenzene	mg/l	0.0575	0.0569	102.	64-135	1.00	20	L574882-05	WG593261
Toluene	mg/l	0.0212	0.0203	84.8	61-126	4.31	20	L574882-05	WG593261
Total Xylenes	mg/l	0.201	0.204	108.	64-133	1.43	20	L574882-05	WG593261
4-Bromofluorobenzene				102.8	82-120				WG593261
Dibromofluoromethane				100.2	82-126				WG593261
Toluene-d8				101.9	92-112				WG593261
a,a,a-Trifluorotoluene				106.1	90-116				WG593261
TPH (GC/FID) Low Fraction	mg/l	6.35	6.70	115.*	55-109	5.40	20	L574882-06	WG593264
a,a,a-Trifluorotoluene(FID)				117.2	62-128				WG593264
1-Methylnaphthalene	mg/kg	0.0766	0.0973	150.	25-155	23.8	27	L575198-05	WG592880
2-Methylnaphthalene	mg/kg	0.0799	0.101	157.	22-172	23.3	29	L575198-05	WG592880
Benzo(a)anthracene	mg/kg	0.0385	0.0369	114.	31-142	4.48	31	L575198-05	WG592880
Benzo(a)pyrene	mg/kg	0.0411	0.0387	125.	26-152	5.97	32	L575198-05	WG592880
Benzo(b)fluoranthene	mg/kg	0.0403	0.0399	122.	10-188	1.12	33	L575198-05	WG592880
Benzo(g,h,i)perylene	mg/kg	0.0410	0.0388	124.	10-176	5.57	30	L575198-05	WG592880
Benzo(k)fluoranthene	mg/kg	0.0408	0.0369	124.	22-163	10.1	29	L575198-05	WG592880
Chrysene	mg/kg	0.0414	0.0385	125.	26-146	7.29	30	L575198-05	WG592880
Dibenz(a,h)anthracene	mg/kg	0.0429	0.0407	130.	10-160	5.37	39	L575198-05	WG592880
Indeno(1,2,3-cd)pyrene	mg/kg	0.0411	0.0390	124.	10-157	5.25	40	L575198-05	WG592880
Naphthalene	mg/kg	0.0503	0.0583	123.	22-156	14.7	27	L575198-05	WG592880
Pyrene	mg/kg	0.0502	0.0550	131.	12-170	9.01	24	L575198-05	WG592880
Nitrobenzene-d5				146.0*	14-141				WG592880
p-Terphenyl-d14				151.5*	25-139				WG592880
2-Chloronaphthalene	mg/kg	0.0374	0.0404	113.	31-153	7.66	22	L575198-05	WG592880
Acenaphthene	mg/kg	0.0469	0.0556	123.	43-133	16.8	26	L575198-05	WG592880

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Tax I.D. 62-0814289

Est. 1970

May 23, 2012

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Acenaphthylene	mg/kg	0.0424	0.0455	126.	42-146	7.15	22	L575198-05		WG592880
Anthracene	mg/kg	0.0470	0.0464	124.	38-153	1.31	27	L575198-05		WG592880
Fluoranthene	mg/kg	0.0397	0.0380	120.	23-160	4.30	22	L575198-05		WG592880
Fluorene	mg/kg	0.0471	0.0530	119.	44-143	11.9	23	L575198-05		WG592880
Phenanthrene	mg/kg	0.0547	0.0617	132.	23-164	12.1	25	L575198-05		WG592880
2-Fluorobiphenyl				115.3	34-129					WG592880

Batch number /Run number / Sample number cross reference

WG592945: R2171253: L575211-01
WG592960: R2172133: L575211-01
WG592879: R2172293: L575211-01
WG592848: R2172713: L575211-02 03
WG592851: R2174395: L575211-02 03
WG593261: R2174473: L575211-02 03
WG593264: R2174593: L575211-02 03
WG593628: R2177635: L575211-02 03
WG592880: R2177674: L575211-01
WG593212: R2179714: L575211-02 03

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



12065 Lebanon Road
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Phone: (800) 767-5859
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CoCode (lab use only)

Template/Prelogin

Shipped Via:

Remarks/Contaminant

Sample # (lab only)

WPX Energy 1058 County Road 215 Parachute, CO 81635				Billing Information: Leo Braun 1058 County Rd. 215 Parachute, CO 81635				Analysis/Container/Preservative									
Project Description: RMV 216-21 Site Investigation				City/State Collected: CO				Report to: Karolina Blaney/Greg Geras Email to: karolina.blaney@williams.com greg.geras@williams.com									
Phone: (970) 683-2295				Client Project #: 68555 Key Lab Project #: WILPCO-RMV216.21				BTEX (SW-846 Method 8260) TPH (GRD/DRD) PAHs (SV8270PAH SIM) SPLP Ext. BTEX SPLP Ext. TPH (GRD/DRD) SPLP Ext. PAHs									
Collected by: Greg Geras				Site/Facility ID#: RMV 216-21				P.O.#:									
Collected by (signature):				Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day 200% <input type="checkbox"/> Next Day 100% <input type="checkbox"/> Two Day 50%				Date Results Needed: Email? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes FAX? <input type="checkbox"/> No <input type="checkbox"/> Yes				No. of Cntrs					
Immediately Packed on Ice N																	
Sample ID		Comp/Grab	Matrix*	Depth	Date	Time											
RMV 216-21 BH10 4-6'		Grab	SS	4-6'	5/11/12	0745	3	X	X	X							
RMV 216-21 BH10 39-40.5'		Grab	SS	39-40.5'	5/11/12	1015	2				X	X	X	X	X		
↓ ↓ ↓ ↓ 65-66'		Grab	SS	65-66'	5/11/12	1545	12				X	X	X	X	X		

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH Temp

Remarks:

Flow Other

Relinquished by: (Signature)	Date: 5/11/12	Time: 1415	Received by: (Signature)	Samples returned via: <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> UPS <input type="checkbox"/> Courier	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 3.1°C	Bottles Received: 6
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/15/12	Time: 09:00
				CoC Seals Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA	pH Checked:
				NCF:	



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Est. 1970

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

Report Summary

Tuesday May 29, 2012

Report Number: L575823

Samples Received: 05/17/12

Client Project:

Description: Clough Pit RMV 216-21

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 14 14-16 FT
Collected By : Greg Geras
Collection Date : 05/14/12 12:10

ESC Sample # : L575823-01

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	130	50.	mg/kg	8015D/GRO	05/19/12	500
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	96.4		% Rec.	602/8015	05/19/12	500
Benzene	0.087	0.050	mg/kg	8260B	05/22/12	50
Toluene	0.61	0.25	mg/kg	8260B	05/22/12	50
Ethylbenzene	1.6	0.050	mg/kg	8260B	05/22/12	50
Total Xylenes	24.	0.30	mg/kg	8260B	05/23/12	100
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	05/22/12	50
Dibromofluoromethane	93.3		% Rec.	8260B	05/22/12	50
a,a,a-Trifluorotoluene	96.9		% Rec.	8260B	05/22/12	50
4-Bromofluorobenzene	137.		% Rec.	8260B	05/22/12	50
TPH (GC/FID) High Fraction	380	4.0	mg/kg	3546/DRO	05/24/12	1
Surrogate recovery(%)						
o-Terphenyl	96.0		% Rec.	3546/DRO	05/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.038	0.0060	mg/kg	8270C-SIM	05/24/12	1
Acenaphthene	0.042	0.0060	mg/kg	8270C-SIM	05/24/12	1
Acenaphthylene	0.0096	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Fluorene	0.15	0.0060	mg/kg	8270C-SIM	05/24/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Naphthalene	0.87	0.12	mg/kg	8270C-SIM	05/27/12	20
Phenanthrene	0.041	0.0060	mg/kg	8270C-SIM	05/24/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
1-Methylnaphthalene	0.60	0.12	mg/kg	8270C-SIM	05/27/12	20
2-Methylnaphthalene	1.8	0.12	mg/kg	8270C-SIM	05/27/12	20
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Surrogate Recovery						
Nitrobenzene-d5	435.		% Rec.	8270C-SIM	05/27/12	20
2-Fluorobiphenyl	64.5		% Rec.	8270C-SIM	05/24/12	1
p-Terphenyl-d14	91.4		% Rec.	8270C-SIM	05/24/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 14 24-26 FT
Collected By : Greg Geras
Collection Date : 05/14/12 12:45

ESC Sample # : L575823-02

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	170	5.0	mg/kg	8015D/GRO	05/21/12	50
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	96.8		% Rec.	602/8015	05/21/12	50
Benzene	0.14	0.050	mg/kg	8260B	05/22/12	50
Toluene	BDL	0.25	mg/kg	8260B	05/22/12	50
Ethylbenzene	0.62	0.50	mg/kg	8260B	05/18/12	500
Total Xylenes	5.6	1.5	mg/kg	8260B	05/18/12	500
Surrogate Recovery						
Toluene-d8	108.		% Rec.	8260B	05/18/12	500
Dibromofluoromethane	108.		% Rec.	8260B	05/18/12	500
a,a,a-Trifluorotoluene	103.		% Rec.	8260B	05/18/12	500
4-Bromofluorobenzene	106.		% Rec.	8260B	05/18/12	500
TPH (GC/FID) High Fraction	160	4.0	mg/kg	3546/DRO	05/24/12	1
Surrogate recovery(%)						
o-Terphenyl	91.2		% Rec.	3546/DRO	05/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.015	0.0060	mg/kg	8270C-SIM	05/24/12	1
Acenaphthene	0.024	0.0060	mg/kg	8270C-SIM	05/24/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Fluorene	0.053	0.0060	mg/kg	8270C-SIM	05/24/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Naphthalene	0.44	0.12	mg/kg	8270C-SIM	05/26/12	20
Phenanthrene	0.033	0.0060	mg/kg	8270C-SIM	05/24/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
1-Methylnaphthalene	0.28	0.12	mg/kg	8270C-SIM	05/26/12	20
2-Methylnaphthalene	0.90	0.12	mg/kg	8270C-SIM	05/26/12	20
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Surrogate Recovery						
Nitrobenzene-d5	183.		% Rec.	8270C-SIM	05/26/12	20
2-Fluorobiphenyl	62.1		% Rec.	8270C-SIM	05/24/12	1
p-Terphenyl-d14	94.5		% Rec.	8270C-SIM	05/24/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 16 21-23 FT
Collected By : Greg Geras
Collection Date : 05/14/12 15:55

ESC Sample # : L575823-03

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/18/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	95.8		% Rec.	602/8015	05/18/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/18/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/18/12	5
Ethylbenzene	0.0050	0.0050	mg/kg	8260B	05/18/12	5
Total Xylenes	0.044	0.015	mg/kg	8260B	05/18/12	5
Surrogate Recovery						
Toluene-d8	107.		% Rec.	8260B	05/18/12	5
Dibromofluoromethane	102.		% Rec.	8260B	05/18/12	5
a,a,a-Trifluorotoluene	104.		% Rec.	8260B	05/18/12	5
4-Bromofluorobenzene	104.		% Rec.	8260B	05/18/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/24/12	1
Surrogate recovery(%)						
o-Terphenyl	75.1		% Rec.	3546/DRO	05/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Surrogate Recovery						
Nitrobenzene-d5	94.5		% Rec.	8270C-SIM	05/24/12	1
2-Fluorobiphenyl	68.5		% Rec.	8270C-SIM	05/24/12	1
p-Terphenyl-d14	50.9		% Rec.	8270C-SIM	05/24/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 16 35-37 FT
Collected By : Greg Geras
Collection Date : 05/14/12 16:55

ESC Sample # : L575823-04

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	120	25.	mg/kg	8015D/GRO	05/18/12	250
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	116.		% Rec.	602/8015	05/18/12	250
Benzene	0.16	0.050	mg/kg	8260B	05/22/12	50
Toluene	BDL	0.25	mg/kg	8260B	05/22/12	50
Ethylbenzene	1.3	0.050	mg/kg	8260B	05/22/12	50
Total Xylenes	16.	0.15	mg/kg	8260B	05/22/12	50
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	05/22/12	50
Dibromofluoromethane	95.8		% Rec.	8260B	05/22/12	50
a,a,a-Trifluorotoluene	99.6		% Rec.	8260B	05/22/12	50
4-Bromofluorobenzene	121.		% Rec.	8260B	05/22/12	50
TPH (GC/FID) High Fraction	870	80.	mg/kg	3546/DRO	05/24/12	20
Surrogate recovery(%)						
o-Terphenyl	109.		% Rec.	3546/DRO	05/24/12	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.042	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthene	0.067	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthylene	0.059	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluorene	0.20	0.0060	mg/kg	8270C-SIM	05/25/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Naphthalene	0.72	0.12	mg/kg	8270C-SIM	05/26/12	20
Phenanthrene	0.084	0.0060	mg/kg	8270C-SIM	05/25/12	1
Pyrene	0.010	0.0060	mg/kg	8270C-SIM	05/25/12	1
1-Methylnaphthalene	0.67	0.12	mg/kg	8270C-SIM	05/26/12	20
2-Methylnaphthalene	2.1	0.12	mg/kg	8270C-SIM	05/26/12	20
2-Chloronaphthalene	BDL	0.12	mg/kg	8270C-SIM	05/26/12	20
Surrogate Recovery						
Nitrobenzene-d5	1200		% Rec.	8270C-SIM	05/26/12	20
2-Fluorobiphenyl	106.		% Rec.	8270C-SIM	05/25/12	1
p-Terphenyl-d14	132.		% Rec.	8270C-SIM	05/25/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 16 59-60.5 FT
Collected By : Greg Geras
Collection Date : 05/14/12 19:00

ESC Sample # : L575823-05

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	0.58	0.50	mg/kg	8015D/GRO	05/18/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	109.		% Rec.	602/8015	05/18/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/18/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/18/12	5
Ethylbenzene	0.0070	0.0050	mg/kg	8260B	05/18/12	5
Total Xylenes	0.076	0.015	mg/kg	8260B	05/18/12	5
Surrogate Recovery						
Toluene-d8	107.		% Rec.	8260B	05/18/12	5
Dibromofluoromethane	102.		% Rec.	8260B	05/18/12	5
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	05/18/12	5
4-Bromofluorobenzene	101.		% Rec.	8260B	05/18/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/24/12	1
Surrogate recovery(%)						
o-Terphenyl	88.0		% Rec.	3546/DRO	05/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Naphthalene	0.0061	0.0060	mg/kg	8270C-SIM	05/25/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
2-Methylnaphthalene	0.0077	0.0060	mg/kg	8270C-SIM	05/25/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Surrogate Recovery						
Nitrobenzene-d5	75.3		% Rec.	8270C-SIM	05/25/12	1
2-Fluorobiphenyl	71.5		% Rec.	8270C-SIM	05/25/12	1
p-Terphenyl-d14	81.2		% Rec.	8270C-SIM	05/25/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 16 59-60.5 FT-FD
Collected By : Greg Geras
Collection Date : 05/14/12 19:00

ESC Sample # : L575823-06

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/18/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	111.		% Rec.	602/8015	05/18/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/18/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/18/12	5
Ethylbenzene	0.0085	0.0050	mg/kg	8260B	05/18/12	5
Total Xylenes	0.088	0.015	mg/kg	8260B	05/18/12	5
Surrogate Recovery						
Toluene-d8	107.		% Rec.	8260B	05/18/12	5
Dibromofluoromethane	102.		% Rec.	8260B	05/18/12	5
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	05/18/12	5
4-Bromofluorobenzene	102.		% Rec.	8260B	05/18/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/24/12	1
Surrogate recovery(%)						
o-Terphenyl	78.5		% Rec.	3546/DRO	05/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Surrogate Recovery						
Nitrobenzene-d5	91.9		% Rec.	8270C-SIM	05/24/12	1
2-Fluorobiphenyl	70.1		% Rec.	8270C-SIM	05/24/12	1
p-Terphenyl-d14	62.3		% Rec.	8270C-SIM	05/24/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/29/12 17:36 Printed: 05/29/12 17:37

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 13 15-17 T
Collected By : Greg Geras
Collection Date : 05/15/12 08:25

ESC Sample # : L575823-07

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	130	5.0	mg/kg	8015D/GRO	05/22/12	50
Surrogate Recovery (70-130) a,a,a-Trifluorotoluene(FID)	87.0		% Rec.	602/8015	05/22/12	50
Benzene	0.056	0.050	mg/kg	8260B	05/22/12	50
Toluene	BDL	0.25	mg/kg	8260B	05/22/12	50
Ethylbenzene	1.1	0.050	mg/kg	8260B	05/22/12	50
Total Xylenes	12.	0.15	mg/kg	8260B	05/22/12	50
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	05/22/12	50
Dibromofluoromethane	91.9		% Rec.	8260B	05/22/12	50
a,a,a-Trifluorotoluene	96.4		% Rec.	8260B	05/22/12	50
4-Bromofluorobenzene	125.		% Rec.	8260B	05/22/12	50
TPH (GC/FID) High Fraction	200	4.0	mg/kg	3546/DRO	05/24/12	1
Surrogate recovery(%) o-Terphenyl	80.3		% Rec.	3546/DRO	05/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.0069	0.0060	mg/kg	8270C-SIM	05/24/12	1
Acenaphthene	0.015	0.0060	mg/kg	8270C-SIM	05/24/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Fluorene	0.028	0.0060	mg/kg	8270C-SIM	05/24/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Naphthalene	0.41	0.12	mg/kg	8270C-SIM	05/26/12	20
Phenanthrene	0.017	0.0060	mg/kg	8270C-SIM	05/24/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
1-Methylnaphthalene	0.24	0.12	mg/kg	8270C-SIM	05/26/12	20
2-Methylnaphthalene	0.81	0.12	mg/kg	8270C-SIM	05/26/12	20
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Surrogate Recovery						
Nitrobenzene-d5	231.		% Rec.	8270C-SIM	05/26/12	20
2-Fluorobiphenyl	77.3		% Rec.	8270C-SIM	05/24/12	1
p-Terphenyl-d14	63.2		% Rec.	8270C-SIM	05/24/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/29/12 17:36 Printed: 05/29/12 17:37

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 13 25-25.5 FT
Collected By : Greg Geras
Collection Date : 05/15/12 09:15

ESC Sample # : L575823-08

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	240	5.0	mg/kg	8015D/GRO	05/22/12	50
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	92.8		% Rec.	602/8015	05/22/12	50
Benzene	0.070	0.050	mg/kg	8260B	05/18/12	50
Toluene	BDL	0.25	mg/kg	8260B	05/18/12	50
Ethylbenzene	0.70	0.050	mg/kg	8260B	05/18/12	50
Total Xylenes	2.8	0.15	mg/kg	8260B	05/18/12	50
Surrogate Recovery						
Toluene-d8	97.3		% Rec.	8260B	05/18/12	50
Dibromofluoromethane	88.7		% Rec.	8260B	05/18/12	50
a,a,a-Trifluorotoluene	103.		% Rec.	8260B	05/18/12	50
4-Bromofluorobenzene	122.		% Rec.	8260B	05/18/12	50
TPH (GC/FID) High Fraction	100	4.0	mg/kg	3546/DRO	05/24/12	1
Surrogate recovery(%)						
o-Terphenyl	91.7		% Rec.	3546/DRO	05/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.014	0.0060	mg/kg	8270C-SIM	05/24/12	1
Acenaphthene	0.028	0.0060	mg/kg	8270C-SIM	05/24/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Fluorene	0.060	0.0060	mg/kg	8270C-SIM	05/24/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Naphthalene	0.60	0.12	mg/kg	8270C-SIM	05/26/12	20
Phenanthrene	0.036	0.0060	mg/kg	8270C-SIM	05/24/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
1-Methylnaphthalene	0.45	0.12	mg/kg	8270C-SIM	05/26/12	20
2-Methylnaphthalene	1.4	0.12	mg/kg	8270C-SIM	05/26/12	20
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/24/12	1
Surrogate Recovery						
Nitrobenzene-d5	175.		% Rec.	8270C-SIM	05/26/12	20
2-Fluorobiphenyl	83.6		% Rec.	8270C-SIM	05/24/12	1
p-Terphenyl-d14	85.7		% Rec.	8270C-SIM	05/24/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 13 50-52 FT
Collected By : Greg Geras
Collection Date : 05/15/12 11:15

ESC Sample # : L575823-09

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/22/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	97.5		% Rec.	602/8015	05/22/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/18/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/18/12	5
Ethylbenzene	0.0077	0.0050	mg/kg	8260B	05/18/12	5
Total Xylenes	0.073	0.015	mg/kg	8260B	05/18/12	5
Surrogate Recovery						
Toluene-d8	94.9		% Rec.	8260B	05/18/12	5
Dibromofluoromethane	91.6		% Rec.	8260B	05/18/12	5
a,a,a-Trifluorotoluene	102.		% Rec.	8260B	05/18/12	5
4-Bromofluorobenzene	112.		% Rec.	8260B	05/18/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/24/12	1
Surrogate recovery(%)						
o-Terphenyl	80.7		% Rec.	3546/DRO	05/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Surrogate Recovery						
Nitrobenzene-d5	65.9		% Rec.	8270C-SIM	05/25/12	1
2-Fluorobiphenyl	77.1		% Rec.	8270C-SIM	05/25/12	1
p-Terphenyl-d14	116.		% Rec.	8270C-SIM	05/25/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 17 18-19 FT
Collected By : Greg Geras
Collection Date : 05/15/12 14:00

ESC Sample # : L575823-10

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	1700	50.	mg/kg	8015D/GRO	05/18/12	500
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	112.		% Rec.	602/8015	05/18/12	500
Benzene	BDL	0.20	mg/kg	8260B	05/18/12	200
Toluene	BDL	1.0	mg/kg	8260B	05/18/12	200
Ethylbenzene	17.	0.20	mg/kg	8260B	05/18/12	200
Total Xylenes	170	15.	mg/kg	8260B	05/20/12	5000
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	05/18/12	200
Dibromofluoromethane	99.5		% Rec.	8260B	05/18/12	200
a,a,a-Trifluorotoluene	114.		% Rec.	8260B	05/18/12	200
4-Bromofluorobenzene	135.		% Rec.	8260B	05/18/12	200
TPH (GC/FID) High Fraction	7400	400	mg/kg	3546/DRO	05/24/12	100
Surrogate recovery(%)						
o-Terphenyl	141.		% Rec.	3546/DRO	05/24/12	100
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.36	0.30	mg/kg	8270C-SIM	05/26/12	50
Acenaphthene	BDL	0.30	mg/kg	8270C-SIM	05/26/12	50
Acenaphthylene	BDL	0.30	mg/kg	8270C-SIM	05/26/12	50
Benzo(a)anthracene	BDL	0.30	mg/kg	8270C-SIM	05/26/12	50
Benzo(a)pyrene	BDL	0.30	mg/kg	8270C-SIM	05/26/12	50
Benzo(b)fluoranthene	BDL	0.30	mg/kg	8270C-SIM	05/26/12	50
Benzo(g,h,i)perylene	BDL	0.30	mg/kg	8270C-SIM	05/26/12	50
Benzo(k)fluoranthene	BDL	0.30	mg/kg	8270C-SIM	05/26/12	50
Chrysene	BDL	0.30	mg/kg	8270C-SIM	05/26/12	50
Dibenz(a,h)anthracene	BDL	0.30	mg/kg	8270C-SIM	05/26/12	50
Fluoranthene	BDL	0.30	mg/kg	8270C-SIM	05/26/12	50
Fluorene	1.6	0.30	mg/kg	8270C-SIM	05/26/12	50
Indeno(1,2,3-cd)pyrene	BDL	0.30	mg/kg	8270C-SIM	05/26/12	50
Naphthalene	9.8	0.30	mg/kg	8270C-SIM	05/26/12	50
Phenanthrene	0.89	0.30	mg/kg	8270C-SIM	05/26/12	50
Pyrene	BDL	0.30	mg/kg	8270C-SIM	05/26/12	50
1-Methylnaphthalene	5.4	0.30	mg/kg	8270C-SIM	05/26/12	50
2-Methylnaphthalene	27.	0.60	mg/kg	8270C-SIM	05/29/12	100
2-Chloronaphthalene	BDL	0.30	mg/kg	8270C-SIM	05/26/12	50
Surrogate Recovery						
Nitrobenzene-d5	4970		% Rec.	8270C-SIM	05/26/12	50
2-Fluorobiphenyl	116.		% Rec.	8270C-SIM	05/26/12	50
p-Terphenyl-d14	88.6		% Rec.	8270C-SIM	05/26/12	50

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 18 15-17 FT
Collected By : Greg Geras
Collection Date : 05/15/12 16:15

ESC Sample # : L575823-11

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	1.2	0.50	mg/kg	8015D/GRO	05/18/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	111.		% Rec.	602/8015	05/18/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/18/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/18/12	5
Ethylbenzene	0.025	0.0050	mg/kg	8260B	05/18/12	5
Total Xylenes	0.25	0.015	mg/kg	8260B	05/18/12	5
Surrogate Recovery						
Toluene-d8	96.6		% Rec.	8260B	05/18/12	5
Dibromofluoromethane	93.0		% Rec.	8260B	05/18/12	5
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	05/18/12	5
4-Bromofluorobenzene	111.		% Rec.	8260B	05/18/12	5
TPH (GC/FID) High Fraction	4.1	4.0	mg/kg	3546/DRO	05/24/12	1
Surrogate recovery(%)						
o-Terphenyl	65.1		% Rec.	3546/DRO	05/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Surrogate Recovery						
Nitrobenzene-d5	65.8		% Rec.	8270C-SIM	05/25/12	1
2-Fluorobiphenyl	67.7		% Rec.	8270C-SIM	05/25/12	1
p-Terphenyl-d14	73.9		% Rec.	8270C-SIM	05/25/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 18 50-51.5 FT
Collected By : Greg Geras
Collection Date : 05/15/12 18:15

ESC Sample # : L575823-12

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	2.4	0.50	mg/kg	8015D/GRO	05/18/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	109.		% Rec.	602/8015	05/18/12	5
Benzene	0.016	0.0050	mg/kg	8260B	05/18/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/18/12	5
Ethylbenzene	0.016	0.0050	mg/kg	8260B	05/18/12	5
Total Xylenes	0.19	0.015	mg/kg	8260B	05/18/12	5
Surrogate Recovery						
Toluene-d8	96.5		% Rec.	8260B	05/18/12	5
Dibromofluoromethane	90.2		% Rec.	8260B	05/18/12	5
a,a,a-Trifluorotoluene	99.8		% Rec.	8260B	05/18/12	5
4-Bromofluorobenzene	112.		% Rec.	8260B	05/18/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/24/12	1
Surrogate recovery(%)						
o-Terphenyl	88.6		% Rec.	3546/DRO	05/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Surrogate Recovery						
Nitrobenzene-d5	77.4		% Rec.	8270C-SIM	05/25/12	1
2-Fluorobiphenyl	71.5		% Rec.	8270C-SIM	05/25/12	1
p-Terphenyl-d14	58.3		% Rec.	8270C-SIM	05/25/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/29/12 17:36 Printed: 05/29/12 17:37

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 18 50-51.5 FT-FD
Collected By : Greg Geras
Collection Date : 05/15/12 18:15

ESC Sample # : L575823-13

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	2.9	0.50	mg/kg	8015D/GRO	05/18/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	109.		% Rec.	602/8015	05/18/12	5
Benzene	0.017	0.0050	mg/kg	8260B	05/18/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/18/12	5
Ethylbenzene	0.020	0.0050	mg/kg	8260B	05/18/12	5
Total Xylenes	0.23	0.015	mg/kg	8260B	05/18/12	5
Surrogate Recovery						
Toluene-d8	95.2		% Rec.	8260B	05/18/12	5
Dibromofluoromethane	91.9		% Rec.	8260B	05/18/12	5
a,a,a-Trifluorotoluene	100.		% Rec.	8260B	05/18/12	5
4-Bromofluorobenzene	110.		% Rec.	8260B	05/18/12	5
TPH (GC/FID) High Fraction	4.6	4.0	mg/kg	3546/DRO	05/24/12	1
Surrogate recovery(%)						
o-Terphenyl	81.2		% Rec.	3546/DRO	05/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
2-Methylnaphthalene	0.0064	0.0060	mg/kg	8270C-SIM	05/25/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Surrogate Recovery						
Nitrobenzene-d5	87.2		% Rec.	8270C-SIM	05/25/12	1
2-Fluorobiphenyl	69.9		% Rec.	8270C-SIM	05/25/12	1
p-Terphenyl-d14	60.4		% Rec.	8270C-SIM	05/25/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/29/12 17:36 Printed: 05/29/12 17:37

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : RMV 216-21 BH 18 60-61 FT
Collected By : Greg Geras
Collection Date : 05/15/12 19:00

ESC Sample # : L575823-14

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	0.95	0.50	mg/kg	8015D/GRO	05/19/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	112.		% Rec.	602/8015	05/19/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/18/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/18/12	5
Ethylbenzene	0.013	0.0050	mg/kg	8260B	05/18/12	5
Total Xylenes	0.13	0.015	mg/kg	8260B	05/18/12	5
Surrogate Recovery						
Toluene-d8	94.8		% Rec.	8260B	05/18/12	5
Dibromofluoromethane	91.4		% Rec.	8260B	05/18/12	5
a,a,a-Trifluorotoluene	101.		% Rec.	8260B	05/18/12	5
4-Bromofluorobenzene	110.		% Rec.	8260B	05/18/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/24/12	1
Surrogate recovery(%)						
o-Terphenyl	74.4		% Rec.	3546/DRO	05/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/25/12	1
Surrogate Recovery						
Nitrobenzene-d5	87.1		% Rec.	8270C-SIM	05/25/12	1
2-Fluorobiphenyl	69.5		% Rec.	8270C-SIM	05/25/12	1
p-Terphenyl-d14	56.9		% Rec.	8270C-SIM	05/25/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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(615) 758-5858
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 29, 2012

Date Received : May 17, 2012
Description : RMV 21-21 Site Investigation
Sample ID : TRIP BLANK
Collected By : Greg Geras
Collection Date : 05/14/12 00:00

ESC Sample # : L575823-15

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0010	mg/l	8260B	05/17/12	1
Toluene	BDL	0.0050	mg/l	8260B	05/17/12	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	05/17/12	1
Total Xylenes	BDL	0.0030	mg/l	8260B	05/17/12	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	05/17/12	1
Dibromofluoromethane	98.0		% Rec.	8260B	05/17/12	1
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	05/17/12	1
4-Bromofluorobenzene	102.		% Rec.	8260B	05/17/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L575823-01	WG594072	SAMP	Nitrobenzene-d5	R2183553	J7
L575823-02	WG594072	SAMP	Acenaphthylene	R2183553	J5
	WG594072	SAMP	Benzo(g,h,i)perylene	R2183553	J3
	WG594072	SAMP	Fluorene	R2183553	J5
	WG594072	SAMP	Phenanthrene	R2183553	J5J3
	WG594072	SAMP	Nitrobenzene-d5	R2183553	J7
	WG593486	SAMP	TPH (GC/FID) High Fraction	R2183717	J5J3
L575823-03	WG593522	SAMP	TPH (GC/FID) Low Fraction	R2178213	J5
L575823-04	WG594072	SAMP	Nitrobenzene-d5	R2183553	J7
	WG593486	SAMP	o-Terphenyl	R2183717	J7
L575823-07	WG594072	SAMP	Nitrobenzene-d5	R2183553	J7
L575823-08	WG594072	SAMP	Nitrobenzene-d5	R2183553	J7
L575823-10	WG593572	SAMP	4-Bromofluorobenzene	R2177013	J1
	WG594073	SAMP	Nitrobenzene-d5	R2183554	J7
	WG594073	SAMP	2-Fluorobiphenyl	R2183554	J7
	WG594073	SAMP	p-Terphenyl-d14	R2183554	J7
	WG593486	SAMP	o-Terphenyl	R2183717	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
05/29/12 at 17:37:08

TSR Signing Reports: 364
R5 - Desired TAT

for 910-1 List log BTEXGRO, DRO and PAHSIM to separate dash number. \$100 min invoice removed
per Rodney Mann 9/19/11 TAH, no energy surcharge per Rodney Mann 10/26/11 TAH

Sample: L575823-01 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
Sample: L575823-02 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
MS/MSD
Sample: L575823-03 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
Sample: L575823-04 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
Sample: L575823-05 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
Sample: L575823-06 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
Duplicate
Sample: L575823-07 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
Sample: L575823-08 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
Sample: L575823-09 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
Sample: L575823-10 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
Sample: L575823-11 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
Sample: L575823-12 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
Sample: L575823-13 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
Duplicate
Sample: L575823-14 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36
Sample: L575823-15 Account: WILPCO Received: 05/17/12 09:00 Due Date: 05/24/12 00:00 RPT Date: 05/29/12 17:36



WPX Energy
Karolina Blaney
1058 County Road 215
Parachute, CO 81635

Quality Assurance Report
Level II

L575823

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 29, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .001	mg/kg			WG593461	05/17/12 23:58
Ethylbenzene	< .001	mg/kg			WG593461	05/17/12 23:58
Toluene	< .005	mg/kg			WG593461	05/17/12 23:58
Total Xylenes	< .003	mg/kg			WG593461	05/17/12 23:58
4-Bromofluorobenzene		% Rec.	105.5	67-133	WG593461	05/17/12 23:58
Dibromofluoromethane		% Rec.	96.05	72-135	WG593461	05/17/12 23:58
Toluene-d8		% Rec.	95.74	90-113	WG593461	05/17/12 23:58
a,a,a-Trifluorotoluene		% Rec.	101.3	89-115	WG593461	05/17/12 23:58
Benzene	< .001	mg/l			WG593471	05/17/12 22:54
Ethylbenzene	< .001	mg/l			WG593471	05/17/12 22:54
Toluene	< .005	mg/l			WG593471	05/17/12 22:54
Total Xylenes	< .003	mg/l			WG593471	05/17/12 22:54
4-Bromofluorobenzene		% Rec.	102.8	82-120	WG593471	05/17/12 22:54
Dibromofluoromethane		% Rec.	97.92	82-126	WG593471	05/17/12 22:54
Toluene-d8		% Rec.	100.6	92-112	WG593471	05/17/12 22:54
a,a,a-Trifluorotoluene		% Rec.	106.9	90-116	WG593471	05/17/12 22:54
Benzene	< .001	mg/kg			WG593424	05/18/12 06:50
Ethylbenzene	< .001	mg/kg			WG593424	05/18/12 06:50
Toluene	< .005	mg/kg			WG593424	05/18/12 06:50
Total Xylenes	< .003	mg/kg			WG593424	05/18/12 06:50
4-Bromofluorobenzene		% Rec.	103.6	67-133	WG593424	05/18/12 06:50
Dibromofluoromethane		% Rec.	100.9	72-135	WG593424	05/18/12 06:50
Toluene-d8		% Rec.	109.1	90-113	WG593424	05/18/12 06:50
a,a,a-Trifluorotoluene		% Rec.	108.0	89-115	WG593424	05/18/12 06:50
Benzene	< .001	mg/kg			WG593572	05/18/12 16:15
Ethylbenzene	< .001	mg/kg			WG593572	05/18/12 16:15
Toluene	< .005	mg/kg			WG593572	05/18/12 16:15
4-Bromofluorobenzene		% Rec.	99.72	67-133	WG593572	05/18/12 16:15
Dibromofluoromethane		% Rec.	100.9	72-135	WG593572	05/18/12 16:15
Toluene-d8		% Rec.	99.62	90-113	WG593572	05/18/12 16:15
a,a,a-Trifluorotoluene		% Rec.	109.7	89-115	WG593572	05/18/12 16:15
Total Xylenes	< .003	mg/kg			WG593794	05/20/12 20:29
4-Bromofluorobenzene		% Rec.	112.5	67-133	WG593794	05/20/12 20:29
Dibromofluoromethane		% Rec.	114.6	72-135	WG593794	05/20/12 20:29
Toluene-d8		% Rec.	103.1	90-113	WG593794	05/20/12 20:29
a,a,a-Trifluorotoluene		% Rec.	101.9	89-115	WG593794	05/20/12 20:29
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG593524	05/18/12 15:22
a,a,a-Trifluorotoluene(FID)		% Rec.	113.8	59-128	WG593524	05/18/12 15:22
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG593522	05/18/12 14:05
a,a,a-Trifluorotoluene(FID)		% Rec.	95.92	59-128	WG593522	05/18/12 14:05
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG593874	05/21/12 16:57
a,a,a-Trifluorotoluene(FID)		% Rec.	97.68	59-128	WG593874	05/21/12 16:57
Benzene	< .001	mg/kg			WG594050	05/22/12 12:42

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



WPX Energy
Karolina Blaney
1058 County Road 215
Parachute, CO 81635

Quality Assurance Report
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Tax I.D. 62-0814289

Est. 1970

May 29, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Ethylbenzene	< .001	mg/kg			WG594050	05/22/12 12:42
Toluene	< .005	mg/kg			WG594050	05/22/12 12:42
Total Xylenes	< .003	mg/kg			WG594050	05/22/12 12:42
4-Bromofluorobenzene		% Rec.	96.02	67-133	WG594050	05/22/12 12:42
Dibromofluoromethane		% Rec.	98.17	72-135	WG594050	05/22/12 12:42
Toluene-d8		% Rec.	97.54	90-113	WG594050	05/22/12 12:42
a,a,a-Trifluorotoluene		% Rec.	101.1	89-115	WG594050	05/22/12 12:42
Benzene	< .001	mg/kg			WG594102	05/22/12 16:18
Toluene	< .005	mg/kg			WG594102	05/22/12 16:18
4-Bromofluorobenzene		% Rec.	104.3	67-133	WG594102	05/22/12 16:18
Dibromofluoromethane		% Rec.	98.42	72-135	WG594102	05/22/12 16:18
Toluene-d8		% Rec.	101.9	90-113	WG594102	05/22/12 16:18
a,a,a-Trifluorotoluene		% Rec.	111.2	89-115	WG594102	05/22/12 16:18
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG594024	05/22/12 15:28
a,a,a-Trifluorotoluene(FID)		% Rec.	96.12	59-128	WG594024	05/22/12 15:28
Total Xylenes	< .003	mg/kg			WG594317	05/23/12 16:28
4-Bromofluorobenzene		% Rec.	103.2	67-133	WG594317	05/23/12 16:28
Dibromofluoromethane		% Rec.	102.3	72-135	WG594317	05/23/12 16:28
Toluene-d8		% Rec.	106.3	90-113	WG594317	05/23/12 16:28
a,a,a-Trifluorotoluene		% Rec.	104.7	89-115	WG594317	05/23/12 16:28
1-Methylnaphthalene	< .006	mg/kg			WG594072	05/24/12 09:23
2-Chloronaphthalene	< .006	mg/kg			WG594072	05/24/12 09:23
2-Methylnaphthalene	< .006	mg/kg			WG594072	05/24/12 09:23
Acenaphthene	< .006	mg/kg			WG594072	05/24/12 09:23
Acenaphthylene	< .006	mg/kg			WG594072	05/24/12 09:23
Anthracene	< .006	mg/kg			WG594072	05/24/12 09:23
Benzo(a)anthracene	< .006	mg/kg			WG594072	05/24/12 09:23
Benzo(a)pyrene	< .006	mg/kg			WG594072	05/24/12 09:23
Benzo(b)fluoranthene	< .006	mg/kg			WG594072	05/24/12 09:23
Benzo(g,h,i)perylene	< .006	mg/kg			WG594072	05/24/12 09:23
Benzo(k)fluoranthene	< .006	mg/kg			WG594072	05/24/12 09:23
Chrysene	< .006	mg/kg			WG594072	05/24/12 09:23
Dibenz(a,h)anthracene	< .006	mg/kg			WG594072	05/24/12 09:23
Fluoranthene	< .006	mg/kg			WG594072	05/24/12 09:23
Fluorene	< .006	mg/kg			WG594072	05/24/12 09:23
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG594072	05/24/12 09:23
Naphthalene	< .006	mg/kg			WG594072	05/24/12 09:23
Phenanthrene	< .006	mg/kg			WG594072	05/24/12 09:23
Pyrene	< .006	mg/kg			WG594072	05/24/12 09:23
2-Fluorobiphenyl		% Rec.	74.90	34-129	WG594072	05/24/12 09:23
Nitrobenzene-d5		% Rec.	75.68	14-141	WG594072	05/24/12 09:23
p-Terphenyl-d14		% Rec.	105.0	25-139	WG594072	05/24/12 09:23
1-Methylnaphthalene	< .006	mg/kg			WG594073	05/24/12 08:26
2-Chloronaphthalene	< .006	mg/kg			WG594073	05/24/12 08:26
2-Methylnaphthalene	< .006	mg/kg			WG594073	05/24/12 08:26
Acenaphthene	< .006	mg/kg			WG594073	05/24/12 08:26
Acenaphthylene	< .006	mg/kg			WG594073	05/24/12 08:26
Anthracene	< .006	mg/kg			WG594073	05/24/12 08:26
Benzo(a)anthracene	< .006	mg/kg			WG594073	05/24/12 08:26

