ATTACHMENT E

Laboratory Analytical Summary Report

1310080

GC/MS Volatiles:
The samples were analyzed using GC/MS following the current revision of SOP 525 based on SW-846 Method 8260C. The samples were also analyzed for Gasoline Range Organics (GRO).

All acceptance criteria were met with the following exceptions:

Sample -1 contained headspace and had a pH > 2 at the time of analysis.

Dissolved Gasses:
The samples were prepared and analyzed according to method RSK-175 procedures and the current revision of SOP 449.

All acceptance criteria were met with the following exception:

Sample -1 had a pH > 2 at the time of analysis.

DRO:
The samples were analyzed following the current revision of SOP 406 generally based on SW-846 Methods 8000C and 8015D. TEPH is a multicomponent mixture and is quantitated by summing the entire carbon range, rather than individual peaks. The carbon range integrated in this test extends from C10 to C28.

All surrogate recoveries were within acceptable limits with the following exceptions:

Surrogate	Sample	Direction
O-terphenyl	MB, LCS/LCSD and MS/MSD	High

All spike recoveries in the batch were within limits. No further action was taken.

BART:
The Biological Activity Reaction Test was completed with the Iron-Related Bacteria, Sulfate-Reducing Bacteria, and Slime-Forming Bacteria kit manufactured by Hach Company. The analysis was performed following the manufacturer provided instructions. If the target analyte is not detected (absent), then the sample will be reported with “ND” in the result field and a “U” flag. If the target analyte is detected (present), then the sample will be reported with a “1” for a result without a flag.

Metals:

The samples were analyzed following Methods for the Determination of Metals in Environmental Samples – Supplement 1 procedures. Analysis by ICPMS followed method 200.8 and the current revision of SOP 827.

The samples were to be analyzed for dissolved metals. The samples were filtered through a 0.45 micron filter and preserved with nitric acid to a pH less than two prior to analysis.

All acceptance criteria were met.

Inorganics:

The samples were analyzed following MCAWW, EMSL, and Standard Method procedures for the current revisions of the following SOPs and methods:

Analyte	Method	SOP #
Alkalinity	SM2320B	1106
Bicarbonate	SM2320B	1106
Carbonate	SM2320B	1106
pH	SM4500-H^+ B	1126
Specific conductance	SM2510B	1128
Total phosphorus	365.2	1119
TDS	SM2540C	1101
Bromide	300.0 Revision 2.1	1113
Chloride	300.0 Revision 2.1	1113
Fluoride	300.0 Revision 2.1	1113
Nitrate as N	300.0 Revision 2.1	1113
Nitrite as N	300.0 Revision 2.1	1113
Nitrate/nitrite as N	300.0 Revision 2.1	1113
Sulfate	300.0 Revision 2.1	1113

All acceptance criteria were met.

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1310080
Client Name: Western Water and Land, Inc.
Client Project Name: WPX BWQ RMV 15-35
Client Project Number: 30000.01.61
Client PO Number:

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
Stokvis-61750-FR	1310080-1		WATER	03-Oct-13	10:05
Cox-61751-F	1310080-2		WATER	03-Oct-13	11:11
Trip Blank	1310080-3		WATER	03-Oct-13	

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1310080

PROJECT NAME	WPX BWQ RMV 15-35	SAMPLER	Nick Solawetz	DATE	10-3-13
FACILITY NAME	RMV 15-35	PROJECT NO.	30000.01.61	TURNAROUND	Standard
FACILITY ID (API)		EDD FORMAT			
COMPANY NAME	Western Water + Land	PURCHASE ORDER			
SEND REPORT TO	Bruce Smith	BILL TO COMPANY	WPX Energy		
ADDRESS	743 Horizon Ct. Suite 330	INVOICE ATTN TO	Brandon Danforth		
CITY / STATE / ZIP	Grand Junction, CO 81506	ADDRESS	1058 CR 215		
PHONE	970-242-0170	CITY / STATE / ZIP	Parachute, CO 81635		
FAX		PHONE	970-263-2792		
E-MAIL	bsmith@westernwaterandland.com	FAX			
		E-MAIL			

PAGE 1 of 1

DISPOSAL ~~By Lab~~ or Return to Client

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	VG1	BART	BTEX	GRO	Dis. Gasses	DRO	Dis. Metals Lab Filter	Anions, Alk, TDS	pH, Cond.	Total Phosphorus
1	Stokvis-61750-FR	W	10-3-13	1005	15	1,3		✓	✓	✓	✓	✓	✓	✓	✓		✓
2	Cox-61751-F	W	10-3-13	1111	15	1,3		✓	✓	✓	✓	✓	✓	✓	✓		✓
3	TB1, TB2																

*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments:	Dis. Metals Lab Filter.
	Stokvis-61750-FR was effervescent, will find gas in ISO + VOAs.

QC PACKAGE (check below)	
	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
X	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Nick Solawetz	10-3-13	1530
RECEIVED BY		Jacob Roddy	10/4/13	0920
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental - Fort Collins
CONDITION OF SAMPLE UPON RECEIPT FORM

Client: Western Water + Land Workorder No: 1310080

Project Manager: ARW Initials: JLR Date: 10/4/13

1.	Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2.	Are custody seals on shipping containers intact?	NONE	(YES)	NO
3.	Are Custody seals on sample containers intact?	(NONE)	YES	NO
4.	Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5.	Are the COC and bottle labels complete and legible?		(YES)	NO
6.	Is the COC in agreement with samples received? (IDs, dates, times, no. of containers, matrix, requested analyses, etc.)		(YES)	NO
7.	Were airbills / shipping documents present and/or removable?	DROP OFF	(YES)	NO
8.	Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	(YES)	NO
9.	Are all aqueous non-preserved samples pH 4-9?	N/A	(YES)	NO
10.	Is there sufficient sample for the requested analyses?		(YES)	NO
11.	Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12.	Are all samples within holding times for the requested analyses?		(YES)	NO
13.	Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
★ 14.	Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: X < green pea ____ > green pea	N/A	YES	(NO) ★
15.	Do any water samples contain sediment? Amount Amount of sediment: ____ dusting ____ moderate ____ heavy	N/A	YES	(NO)
16.	Were the samples shipped on ice?		(YES)	NO
17.	Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 (#4)	RAD ONLY	(YES)	NO

Cooler #:	1							
Temperature (°C):	4°							
No. of custody seals on cooler:	2							
DOT Survey/ Acceptance Information External µR/hr reading:	10							
Background µR/hr reading:	11							

Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? (YES) / NO / NA (If no, see Form 008.)

Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #1 AND #16.

★ 14 -> samples 1310080-1-4, 1310080-2-5, 1310080-1-5, 1310080-1-6 were all in 40ml voa bottles and had small (< size of green pea) bubbles inside. COC does mention that some bottles were effervescent and that gas inside bottles may be present.

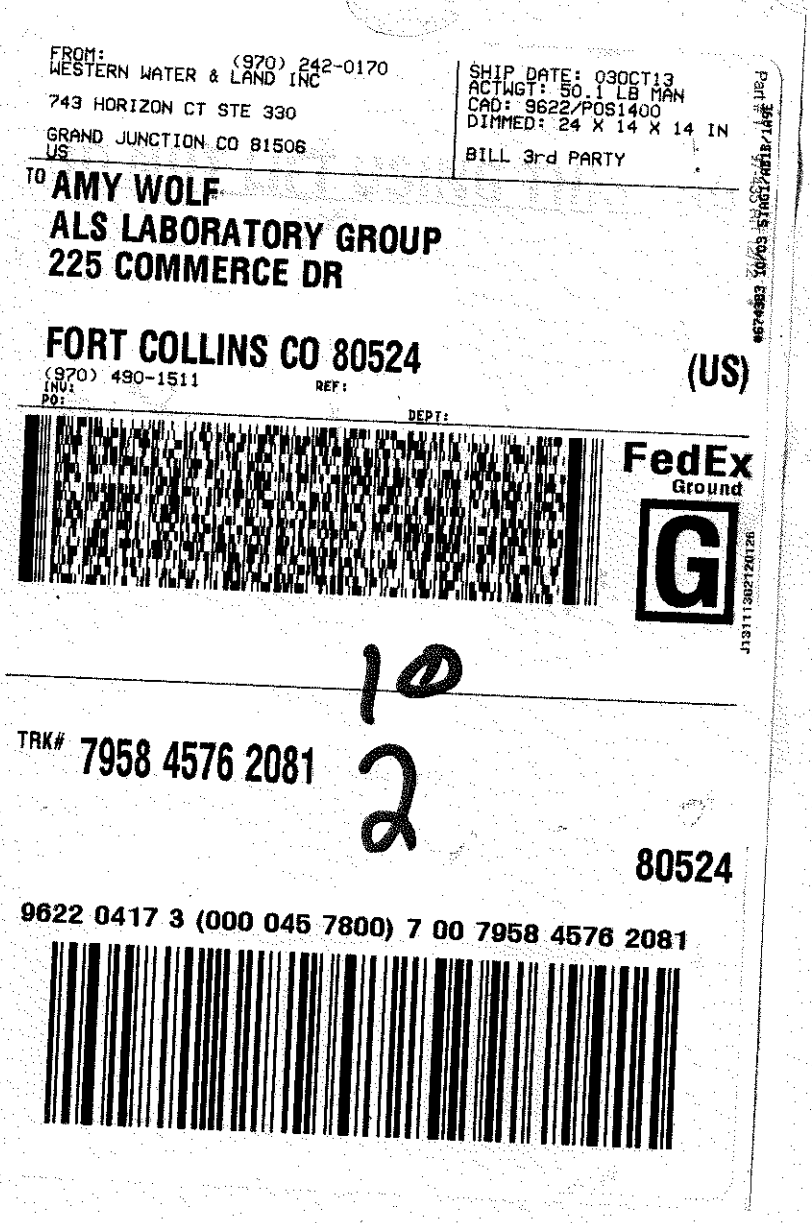
If applicable, was the client contacted? (YES) / NO / NA Contact: Bruce Smith Date/Time: 10/7/13 email