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YOUR LAB OF CHOICE

WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L575823

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(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 29, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzo(a)pyrene	< .006	mg/kg			WG594073	05/24/12 08:26
Benzo(b)fluoranthene	< .006	mg/kg			WG594073	05/24/12 08:26
Benzo(g,h,i)perylene	< .006	mg/kg			WG594073	05/24/12 08:26
Benzo(k)fluoranthene	< .006	mg/kg			WG594073	05/24/12 08:26
Chrysene	< .006	mg/kg			WG594073	05/24/12 08:26
Dibenz(a,h)anthracene	< .006	mg/kg			WG594073	05/24/12 08:26
Fluoranthene	< .006	mg/kg			WG594073	05/24/12 08:26
Fluorene	< .006	mg/kg			WG594073	05/24/12 08:26
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG594073	05/24/12 08:26
Naphthalene	< .006	mg/kg			WG594073	05/24/12 08:26
Phenanthrene	< .006	mg/kg			WG594073	05/24/12 08:26
Pyrene	< .006	mg/kg			WG594073	05/24/12 08:26
2-Fluorobiphenyl		% Rec.	71.61	34-129	WG594073	05/24/12 08:26
Nitrobenzene-d5		% Rec.	69.99	14-141	WG594073	05/24/12 08:26
p-Terphenyl-d14		% Rec.	107.9	25-139	WG594073	05/24/12 08:26
TPH (GC/FID) High Fraction	< 4	ppm			WG593486	05/23/12 23:40
o-Terphenyl		% Rec.	94.20	50-150	WG593486	05/23/12 23:40

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.025	0.0235	94.0	72-120	WG593461
Ethylbenzene	mg/kg	.025	0.0257	103.	76-126	WG593461
Toluene	mg/kg	.025	0.0226	90.6	74-155	WG593461
Total Xylenes	mg/kg	.075	0.0754	101.	76-126	WG593461
4-Bromofluorobenzene				103.2	67-133	WG593461
Dibromofluoromethane				94.68	72-135	WG593461
Toluene-d8				97.39	90-113	WG593461
a,a,a-Trifluorotoluene				99.43	89-115	WG593461
Benzene	mg/l	.025	0.0204	81.7	72-119	WG593471
Ethylbenzene	mg/l	.025	0.0229	91.5	77-124	WG593471
Toluene	mg/l	.025	0.0217	86.7	75-114	WG593471
Total Xylenes	mg/l	.075	0.0700	93.3	77-123	WG593471
4-Bromofluorobenzene				100.8	82-120	WG593471
Dibromofluoromethane				100.4	82-126	WG593471
Toluene-d8				101.1	92-112	WG593471
a,a,a-Trifluorotoluene				106.4	90-116	WG593471
Benzene	mg/kg	.025	0.0258	103.	72-120	WG593424
Ethylbenzene	mg/kg	.025	0.0256	102.	76-126	WG593424
Toluene	mg/kg	.025	0.0249	99.8	74-155	WG593424
Total Xylenes	mg/kg	.075	0.0755	101.	76-126	WG593424
4-Bromofluorobenzene				103.2	67-133	WG593424
Dibromofluoromethane				105.2	72-135	WG593424
Toluene-d8				107.1	90-113	WG593424
a,a,a-Trifluorotoluene				105.4	89-115	WG593424
Benzene	mg/kg	.025	0.0248	99.0	72-120	WG593572
Ethylbenzene	mg/kg	.025	0.0264	105.	76-126	WG593572
Toluene	mg/kg	.025	0.0251	100.	74-155	WG593572
4-Bromofluorobenzene				102.1	67-133	WG593572
Dibromofluoromethane				97.26	72-135	WG593572
Toluene-d8				100.5	90-113	WG593572

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Analyte	Units	Laboratory Control	Sample	% Rec	Limit	Batch
		Known Val	Result			
a,a,a-Trifluorotoluene				111.7	89-115	
Total Xylenes	mg/kg	.075	0.0813	108.	76-126	WG593794
4-Bromofluorobenzene				106.1	67-133	WG593794
Dibromofluoromethane				110.4	72-135	WG593794
Toluene-d8				106.0	90-113	WG593794
a,a,a-Trifluorotoluene				99.70	89-115	WG593794
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.37	116.	67-135	WG593524
a,a,a-Trifluorotoluene(FID)				121.1	59-128	WG593524
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.74	123.	67-135	WG593522
a,a,a-Trifluorotoluene(FID)				103.6	59-128	WG593522
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.53	100.	67-135	WG593874
a,a,a-Trifluorotoluene(FID)				104.8	59-128	WG593874
Benzene	mg/kg	.025	0.0238	95.1	72-120	WG594050
Ethylbenzene	mg/kg	.025	0.0231	92.5	76-126	WG594050
Toluene	mg/kg	.025	0.0229	91.5	74-155	WG594050
Total Xylenes	mg/kg	.075	0.0708	94.5	76-126	WG594050
4-Bromofluorobenzene				98.05	67-133	WG594050
Dibromofluoromethane				102.7	72-135	WG594050
Toluene-d8				99.39	90-113	WG594050
a,a,a-Trifluorotoluene				99.61	89-115	WG594050
Benzene	mg/kg	.025	0.0257	103.	72-120	WG594102
Toluene	mg/kg	.025	0.0264	106.	74-155	WG594102
4-Bromofluorobenzene				104.8	67-133	WG594102
Dibromofluoromethane				98.13	72-135	WG594102
Toluene-d8				101.4	90-113	WG594102
a,a,a-Trifluorotoluene				111.9	89-115	WG594102
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.83	124.	67-135	WG594024
a,a,a-Trifluorotoluene(FID)				103.8	59-128	WG594024
Total Xylenes	mg/kg	.075	0.0822	110.	76-126	WG594317
4-Bromofluorobenzene				99.11	67-133	WG594317
Dibromofluoromethane				104.0	72-135	WG594317
Toluene-d8				104.8	90-113	WG594317
a,a,a-Trifluorotoluene				104.4	89-115	WG594317
1-Methylnaphthalene	mg/kg	.033	0.0253	76.6	48-113	WG594072
2-Chloronaphthalene	mg/kg	.033	0.0253	76.7	51-114	WG594072
2-Methylnaphthalene	mg/kg	.033	0.0250	75.9	44-109	WG594072
Acenaphthene	mg/kg	.033	0.0243	73.6	52-108	WG594072
Acenaphthylene	mg/kg	.033	0.0248	75.0	51-110	WG594072
Anthracene	mg/kg	.033	0.0290	87.8	58-120	WG594072
Benzo(a)anthracene	mg/kg	.033	0.0274	83.0	54-110	WG594072
Benzo(a)pyrene	mg/kg	.033	0.0275	83.4	56-118	WG594072
Benzo(b)fluoranthene	mg/kg	.033	0.0278	84.3	55-114	WG594072
Benzo(g,h,i)perylene	mg/kg	.033	0.0273	82.8	48-130	WG594072

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzo(k)fluoranthene	mg/kg	.033	0.0286	86.6	55-122	WG594072
Chrysene	mg/kg	.033	0.0295	89.4	57-118	WG594072
Dibenz(a,h)anthracene	mg/kg	.033	0.0272	82.5	53-122	WG594072
Fluoranthene	mg/kg	.033	0.0288	87.2	58-118	WG594072
Fluorene	mg/kg	.033	0.0247	74.9	54-109	WG594072
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0280	84.7	51-125	WG594072
Naphthalene	mg/kg	.033	0.0237	71.7	45-105	WG594072
Phenanthrene	mg/kg	.033	0.0279	84.4	53-114	WG594072
Pyrene	mg/kg	.033	0.0290	87.8	53-121	WG594072
2-Fluorobiphenyl				73.72	34-129	WG594072
Nitrobenzene-d5				69.18	14-141	WG594072
p-Terphenyl-d14				104.1	25-139	WG594072
1-Methylnaphthalene	mg/kg	.033	0.0305	92.4	48-113	WG594073
2-Chloronaphthalene	mg/kg	.033	0.0308	93.4	51-114	WG594073
2-Methylnaphthalene	mg/kg	.033	0.0310	93.9	44-109	WG594073
Acenaphthene	mg/kg	.033	0.0286	86.5	52-108	WG594073
Acenaphthylene	mg/kg	.033	0.0291	88.1	51-110	WG594073
Anthracene	mg/kg	.033	0.0325	98.4	58-120	WG594073
Benzo(a)anthracene	mg/kg	.033	0.0294	89.2	54-110	WG594073
Benzo(a)pyrene	mg/kg	.033	0.0312	94.6	56-118	WG594073
Benzo(b)fluoranthene	mg/kg	.033	0.0309	93.8	55-114	WG594073
Benzo(g,h,i)perylene	mg/kg	.033	0.0319	96.7	48-130	WG594073
Benzo(k)fluoranthene	mg/kg	.033	0.0320	96.9	55-122	WG594073
Chrysene	mg/kg	.033	0.0325	98.6	57-118	WG594073
Dibenz(a,h)anthracene	mg/kg	.033	0.0311	94.2	53-122	WG594073
Fluoranthene	mg/kg	.033	0.0322	97.6	58-118	WG594073
Fluorene	mg/kg	.033	0.0291	88.2	54-109	WG594073
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0313	94.9	51-125	WG594073
Naphthalene	mg/kg	.033	0.0292	88.4	45-105	WG594073
Phenanthrene	mg/kg	.033	0.0304	92.3	53-114	WG594073
Pyrene	mg/kg	.033	0.0319	96.7	53-121	WG594073
2-Fluorobiphenyl				86.80	34-129	WG594073
Nitrobenzene-d5				85.53	14-141	WG594073
p-Terphenyl-d14				110.1	25-139	WG594073
TPH (GC/FID) High Fraction	ppm	60	48.9	81.4	50-150	WG593486
o-Terphenyl				89.75	50-150	WG593486

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0244	0.0235	98.0	72-120	3.71	20	WG593461
Ethylbenzene	mg/kg	0.0266	0.0257	106.	76-126	3.50	20	WG593461
Toluene	mg/kg	0.0230	0.0226	92.0	74-155	1.62	20	WG593461
Total Xylenes	mg/kg	0.0804	0.0754	107.	76-126	6.43	20	WG593461
4-Bromofluorobenzene				107.0	67-133			WG593461
Dibromofluoromethane				96.14	72-135			WG593461
Toluene-d8				95.68	90-113			WG593461
a,a,a-Trifluorotoluene				98.90	89-115			WG593461
Benzene	mg/l	0.0200	0.0204	80.0	72-119	1.84	20	WG593471
Ethylbenzene	mg/l	0.0228	0.0229	91.0	77-124	0.150	20	WG593471
Toluene	mg/l	0.0214	0.0217	86.0	75-114	1.14	20	WG593471
Total Xylenes	mg/l	0.0699	0.0700	93.0	77-123	0.170	20	WG593471
4-Bromofluorobenzene				100.8	82-120			WG593471

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Analyte	Laboratory Control Sample Duplicate				Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
Dibromofluoromethane				99.95	82-126			
Toluene-d8				100.8	92-112			
a,a,a-Trifluorotoluene				107.0	90-116			
Benzene	mg/kg	0.0261	0.0258	104.	72-120	1.15	20	WG593424
Ethylbenzene	mg/kg	0.0263	0.0256	105.	76-126	2.60	20	WG593424
Toluene	mg/kg	0.0255	0.0249	102.	74-155	2.18	20	WG593424
Total Xylenes	mg/kg	0.0776	0.0755	103.	76-126	2.68	20	WG593424
4-Bromofluorobenzene				102.4	67-133			WG593424
Dibromofluoromethane				106.2	72-135			WG593424
Toluene-d8				108.0	90-113			WG593424
a,a,a-Trifluorotoluene				106.1	89-115			WG593424
Benzene	mg/kg	0.0261	0.0248	104.	72-120	5.18	20	WG593572
Ethylbenzene	mg/kg	0.0264	0.0264	106.	76-126	0.240	20	WG593572
Toluene	mg/kg	0.0264	0.0251	106.	74-155	4.98	20	WG593572
4-Bromofluorobenzene				98.85	67-133			WG593572
Dibromofluoromethane				97.31	72-135			WG593572
Toluene-d8				98.26	90-113			WG593572
a,a,a-Trifluorotoluene				111.9	89-115			WG593572
Total Xylenes	mg/kg	0.0789	0.0813	105.	76-126	2.97	20	WG593794
4-Bromofluorobenzene				107.3	67-133			WG593794
Dibromofluoromethane				110.3	72-135			WG593794
Toluene-d8				105.1	90-113			WG593794
a,a,a-Trifluorotoluene				99.60	89-115			WG593794
TPH (GC/FID) Low Fraction	mg/kg	6.36	6.37	116.	67-135	0.110	20	WG593524
a,a,a-Trifluorotoluene(FID)				121.5	59-128			WG593524
TPH (GC/FID) Low Fraction	mg/kg	6.53	6.74	119.	67-135	3.21	20	WG593522
a,a,a-Trifluorotoluene(FID)				102.0	59-128			WG593522
TPH (GC/FID) Low Fraction	mg/kg	5.46	5.53	99.0	67-135	1.19	20	WG593874
a,a,a-Trifluorotoluene(FID)				105.3	59-128			WG593874
Benzene	mg/kg	0.0243	0.0238	97.0	72-120	2.16	20	WG594050
Ethylbenzene	mg/kg	0.0237	0.0231	95.0	76-126	2.64	20	WG594050
Toluene	mg/kg	0.0226	0.0229	90.0	74-155	1.10	20	WG594050
Total Xylenes	mg/kg	0.0706	0.0708	94.0	76-126	0.300	20	WG594050
4-Bromofluorobenzene				101.0	67-133			WG594050
Dibromofluoromethane				103.4	72-135			WG594050
Toluene-d8				98.21	90-113			WG594050
a,a,a-Trifluorotoluene				98.04	89-115			WG594050
Benzene	mg/kg	0.0248	0.0257	99.0	72-120	3.48	20	WG594102
Toluene	mg/kg	0.0252	0.0264	101.	74-155	4.73	20	WG594102
4-Bromofluorobenzene				104.4	67-133			WG594102
Dibromofluoromethane				97.56	72-135			WG594102
Toluene-d8				100.7	90-113			WG594102
a,a,a-Trifluorotoluene				109.4	89-115			WG594102

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Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
TPH (GC/FID) Low Fraction	mg/kg	6.73	6.83	122.		67-135	1.41	20	WG594024
a,a,a-Trifluorotoluene(FID)				102.9		59-128			WG594024
Total Xylenes	mg/kg	0.0851	0.0822	114.		76-126	3.47	20	WG594317
4-Bromofluorobenzene				105.9		67-133			WG594317
Dibromofluoromethane				102.1		72-135			WG594317
Toluene-d8				103.6		90-113			WG594317
a,a,a-Trifluorotoluene				104.8		89-115			WG594317
1-Methylnaphthalene	mg/kg	0.0249	0.0253	76.0		48-113	1.47	24	WG594072
2-Chloronaphthalene	mg/kg	0.0240	0.0253	73.0		51-114	5.52	24	WG594072
2-Methylnaphthalene	mg/kg	0.0250	0.0250	76.0		44-109	0.0506	24	WG594072
Acenaphthene	mg/kg	0.0248	0.0243	75.0		52-108	1.99	22	WG594072
Acenaphthylene	mg/kg	0.0249	0.0248	75.0		51-110	0.486	21	WG594072
Anthracene	mg/kg	0.0273	0.0290	83.0		58-120	5.96	20	WG594072
Benzo(a)anthracene	mg/kg	0.0271	0.0274	82.0		54-110	1.03	22	WG594072
Benzo(a)pyrene	mg/kg	0.0277	0.0275	84.0		56-118	0.785	21	WG594072
Benzo(b)fluoranthene	mg/kg	0.0282	0.0278	86.0		55-114	1.55	20	WG594072
Benzo(g,h,i)perylene	mg/kg	0.0276	0.0273	84.0		48-130	0.953	20	WG594072
Benzo(k)fluoranthene	mg/kg	0.0286	0.0286	87.0		55-122	0.265	25	WG594072
Chrysene	mg/kg	0.0293	0.0295	89.0		57-118	0.742	20	WG594072
Dibenz(a,h)anthracene	mg/kg	0.0269	0.0272	81.0		53-122	1.34	20	WG594072
Fluoranthene	mg/kg	0.0287	0.0288	87.0		58-118	0.230	20	WG594072
Fluorene	mg/kg	0.0264	0.0247	80.0		54-109	6.56	20	WG594072
Indeno(1,2,3-cd)pyrene	mg/kg	0.0280	0.0280	85.0		51-125	0.329	21	WG594072
Naphthalene	mg/kg	0.0242	0.0237	73.0		45-105	2.03	24	WG594072
Phenanthrene	mg/kg	0.0274	0.0279	83.0		53-114	1.86	20	WG594072
Pyrene	mg/kg	0.0290	0.0290	88.0		53-121	0.107	20	WG594072
2-Fluorobiphenyl				71.93		34-129			WG594072
Nitrobenzene-d5				70.02		14-141			WG594072
p-Terphenyl-d14				100.7		25-139			WG594072
1-Methylnaphthalene	mg/kg	0.0257	0.0305	78.0		48-113	17.1	24	WG594073
2-Chloronaphthalene	mg/kg	0.0274	0.0308	83.0		51-114	11.7	24	WG594073
2-Methylnaphthalene	mg/kg	0.0262	0.0310	79.0		44-109	16.8	24	WG594073
Acenaphthene	mg/kg	0.0252	0.0286	76.0		52-108	12.5	22	WG594073
Acenaphthylene	mg/kg	0.0256	0.0291	78.0		51-110	12.8	21	WG594073
Anthracene	mg/kg	0.0290	0.0325	88.0		58-120	11.3	20	WG594073
Benzo(a)anthracene	mg/kg	0.0275	0.0294	83.0		54-110	6.69	22	WG594073
Benzo(a)pyrene	mg/kg	0.0289	0.0312	88.0		56-118	7.64	21	WG594073
Benzo(b)fluoranthene	mg/kg	0.0288	0.0309	87.0		55-114	7.11	20	WG594073
Benzo(g,h,i)perylene	mg/kg	0.0292	0.0319	88.0		48-130	8.79	20	WG594073
Benzo(k)fluoranthene	mg/kg	0.0295	0.0320	89.0		55-122	7.96	25	WG594073
Chrysene	mg/kg	0.0302	0.0325	91.0		57-118	7.59	20	WG594073
Dibenz(a,h)anthracene	mg/kg	0.0277	0.0311	84.0		53-122	11.5	20	WG594073
Fluoranthene	mg/kg	0.0298	0.0322	90.0		58-118	7.66	20	WG594073
Fluorene	mg/kg	0.0265	0.0291	80.0		54-109	9.47	20	WG594073
Indeno(1,2,3-cd)pyrene	mg/kg	0.0291	0.0313	88.0		51-125	7.47	21	WG594073
Naphthalene	mg/kg	0.0245	0.0292	74.0		45-105	17.4	24	WG594073
Phenanthrene	mg/kg	0.0284	0.0304	86.0		53-114	6.98	20	WG594073
Pyrene	mg/kg	0.0299	0.0319	90.0		53-121	6.68	20	WG594073
2-Fluorobiphenyl				74.15		34-129			WG594073
Nitrobenzene-d5				70.48		14-141			WG594073
p-Terphenyl-d14				104.7		25-139			WG594073

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WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L575823

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 29, 2012

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
TPH (GC/FID) High Fraction	ppm	45.9	48.9	76.0	50-150	6.19	23	WG593486
o-Terphenyl				85.35	50-150			WG593486

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Benzene	mg/kg	0.0230	0.00130	.025	86.9	44-131	L575827-01	WG593461
Ethylbenzene	mg/kg	0.0234	0	.025	93.6	38-139	L575827-01	WG593461
Toluene	mg/kg	0.0210	0	.025	84.0	43-127	L575827-01	WG593461
Total Xylenes	mg/kg	0.0686	0	.075	91.5	38-137	L575827-01	WG593461
4-Bromofluorobenzene					90.31	67-133		WG593461
Dibromofluoromethane					97.56	72-135		WG593461
Toluene-d8					94.39	90-113		WG593461
a,a,a-Trifluorotoluene					95.71	89-115		WG593461
Benzene	mg/l	0.0211	0	.025	84.3	51-134	L575482-02	WG593471
Ethylbenzene	mg/l	0.0288	0.00580	.025	92.1	64-135	L575482-02	WG593471
Toluene	mg/l	0.0215	0	.025	86.1	61-126	L575482-02	WG593471
Total Xylenes	mg/l	0.0682	0	.075	91.0	64-133	L575482-02	WG593471
4-Bromofluorobenzene					101.5	82-120		WG593471
Dibromofluoromethane					100.5	82-126		WG593471
Toluene-d8					99.33	92-112		WG593471
a,a,a-Trifluorotoluene					106.3	90-116		WG593471
Benzene	mg/kg	13.4	0	.025	108.	44-131	L575823-02	WG593424
Ethylbenzene	mg/kg	13.3	0.620	.025	102.	38-139	L575823-02	WG593424
Toluene	mg/kg	12.6	0	.025	101.	43-127	L575823-02	WG593424
Total Xylenes	mg/kg	43.7	5.60	.075	102.	38-137	L575823-02	WG593424
4-Bromofluorobenzene					101.3	67-133		WG593424
Dibromofluoromethane					106.4	72-135		WG593424
Toluene-d8					106.0	90-113		WG593424
a,a,a-Trifluorotoluene					103.4	89-115		WG593424
Benzene	mg/kg	0.0245	0.00260	.025	87.7	44-131	L575906-03	WG593572
Ethylbenzene	mg/kg	0.0219	0	.025	87.8	38-139	L575906-03	WG593572
Toluene	mg/kg	0.0310	0.00870	.025	89.0	43-127	L575906-03	WG593572
4-Bromofluorobenzene					102.2	67-133		WG593572
Dibromofluoromethane					104.8	72-135		WG593572
Toluene-d8					97.82	90-113		WG593572
a,a,a-Trifluorotoluene					103.0	89-115		WG593572
Total Xylenes	mg/kg	0.0533	0	.075	71.1	38-137	L576290-08	WG593794
4-Bromofluorobenzene					103.5	67-133		WG593794
Dibromofluoromethane					112.8	72-135		WG593794
Toluene-d8					103.7	90-113		WG593794
a,a,a-Trifluorotoluene					99.07	89-115		WG593794
TPH (GC/FID) Low Fraction	mg/kg	28.7	0.580	5.5	102.	55-109	L575823-05	WG593524
a,a,a-Trifluorotoluene(FID)					117.0	59-128		WG593524
TPH (GC/FID) Low Fraction	mg/kg	32.9	0	5.5	119.*	55-109	L575823-03	WG593522
a,a,a-Trifluorotoluene(FID)					102.1	59-128		WG593522

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WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L575823

12065 Lebanon Rd.
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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 29, 2012

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
TPH (GC/FID) Low Fraction	mg/kg	422.	170.	5.5	91.6	55-109	L575823-02	WG593874
a,a,a-Trifluorotoluene(FID)					100.3	59-128		WG593874
Benzene	mg/kg	0.0881	0	.025	70.5	44-131	L576096-06	WG594050
Ethylbenzene	mg/kg	0.0862	0	.025	69.0	38-139	L576096-06	WG594050
Toluene	mg/kg	0.0833	0	.025	66.6	43-127	L576096-06	WG594050
Total Xylenes	mg/kg	0.258	0	.075	68.7	38-137	L576096-06	WG594050
4-Bromofluorobenzene					98.89	67-133		WG594050
Dibromofluoromethane					99.94	72-135		WG594050
Toluene-d8					99.93	90-113		WG594050
a,a,a-Trifluorotoluene					101.0	89-115		WG594050
Benzene	mg/kg	0.0893	0	.025	71.4	44-131	L576096-29	WG594102
Toluene	mg/kg	0.0899	0.00200	.025	70.3	43-127	L576096-29	WG594102
4-Bromofluorobenzene					101.0	67-133		WG594102
Dibromofluoromethane					101.0	72-135		WG594102
Toluene-d8					103.0	90-113		WG594102
a,a,a-Trifluorotoluene					109.4	89-115		WG594102
TPH (GC/FID) Low Fraction	mg/kg	13.5	0	5.5	49.2*	55-109	L576282-04	WG594024
a,a,a-Trifluorotoluene(FID)					98.92	59-128		WG594024
Total Xylenes	mg/kg	0.406	0	.075	108.	38-137	L576587-01	WG594317
4-Bromofluorobenzene					101.5	67-133		WG594317
Dibromofluoromethane					104.2	72-135		WG594317
Toluene-d8					104.1	90-113		WG594317
a,a,a-Trifluorotoluene					102.3	89-115		WG594317
TPH (GC/FID) High Fraction	ppm	443.	160.	60	472.*	50-150	L575823-02	WG593486
o-Terphenyl					100.2	50-150		WG593486
2-Chloronaphthalene	mg/kg	0.0173	0	.033	52.3	31-153	L575823-02	WG594072
Acenaphthene	mg/kg	0.0525	0.0240	.033	86.4	43-133	L575823-02	WG594072
Acenaphthylene	mg/kg	0.0495	0	.033	150.*	42-146	L575823-02	WG594072
Anthracene	mg/kg	0.0398	0.0150	.033	75.3	38-153	L575823-02	WG594072
Benzo(a)anthracene	mg/kg	0.0248	0	.033	75.1	31-142	L575823-02	WG594072
Benzo(a)pyrene	mg/kg	0.0253	0	.033	76.7	26-152	L575823-02	WG594072
Benzo(b)fluoranthene	mg/kg	0.0255	0	.033	77.4	10-188	L575823-02	WG594072
Benzo(g,h,i)perylene	mg/kg	0.0217	0	.033	65.6	10-176	L575823-02	WG594072
Benzo(k)fluoranthene	mg/kg	0.0254	0	.033	77.0	22-163	L575823-02	WG594072
Chrysene	mg/kg	0.0266	0	.033	80.7	26-146	L575823-02	WG594072
Dibenz(a,h)anthracene	mg/kg	0.0222	0	.033	67.2	10-160	L575823-02	WG594072
Fluoranthene	mg/kg	0.0309	0	.033	93.6	23-160	L575823-02	WG594072
Fluorene	mg/kg	0.0873	0.0530	.033	104.	44-143	L575823-02	WG594072
Indeno(1,2,3-cd)pyrene	mg/kg	0.0224	0	.033	67.9	10-157	L575823-02	WG594072
Phenanthrene	mg/kg	0.0667	0.0330	.033	102.	23-164	L575823-02	WG594072
Pyrene	mg/kg	0.0242	0	.033	73.2	12-170	L575823-02	WG594072
2-Fluorobiphenyl					61.07	34-129		WG594072
p-Terphenyl-d14					81.56	25-139		WG594072
1-Methylnaphthalene	mg/kg	0.0327	0	.033	99.2	25-155	L575823-12	WG594073

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WPX Energy
Karolina Blaney
1058 County Road 215
Parachute, CO 81635

Quality Assurance Report
Level II

L575823

12065 Lebanon Rd.
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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 29, 2012

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
2-Chloronaphthalene	mg/kg	0.0236	0	.033	71.5	31-153	L575823-12	WG594073
2-Methylnaphthalene	mg/kg	0.0374	0	.033	113.	22-172	L575823-12	WG594073
Acenaphthene	mg/kg	0.0227	0	.033	68.8	43-133	L575823-12	WG594073
Acenaphthylene	mg/kg	0.0230	0	.033	69.8	42-146	L575823-12	WG594073
Anthracene	mg/kg	0.0224	0	.033	68.0	38-153	L575823-12	WG594073
Benzo(a)anthracene	mg/kg	0.0199	0	.033	60.4	31-142	L575823-12	WG594073
Benzo(a)pyrene	mg/kg	0.0198	0	.033	59.9	26-152	L575823-12	WG594073
Benzo(b)fluoranthene	mg/kg	0.0225	0	.033	68.1	10-188	L575823-12	WG594073
Benzo(g,h,i)perylene	mg/kg	0.00796	0	.033	24.1	10-176	L575823-12	WG594073
Benzo(k)fluoranthene	mg/kg	0.0224	0	.033	67.8	22-163	L575823-12	WG594073
Chrysene	mg/kg	0.0201	0	.033	61.0	26-146	L575823-12	WG594073
Dibenz(a,h)anthracene	mg/kg	0.00934	0	.033	28.3	10-160	L575823-12	WG594073
Fluoranthene	mg/kg	0.0246	0	.033	74.5	23-160	L575823-12	WG594073
Fluorene	mg/kg	0.0229	0	.033	69.3	44-143	L575823-12	WG594073
Indeno(1,2,3-cd)pyrene	mg/kg	0.00943	0	.033	28.6	10-157	L575823-12	WG594073
Naphthalene	mg/kg	0.0281	0	.033	85.2	22-156	L575823-12	WG594073
Phenanthrene	mg/kg	0.0226	0	.033	68.6	23-164	L575823-12	WG594073
Pyrene	mg/kg	0.0183	0	.033	55.4	12-170	L575823-12	WG594073
2-Fluorobiphenyl					71.09	34-129		WG594073
Nitrobenzene-d5					108.7	14-141		WG594073
p-Terphenyl-d14					61.62	25-139		WG594073

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.0226	0.0230	85.4	44-131	1.68	21	L575827-01	WG593461
Ethylbenzene	mg/kg	0.0235	0.0234	94.2	38-139	0.560	27	L575827-01	WG593461
Toluene	mg/kg	0.0217	0.0210	86.9	43-127	3.37	21	L575827-01	WG593461
Total Xylenes	mg/kg	0.0698	0.0686	93.1	38-137	1.79	26	L575827-01	WG593461
4-Bromofluorobenzene				88.88	67-133				WG593461
Dibromofluoromethane				94.15	72-135				WG593461
Toluene-d8				95.55	90-113				WG593461
a,a,a-Trifluorotoluene				97.52	89-115				WG593461
Benzene	mg/l	0.0214	0.0211	85.6	51-134	1.49	20	L575482-02	WG593471
Ethylbenzene	mg/l	0.0283	0.0288	90.0	64-135	1.82	20	L575482-02	WG593471
Toluene	mg/l	0.0213	0.0215	85.0	61-126	1.28	20	L575482-02	WG593471
Total Xylenes	mg/l	0.0671	0.0682	89.4	64-133	1.73	20	L575482-02	WG593471
4-Bromofluorobenzene				101.1	82-120				WG593471
Dibromofluoromethane				100.1	82-126				WG593471
Toluene-d8				98.07	92-112				WG593471
a,a,a-Trifluorotoluene				105.1	90-116				WG593471
Benzene	mg/kg	12.9	13.4	104.	44-131	3.78	21	L575823-02	WG593424
Ethylbenzene	mg/kg	13.8	13.3	105.	38-139	3.25	27	L575823-02	WG593424
Toluene	mg/kg	12.5	12.6	100.	43-127	0.920	21	L575823-02	WG593424
Total Xylenes	mg/kg	45.8	43.7	107.	38-137	4.68	26	L575823-02	WG593424
4-Bromofluorobenzene				103.7	67-133				WG593424
Dibromofluoromethane				102.8	72-135				WG593424
Toluene-d8				106.2	90-113				WG593424
a,a,a-Trifluorotoluene				105.2	89-115				WG593424
Benzene	mg/kg	0.0240	0.0245	85.4	44-131	2.36	21	L575906-03	WG593572
Ethylbenzene	mg/kg	0.0215	0.0219	86.2	38-139	1.83	27	L575906-03	WG593572
Toluene	mg/kg	0.0273	0.0310	74.2	43-127	12.7	21	L575906-03	WG593572
4-Bromofluorobenzene				98.74	67-133				WG593572

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WPX Energy
Karolina Blaney
1058 County Road 215
Parachute, CO 81635

Quality Assurance Report
Level II

L575823

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Tax I.D. 62-0814289

Est. 1970

May 29, 2012

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Dibromofluoromethane				107.6	72-135					
Toluene-d8				101.3	90-113					
a,a,a-Trifluorotoluene				101.4	89-115					
Total Xylenes	mg/kg	0.0557	0.0533	74.3	38-137	4.44	26	L576290-08		WG593794
4-Bromofluorobenzene				107.5	67-133					WG593794
Dibromofluoromethane				112.7	72-135					WG593794
Toluene-d8				105.5	90-113					WG593794
a,a,a-Trifluorotoluene				100.2	89-115					WG593794
TPH (GC/FID) Low Fraction	mg/kg	28.4	28.7	101.	55-109	1.08	20	L575823-05		WG593524
a,a,a-Trifluorotoluene(FID)				117.4	59-128					WG593524
TPH (GC/FID) Low Fraction	mg/kg	29.7	32.9	108.	55-109	9.95	20	L575823-03		WG593522
a,a,a-Trifluorotoluene(FID)				101.0	59-128					WG593522
TPH (GC/FID) Low Fraction	mg/kg	411.	422.	87.6	55-109	2.61	20	L575823-02		WG593874
a,a,a-Trifluorotoluene(FID)				102.6	59-128					WG593874
Benzene	mg/kg	0.128	0.0881	103.	44-131	37.2*	21	L576096-06		WG594050
Ethylbenzene	mg/kg	0.124	0.0862	99.0	38-139	35.7*	27	L576096-06		WG594050
Toluene	mg/kg	0.122	0.0833	97.3	43-127	37.4*	21	L576096-06		WG594050
Total Xylenes	mg/kg	0.374	0.258	99.8	38-137	36.9*	26	L576096-06		WG594050
4-Bromofluorobenzene				96.65	67-133					WG594050
Dibromofluoromethane				101.9	72-135					WG594050
Toluene-d8				99.68	90-113					WG594050
a,a,a-Trifluorotoluene				98.18	89-115					WG594050
Benzene	mg/kg	0.109	0.0893	87.3	44-131	20.0	21	L576096-29		WG594102
Toluene	mg/kg	0.113	0.0899	88.8	43-127	22.7*	21	L576096-29		WG594102
4-Bromofluorobenzene				102.6	67-133					WG594102
Dibromofluoromethane				98.92	72-135					WG594102
Toluene-d8				102.6	90-113					WG594102
a,a,a-Trifluorotoluene				111.2	89-115					WG594102
TPH (GC/FID) Low Fraction	mg/kg	16.4	13.5	59.6	55-109	19.0	20	L576282-04		WG594024
a,a,a-Trifluorotoluene(FID)				98.72	59-128					WG594024
Total Xylenes	mg/kg	0.371	0.406	98.8	38-137	9.06	26	L576587-01		WG594317
4-Bromofluorobenzene				100.7	67-133					WG594317
Dibromofluoromethane				105.8	72-135					WG594317
Toluene-d8				104.2	90-113					WG594317
a,a,a-Trifluorotoluene				95.41	89-115					WG594317
TPH (GC/FID) High Fraction	ppm	285.	443.	209.*	50-150	43.3*	40	L575823-02		WG593486
o-Terphenyl				85.81	50-150					WG593486
2-Chloronaphthalene	mg/kg	0.0160	0.0173	48.6	31-153	7.29	22	L575823-02		WG594072
Acenaphthene	mg/kg	0.0610	0.0525	112.	43-133	15.0	26	L575823-02		WG594072
Acenaphthylene	mg/kg	0.0478	0.0495	145.	42-146	3.59	22	L575823-02		WG594072
Anthracene	mg/kg	0.0502	0.0398	107.	38-153	23.1	27	L575823-02		WG594072

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L575823

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Mt. Juliet, TN 37122
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1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

May 29, 2012

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzo(a)anthracene	mg/kg	0.0254	0.0248	76.9	31-142	2.31	31	L575823-02	WG594072
Benzo(a)pyrene	mg/kg	0.0253	0.0253	76.7	26-152	0.111	32	L575823-02	WG594072
Benzo(b)fluoranthene	mg/kg	0.0265	0.0255	80.4	10-188	3.77	33	L575823-02	WG594072
Benzo(g,h,i)perylene	mg/kg	0.0150	0.0217	45.5	10-176	36.1*	30	L575823-02	WG594072
Benzo(k)fluoranthene	mg/kg	0.0263	0.0254	79.7	22-163	3.41	29	L575823-02	WG594072
Chrysene	mg/kg	0.0257	0.0266	77.9	26-146	3.56	30	L575823-02	WG594072
Dibenz(a,h)anthracene	mg/kg	0.0168	0.0222	50.8	10-160	27.7	39	L575823-02	WG594072
Fluoranthene	mg/kg	0.0329	0.0309	99.6	23-160	6.29	22	L575823-02	WG594072
Fluorene	mg/kg	0.109	0.0873	171.*	44-143	22.4	23	L575823-02	WG594072
Indeno(1,2,3-cd)pyrene	mg/kg	0.0169	0.0224	51.4	10-157	27.8	40	L575823-02	WG594072
Phenanthrene	mg/kg	0.0885	0.0667	168.*	23-164	28.0*	25	L575823-02	WG594072
Pyrene	mg/kg	0.0256	0.0242	77.5	12-170	5.67	24	L575823-02	WG594072
2-Fluorobiphenyl				58.78	34-129				WG594072
p-Terphenyl-d14				81.57	25-139				WG594072
1-Methylnaphthalene	mg/kg	0.0335	0.0327	102.	25-155	2.35	27	L575823-12	WG594073
2-Chloronaphthalene	mg/kg	0.0236	0.0236	71.5	31-153	0.0666	22	L575823-12	WG594073
2-Methylnaphthalene	mg/kg	0.0392	0.0374	119.	22-172	4.78	29	L575823-12	WG594073
Acenaphthene	mg/kg	0.0231	0.0227	70.0	43-133	1.78	26	L575823-12	WG594073
Acenaphthylene	mg/kg	0.0231	0.0230	70.0	42-146	0.259	22	L575823-12	WG594073
Anthracene	mg/kg	0.0214	0.0224	64.8	38-153	4.82	27	L575823-12	WG594073
Benzo(a)anthracene	mg/kg	0.0193	0.0199	58.4	31-142	3.50	31	L575823-12	WG594073
Benzo(a)pyrene	mg/kg	0.0199	0.0198	60.3	26-152	0.577	32	L575823-12	WG594073
Benzo(b)fluoranthene	mg/kg	0.0238	0.0225	72.1	10-188	5.76	33	L575823-12	WG594073
Benzo(g,h,i)perylene	mg/kg	0.00707	0.00796	21.4	10-176	11.9	30	L575823-12	WG594073
Benzo(k)fluoranthene	mg/kg	0.0216	0.0224	65.5	22-163	3.46	29	L575823-12	WG594073
Chrysene	mg/kg	0.0200	0.0201	60.6	26-146	0.585	30	L575823-12	WG594073
Dibenz(a,h)anthracene	mg/kg	0.00875	0.00934	26.5	10-160	6.53	39	L575823-12	WG594073
Fluoranthene	mg/kg	0.0253	0.0246	76.7	23-160	2.87	22	L575823-12	WG594073
Fluorene	mg/kg	0.0227	0.0229	68.8	44-143	0.765	23	L575823-12	WG594073
Indeno(1,2,3-cd)pyrene	mg/kg	0.00867	0.00943	26.3	10-157	8.39	40	L575823-12	WG594073
Naphthalene	mg/kg	0.0299	0.0281	90.6	22-156	6.13	27	L575823-12	WG594073
Phenanthrene	mg/kg	0.0218	0.0226	65.9	23-164	4.00	25	L575823-12	WG594073
Pyrene	mg/kg	0.0176	0.0183	53.2	12-170	3.94	24	L575823-12	WG594073
2-Fluorobiphenyl				72.75	34-129				WG594073
Nitrobenzene-d5				95.11	14-141				WG594073
p-Terphenyl-d14				60.58	25-139				WG594073

Batch number /Run number / Sample number cross reference

WG593461: R2175273: L575823-08 09 11 12 13 14
WG593471: R2175813: L575823-15
WG593424: R2176478: L575823-02 03 05 06
WG593572: R2177013: L575823-10
WG593794: R2177495: L575823-10
WG593524: R2178197: L575823-04 05 06 10 11 12 13 14
WG593522: R2178213: L575823-01 03
WG593874: R2179234: L575823-02 07 08
WG594050: R2181154: L575823-01 04 07
WG594102: R2181197: L575823-02
WG594024: R2181753: L575823-09
WG594317: R2182553: L575823-01
WG594072: R2183553: L575823-01 02 03 04 05 06 07 08 09
WG594073: R2183554: L575823-10 11 12 13 14
WG593486: R2183717: L575823-01 02 03 04 05 06 07 08 09 10 11 12 13 14

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L575823

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(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 29, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

WPX Energy
1058 County Road 215
Parachute, CO 81635

Billing Information:
Leo Braun
1058 County Rd. 215
Parachute, CO 81635

Report to:
Karolina Blaney/Greg Geras
Email to: karolina.blaney@williams.com
greg.geras@kuestansolutions.com

Analysis/Container/Preservative

Chain of Custody
Page 1 of 2



12065 Lebanon Road
Mt. Juliet, TN 37122

Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

H179

CoCode (lab use only)

Template/Prelogin

Shipped Via:

Remarks/Contaminant Sample # (lab only)