Project Manager Signature / Date: 10/7/13

*IR Gun #2: Oakton, SN 29922500201-0066
*IR Gun #4: Oakton, SN 2372220101-0002

Form 201r24.xls (06/04/2012)

1310080



FROM:
WESTERN WATER & LAND INC (970) 242-0170
743 HORIZON CT STE 330
GRAND JUNCTION CO 81506
US

SHIP DATE: 030CT13
ACTWGT: 50.1 LB MAN
CAD: 9622/POS1400
DIMMED: 24 X 14 X 14 IN
BILL 3rd PARTY

TO AMY WOLF
ALS LABORATORY GROUP
225 COMMERCE DR

FORT COLLINS CO 80524
(970) 490-1511 (US)
INV:
PO: REF:
DEPT:

FedEx Ground

10
2

TRK# 7958 4576 2081

80524

9622 0417 3 (000 045 7800) 7 00 7958 4576 2081

Temp: 4°C

Client: Western Water and Land, Inc. **Date:** *25-Oct-13*
Project: 30000.01.61 WPX BWQ RMV 15-35 **Work Order:** 1310080
Sample ID: Stokvis-61750-FR **Lab ID:** 1310080-1
Legal Location: **Matrix:** WATER
Collection Date: 10/3/2013 10:05 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			**SM2320B**		Prep Date: **10/7/2013**	PrepBy: **KMP**
BICARBONATE AS CaCO3	**390**		**20**	**MG/L**	1	10/7/2013
CARBONATE AS CaCO3	ND		20	MG/L	1	10/7/2013
TOTAL ALKALINITY AS CaCO3	**390**		**20**	**MG/L**	1	10/7/2013
BIOLOGICAL ACTIVITY REACTION TEST			**BART**		Prep Date: **10/16/2013**	PrepBy: **BAS**
IRON RELATED BACTERIA	**1**		**1**	**NU**	1	10/24/2013
SLIME FORMING BACTERIA	ND		1	NU	1	10/24/2013
SULFATE REDUCING BACTERIA	ND		1	NU	1	10/24/2013
DIESEL RANGE ORGANICS			**SW8015M**		Prep Date: **10/8/2013**	PrepBy: **JAC**
Diesel Range Organics	ND		0.5	MG/L	1	10/8/2013 19:27
Surr: O-TERPHENYL	*94*		*51-97*	*%REC*	1	10/8/2013 19:27
DISSOLVED GASSES			**RSK175**		Prep Date: **10/8/2013**	PrepBy: **JFN**
METHANE	ND		1	UG/L	1	10/8/2013 15:42
ETHANE	ND		2	UG/L	1	10/8/2013 15:42
PROPANE	ND		1	UG/L	1	10/8/2013 15:42
GC/MS VOLATILES			**SW8260_25**		Prep Date: **10/8/2013**	PrepBy: **SDW**
BENZENE	ND		1	UG/L	1	10/8/2013 16:47
TOLUENE	ND		1	UG/L	1	10/8/2013 16:47
ETHYLBENZENE	ND		1	UG/L	1	10/8/2013 16:47
M+P-XYLENE	ND		1	UG/L	1	10/8/2013 16:47
O-XYLENE	ND		1	UG/L	1	10/8/2013 16:47
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	10/8/2013 16:47