Project Description: RMV 216-21 Site Investigation
Phone: (470) 683-2295
FAX:
Client Project #:
City/State Collected: CO
WILPCO-RMV216.21

Collected by: Greg Geras
Site/Facility ID#: RMV 216-21
P.O.#:
Rush? (Lab MUST Be Notified)

Collected by (signature):
Date Results Needed:
Email? No X Yes
FAX? No Yes
No. of Cntrs

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs
RMV 216-21 BH14 14-16'	Grab	SS	14-16'	5/14/12	1210	3
↓ ↓ ↓ BH14 24-26'	↓	↓	24-26'	↓	1245	8
RMV 216-21 BH16 21-23'	Grab	SS	21-23'	5/14/12	1555	3
↓ ↓ ↓ BH16 35-37'	↓	↓	35-37'	↓	1655	3
↓ ↓ ↓ BH16 59-60.5'	↓	↓	59-60.5'	↓	1900	3
RMV 216-21 BH16 59-60.5'	Grab	SS	59-60.5'	5/14/12	1900	3
RMV 216-21 BH13 15-17'	Grab	SS	15-17'	5/15/12	0825	2
↓ ↓ ↓ BH13 25-25.5'	↓	↓	25-25.5'	↓	0915	2
↓ ↓ ↓ BH13 50-52'	↓	↓	50-52'	↓	1115	2

BTX (SU-846 Method 8260)
TPH (GRO/DRO)
PAHs (SU8270 PAH SIM)

*Matrix SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other 5274 8786 6605 pH Temp

Remarks:

Flow Other

Relinquished by: (Signature)	Date: 5/16/12	Time: 1430	Received by: (Signature)	Samples returned via: <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 27	Bottles Received: 40
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5/17/12	Time: 0900

CoC Seals Intact: Y N NA

pH Checked: NCF:

WPX Energy
1058 County Road 215
Parachute, CO 81635

Billing Information:

Leo Braun
1058 County Rd. 215
Parachute, CO 81635

Report to:

Kardina Blaney/Greg Geras
Email to: kardina.blaney@williams.com
greg.geras@westansolutions.com

Analysis/Container/Preservative

BTEX (SW-846 Method 8260)
TPH (GR0/DRO)
PAH's (SV8270PAH SIM)

Chain of Custody
Page 2 of 2



12065 Lebanon Road
Mt. Juliet, TN 37122

Phone: (800) 767-5859
Phone: (615) 758-5858
Fax: (615) 758-5859

CoCode (lab use only)

Template/Prelogin

Shipped Via:

Remarks/Contaminant Sample # (lab only)

Project Description: RMV 216-21 Site Investigation

Phone: (970) 683-2295

FAX:

Client Project #:

City/State
Collected CO

Lab Project #:

WILPCO-RMV216.21

Collected by: Greg Geras

Site/Facility ID#:
RMV 216-21

P.O.#:

Collected by (signature):

Rush? (Lab MUST Be Notified)

Same Day.....200%
Next Day.....100%
Two Day.....50%

Date Results Needed:

Email? No X Yes

FAX? No Yes

No.
of
Cntrs

Immediately Packed on Ice N

Sample ID

Comp/Grab

Matrix*

Depth

Date

Time

RMV 216-21 BH17 15-17'

Grab

SS

18-19'

5/15/12

1400

2

- BH18 15-17'

↓

↓

15-17'

↓

1615

2

- BH18 50-51.5'

↓

↓

50-51.5'

↓

1815

2

- BH18 50-51.5'

↓

↓

50-51.5'

↓

1815

2

↓ - BH18 60-61'

↓

↓

60-61'

↓

1900

2

Trip Blanks

↓

↓

↓

↓

1

1

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH Temp

Remarks:

Flow Other

Relinquished by: (Signature)	Date: 5/16/12	Time: 1430	Received by: (Signature)	Samples returned via: <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 2.7	Bottles Received: 40
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 5-17-12	Time: 0900
				CoC Seals Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N <input type="checkbox"/> NA	
				pH Checked:	NCF:



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Tax I.D. 62-0814289

Est. 1970

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

Report Summary

Wednesday May 30, 2012

Report Number: L576388

Samples Received: 05/22/12

Client Project:

Description: RMV 216-21 Site Investigation

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 30, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH15 GW
Collected By : Greg Geras
Collection Date : 05/21/12 11:15

ESC Sample # : L576388-01

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Bromide	BDL	1.0	mg/l	9056	05/22/12	1
Chloride	150	20.	mg/l	9056	05/22/12	20
Fluoride	0.44	0.10	mg/l	9056	05/22/12	1
Nitrate	22.	2.0	mg/l	9056	05/22/12	20
Nitrite	0.16	0.10	mg/l	9056	05/22/12	1
Sulfate	1200	100	mg/l	9056	05/22/12	20
Nitrate-Nitrite	26.	0.50	mg/l	353.2	05/24/12	5
Dissolved Solids	2700	10.	mg/l	2540C	05/30/12	1
Calcium	280	0.50	mg/l	6010B	05/24/12	1
Iron	63.	0.10	mg/l	6010B	05/24/12	1
Magnesium	210	0.10	mg/l	6010B	05/24/12	1
Manganese	1.1	0.010	mg/l	6010B	05/24/12	1
Potassium	15.	0.50	mg/l	6010B	05/24/12	1
Sodium	380	0.50	mg/l	6010B	05/24/12	1
Benzene	BDL	0.00050	mg/l	8021B	05/23/12	1
Toluene	BDL	0.0050	mg/l	8021B	05/23/12	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	05/23/12	1
Total Xylene	BDL	0.0015	mg/l	8021B	05/23/12	1
Surrogate Recovery(%) a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021B	05/23/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/30/12 10:19 Printed: 05/30/12 10:19



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Est. 1970

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 30, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : TRIP BLANK
Collected By : Greg Geras
Collection Date : 05/21/12 00:00

ESC Sample # : L576388-02

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.00050	mg/l	8021B	05/23/12	1
Toluene	BDL	0.0050	mg/l	8021B	05/23/12	1
Ethylbenzene	BDL	0.00050	mg/l	8021B	05/23/12	1
Total Xylene	BDL	0.0015	mg/l	8021B	05/23/12	1
Surrogate Recovery(%) a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021B	05/23/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/30/12 10:19 Printed: 05/30/12 10:19

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L576388-01	WG594314	SAMP	Sodium	R2184773	B

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
B	(EPA) - The indicated compound was found in the associated method blank as well as the laboratory sample.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
05/30/12 at 10:19:56

TSR Signing Reports: 364
R5 - Desired TAT

for 910-1 List log BTEXGRO, DRO and PAHSIM to separate dash number. \$100 min invoice removed
per Rodney Mann 9/19/11 TAH, no energy surcharge per Rodney Mann 10/26/11 TAH

Sample: L576388-01 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/30/12 10:19

Sample: L576388-02 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/30/12 10:19



WPX Energy
Karolina Blaney
1058 County Road 215
Parachute, CO 81635

Quality Assurance Report
Level II

L576388

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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 30, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Bromide	< 1	mg/l			WG594064	05/22/12 07:01
Chloride	< 1	mg/l			WG594064	05/22/12 07:01
Fluoride	< .1	mg/l			WG594064	05/22/12 07:01
Nitrate	< .1	mg/l			WG594064	05/22/12 07:01
Nitrite	< .1	mg/l			WG594064	05/22/12 07:01
Sulfate	< 5	mg/l			WG594064	05/22/12 07:01
Benzene	< .0005	mg/l			WG593911	05/22/12 16:02
Ethylbenzene	< .0005	mg/l			WG593911	05/22/12 16:02
Toluene	< .005	mg/l			WG593911	05/22/12 16:02
Total Xylene	< .0015	mg/l			WG593911	05/22/12 16:02
a,a,a-Trifluorotoluene (PID)		% Rec.	101.2	55-122	WG593911	05/22/12 16:02
Nitrate-Nitrite	< .1	mg/l			WG594169	05/24/12 12:05
Calcium	< .5	mg/l			WG594314	05/24/12 16:10
Iron	< .1	mg/l			WG594314	05/24/12 16:10
Magnesium	< .1	mg/l			WG594314	05/24/12 16:10
Manganese	< .01	mg/l			WG594314	05/24/12 16:10
Potassium	< .5	mg/l			WG594314	05/24/12 16:10
Sodium	< .5	mg/l			WG594314	05/24/12 17:31
Dissolved Solids	< 10	mg/l			WG594507	05/30/12 10:00

Analyte	Units	Result	Duplicate		Limit	Ref Samp	Batch
			Duplicate	RPD			
Nitrate	mg/l	1.20	1.40	18.8	20	L576381-02	WG594064
Chloride	mg/l	330.	330.	0.913	20	L576381-02	WG594064
Nitrate-Nitrite	mg/l	12.0	12.0	1.68	20	L575946-01	WG594169
Nitrate-Nitrite	mg/l	19.0	19.0	0	20	L576426-01	WG594169
Calcium	mg/l	36.0	35.0	2.26	20	L576419-03	WG594314
Iron	mg/l	0	0.0460	NA	20	L576419-03	WG594314
Magnesium	mg/l	8.60	8.50	0.820	20	L576419-03	WG594314
Manganese	mg/l	0	0.00510	NA	20	L576419-03	WG594314
Potassium	mg/l	2.90	3.20	9.15	20	L576419-03	WG594314
Dissolved Solids	mg/l	2800	2810	0.428	5	L576403-04	WG594507

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Bromide	mg/l	40	39.4	98.5	90-110	WG594064
Chloride	mg/l	40	39.3	98.3	90-110	WG594064
Fluoride	mg/l	8	8.01	100.	90-110	WG594064
Nitrate	mg/l	8	8.10	101.	90-110	WG594064
Nitrite	mg/l	8	7.81	97.6	90-110	WG594064
Sulfate	mg/l	40	39.1	97.8	90-110	WG594064

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L576388

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May 30, 2012

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/l	.05	0.0424	84.7	79-114	WG593911
Ethylbenzene	mg/l	.05	0.0418	83.6	80-116	WG593911
Toluene	mg/l	.05	0.0417	83.5	79-112	WG593911
Total Xylene	mg/l	.15	0.132	87.7	84-118	WG593911
a,a,a-Trifluorotoluene(PID)				101.1	55-122	WG593911
Nitrate-Nitrite	mg/l	5	5.28	106.	90-110	WG594169
Calcium	mg/l	11.3	11.4	101.	85-115	WG594314
Iron	mg/l	1.13	1.23	109.	85-115	WG594314
Magnesium	mg/l	11.3	11.7	104.	85-115	WG594314
Manganese	mg/l	1.13	1.16	103.	85-115	WG594314
Potassium	mg/l	11.3	11.4	101.	85-115	WG594314
Sodium	mg/l	11.3	11.1	98.2	85-115	WG594314
Dissolved Solids	mg/l	8800	8850	101.	85-115	WG594507

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Bromide	mg/l	39.4	39.4	98.0	90-110	0	20	WG594064
Chloride	mg/l	39.3	39.3	98.0	90-110	0	20	WG594064
Fluoride	mg/l	7.98	8.01	100.	90-110	0.375	20	WG594064
Nitrate	mg/l	8.06	8.10	101.	90-110	0.495	20	WG594064
Nitrite	mg/l	7.77	7.81	97.0	90-110	0.513	20	WG594064
Sulfate	mg/l	38.9	39.1	97.0	90-110	0.513	20	WG594064
Benzene	mg/l	0.0420	0.0424	84.0	79-114	0.830	20	WG593911
Ethylbenzene	mg/l	0.0423	0.0418	84.0	80-116	1.15	20	WG593911
Toluene	mg/l	0.0414	0.0417	83.0	79-112	0.710	20	WG593911
Total Xylene	mg/l	0.130	0.132	87.0	84-118	0.870	20	WG593911
a,a,a-Trifluorotoluene(PID)				100.1	55-122			WG593911
Nitrate-Nitrite	mg/l	5.18	5.28	104.	90-110	1.91	20	WG594169
Dissolved Solids	mg/l	8820	8850	100.	85-115	0.317	20	WG594507

Analyte	Units	Matrix Spike			% Rec	Limit	Ref Samp	Batch
		MS Res	Ref Res	TV				
Nitrate	mg/l	4.83	0	5	96.6	80-120	L576381-01	WG594064
Sulfate	mg/l	119.	73.0	50	92.0	80-120	L576381-01	WG594064
Chloride	mg/l	542.	320.	50	88.8	80-120	L576381-01	WG594064
Benzene	mg/l	0.0462	0.00620	.05	80.0	35-147	L575816-07	WG593911
Ethylbenzene	mg/l	0.0408	0	.05	81.6	39-141	L575816-07	WG593911
Toluene	mg/l	0.0407	0	.05	81.5	35-148	L575816-07	WG593911
Total Xylene	mg/l	0.131	0.00400	.15	84.9	33-151	L575816-07	WG593911
a,a,a-Trifluorotoluene(PID)					100.2	55-122		WG593911
Nitrate-Nitrite	mg/l	5.79	0.590	5	104.	90-110	L575942-01	WG594169

* Performance of this Analyte is outside of established criteria.

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WPX Energy
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May 30, 2012

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Calcium	mg/l	46.8	35.0	11.3	104.	75-125	L576419-03	WG594314
Iron	mg/l	1.29	0.0460	1.13	110.	75-125	L576419-03	WG594314
Magnesium	mg/l	19.7	8.50	11.3	99.1	75-125	L576419-03	WG594314
Manganese	mg/l	1.15	0.00510	1.13	101.	75-125	L576419-03	WG594314
Potassium	mg/l	13.6	3.20	11.3	92.0	75-125	L576419-03	WG594314
Sodium	mg/l	16.0	4.90	11.3	98.2	75-125	L576419-03	WG594314

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Nitrate	mg/l	4.92	4.83	98.4	80-120	1.85	20	L576381-01	WG594064
Sulfate	mg/l	120.	119.	94.0	80-120	0.837	20	L576381-01	WG594064
Chloride	mg/l	538.	542.	87.2	80-120	0.741	20	L576381-01	WG594064
Benzene	mg/l	0.0472	0.0462	82.0	35-147	2.20	20	L575816-07	WG593911
Ethylbenzene	mg/l	0.0417	0.0408	83.5	39-141	2.26	20	L575816-07	WG593911
Toluene	mg/l	0.0418	0.0407	83.5	35-148	2.45	20	L575816-07	WG593911
Total Xylene	mg/l	0.133	0.131	86.0	33-151	1.22	20	L575816-07	WG593911
a,a,a-Trifluorotoluene(PID)				100.7	55-122				WG593911
Nitrate-Nitrite	mg/l	5.81	5.79	104.	90-110	0.345	20	L575942-01	WG594169
Calcium	mg/l	46.5	46.8	102.	75-125	0.643	20	L576419-03	WG594314
Iron	mg/l	1.26	1.29	107.	75-125	2.35	20	L576419-03	WG594314
Magnesium	mg/l	19.7	19.7	99.1	75-125	0	20	L576419-03	WG594314
Manganese	mg/l	1.13	1.15	99.5	75-125	1.75	20	L576419-03	WG594314
Potassium	mg/l	14.0	13.6	95.6	75-125	2.90	20	L576419-03	WG594314
Sodium	mg/l	15.5	16.0	93.8	75-125	3.17	20	L576419-03	WG594314

Batch number /Run number / Sample number cross reference

WG594064: R2181253: L576388-01
WG593911: R2181273: L576388-01 02
WG594169: R2184233: L576388-01
WG594314: R2184773: L576388-01
WG594507: R2188853: L576388-01

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
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The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



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Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

Report Summary

Thursday May 31, 2012

Report Number: L576447

Samples Received: 05/22/12

Client Project:

Description: RMV 216-21 Site Investigation

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH19 4-6 FT
Collected By : Greg Geras
Collection Date : 05/17/12 07:35

ESC Sample # : L576447-01

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	2900	200	mg/kg	8015D/GRO	05/22/12	2000
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	107.		% Rec.	602/8015	05/22/12	2000
Benzene	BDL	2.0	mg/kg	8260B	05/22/12	2000
Toluene	BDL	10.	mg/kg	8260B	05/22/12	2000
Ethylbenzene	3.9	2.0	mg/kg	8260B	05/22/12	2000
Total Xylenes	73.	6.0	mg/kg	8260B	05/22/12	2000
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	05/22/12	2000
Dibromofluoromethane	98.4		% Rec.	8260B	05/22/12	2000
a,a,a-Trifluorotoluene	108.		% Rec.	8260B	05/22/12	2000
4-Bromofluorobenzene	107.		% Rec.	8260B	05/22/12	2000
TPH (GC/FID) High Fraction	2300	80.	mg/kg	3546/DRO	05/25/12	20
Surrogate recovery(%)						
o-Terphenyl	122.		% Rec.	3546/DRO	05/25/12	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.22	0.030	mg/kg	8270C-SIM	05/26/12	5
Acenaphthene	0.17	0.030	mg/kg	8270C-SIM	05/26/12	5
Acenaphthylene	0.10	0.030	mg/kg	8270C-SIM	05/26/12	5
Benzo(a)anthracene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Benzo(a)pyrene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Benzo(b)fluoranthene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Benzo(g,h,i)perylene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Benzo(k)fluoranthene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Chrysene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Dibenz(a,h)anthracene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Fluoranthene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Fluorene	0.89	0.030	mg/kg	8270C-SIM	05/26/12	5
Indeno(1,2,3-cd)pyrene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Naphthalene	5.3	0.30	mg/kg	8270C-SIM	05/29/12	50
Phenanthrene	0.62	0.030	mg/kg	8270C-SIM	05/26/12	5
Pyrene	0.11	0.030	mg/kg	8270C-SIM	05/26/12	5
1-Methylnaphthalene	3.9	0.30	mg/kg	8270C-SIM	05/29/12	50
2-Methylnaphthalene	12.	0.30	mg/kg	8270C-SIM	05/29/12	50
2-Chloronaphthalene	BDL	0.30	mg/kg	8270C-SIM	05/29/12	50
Surrogate Recovery						
Nitrobenzene-d5	5900		% Rec.	8270C-SIM	05/29/12	50
2-Fluorobiphenyl	105.		% Rec.	8270C-SIM	05/26/12	5
p-Terphenyl-d14	102.		% Rec.	8270C-SIM	05/26/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 05/31/12 15:04 Printed: 05/31/12 16:21

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH19 24-25.5 FT
Collected By : Greg Geras
Collection Date : 05/17/12 08:20

ESC Sample # : L576447-02

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	1000	100	mg/kg	8015D/GRO	05/22/12	1000
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	108.		% Rec.	602/8015	05/22/12	1000
Benzene	BDL	1.0	mg/kg	8260B	05/22/12	1000
Toluene	BDL	5.0	mg/kg	8260B	05/22/12	1000
Ethylbenzene	2.2	1.0	mg/kg	8260B	05/22/12	1000
Total Xylenes	44.	3.0	mg/kg	8260B	05/22/12	1000
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	05/22/12	1000
Dibromofluoromethane	100.		% Rec.	8260B	05/22/12	1000
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	05/22/12	1000
4-Bromofluorobenzene	106.		% Rec.	8260B	05/22/12	1000
TPH (GC/FID) High Fraction	1000	80.	mg/kg	3546/DRO	05/25/12	20
Surrogate recovery(%)						
o-Terphenyl	93.0		% Rec.	3546/DRO	05/25/12	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.048	0.0060	mg/kg	8270C-SIM	05/26/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Fluorene	0.28	0.0060	mg/kg	8270C-SIM	05/26/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Naphthalene	1.7	0.30	mg/kg	8270C-SIM	05/29/12	50
Phenanthrene	0.13	0.0060	mg/kg	8270C-SIM	05/26/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
1-Methylnaphthalene	1.4	0.30	mg/kg	8270C-SIM	05/29/12	50
2-Methylnaphthalene	4.2	0.30	mg/kg	8270C-SIM	05/29/12	50
2-Chloronaphthalene	BDL	0.30	mg/kg	8270C-SIM	05/29/12	50
Surrogate Recovery						
Nitrobenzene-d5	2000		% Rec.	8270C-SIM	05/29/12	50
2-Fluorobiphenyl	107.		% Rec.	8270C-SIM	05/26/12	1
p-Terphenyl-d14	80.5		% Rec.	8270C-SIM	05/26/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/31/12 15:04 Printed: 05/31/12 16:21

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH19 29-30 FT
Collected By : Greg Geras
Collection Date : 05/17/12 08:50

ESC Sample # : L576447-03

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	630	50.	mg/kg	8015D/GRO	05/22/12	500
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	108.		% Rec.	602/8015	05/22/12	500
Benzene	BDL	0.50	mg/kg	8260B	05/22/12	500
Toluene	BDL	2.5	mg/kg	8260B	05/22/12	500
Ethylbenzene	0.99	0.50	mg/kg	8260B	05/22/12	500
Total Xylenes	18.	1.5	mg/kg	8260B	05/22/12	500
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	05/22/12	500
Dibromofluoromethane	98.3		% Rec.	8260B	05/22/12	500
a,a,a-Trifluorotoluene	109.		% Rec.	8260B	05/22/12	500
4-Bromofluorobenzene	109.		% Rec.	8260B	05/22/12	500
TPH (GC/FID) High Fraction	290	4.0	mg/kg	3546/DRO	05/24/12	1
Surrogate recovery(%)						
o-Terphenyl	80.0		% Rec.	3546/DRO	05/24/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Acenaphthene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Acenaphthylene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Benzo(a)anthracene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Benzo(a)pyrene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Benzo(b)fluoranthene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Benzo(g,h,i)perylene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Benzo(k)fluoranthene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Chrysene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Dibenz(a,h)anthracene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Fluoranthene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Fluorene	0.12	0.030	mg/kg	8270C-SIM	05/26/12	5
Indeno(1,2,3-cd)pyrene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
Naphthalene	1.0	0.12	mg/kg	8270C-SIM	05/29/12	20
Phenanthrene	0.074	0.030	mg/kg	8270C-SIM	05/26/12	5
Pyrene	BDL	0.030	mg/kg	8270C-SIM	05/26/12	5
1-Methylnaphthalene	0.84	0.12	mg/kg	8270C-SIM	05/29/12	20
2-Methylnaphthalene	2.8	0.12	mg/kg	8270C-SIM	05/29/12	20
2-Chloronaphthalene	BDL	0.12	mg/kg	8270C-SIM	05/29/12	20
Surrogate Recovery						
Nitrobenzene-d5	1630		% Rec.	8270C-SIM	05/29/12	20
2-Fluorobiphenyl	101.		% Rec.	8270C-SIM	05/26/12	5
p-Terphenyl-d14	88.9		% Rec.	8270C-SIM	05/26/12	5

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/31/12 15:04 Printed: 05/31/12 16:21

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH20 47-48 FT
Collected By : Greg Geras
Collection Date : 05/17/12 13:10

ESC Sample # : L576447-04

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	1.3	0.50	mg/kg	8015D/GRO	05/23/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	108.		% Rec.	602/8015	05/23/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/22/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/22/12	5
Ethylbenzene	0.0073	0.0050	mg/kg	8260B	05/22/12	5
Total Xylenes	0.43	0.015	mg/kg	8260B	05/22/12	5
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	05/22/12	5
Dibromofluoromethane	101.		% Rec.	8260B	05/22/12	5
a,a,a-Trifluorotoluene	104.		% Rec.	8260B	05/22/12	5
4-Bromofluorobenzene	103.		% Rec.	8260B	05/22/12	5
TPH (GC/FID) High Fraction	5.0	4.0	mg/kg	3546/DRO	05/29/12	1
Surrogate recovery(%)						
o-Terphenyl	51.6		% Rec.	3546/DRO	05/29/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Naphthalene	0.025	0.0060	mg/kg	8270C-SIM	05/26/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
1-Methylnaphthalene	0.0084	0.0060	mg/kg	8270C-SIM	05/26/12	1
2-Methylnaphthalene	0.026	0.0060	mg/kg	8270C-SIM	05/26/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/26/12	1
Surrogate Recovery						
Nitrobenzene-d5	79.8		% Rec.	8270C-SIM	05/26/12	1
2-Fluorobiphenyl	90.4		% Rec.	8270C-SIM	05/26/12	1
p-Terphenyl-d14	70.6		% Rec.	8270C-SIM	05/26/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/31/12 15:04 Printed: 05/31/12 16:21

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH20 67-67.5 FT
Collected By : Greg Geras
Collection Date : 05/17/12 14:40

ESC Sample # : L576447-05

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	0.52	0.50	mg/kg	8015D/GRO	05/23/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	108.		% Rec.	602/8015	05/23/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/22/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/22/12	5
Ethylbenzene	0.016	0.0050	mg/kg	8260B	05/22/12	5
Total Xylenes	0.092	0.015	mg/kg	8260B	05/22/12	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	05/22/12	5
Dibromofluoromethane	100.		% Rec.	8260B	05/22/12	5
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	05/22/12	5
4-Bromofluorobenzene	102.		% Rec.	8260B	05/22/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/30/12	1
Surrogate recovery(%)						
o-Terphenyl	63.7		% Rec.	3546/DRO	05/30/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Naphthalene	0.0091	0.0060	mg/kg	8270C-SIM	05/28/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
1-Methylnaphthalene	0.0072	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Methylnaphthalene	0.0094	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Surrogate Recovery						
Nitrobenzene-d5	131.		% Rec.	8270C-SIM	05/28/12	1
2-Fluorobiphenyl	89.3		% Rec.	8270C-SIM	05/28/12	1
p-Terphenyl-d14	99.6		% Rec.	8270C-SIM	05/28/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH12 5-6 FT
Collected By : Greg Geras
Collection Date : 05/17/12 16:45

ESC Sample # : L576447-06

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	67.	5.0	mg/kg	8015D/GRO	05/23/12	50
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	108.		% Rec.	602/8015	05/23/12	50
Benzene	BDL	0.050	mg/kg	8260B	05/22/12	50
Toluene	BDL	0.25	mg/kg	8260B	05/22/12	50
Ethylbenzene	0.055	0.050	mg/kg	8260B	05/22/12	50
Total Xylenes	1.4	0.15	mg/kg	8260B	05/22/12	50
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	05/22/12	50
Dibromofluoromethane	98.8		% Rec.	8260B	05/22/12	50
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	05/22/12	50
4-Bromofluorobenzene	108.		% Rec.	8260B	05/22/12	50
TPH (GC/FID) High Fraction	1000	20.	mg/kg	3546/DRO	05/29/12	5
Surrogate recovery(%)						
o-Terphenyl	138.		% Rec.	3546/DRO	05/29/12	5
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.042	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthene	0.046	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthylene	0.013	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluorene	0.16	0.0060	mg/kg	8270C-SIM	05/28/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Naphthalene	0.44	0.12	mg/kg	8270C-SIM	05/29/12	20
Phenanthrene	0.099	0.0060	mg/kg	8270C-SIM	05/28/12	1
Pyrene	0.022	0.0060	mg/kg	8270C-SIM	05/28/12	1
1-Methylnaphthalene	0.48	0.12	mg/kg	8270C-SIM	05/29/12	20
2-Methylnaphthalene	1.5	0.12	mg/kg	8270C-SIM	05/29/12	20
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Surrogate Recovery						
Nitrobenzene-d5	185.		% Rec.	8270C-SIM	05/29/12	20
2-Fluorobiphenyl	110.		% Rec.	8270C-SIM	05/28/12	1
p-Terphenyl-d14	143.		% Rec.	8270C-SIM	05/28/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH12 14-15 FT
Collected By : Greg Geras
Collection Date : 05/17/12 17:05

ESC Sample # : L576447-07

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/23/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	108.		% Rec.	602/8015	05/23/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/22/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/22/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	05/22/12	5
Total Xylenes	BDL	0.015	mg/kg	8260B	05/22/12	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	05/22/12	5
Dibromofluoromethane	99.8		% Rec.	8260B	05/22/12	5
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	05/22/12	5
4-Bromofluorobenzene	104.		% Rec.	8260B	05/22/12	5
TPH (GC/FID) High Fraction	4.9	4.0	mg/kg	3546/DRO	05/29/12	1
Surrogate recovery(%)						
o-Terphenyl	61.5		% Rec.	3546/DRO	05/29/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Naphthalene	0.013	0.0060	mg/kg	8270C-SIM	05/28/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Methylnaphthalene	0.013	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Surrogate Recovery						
Nitrobenzene-d5	129.		% Rec.	8270C-SIM	05/28/12	1
2-Fluorobiphenyl	84.8		% Rec.	8270C-SIM	05/28/12	1
p-Terphenyl-d14	91.2		% Rec.	8270C-SIM	05/28/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH12 59-60 FT
Collected By : Greg Geras
Collection Date : 05/18/12 08:00

ESC Sample # : L576447-08

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/23/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	108.		% Rec.	602/8015	05/23/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/22/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/22/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	05/22/12	5
Total Xylenes	0.10	0.015	mg/kg	8260B	05/22/12	5
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	05/22/12	5
Dibromofluoromethane	101.		% Rec.	8260B	05/22/12	5
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	05/22/12	5
4-Bromofluorobenzene	104.		% Rec.	8260B	05/22/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/29/12	1
Surrogate recovery(%)						
o-Terphenyl	61.6		% Rec.	3546/DRO	05/29/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Surrogate Recovery						
Nitrobenzene-d5	105.		% Rec.	8270C-SIM	05/28/12	1
2-Fluorobiphenyl	68.7		% Rec.	8270C-SIM	05/28/12	1
p-Terphenyl-d14	77.8		% Rec.	8270C-SIM	05/28/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH12 59-60 FT FD
Collected By : Greg Geras
Collection Date : 05/18/12 08:00

ESC Sample # : L576447-09

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/23/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	108.		% Rec.	602/8015	05/23/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/22/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/22/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	05/22/12	5
Total Xylenes	BDL	0.015	mg/kg	8260B	05/22/12	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	05/22/12	5
Dibromofluoromethane	100.		% Rec.	8260B	05/22/12	5
a,a,a-Trifluorotoluene	106.		% Rec.	8260B	05/22/12	5
4-Bromofluorobenzene	104.		% Rec.	8260B	05/22/12	5
TPH (GC/FID) High Fraction	BDL	4.0	mg/kg	3546/DRO	05/29/12	1
Surrogate recovery(%)						
o-Terphenyl	59.2		% Rec.	3546/DRO	05/29/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Surrogate Recovery						
Nitrobenzene-d5	110.		% Rec.	8270C-SIM	05/28/12	1
2-Fluorobiphenyl	74.8		% Rec.	8270C-SIM	05/28/12	1
p-Terphenyl-d14	83.7		% Rec.	8270C-SIM	05/28/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 05/31/12 15:04 Printed: 05/31/12 16:21

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH11 5-7 FT
Collected By : Greg Geras
Collection Date : 05/16/12 08:25

ESC Sample # : L576447-10

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	1400	50.	mg/kg	8015D/GRO	05/23/12	500
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	96.2		% Rec.	602/8015	05/23/12	500
Benzene	0.30	0.050	mg/kg	8260B	05/26/12	50
Toluene	BDL	0.25	mg/kg	8260B	05/26/12	50
Ethylbenzene	1.3	0.050	mg/kg	8260B	05/26/12	50
Total Xylenes	32.	1.5	mg/kg	8260B	05/29/12	500
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	05/26/12	50
Dibromofluoromethane	100.		% Rec.	8260B	05/26/12	50
a,a,a-Trifluorotoluene	98.5		% Rec.	8260B	05/26/12	50
4-Bromofluorobenzene	111.		% Rec.	8260B	05/26/12	50
TPH (GC/FID) High Fraction	3500	80.	mg/kg	3546/DRO	05/29/12	20
Surrogate recovery(%)						
o-Terphenyl	218.		% Rec.	3546/DRO	05/29/12	20
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.16	0.12	mg/kg	8270C-SIM	05/29/12	20
Acenaphthene	0.15	0.12	mg/kg	8270C-SIM	05/29/12	20
Acenaphthylene	BDL	0.12	mg/kg	8270C-SIM	05/29/12	20
Benzo(a)anthracene	BDL	0.12	mg/kg	8270C-SIM	05/29/12	20
Benzo(a)pyrene	BDL	0.12	mg/kg	8270C-SIM	05/29/12	20
Benzo(b)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	05/29/12	20
Benzo(g,h,i)perylene	BDL	0.12	mg/kg	8270C-SIM	05/29/12	20
Benzo(k)fluoranthene	BDL	0.12	mg/kg	8270C-SIM	05/29/12	20
Chrysene	BDL	0.12	mg/kg	8270C-SIM	05/29/12	20
Dibenz(a,h)anthracene	BDL	0.12	mg/kg	8270C-SIM	05/29/12	20
Fluoranthene	BDL	0.12	mg/kg	8270C-SIM	05/29/12	20
Fluorene	0.90	0.12	mg/kg	8270C-SIM	05/29/12	20
Indeno(1,2,3-cd)pyrene	BDL	0.12	mg/kg	8270C-SIM	05/29/12	20
Naphthalene	3.2	0.12	mg/kg	8270C-SIM	05/29/12	20
Phenanthrene	0.67	0.12	mg/kg	8270C-SIM	05/29/12	20
Pyrene	0.12	0.12	mg/kg	8270C-SIM	05/29/12	20
1-Methylnaphthalene	3.1	0.12	mg/kg	8270C-SIM	05/29/12	20
2-Methylnaphthalene	12.	0.30	mg/kg	8270C-SIM	05/31/12	50
2-Chloronaphthalene	BDL	0.12	mg/kg	8270C-SIM	05/29/12	20
Surrogate Recovery						
Nitrobenzene-d5	6020		% Rec.	8270C-SIM	05/29/12	20
2-Fluorobiphenyl	101.		% Rec.	8270C-SIM	05/29/12	20
p-Terphenyl-d14	88.4		% Rec.	8270C-SIM	05/29/12	20

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH11 39-40 FT
Collected By : Greg Geras
Collection Date : 05/16/12 11:10

ESC Sample # : L576447-11

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	57.	10.	mg/kg	8015D/GRO	05/23/12	100
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	109.		% Rec.	602/8015	05/23/12	100
Benzene	0.089	0.050	mg/kg	8260B	05/26/12	50
Toluene	BDL	0.25	mg/kg	8260B	05/26/12	50
Ethylbenzene	0.84	0.050	mg/kg	8260B	05/26/12	50
Total Xylenes	3.9	0.15	mg/kg	8260B	05/26/12	50
Surrogate Recovery						
Toluene-d8	102.		% Rec.	8260B	05/26/12	50
Dibromofluoromethane	96.9		% Rec.	8260B	05/26/12	50
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	05/26/12	50
4-Bromofluorobenzene	97.8		% Rec.	8260B	05/26/12	50
TPH (GC/FID) High Fraction	310	4.0	mg/kg	3546/DRO	05/29/12	1
Surrogate recovery(%)						
o-Terphenyl	68.3		% Rec.	3546/DRO	05/29/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.022	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthene	0.022	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluorene	0.062	0.0060	mg/kg	8270C-SIM	05/28/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Naphthalene	0.18	0.0060	mg/kg	8270C-SIM	05/28/12	1
Phenanthrene	0.045	0.0060	mg/kg	8270C-SIM	05/28/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
1-Methylnaphthalene	0.17	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Methylnaphthalene	0.76	0.060	mg/kg	8270C-SIM	05/29/12	10
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Surrogate Recovery						
Nitrobenzene-d5	147.		% Rec.	8270C-SIM	05/28/12	1
2-Fluorobiphenyl	73.6		% Rec.	8270C-SIM	05/28/12	1
p-Terphenyl-d14	82.4		% Rec.	8270C-SIM	05/28/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH11 61-63 FT
Collected By : Greg Geras
Collection Date : 05/16/12 17:40

ESC Sample # : L576447-12

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	0.52	0.50	mg/kg	8015D/GRO	05/22/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	108.		% Rec.	602/8015	05/22/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/25/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/25/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	05/25/12	5
Total Xylenes	BDL	0.015	mg/kg	8260B	05/25/12	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	05/25/12	5
Dibromofluoromethane	98.5		% Rec.	8260B	05/25/12	5
a,a,a-Trifluorotoluene	108.		% Rec.	8260B	05/25/12	5
4-Bromofluorobenzene	104.		% Rec.	8260B	05/25/12	5
TPH (GC/FID) High Fraction	5.6	4.0	mg/kg	3546/DRO	05/29/12	1
Surrogate recovery(%)						
o-Terphenyl	65.1		% Rec.	3546/DRO	05/29/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Naphthalene	0.018	0.0060	mg/kg	8270C-SIM	05/28/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Methylnaphthalene	0.015	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Surrogate Recovery						
Nitrobenzene-d5	115.		% Rec.	8270C-SIM	05/28/12	1
2-Fluorobiphenyl	77.9		% Rec.	8270C-SIM	05/28/12	1
p-Terphenyl-d14	116.		% Rec.	8270C-SIM	05/28/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH15 69-71 FT
Collected By : Greg Geras
Collection Date : 05/18/12 14:00

ESC Sample # : L576447-13

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/23/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	108.		% Rec.	602/8015	05/23/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/25/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/25/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	05/25/12	5
Total Xylenes	0.015	0.015	mg/kg	8260B	05/25/12	5
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	05/25/12	5
Dibromofluoromethane	98.2		% Rec.	8260B	05/25/12	5
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	05/25/12	5
4-Bromofluorobenzene	104.		% Rec.	8260B	05/25/12	5
TPH (GC/FID) High Fraction	5.0	4.0	mg/kg	3546/DRO	05/29/12	1
Surrogate recovery(%)						
o-Terphenyl	56.3		% Rec.	3546/DRO	05/29/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Surrogate Recovery						
Nitrobenzene-d5	99.8		% Rec.	8270C-SIM	05/28/12	1
2-Fluorobiphenyl	67.7		% Rec.	8270C-SIM	05/28/12	1
p-Terphenyl-d14	76.5		% Rec.	8270C-SIM	05/28/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

May 31, 2012

Date Received : May 22, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH15 79-79.5 FT
Collected By : Greg Geras
Collection Date : 05/18/12 14:25

ESC Sample # : L576447-14

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	0.70	0.50	mg/kg	8015D/GRO	05/23/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	108.		% Rec.	602/8015	05/23/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/25/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/25/12	5
Ethylbenzene	0.021	0.0050	mg/kg	8260B	05/25/12	5
Total Xylenes	0.19	0.015	mg/kg	8260B	05/25/12	5
Surrogate Recovery						
Toluene-d8	99.3		% Rec.	8260B	05/25/12	5
Dibromofluoromethane	101.		% Rec.	8260B	05/25/12	5
a,a,a-Trifluorotoluene	102.		% Rec.	8260B	05/25/12	5
4-Bromofluorobenzene	92.5		% Rec.	8260B	05/25/12	5
TPH (GC/FID) High Fraction	16.	4.0	mg/kg	3546/DRO	05/29/12	1
Surrogate recovery(%)						
o-Terphenyl	61.8		% Rec.	3546/DRO	05/29/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Naphthalene	0.036	0.0060	mg/kg	8270C-SIM	05/28/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Methylnaphthalene	0.0085	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Surrogate Recovery						
Nitrobenzene-d5	94.6		% Rec.	8270C-SIM	05/28/12	1
2-Fluorobiphenyl	61.1		% Rec.	8270C-SIM	05/28/12	1
p-Terphenyl-d14	83.8		% Rec.	8270C-SIM	05/28/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L576447-01	WG594432	SAMP	Nitrobenzene-d5	R2185834	J7
	WG594320	SAMP	o-Terphenyl	R2184954	J7
L576447-02	WG594432	SAMP	Nitrobenzene-d5	R2185834	J7
	WG594320	SAMP	o-Terphenyl	R2184954	J7
L576447-03	WG594432	SAMP	Nitrobenzene-d5	R2185834	J7
L576447-04	WG594120	SAMP	Total Xylenes	R2180995	J3J5
L576447-06	WG594840	SAMP	Nitrobenzene-d5	R2187516	J7
	WG594840	SAMP	p-Terphenyl-d14	R2187516	J1
L576447-10	WG594840	SAMP	Nitrobenzene-d5	R2187516	J7
	WG594840	SAMP	2-Fluorobiphenyl	R2187516	J7
	WG594840	SAMP	p-Terphenyl-d14	R2187516	J7
	WG594686	SAMP	o-Terphenyl	R2187174	J7
L576447-11	WG594840	SAMP	Nitrobenzene-d5	R2187516	J1

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods, it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

- Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.
- Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Difference.
- Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromatography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.
- TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

Summary of Remarks For Samples Printed
05/31/12 at 16:21:45

TSR Signing Reports: 364
R5 - Desired TAT

for 910-1 List log BTEXGRO, DRO and PAHSIM to separate dash number. \$100 min invoice removed
per Rodney Mann 9/19/11 TAH, no energy surcharge per Rodney Mann 10/26/11 TAH

Sample: L576447-01 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04
Sample: L576447-02 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04
Sample: L576447-03 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04
Sample: L576447-04 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04
Sample: L576447-05 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04
Sample: L576447-06 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04
Sample: L576447-07 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04
Sample: L576447-08 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04
Sample: L576447-09 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04
Sample: L576447-10 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04
Sample: L576447-11 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04
Sample: L576447-12 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04
MS/MSD Sample.
Sample: L576447-13 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04
Sample: L576447-14 Account: WILPCO Received: 05/22/12 09:00 Due Date: 05/30/12 00:00 RPT Date: 05/31/12 15:04



WPX Energy
Karolina Blaney
1058 County Road 215
Parachute, CO 81635

Quality Assurance Report
Level II

L576447

12065 Lebanon Rd.
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(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 31, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .001	mg/kg			WG594120	05/22/12 17:53
Ethylbenzene	< .001	mg/kg			WG594120	05/22/12 17:53
Toluene	< .005	mg/kg			WG594120	05/22/12 17:53
Total Xylenes	< .003	mg/kg			WG594120	05/22/12 17:53
4-Bromofluorobenzene		% Rec.	104.1	67-133	WG594120	05/22/12 17:53
Dibromofluoromethane		% Rec.	99.57	72-135	WG594120	05/22/12 17:53
Toluene-d8		% Rec.	102.8	90-113	WG594120	05/22/12 17:53
a,a,a-Trifluorotoluene		% Rec.	108.4	89-115	WG594120	05/22/12 17:53
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG594100	05/22/12 17:22
a,a,a-Trifluorotoluene(FID)		% Rec.	108.1	59-128	WG594100	05/22/12 17:22
Benzene	< .001	mg/kg			WG594608	05/25/12 01:06
Ethylbenzene	< .001	mg/kg			WG594608	05/25/12 01:06
Toluene	< .005	mg/kg			WG594608	05/25/12 01:06
Total Xylenes	< .003	mg/kg			WG594608	05/25/12 01:06
4-Bromofluorobenzene		% Rec.	105.8	67-133	WG594608	05/25/12 01:06
Dibromofluoromethane		% Rec.	98.78	72-135	WG594608	05/25/12 01:06
Toluene-d8		% Rec.	101.8	90-113	WG594608	05/25/12 01:06
a,a,a-Trifluorotoluene		% Rec.	109.3	89-115	WG594608	05/25/12 01:06
TPH (GC/FID) High Fraction	< 4	ppm			WG594320	05/24/12 14:39
o-Terphenyl		% Rec.	86.46	50-150	WG594320	05/24/12 14:39
1-Methylnaphthalene	< .006	mg/kg			WG594432	05/25/12 04:01
2-Chloronaphthalene	< .006	mg/kg			WG594432	05/25/12 04:01
2-Methylnaphthalene	< .006	mg/kg			WG594432	05/25/12 04:01
Acenaphthene	< .006	mg/kg			WG594432	05/25/12 04:01
Acenaphthylene	< .006	mg/kg			WG594432	05/25/12 04:01
Anthracene	< .006	mg/kg			WG594432	05/25/12 04:01
Benzo(a)anthracene	< .006	mg/kg			WG594432	05/25/12 04:01
Benzo(a)pyrene	< .006	mg/kg			WG594432	05/25/12 04:01
Benzo(b)fluoranthene	< .006	mg/kg			WG594432	05/25/12 04:01
Benzo(g,h,i)perylene	< .006	mg/kg			WG594432	05/25/12 04:01
Benzo(k)fluoranthene	< .006	mg/kg			WG594432	05/25/12 04:01
Chrysene	< .006	mg/kg			WG594432	05/25/12 04:01
Dibenz(a,h)anthracene	< .006	mg/kg			WG594432	05/25/12 04:01
Fluoranthene	< .006	mg/kg			WG594432	05/25/12 04:01
Fluorene	< .006	mg/kg			WG594432	05/25/12 04:01
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG594432	05/25/12 04:01
Naphthalene	< .006	mg/kg			WG594432	05/25/12 04:01
Phenanthrene	< .006	mg/kg			WG594432	05/25/12 04:01
Pyrene	< .006	mg/kg			WG594432	05/25/12 04:01
2-Fluorobiphenyl		% Rec.	81.26	34-129	WG594432	05/25/12 04:01
Nitrobenzene-d5		% Rec.	75.90	14-141	WG594432	05/25/12 04:01
p-Terphenyl-d14		% Rec.	102.1	25-139	WG594432	05/25/12 04:01
Benzene	< .001	mg/kg			WG594779	05/26/12 18:52
Ethylbenzene	< .001	mg/kg			WG594779	05/26/12 18:52
Toluene	< .005	mg/kg			WG594779	05/26/12 18:52
Total Xylenes	< .003	mg/kg			WG594779	05/26/12 18:52
4-Bromofluorobenzene		% Rec.	110.8	67-133	WG594779	05/26/12 18:52
Dibromofluoromethane		% Rec.	99.77	72-135	WG594779	05/26/12 18:52
Toluene-d8		% Rec.	98.83	90-113	WG594779	05/26/12 18:52

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Tax I.D. 62-0814289

Est. 1970

May 31, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
a,a,a-Trifluorotoluene		% Rec.	111.1	89-115		05/26/12 18:52
TPH (GC/FID) High Fraction	< 4	ppm			WG594686	05/29/12 06:52
o-Terphenyl		% Rec.	79.01	50-150	WG594686	05/29/12 06:52
1-Methylnaphthalene	< .006	mg/kg			WG594840	05/28/12 15:25
2-Chloronaphthalene	< .006	mg/kg			WG594840	05/28/12 15:25
2-Methylnaphthalene	< .006	mg/kg			WG594840	05/28/12 15:25
Acenaphthene	< .006	mg/kg			WG594840	05/28/12 15:25
Acenaphthylene	< .006	mg/kg			WG594840	05/28/12 15:25
Anthracene	< .006	mg/kg			WG594840	05/28/12 15:25
Benzo(a)anthracene	< .006	mg/kg			WG594840	05/28/12 15:25
Benzo(a)pyrene	< .006	mg/kg			WG594840	05/28/12 15:25
Benzo(b)fluoranthene	< .006	mg/kg			WG594840	05/28/12 15:25
Benzo(g,h,i)perylene	< .006	mg/kg			WG594840	05/28/12 15:25
Benzo(k)fluoranthene	< .006	mg/kg			WG594840	05/28/12 15:25
Chrysene	< .006	mg/kg			WG594840	05/28/12 15:25
Dibenz(a,h)anthracene	< .006	mg/kg			WG594840	05/28/12 15:25
Fluoranthene	< .006	mg/kg			WG594840	05/28/12 15:25
Fluorene	< .006	mg/kg			WG594840	05/28/12 15:25
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG594840	05/28/12 15:25
Naphthalene	< .006	mg/kg			WG594840	05/28/12 15:25
Phenanthrene	< .006	mg/kg			WG594840	05/28/12 15:25
Pyrene	< .006	mg/kg			WG594840	05/28/12 15:25
2-Fluorobiphenyl		% Rec.	73.85	34-129	WG594840	05/28/12 15:25
Nitrobenzene-d5		% Rec.	105.7	14-141	WG594840	05/28/12 15:25
p-Terphenyl-d14		% Rec.	82.43	25-139	WG594840	05/28/12 15:25
Total Xylenes	< .003	mg/kg			WG595055	05/29/12 12:22
4-Bromofluorobenzene		% Rec.	104.5	67-133	WG595055	05/29/12 12:22
Dibromofluoromethane		% Rec.	108.8	72-135	WG595055	05/29/12 12:22
Toluene-d8		% Rec.	107.0	90-113	WG595055	05/29/12 12:22
a,a,a-Trifluorotoluene		% Rec.	104.8	89-115	WG595055	05/29/12 12:22
TPH (GC/FID) High Fraction	< 4	ppm			WG594992	05/30/12 22:39
o-Terphenyl		% Rec.	72.08	50-150	WG594992	05/30/12 22:39

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.025	0.0208	83.3	72-120	WG594120
Ethylbenzene	mg/kg	.025	0.0241	96.5	76-126	WG594120
Toluene	mg/kg	.025	0.0221	88.3	74-155	WG594120
Total Xylenes	mg/kg	.075	0.0730	97.4	76-126	WG594120
4-Bromofluorobenzene				102.5	67-133	WG594120
Dibromofluoromethane				98.53	72-135	WG594120
Toluene-d8				102.3	90-113	WG594120
a,a,a-Trifluorotoluene				106.5	89-115	WG594120
TPH (GC/FID) Low Fraction	mg/kg	5.5	6.64	121.	67-135	WG594100
a,a,a-Trifluorotoluene(FID)				106.5	59-128	WG594100
Benzene	mg/kg	.025	0.0211	84.6	72-120	WG594608
Ethylbenzene	mg/kg	.025	0.0230	92.1	76-126	WG594608
Toluene	mg/kg	.025	0.0225	89.8	74-155	WG594608

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Analyte	Units	Laboratory Control Known Val	Sample Result	% Rec	Limit	Batch
Total Xylenes	mg/kg	.075	0.0710	94.7	76-126	WG594608
4-Bromofluorobenzene				104.2	67-133	WG594608
Dibromofluoromethane				100.5	72-135	WG594608
Toluene-d8				102.1	90-113	WG594608
a,a,a-Trifluorotoluene				106.9	89-115	WG594608
TPH (GC/FID) High Fraction	ppm	60	40.9	68.1	50-150	WG594320
o-Terphenyl				74.63	50-150	WG594320
1-Methylnaphthalene	mg/kg	.033	0.0257	78.0	48-113	WG594432
2-Chloronaphthalene	mg/kg	.033	0.0264	80.1	51-114	WG594432
2-Methylnaphthalene	mg/kg	.033	0.0270	81.8	44-109	WG594432
Acenaphthene	mg/kg	.033	0.0254	77.0	52-108	WG594432
Acenaphthylene	mg/kg	.033	0.0259	78.5	51-110	WG594432
Anthracene	mg/kg	.033	0.0270	81.8	58-120	WG594432
Benzo(a)anthracene	mg/kg	.033	0.0262	79.3	54-110	WG594432
Benzo(a)pyrene	mg/kg	.033	0.0264	80.0	56-118	WG594432
Benzo(b)fluoranthene	mg/kg	.033	0.0255	77.2	55-114	WG594432
Benzo(g,h,i)perylene	mg/kg	.033	0.0272	82.5	48-130	WG594432
Benzo(k)fluoranthene	mg/kg	.033	0.0273	82.8	55-122	WG594432
Chrysene	mg/kg	.033	0.0273	82.7	57-118	WG594432
Dibenz(a,h)anthracene	mg/kg	.033	0.0253	76.7	53-122	WG594432
Fluoranthene	mg/kg	.033	0.0273	82.8	58-118	WG594432
Fluorene	mg/kg	.033	0.0255	77.2	54-109	WG594432
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0260	78.7	51-125	WG594432
Naphthalene	mg/kg	.033	0.0254	76.9	45-105	WG594432
Phenanthrene	mg/kg	.033	0.0265	80.3	53-114	WG594432
Pyrene	mg/kg	.033	0.0279	84.5	53-121	WG594432
2-Fluorobiphenyl				74.49	34-129	WG594432
Nitrobenzene-d5				70.44	14-141	WG594432
p-Terphenyl-d14				100.2	25-139	WG594432
Benzene	mg/kg	.025	0.0230	92.0	72-120	WG594779
Ethylbenzene	mg/kg	.025	0.0304	121.	76-126	WG594779
Toluene	mg/kg	.025	0.0256	102.	74-155	WG594779
Total Xylenes	mg/kg	.075	0.0899	120.	76-126	WG594779
4-Bromofluorobenzene				96.83	67-133	WG594779
Dibromofluoromethane				98.43	72-135	WG594779
Toluene-d8				99.31	90-113	WG594779
a,a,a-Trifluorotoluene				109.2	89-115	WG594779
TPH (GC/FID) High Fraction	ppm	60	54.1	90.2	50-150	WG594686
o-Terphenyl				82.28	50-150	WG594686
1-Methylnaphthalene	mg/kg	.033	0.0225	68.1	48-113	WG594840
2-Chloronaphthalene	mg/kg	.033	0.0232	70.2	51-114	WG594840
2-Methylnaphthalene	mg/kg	.033	0.0220	66.7	44-109	WG594840
Acenaphthene	mg/kg	.033	0.0232	70.4	52-108	WG594840
Acenaphthylene	mg/kg	.033	0.0230	69.8	51-110	WG594840
Anthracene	mg/kg	.033	0.0253	76.8	58-120	WG594840
Benzo(a)anthracene	mg/kg	.033	0.0250	75.8	54-110	WG594840
Benzo(a)pyrene	mg/kg	.033	0.0255	77.2	56-118	WG594840
Benzo(b)fluoranthene	mg/kg	.033	0.0263	79.6	55-114	WG594840
Benzo(g,h,i)perylene	mg/kg	.033	0.0254	77.0	48-130	WG594840

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May 31, 2012

Analyte	Units	Laboratory Control		Sample	% Rec	Limit	Batch
		Known	Val	Result			
Benzo(k)fluoranthene	mg/kg	.033		0.0258	78.1	55-122	WG594840
Chrysene	mg/kg	.033		0.0273	82.6	57-118	WG594840
Dibenz(a,h)anthracene	mg/kg	.033		0.0251	76.2	53-122	WG594840
Fluoranthene	mg/kg	.033		0.0280	85.0	58-118	WG594840
Fluorene	mg/kg	.033		0.0243	73.6	54-109	WG594840
Indeno(1,2,3-cd)pyrene	mg/kg	.033		0.0249	75.6	51-125	WG594840
Naphthalene	mg/kg	.033		0.0237	71.8	45-105	WG594840
Phenanthrene	mg/kg	.033		0.0257	77.9	53-114	WG594840
Pyrene	mg/kg	.033		0.0248	75.2	53-121	WG594840
2-Fluorobiphenyl					71.02	34-129	WG594840
Nitrobenzene-d5					102.4	14-141	WG594840
p-Terphenyl-d14					92.39	25-139	WG594840
Total Xylenes	mg/kg	.075		0.0751	100.	76-126	WG595055
4-Bromofluorobenzene					105.6	67-133	WG595055
Dibromofluoromethane					104.1	72-135	WG595055
Toluene-d8					107.5	90-113	WG595055
a,a,a-Trifluorotoluene					106.3	89-115	WG595055
TPH (GC/FID) High Fraction	ppm	60		40.4	67.3	50-150	WG594992
o-Terphenyl					69.26	50-150	WG594992

Analyte	Units	Laboratory Control		Sample	%Rec	Limit	RPD	Limit	Batch
		Result	Ref	Duplicate					
Benzene	mg/kg	0.0208	0.0208		83.0	72-120	0.0900	20	WG594120
Ethylbenzene	mg/kg	0.0234	0.0241		94.0	76-126	3.01	20	WG594120
Toluene	mg/kg	0.0221	0.0221		88.0	74-155	0.250	20	WG594120
Total Xylenes	mg/kg	0.0704	0.0730		94.0	76-126	3.60	20	WG594120
4-Bromofluorobenzene					100.7	67-133			WG594120
Dibromofluoromethane					98.72	72-135			WG594120
Toluene-d8					101.3	90-113			WG594120
a,a,a-Trifluorotoluene					107.6	89-115			WG594120
TPH (GC/FID) Low Fraction	mg/kg	6.70	6.64		122.	67-135	1.00	20	WG594100
a,a,a-Trifluorotoluene(FID)					108.1	59-128			WG594100
Benzene	mg/kg	0.0211	0.0211		84.0	72-120	0.370	20	WG594608
Ethylbenzene	mg/kg	0.0235	0.0230		94.0	76-126	1.98	20	WG594608
Toluene	mg/kg	0.0223	0.0225		89.0	74-155	0.780	20	WG594608
Total Xylenes	mg/kg	0.0706	0.0710		94.0	76-126	0.580	20	WG594608
4-Bromofluorobenzene					103.4	67-133			WG594608
Dibromofluoromethane					99.29	72-135			WG594608
Toluene-d8					102.7	90-113			WG594608
a,a,a-Trifluorotoluene					107.4	89-115			WG594608
TPH (GC/FID) High Fraction	ppm	45.4	40.9		76.0	50-150	10.4	23	WG594320
o-Terphenyl					82.91	50-150			WG594320
1-Methylnaphthalene	mg/kg	0.0286	0.0257		87.0	48-113	10.6	24	WG594432
2-Chloronaphthalene	mg/kg	0.0286	0.0264		86.0	51-114	7.70	24	WG594432
2-Methylnaphthalene	mg/kg	0.0287	0.0270		87.0	44-109	6.15	24	WG594432
Acenaphthene	mg/kg	0.0277	0.0254		84.0	52-108	8.50	22	WG594432

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WPX Energy
Karolina Blaney
1058 County Road 215
Parachute, CO 81635

Quality Assurance Report
Level II

L576447

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 31, 2012

Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Acenaphthylene	mg/kg	0.0274	0.0259	83.0		51-110	5.50	21	WG594432
Anthracene	mg/kg	0.0297	0.0270	90.0		58-120	9.63	20	WG594432
Benzo(a)anthracene	mg/kg	0.0279	0.0262	84.0		54-110	6.47	22	WG594432
Benzo(a)pyrene	mg/kg	0.0285	0.0264	86.0		56-118	7.73	21	WG594432
Benzo(b)fluoranthene	mg/kg	0.0301	0.0255	91.0		55-114	16.7	20	WG594432
Benzo(g,h,i)perylene	mg/kg	0.0297	0.0272	90.0		48-130	8.72	20	WG594432
Benzo(k)fluoranthene	mg/kg	0.0279	0.0273	84.0		55-122	2.14	25	WG594432
Chrysene	mg/kg	0.0306	0.0273	93.0		57-118	11.4	20	WG594432
Dibenz(a,h)anthracene	mg/kg	0.0278	0.0253	84.0		53-122	9.33	20	WG594432
Fluoranthene	mg/kg	0.0300	0.0273	91.0		58-118	9.46	20	WG594432
Fluorene	mg/kg	0.0271	0.0255	82.0		54-109	6.12	20	WG594432
Indeno(1,2,3-cd)pyrene	mg/kg	0.0289	0.0260	87.0		51-125	10.5	21	WG594432
Naphthalene	mg/kg	0.0257	0.0254	78.0		45-105	1.11	24	WG594432
Phenanthrene	mg/kg	0.0276	0.0265	84.0		53-114	4.14	20	WG594432
Pyrene	mg/kg	0.0295	0.0279	89.0		53-121	5.70	20	WG594432
2-Fluorobiphenyl				78.88		34-129			WG594432
Nitrobenzene-d5				74.80		14-141			WG594432
p-Terphenyl-d14				106.9		25-139			WG594432
Benzene	mg/kg	0.0259	0.0230	104.		72-120	11.9	20	WG594779
Ethylbenzene	mg/kg	0.0277	0.0304	111.		76-126	9.07	20	WG594779
Toluene	mg/kg	0.0238	0.0256	95.0		74-155	7.21	20	WG594779
Total Xylenes	mg/kg	0.0843	0.0899	112.		76-126	6.47	20	WG594779
4-Bromofluorobenzene				97.63		67-133			WG594779
Dibromofluoromethane				102.5		72-135			WG594779
Toluene-d8				96.21		90-113			WG594779
a,a,a-Trifluorotoluene				103.0		89-115			WG594779
TPH (GC/FID) High Fraction	ppm	53.6	54.1	89.0		50-150	0.966	23	WG594686
o-Terphenyl				81.98		50-150			WG594686
1-Methylnaphthalene	mg/kg	0.0205	0.0225	62.0		48-113	9.18	24	WG594840
2-Chloronaphthalene	mg/kg	0.0219	0.0232	66.0		51-114	5.54	24	WG594840
2-Methylnaphthalene	mg/kg	0.0204	0.0220	62.0		44-109	7.62	24	WG594840
Acenaphthene	mg/kg	0.0228	0.0232	69.0		52-108	2.00	22	WG594840
Acenaphthylene	mg/kg	0.0226	0.0230	68.0		51-110	2.06	21	WG594840
Anthracene	mg/kg	0.0243	0.0253	74.0		58-120	4.24	20	WG594840
Benzo(a)anthracene	mg/kg	0.0246	0.0250	74.0		54-110	1.75	22	WG594840
Benzo(a)pyrene	mg/kg	0.0248	0.0255	75.0		56-118	2.56	21	WG594840
Benzo(b)fluoranthene	mg/kg	0.0250	0.0263	76.0		55-114	5.00	20	WG594840
Benzo(g,h,i)perylene	mg/kg	0.0248	0.0254	75.0		48-130	2.25	20	WG594840
Benzo(k)fluoranthene	mg/kg	0.0267	0.0258	81.0		55-122	3.51	25	WG594840
Chrysene	mg/kg	0.0258	0.0273	78.0		57-118	5.46	20	WG594840
Dibenz(a,h)anthracene	mg/kg	0.0243	0.0251	74.0		53-122	3.38	20	WG594840
Fluoranthene	mg/kg	0.0271	0.0280	82.0		58-118	3.36	20	WG594840
Fluorene	mg/kg	0.0233	0.0243	71.0		54-109	4.05	20	WG594840
Indeno(1,2,3-cd)pyrene	mg/kg	0.0246	0.0249	74.0		51-125	1.33	21	WG594840
Naphthalene	mg/kg	0.0222	0.0237	67.0		45-105	6.36	24	WG594840
Phenanthrene	mg/kg	0.0246	0.0257	75.0		53-114	4.30	20	WG594840
Pyrene	mg/kg	0.0231	0.0248	70.0		53-121	7.15	20	WG594840
2-Fluorobiphenyl				65.76		34-129			WG594840
Nitrobenzene-d5				94.23		14-141			WG594840
p-Terphenyl-d14				86.47		25-139			WG594840
Total Xylenes	mg/kg	0.0752	0.0751	100.		76-126	0.170	20	WG595055

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Tax I.D. 62-0814289

Est. 1970

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Analyte	Laboratory Control Sample Duplicate				Limit	RPD	Limit	Batch
	Units	Result	Ref	%Rec				
4-Bromofluorobenzene				105.1	67-133			
Dibromofluoromethane				105.8	72-135			
Toluene-d8				106.8	90-113			
a,a,a-Trifluorotoluene				106.1	89-115			
TPH (GC/FID) High Fraction	ppm	39.8	40.4	66.0	50-150	1.50	23	WG594992
o-Terphenyl				68.97	50-150			WG594992

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Benzene	mg/kg	0.0186	0	.025	74.3	44-131	L576447-04	WG594120
Ethylbenzene	mg/kg	0.0233	0.00730	.025	63.9	38-139	L576447-04	WG594120
Toluene	mg/kg	0.0200	0	.025	79.8	43-127	L576447-04	WG594120
Total Xylenes	mg/kg	0.207	0.430	.075	0*	38-137	L576447-04	WG594120
4-Bromofluorobenzene					102.2	67-133		WG594120
Dibromofluoromethane					98.64	72-135		WG594120
Toluene-d8					102.6	90-113		WG594120
a,a,a-Trifluorotoluene					105.4	89-115		WG594120
TPH (GC/FID) Low Fraction	mg/kg	23.0	0.520	5.5	81.7	55-109	L576447-12	WG594100
a,a,a-Trifluorotoluene(FID)					82.37	59-128		WG594100
Benzene	mg/kg	0.0830	0	.025	66.4	44-131	L576447-12	WG594608
Ethylbenzene	mg/kg	0.104	0	.025	83.3	38-139	L576447-12	WG594608
Toluene	mg/kg	0.0937	0	.025	75.0	43-127	L576447-12	WG594608
Total Xylenes	mg/kg	0.328	0	.075	87.4	38-137	L576447-12	WG594608
4-Bromofluorobenzene					101.7	67-133		WG594608
Dibromofluoromethane					99.68	72-135		WG594608
Toluene-d8					102.9	90-113		WG594608
a,a,a-Trifluorotoluene					108.5	89-115		WG594608
TPH (GC/FID) High Fraction	ppm	24.6	0	60	40.9*	50-150	L576662-04	WG594320
o-Terphenyl					59.70	50-150		WG594320
Benzene	mg/kg	0.129	0	.025	103.	44-131	L576685-01	WG594779
Ethylbenzene	mg/kg	0.129	0	.025	103.	38-139	L576685-01	WG594779
Toluene	mg/kg	0.125	0	.025	100.	43-127	L576685-01	WG594779
Total Xylenes	mg/kg	0.378	0	.075	101.	38-137	L576685-01	WG594779
4-Bromofluorobenzene					88.30	67-133		WG594779
Dibromofluoromethane					103.2	72-135		WG594779
Toluene-d8					104.1	90-113		WG594779
a,a,a-Trifluorotoluene					103.8	89-115		WG594779
1-Methylnaphthalene	mg/kg	0.0315	0	.033	95.5	25-155	L576727-07	WG594432
2-Chloronaphthalene	mg/kg	0.0284	0	.033	86.1	31-153	L576727-07	WG594432
2-Methylnaphthalene	mg/kg	0.0310	0	.033	93.8	22-172	L576727-07	WG594432
Acenaphthene	mg/kg	0.0290	0	.033	88.0	43-133	L576727-07	WG594432
Acenaphthylene	mg/kg	0.0277	0	.033	84.0	42-146	L576727-07	WG594432
Anthracene	mg/kg	0.0259	0	.033	78.5	38-153	L576727-07	WG594432
Benzo(a)anthracene	mg/kg	0.0315	0	.033	95.3	31-142	L576727-07	WG594432
Benzo(a)pyrene	mg/kg	0.0337	0	.033	102.	26-152	L576727-07	WG594432
Benzo(b)fluoranthene	mg/kg	0.0326	0	.033	98.9	10-188	L576727-07	WG594432
Benzo(g,h,i)perylene	mg/kg	0.0314	0	.033	95.3	10-176	L576727-07	WG594432
Benzo(k)fluoranthene	mg/kg	0.0320	0	.033	96.9	22-163	L576727-07	WG594432

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Est. 1970

May 31, 2012

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Chrysene	mg/kg	0.0301	0	.033	91.3	26-146	L576727-07	WG594432
Dibenz(a,h)anthracene	mg/kg	0.0356	0	.033	108.	10-160	L576727-07	WG594432
Fluoranthene	mg/kg	0.0358	0	.033	108.	23-160	L576727-07	WG594432
Fluorene	mg/kg	0.0324	0	.033	98.2	44-143	L576727-07	WG594432
Indeno(1,2,3-cd)pyrene	mg/kg	0.0339	0	.033	103.	10-157	L576727-07	WG594432
Naphthalene	mg/kg	0.0264	0	.033	80.1	22-156	L576727-07	WG594432
Phenanthrene	mg/kg	0.0271	0	.033	82.2	23-164	L576727-07	WG594432
Pyrene	mg/kg	0.0270	0	.033	81.8	12-170	L576727-07	WG594432
2-Fluorobiphenyl					102.3	34-129		WG594432
Nitrobenzene-d5					87.44	14-141		WG594432
p-Terphenyl-d14					94.04	25-139		WG594432
1-Methylnaphthalene	mg/kg	0.0257	0	.033	77.9	25-155	L576447-12	WG594840
2-Chloronaphthalene	mg/kg	0.0240	0	.033	72.8	31-153	L576447-12	WG594840
2-Methylnaphthalene	mg/kg	0.0333	0.0150	.033	55.4	22-172	L576447-12	WG594840
Acenaphthene	mg/kg	0.0243	0	.033	73.5	43-133	L576447-12	WG594840
Acenaphthylene	mg/kg	0.0239	0	.033	72.5	42-146	L576447-12	WG594840
Anthracene	mg/kg	0.0272	0	.033	82.4	38-153	L576447-12	WG594840
Benzo(a)anthracene	mg/kg	0.0241	0	.033	72.9	31-142	L576447-12	WG594840
Benzo(a)pyrene	mg/kg	0.0263	0	.033	79.8	26-152	L576447-12	WG594840
Benzo(b)fluoranthene	mg/kg	0.0368	0	.033	111.	10-188	L576447-12	WG594840
Benzo(g,h,i)perylene	mg/kg	0.00518	0	.033	15.7	10-176	L576447-12	WG594840
Benzo(k)fluoranthene	mg/kg	0.0337	0	.033	102.	22-163	L576447-12	WG594840
Chrysene	mg/kg	0.0255	0	.033	77.2	26-146	L576447-12	WG594840
Dibenz(a,h)anthracene	mg/kg	0.00720	0	.033	21.8	10-160	L576447-12	WG594840
Fluoranthene	mg/kg	0.0301	0	.033	91.1	23-160	L576447-12	WG594840
Fluorene	mg/kg	0.0254	0	.033	77.1	44-143	L576447-12	WG594840
Indeno(1,2,3-cd)pyrene	mg/kg	0.00705	0	.033	21.4	10-157	L576447-12	WG594840
Naphthalene	mg/kg	0.0362	0.0180	.033	55.1	22-156	L576447-12	WG594840
Phenanthrene	mg/kg	0.0268	0	.033	81.1	23-164	L576447-12	WG594840
Pyrene	mg/kg	0.0271	0	.033	82.1	12-170	L576447-12	WG594840
2-Fluorobiphenyl					70.59	34-129		WG594840
Nitrobenzene-d5					103.2	14-141		WG594840
p-Terphenyl-d14					102.2	25-139		WG594840
TPH (GC/FID) High Fraction	ppm	45.8	5.60	60	67.1	50-150	L576447-12	WG594686
o-Terphenyl					72.45	50-150		WG594686
Total Xylenes	mg/kg	0.283	0	.075	75.4	38-137	L577291-03	WG595055
4-Bromofluorobenzene					99.36	67-133		WG595055
Dibromofluoromethane					104.2	72-135		WG595055
Toluene-d8					107.1	90-113		WG595055
a,a,a-Trifluorotoluene					105.0	89-115		WG595055
TPH (GC/FID) High Fraction	ppm	34.4	0	60	57.4	50-150	L576447-05	WG594992
o-Terphenyl					62.92	50-150		WG594992

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.0193	0.0186	77.0	44-131	3.53	21	L576447-04	WG594120
Ethylbenzene	mg/kg	0.0223	0.0233	60.0	38-139	4.27	27	L576447-04	WG594120
Toluene	mg/kg	0.0202	0.0200	80.9	43-127	1.26	21	L576447-04	WG594120
Total Xylenes	mg/kg	0.153	0.207	0*	38-137	29.9*	26	L576447-04	WG594120
4-Bromofluorobenzene				99.74	67-133				WG594120

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref	Samp	Batch
			Ref	%Rec						
Dibromofluoromethane				100.0	72-135					
Toluene-d8				101.7	90-113					
a,a,a-Trifluorotoluene				104.1	89-115					
TPH (GC/FID) Low Fraction	mg/kg	23.0	23.0	81.8	55-109	0.190	20	L576447-12		WG594100
a,a,a-Trifluorotoluene(FID)				82.94	59-128					WG594100
Benzene	mg/kg	0.0871	0.0830	69.7	44-131	4.86	21	L576447-12		WG594608
Ethylbenzene	mg/kg	0.104	0.104	83.1	38-139	0.250	27	L576447-12		WG594608
Toluene	mg/kg	0.0954	0.0937	76.4	43-127	1.86	21	L576447-12		WG594608
Total Xylenes	mg/kg	0.320	0.328	85.2	38-137	2.45	26	L576447-12		WG594608
4-Bromofluorobenzene				102.4	67-133					WG594608
Dibromofluoromethane				101.5	72-135					WG594608
Toluene-d8				102.2	90-113					WG594608
a,a,a-Trifluorotoluene				107.3	89-115					WG594608
TPH (GC/FID) High Fraction	ppm	28.4	24.6	47.3*	50-150	14.5	40	L576662-04		WG594320
o-Terphenyl				61.77	50-150					WG594320
Benzene	mg/kg	0.114	0.129	91.2	44-131	12.1	21	L576685-01		WG594779
Ethylbenzene	mg/kg	0.111	0.129	89.1	38-139	14.9	27	L576685-01		WG594779
Toluene	mg/kg	0.113	0.125	90.6	43-127	10.2	21	L576685-01		WG594779
Total Xylenes	mg/kg	0.338	0.378	90.1	38-137	11.2	26	L576685-01		WG594779
4-Bromofluorobenzene				86.22	67-133					WG594779
Dibromofluoromethane				102.8	72-135					WG594779
Toluene-d8				107.1	90-113					WG594779
a,a,a-Trifluorotoluene				103.9	89-115					WG594779
1-Methylnaphthalene	mg/kg	0.0310	0.0315	94.0	25-155	1.49	27	L576727-07		WG594432
2-Chloronaphthalene	mg/kg	0.0285	0.0284	86.4	31-153	0.418	22	L576727-07		WG594432
2-Methylnaphthalene	mg/kg	0.0310	0.0310	94.0	22-172	0.163	29	L576727-07		WG594432
Acenaphthene	mg/kg	0.0294	0.0290	89.1	43-133	1.29	26	L576727-07		WG594432
Acenaphthylene	mg/kg	0.0286	0.0277	86.7	42-146	3.17	22	L576727-07		WG594432
Anthracene	mg/kg	0.0264	0.0259	80.1	38-153	1.96	27	L576727-07		WG594432
Benzo(a)anthracene	mg/kg	0.0312	0.0315	94.6	31-142	0.784	31	L576727-07		WG594432
Benzo(a)pyrene	mg/kg	0.0337	0.0337	102.	26-152	0.151	32	L576727-07		WG594432
Benzo(b)fluoranthene	mg/kg	0.0342	0.0326	104.	10-188	4.80	33	L576727-07		WG594432
Benzo(g,h,i)perylene	mg/kg	0.0306	0.0314	92.8	10-176	2.63	30	L576727-07		WG594432
Benzo(k)fluoranthene	mg/kg	0.0296	0.0320	89.7	22-163	7.72	29	L576727-07		WG594432
Chrysene	mg/kg	0.0291	0.0301	88.1	26-146	3.53	30	L576727-07		WG594432
Dibenz(a,h)anthracene	mg/kg	0.0345	0.0356	105.	10-160	3.03	39	L576727-07		WG594432
Fluoranthene	mg/kg	0.0324	0.0358	98.2	23-160	9.87	22	L576727-07		WG594432
Fluorene	mg/kg	0.0330	0.0324	99.9	44-143	1.79	23	L576727-07		WG594432
Indeno(1,2,3-cd)pyrene	mg/kg	0.0331	0.0339	100.	10-157	2.41	40	L576727-07		WG594432
Naphthalene	mg/kg	0.0268	0.0264	81.1	22-156	1.19	27	L576727-07		WG594432
Phenanthrene	mg/kg	0.0269	0.0271	81.7	23-164	0.663	25	L576727-07		WG594432
Pyrene	mg/kg	0.0266	0.0270	80.7	12-170	1.26	24	L576727-07		WG594432
2-Fluorobiphenyl				101.2	34-129					WG594432
Nitrobenzene-d5				88.78	14-141					WG594432
p-Terphenyl-d14				94.27	25-139					WG594432
1-Methylnaphthalene	mg/kg	0.0271	0.0257	82.0	25-155	5.15	27	L576447-12		WG594840
2-Chloronaphthalene	mg/kg	0.0251	0.0240	76.1	31-153	4.49	22	L576447-12		WG594840
2-Methylnaphthalene	mg/kg	0.0369	0.0333	66.2	22-172	10.2	29	L576447-12		WG594840
Acenaphthene	mg/kg	0.0250	0.0243	75.7	43-133	2.91	26	L576447-12		WG594840

* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L576447

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

May 31, 2012

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Acenaphthylene	mg/kg	0.0243	0.0239	73.5	42-146	1.43	22	L576447-12	WG594840
Anthracene	mg/kg	0.0264	0.0272	80.1	38-153	2.93	27	L576447-12	WG594840
Benzo(a)anthracene	mg/kg	0.0253	0.0241	76.7	31-142	5.13	31	L576447-12	WG594840
Benzo(a)pyrene	mg/kg	0.0272	0.0263	82.3	26-152	3.01	32	L576447-12	WG594840
Benzo(b)fluoranthene	mg/kg	0.0365	0.0368	110.	10-188	0.806	33	L576447-12	WG594840
Benzo(g,h,i)perylene	mg/kg	0.00687	0.00518	20.8	10-176	28.0	30	L576447-12	WG594840
Benzo(k)fluoranthene	mg/kg	0.0362	0.0337	110.	22-163	7.20	29	L576447-12	WG594840
Chrysene	mg/kg	0.0255	0.0255	77.2	26-146	0.00962	30	L576447-12	WG594840
Dibenz(a,h)anthracene	mg/kg	0.00880	0.00720	26.7	10-160	19.9	39	L576447-12	WG594840
Fluoranthene	mg/kg	0.0340	0.0301	103.	23-160	12.4	22	L576447-12	WG594840
Fluorene	mg/kg	0.0260	0.0254	78.7	44-143	1.99	23	L576447-12	WG594840
Indeno(1,2,3-cd)pyrene	mg/kg	0.00874	0.00705	26.5	10-157	21.4	40	L576447-12	WG594840
Naphthalene	mg/kg	0.0426	0.0362	74.6	22-156	16.4	27	L576447-12	WG594840
Phenanthrene	mg/kg	0.0261	0.0268	79.0	23-164	2.64	25	L576447-12	WG594840
Pyrene	mg/kg	0.0265	0.0271	80.3	12-170	2.12	24	L576447-12	WG594840
2-Fluorobiphenyl				75.54	34-129				WG594840
Nitrobenzene-d5				106.9	14-141				WG594840
p-Terphenyl-d14				98.23	25-139				WG594840
TPH (GC/FID) High Fraction	ppm	42.2	45.8	61.0	50-150	8.30	40	L576447-12	WG594686
o-Terphenyl				67.50	50-150				WG594686
Total Xylenes	mg/kg	0.332	0.283	88.6	38-137	16.0	26	L577291-03	WG595055
4-Bromofluorobenzene				98.14	67-133				WG595055
Dibromofluoromethane				106.5	72-135				WG595055
Toluene-d8				107.9	90-113				WG595055
a,a,a-Trifluorotoluene				106.0	89-115				WG595055
TPH (GC/FID) High Fraction	ppm	32.7	34.4	54.5	50-150	5.12	40	L576447-05	WG594992
o-Terphenyl				70.65	50-150				WG594992

Batch number /Run number / Sample number cross reference

WG594120: R2180995: L576447-01 02 03 04 05 06 07 08 09
WG594100: R2184174: L576447-01 02 03 04 05 06 07 08 09 10 11 12 13 14
WG594608: R2184816: L576447-12 13 14
WG594320: R2184954: L576447-01 02 03
WG594432: R2185834: L576447-01 02 03 04
WG594779: R2186634: L576447-10 11
WG594686: R2187174: L576447-04 06 07 08 09 10 11 12 13 14
WG594840: R2187516: L576447-05 06 07 08 09 10 11 12 13 14
WG595055: R2188493: L576447-10
WG594992: R2190373: L576447-05

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L576447

12065 Lebanon Rd.
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Tax I.D. 62-0814289

Est. 1970



May 31, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.