TOTAL XYLENES	ND		1	UG/L	1	10/8/2013 16:47
Surr: DIBROMOFLUOROMETHANE	*94*		*84-118*	*%REC*	1	10/8/2013 16:47
Surr: TOLUENE-D8	*96*		*85-115*	*%REC*	1	10/8/2013 16:47
Surr: 4-BROMOFLUOROBENZENE	*103*		*85-115*	*%REC*	1	10/8/2013 16:47
ION CHROMATOGRAPHY			**EPA300.0**		Prep Date: **10/4/2013**	PrepBy: **AJD**
BROMIDE	ND		0.2	MG/L	1	10/4/2013 16:40
CHLORIDE	**7.1**		**0.2**	**MG/L**	1	10/4/2013 16:40
FLUORIDE	**0.34**		**0.1**	**MG/L**	1	10/4/2013 16:40
NITRATE/NITRITE AS N	**3.3**		**0.1**	**MG/L**	1	10/4/2013 16:40
NITRITE AS N	ND		0.1	MG/L	1	10/4/2013 16:40
NITRATE AS N	**3.3**		**0.2**	**MG/L**	1	10/4/2013 16:40
SULFATE	**180**		**10**	**MG/L**	10	10/4/2013 17:08
METALS BY 200.8			**EPA200.8**		Prep Date: **10/9/2013**	PrepBy: **NAQ**
BARIUM	**24**		**1**	**UG/L**	10	10/10/2013 12:03
BORON	**96**		**50**	**UG/L**	10	10/10/2013 12:03
CALCIUM	**88000**		**1000**	**UG/L**	10	10/10/2013 12:03
IRON	ND		100	UG/L	10	10/10/2013 12:03
MAGNESIUM	**52000**		**100**	**UG/L**	10	10/10/2013 12:03
MANGANESE	ND		2	UG/L	10	10/10/2013 12:03

Client:	Western Water and Land, Inc.	**Date:**	*25-Oct-13*
Project:	30000.01.61 WPX BWQ RMV 15-35	**Work Order:**	1310080
Sample ID:	Stokvis-61750-FR	**Lab ID:**	1310080-1
Legal Location:		**Matrix:**	WATER
Collection Date:	10/3/2013 10:05	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
POTASSIUM	**7600**		**1000**	**UG/L**	10	10/10/2013 12:03
SELENIUM	**5.5**		**1**	**UG/L**	10	10/10/2013 12:03
SODIUM	**63000**		**1000**	**UG/L**	10	10/10/2013 12:03
STRONTIUM	**1100**		**1**	**UG/L**	10	10/10/2013 12:03
PH			**SM4500-H**		Prep Date: **10/7/2013**	PrepBy: **KMP**
PH	**7.42**		**0.1**	**pH**	1	10/7/2013
SPECIFIC CONDUCTANCE IN WATER			**SM2510B**		Prep Date: **10/7/2013**	PrepBy: **KMP**
SPECIFIC CONDUCTIVITY	**1027**		**1**	**umhos/cm**	1	10/7/2013
TOTAL DISSOLVED SOLIDS			**SM2540C**		Prep Date: **10/8/2013**	PrepBy: **KMP**
TOTAL DISSOLVED SOLIDS	**690**		**20**	**MG/L**	1	10/9/2013
TOTAL PHOSPHORUS AS P			**EPA365.2**		Prep Date: **10/8/2013**	PrepBy: **TWK**
TOTAL PHOSPHORUS	ND		0.05	MG/L	1	10/8/2013