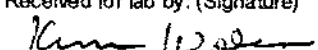
WPX Energy 1058 County Road 215 Parachute, CO 81635				Billing information: Leo Braun 1058 County Rd, 215 Parachute, CO 81635				Analysis/Container/Preservative				Chain of Custody Page 1 of 2	
Project Description: RMV 216-21 Site Investigation				City/State Collected: CO				BTEX (SW-846 Method 8260) TPH (GRO/DRO) PAHs (SV8270 PAH SIM)				 ESC L.A.B S.C.I.E.N.C.E.S 12065 Lebanon Road Mt. Juliet, TN 37122 Phone: (800) 767-5859 Phone: (615) 758-5858 Fax: (615) 758-5859	
Phone: (970) 683-2295				Client Project #: 61555 Key Lab Project #: WILPCO-RMV216.21								CoCode (lab use only) Template/Prelogin Shipped Via:	
FAX:				P.O.#:								Remarks/Contaminant Sample # (lab only)	
Collected by: Greg Geras				Site/Facility ID#: RMV 216-21				Date Results Needed:				CoCode (lab use only) Template/Prelogin Shipped Via:	
Collected by (signature): 				Rush? (Lab MUST Be Notified) Same Day.....200% Next Day.....100% Two Day.....50%				Email? No X Yes FAX? No Yes				CoCode (lab use only) Template/Prelogin Shipped Via:	
Immediately Packed on Ice: N				Sample ID				Comp/Grab				CoCode (lab use only) Template/Prelogin Shipped Via:	
Matrix*				Depth				Date				CoCode (lab use only) Template/Prelogin Shipped Via:	
Time				No. of Cntrs				CoCode (lab use only) Template/Prelogin Shipped Via:					
RMV 216-21 BH19 4-6'				Grab				SS				4-6' 5/17/12 0735 2	
↓ ↓ ↓ BH19 24-25.5'				↓				↓				24-25.5' ↓ 0820 2	
↓ ↓ ↓ BH19 29-30'				↓				↓				29-30' ↓ 0850 2	
RMV 216-21 BH20 47-48'				Grab				SS				47-48' 5/17/12 1310 2	
↓ ↓ ↓ BH20 67-67.5'				↓				↓				67-67.5' ↓ 1440 2	
RMV 216-21 BH12 5-6'				Grab				SS				5-6' 5/17/12 1645 2	
↓ ↓ ↓ BH12 14-15'				↓				↓				14-15' ↓ 1705 2	
↓ ↓ ↓ BH12 59-60'				↓				↓				59-60' 5/18/12 0800 2	
↓ ↓ ↓ BH12 59-60'-FD				↓				↓				59-60' ↓ 0800 2	

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other

pH Temp

Remarks:

527487866627 Flow Other

Relinquished by: (Signature) 	Date: 5/24/12	Time: 1600	Received by: (Signature)	Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: JF (lab use only)
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: 32°	Bottles Received: 32
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature) 	Date: 5/23/12	Time: 0900
				pH Checked:	NCF:

WPX Energy 1058 County Road 215 Parachute, CO 81635				Billing Information: Leo Braun 1058 County Rd. 215 Parachute, CO 81635				Analysis/Container/Preservative				Chain of Custody Page 2 of 2	
				Report to: Karolina Blaney/Greg Geras Email to: karolina.blaney@williams.com greg.geras@weston-solutions.com				<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> BTEX (SW-846 Method 8260) </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> TPH (GRO/DRO) </div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);"> PAH's (SV8270PAH SIM) </div> </div>				 ESC L.A.B S.C.I.E.N.C.E.S 12065 Lebanon Road Mt. Juliet, TN 37122 Phone: (800) 767-5859 Phone: (615) 758-5858 Fax: (615) 758-5859	
Project Description: RMV 216-21 Site Investigation				City/State Collected: CO									
Phone: (970) 683-2295		Client Project #:		ESC Key Lab Project #:		CoCode (lab use only) Template/Prelogin Shipped Via:							
FAX:		Site/Facility ID#: RMV 216-21		P.O.#:									
Collected by: Greg Geras		Collected by (signature): <i>[Signature]</i>		Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day.....200% <input type="checkbox"/> Next Day.....100% <input type="checkbox"/> Two Day.....50%									
Immediately Packed on Ice: N				Date Results Needed: Email? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes FAX? <input type="checkbox"/> No <input type="checkbox"/> Yes		No. of Cntrs		Remarks/Contaminant		Sample # (lab only)			

Sample ID	Comp/Grab	Matrix*	Depth	Date	Time	No. of Cntrs	BTEX	TPH	PAH's	Remarks/Contaminant	Sample # (lab only)
RMV 216-21 BH11 5-7'	Grab	SS	5-7'	5/16/12	0825	2	X	X	X		L576447-10
↓ ↓ ↓ BH11 39-40'	↓	↓	39-40'	↓	1110	2	X	X	X		-11
↓ ↓ ↓ BH11 61-63'	↓	↓	61-63'	↓	1740	6	X	X	X	ms/msd	-12
RMV 216-21 BH15 69-71'	Grab	SS	69-71'	5/18/12	1400	2	X	X	X		-13
↓ ↓ ↓ BH15 79-79.5'	↓	↓	79-79.5'	↓	1425	2	X	X	X		-14

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

pH _____ Temp _____

Remarks:

Flow _____ Other _____

Relinquished by: (Signature) <i>[Signature]</i>	Date: 5/21/12	Time: 1600	Received by: (Signature) _____	Samples returned via: <input checked="" type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier	Condition: <i>JP</i> (lab use only)
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received by: (Signature) _____	Temp: 32°	Bottles Received: 32
Relinquished by: (Signature) _____	Date: _____	Time: _____	Received for lab by: (Signature) <i>[Signature]</i>	Date: 5/22/12	Time: 0900
				pH Checked: _____	NCF: _____



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Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

Report Summary

Monday June 04, 2012

Report Number: L576587

Samples Received: 05/23/12

Client Project:

Description: Clough Pit RMV 216-21

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Darren Reeder , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

June 04, 2012

Date Received : May 23, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH 21 9-9.5 FT
Collected By : Greg Geras
Collection Date : 05/21/12 14:00

ESC Sample # : L576587-01

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/23/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	95.3		% Rec.	602/8015	05/23/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/23/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/23/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	05/23/12	5
Total Xylenes	BDL	0.015	mg/kg	8260B	05/23/12	5
Surrogate Recovery						
Toluene-d8	105.		% Rec.	8260B	05/23/12	5
Dibromofluoromethane	101.		% Rec.	8260B	05/23/12	5
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	05/23/12	5
4-Bromofluorobenzene	103.		% Rec.	8260B	05/23/12	5
TPH (GC/FID) High Fraction	17.	4.0	mg/kg	3546/DRO	06/02/12	1
Surrogate recovery(%)						
o-Terphenyl	59.0		% Rec.	3546/DRO	06/02/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Surrogate Recovery						
Nitrobenzene-d5	113.		% Rec.	8270C-SIM	05/28/12	1
2-Fluorobiphenyl	82.6		% Rec.	8270C-SIM	05/28/12	1
p-Terphenyl-d14	92.3		% Rec.	8270C-SIM	05/28/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/04/12 11:09 Printed: 06/04/12 11:16

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

June 04, 2012

Date Received : May 23, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 BH 21 14-14.5 FT
Collected By : Greg Geras
Collection Date : 05/21/12 14:15

ESC Sample # : L576587-02

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015D/GRO	05/23/12	5
Surrogate Recovery (70-130)						
a,a,a-Trifluorotoluene(FID)	95.9		% Rec.	602/8015	05/23/12	5
Benzene	BDL	0.0050	mg/kg	8260B	05/23/12	5
Toluene	BDL	0.025	mg/kg	8260B	05/23/12	5
Ethylbenzene	BDL	0.0050	mg/kg	8260B	05/23/12	5
Total Xylenes	BDL	0.015	mg/kg	8260B	05/23/12	5
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	05/23/12	5
Dibromofluoromethane	102.		% Rec.	8260B	05/23/12	5
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	05/23/12	5
4-Bromofluorobenzene	106.		% Rec.	8260B	05/23/12	5
TPH (GC/FID) High Fraction	7.0	4.0	mg/kg	3546/DRO	05/30/12	1
Surrogate recovery(%)						
o-Terphenyl	59.7		% Rec.	3546/DRO	05/30/12	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Acenaphthylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(g,h,i)perylene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Fluorene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Naphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Phenanthrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Pyrene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
1-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Methylnaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
2-Chloronaphthalene	BDL	0.0060	mg/kg	8270C-SIM	05/28/12	1
Surrogate Recovery						
Nitrobenzene-d5	104.		% Rec.	8270C-SIM	05/28/12	1
2-Fluorobiphenyl	68.1		% Rec.	8270C-SIM	05/28/12	1
p-Terphenyl-d14	76.1		% Rec.	8270C-SIM	05/28/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/04/12 11:09 Printed: 06/04/12 11:16

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

June 04, 2012

Date Received : May 23, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 EB-CASING
Collected By : Greg Geras
Collection Date : 05/22/12 00:00

ESC Sample # : L576587-03

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Bromide	BDL	1.0	mg/l	9056	05/23/12	1
Chloride	BDL	1.0	mg/l	9056	05/23/12	1
Fluoride	BDL	0.10	mg/l	9056	05/23/12	1
Nitrate	BDL	0.10	mg/l	9056	05/23/12	1
Nitrite	BDL	0.10	mg/l	9056	05/23/12	1
Sulfate	BDL	5.0	mg/l	9056	05/23/12	1
Nitrate-Nitrite	BDL	0.10	mg/l	353.2	05/24/12	1
Dissolved Solids	BDL	10.	mg/l	2540C	05/31/12	1
Calcium	1.0	0.50	mg/l	6010B	05/26/12	1
Iron	0.20	0.10	mg/l	6010B	05/26/12	1
Magnesium	0.16	0.10	mg/l	6010B	05/26/12	1
Manganese	BDL	0.010	mg/l	6010B	05/26/12	1
Potassium	BDL	0.50	mg/l	6010B	05/26/12	1
Sodium	0.66	0.50	mg/l	6010B	05/26/12	1
Benzene	BDL	0.0010	mg/l	8260B	05/23/12	1
Toluene	BDL	0.0050	mg/l	8260B	05/23/12	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	05/23/12	1
Total Xylenes	BDL	0.0030	mg/l	8260B	05/23/12	1
Surrogate Recovery						
Toluene-d8	97.0		% Rec.	8260B	05/23/12	1
Dibromofluoromethane	96.8		% Rec.	8260B	05/23/12	1
a,a,a-Trifluorotoluene	102.		% Rec.	8260B	05/23/12	1
4-Bromofluorobenzene	107.		% Rec.	8260B	05/23/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

June 04, 2012

Date Received : May 23, 2012
Description : RMV 216-21 Site Investigation
Sample ID : TRIPBLANK
Collected By : Greg Geras
Collection Date : 05/22/12 00:00

ESC Sample # : L576587-04

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0010	mg/l	8260B	05/23/12	1
Toluene	BDL	0.0050	mg/l	8260B	05/23/12	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	05/23/12	1
Total Xylenes	BDL	0.0030	mg/l	8260B	05/23/12	1
Surrogate Recovery						
Toluene-d8	98.5		% Rec.	8260B	05/23/12	1
Dibromofluoromethane	96.9		% Rec.	8260B	05/23/12	1
a,a,a-Trifluorotoluene	104.		% Rec.	8260B	05/23/12	1
4-Bromofluorobenzene	102.		% Rec.	8260B	05/23/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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1058 County Road 215
Parachute, CO 81635

Quality Assurance Report
Level II

L576587

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June 04, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .001	mg/kg			WG594317	05/23/12 16:28
Ethylbenzene	< .001	mg/kg			WG594317	05/23/12 16:28
Toluene	< .005	mg/kg			WG594317	05/23/12 16:28
Total Xylenes	< .003	mg/kg			WG594317	05/23/12 16:28
4-Bromofluorobenzene		% Rec.	103.2	67-133	WG594317	05/23/12 16:28
Dibromofluoromethane		% Rec.	102.3	72-135	WG594317	05/23/12 16:28
Toluene-d8		% Rec.	106.3	90-113	WG594317	05/23/12 16:28
a,a,a-Trifluorotoluene		% Rec.	104.7	89-115	WG594317	05/23/12 16:28
Bromide	< 1	mg/l			WG594268	05/23/12 07:11
Chloride	< 1	mg/l			WG594268	05/23/12 07:11
Fluoride	< .1	mg/l			WG594268	05/23/12 07:11
Nitrate	< .1	mg/l			WG594268	05/23/12 07:11
Nitrite	< .1	mg/l			WG594268	05/23/12 07:11
Sulfate	< 5	mg/l			WG594268	05/23/12 07:11
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG594287	05/23/12 16:24
a,a,a-Trifluorotoluene(FID)		% Rec.	96.63	59-128	WG594287	05/23/12 16:24
Nitrate-Nitrite	< .1	mg/l			WG594441	05/24/12 16:04
Benzene	< .001	mg/l			WG594378	05/23/12 17:13
Ethylbenzene	< .001	mg/l			WG594378	05/23/12 17:13
Toluene	< .005	mg/l			WG594378	05/23/12 17:13
Total Xylenes	< .003	mg/l			WG594378	05/23/12 17:13
4-Bromofluorobenzene		% Rec.	109.1	82-120	WG594378	05/23/12 17:13
Dibromofluoromethane		% Rec.	96.83	82-126	WG594378	05/23/12 17:13
Toluene-d8		% Rec.	98.07	92-112	WG594378	05/23/12 17:13
a,a,a-Trifluorotoluene		% Rec.	105.8	90-116	WG594378	05/23/12 17:13
Calcium	< .5	mg/l			WG594343	05/26/12 14:06
Iron	< .1	mg/l			WG594343	05/26/12 14:06
Magnesium	< .1	mg/l			WG594343	05/26/12 14:06
Manganese	< .01	mg/l			WG594343	05/26/12 14:06
Potassium	< .5	mg/l			WG594343	05/26/12 14:06
Sodium	< .5	mg/l			WG594343	05/26/12 14:06
1-Methylnaphthalene	< .006	mg/kg			WG594840	05/28/12 15:25
2-Chloronaphthalene	< .006	mg/kg			WG594840	05/28/12 15:25
2-Methylnaphthalene	< .006	mg/kg			WG594840	05/28/12 15:25
Acenaphthene	< .006	mg/kg			WG594840	05/28/12 15:25
Acenaphthylene	< .006	mg/kg			WG594840	05/28/12 15:25
Anthracene	< .006	mg/kg			WG594840	05/28/12 15:25
Benzo(a)anthracene	< .006	mg/kg			WG594840	05/28/12 15:25
Benzo(a)pyrene	< .006	mg/kg			WG594840	05/28/12 15:25
Benzo(b)fluoranthene	< .006	mg/kg			WG594840	05/28/12 15:25
Benzo(g,h,i)perylene	< .006	mg/kg			WG594840	05/28/12 15:25
Benzo(k)fluoranthene	< .006	mg/kg			WG594840	05/28/12 15:25
Chrysene	< .006	mg/kg			WG594840	05/28/12 15:25
Dibenz(a,h)anthracene	< .006	mg/kg			WG594840	05/28/12 15:25
Fluoranthene	< .006	mg/kg			WG594840	05/28/12 15:25
Fluorene	< .006	mg/kg			WG594840	05/28/12 15:25
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG594840	05/28/12 15:25

* Performance of this Analyte is outside of established criteria.

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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Naphthalene	< .006	mg/kg			WG594840	05/28/12 15:25
Phenanthrene	< .006	mg/kg			WG594840	05/28/12 15:25
Pyrene	< .006	mg/kg			WG594840	05/28/12 15:25
2-Fluorobiphenyl		% Rec.	73.85	34-129	WG594840	05/28/12 15:25
Nitrobenzene-d5		% Rec.	105.7	14-141	WG594840	05/28/12 15:25
p-Terphenyl-d14		% Rec.	82.43	25-139	WG594840	05/28/12 15:25
TPH (GC/FID) High Fraction	< 4	ppm			WG594847	05/30/12 08:45
o-Terphenyl		% Rec.	70.16	50-150	WG594847	05/30/12 08:45
Dissolved Solids	< 10	mg/l			WG594816	05/31/12 10:05
TPH (GC/FID) High Fraction	< 4	ppm			WG595616	06/01/12 16:11
o-Terphenyl		% Rec.	90.13	50-150	WG595616	06/01/12 16:11

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Bromide	mg/l	0	0	0	0	20	L576587-03	WG594268
Chloride	mg/l	0	0	0	0	20	L576587-03	WG594268
Fluoride	mg/l	0	0	0	0	20	L576587-03	WG594268
Nitrate	mg/l	0	0	0	0	20	L576587-03	WG594268
Nitrite	mg/l	0	0	0	0	20	L576587-03	WG594268
Sulfate	mg/l	0	0	0	0	20	L576587-03	WG594268
Nitrate	mg/l	0	0	0	0	20	L576563-01	WG594268
Nitrite	mg/l	0	0	0	0	20	L576513-01	WG594268
Chloride	mg/l	690.	694.	0	0	20	L575924-14	WG594268
Nitrate-Nitrite	mg/l	0.0370	0.0430	15.0	20	20	L576577-02	WG594441
Nitrate-Nitrite	mg/l	0.200	0.190	7.11	20	20	L576755-01	WG594441
Calcium	mg/l	290.	285.	0.699	20	20	L576623-06	WG594343
Iron	mg/l	53.0	53.0	0.378	20	20	L576623-06	WG594343
Magnesium	mg/l	72.0	72.5	0.970	20	20	L576623-06	WG594343
Manganese	mg/l	5.30	5.40	1.12	20	20	L576623-06	WG594343
Potassium	mg/l	15.0	15.2	0.656	20	20	L576623-06	WG594343
Sodium	mg/l	890.	908.	2.00	20	20	L576623-06	WG594343
Dissolved Solids	mg/l	290.	288.	0.692	5	5	L576593-01	WG594816

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.025	0.0278	111.	72-120	WG594317
Ethylbenzene	mg/kg	.025	0.0275	110.	76-126	WG594317
Toluene	mg/kg	.025	0.0269	108.	74-155	WG594317
Total Xylenes	mg/kg	.075	0.0822	110.	76-126	WG594317
4-Bromofluorobenzene				99.11	67-133	WG594317
Dibromofluoromethane				104.0	72-135	WG594317
Toluene-d8				104.8	90-113	WG594317
a,a,a-Trifluorotoluene				104.4	89-115	WG594317

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Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Bromide	mg/l	40	39.8	99.5	90-110	WG594268
Chloride	mg/l	40	39.5	98.8	90-110	WG594268
Fluoride	mg/l	8	7.99	99.9	90-110	WG594268
Nitrate	mg/l	8	8.11	101.	90-110	WG594268
Nitrite	mg/l	8	7.75	96.9	90-110	WG594268
Sulfate	mg/l	40	39.4	98.5	90-110	WG594268
TPH (GC/FID) Low Fraction	mg/kg	5.5	7.11	129.	67-135	WG594287
a,a,a-Trifluorotoluene(FID)				103.5	59-128	WG594287
Nitrate-Nitrite	mg/l	5	5.38	108.	90-110	WG594441
Benzene	mg/l	.025	0.0232	92.8	72-119	WG594378
Ethylbenzene	mg/l	.025	0.0266	106.	77-124	WG594378
Toluene	mg/l	.025	0.0230	92.1	75-114	WG594378
Total Xylenes	mg/l	.075	0.0783	104.	77-123	WG594378
4-Bromofluorobenzene				103.9	82-120	WG594378
Dibromofluoromethane				99.91	82-126	WG594378
Toluene-d8				95.04	92-112	WG594378
a,a,a-Trifluorotoluene				101.1	90-116	WG594378
Calcium	mg/l	11.3	11.5	102.	85-115	WG594343
Iron	mg/l	1.13	1.21	107.	85-115	WG594343
Magnesium	mg/l	11.3	11.7	104.	85-115	WG594343
Manganese	mg/l	1.13	1.14	101.	85-115	WG594343
Potassium	mg/l	11.3	11.6	103.	85-115	WG594343
Sodium	mg/l	11.3	11.7	104.	85-115	WG594343
1-Methylnaphthalene	mg/kg	.033	0.0225	68.1	48-113	WG594840
2-Chloronaphthalene	mg/kg	.033	0.0232	70.2	51-114	WG594840
2-Methylnaphthalene	mg/kg	.033	0.0220	66.7	44-109	WG594840
Acenaphthene	mg/kg	.033	0.0232	70.4	52-108	WG594840
Acenaphthylene	mg/kg	.033	0.0230	69.8	51-110	WG594840
Anthracene	mg/kg	.033	0.0253	76.8	58-120	WG594840
Benzo(a)anthracene	mg/kg	.033	0.0250	75.8	54-110	WG594840
Benzo(a)pyrene	mg/kg	.033	0.0255	77.2	56-118	WG594840
Benzo(b)fluoranthene	mg/kg	.033	0.0263	79.6	55-114	WG594840
Benzo(g,h,i)perylene	mg/kg	.033	0.0254	77.0	48-130	WG594840
Benzo(k)fluoranthene	mg/kg	.033	0.0258	78.1	55-122	WG594840
Chrysene	mg/kg	.033	0.0273	82.6	57-118	WG594840
Dibenz(a,h)anthracene	mg/kg	.033	0.0251	76.2	53-122	WG594840
Fluoranthene	mg/kg	.033	0.0280	85.0	58-118	WG594840
Fluorene	mg/kg	.033	0.0243	73.6	54-109	WG594840
Indeno(1,2,3-cd)pyrene	mg/kg	.033	0.0249	75.6	51-125	WG594840
Naphthalene	mg/kg	.033	0.0237	71.8	45-105	WG594840
Phenanthrene	mg/kg	.033	0.0257	77.9	53-114	WG594840
Pyrene	mg/kg	.033	0.0248	75.2	53-121	WG594840
2-Fluorobiphenyl				71.02	34-129	WG594840
Nitrobenzene-d5				102.4	14-141	WG594840
p-Terphenyl-d14				92.39	25-139	WG594840
TPH (GC/FID) High Fraction	ppm	60	39.7	66.1	50-150	WG594847
o-Terphenyl				60.12	50-150	WG594847

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Analyte	Units	Laboratory Control	Sample	% Rec	Limit	Batch
		Known Val	Result			
Dissolved Solids	mg/l	8800	8740	99.3	85-115	WG594816
TPH (GC/FID) High Fraction	ppm	60	51.1	85.1	50-150	WG595616
o-Terphenyl				80.00	50-150	WG595616

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Benzene	mg/kg	0.0278	0.0278	111.	72-120	0.170	20	WG594317
Ethylbenzene	mg/kg	0.0285	0.0275	114.	76-126	3.51	20	WG594317
Toluene	mg/kg	0.0269	0.0269	107.	74-155	0.160	20	WG594317
Total Xylenes	mg/kg	0.0851	0.0822	114.	76-126	3.47	20	WG594317
4-Bromofluorobenzene				105.9	67-133			WG594317
Dibromofluoromethane				102.1	72-135			WG594317
Toluene-d8				103.6	90-113			WG594317
a,a,a-Trifluorotoluene				104.8	89-115			WG594317
Bromide	mg/l	39.9	39.8	100.	90-110	0.251	20	WG594268
Chloride	mg/l	39.5	39.5	99.0	90-110	0	20	WG594268
Fluoride	mg/l	8.03	7.99	100.	90-110	0.499	20	WG594268
Nitrate	mg/l	8.14	8.11	102.	90-110	0.369	20	WG594268
Nitrite	mg/l	7.80	7.75	98.0	90-110	0.643	20	WG594268
Sulfate	mg/l	39.4	39.4	98.0	90-110	0	20	WG594268
TPH (GC/FID) Low Fraction	mg/kg	6.95	7.11	126.	67-135	2.38	20	WG594287
a,a,a-Trifluorotoluene(FID)				103.0	59-128			WG594287
Nitrate-Nitrite	mg/l	5.27	5.38	105.	90-110	2.07	20	WG594441
Benzene	mg/l	0.0228	0.0232	91.0	72-119	1.72	20	WG594378
Ethylbenzene	mg/l	0.0271	0.0266	108.	77-124	2.21	20	WG594378
Toluene	mg/l	0.0232	0.0230	93.0	75-114	0.610	20	WG594378
Total Xylenes	mg/l	0.0816	0.0783	109.	77-123	4.19	20	WG594378
4-Bromofluorobenzene				106.5	82-120			WG594378
Dibromofluoromethane				97.03	82-126			WG594378
Toluene-d8				96.09	92-112			WG594378
a,a,a-Trifluorotoluene				102.0	90-116			WG594378
1-Methylnaphthalene	mg/kg	0.0205	0.0225	62.0	48-113	9.18	24	WG594840
2-Chloronaphthalene	mg/kg	0.0219	0.0232	66.0	51-114	5.54	24	WG594840
2-Methylnaphthalene	mg/kg	0.0204	0.0220	62.0	44-109	7.62	24	WG594840
Acenaphthene	mg/kg	0.0228	0.0232	69.0	52-108	2.00	22	WG594840
Acenaphthylene	mg/kg	0.0226	0.0230	68.0	51-110	2.06	21	WG594840
Anthracene	mg/kg	0.0243	0.0253	74.0	58-120	4.24	20	WG594840
Benzo(a)anthracene	mg/kg	0.0246	0.0250	74.0	54-110	1.75	22	WG594840
Benzo(a)pyrene	mg/kg	0.0248	0.0255	75.0	56-118	2.56	21	WG594840
Benzo(b)fluoranthene	mg/kg	0.0250	0.0263	76.0	55-114	5.00	20	WG594840
Benzo(g,h,i)perylene	mg/kg	0.0248	0.0254	75.0	48-130	2.25	20	WG594840
Benzo(k)fluoranthene	mg/kg	0.0267	0.0258	81.0	55-122	3.51	25	WG594840
Chrysene	mg/kg	0.0258	0.0273	78.0	57-118	5.46	20	WG594840
Dibenz(a,h)anthracene	mg/kg	0.0243	0.0251	74.0	53-122	3.38	20	WG594840
Fluoranthene	mg/kg	0.0271	0.0280	82.0	58-118	3.36	20	WG594840
Fluorene	mg/kg	0.0233	0.0243	71.0	54-109	4.05	20	WG594840

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June 04, 2012

Analyte	Units	Laboratory Control		Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref	%Rec					
Indeno(1,2,3-cd)pyrene	mg/kg	0.0246	0.0249	74.0		51-125	1.33	21	WG594840
Naphthalene	mg/kg	0.0222	0.0237	67.0		45-105	6.36	24	WG594840
Phenanthrene	mg/kg	0.0246	0.0257	75.0		53-114	4.30	20	WG594840
Pyrene	mg/kg	0.0231	0.0248	70.0		53-121	7.15	20	WG594840
2-Fluorobiphenyl				65.76		34-129			WG594840
Nitrobenzene-d5				94.23		14-141			WG594840
p-Terphenyl-d14				86.47		25-139			WG594840
TPH (GC/FID) High Fraction	ppm	43.9	39.7	73.0		50-150	10.1	25	WG594847
o-Terphenyl				65.88		50-150			WG594847
Dissolved Solids	mg/l	8740	8740	99.0		85-115	0.0458	20	WG594816
TPH (GC/FID) High Fraction	ppm	58.8	51.1	98.0		50-150	14.1	25	WG595616
o-Terphenyl				89.90		50-150			WG595616

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Benzene	mg/kg	0.139	0	.025	112.	44-131	L576587-01	WG594317
Ethylbenzene	mg/kg	0.139	0	.025	111.	38-139	L576587-01	WG594317
Toluene	mg/kg	0.132	0	.025	105.	43-127	L576587-01	WG594317
Total Xylenes	mg/kg	0.406	0	.075	108.	38-137	L576587-01	WG594317
4-Bromofluorobenzene					101.5	67-133		WG594317
Dibromofluoromethane					104.2	72-135		WG594317
Toluene-d8					104.1	90-113		WG594317
a,a,a-Trifluorotoluene					102.3	89-115		WG594317
Nitrate	mg/l	4.74	0	5	94.8	80-120	L576594-01	WG594268
Nitrite	mg/l	4.91	0	5	98.2	80-120	L576594-01	WG594268
TPH (GC/FID) Low Fraction	mg/kg	28.1	0	5.5	102.	55-109	L576564-01	WG594287
a,a,a-Trifluorotoluene(FID)					100.8	59-128		WG594287
Nitrate-Nitrite	mg/l	5.51	0	5	110.*	90-110	L576577-01	WG594441
Benzene	mg/l	0.0223	0	.025	89.1	51-134	L576587-03	WG594378
Ethylbenzene	mg/l	0.0260	0	.025	104.	64-135	L576587-03	WG594378
Toluene	mg/l	0.0218	0	.025	87.2	61-126	L576587-03	WG594378
Total Xylenes	mg/l	0.0758	0	.075	101.	64-133	L576587-03	WG594378
4-Bromofluorobenzene					103.0	82-120		WG594378
Dibromofluoromethane					98.47	82-126		WG594378
Toluene-d8					95.06	92-112		WG594378
a,a,a-Trifluorotoluene					101.8	90-116		WG594378
Calcium	mg/l	302.	285.	11.3	150.*	75-125	L576623-06	WG594343
Iron	mg/l	54.1	53.0	1.13	97.3	75-125	L576623-06	WG594343
Magnesium	mg/l	82.7	72.5	1.13	90.3	75-125	L576623-06	WG594343
Manganese	mg/l	6.44	5.40	1.13	92.0	75-125	L576623-06	WG594343
Potassium	mg/l	27.3	15.2	1.13	107.	75-125	L576623-06	WG594343
Sodium	mg/l	914.	908.	11.3	53.1*	75-125	L576623-06	WG594343

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L576587

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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

June 04, 2012

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
1-Methylnaphthalene	mg/kg	0.0257	0	.033	77.9	25-155	L576447-12	WG594840
2-Chloronaphthalene	mg/kg	0.0240	0	.033	72.8	31-153	L576447-12	WG594840
2-Methylnaphthalene	mg/kg	0.0333	0.0150	.033	55.4	22-172	L576447-12	WG594840
Acenaphthene	mg/kg	0.0243	0	.033	73.5	43-133	L576447-12	WG594840
Acenaphthylene	mg/kg	0.0239	0	.033	72.5	42-146	L576447-12	WG594840
Anthracene	mg/kg	0.0272	0	.033	82.4	38-153	L576447-12	WG594840
Benzo(a)anthracene	mg/kg	0.0241	0	.033	72.9	31-142	L576447-12	WG594840
Benzo(a)pyrene	mg/kg	0.0263	0	.033	79.8	26-152	L576447-12	WG594840
Benzo(b)fluoranthene	mg/kg	0.0368	0	.033	111.	10-188	L576447-12	WG594840
Benzo(g,h,i)perylene	mg/kg	0.00518	0	.033	15.7	10-176	L576447-12	WG594840
Benzo(k)fluoranthene	mg/kg	0.0337	0	.033	102.	22-163	L576447-12	WG594840
Chrysene	mg/kg	0.0255	0	.033	77.2	26-146	L576447-12	WG594840
Dibenz(a,h)anthracene	mg/kg	0.00720	0	.033	21.8	10-160	L576447-12	WG594840
Fluoranthene	mg/kg	0.0301	0	.033	91.1	23-160	L576447-12	WG594840
Fluorene	mg/kg	0.0254	0	.033	77.1	44-143	L576447-12	WG594840
Indeno(1,2,3-cd)pyrene	mg/kg	0.00705	0	.033	21.4	10-157	L576447-12	WG594840
Naphthalene	mg/kg	0.0362	0.0180	.033	55.1	22-156	L576447-12	WG594840
Phenanthrene	mg/kg	0.0268	0	.033	81.1	23-164	L576447-12	WG594840
Pyrene	mg/kg	0.0271	0	.033	82.1	12-170	L576447-12	WG594840
2-Fluorobiphenyl					70.59	34-129		WG594840
Nitrobenzene-d5					103.2	14-141		WG594840
p-Terphenyl-d14					102.2	25-139		WG594840
TPH (GC/FID) High Fraction	ppm	49.8	17.0	60	54.6	50-150	L576587-01	WG595616
o-Terphenyl					66.83	50-150		WG595616

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Benzene	mg/kg	0.132	0.139	106.	44-131	5.37	21	L576587-01	WG594317
Ethylbenzene	mg/kg	0.127	0.139	101.	38-139	8.95	27	L576587-01	WG594317
Toluene	mg/kg	0.124	0.132	99.0	43-127	6.09	21	L576587-01	WG594317
Total Xylenes	mg/kg	0.371	0.406	98.8	38-137	9.06	26	L576587-01	WG594317
4-Bromofluorobenzene				100.7	67-133				WG594317
Dibromofluoromethane				105.8	72-135				WG594317
Toluene-d8				104.2	90-113				WG594317
a,a,a-Trifluorotoluene				95.41	89-115				WG594317
Nitrate	mg/l	4.69	4.74	93.8	80-120	1.06	20	L576594-01	WG594268
Nitrite	mg/l	4.85	4.91	97.0	80-120	1.23	20	L576594-01	WG594268
TPH (GC/FID) Low Fraction	mg/kg	27.7	28.1	101.	55-109	1.57	20	L576564-01	WG594287
a,a,a-Trifluorotoluene(FID)				101.4	59-128				WG594287
Nitrate-Nitrite	mg/l	5.49	5.51	110.	90-110	0.364	20	L576577-01	WG594441
Benzene	mg/l	0.0236	0.0223	94.3	51-134	5.65	20	L576587-03	WG594378
Ethylbenzene	mg/l	0.0275	0.0260	110.	64-135	5.67	20	L576587-03	WG594378
Toluene	mg/l	0.0239	0.0218	95.7	61-126	9.33	20	L576587-03	WG594378
Total Xylenes	mg/l	0.0802	0.0758	107.	64-133	5.60	20	L576587-03	WG594378
4-Bromofluorobenzene				103.0	82-120				WG594378
Dibromofluoromethane				95.68	82-126				WG594378
Toluene-d8				95.82	92-112				WG594378
a,a,a-Trifluorotoluene				104.6	90-116				WG594378

* Performance of this Analyte is outside of established criteria.
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WPX Energy
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Quality Assurance Report
Level II

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Tax I.D. 62-0814289

Est. 1970

June 04, 2012

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Calcium	mg/l	306.	302.	186.*	75-125	1.32	20	L576623-06	WG594343
Iron	mg/l	54.2	54.1	106.	75-125	0.185	20	L576623-06	WG594343
Magnesium	mg/l	82.8	82.7	91.2	75-125	0.121	20	L576623-06	WG594343
Manganese	mg/l	6.46	6.44	93.8	75-125	0.310	20	L576623-06	WG594343
Potassium	mg/l	28.7	27.3	119.	75-125	5.00	20	L576623-06	WG594343
Sodium	mg/l	946.	914.	336.*	75-125	3.44	20	L576623-06	WG594343
1-Methylnaphthalene	mg/kg	0.0271	0.0257	82.0	25-155	5.15	27	L576447-12	WG594840
2-Chloronaphthalene	mg/kg	0.0251	0.0240	76.1	31-153	4.49	22	L576447-12	WG594840
2-Methylnaphthalene	mg/kg	0.0369	0.0333	66.2	22-172	10.2	29	L576447-12	WG594840
Acenaphthene	mg/kg	0.0250	0.0243	75.7	43-133	2.91	26	L576447-12	WG594840
Acenaphthylene	mg/kg	0.0243	0.0239	73.5	42-146	1.43	22	L576447-12	WG594840
Anthracene	mg/kg	0.0264	0.0272	80.1	38-153	2.93	27	L576447-12	WG594840
Benzo(a)anthracene	mg/kg	0.0253	0.0241	76.7	31-142	5.13	31	L576447-12	WG594840
Benzo(a)pyrene	mg/kg	0.0272	0.0263	82.3	26-152	3.01	32	L576447-12	WG594840
Benzo(b)fluoranthene	mg/kg	0.0365	0.0368	110.	10-188	0.806	33	L576447-12	WG594840
Benzo(g,h,i)perylene	mg/kg	0.00687	0.00518	20.8	10-176	28.0	30	L576447-12	WG594840
Benzo(k)fluoranthene	mg/kg	0.0362	0.0337	110.	22-163	7.20	29	L576447-12	WG594840
Chrysene	mg/kg	0.0255	0.0255	77.2	26-146	0.00962	30	L576447-12	WG594840
Dibenz(a,h)anthracene	mg/kg	0.00880	0.00720	26.7	10-160	19.9	39	L576447-12	WG594840
Fluoranthene	mg/kg	0.0340	0.0301	103.	23-160	12.4	22	L576447-12	WG594840
Fluorene	mg/kg	0.0260	0.0254	78.7	44-143	1.99	23	L576447-12	WG594840
Indeno(1,2,3-cd)pyrene	mg/kg	0.00874	0.00705	26.5	10-157	21.4	40	L576447-12	WG594840
Naphthalene	mg/kg	0.0426	0.0362	74.6	22-156	16.4	27	L576447-12	WG594840
Phenanthrene	mg/kg	0.0261	0.0268	79.0	23-164	2.64	25	L576447-12	WG594840
Pyrene	mg/kg	0.0265	0.0271	80.3	12-170	2.12	24	L576447-12	WG594840
2-Fluorobiphenyl				75.54	34-129				WG594840
Nitrobenzene-d5				106.9	14-141				WG594840
p-Terphenyl-d14				98.23	25-139				WG594840
TPH (GC/FID) High Fraction	ppm	54.3	49.8	62.1	50-150	8.67	25	L576587-01	WG595616
o-Terphenyl				69.93	50-150				WG595616

Batch number /Run number / Sample number cross reference

WG594317: R2182553: L576587-01 02
WG594268: R2182935: L576587-03
WG594287: R2183293: L576587-01 02
WG594441: R2184394: L576587-03
WG594378: R2186673: L576587-03 04
WG594343: R2187396: L576587-03
WG594840: R2187516: L576587-01 02
WG594847: R2189041: L576587-02
WG594816: R2190593: L576587-03
WG595616: R2193713: L576587-01

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L576587

12065 Lebanon Rd.
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Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

June 04, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

WPX Energy 1058 County Road 215 Parachute, CO 81635			Billing Information: Lec Braun 1058 County Rd. 215 Parachute, CO 81635			Analysis/Container/Preservative			Chain of Custody Page 1 of 1											
			Report to: Karolina Blaney/Greg Geras Email to: karolina.blaney@williams.com greg.geras@westernsolutions.com			BTEX (SW-846 Method 8260) TPH (600/DRO) PAHs (SV8270 PAH SIM) Bromide, Chloride, Fluoride, Nitrate, Nitrite, Sulfate BTEX Cadmium, Iron, Potassium, Magnesium, Manganese, Sodium Nitrate - Nitrite C-2 TDS			 ESC L.A.B S.C.I.E.N.C.E.S 12065 Lebanon Road Mt. Juliet, TN 37122 Phone: (800) 767-5859 Phone: (615) 758-5858 Fax: (615) 758-5859 E203											
Project Description: RMV 216-21 Site Investigation			City/State Collected: CO																	
Phone: (970) 683-2295			Client Project #: WILPCO-RMV216.21																	
FAX:			Site/Facility ID#: RMV 216-21																	
Collected by: Greg Geras			P.O.#:																	
Collected by (signature): 			Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day.....200% <input type="checkbox"/> Next Day.....100% <input type="checkbox"/> Two Day.....50%			Date Results Needed: Email? <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes FAX? <input type="checkbox"/> No <input type="checkbox"/> Yes			No. of Cntrs											
Immediately Packed on Ice N			Sample ID			Comp/Grab			Matrix*			Depth			Date			Time		
RMV 216-21 BH21 9-9.5'			Grab			SS			9-9.5'			5/21/12			1400			2		
↓ ↓ ↓ BH21 14-14.5'			↓			↓			14-14.5'			↓			1415			2		
RMV 216-21 EB-Casing			Grab			Water			-			5/22/12			6			1		
Trip Blank			-			↓			-			-			-			1		
Remarks/Contaminant			Sample # (lab only)			CoCode (lab use only)			Template/Prelogin			Shipped Via:								
6576587-01			6576587			02			Equipment Blank			03								
04			04			04			04			04								

*Matrix: SS - Soil/Solid GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other _____

pH _____ Temp _____

Remarks:

5040 0631 1867

Flow _____ Other _____

Relinquished by: (Signature) 		Date: 5/22/12 Time: 1545		Received by: (Signature) 		Samples returned via: <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier		Condition: (lab use only)	
Relinquished by: (Signature)		Date: Time:		Received by: (Signature)		Temp: 4.3		Bottles Received: 11	
Relinquished by: (Signature)		Date: Time:		Received for lab by: (Signature) 		Date: 5-23-12 Time: 09:00		pH Checked: 6.2 NCF:	



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Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

Report Summary

Monday June 04, 2012

Report Number: L577067

Samples Received: 05/25/12

Client Project:

Description: Clough Pit RMV 216-21

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Darren Reeder , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979

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Note: The use of the preparatory EPA Method 3511 is not approved or endorsed by the CA ELAP.

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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

June 04, 2012

Date Received : May 25, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 MW7
Collected By : Greg Geras
Collection Date : 05/24/12 14:15

ESC Sample # : L577067-01

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Bromide	BDL	1.0	mg/l	9056	05/25/12	1
Chloride	260	20.	mg/l	9056	05/25/12	20
Fluoride	0.56	0.10	mg/l	9056	05/25/12	1
Nitrate	25.	2.0	mg/l	9056	05/25/12	20
Nitrite	0.10	0.10	mg/l	9056	05/25/12	1
Sulfate	1400	100	mg/l	9056	05/25/12	20
Nitrate-Nitrite	26.	1.0	mg/l	353.2	06/01/12	10
Dissolved Solids	3300	10.	mg/l	2540C	06/04/12	1
Calcium	820	0.50	mg/l	6010B	05/30/12	1
Iron	200	0.10	mg/l	6010B	05/30/12	1
Magnesium	340	0.10	mg/l	6010B	05/30/12	1
Manganese	5.6	0.010	mg/l	6010B	05/30/12	1
Potassium	29.	0.50	mg/l	6010B	05/31/12	1
Sodium	460	0.50	mg/l	6010B	05/30/12	1
Benzene	BDL	0.0010	mg/l	8260B	05/26/12	1
Toluene	BDL	0.0050	mg/l	8260B	05/26/12	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	05/26/12	1
Total Xylenes	BDL	0.0030	mg/l	8260B	05/26/12	1
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	05/26/12	1
Dibromofluoromethane	93.8		% Rec.	8260B	05/26/12	1
a,a,a-Trifluorotoluene	105.		% Rec.	8260B	05/26/12	1
4-Bromofluorobenzene	99.6		% Rec.	8260B	05/26/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/04/12 13:26 Printed: 06/04/12 14:31



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REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

June 04, 2012

Date Received : May 25, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 MW8
Collected By : Greg Geras
Collection Date : 05/24/12 14:55

ESC Sample # : L577067-02

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Bromide	BDL	1.0	mg/l	9056	05/25/12	1
Chloride	340	20.	mg/l	9056	05/25/12	20
Fluoride	0.59	0.10	mg/l	9056	05/25/12	1
Nitrate	31.	2.0	mg/l	9056	05/25/12	20
Nitrite	BDL	0.10	mg/l	9056	05/25/12	1
Sulfate	1400	100	mg/l	9056	05/25/12	20
Nitrate-Nitrite	34.	1.0	mg/l	353.2	06/01/12	10
Dissolved Solids	3400	10.	mg/l	2540C	06/04/12	1
Calcium	240	0.50	mg/l	6010B	05/31/12	1
Iron	27.	0.10	mg/l	6010B	05/31/12	1
Magnesium	260	0.10	mg/l	6010B	05/31/12	1
Manganese	0.60	0.010	mg/l	6010B	05/31/12	1
Potassium	9.2	0.50	mg/l	6010B	05/31/12	1
Sodium	490	0.50	mg/l	6010B	05/31/12	1
Benzene	BDL	0.0010	mg/l	8260B	05/26/12	1
Toluene	BDL	0.0050	mg/l	8260B	05/26/12	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	05/26/12	1
Total Xylenes	BDL	0.0030	mg/l	8260B	05/26/12	1
Surrogate Recovery						
Toluene-d8	101.		% Rec.	8260B	05/26/12	1
Dibromofluoromethane	96.0		% Rec.	8260B	05/26/12	1
a,a,a-Trifluorotoluene	110.		% Rec.	8260B	05/26/12	1
4-Bromofluorobenzene	106.		% Rec.	8260B	05/26/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 06/04/12 13:26 Printed: 06/04/12 14:32

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

June 04, 2012

Date Received : May 25, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 MW8DUP
Collected By : Greg Geras
Collection Date : 05/24/12 14:55

ESC Sample # : L577067-03

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Bromide	BDL	1.0	mg/l	9056	05/25/12	1
Chloride	350	20.	mg/l	9056	05/25/12	20
Fluoride	0.58	0.10	mg/l	9056	05/25/12	1
Nitrate	31.	2.0	mg/l	9056	05/25/12	20
Nitrite	BDL	0.10	mg/l	9056	05/25/12	1
Sulfate	1400	100	mg/l	9056	05/25/12	20
Nitrate-Nitrite	33.	1.0	mg/l	353.2	06/01/12	10
Dissolved Solids	3400	10.	mg/l	2540C	06/04/12	1
Calcium	380	0.50	mg/l	6010B	05/31/12	1
Iron	90.	0.10	mg/l	6010B	05/31/12	1
Magnesium	280	0.10	mg/l	6010B	05/31/12	1
Manganese	2.0	0.010	mg/l	6010B	05/31/12	1
Potassium	17.	0.50	mg/l	6010B	05/31/12	1
Sodium	480	0.50	mg/l	6010B	05/31/12	1
Benzene	BDL	0.0010	mg/l	8260B	05/26/12	1
Toluene	BDL	0.0050	mg/l	8260B	05/26/12	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	05/26/12	1
Total Xylenes	BDL	0.0030	mg/l	8260B	05/26/12	1
Surrogate Recovery						
Toluene-d8	104.		% Rec.	8260B	05/26/12	1
Dibromofluoromethane	103.		% Rec.	8260B	05/26/12	1
a,a,a-Trifluorotoluene	107.		% Rec.	8260B	05/26/12	1
4-Bromofluorobenzene	104.		% Rec.	8260B	05/26/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 06/04/12 13:26 Printed: 06/04/12 14:32

REPORT OF ANALYSIS

Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

June 04, 2012

Date Received : May 25, 2012
Description : RMV 216-21 Site Investigation
Sample ID : RMV 216-21 MW9
Collected By : Greg Geras
Collection Date : 05/24/12 15:25

ESC Sample # : L577067-04

Site ID : RMV 216-21

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Bromide	BDL	1.0	mg/l	9056	05/25/12	1
Chloride	270	20.	mg/l	9056	05/25/12	20
Fluoride	0.51	0.10	mg/l	9056	05/25/12	1
Nitrate	45.	2.0	mg/l	9056	05/25/12	20
Nitrite	1.8	0.10	mg/l	9056	05/25/12	1
Sulfate	1500	100	mg/l	9056	05/25/12	20
Nitrate-Nitrite	48.	1.0	mg/l	353.2	06/01/12	10
Dissolved Solids	3400	10.	mg/l	2540C	06/04/12	1
Calcium	740	0.50	mg/l	6010B	05/31/12	1
Iron	120	0.10	mg/l	6010B	05/31/12	1
Magnesium	330	0.10	mg/l	6010B	05/31/12	1
Manganese	3.5	0.010	mg/l	6010B	05/31/12	1
Potassium	19.	0.50	mg/l	6010B	05/31/12	1
Sodium	460	0.50	mg/l	6010B	05/31/12	1
Benzene	0.0046	0.0010	mg/l	8260B	05/26/12	1
Toluene	BDL	0.0050	mg/l	8260B	05/26/12	1
Ethylbenzene	BDL	0.0010	mg/l	8260B	05/26/12	1
Total Xylenes	BDL	0.0030	mg/l	8260B	05/26/12	1
Surrogate Recovery						
Toluene-d8	99.8		% Rec.	8260B	05/26/12	1
Dibromofluoromethane	98.0		% Rec.	8260B	05/26/12	1
a,a,a-Trifluorotoluene	112.		% Rec.	8260B	05/26/12	1
4-Bromofluorobenzene	109.		% Rec.	8260B	05/26/12	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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1058 County Road 215

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Level II

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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

June 04, 2012

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Bromide	< 1	mg/l			WG594655	05/25/12 07:08
Chloride	< 1	mg/l			WG594655	05/25/12 07:08
Fluoride	< .1	mg/l			WG594655	05/25/12 07:08
Nitrate	< .1	mg/l			WG594655	05/25/12 07:08
Nitrite	< .1	mg/l			WG594655	05/25/12 07:08
Sulfate	< 5	mg/l			WG594655	05/25/12 07:08
Benzene	< .001	mg/l			WG594772	05/26/12 07:20
Ethylbenzene	< .001	mg/l			WG594772	05/26/12 07:20
Toluene	< .005	mg/l			WG594772	05/26/12 07:20
Total Xylenes	< .003	mg/l			WG594772	05/26/12 07:20
4-Bromofluorobenzene		% Rec.	107.8	82-120	WG594772	05/26/12 07:20
Dibromofluoromethane		% Rec.	94.75	82-126	WG594772	05/26/12 07:20
Toluene-d8		% Rec.	97.55	92-112	WG594772	05/26/12 07:20
a,a,a-Trifluorotoluene		% Rec.	111.6	90-116	WG594772	05/26/12 07:20
Calcium	< .5	mg/l			WG595185	05/30/12 21:53
Iron	< .1	mg/l			WG595185	05/30/12 21:53
Magnesium	< .1	mg/l			WG595185	05/30/12 21:53
Manganese	< .01	mg/l			WG595185	05/30/12 21:53
Sodium	< .5	mg/l			WG595185	05/30/12 21:53
Potassium	< .5	mg/l			WG595185	05/31/12 08:38
Nitrate-Nitrite	< .1	mg/l			WG595577	06/01/12 09:27
Dissolved Solids	< 10	mg/l			WG595182	06/04/12 12:47

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Chloride	mg/l	71.0	72.0		0.977	20	L577030-04	WG594655
Nitrate	mg/l	0	0		0	20	L577030-04	WG594655
Sulfate	mg/l	0	0		0	20	L577030-04	WG594655
Chloride	mg/l	1.90	2.00		3.05	20	L577061-01	WG594655
Fluoride	mg/l	0	0		0	20	L577061-01	WG594655
Nitrate	mg/l	0.120	0.120		1.65	20	L577061-01	WG594655
Nitrite	mg/l	0	0		0	20	L577061-01	WG594655
Sulfate	mg/l	38.0	38.0		0.528	20	L577061-01	WG594655
Calcium	mg/l	0	0.123		NA	20	L577497-11	WG595185
Iron	mg/l	0	0.00730		NA	20	L577497-11	WG595185
Magnesium	mg/l	0	0.0818		NA	20	L577497-11	WG595185
Manganese	mg/l	0	0.000400		NA	20	L577497-11	WG595185
Sodium	mg/l	0	0.405		NA	20	L577497-11	WG595185
Potassium	mg/l	0	0		0	20	L577497-11	WG595185
Nitrate-Nitrite	mg/l	12.0	12.0		4.26	20	L577211-07	WG595577
Nitrate-Nitrite	mg/l	0	0		0	20	L577020-01	WG595577
Dissolved Solids	mg/l	1400	1410		0.924	5	L577071-07	WG595182

* Performance of this Analyte is outside of established criteria.
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WPX Energy
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Level II

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Est. 1970

June 04, 2012

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Bromide	mg/l	40	39.9	99.8	90-110	WG594655
Chloride	mg/l	40	39.8	99.5	90-110	WG594655
Fluoride	mg/l	8	8.02	100.	90-110	WG594655
Nitrate	mg/l	8	8.20	103.	90-110	WG594655
Nitrite	mg/l	8	7.91	98.9	90-110	WG594655
Sulfate	mg/l	40	39.8	99.5	90-110	WG594655
Benzene	mg/l	.025	0.0205	82.0	72-119	WG594772
Ethylbenzene	mg/l	.025	0.0295	118.	77-124	WG594772
Toluene	mg/l	.025	0.0237	94.7	75-114	WG594772
Total Xylenes	mg/l	.075	0.0871	116.	77-123	WG594772
4-Bromofluorobenzene				102.8	82-120	WG594772
Dibromofluoromethane				94.83	82-126	WG594772
Toluene-d8				97.77	92-112	WG594772
a,a,a-Trifluorotoluene				111.0	90-116	WG594772
Calcium	mg/l	11.3	11.0	97.3	85-115	WG595185
Iron	mg/l	1.13	1.20	106.	85-115	WG595185
Magnesium	mg/l	11.3	11.4	101.	85-115	WG595185
Manganese	mg/l	1.13	1.13	100.	85-115	WG595185
Sodium	mg/l	11.3	11.4	101.	85-115	WG595185
Potassium	mg/l	11.3	11.2	99.1	85-115	WG595185
Nitrate-Nitrite	mg/l	5	5.25	105.	90-110	WG595577
Dissolved Solids	mg/l	8800	8710	99.0	85-115	WG595182

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Bromide	mg/l	39.9	39.9	100.	90-110	0	20	WG594655
Chloride	mg/l	39.7	39.8	99.0	90-110	0.252	20	WG594655
Fluoride	mg/l	8.03	8.02	100.	90-110	0.125	20	WG594655
Nitrate	mg/l	8.19	8.20	102.	90-110	0.122	20	WG594655
Nitrite	mg/l	7.93	7.91	99.0	90-110	0.253	20	WG594655
Sulfate	mg/l	39.7	39.8	99.0	90-110	0.252	20	WG594655
Benzene	mg/l	0.0212	0.0205	85.0	72-119	3.56	20	WG594772
Ethylbenzene	mg/l	0.0303	0.0295	121.	77-124	2.78	20	WG594772
Toluene	mg/l	0.0251	0.0237	100.	75-114	5.82	20	WG594772
Total Xylenes	mg/l	0.0903	0.0871	120.	77-123	3.62	20	WG594772
4-Bromofluorobenzene				99.46	82-120			WG594772
Dibromofluoromethane				94.51	82-126			WG594772
Toluene-d8				98.50	92-112			WG594772
a,a,a-Trifluorotoluene				112.7	90-116			WG594772
Nitrate-Nitrite	mg/l	5.48	5.25	110.	90-110	4.29	20	WG595577
Dissolved Solids	mg/l	8680	8710	99.0	85-115	0.368	20	WG595182

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Est. 1970

June 04, 2012

Analyte	Units	MS Res	Matrix Spike		% Rec	Limit	Ref Samp	Batch
			Ref Res	TV				
Chloride	mg/l	59.9	9.90	50	100.	80-120	L577061-02	WG594655
Fluoride	mg/l	4.87	0	5	97.4	80-120	L577061-02	WG594655
Nitrate	mg/l	4.93	0	5	98.6	80-120	L577061-02	WG594655
Nitrite	mg/l	5.02	0	5	100.	80-120	L577061-02	WG594655
Sulfate	mg/l	107.	60.0	50	94.0	80-120	L577061-02	WG594655
Benzene	mg/l	0.0209	0	.025	83.6	51-134	L577039-01	WG594772
Ethylbenzene	mg/l	0.0303	0	.025	121.	64-135	L577039-01	WG594772
Toluene	mg/l	0.0250	0	.025	100.	61-126	L577039-01	WG594772
Total Xylenes	mg/l	0.0889	0	.075	118.	64-133	L577039-01	WG594772
4-Bromofluorobenzene					99.15	82-120		WG594772
Dibromofluoromethane					93.51	82-126		WG594772
Toluene-d8					99.27	92-112		WG594772
a,a,a-Trifluorotoluene					112.9	90-116		WG594772
Calcium	mg/l	10.8	0.123	11.3	94.5	75-125	L577497-11	WG595185
Iron	mg/l	1.18	0.00730	1.13	104.	75-125	L577497-11	WG595185
Magnesium	mg/l	11.3	0.0818	11.3	99.3	75-125	L577497-11	WG595185
Manganese	mg/l	1.11	0.000400	1.13	98.2	75-125	L577497-11	WG595185
Sodium	mg/l	11.8	0.405	11.3	101.	75-125	L577497-11	WG595185
Potassium	mg/l	11.4	0	11.3	101.	75-125	L577497-11	WG595185
Nitrate-Nitrite	mg/l	17.5	12.0	5	110.	90-110	L577020-02	WG595577

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Chloride	mg/l	59.5	59.9	99.2	80-120	0.670	20	L577061-02	WG594655
Fluoride	mg/l	4.85	4.87	97.0	80-120	0.412	20	L577061-02	WG594655
Nitrate	mg/l	4.89	4.93	97.8	80-120	0.815	20	L577061-02	WG594655
Nitrite	mg/l	4.98	5.02	99.6	80-120	0.800	20	L577061-02	WG594655
Sulfate	mg/l	107.	107.	94.0	80-120	0	20	L577061-02	WG594655
Benzene	mg/l	0.0205	0.0209	82.0	51-134	2.00	20	L577039-01	WG594772
Ethylbenzene	mg/l	0.0288	0.0303	115.	64-135	4.92	20	L577039-01	WG594772
Toluene	mg/l	0.0243	0.0250	97.1	61-126	2.97	20	L577039-01	WG594772
Total Xylenes	mg/l	0.0876	0.0889	117.	64-133	1.42	20	L577039-01	WG594772
4-Bromofluorobenzene				102.1	82-120				WG594772
Dibromofluoromethane				93.77	82-126				WG594772
Toluene-d8				99.53	92-112				WG594772
a,a,a-Trifluorotoluene				112.7	90-116				WG594772
Calcium	mg/l	11.4	10.8	99.8	75-125	5.41	20	L577497-11	WG595185
Iron	mg/l	1.20	1.18	106.	75-125	1.68	20	L577497-11	WG595185
Magnesium	mg/l	11.8	11.3	104.	75-125	4.33	20	L577497-11	WG595185
Manganese	mg/l	1.17	1.11	104.	75-125	5.26	20	L577497-11	WG595185
Sodium	mg/l	11.8	11.8	101.	75-125	0	20	L577497-11	WG595185
Potassium	mg/l	11.7	11.4	104.	75-125	2.60	20	L577497-11	WG595185
Nitrate-Nitrite	mg/l	17.7	17.5	114.*	90-110	1.14	20	L577020-02	WG595577

Batch number /Run number / Sample number cross reference

* Performance of this Analyte is outside of established criteria.
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WG594655: R2186054: L577067-01 02 03 04
WG594772: R2186633: L577067-01 02 03 04
WG595185: R2190653: L577067-01 02 03 04
WG595577: R2192933: L577067-01 02 03 04
WG595182: R2195293: L577067-01 02 03 04

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



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June 04, 2012

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.



L·A·B S·C·I·E·N·C·E·S

Allen

NON-CONFORMANCE FORM

Login No.: LS77067

Date: 5-25-12

Evaluated by: Greg Deacon

Client: WILCO

Non-Conformance (check applicable items)

- | | |
|---|--|
| <input type="checkbox"/> Parameter(s) past holding time | <input checked="" type="checkbox"/> Login Clarification Needed |
| <input type="checkbox"/> Improper temperature | <input type="checkbox"/> Chain of custody is incomplete |
| <input type="checkbox"/> Improper container type | <input type="checkbox"/> Chain of Custody is missing (see below) |
| <input type="checkbox"/> Improper preservation | <input type="checkbox"/> Broken container(s) (See below) |
| <input type="checkbox"/> Container lid not intact | <input type="checkbox"/> Broken container: sufficient sample |

volume remains for analysis requested (See below)

If no COC: Received by _____

Date: _____ Time: _____

Temp: _____ Cont. Rec. _____ pH: _____

☐ FedEx ☐ UPS ☐ SWA ☐ Other _____

Tracking # _____

☐ Insufficient packing material around container

☐ Insufficient packing material inside cooler

☐ Improper handling by carrier (FedEx / UPS / Courier

☐ Sample was frozen

Comments: received a bottle of water for Trip Blank

Login Instructions:

TSR Initials: TAT

Client informed by Call email / fax / voice mail date: 5/25/12 time: 10:30

Client contact: Greg Deacon - 1011 v.m

Disregard trip blank



08/13/12

Technical Report for

Olsson Associates

WPX Energy RMV 216-21GW Investigation

012-1539

Accutest Job Number: D36584

Sampling Date: 07/18/12

Report to:

Olsson Associates

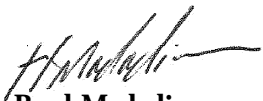
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Total number of pages in report: 48



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.


Brad Madadian
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

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Test results relate only to samples analyzed.

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Sample Summary

Olsson Associates

Job No: D36584

WPX Energy RMV 216-21GW Investigation
Project No: 012-1539

Sample Number	Collected			Received	Matrix		Client Sample ID
	Date	Time	By		Code	Type	
D36584-1	07/18/12	09:00	WF	07/19/12	AQ	Ground Water	RMV216-21MW1
D36584-2	07/18/12	09:55	WF	07/19/12	AQ	Ground Water	RMV216-21MW1X
D36584-3	07/18/12	11:50	WF	07/19/12	AQ	Ground Water	RMV216-21MW2
D36584-4	07/18/12	13:40	WF	07/19/12	AQ	Ground Water	RMV216-21MW3
D36584-5	07/18/12	14:55	WF	07/19/12	AQ	Ground Water	RMV216-21MW4
D36584-6	07/18/12	13:55	WF	07/19/12	AQ	Ground Water	RMV216-21MW5

Summary of Hits

Job Number: D36584
Account: Olsson Associates
Project: WPX Energy RMV 216-21GW Investigation
Collected: 07/18/12

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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D36584-1 RMV216-21MW1

Benzene ^a	1.0	1.0	0.20	ug/l	SW846 8021B
TPH-DRO (C10-C28)	0.263 J	0.38	0.25	mg/l	SW846-8015B
Calcium	643000	400	7.3	ug/l	SW846 6010C
Iron	168000	70	19	ug/l	SW846 6010C
Magnesium	313000	200	11	ug/l	SW846 6010C
Manganese	3290	5.0	1.8	ug/l	SW846 6010C
Potassium	25300	1000	61	ug/l	SW846 6010C
Selenium	51.0	50	5.7	ug/l	SW846 6010C
Sodium	378000	400	98	ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO3	1050	5.0	2.0	mg/l	SM20 2320B
Alkalinity, Total as CaCO3	1050	5.0	2.0	mg/l	SM20 2320B
Bromide	1.1	1.0	0.50	mg/l	EPA 300/SW846 9056
Chemical Oxygen Demand	16.2	10	5.0	mg/l	SM20 5220D
Chloride	250	5.0	2.0	mg/l	EPA 300/SW846 9056
Fluoride	1.2	0.50	0.25	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate	29.2	4.5	2.2	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrite	0.20	0.10	0.080	mg/l	EPA 300/SW846 9056
Phosphorus, Total	4.6	0.10	0.0070	mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	3310	10	5.0	mg/l	SM20 2540C
Sulfate	1340	50	20	mg/l	EPA 300/SW846 9056
Total Organic Carbon	6.4	1.0	0.50	mg/l	SM20 5310B
pH	7.29			su	SM20 4500H B+

D36584-2 RMV216-21MW1X

Benzene ^a	0.77 J	1.0	0.20	ug/l	SW846 8021B
TPH-DRO (C10-C28)	0.269 J	0.38	0.25	mg/l	SW846-8015B
Calcium	445000	400	7.3	ug/l	SW846 6010C
Iron	38900	70	19	ug/l	SW846 6010C
Magnesium	260000	200	11	ug/l	SW846 6010C
Manganese	1620	5.0	1.8	ug/l	SW846 6010C
Potassium	11200	1000	61	ug/l	SW846 6010C
Sodium	400000	400	98	ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO3	1080	5.0	2.0	mg/l	SM20 2320B
Alkalinity, Total as CaCO3	1080	5.0	2.0	mg/l	SM20 2320B
Bromide	1.2	1.0	0.50	mg/l	EPA 300/SW846 9056
Chemical Oxygen Demand	19.9	10	5.0	mg/l	SM20 5220D
Chloride	262	5.0	2.0	mg/l	EPA 300/SW846 9056
Fluoride	1.2	0.50	0.25	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate	30.2	4.5	2.2	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrite	0.22	0.10	0.080	mg/l	EPA 300/SW846 9056
Phosphorus, Total	4.0	0.10	0.0070	mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	3350	10	5.0	mg/l	SM20 2540C

Summary of Hits

Job Number: D36584
Account: Olsson Associates
Project: WPX Energy RMV 216-21GW Investigation
Collected: 07/18/12

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
Sulfate		1360	50	20	mg/l	EPA 300/SW846 9056
Total Organic Carbon		6.4	1.0	0.50	mg/l	SM20 5310B
pH		7.29			su	SM20 4500H B+

D36584-3 RMV216-21MW2

Calcium	572000	400	7.3	ug/l	SW846 6010C
Iron	82400	70	19	ug/l	SW846 6010C
Magnesium	236000	200	11	ug/l	SW846 6010C
Manganese	2490	5.0	1.8	ug/l	SW846 6010C
Potassium	16800	1000	61	ug/l	SW846 6010C
Sodium	301000	400	98	ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO3	1320	5.0	2.0	mg/l	SM20 2320B
Alkalinity, Total as CaCO3	1320	5.0	2.0	mg/l	SM20 2320B
Chemical Oxygen Demand	17.9	10	5.0	mg/l	SM20 5220D
Chloride	17.1	2.5	1.0	mg/l	EPA 300/SW846 9056
Fluoride	1.1	0.50	0.25	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate	26.0	4.5	2.2	mg/l	EPA 300/SW846 9056
Phosphorus, Total	6.9	0.20	0.0070	mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	2820	10	5.0	mg/l	SM20 2540C
Sulfate	1290	50	20	mg/l	EPA 300/SW846 9056
Total Organic Carbon	7.3	1.0	0.50	mg/l	SM20 5310B
pH	7.24			su	SM20 4500H B+

D36584-4 RMV216-21MW3

Calcium	316000	400	7.3	ug/l	SW846 6010C
Iron	34200	70	19	ug/l	SW846 6010C
Magnesium	209000	200	11	ug/l	SW846 6010C
Manganese	1030	5.0	1.8	ug/l	SW846 6010C
Potassium	11700	1000	61	ug/l	SW846 6010C
Sodium	326000	400	98	ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO3	611	5.0	2.0	mg/l	SM20 2320B
Alkalinity, Total as CaCO3	611	5.0	2.0	mg/l	SM20 2320B
Chemical Oxygen Demand	13.2	10	5.0	mg/l	SM20 5220D
Chloride	30.2	2.5	1.0	mg/l	EPA 300/SW846 9056
Fluoride	1.2	0.50	0.25	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate	44.9	4.5	2.2	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrite	0.053	0.050	0.040	mg/l	EPA 300/SW846 9056
Phosphorus, Total	1.8	0.10	0.0070	mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	2980	10	5.0	mg/l	SM20 2540C
Sulfate	1360	50	20	mg/l	EPA 300/SW846 9056
Total Organic Carbon	5.5	1.0	0.50	mg/l	SM20 5310B
pH	7.29			su	SM20 4500H B+

Summary of Hits

Job Number: D36584
Account: Olsson Associates
Project: WPX Energy RMV 216-21GW Investigation
Collected: 07/18/12

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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D36584-5 RMV216-21MW4

Calcium	347000	400	7.3	ug/l	SW846 6010C
Iron	37100	70	19	ug/l	SW846 6010C
Magnesium	218000	200	11	ug/l	SW846 6010C
Manganese	767	5.0	1.8	ug/l	SW846 6010C
Potassium	12400	1000	61	ug/l	SW846 6010C
Sodium	323000	400	98	ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO3	713	5.0	2.0	mg/l	SM20 2320B
Alkalinity, Total as CaCO3	713	5.0	2.0	mg/l	SM20 2320B
Chemical Oxygen Demand	14.8	10	5.0	mg/l	SM20 5220D
Chloride	15.6	2.5	1.0	mg/l	EPA 300/SW846 9056
Fluoride	1.1	0.50	0.25	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate	19.0	4.5	2.2	mg/l	EPA 300/SW846 9056
Phosphorus, Total	2.2	0.10	0.0070	mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	3000	10	5.0	mg/l	SM20 2540C
Sulfate	1390	50	20	mg/l	EPA 300/SW846 9056
Total Organic Carbon	5.2	1.0	0.50	mg/l	SM20 5310B
pH	7.25			su	SM20 4500H B+

D36584-6 RMV216-21MW5

Benzene	0.55 J	1.0	0.20	ug/l	SW846 8021B
Calcium	277000	400	7.3	ug/l	SW846 6010C
Iron	11200	70	19	ug/l	SW846 6010C
Magnesium	259000	200	11	ug/l	SW846 6010C
Manganese	385	5.0	1.8	ug/l	SW846 6010C
Potassium	8090	1000	61	ug/l	SW846 6010C
Sodium	465000	400	98	ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO3	579	5.0	2.0	mg/l	SM20 2320B
Alkalinity, Total as CaCO3	579	5.0	2.0	mg/l	SM20 2320B
Bromide	1.6	1.0	0.50	mg/l	EPA 300/SW846 9056
Chemical Oxygen Demand	15.2	10	5.0	mg/l	SM20 5220D
Chloride	364	10	4.0	mg/l	EPA 300/SW846 9056
Fluoride	1.2	0.50	0.25	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate	31.7	4.5	2.2	mg/l	EPA 300/SW846 9056
Phosphorus, Total	0.74	0.10	0.0070	mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	3660	10	5.0	mg/l	SM20 2540C
Sulfate	1390	50	20	mg/l	EPA 300/SW846 9056
Total Organic Carbon	6.2	1.0	0.50	mg/l	SM20 5310B
pH	7.18			su	SM20 4500H B+

(a) The ph of the sample was > 2 at time of analysis.

Sample Results

Report of Analysis

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW1	Date Sampled:	07/18/12
Lab Sample ID:	D36584-1	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G108629.D	1	07/27/12	DC	07/24/12	OP6301	E1G742
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.7	0.47	ug/l	
208-96-8	Acenaphthylene	ND	4.7	0.47	ug/l	
120-12-7	Anthracene	ND	4.7	0.47	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.7	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.7	0.47	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.7	0.47	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.7	0.47	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.7	0.47	ug/l	
218-01-9	Chrysene	ND	4.7	0.47	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.7	0.47	ug/l	
206-44-0	Fluoranthene	ND	4.7	0.47	ug/l	
86-73-7	Fluorene	ND	4.7	0.47	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.7	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.7	0.47	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.7	0.47	ug/l	
91-20-3	Naphthalene	ND	4.7	0.47	ug/l	
85-01-8	Phenanthrene	ND	4.7	0.47	ug/l	
129-00-0	Pyrene	ND	4.7	0.47	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	38%		10-130%
321-60-8	2-Fluorobiphenyl	36%		10-130%
1718-51-0	Terphenyl-d14	24%		13-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW1	Date Sampled:	07/18/12
Lab Sample ID:	D36584-1	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	GA16854.D	1	07/20/12	SK	n/a	n/a	GGA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	95%		60-140%		

(a) The ph of the sample was > 2 at time of analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW1	Date Sampled:	07/18/12
Lab Sample ID:	D36584-1	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	TA16854.D	1	07/20/12	SK	n/a	n/a	GTA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	1.0	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	104%		60-140%

(a) The ph of the sample was > 2 at time of analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW1	Date Sampled:	07/18/12
Lab Sample ID:	D36584-1	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD15718.D	1	07/24/12	AW	07/23/12	OP6292	GFD811
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	0.263	0.38	0.25	mg/l	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	80%		25-146%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID: RMV216-21MW1**Lab Sample ID:** D36584-1**Matrix:** AQ - Ground Water**Date Sampled:** 07/18/12**Date Received:** 07/19/12**Percent Solids:** n/a**Project:** WPX Energy RMV 216-21GW Investigation

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	643000	400	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Iron	168000	70	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Magnesium	313000	200	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Manganese	3290	5.0	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Potassium	25300	1000	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Selenium	51.0	50	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Sodium	378000	400	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA2646

(2) Prep QC Batch: MP7978

RL = Reporting Limit

Report of Analysis

Client Sample ID: RMV216-21MW1
Lab Sample ID: D36584-1
Matrix: AQ - Ground Water
Project: WPX Energy RMV 216-21GW Investigation

Date Sampled: 07/18/12**Date Received:** 07/19/12**Percent Solids:** n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	1050	5.0	mg/l	1	07/26/12	JD	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	07/26/12	JD	SM20 2320B
Alkalinity, Total as CaCO3	1050	5.0	mg/l	1	07/26/12	JD	SM20 2320B
BOD, 5 Day	< 10	10	mg/l	1	07/19/12 12:00	CT	SM20 5210B
Bromide	1.1	1.0	mg/l	5	07/19/12 15:23	NS	EPA 300/SW846 9056
Chemical Oxygen Demand	16.2	10	mg/l	1	07/24/12	JD	SM20 5220D
Chloride	250	5.0	mg/l	10	07/19/12 17:37	NS	EPA 300/SW846 9056
Fluoride	1.2	0.50	mg/l	5	07/19/12 15:23	NS	EPA 300/SW846 9056
Nitrogen, Nitrate	29.2	4.5	mg/l	100	07/19/12 17:48	NS	EPA 300/SW846 9056
Nitrogen, Nitrite	0.20	0.10	mg/l	10	07/19/12 17:37	NS	EPA 300/SW846 9056
Phosphorus, Total	4.6	0.10	mg/l	10	07/20/12	CJ	HACH8190/SM4500P-B/E
Solids, Total Dissolved	3310	10	mg/l	1	07/24/12	CT	SM20 2540C
Sulfate	1340	50	mg/l	100	07/19/12 17:48	NS	EPA 300/SW846 9056
Total Organic Carbon	6.4	1.0	mg/l	1	07/25/12 18:16	GH	SM20 5310B
pH	7.29		su	1	07/19/12 15:00	CT	SM20 4500H B+

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW1X	Date Sampled:	07/18/12
Lab Sample ID:	D36584-2	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G108630.D	1	07/27/12	DC	07/24/12	OP6301	E1G742
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.48	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.48	ug/l	
120-12-7	Anthracene	ND	4.8	0.48	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.48	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.48	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.48	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.48	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.48	ug/l	
218-01-9	Chrysene	ND	4.8	0.48	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.48	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.48	ug/l	
86-73-7	Fluorene	ND	4.8	0.48	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.48	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-20-3	Naphthalene	ND	4.8	0.48	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.48	ug/l	
129-00-0	Pyrene	ND	4.8	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	60%		10-130%
321-60-8	2-Fluorobiphenyl	61%		10-130%
1718-51-0	Terphenyl-d14	48%		13-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RMV216-21MW1X	Date Sampled:	07/18/12
Lab Sample ID:	D36584-2	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	GA16857.D	1	07/20/12	SK	n/a	n/a	GGA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	98%		60-140%		

(a) The ph of the sample was > 2 at time of analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW1X	Date Sampled:	07/18/12
Lab Sample ID:	D36584-2	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	TA16857.D	1	07/20/12	SK	n/a	n/a	GTA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.77	1.0	0.20	ug/l	J
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	105%		60-140%

(a) The ph of the sample was > 2 at time of analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	RMV216-21MW1X	Date Sampled:	07/18/12
Lab Sample ID:	D36584-2	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD15720.D	1	07/24/12	AW	07/23/12	OP6292	GFD811
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	0.269	0.38	0.25	mg/l	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	79%		25-146%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: RMV216-21MW1X**Lab Sample ID:** D36584-2**Matrix:** AQ - Ground Water**Date Sampled:** 07/18/12**Date Received:** 07/19/12**Percent Solids:** n/a**Project:** WPX Energy RMV 216-21GW Investigation

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	445000	400	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Iron	38900	70	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Magnesium	260000	200	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Manganese	1620	5.0	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Potassium	11200	1000	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Selenium	< 50	50	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Sodium	400000	400	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA2646

(2) Prep QC Batch: MP7978

RL = Reporting Limit

Report of Analysis

Client Sample ID: RMV216-21MW1X**Lab Sample ID:** D36584-2**Matrix:** AQ - Ground Water**Date Sampled:** 07/18/12**Date Received:** 07/19/12**Percent Solids:** n/a**Project:** WPX Energy RMV 216-21GW Investigation

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	1080	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
Alkalinity, Total as CaCO3	1080	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
BOD, 5 Day	< 10	10	mg/l	1	07/19/12 12:00	CT	SM20 5210B
Bromide	1.2	1.0	mg/l	5	07/19/12 15:34	NS	EPA 300/SW846 9056
Chemical Oxygen Demand	19.9	10	mg/l	1	07/24/12	JD	SM20 5220D
Chloride	262	5.0	mg/l	10	07/19/12 17:59	NS	EPA 300/SW846 9056
Fluoride	1.2	0.50	mg/l	5	07/19/12 15:34	NS	EPA 300/SW846 9056
Nitrogen, Nitrate	30.2	4.5	mg/l	100	07/19/12 18:10	NS	EPA 300/SW846 9056
Nitrogen, Nitrite	0.22	0.10	mg/l	10	07/19/12 17:59	NS	EPA 300/SW846 9056
Phosphorus, Total	4.0	0.10	mg/l	10	07/20/12	CJ	HACH8190/SM4500P-B/E
Solids, Total Dissolved	3350	10	mg/l	1	07/24/12	CT	SM20 2540C
Sulfate	1360	50	mg/l	100	07/19/12 18:10	NS	EPA 300/SW846 9056
Total Organic Carbon	6.4	1.0	mg/l	1	07/25/12 18:29	GH	SM20 5310B
pH	7.29		su	1	07/19/12 15:00	CT	SM20 4500H B+

RL = Reporting Limit

Report of Analysis

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Client Sample ID:	RMV216-21MW2	Date Sampled:	07/18/12
Lab Sample ID:	D36584-3	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G108631.D	1	07/27/12	DC	07/24/12	OP6301	E1G742
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.48	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.48	ug/l	
120-12-7	Anthracene	ND	4.8	0.48	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.48	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.48	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.48	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.48	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.48	ug/l	
218-01-9	Chrysene	ND	4.8	0.48	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.48	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.48	ug/l	
86-73-7	Fluorene	ND	4.8	0.48	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.48	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-20-3	Naphthalene	ND	4.8	0.48	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.48	ug/l	
129-00-0	Pyrene	ND	4.8	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	57%		10-130%
321-60-8	2-Fluorobiphenyl	60%		10-130%
1718-51-0	Terphenyl-d14	50%		13-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW2	Date Sampled:	07/18/12
Lab Sample ID:	D36584-3	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	GA16858.D	1	07/20/12	SK	n/a	n/a	GGA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	98%		60-140%		

(a) The ph of the sample was > 2 at time of analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW2	Date Sampled:	07/18/12
Lab Sample ID:	D36584-3	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	TA16858.D	1	07/20/12	SK	n/a	n/a	GTA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	104%		60-140%

(a) The ph of the sample was > 2 at time of analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW2	Date Sampled:	07/18/12
Lab Sample ID:	D36584-3	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD15722.D	1	07/24/12	AW	07/23/12	OP6292	GFD811
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.38	0.25	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	55%		25-146%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RMV216-21MW2	Date Sampled: 07/18/12
Lab Sample ID: D36584-3	Date Received: 07/19/12
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: WPX Energy RMV 216-21GW Investigation	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	572000	400	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Iron	82400	70	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Magnesium	236000	200	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Manganese	2490	5.0	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Potassium	16800	1000	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Selenium	< 50	50	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Sodium	301000	400	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA2646

(2) Prep QC Batch: MP7978

RL = Reporting Limit

Report of Analysis

Client Sample ID: RMV216-21MW2
Lab Sample ID: D36584-3
Matrix: AQ - Ground Water
Project: WPX Energy RMV 216-21GW Investigation

Date Sampled: 07/18/12
Date Received: 07/19/12
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	1320	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
Alkalinity, Total as CaCO ₃	1320	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
BOD, 5 Day	< 10	10	mg/l	1	07/19/12 12:00	CT	SM20 5210B
Bromide	< 1.0	1.0	mg/l	5	07/19/12 15:45	NS	EPA 300/SW846 9056
Chemical Oxygen Demand	17.9	10	mg/l	1	07/24/12	JD	SM20 5220D
Chloride	17.1	2.5	mg/l	5	07/19/12 15:45	NS	EPA 300/SW846 9056
Fluoride	1.1	0.50	mg/l	5	07/19/12 15:45	NS	EPA 300/SW846 9056
Nitrogen, Nitrate	26.0	4.5	mg/l	100	07/19/12 18:22	NS	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 0.050	0.050	mg/l	5	07/19/12 15:45	NS	EPA 300/SW846 9056
Phosphorus, Total	6.9	0.20	mg/l	20	07/20/12	CJ	HACH8190/SM4500P-B/E
Solids, Total Dissolved	2820	10	mg/l	1	07/24/12	CT	SM20 2540C
Sulfate	1290	50	mg/l	100	07/19/12 18:22	NS	EPA 300/SW846 9056
Total Organic Carbon	7.3	1.0	mg/l	1	07/25/12 18:42	GH	SM20 5310B
pH	7.24		su	1	07/19/12 15:00	CT	SM20 4500H B+

(a) Elevated detection limit/MDL due to matrix interference.

RL = Reporting Limit

Report of Analysis

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Client Sample ID:	RMV216-21MW3	Date Sampled:	07/18/12
Lab Sample ID:	D36584-4	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G108632.D	1	07/27/12	DC	07/24/12	OP6301	E1G742
Run #2							

	Initial Volume	Final Volume
Run #1	1030 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.9	0.49	ug/l	
208-96-8	Acenaphthylene	ND	4.9	0.49	ug/l	
120-12-7	Anthracene	ND	4.9	0.49	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.9	0.49	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.9	0.49	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.49	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	0.49	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.49	ug/l	
218-01-9	Chrysene	ND	4.9	0.49	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	0.49	ug/l	
206-44-0	Fluoranthene	ND	4.9	0.49	ug/l	
86-73-7	Fluorene	ND	4.9	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	0.49	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.9	0.49	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.9	0.49	ug/l	
91-20-3	Naphthalene	ND	4.9	0.49	ug/l	
85-01-8	Phenanthrene	ND	4.9	0.49	ug/l	
129-00-0	Pyrene	ND	4.9	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	66%		10-130%
321-60-8	2-Fluorobiphenyl	68%		10-130%
1718-51-0	Terphenyl-d14	55%		13-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW3	Date Sampled:	07/18/12
Lab Sample ID:	D36584-4	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA16859.D	1	07/20/12	SK	n/a	n/a	GGA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	96%		60-140%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW3	Date Sampled:	07/18/12
Lab Sample ID:	D36584-4	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA16859.D	1	07/20/12	SK	n/a	n/a	GTA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	103%		60-140%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW3	Date Sampled:	07/18/12
Lab Sample ID:	D36584-4	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD15724.D	1	07/24/12	AW	07/23/12	OP6292	GFD811
Run #2							

	Initial Volume	Final Volume
Run #1	1060 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.38	0.25	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	83%		25-146%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID: RMV216-21MW3	Date Sampled: 07/18/12
Lab Sample ID: D36584-4	Date Received: 07/19/12
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: WPX Energy RMV 216-21GW Investigation	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	316000	400	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Iron	34200	70	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Magnesium	209000	200	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Manganese	1030	5.0	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Potassium	11700	1000	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Selenium	< 50	50	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Sodium	326000	400	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA2646

(2) Prep QC Batch: MP7978

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: RMV216-21MW3
Lab Sample ID: D36584-4
Matrix: AQ - Ground Water
Project: WPX Energy RMV 216-21GW Investigation

Date Sampled: 07/18/12**Date Received:** 07/19/12**Percent Solids:** n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	611	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
Alkalinity, Total as CaCO ₃	611	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
BOD, 5 Day	< 10	10	mg/l	1	07/19/12 12:00	CT	SM20 5210B
Bromide ^a	< 1.0	1.0	mg/l	5	07/19/12 15:56	NS	EPA 300/SW846 9056
Chemical Oxygen Demand	13.2	10	mg/l	1	07/24/12	JD	SM20 5220D
Chloride	30.2	2.5	mg/l	5	07/19/12 15:56	NS	EPA 300/SW846 9056
Fluoride	1.2	0.50	mg/l	5	07/19/12 15:56	NS	EPA 300/SW846 9056
Nitrogen, Nitrate	44.9	4.5	mg/l	100	07/19/12 18:33	NS	EPA 300/SW846 9056
Nitrogen, Nitrite	0.053	0.050	mg/l	5	07/19/12 15:56	NS	EPA 300/SW846 9056
Phosphorus, Total	1.8	0.10	mg/l	10	07/20/12	CJ	HACH8190/SM4500P-B/E
Solids, Total Dissolved	2980	10	mg/l	1	07/24/12	CT	SM20 2540C
Sulfate	1360	50	mg/l	100	07/19/12 18:33	NS	EPA 300/SW846 9056
Total Organic Carbon	5.5	1.0	mg/l	1	07/25/12 18:53	GH	SM20 5310B
pH	7.29		su	1	07/19/12 15:00	CT	SM20 4500H B+

(a) Elevated detection limit/MDL due to matrix interference.