Client: Western Water and Land, Inc. **Date:** *25-Oct-13*
Project: 30000.01.61 WPX BWQ RMV 15-35 **Work Order:** 1310080
Sample ID: Cox-61751-F **Lab ID:** 1310080-2
Legal Location: **Matrix:** WATER
Collection Date: 10/3/2013 11:11 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
ALKALINITY AS CALCIUM CARBONATE			**SM2320B**		Prep Date: **10/7/2013**	PrepBy: **KMP**
BICARBONATE AS CaCO3	**380**		**20**	**MG/L**	1	10/7/2013
CARBONATE AS CaCO3	ND		20	MG/L	1	10/7/2013
TOTAL ALKALINITY AS CaCO3	**380**		**20**	**MG/L**	1	10/7/2013
BIOLOGICAL ACTIVITY REACTION TEST			**BART**		Prep Date: **10/16/2013**	PrepBy: **BAS**
IRON RELATED BACTERIA	ND		1	NU	1	10/24/2013
SLIME FORMING BACTERIA	ND		1	NU	1	10/24/2013
SULFATE REDUCING BACTERIA	ND		1	NU	1	10/24/2013
DIESEL RANGE ORGANICS			**SW8015M**		Prep Date: **10/8/2013**	PrepBy: **JAC**
Diesel Range Organics	ND		0.5	MG/L	1	10/8/2013 20:50
Surr: O-TERPHENYL	*97*		*51-97*	*%REC*	1	10/8/2013 20:50
DISSOLVED GASSES			**RSK175**		Prep Date: **10/8/2013**	PrepBy: **JFN**
METHANE	**4.1**		**1**	**UG/L**	1	10/8/2013 15:45
ETHANE	ND		2	UG/L	1	10/8/2013 15:45
PROPANE	ND		1	UG/L	1	10/8/2013 15:45
GC/MS VOLATILES			**SW8260_25**		Prep Date: **10/8/2013**	PrepBy: **SDW**
BENZENE	ND		1	UG/L	1	10/8/2013 16:24
TOLUENE	ND		1	UG/L	1	10/8/2013 16:24
ETHYLBENZENE	ND		1	UG/L	1	10/8/2013 16:24
M+P-XYLENE	ND		1	UG/L	1	10/8/2013 16:24
O-XYLENE	ND		1	UG/L	1	10/8/2013 16:24
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	10/8/2013 16:24
TOTAL XYLENES	ND		1	UG/L	1	10/8/2013 16:24
Surr: DIBROMOFLUOROMETHANE	*93*		*84-118*	*%REC*	1	10/8/2013 16:24
Surr: TOLUENE-D8	*97*		*85-115*	*%REC*	1	10/8/2013 16:24
Surr: 4-BROMOFLUOROBENZENE	*105*		*85-115*	*%REC*	1	10/8/2013 16:24
ION CHROMATOGRAPHY			**EPA300.0**		Prep Date: **10/4/2013**	PrepBy: **AJD**
BROMIDE	ND		0.2	MG/L	1	10/4/2013 16:54
CHLORIDE	**8.9**		**0.2**	**MG/L**	1	10/4/2013 16:54
FLUORIDE	**0.33**		**0.1**	**MG/L**	1	10/4/2013 16:54
NITRATE/NITRITE AS N	**2**		**0.1**	**MG/L**	1	10/4/2013 16:54
NITRITE AS N	ND		0.1	MG/L	1	10/4/2013 16:54
NITRATE AS N	**2**		**0.2**	**MG/L**	1	10/4/2013 16:54
SULFATE	**140**		**10**	**MG/L**	10	10/4/2013 17:22
METALS BY 200.8			**EPA200.8**		Prep Date: **10/9/2013**	PrepBy: **NAQ**
BARIUM	**91**		**1**	**UG/L**	10	10/10/2013 12:06
BORON	**66**		**50**	**UG/L**	10	10/10/2013 12:06
CALCIUM	**80000**		**1000**	**UG/L**	10	10/10/2013 12:06
IRON	ND		100	UG/L	10	10/10/2013 12:06
MAGNESIUM	**54000**		**100**	**UG/L**	10	10/10/2013 12:06
MANGANESE	ND		2	UG/L	10	10/10/2013 12:06