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW4	Date Sampled:	07/18/12
Lab Sample ID:	D36584-5	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G108633.D	1	07/27/12	DC	07/24/12	OP6301	E1G742
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1060 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.7	0.47	ug/l	
208-96-8	Acenaphthylene	ND	4.7	0.47	ug/l	
120-12-7	Anthracene	ND	4.7	0.47	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.7	0.47	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.7	0.47	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.7	0.47	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.7	0.47	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.7	0.47	ug/l	
218-01-9	Chrysene	ND	4.7	0.47	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.7	0.47	ug/l	
206-44-0	Fluoranthene	ND	4.7	0.47	ug/l	
86-73-7	Fluorene	ND	4.7	0.47	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.7	0.47	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.7	0.47	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.7	0.47	ug/l	
91-20-3	Naphthalene	ND	4.7	0.47	ug/l	
85-01-8	Phenanthrene	ND	4.7	0.47	ug/l	
129-00-0	Pyrene	ND	4.7	0.47	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	64%		10-130%
321-60-8	2-Fluorobiphenyl	65%		10-130%
1718-51-0	Terphenyl-d14	47%		13-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW4	Date Sampled:	07/18/12
Lab Sample ID:	D36584-5	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA16860.D	1	07/20/12	SK	n/a	n/a	GGA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	95%		60-140%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW4	Date Sampled:	07/18/12
Lab Sample ID:	D36584-5	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA16860.D	1	07/20/12	SK	n/a	n/a	GTA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	102%		60-140%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW4	Date Sampled:	07/18/12
Lab Sample ID:	D36584-5	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD15726.D	1	07/24/12	AW	07/23/12	OP6292	GFD811
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.38	0.25	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	98%		25-146%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: RMV216-21MW4	Date Sampled: 07/18/12
Lab Sample ID: D36584-5	Date Received: 07/19/12
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: WPX Energy RMV 216-21GW Investigation	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	347000	400	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Iron	37100	70	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Magnesium	218000	200	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Manganese	767	5.0	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Potassium	12400	1000	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Selenium	< 50	50	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²
Sodium	323000	400	ug/l	1	07/23/12	07/24/12 JB	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA2646

(2) Prep QC Batch: MP7978

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: RMV216-21MW4	Date Sampled: 07/18/12
Lab Sample ID: D36584-5	Date Received: 07/19/12
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: WPX Energy RMV 216-21GW Investigation	

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	713	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
Alkalinity, Total as CaCO3	713	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
BOD, 5 Day	< 10	10	mg/l	1	07/19/12 12:00	CT	SM20 5210B
Bromide ^a	< 1.0	1.0	mg/l	5	07/19/12 16:08	NS	EPA 300/SW846 9056
Chemical Oxygen Demand	14.8	10	mg/l	1	07/24/12	JD	SM20 5220D
Chloride	15.6	2.5	mg/l	5	07/19/12 16:08	NS	EPA 300/SW846 9056
Fluoride	1.1	0.50	mg/l	5	07/19/12 16:08	NS	EPA 300/SW846 9056
Nitrogen, Nitrate	19.0	4.5	mg/l	100	07/19/12 19:06	NS	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 0.050	0.050	mg/l	5	07/19/12 16:08	NS	EPA 300/SW846 9056
Phosphorus, Total	2.2	0.10	mg/l	10	07/20/12	CJ	HACH8190/SM4500P-B/E
Solids, Total Dissolved	3000	10	mg/l	1	07/24/12	CT	SM20 2540C
Sulfate	1390	50	mg/l	100	07/19/12 19:06	NS	EPA 300/SW846 9056
Total Organic Carbon	5.2	1.0	mg/l	1	07/25/12 19:04	GH	SM20 5310B
pH	7.25		su	1	07/19/12 15:00	CT	SM20 4500H B+

(a) Elevated detection limit/MDL due to matrix interference.

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW5	Date Sampled:	07/18/12
Lab Sample ID:	D36584-6	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G108634.D	1	07/27/12	DC	07/24/12	OP6301	E1G742
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.48	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.48	ug/l	
120-12-7	Anthracene	ND	4.8	0.48	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.48	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.48	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.48	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.48	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.48	ug/l	
218-01-9	Chrysene	ND	4.8	0.48	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.48	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.48	ug/l	
86-73-7	Fluorene	ND	4.8	0.48	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.48	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-20-3	Naphthalene	ND	4.8	0.48	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.48	ug/l	
129-00-0	Pyrene	ND	4.8	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	54%		10-130%
321-60-8	2-Fluorobiphenyl	55%		10-130%
1718-51-0	Terphenyl-d14	52%		13-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW5	Date Sampled:	07/18/12
Lab Sample ID:	D36584-6	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA16861.D	1	07/20/12	SK	n/a	n/a	GGA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	92%		60-140%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW5	Date Sampled:	07/18/12
Lab Sample ID:	D36584-6	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA16861.D	1	07/20/12	SK	n/a	n/a	GTA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.55	1.0	0.20	ug/l	J
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	99%		60-140%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV216-21MW5	Date Sampled:	07/18/12
Lab Sample ID:	D36584-6	Date Received:	07/19/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD15728.D	1	07/24/12	AW	07/23/12	OP6292	GFD811
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.38	0.25	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	97%		25-146%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: RMV216-21MW5	Date Sampled: 07/18/12
Lab Sample ID: D36584-6	Date Received: 07/19/12
Matrix: AQ - Ground Water	Percent Solids: n/a
Project: WPX Energy RMV 216-21GW Investigation	

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	277000	400	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Iron	11200	70	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Magnesium	259000	200	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Manganese	385	5.0	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Potassium	8090	1000	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Selenium	< 50	50	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Sodium	465000	400	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA2646

(2) Prep QC Batch: MP7978

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: RMV216-21MW5
Lab Sample ID: D36584-6
Matrix: AQ - Ground Water
Project: WPX Energy RMV 216-21GW Investigation

Date Sampled: 07/18/12**Date Received:** 07/19/12**Percent Solids:** n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	579	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
Alkalinity, Total as CaCO ₃	579	5.0	mg/l	1	07/27/12	CJ	SM20 2320B
BOD, 5 Day	< 10	10	mg/l	1	07/19/12 12:00	CT	SM20 5210B
Bromide	1.6	1.0	mg/l	5	07/19/12 16:19	NS	EPA 300/SW846 9056
Chemical Oxygen Demand	15.2	10	mg/l	1	07/24/12	JD	SM20 5220D
Chloride	364	10	mg/l	20	07/19/12 19:18	NS	EPA 300/SW846 9056
Fluoride	1.2	0.50	mg/l	5	07/19/12 16:19	NS	EPA 300/SW846 9056
Nitrogen, Nitrate	31.7	4.5	mg/l	100	07/19/12 19:29	NS	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 0.20	0.20	mg/l	20	07/19/12 19:18	NS	EPA 300/SW846 9056
Phosphorus, Total	0.74	0.10	mg/l	10	07/20/12	CJ	HACH8190/SM4500P-B/E
Solids, Total Dissolved	3660	10	mg/l	1	07/24/12	CT	SM20 2540C
Sulfate	1390	50	mg/l	100	07/19/12 19:29	NS	EPA 300/SW846 9056
Total Organic Carbon	6.2	1.0	mg/l	1	07/25/12 19:15	GH	SM20 5310B
pH	7.18		su	1	07/19/12 15:00	CT	SM20 4500H B+

(a) Elevated detection limit/MDL due to matrix interference.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Mountain States
4036 Youngfield Street Wheat Ridge, Co 80033
TEL 303-425-6021 877-737-4521
FAX 303-425-6021

FED-EX Tracking #
Accutest Quote #
Bottle Order Control #
Accutest Job # **D36584**

Client / Reporting Information		Project Information		Requested Analysis (see TEST CODE sheet)												Matrix Codes	
Company Name: OSEN ASSOCIATES Street Address: 8260 21 1/2 Road City/State/Zip: Grand Junction CO 81505 Project Contact: Timothy Dobransky Phone #: 9702637800 Fax #: 9702637456 Sample(s) Name(s): Whitely Fox 9702637800		Project Name: WPX Energy RMV 216-21 EW Investigation Street: City: State: Zip: Project #: 012-1539 Client PO #: Project Manager: Timothy Dobransky Attention: PO #:		Billing Information (if different from Report to): Company Name: Street Address: City: State: Zip: Attention: PO #:												Matrix Codes: DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment OI - Oil LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipe FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank	
Accutest Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Date	Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	EMCON	EMCON	Residue	LAB USE ONLY
	RMV 216-21 MW 1		7/18/12	900	WF CW IS		6										01
	RMV 216-21 MW 1X			1155			6										02
	RMV 216-21 MW 2			1150			6										03
	RMV 216-21 MW 3			1340			6										04
	RMV 216-21 MW 4			1405			6										05
	RMV 216-21 MW 5			1355			6										06
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D36584: Chain of Custody

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Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D36584

Client: OLSSON ASS.

Immediate Client Services Action Required: No

Date / Time Received: 7/19/2012 12:00:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: WPX ENERGY RMV 216 21 GW INVESTIGAT

Airbill #'s: HD/CO

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | Infrared gun | |
| 3. Cooler media: | Ice (bag) | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|--------------------------|
| 1. Trip Blank present / cooler: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Trip Blank listed on COC: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | |

Sample Integrity - Instructions

Y or N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume rec'd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments



**industrial
LABORATORIES**

Industrial Laboratories is your independent,
third-party analytical testing laboratory

To: Accutest Mountain States (AMS)
4036 Youngfield St.

Wheat Ridge CO 80033

Attn: Andrew Fluegel

TEST REPORT

ACCUTEST - M

Date Received: 7/20/2012

Date Reported: 7/23/2012

PO Number: D36584X

Note: Sample test procedures conform to EPA 40CFR136 requirements.

Lab No.	Sample Description	Test Method	Result	Units	MDL	Analysis Date/By
120720009-01A	D36584X-1, 7/18/12, 9:00am	* Heterotrophic Plate Count SM 9215B	390000	CFU/mL		RJ 7/20/2012
120720009-02A	D36584X-2, 7/18/12, 9:55am	* Heterotrophic Plate Count SM 9215B	480000	CFU/mL		RJ 7/20/2012
120720009-03A	D36584X-3, 7/18/12, 11:50am	* Heterotrophic Plate Count SM 9215B	490000	CFU/mL		RJ 7/20/2012
120720009-04A	D36584X-4, 7/18/12, 1:40pm	* Heterotrophic Plate Count SM 9215B	83000	CFU/mL		RJ 7/20/2012
120720009-05A	D36584X-5, 7/18/12, 2:55pm	* Heterotrophic Plate Count SM 9215B	86000	CFU/mL		RJ 7/20/2012
120720009-06A	D36584X-6, 7/18/12, 1:55pm	* Heterotrophic Plate Count SM 9215B	28000	CFU/mL		RJ 7/20/2012

* = Scope Analysis
= Subcontracted Analysis
MDL = Method Detection Limit
ND = Not Detected at the Method Detection Limit

Page: 1 of 1

Department Manager

4046 Youngfield Street • Wheat Ridge, Colorado 80033 • (303) 287-9691 • (303) 287-0964 FAX • www.industriallabs.net

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D36584: Chain of Custody

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08/13/12

Technical Report for

Olsson Associates

WPX Energy RMV 216-21GW Investigation

012-1539

Accutest Job Number: D36640

Sampling Date: 07/19/12

Report to:

Olsson Associates

tdobransky@oaconsulting.com

ATTN: Timothy Dobransky

Total number of pages in report: **29**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'Brad Madadian'.

Brad Madadian
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

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Test results relate only to samples analyzed.

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Sample Summary

Olsson Associates

Job No: D36640

WPX Energy RMV 216-21GW Investigation
Project No: 012-1539

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
D36640-1	07/19/12	09:00	JVTC	07/20/12	AQ Ground Water	RMV-21 MW 6
D36640-2	07/19/12	10:20	JVTC	07/20/12	AQ Ground Water	RMV-21 MW 7
D36640-3	07/19/12	13:00	JVTC	07/20/12	AQ Ground Water	RMV-21 MW 9

Summary of Hits

Job Number: D36640
Account: Olsson Associates
Project: WPX Energy RMV 216-21GW Investigation
Collected: 07/19/12

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
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D36640-1 RMV-21 MW 6

Benzene ^a	24.3	1.0	0.20	ug/l	SW846 8021B
TPH-DRO (C10-C28)	0.295 J	0.39	0.25	mg/l	SW846-8015B
Calcium	440000	400	7.3	ug/l	SW846 6010C
Iron	70900	70	19	ug/l	SW846 6010C
Magnesium	339000	200	11	ug/l	SW846 6010C
Manganese	1360	5.0	1.8	ug/l	SW846 6010C
Potassium	17400	1000	61	ug/l	SW846 6010C
Sodium	633000	400	98	ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO ₃	1050	5.0	2.0	mg/l	SM20 2320B
Alkalinity, Total as CaCO ₃	1050	5.0	2.0	mg/l	SM20 2320B
Bromide	3.2	1.0	0.50	mg/l	EPA 300/SW846 9056
Chemical Oxygen Demand	18.9	10	5.0	mg/l	SM20 5220D
Chloride	758	25	10	mg/l	EPA 300/SW846 9056
Fluoride	0.78	0.50	0.25	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate	36.7	2.3	1.1	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrite	6.6	0.50	0.40	mg/l	EPA 300/SW846 9056
Phosphorus, Total	2.6	0.050	0.0070	mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	4460	10	5.0	mg/l	SM20 2540C
Sulfate	1600	50	20	mg/l	EPA 300/SW846 9056
Total Organic Carbon	8.4	1.0	0.50	mg/l	SM20 5310B
pH	7.00			su	SM20 4500H B+

D36640-2 RMV-21 MW 7

Calcium	842000	400	7.3	ug/l	SW846 6010C
Iron	257000	70	19	ug/l	SW846 6010C
Magnesium	340000	200	11	ug/l	SW846 6010C
Manganese	6360	5.0	1.8	ug/l	SW846 6010C
Potassium	36000	1000	61	ug/l	SW846 6010C
Sodium	342000	400	98	ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO ₃	2130	5.0	2.0	mg/l	SM20 2320B
Alkalinity, Total as CaCO ₃	2130	5.0	2.0	mg/l	SM20 2320B
Bromide	1.2	1.0	0.50	mg/l	EPA 300/SW846 9056
Chemical Oxygen Demand	28.3	10	5.0	mg/l	SM20 5220D
Chloride	281	5.0	2.0	mg/l	EPA 300/SW846 9056
Fluoride	0.82	0.50	0.25	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate	26.6	2.3	1.1	mg/l	EPA 300/SW846 9056
Phosphorus, Total	11.9	0.20	0.0070	mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved	3510	10	5.0	mg/l	SM20 2540C
Sulfate	1550	50	20	mg/l	EPA 300/SW846 9056
Total Organic Carbon	9.1	1.0	0.50	mg/l	SM20 5310B
pH	7.18			su	SM20 4500H B+

Summary of Hits

Job Number: D36640
Account: Olsson Associates
Project: WPX Energy RMV 216-21GW Investigation
Collected: 07/19/12

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D36640-3	RMV-21 MW 9					
Calcium		746000	400	7.3	ug/l	SW846 6010C
Iron		128000	70	19	ug/l	SW846 6010C
Magnesium		351000	200	11	ug/l	SW846 6010C
Manganese		3470	5.0	1.8	ug/l	SW846 6010C
Potassium		21400	1000	61	ug/l	SW846 6010C
Sodium		384000	400	98	ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO3		2600	5.0	2.0	mg/l	SM20 2320B
Alkalinity, Total as CaCO3		2600	5.0	2.0	mg/l	SM20 2320B
Bromide		1.5	1.0	0.50	mg/l	EPA 300/SW846 9056
Chemical Oxygen Demand		18.2	10	5.0	mg/l	SM20 5220D
Chloride		338	13	5.0	mg/l	EPA 300/SW846 9056
Fluoride		0.75	0.50	0.25	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate		52.5	4.5	2.2	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrite		1.6	0.050	0.040	mg/l	EPA 300/SW846 9056
Phosphorus, Total		5.6	0.10	0.0070	mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved		3890	10	5.0	mg/l	SM20 2540C
Sulfate		1580	50	20	mg/l	EPA 300/SW846 9056
Total Organic Carbon		8.8	1.0	0.50	mg/l	SM20 5310B
pH		7.05			su	SM20 4500H B+

(a) The ph of the sample was > 2 at time of analysis.

Sample Results

Report of Analysis

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW 6	Date Sampled:	07/19/12
Lab Sample ID:	D36640-1	Date Received:	07/20/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G108635.D	1	07/27/12	DC	07/24/12	OP6301	E1G742
Run #2							

	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.48	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.48	ug/l	
120-12-7	Anthracene	ND	4.8	0.48	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.48	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.48	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.48	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.48	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.48	ug/l	
218-01-9	Chrysene	ND	4.8	0.48	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.48	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.48	ug/l	
86-73-7	Fluorene	ND	4.8	0.48	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.48	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-20-3	Naphthalene	ND	4.8	0.48	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.48	ug/l	
129-00-0	Pyrene	ND	4.8	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	54%		10-130%
321-60-8	2-Fluorobiphenyl	47%		10-130%
1718-51-0	Terphenyl-d14	21%		13-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW 6	Date Sampled:	07/19/12
Lab Sample ID:	D36640-1	Date Received:	07/20/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	GA16862.D	1	07/20/12	SK	n/a	n/a	GGA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	95%		60-140%		

(a) The ph of the sample was > 2 at time of analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW 6	Date Sampled:	07/19/12
Lab Sample ID:	D36640-1	Date Received:	07/20/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	TA16862.D	1	07/20/12	SK	n/a	n/a	GTA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	24.3	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	102%		60-140%

(a) The ph of the sample was > 2 at time of analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW 6	Date Sampled:	07/19/12
Lab Sample ID:	D36640-1	Date Received:	07/20/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD15710.D	1	07/23/12	AW	07/23/12	OP6292	GFD811
Run #2							

	Initial Volume	Final Volume
Run #1	1030 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	0.295	0.39	0.25	mg/l	J
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	59%		25-146%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: RMV-21 MW 6**Lab Sample ID:** D36640-1**Matrix:** AQ - Ground Water**Date Sampled:** 07/19/12**Date Received:** 07/20/12**Percent Solids:** n/a**Project:** WPX Energy RMV 216-21GW Investigation

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	440000	400	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Iron	70900	70	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Magnesium	339000	200	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Manganese	1360	5.0	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Potassium	17400	1000	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Sodium	633000	400	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA2646

(2) Prep QC Batch: MP7978

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID: RMV-21 MW 6
Lab Sample ID: D36640-1
Matrix: AQ - Ground Water
Project: WPX Energy RMV 216-21GW Investigation

Date Sampled: 07/19/12**Date Received:** 07/20/12**Percent Solids:** n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	1050	5.0	mg/l	1	08/01/12	CJ	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	08/01/12	CJ	SM20 2320B
Alkalinity, Total as CaCO3	1050	5.0	mg/l	1	08/01/12	CJ	SM20 2320B
BOD, 5 Day	< 10	10	mg/l	1	07/20/12 11:00	CJ	SM20 5210B
Bromide	3.2	1.0	mg/l	5	07/20/12 15:24	JML	EPA 300/SW846 9056
Chemical Oxygen Demand	18.9	10	mg/l	1	07/24/12	JD	SM20 5220D
Chloride	758	25	mg/l	50	07/20/12 17:31	JML	EPA 300/SW846 9056
Fluoride	0.78	0.50	mg/l	5	07/20/12 15:24	JML	EPA 300/SW846 9056
Nitrogen, Nitrate	36.7	2.3	mg/l	50	07/20/12 17:31	JML	EPA 300/SW846 9056
Nitrogen, Nitrite	6.6	0.50	mg/l	50	07/20/12 17:31	JML	EPA 300/SW846 9056
Phosphorus, Total	2.6	0.050	mg/l	5	07/27/12	JD	HACH8190/SM4500P-B/E
Solids, Total Dissolved	4460	10	mg/l	1	07/24/12	CT	SM20 2540C
Sulfate	1600	50	mg/l	100	07/20/12 17:45	JML	EPA 300/SW846 9056
Total Organic Carbon	8.4	1.0	mg/l	1	07/27/12 15:32	NS	SM20 5310B
pH	7.00		su	1	07/20/12 13:00	CT	SM20 4500H B+

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW 7	Date Sampled:	07/19/12
Lab Sample ID:	D36640-2	Date Received:	07/20/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G108636.D	1	07/27/12	DC	07/24/12	OP6301	E1G742
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.48	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.48	ug/l	
120-12-7	Anthracene	ND	4.8	0.48	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.48	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.48	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.48	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.48	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.48	ug/l	
218-01-9	Chrysene	ND	4.8	0.48	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.48	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.48	ug/l	
86-73-7	Fluorene	ND	4.8	0.48	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.48	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-20-3	Naphthalene	ND	4.8	0.48	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.48	ug/l	
129-00-0	Pyrene	ND	4.8	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	55%		10-130%
321-60-8	2-Fluorobiphenyl	51%		10-130%
1718-51-0	Terphenyl-d14	36%		13-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW 7	Date Sampled:	07/19/12
Lab Sample ID:	D36640-2	Date Received:	07/20/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	GA16863.D	1	07/20/12	SK	n/a	n/a	GGA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	94%		60-140%		

(a) The ph of the sample was > 2 at time of analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW 7	Date Sampled:	07/19/12
Lab Sample ID:	D36640-2	Date Received:	07/20/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	TA16863.D	1	07/20/12	SK	n/a	n/a	GTA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	101%		60-140%

(a) The ph of the sample was > 2 at time of analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW 7	Date Sampled:	07/19/12
Lab Sample ID:	D36640-2	Date Received:	07/20/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FD15712.D	1	07/23/12	AW	07/23/12	OP6292	GFD811
Run #2							

	Initial Volume	Final Volume
Run #1	1030 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.39	0.25	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	68%		25-146%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: RMV-21 MW 7**Lab Sample ID:** D36640-2**Matrix:** AQ - Ground Water**Project:** WPX Energy RMV 216-21GW Investigation**Date Sampled:** 07/19/12**Date Received:** 07/20/12**Percent Solids:** n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	842000	400	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Iron	257000	70	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Magnesium	340000	200	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Manganese	6360	5.0	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Potassium	36000	1000	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Sodium	342000	400	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA2646

(2) Prep QC Batch: MP7978

RL = Reporting Limit

Report of Analysis

Client Sample ID: RMV-21 MW 7
Lab Sample ID: D36640-2
Matrix: AQ - Ground Water
Project: WPX Energy RMV 216-21GW Investigation

Date Sampled: 07/19/12
Date Received: 07/20/12
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	2130	5.0	mg/l	1	08/02/12	JD	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	08/02/12	JD	SM20 2320B
Alkalinity, Total as CaCO ₃	2130	5.0	mg/l	1	08/02/12	JD	SM20 2320B
BOD, 5 Day	< 10	10	mg/l	1	07/20/12 11:00	CJ	SM20 5210B
Bromide	1.2	1.0	mg/l	5	07/20/12 15:39	JML	EPA 300/SW846 9056
Chemical Oxygen Demand	28.3	10	mg/l	1	07/24/12	JD	SM20 5220D
Chloride	281	5.0	mg/l	10	07/20/12 18:50	JML	EPA 300/SW846 9056
Fluoride	0.82	0.50	mg/l	5	07/20/12 15:39	JML	EPA 300/SW846 9056
Nitrogen, Nitrate	26.6	2.3	mg/l	50	07/20/12 18:35	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^a	< 0.050	0.050	mg/l	5	07/20/12 15:39	JML	EPA 300/SW846 9056
Phosphorus, Total	11.9	0.20	mg/l	20	07/27/12	JD	HACH8190/SM4500P-B/E
Solids, Total Dissolved	3510	10	mg/l	1	07/24/12	CT	SM20 2540C
Sulfate	1550	50	mg/l	100	07/20/12 19:04	JML	EPA 300/SW846 9056
Total Organic Carbon	9.1	1.0	mg/l	1	07/27/12 16:19	NS	SM20 5310B
pH	7.18		su	1	07/20/12 13:00	CT	SM20 4500H B+

(a) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW 9	Date Sampled:	07/19/12
Lab Sample ID:	D36640-3	Date Received:	07/20/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G108637.D	1	07/27/12	DC	07/24/12	OP6301	E1G742
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1040 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.48	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.48	ug/l	
120-12-7	Anthracene	ND	4.8	0.48	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.48	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.48	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.48	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.48	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.48	ug/l	
218-01-9	Chrysene	ND	4.8	0.48	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.48	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.48	ug/l	
86-73-7	Fluorene	ND	4.8	0.48	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.48	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-20-3	Naphthalene	ND	4.8	0.48	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.48	ug/l	
129-00-0	Pyrene	ND	4.8	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	55%		10-130%
321-60-8	2-Fluorobiphenyl	52%		10-130%
1718-51-0	Terphenyl-d14	31%		13-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW 9	Date Sampled:	07/19/12
Lab Sample ID:	D36640-3	Date Received:	07/20/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	GA16864.D	1	07/20/12	SK	n/a	n/a	GGA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	98%		60-140%		

(a) The ph of the sample was > 2 at time of analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW 9	Date Sampled:	07/19/12
Lab Sample ID:	D36640-3	Date Received:	07/20/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	TA16864.D	1	07/20/12	SK	n/a	n/a	GTA952
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	105%		60-140%

(a) The ph of the sample was > 2 at time of analysis.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW 9	Date Sampled:	07/19/12
Lab Sample ID:	D36640-3	Date Received:	07/20/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH006078.D	1	08/01/12	AW	07/26/12	OP6315	GFH337
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.40	0.26	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	50%		25-146%		

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: RMV-21 MW 9**Lab Sample ID:** D36640-3**Matrix:** AQ - Ground Water**Date Sampled:** 07/19/12**Date Received:** 07/20/12**Percent Solids:** n/a**Project:** WPX Energy RMV 216-21GW Investigation

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	746000	400	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Iron	128000	70	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Magnesium	351000	200	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Manganese	3470	5.0	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Potassium	21400	1000	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Sodium	384000	400	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA2646

(2) Prep QC Batch: MP7978

RL = Reporting Limit

Report of Analysis

Client Sample ID: RMV-21 MW 9
Lab Sample ID: D36640-3
Matrix: AQ - Ground Water
Project: WPX Energy RMV 216-21GW Investigation

Date Sampled: 07/19/12**Date Received:** 07/20/12**Percent Solids:** n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	2600	5.0	mg/l	1	08/02/12	JD	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	08/02/12	JD	SM20 2320B
Alkalinity, Total as CaCO3	2600	5.0	mg/l	1	08/02/12	JD	SM20 2320B
BOD, 5 Day	< 10	10	mg/l	1	07/20/12 11:00	CJ	SM20 5210B
Bromide	1.5	1.0	mg/l	5	07/20/12 15:53	JML	EPA 300/SW846 9056
Chemical Oxygen Demand	18.2	10	mg/l	1	07/24/12	JD	SM20 5220D
Chloride	338	13	mg/l	25	07/20/12 19:18	JML	EPA 300/SW846 9056
Fluoride	0.75	0.50	mg/l	5	07/20/12 15:53	JML	EPA 300/SW846 9056
Nitrogen, Nitrate	52.5	4.5	mg/l	100	07/20/12 19:33	JML	EPA 300/SW846 9056
Nitrogen, Nitrite	1.6	0.050	mg/l	5	07/20/12 15:53	JML	EPA 300/SW846 9056
Phosphorus, Total	5.6	0.10	mg/l	10	07/27/12	JD	HACH8190/SM4500P-B/E
Solids, Total Dissolved	3890	10	mg/l	1	07/24/12	CT	SM20 2540C
Sulfate	1580	50	mg/l	100	07/20/12 19:33	JML	EPA 300/SW846 9056
Total Organic Carbon	8.8	1.0	mg/l	1	07/27/12 16:32	NS	SM20 5310B
pH	7.05		su	1	07/20/12 13:00	CT	SM20 4500H B+

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D36640

Client: OLSSON

Immediate Client Services Action Required: No

Date / Time Received: 7/20/2012 12:30:00 PM

No. Coolers: 1

Client Service Action Required at Login: No

Project: WPX

Airbill #'s: CO

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | Infrared gun | |
| 3. Cooler media: | Ice (bag) | |

Quality Control Preservation

Y or N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | |

Sample Integrity - Instructions

Y or N N/A

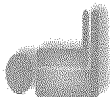
- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume rec'd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Comments

Accutest Laboratories
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4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www.accutest.com



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To: **Accutest Mountain States (AMS)**
4036 Youngfield St.

Wheat Ridge CO 80033

Attn: Andrew Fluegel

TEST REPORT

ACCUTEST - M

Date Received: 7/20/2012

Date Reported: 7/23/2012

PO Number: D36640X

Note: Sample test procedures conform to EPA 40CFR136 requirements.

Lab No.	Sample Description	Test Method	Result	Units	MDL	Analysis Date/By
120720019-01A	D36640X-1, 7/19/12, 9:00am	* Heterotrophic Plate Count	41000	CFU/mL		RJ 7/20/2012
	SM 9215B					
120720019-02A	D36640X-2, 7/19/12, 10:20am	* Heterotrophic Plate Count	1.6 Million	CFU/mL		RJ 7/20/2012
	SM 9215B					
120720019-03A	D36640X-3, 7/19/12, 1:00pm	* Heterotrophic Plate Count	980000	CFU/mL		RJ 7/20/2012
	SM 9215B					

* = Scope Analysis
= Subcontracted Analysis
MDL = Method Detection Limit
ND = Not Detected at the Method Detection Limit

Page: 1 of 1

Department Manager

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D36640: Chain of Custody
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08/13/12

Technical Report for

Olsson Associates

WPX Energy RMV 216-21GW Investigation

012-1539

Accutest Job Number: D36668

Sampling Date: 07/20/12

Report to:

Olsson Associates

tdobransky@oaconsulting.com

ATTN: Timothy Dobransky

Total number of pages in report: 17



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'Brad Madadian'.

Brad Madadian
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

Test results relate only to samples analyzed.

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Sample Summary

Olsson Associates

Job No: D36668

WPX Energy RMV 216-21GW Investigation
Project No: 012-1539

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D36668-1	07/20/12	12:00 JV	07/21/12	AQ	Ground Water	RMV-21 MW8

Summary of Hits

Page 1 of 1

Job Number: D36668
Account: Olsson Associates
Project: WPX Energy RMV 216-21GW Investigation
Collected: 07/20/12

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D36668-1	RMV-21 MW8					
Calcium		256000	400	7.3	ug/l	SW846 6010C
Iron		20400	70	19	ug/l	SW846 6010C
Magnesium		283000	200	11	ug/l	SW846 6010C
Manganese		393	5.0	1.8	ug/l	SW846 6010C
Potassium		9550	1000	61	ug/l	SW846 6010C
Sodium		466000	400	98	ug/l	SW846 6010C
Alkalinity, Bicarbonate as CaCO3		568	5.0	2.0	mg/l	SM20 2320B
Alkalinity, Total as CaCO3		568	5.0	2.0	mg/l	SM20 2320B
Bromide		1.6	1.0	0.50	mg/l	EPA 300/SW846 9056
Chemical Oxygen Demand		14.5	10	5.0	mg/l	SM20 5220D
Chloride		367	10	4.0	mg/l	EPA 300/SW846 9056
Fluoride		0.82	0.50	0.25	mg/l	EPA 300/SW846 9056
Nitrogen, Nitrate		36.0	2.3	1.1	mg/l	EPA 300/SW846 9056
Phosphorus, Total		0.60	0.010	0.0070	mg/l	HACH8190/SM4500P-B/E
Solids, Total Dissolved		3600	10	5.0	mg/l	SM20 2540C
Sulfate		1540	50	20	mg/l	EPA 300/SW846 9056
Total Organic Carbon		6.3	1.0	0.50	mg/l	SM20 5310B
pH		7.05			su	SM20 4500H B+

Sample Results

Report of Analysis

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW8	Date Sampled:	07/20/12
Lab Sample ID:	D36668-1	Date Received:	07/21/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	1G108638.D	1	07/27/12	DC	07/24/12	OP6301	E1G742
Run #2							

	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2		

BN PAH List

CAS No.	Compound	Result	RL	MDL	Units	Q
83-32-9	Acenaphthene	ND	4.8	0.48	ug/l	
208-96-8	Acenaphthylene	ND	4.8	0.48	ug/l	
120-12-7	Anthracene	ND	4.8	0.48	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.48	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.48	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.48	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.48	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.48	ug/l	
218-01-9	Chrysene	ND	4.8	0.48	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.48	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.48	ug/l	
86-73-7	Fluorene	ND	4.8	0.48	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.48	ug/l	
90-12-0	1-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-57-6	2-Methylnaphthalene	ND	4.8	0.48	ug/l	
91-20-3	Naphthalene	ND	4.8	0.48	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.48	ug/l	
129-00-0	Pyrene	ND	4.8	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
4165-60-0	Nitrobenzene-d5	49%		10-130%
321-60-8	2-Fluorobiphenyl	48%		10-130%
1718-51-0	Terphenyl-d14	43%		13-130%

ND = Not detected MDL - Method Detection Limit

RL = Reporting Limit

E = Indicates value exceeds calibration range

J = Indicates an estimated value

B = Indicates analyte found in associated method blank

N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW8	Date Sampled:	07/20/12
Lab Sample ID:	D36668-1	Date Received:	07/21/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8015B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GA16884.D	1	07/25/12	SK	n/a	n/a	GGA953
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-GRO (C6-C10)	ND	0.20	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
120-82-1	1,2,4-Trichlorobenzene	96%		60-140%		

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW8	Date Sampled:	07/20/12
Lab Sample ID:	D36668-1	Date Received:	07/21/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	TA16884.D	1	07/25/12	SK	n/a	n/a	GTA953
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	101%		60-140%

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV-21 MW8	Date Sampled:	07/20/12
Lab Sample ID:	D36668-1	Date Received:	07/21/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846-8015B SW846 3510C		
Project:	WPX Energy RMV 216-21GW Investigation		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH006080.D	1	08/01/12	AW	07/26/12	OP6315	GFH337
Run #2							

	Initial Volume	Final Volume
Run #1	1000 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.40	0.26	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits		
84-15-1	o-Terphenyl	82%		25-146%		

ND = Not detected MDL - Method Detection Limit
RL = Reporting Limit
E = Indicates value exceeds calibration range

J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID: RMV-21 MW8**Lab Sample ID:** D36668-1**Matrix:** AQ - Ground Water**Project:** WPX Energy RMV 216-21GW Investigation**Date Sampled:** 07/20/12**Date Received:** 07/21/12**Percent Solids:** n/a

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Calcium	256000	400	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Iron	20400	70	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Magnesium	283000	200	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Manganese	393	5.0	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Potassium	9550	1000	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²
Sodium	466000	400	ug/l	1	07/23/12	07/25/12 JB	SW846 6010C ¹	SW846 3010A ²

(1) Instrument QC Batch: MA2646

(2) Prep QC Batch: MP7978

RL = Reporting Limit

Report of Analysis

Client Sample ID: RMV-21 MW8
Lab Sample ID: D36668-1
Matrix: AQ - Ground Water
Project: WPX Energy RMV 216-21GW Investigation

Date Sampled: 07/20/12
Date Received: 07/21/12
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	568	5.0	mg/l	1	08/01/12	CJ	SM20 2320B
Alkalinity, Carbonate	< 5.0	5.0	mg/l	1	08/01/12	CJ	SM20 2320B
Alkalinity, Total as CaCO ₃	568	5.0	mg/l	1	08/01/12	CJ	SM20 2320B
BOD, 5 Day ^a	< 10	10	mg/l	1	07/25/12 10:00	JK	SM20 5210B
Bromide	1.6	1.0	mg/l	5	07/24/12 10:21	JML	EPA 300/SW846 9056
Chemical Oxygen Demand	14.5	10	mg/l	1	07/24/12	JD	SM20 5220D
Chloride	367	10	mg/l	20	07/24/12 20:26	JML	EPA 300/SW846 9056
Fluoride	0.82	0.50	mg/l	5	07/24/12 10:21	JML	EPA 300/SW846 9056
Nitrogen, Nitrate	36.0	2.3	mg/l	50	07/24/12 20:40	JML	EPA 300/SW846 9056
Nitrogen, Nitrite ^b	< 0.20	0.20	mg/l	20	07/24/12 20:26	JML	EPA 300/SW846 9056
Phosphorus, Total	0.60	0.010	mg/l	1	07/27/12	JD	HACH8190/SM4500P-B/E
Solids, Total Dissolved	3600	10	mg/l	1	07/26/12	JD	SM20 2540C
Sulfate	1540	50	mg/l	100	07/24/12 20:55	JML	EPA 300/SW846 9056
Total Organic Carbon	6.3	1.0	mg/l	1	07/27/12 16:45	NS	SM20 5310B
pH	7.05		su	1	07/23/12 11:00	JK	SM20 4500H B+

(a) Analysis performed past the recommended method holding time as per client instructions.

(b) Elevated detection limit due to matrix interference.