Client:	Western Water and Land, Inc.	**Date:**	*25-Oct-13*
Project:	30000.01.61 WPX BWQ RMV 15-35	**Work Order:**	1310080
Sample ID:	Cox-61751-F	**Lab ID:**	1310080-2
Legal Location:		**Matrix:**	WATER
Collection Date:	10/3/2013 11:11	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
POTASSIUM	**5900**		**1000**	**UG/L**	10	10/10/2013 12:06
SELENIUM	**4.1**		**1**	**UG/L**	10	10/10/2013 12:06
SODIUM	**56000**		**1000**	**UG/L**	10	10/10/2013 12:06
STRONTIUM	**910**		**1**	**UG/L**	10	10/10/2013 12:06
PH			**SM4500-H**		Prep Date: **10/7/2013**	PrepBy: **KMP**
PH	**7.67**		**0.1**	**pH**	1	10/7/2013
SPECIFIC CONDUCTANCE IN WATER			**SM2510B**		Prep Date: **10/7/2013**	PrepBy: **KMP**
SPECIFIC CONDUCTIVITY	**962**		**1**	**umhos/cm**	1	10/7/2013
TOTAL DISSOLVED SOLIDS			**SM2540C**		Prep Date: **10/8/2013**	PrepBy: **KMP**
TOTAL DISSOLVED SOLIDS	**630**		**20**	**MG/L**	1	10/9/2013
TOTAL PHOSPHORUS AS P			**EPA365.2**		Prep Date: **10/8/2013**	PrepBy: **TWK**
TOTAL PHOSPHORUS	**0.086**		**0.05**	**MG/L**	1	10/8/2013

Client:	Western Water and Land, Inc.	**Date:**	*25-Oct-13*
Project:	30000.01.61 WPX BWQ RMV 15-35	**Work Order:**	1310080
Sample ID:	Trip Blank	**Lab ID:**	1310080-3
Legal Location:		**Matrix:**	WATER
Collection Date:	10/3/2013	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GC/MS VOLATILES			**SW8260_25**		Prep Date: **10/8/2013**	PrepBy: **SDW**
BENZENE	ND		1	UG/L	1	10/8/2013 16:01
TOLUENE	ND		1	UG/L	1	10/8/2013 16:01
ETHYLBENZENE	ND		1	UG/L	1	10/8/2013 16:01
M+P-XYLENE	ND		1	UG/L	1	10/8/2013 16:01
O-XYLENE	ND		1	UG/L	1	10/8/2013 16:01
GASOLINE RANGE ORGANICS	ND		100	UG/L	1	10/8/2013 16:01
TOTAL XYLENES	ND		1	UG/L	1	10/8/2013 16:01
Surr: DIBROMOFLUOROMETHANE	*93*		*84-118*	*%REC*	1	10/8/2013 16:01
Surr: TOLUENE-D8	*97*		*85-115*	*%REC*	1	10/8/2013 16:01
Surr: 4-BROMOFLUOROBENZENE	*104*		*85-115*	*%REC*	1	10/8/2013 16:01

Client:	Western Water and Land, Inc.	**Date:**	*25-Oct-13*
Project:	30000.01.61 WPX BWQ RMV 15-35	**Work Order:**	1310080
Sample ID:	Trip Blank	**Lab ID:**	1310080-3
Legal Location:		**Matrix:**	WATER
Collection Date:	10/3/2013	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.
# - Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

LT - Result is less than requested MDC but greater than achieved MDC.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

Client:	Western Water and Land, Inc.	**Date:**	*25-Oct-13*
Project:	30000.01.61 WPX BWQ RMV 15-35	**Work Order:**	1310080
Sample ID:	Trip Blank	**Lab ID:**	1310080-3
Legal Location:		**Matrix:**	WATER
Collection Date:	10/3/2013	**Percent Moisture:**	

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed

G - A pattern resembling gasoline was detected in this sample.

D - A pattern resembling diesel was detected in this sample.

M - A pattern resembling motor oil was detected in this sample.

C - A pattern resembling crude oil was detected in this sample.

4 - A pattern resembling JP-4 was detected in this sample.

5 - A pattern resembling JP-5 was detected in this sample.

H - Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.

L - Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.

Z - This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Batch ID: **EX131008-2-1** Instrument ID **FUELS-1** Method: **SW8015M**

LCS Sample ID: **EX131008-2** Units: **MG/L** Analysis Date: **10/8/2013 18:04**

Client ID: Run ID: **HC131008-33A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	10.3	0.5	10		103	36-150			20	
Surr: O-TERPHENYL	1.27		1.25		102	51-97				*

LCSD Sample ID: **EX131008-2** Units: **MG/L** Analysis Date: **10/8/2013 18:31**

Client ID: Run ID: **HC131008-33A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	10.2	0.5	10		102	36-150	10.3	0	20	
Surr: O-TERPHENYL	1.28		1.25		102	51-97		0		*

MB Sample ID: **EX131008-2** Units: **MG/L** Analysis Date: **10/8/2013 17:37**

Client ID: Run ID: **HC131008-33A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	ND	0.5								
Surr: O-TERPHENYL	1.3		1.25		104	51-97				*