RL = Reporting Limit

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

Accutest Laboratories Mountain States
4036 Youngfield Street Wheat Ridge, Co 80033
TEL. 303-425-6021 877-737-4521
FAX 303-425-6021

ACCUTEST® LABORATORIES		Accutest Laboratories Mountain States 4036 Youngfield Street Wheat Ridge, Co 80033 TEL: 303-425-6021 877-737-4521 FAX: 303-425-6021		FED-EX Tracking # _____ Accutest Quote # _____		Bottle Order Control # _____ Accutest Job # D3668		
Client / Reporting Information Company Name: OLSSON ASSOCIATES Street Address: 826 21 1/2 Rd City: GRAND TCT, CO State: 81505 Zip: _____ Project Contact: Tim Dobransky E-mail: _____ Phone #: 970 263-7800 Fax #: 7456 Sampler(s) Name(s): JESS VAMM Phone #: 970 250-1320		Project Information Project Name: WPX ENERGY RMV 216-21 GW INVESTIGATION Street: _____ Billing Information (If different from Report to): Company Name: _____ Street Address: _____ City: _____ State: _____ Zip: _____ Client PO#: 012-1539 Project Manager: Tim Dobransky Attention: _____ PO#: _____				Requested Analysis (see TEST CODE sheet) B, C, L, F, NO ₃ , NO ₂ , SO ₄ BTEX METALS: Ca, Fe, K, Mg, M, Na NITRATE -- NITRI TE TDS		Matrix Codes DW - Drinking Water GW - Ground Water WW - Water SW - Surface Water SO - Soil SL - Sludge SED - Sediment LIQ - Other Liquid AIR - Air SOL - Other Solid WP - Wipes FB - Field Blank EB - Equipment Blank RB - Rinse Blank TB - Trip Blank
Accutest Sample # _____ Field ID / Point of Collection: RMV-21 MW8 MEONDI Vial # 98V Date: 7-20-12 Time: 1200 Sampled by: JV Matrix: GW # of bottles: 6 Number of preserved bottles: 13		HCl _____ NO ₃ _____ HNO ₃ _____ H ₂ SO ₄ _____ NONE _____ DI Water _____ MEOH _____ MCOORE _____ Biotin _____		X X X X X X X X X X		LAB USE ONLY 61 DR 7/20		
Turnaround Time (Business days) <input type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> Std. 5 Business Days (By Contract only) <input type="checkbox"/> 5 Day PH SH <input type="checkbox"/> 3 Day EMERGENC <input type="checkbox"/> 2 Day EMERGENC <input type="checkbox"/> 1 Day EMERGENC		Approved By (Accutest PM) / Date: _____ _____ _____ _____ _____		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> State Forms <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> EDD Format <input type="checkbox"/> Commercial "B" + Narrative <input type="checkbox"/> PDF <input type="checkbox"/> FULLT1 (Level 3+4) Commercial "A" = Results Only Commercial "B" = Results + QC Summary		Comments / Special Instructions 		
Emergency & Rush TJA data available VIA Lablink								
Sample Custody must be documented below each time samples change possession, including courier delivery.								
Relinquished by Sampler: Jess Vamm Date Time: 7-20-12/1415		Received By: Service Center		Relinquished By: _____ Date Time: _____		Received By: DL Date Time: 7/20 0900		
Relinquished by Sampler: _____ Date Time: _____		Received By: _____ Date Time: _____		Relinquished By: _____ Date Time: _____		Received By: _____ Date Time: _____		
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Relinquished by: _____ Date Time: _____		Received By: _____ Date Time: _____		Relinquished By: _____ Date Time: _____		Received By: _____ Date Time: _____		
Relinquished by: _____ Date Time: _____								

D36668: Chain of Custody

Page 1 of 5

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D36668

Client: Olsson

Immediate Client Services Action Required: Yes

Date / Time Received: 7/21/2012 9:00:00 AM

Delivery Method:

Project: WPX

No. Coolers:

Airbill #'s: FX

Cooler Security

Y or N

Y or N

- | | | | | | |
|---------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Cooler Temperature

Y or N

- | | | |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | Infrared gun | |
| 3. Cooler media: | Ice (bag) | |

Quality Control Preservation

Y

N

N/A

- | | | | |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/> | <input type="checkbox"/> | |
| 2. Trip Blank listed on COC: | <input type="checkbox"/> | <input type="checkbox"/> | |
| 3. Samples preserved properly: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. VOCs headspace free: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Documentation

Y or N

- | | | |
|--|-------------------------------------|-------------------------------------|
| 1. Sample labels present on bottles: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Sample container label / COC agree: | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Sample Integrity - Condition

Y or N

- | | | |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample rec'd within HT: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample: | Intact | |

Sample Integrity - Instructions

Y N N/A

- | | | | |
|---|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 2. Bottles received for unspecified tests | <input type="checkbox"/> | <input checked="" type="checkbox"/> | |
| 3. Sufficient volume rec'd for analysis: | <input checked="" type="checkbox"/> | <input type="checkbox"/> | |
| 4. Compositing instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear: | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

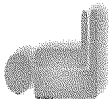
Comments

These tests not on COC but received bottles for: TPC,DRO,8270,BOD,COD,PH,TOC,TPO4,GRO,XCARBICALK

Assumed from oprior email (7/19) that we are logging in for all these tests

BOD and NO3/NO2 received on Saturday - will beout of hold Monday

Accutest Job Number: D36668**CSR:** Renea Jackson**Response Date** 7/23/2012**Response:** Please run all analyses, even though some are out of hold per Tim Dobransky. BOD set up Wednesday is fine.4.1
4**D36668: Chain of Custody**
Page 3 of 5



**industrial
LABORATORIES**

Industrial Laboratories is your independent,
third-party analytical testing laboratory

To: Accutest Mountain States (AMS)
4036 Youngfield St.

Wheat Ridge CO 80033

Attn: Andrew Fluegel

TEST REPORT

ACCUTEST - M

Date Received: 7/23/2012

Date Reported: 7/26/2012

PO Number: D36668X

Note: Sample test procedures conform to EPA 40CFR136 requirements.

Lab No.	Sample Description	Test Method	Result	Units	MDL	Analysis Date/By
120723004-01A	D36668X-1, 7/20/12, 12:00pm	* Heterotrophic Plate Count	520000	CFU/mL		GH
		SM 9215B				7/24/2012

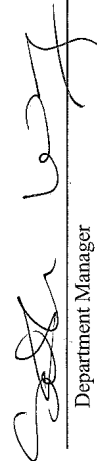
* = Scope Analysis

= Subcontracted Analysis

MDL = Method Detection Limit

ND = Not Detected at the Method Detection Limit

Page: 1 of 1


Department Manager

4046 Youngfield Street • Wheat Ridge, Colorado 80033 • (303) 287-9691 • (303) 287-0964 FAX • www.industrialabs.net

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D36668: Chain of Custody

Page 5 of 5



08/21/12

Technical Report for

Olsson Associates

RMV 216-21 GW Investigation 012.1539.100.100001

Accutest Job Number: D37664

Sampling Date: 08/16/12

Report to:

Olsson Associates

shall@oaconsulting.com

ATTN: Stuart Hall

Total number of pages in report: **11**



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

A handwritten signature in black ink, appearing to read 'Brad Madadian'.

Brad Madadian
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO, ID, NE, NM, ND (R-027) (PW), UT (NELAP CO00049), TX (T104704511-12-1)

This report shall not be reproduced, except in its entirety, without the written approval of Accutest Laboratories.

Test results relate only to samples analyzed.

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Section 3: Summary of Hits	5
Section 4: Sample Results	6
4.1: D37664-1: RMV 216-21 MW5	7
4.2: D37664-2: RMV 216-21 MW6	8
Section 5: Misc. Forms	9
5.1: Chain of Custody	10



Sample Summary

Olsson Associates

Job No: D37664

RMV 216-21 GW Investigation 012.1539.100.100001

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
D37664-1	08/16/12	11:30 TC	08/17/12	AQ	Ground Water	RMV 216-21 MW5
D37664-2	08/16/12	11:55 TC	08/17/12	AQ	Ground Water	RMV 216-21 MW6



CASE NARRATIVE / CONFORMANCE SUMMARY

Client: Olsson Associates

Job No D37664

Site: RMV 216-21 GW Investigation 012.1539.100.100001

Report Date 8/21/2012 9:40:13 AM

On 08/17/2012, 2 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 2.7 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D37664 was assigned to the project. The lab sample IDs, client sample IDs, and date of sample collection are detailed in the report's Results Summary.

Specified quality control criteria were achieved for this job except as noted below. For more information, please refer to the analytical results and QC summary pages.

Volatiles by GC By Method SW846 8021B

Matrix AQ

Batch ID: GTA960

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D37571-1MS, D37571-1MSD were used as the QC samples indicated.
- All samples: Sample was not preserved to a pH < 2.

AMS certifies that data reported for samples received, listed on the associated custody chain or analytical task order, were produced to specifications meeting AMS's Quality System precision, accuracy and completeness objectives except as noted.

Estimated non-standard method measurement uncertainty data is available on request, based on quality control bias and implicit for standard methods. Acceptable uncertainty requires tested parameter quality control data to meet method criteria.

AMS is not responsible for data quality assumptions if partial reports are used and recommends that this report be used in its entirety. This report is authorized by AMS indicated via signature on the report cover.

Summary of Hits

Job Number: D37664
Account: Olsson Associates
Project: RMV 216-21 GW Investigation 012.1539.100.100001
Collected: 08/16/12



Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

D37664-1 RMV 216-21 MW5

Benzene ^a	0.44 J	1.0	0.20	ug/l	SW846 8021B
----------------------	--------	-----	------	------	-------------

D37664-2 RMV 216-21 MW6

No hits reported in this sample.

(a) Sample was not preserved to a pH < 2.

Sample Results

Report of Analysis

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV 216-21 MW5	Date Sampled:	08/16/12
Lab Sample ID:	D37664-1	Date Received:	08/17/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	RMV 216-21 GW Investigation 012.1539.100.100001		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	TA16999.D	1	08/17/12	SK	n/a	n/a	GTA960
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	0.44	1.0	0.20	ug/l	J
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	98%		60-140%

(a) Sample was not preserved to a pH < 2.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Report of Analysis

Page 1 of 1

Client Sample ID:	RMV 216-21 MW6	Date Sampled:	08/16/12
Lab Sample ID:	D37664-2	Date Received:	08/17/12
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8021B		
Project:	RMV 216-21 GW Investigation 012.1539.100.100001		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 ^a	TA17000.D	1	08/17/12	SK	n/a	n/a	GTA960
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.20	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	2.0	2.0	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
120-82-1	1,2,4-Trichlorobenzene	97%		60-140%

(a) Sample was not preserved to a pH < 2.

ND = Not detected MDL - Method Detection Limit
 RL = Reporting Limit
 E = Indicates value exceeds calibration range

J = Indicates an estimated value
 B = Indicates analyte found in associated method blank
 N = Indicates presumptive evidence of a compound

Misc. Forms

5

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody



CHAIN OF CUSTODY

4036 Youngfield St., Wheat Ridge, CO 80033; 303-425-6021; 303-425-6854

Client / Reporting Information		Project Information		Requested Analyses		Matrix Codes	
Company Name Olsson Associates		Project Name / No. RMV 216-21 GW Investigation 012.1539.100.100001					
Project Contact Tim Dobransky		Bill to Olsson Associates					
E-Mail tdobransky@oaconsulting.com		Invoice Attn. Tim Dobransky					
Address 826 21 1/2 Road		Address 826 21 1/2 Road					
City Grand Junction	State CO	Zip 81505	City Grand Junction	State CO	Zip 81505		
Phone No. 970-263-7800		Phone No. 970-263-7800					
Fax No.		Fax No.					
Sampler's Name T. Crossen		Client Purchase Order #					
Turnaround Time (Business days)		Data Deliverable Information		Comments / Remarks			
<input type="checkbox"/> 10 Day STANDARD <input type="checkbox"/> 7 Day (per contract) <input type="checkbox"/> 4 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input checked="" type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input type="checkbox"/> Other		Approved By: Date: _____ <input type="checkbox"/> Commercial "A" <input checked="" type="checkbox"/> Commercial "B" <input type="checkbox"/> Reduced Tier 1 <input type="checkbox"/> Full Data Package Commercial "A" = Results Only Commercial "B" = Results & Standard QC		AMS FEDEX Account Number - 467721860 List 1 - Acenaphthene, Anthracene, Benzo(A)anthracene, Benzo(B)fluoranthene, Benzo(K)fluoranthene, Benzo(A)pyrene, Chrysene, Dibenzo(A,H)anthracene, Fluoranthene, Fluorene, Indeno(1,2,3,C,D)pyrene, Naphthalene, Pyrene List 2 - As, Ba, Cd, Cr3, Cr6, Cu, Pb, Hg, Ni, Se, Ag, Zn			
Real time analytical data available via Lablink		SAMPLE CUSTODY MUST BE DOCUMENTED BELOW EACH TIME SAMPLES CHANGE POSSESSION, INCLUDING COURIER DELIVERY					
Relinquished by Sampler: <i>Tim Dobransky</i>		Date Time: 17:50		Received By: 1		Relinquished By: 2	
Relinquished by: _____		Date Time: _____		Received By: _____		Relinquished By: _____	
3		Date Time: _____		Received By: 3		Relinquished By: 4	
Relinquished by: _____		Date Time: _____		Received By: _____		Relinquished By: _____	
5		Date Time: _____		Received By: 5		Relinquished By: _____	
				Custody Seal # <i>FX</i>		On Ice <input checked="" type="checkbox"/> Cooler Temp. <i>27</i>	

D37664: Chain of Custody

Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D37664

Client: OLSSON ASSOCIATES

Immediate Client Services Action Required: No

Date / Time Received: 8/17/2012 10:00:00 AM

No. Coolers: 1

Client Service Action Required at Login: No

Project: RMV 216-21 GW INVESTIGATION 012.1539.1

Airbill #'s: fx

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Cooler temp verification:			Infrared gun
3. Cooler media:			Ice (bag)

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	<input type="checkbox"/>		<input type="checkbox"/>	
2. Trip Blank listed on COC:	<input type="checkbox"/>		<input type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. VOCs headspace free:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/>		<input type="checkbox"/>

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/>		<input type="checkbox"/>
3. Condition of sample:			Intact

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
2. Bottles received for unspecified tests	<input type="checkbox"/>		<input checked="" type="checkbox"/>	
3. Sufficient volume rec'd for analysis:	<input checked="" type="checkbox"/>		<input type="checkbox"/>	
4. Compositing instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www.accutest.com

APPENDIX C
SUMMARY OF ANALYTICAL RESULTS

RMV 216-21 Groundwater Samples

Client Sample ID:		COGCC Table 910-1 Standards	MW 1	MW 1	MW 1	MW 1	MW 1	MW 1	MW 1 X Duplicate	MW 2	MW 2	MW 3	MW 3	MW 4	MW 4
Date Sampled:			1/13/2010	10/18/2010	7/14/2011	8/5/2011	11/8/2011	7/18/2012	7/18/2012	11/8/2011	7/18/2012	11/8/2011	7/18/2012	11/8/2011	7/18/2012
TPH															
GRO	mg/l							ND	ND		ND		ND		ND
DRO	mg/l							0.263	0.269		ND		ND		ND
GC/MS Volatiles (SW846 8260B)															
Benzene	ug/l	5 ug/l	ND	ND	2.2	1.7	ND	1.0	0.77	ND	ND	ND	ND	ND	ND
Toluene	ug/l	700 ug/l	ND	ND	1	1.1	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	560 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	ug/l	1400 ug/l	ND	ND	ND	2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND
Organic Compounds (SW846 8270C)															
Acenaphthene	ug/l							ND	ND		ND		ND		ND
Anthracene	ug/l							ND	ND		ND		ND		ND
Benzo(A)anthracene	ug/l							ND	ND		ND		ND		ND
Benzo(B)fluoranthene	ug/l							ND	ND		ND		ND		ND
Benzo(K)fluoranthene	ug/l							ND	ND		ND		ND		ND
Benzo(A)pyrene	ug/l							ND	ND		ND		ND		ND
Chrysene	ug/l							ND	ND		ND		ND		ND
Dibenzo(A,H)anthracene	ug/l							ND	ND		ND		ND		ND
Fluoranthene	ug/l							ND	ND		ND		ND		ND
Fluorene	ug/l							ND	ND		ND		ND		ND
Indeno(1,2,3-cd)pyrene	ug/l							ND	ND		ND		ND		ND
Naphthalene	ug/l							ND	ND		ND		ND		ND
Pyrene	ug/l							ND	ND		ND		ND		ND
Metals Analysis															
Calcium	mg/l				210		220	643	445	230	572	230	316	210	347
Iron	mg/l				ND		2.4	168	389	2.3	82.4	2.1	34.2	0.9	37.1
Magnesium	mg/l				200		170	313	260	180	236	180	209	240	218
Manganese	mg/l				0.077		0.52	3.29	1.62	ND	2.49	0.18	1.03	0.086	0.767
Potassium	mg/l				5.6		7	25.3	11.2	6.6	16.8	6.4	11.7	5.3	12.4
Selenium	mg/l							0.051	ND		ND		ND		ND
Sodium	mg/l				400		310	378	400	320	301	330	326	470	323
General Chemistry															
Alkalinity, Bicarbonate as CaCO3	mg/l							1050	1080		1320		611		713
Alkalinity, Carbonate	mg/l							ND	ND		ND		ND		ND
Alkalinity, Total as CaCO3	mg/l							1050	1080		1320		611		713
BOD, 5 Day	mg/l							ND	ND		ND		ND		ND
Bromide	mg/l				1.2		ND	1.1	1.2	ND	ND	ND	ND	1.1	ND
COD	mg/l							16.2	19.9		17.9		13.2		14.8
Chloride	mg/l	1.25 x bkgd		260	270		18	250	262	17	17.1	32	30.2	360	15.6
Fluoride	mg/l				0.61		0.6	1.2	1.2	0.62	1.1	0.56	1.2	0.58	1.1
Nitrogen, Nitrate	mg/l				29		32	29.2	30.2	21	26	54	44.9	36	19
Nitrogen, Nitrite	mg/l				0.11		0.1	0.2	0.22	ND	ND	0.12	0.053	0.041	ND
Nitrogen, Nitrate-Nitrite	mg/l				29		32			22		57		36	
Phosphorous, Total	mg/l							4.6	4.0		6.9		1.8		2.2
Sulfate	mg/l	1.25 x bkgd			1400		1500	1340	1360	1400	1290	1400	1360	1500	1390
TDS	mg/l	1.25 x bkgd		3100	3800		2500	3310	3350	2700	2820	2700	2980	3300	3000
Total Organic Carbon	mg/l							6.4	6.4		7.3		5.5		5.2
pH								7.29	7.29		7.24		7.29		7.25

RMV 216-21 Groundwater Samples

Client Sample ID:		COGCC Table 910-1 Standards	MW 5	MW 5	MW 5	MW 6	MW 6	MW 6	MW 7	MW 7	MW 8	MW 8 Duplicate	MW 8	MW 9	MW 9	BH 15
Date Sampled:			11/8/2011	7/18/2012	8/16/2012	11/8/2011	7/19/2012	8/16/2012	5/24/2012	7/19/2012	5/24/2012	5/24/2012	7/20/2012	5/24/2012	7/19/2012	5/21/2012
TPH																
GRO	mg/l			ND			ND			ND			ND		ND	
DRO	mg/l			ND			0.295			ND			ND		ND	
GC/MS Volatiles (SW846 8260B)																
Benzene	ug/l	5 ug/l	28	0.55	0.44	1.3	24.3	ND	ND	ND	ND	ND	ND	4.6	ND	ND
Toluene	ug/l	700 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	ug/l	560 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Xylenes (total)	ug/l	1400 ug/l	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Organic Compounds (SW846 8270C)																
Acenaphthene	ug/l			ND			ND			ND			ND		ND	
Anthracene	ug/l			ND			ND			ND			ND		ND	
Benzo(A)anthracene	ug/l			ND			ND			ND			ND		ND	
Benzo(B)fluoranthene	ug/l			ND			ND			ND			ND		ND	
Benzo(K)fluoranthene	ug/l			ND			ND			ND			ND		ND	
Benzo(A)pyrene	ug/l			ND			ND			ND			ND		ND	
Chrysene	ug/l			ND			ND			ND			ND		ND	
Dibenzo(A,H)anthracene	ug/l			ND			ND			ND			ND		ND	
Fluoranthene	ug/l			ND			ND			ND			ND		ND	
Fluorene	ug/l			ND			ND			ND			ND		ND	
Indeno(1,2,3-cd)pyrene	ug/l			ND			ND			ND			ND		ND	
Naphthalene	ug/l			ND			ND			ND			ND		ND	
Pyrene	ug/l			ND			ND			ND			ND		ND	
Metals Analysis																
Calcium	mg/l		310	277		220	440		820	842	240	380	256	740	746	280
Iron	mg/l		2.3	11.2		ND	70.9		200	257	27	90	20.4	120	128	63
Magnesium	mg/l		360	259		210	339		340	340	260	280	283	330	351	210
Manganese	mg/l		0.49	0.385		0.26	1.36		5.6	6.36	0.6	2	0.393	3.5	3.47	1.1
Potassium	mg/l		7.6	8.09		5.4	17.4		29	36	9.2	17	9.55	19	21.4	15
Selenium	mg/l			ND												
Sodium	mg/l		900	465		420	633		460	342	490	480	466	460	38.4	380 B
General Chemistry																
Alkalinity, Bicarbonate as CaCO3	mg/l			579			1050			2130			568		2600	
Alkalinity, Carbonate	mg/l			ND			ND			ND			ND		ND	
Alkalinity, Total as CaCO3	mg/l			579			1050			2130			568		2600	
BOD, 5 Day	mg/l			ND			ND			ND			ND		ND	
Bromide	mg/l		4.6	1.6		0.7	3.2		ND	1.2	ND	ND	1.6	ND	1.5	ND
COD	mg/l			15.2			18.9			28.3			14.5		18.2	
Chloride	mg/l	1.25 x bkgd	1300	364		260	758		260	281	340	350	367	270	338	150
Fluoride	mg/l		0.6	1.2		0.62	0.78		0.56	0.82	0.59	0.58	0.82	0.51	0.75	0.44
Nitrogen, Nitrate	mg/l		39	31.7		30	36.7		25	26.6	31	31	36	45	52.5	22
Nitrogen, Nitrite	mg/l		9.5	ND		0.29	6.6		0.1	ND	ND	ND	ND	1.8	1.6	0.16
Nitrogen, Nitrate-Nitrite	mg/l		51			32			26		34	33		48		
Phosphorous, Total	mg/l			0.74			2.6			11.9			0.6		5.6	26
Sulfate	mg/l	1.25 x bkgd	1800	1390		1400	1600		1400	1550	1400	1400	1540	1500	1580	1200
TDS	mg/l	1.25 x bkgd	5500	3660		3000	4460		3300	3510	3400	3400	3600	3400	3890	2700
Total Organic Carbon	mg/l			6.2			8.4			9.1			6.3		8.8	
pH				7.18			7			7.18			7.05		7.05	

Laboratory Analytical Results
Sub-surface Soil Samples
RMV 216-21

Contaminant of Concern ↓	COGCC standards	Location →	RMV 216-21 BH01 14-20'	RMV 216-21 BH01 24-26'	RMV 216-21 BH01 34-36'	RMV 216-21 BH02 10-14'	RMV 216-21 BH02 15-19'	RMV 216-21 BH02 20-24'	RMV 216-21 BH02 25-29'	RMV 216-21 BH02 30-34'	RMV 216-21 BH02 35-39'	RMV 216-21 BH02 39-41'	RMV 216-21 BH02 46-51'	RMV 216-21 BH03 14-18'
		Date Sampled →	1/13/2010	1/13/2010	1/13/2010	2/1/2010	2/1/2010	2/1/2010	2/1/2010	2/1/2010	2/1/2010	2/1/2010	2/1/2010	2/2/2010
Organic Compounds in Soil														
TPH (DRO+GRO)	500	mg/kg	11,600	4,060	4,670	16,220	6,880	1,712	4,070	2,066	1,838	397	1,363	13,030
Benzene	0.17	mg/kg	6.91	3.58	3.38	5.4	3.9	0.654	2.17	1.26	1.81	0.684	1.34	23
Toluene	85	mg/kg	BDL	BDL	5.48	34.1	6.14	1.06	5.33	1.55	2.79	0.734	15.5	230
Ethylbenzene	100	mg/kg	29.6	8.52	16.1	33.6	18.1	3.56	14	4.68	8.37	0.731	3.73	42.8
Xylenes (Total)	175	mg/kg	410.7	71.47	182.5	432.4	199.8	21.64	152.9	455.55	83.86	6.997	47.36	712
Acenaphthene	1,000	mg/kg	BDL	BDL										
Anthracene	1,000	mg/kg	BDL	BDL										
Benzo(A)anthracene	0.22	mg/kg	BDL	BDL										
Benzo(B)fluoranthene	0.22	mg/kg	BDL	BDL										
Benzo(K)fluoranthene	2.2	mg/kg	BDL	BDL										
Benzo(A)pyrene	0.022	mg/kg	BDL	BDL										
Chrysene	22	mg/kg	BDL	BDL										
Dibenzo(A,H)anthracene	0.022	mg/kg	BDL	BDL										
Fluoranthene	1,000	mg/kg	BDL	BDL										
Fluorene	1,000	mg/kg	BDL	BDL										
Indeno(1,2,3-cd)pyrene	0.22	mg/kg	BDL	BDL										
Naphthalene	23	mg/kg	6.58	1.85										
Pyrene	1,000	mg/kg	0.113	BDL										
Inorganics in Soil														
EC	<4 or 2 x background	mmhos/cm	7.76											
SAR	<12		20.2											
pH	6-9		8.73											
Metals in Soil														
Arsenic	0.39	mg/kg	6.7											
Barium total	15,000	mg/kg												
Boron	2	mg/L	2.15											
Cadmium	70	mg/kg	0.62											
Chromium (III)	120,000	mg/kg	7.6											
Chromium (VI)	23	mg/kg	2.4											
Copper	3,100	mg/kg	21.6											
Lead	400	mg/kg	12.5											
Mercury	23	mg/kg	0.11											
Nickel	1,600	mg/kg	12.5											
Selenium	390	mg/kg	2.2											
Silver	390	mg/kg	0.55											
Zinc	23,000	mg/kg	38.8											

BDL - Below Detection Limit (Practical Quantitation Limit [PQL])

J3 - The associated quality control (QC) sample was outside of the laboratory QC limits

J5 - Matrix interference; one or more of the spiked results is high

Laboratory Analytical Results
Sub-surface Soil Samples
RMV 216-21

Contaminant of Concern ↓	COGCC standards	Location →	RMV 216-21 BH03 24-36'	RMV 216-21 BH03 29-31'	RMV 216-21 BH03 34-36'	RMV 216-21 BH04 14-16'	RMV 216-21 BH04 24-26'	RMV 216-21 BH04 29-31'	RMV 216-21 BH04 34-36'	RMV 216-21 BH05 14-16'	RMV 216-21 BH05 19-21'	RMV 216-21 BH05 34-36'	RMV 216-21 BH06 24-26'	RMV 216-21 BH06 40-42'
		Date Sampled →	2/2/2010	2/2/2010	2/2/2010	2/2/2010	2/2/2010	2/2/2010	2/2/2010	2/2/2010	2/2/2010	2/2/2010	2/2/2010	10/7/2010
Organic Compounds in Soil														
TPH (DRO+GRO)	500	mg/kg	1,740	2,490	348	6,980	1,420	2,680	641	10,110	26,920	279	48.0000	11.0520
Benzene	0.17	mg/kg	1.14	2.17	0.69	5.03	1.76	2.61	0.418	4	61.6	0.673	0.0017	0.0029
Toluene	85	mg/kg	1.22	12.2	0.14	BDL	BDL	1.29	BDL	BDL	637	0.389	0.0190	0.0039
Ethylbenzene	100	mg/kg	4.89	4.51	1.66	14.1	4.74	7.68	2.14	14.2	64.1	0.826	0.0081	0.0042
Xylenes (Total)	175	mg/kg	89.5	77.7	19.5	170	74.2	96.8	29.5	26.4	1270	6.06	0.1160	0.0200
Acenaphthene	1,000	mg/kg								BDL				
Anthracene	1,000	mg/kg								BDL				
Benzo(A)anthracene	0.22	mg/kg								BDL				
Benzo(B)fluoranthene	0.22	mg/kg								BDL				
Benzo(K)fluoranthene	2.2	mg/kg								BDL				
Benzo(A)pyrene	0.022	mg/kg								BDL				
Chrysene	22	mg/kg								BDL				
Dibenzo(A,H)anthracene	0.022	mg/kg								BDL				
Fluoranthene	1,000	mg/kg								BDL				
Fluorene	1,000	mg/kg								0.0095				
Indeno(1,2,3-cd)pyrene	0.22	mg/kg								BDL				
Naphthalene	23	mg/kg								0.0180				
Pyrene	1,000	mg/kg								BDL				
Inorganics in Soil														
EC	<4 or 2 x background	mmhos/cm												
SAR	<12													
pH	6-9													
Metals in Soil														
Arsenic	0.39	mg/kg												
Barium total	15,000	mg/kg												
Boron	2	mg/L												
Cadmium	70	mg/kg												
Chromium (III)	120,000	mg/kg												
Chromium (VI)	23	mg/kg												
Copper	3,100	mg/kg												
Lead	400	mg/kg												
Mercury	23	mg/kg												
Nickel	1,600	mg/kg												
Selenium	390	mg/kg												
Silver	390	mg/kg												
Zinc	23,000	mg/kg												

BDL - Below Detection Limit (Practical Quantitation Limit [PQL])

J3 - The associated quality control (QC) sample was outside of the labore

J5 - Matrix interference; one or more of the spiked results is high

Laboratory Analytical Results
Sub-surface Soil Samples
RMV 216-21

Contaminant of Concern ↓	COGCC standards	Location →	RMV 216-21 BH06 50-52'	RMV 216-21 BH06 60-62'	RMV 216-21 BH06 62-64'	RMV 216-21 BH07 31.5-33.5'	RMV 216-21 BH07 41.5-43.5'	RMV 216-21 BH07 50-52'	RMV 216-21 BH07 62-64'	RMV 216-21 BH08/MW1 20-22'	RMV 216-21 BH08/MW1 44-46'	RMV 216-21 BH08/MW1 60-62'
		Date Sampled →	10/7/2010	10/7/2010	10/7/2010	10/8 & 11/2010	10/8 & 11/2010	10/8 & 11/2010	10/8 & 11/2010	10/5/2010	10/5/2010	10/6/2010
Organic Compounds in Soil												
TPH (DRO+GRO)	500	mg/kg	2.6570	0.9320	0.6900	220.6000	1.0630	0.0000	0.7330	14.0000	12.0450	8.5320
Benzene	0.17	mg/kg	0.0027	BDL	BDL	0.0025	0.0029	BDL	BDL	BDL	BDL	BDL
Toluene	85	mg/kg	0.0012	0.0008	BDL	0.0052	0.0037	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	100	mg/kg	0.0031	0.0036	0.0024	0.0093	0.0042	0.0024	0.0025	BDL	BDL	BDL
Xylenes (Total)	175	mg/kg	0.0180	0.0015	0.0024	0.1000	0.0200	0.0027	0.0034	BDL	0.0186	BDL
Acenaphthene	1,000	mg/kg			BDL		BDL		BDL			
Anthracene	1,000	mg/kg			BDL		BDL		BDL			
Benzo(A)anthracene	0.22	mg/kg			BDL		BDL		BDL			
Benzo(B)fluoranthene	0.22	mg/kg			BDL		BDL		BDL			
Benzo(K)fluoranthene	2.2	mg/kg			BDL		BDL		BDL			
Benzo(A)pyrene	0.022	mg/kg			BDL		BDL		BDL			
Chrysene	22	mg/kg			BDL		BDL		BDL			
Dibenzo(A,H)anthracene	0.022	mg/kg			BDL		BDL		BDL			
Fluoranthene	1,000	mg/kg			BDL		BDL		BDL			
Fluorene	1,000	mg/kg			BDL		BDL		BDL			
Indeno(1,2,3-cd)pyrene	0.22	mg/kg			BDL		BDL		BDL			
Naphthalene	23	mg/kg			BDL		BDL		BDL			
Pyrene	1,000	mg/kg			BDL		BDL		BDL			
Inorganics in Soil												
EC	<4 or 2 x background	mmhos/cm										
SAR	<12											
pH	6-9											
Metals in Soil												
Arsenic	0.39	mg/kg										
Barium total	15,000	mg/kg										
Boron	2	mg/L										
Cadmium	70	mg/kg										
Chromium (III)	120,000	mg/kg										
Chromium (VI)	23	mg/kg										
Copper	3,100	mg/kg										
Lead	400	mg/kg										
Mercury	23	mg/kg										
Nickel	1,600	mg/kg										
Selenium	390	mg/kg										
Silver	390	mg/kg										
Zinc	23,000	mg/kg										

BDL - Below Detection Limit (Practical Quantitation Limit [PQL])

J3 - The associated quality control (QC) sample was outside of the labore

J5 - Matrix interference; one or more of the spiked results is high

Laboratory Analytical Results
Sub-surface Soil Samples
RMV 216-21

Contaminant of Concern ↓	COGCC standards	Location →	RMV 216-21 BH08/MW1 73-75'	RMV 216-21 BH08/MW1 80-82'	RMV 216-21 BH09B 4-6'	RMV 216-21 BH10 4-6'	RMV 216-21 BH11 5-7'	RMV 216-21 BH11 39-40'	RMV 216-21 BH11 61-63'	RMV 216-21 BH12 5-6	RMV 216-21 BH12 14-15'	RMV 216-21 BH12 59-60'	RMV 216-21 BH12 FD 59-60'
		Date Sampled →	10/6/2010	10/6/2010	5/10/2012	5/11/2012	5/16/2012	5/16/2012	5/16/2012	5/17/2012	5/17/2012	5/17/2012	5/18/2012
Organic Compounds in Soil													
TPH (DRO+GRO)	500	mg/kg	11.0280	0.0210	7700	9900	4900	367	6.12	1067	4.9	BDL	BDL
Benzene	0.17	mg/kg	BDL	BDL	BDL	5.3	0.30	0.089	BDL	BDL	BDL	BDL	BDL
Toluene	85	mg/kg	BDL	0.0007	BDL	40	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	100	mg/kg	BDL	0.0026	2.5	18	1.3	0.84	BDL	0.055	BDL	BDL	BDL
Xylenes (Total)	175	mg/kg	BDL	0.0064	37	320	32	3.9	BDL	1.4	BDL	0.10	BDL
Acenaphthene	1,000	mg/kg			0.30	0.45	0.15	0.022	BDL	0.046	BDL	BDL	BDL
Anthracene	1,000	mg/kg			0.28	0.23	0.16	0.022	BDL	0.042	BDL	BDL	BDL
Benzo(A)anthracene	0.22	mg/kg			BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(B)fluoranthene	0.22	mg/kg			BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(K)fluoranthene	2.2	mg/kg			BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(A)pyrene	0.022	mg/kg			BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chrysene	22	mg/kg			BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dibenzo(A,H)anthracene	0.022	mg/kg			BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluoranthene	1,000	mg/kg			BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluorene	1,000	mg/kg			1.1	1.4	0.90	0.062	BDL	0.16	BDL	BDL	BDL
Indeno(1,2,3-cd)pyrene	0.22	mg/kg			BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	23	mg/kg			6.1	14	3.2	0.018	0.018	0.44	0.013	BDL	BDL
Pyrene	1,000	mg/kg			0.19	0.16	0.12	BDL	BDL	0.022	BDL	BDL	BDL
Inorganics in Soil													
EC	<4 or 2 x background	mmhos/cm											
SAR	<12												
pH	6-9												
Metals in Soil													
Arsenic	0.39	mg/kg											
Barium total	15,000	mg/kg											
Boron	2	mg/L											
Cadmium	70	mg/kg											
Chromium (III)	120,000	mg/kg											
Chromium (VI)	23	mg/kg											
Copper	3,100	mg/kg											
Lead	400	mg/kg											
Mercury	23	mg/kg											
Nickel	1,600	mg/kg											
Selenium	390	mg/kg											
Silver	390	mg/kg											
Zinc	23,000	mg/kg											

BDL - Below Detection Limit (Practical Quantitation Limit [PQL])
J3 - The associated quality control (QC) sample was outside of the labore
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Laboratory Analytical Results
Sub-surface Soil Samples
RMV 216-21

Contaminant of Concern ↓	COGCC standards	Location →	RMV 216-21 BH13 15-17'	RMV 216-21 BH13 25-25.5'	RMV 216-21 BH13 50-52'	RMV 216-21 BH14 14-16'	RMV 216-21 BH14 24-26'	RMV 216-21 BH15 69-71'	RMV 216-21 BH15 79-79.5'	RMV 216-21 BH16 21-23'	RMV 216-21 BH16 35-37'	RMV 216-21 BH16 59-60.5'	RMV 216-21 BH16 FD 59-60.5'
		Date Sampled →	5/15/2012	5/15/2012	5/15/2012	5/14/2012	5/14/2012	5/18/2012	5/18/2012	5/14/2012	5/14/2012	5/14/2012	5/14/2012
Organic Compounds in Soil													
TPH (DRO+GRO)	500	mg/kg	330	340	BDL	510	330 J5J3	5.0	16.70	BDL J5	990	0.58	BDL
Benzene	0.17	mg/kg	0.056	0.070	BDL	0.087	0.14	BDL	BDL	BDL	0.16	BDL	BDL
Toluene	85	mg/kg	BDL	BDL	BDL	0.61	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	100	mg/kg	1.1	0.70	0.0077	1.6	0.62	BDL	0.021	0.0050	1.3	0.0070	0.0085
Xylenes (Total)	175	mg/kg	12	2.8	0.073	24	5.6	0.015	0.19	0.044	16	0.76	0.088
Acenaphthene	1,000	mg/kg	0.015	0.028	BDL	0.042	0.024 J5	BDL	BDL	BDL	0.067	BDL	BDL
Anthracene	1,000	mg/kg	0.0069	0.014	BDL	0.038	0.015	BDL	BDL	BDL	0.042	BDL	BDL
Benzo(A)anthracene	0.22	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(B)fluoranthene	0.22	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(K)fluoranthene	2.2	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(A)pyrene	0.022	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chrysene	22	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dibenzo(A,H)anthracene	0.022	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluoranthene	1,000	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluorene	1,000	mg/kg	0.028	0.060	BDL	0.15	0.053 J5	BDL	BDL	BDL	0.20	BDL	BDL
Indeno(1,2,3-cd)pyrene	0.22	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	23	mg/kg	0.41	0.6	BDL	0.87	0.44	BDL	0.036	BDL	0.72	0.0061	BDL
Pyrene	1,000	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	0.010	BDL	BDL
Inorganics in Soil													
EC	<4 or 2 x background	mmhos/cm											
SAR	<12												
pH	6-9												
Metals in Soil													
Arsenic	0.39	mg/kg											
Barium total	15,000	mg/kg											
Boron	2	mg/L											
Cadmium	70	mg/kg											
Chromium (III)	120,000	mg/kg											
Chromium (VI)	23	mg/kg											
Copper	3,100	mg/kg											
Lead	400	mg/kg											
Mercury	23	mg/kg											
Nickel	1,600	mg/kg											
Selenium	390	mg/kg											
Silver	390	mg/kg											
Zinc	23,000	mg/kg											

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Laboratory Analytical Results
Sub-surface Soil Samples
RMV 216-21

Contaminant of Concern ↓	COGCC standards	Location →	RMV 216-21 BH17 18-19'	RMV 216-21 BH18 15-17'	RMV 216-21 BH18 50-51.5'	RMV 216-21 BH18 FD 50-51.5'	RMV 216-21 BH18 60-61'	RMV 216-21 BH19 4-6'	RMV 216-21 BH19 24-25.5'	RMV 216-21 BH19 29-30'	RMV 216-21 BH20 47-48'	RMV 216-21 BH20 67-67.5'	RMV 216-21 BH21 9-9.5'	RMV 216-21 BH21 14-14.5'
		Date Sampled →	5/15/2012	5/15/2012	5/15/2012	5/15/2012	5/15/2012	5/17/2012	5/17/2012	5/17/2012	5/17/2012	5/17/2012	5/17/2012	5/21/2012
Organic Compounds in Soil														
TPH (DRO+GRO)	500	mg/kg	9100	5.3	2.4	7.5	0.95	5200	2000	920	6.3	0.52	17	7
Benzene	0.17	mg/kg	BDL	BDL	0.016	0.017	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Toluene	85	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Ethylbenzene	100	mg/kg	17	0.025	0.016	0.020	0.013	3.9	2.2	0.99	0.0073	0.016	BDL	BDL
Xylenes (Total)	175	mg/kg	170	0.25	0.19	0.23	0.13	73	44	18	0.43 J5J3	0.092	BDL	BDL
Acenaphthene	1,000	mg/kg	BDL	BDL	BDL	BDL	BDL	0.17	BDL	BDL	BDL	BDL	BDL	BDL
Anthracene	1,000	mg/kg	0.36	BDL	BDL	BDL	BDL	0.22	0.048	BDL	BDL	BDL	BDL	BDL
Benzo(A)anthracene	0.22	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(B)fluoranthene	0.22	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(K)fluoranthene	2.2	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Benzo(A)pyrene	0.022	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Chrysene	22	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Dibenzo(A,H)anthracene	0.022	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluoranthene	1,000	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Fluorene	1,000	mg/kg	1.6	BDL	BDL	BDL	BDL	0.89	0.28	0.12	BDL	BDL	BDL	BDL
Indeno(1,2,3-cd)pyrene	0.22	mg/kg	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Naphthalene	23	mg/kg	9.8	BDL	BDL	BDL	BDL	5.3	1.7	1.0	0.025	0.0091	BDL	BDL
Pyrene	1,000	mg/kg	BDL	BDL	BDL	BDL	BDL	0.11	BDL	BDL	BDL	BDL	BDL	BDL
Inorganics in Soil														
EC	<4 or 2 x background	mmhos/cm												
SAR	<12													
pH	6-9													
Metals in Soil														
Arsenic	0.39	mg/kg												
Barium total	15,000	mg/kg												
Boron	2	mg/L												
Cadmium	70	mg/kg												
Chromium (III)	120,000	mg/kg												
Chromium (VI)	23	mg/kg												
Copper	3,100	mg/kg												
Lead	400	mg/kg												
Mercury	23	mg/kg												
Nickel	1,600	mg/kg												
Selenium	390	mg/kg												
Silver	390	mg/kg												
Zinc	23,000	mg/kg												

BDL - Below Detection Limit (Practical Quantitation Limit [PQL])
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**Laboratory Analytical Results
Surface Soil Samples
RMV 216-21**

Sample Identification:	Units	COGCC Table 910-1 Standards	RMV 216-21 Background	RMV 216-21 BH01	RMV 216-21 Surface Soil #1	RMV 216-21 Surface Soil #2	RMV 216-21 Surface Soil #3
Sample Depth (feet):			0-0.5	1-3'	0-0.5	0-0.5	0-0.5
Sample Date:			1/13/2010	1/13/2010	5/11/2012	5/11/2012	5/11/2012
Metals							
Arsenic	mg/kg	0.39	7.7				
General Chemistry							
pH	su	6-9		8.46	7.9 T8	8.2 T8	8.2 T8
Sodium Absorption Ratio	--	<125		11.9	12	9.5	12
Specific Conductance	mmhos/cm	<4 or 2x background		8.73	3.5	1.6	2.4
Arsenic							

Notes:

-- Not established

cm - centimeter

mmhos - millimhos

su - standard units

T8 - Sample received past/too close to holding time expiration