MS Sample ID: **1310080-1** Units: **MG/L** Analysis Date: **10/8/2013 19:54**

Client ID: **Stokvis-61750-FR** Run ID: **HC131008-33A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	9.87	0.5	10	0.5	99	36-150			20	
Surr: O-TERPHENYL	1.26		1.25		101	51-97				*

MSD Sample ID: **1310080-1** Units: **MG/L** Analysis Date: **10/8/2013 20:22**

Client ID: **Stokvis-61750-FR** Run ID: **HC131008-33A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
Diesel Range Organics	10.1	0.5	10	0.5	101	36-150	9.87	2	20	
Surr: O-TERPHENYL	1.26		1.25		101	51-97		0		*

The following samples were analyzed in this batch: 1310080-1 1310080-2

QC BATCH REPORT

Batch ID: **HC131008-9-1** Instrument ID **MEE-1** Method: **RSK175**

LCS Sample ID: **HC131008-9** Units: **UG/L** Analysis Date: **10/8/2013 13:41**
Client ID: Run ID: **HC131008-9a** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	125	1	142		88	80-120			25	
ETHANE	232	2	267		87	80-120			25	
PROPANE	330	1	391		84	80-120			25	

LCSD Sample ID: **HC131008-9** Units: **UG/L** Analysis Date: **10/8/2013 15:54**
Client ID: Run ID: **HC131008-9a** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	132	1	142		93	80-120	125	6	25	
ETHANE	245	2	267		92	80-120	232	5	25	
PROPANE	341	1	391		87	80-120	330	3	25	

MB Sample ID: **HC131008-9** Units: **UG/L** Analysis Date: **10/8/2013 13:46**
Client ID: Run ID: **HC131008-9a** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
METHANE	ND	1								
ETHANE	ND	2								
PROPANE	ND	1								

The following samples were analyzed in this batch: 1310080-1 1310080-2

QC BATCH REPORT

Batch ID: **IP131009-1-2** Instrument ID **ICPMS2** Method: **EPA200.8**

LCS Sample ID: **FM131009-1** Units: **UG/L** Analysis Date: **10/10/2013 12:00**

Client ID: Run ID: **IM131010-10A2** Prep Date: **10/9/2013** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BARIUM	104	1	100		104	85-115			20	
BORON	970	50	1000		97	85-115			20	
CALCIUM	9910	1000	10000		99	85-115			20	
IRON	5390	100	5000		108	85-115			20	
MAGNESIUM	9900	100	10000		99	85-115			20	
MANGANESE	199	2	200		99	85-115			20	
POTASSIUM	5360	1000	5000		107	85-115			20	
SELENIUM	102	1	100		102	85-115			20	
SODIUM	10900	1000	10000		109	85-115			20	
STRONTIUM	97.9	1	100		98	85-115			20	

MB Sample ID: **FP131009-1** Units: **UG/L** Analysis Date: **10/10/2013 11:57**

Client ID: Run ID: **IM131010-10A2** Prep Date: **10/9/2013** DF: **10**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BARIUM	ND	1								
BORON	ND	50								
CALCIUM	ND	1000								
IRON	ND	100								
MAGNESIUM	ND	100								
MANGANESE	ND	2								
POTASSIUM	ND	1000								
SELENIUM	ND	1								
SODIUM	ND	1000								
STRONTIUM	ND	1								

The following samples were analyzed in this batch: 1310080-1 1310080-2

QC BATCH REPORT

Batch ID: **VL131008-4-1** Instrument ID **HPV1** Method: **SW8260_25**

LCS Sample ID: **VL131008-4** Units: **UG/L** Analysis Date: **10/8/2013 14:06**
Client ID: Run ID: **VL131008-4A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	9.32	1	10		93	83-117			20	
TOLUENE	10.1	1	10		101	82-113			20	
ETHYLBENZENE	9.24	1	10		92	81-113			20	
M+P-XYLENE	20.2	1	20		101	82-115			20	
O-XYLENE	9.75	1	10		98	81-115			20	
Surr: DIBROMOFLUOROMETHA	23.8		25		95	84-118				
Surr: TOLUENE-D8	24.1		25		97	85-115				
Surr: 4-BROMOFLUOROBENZE	25.9		25		103	85-115				

LCS Sample ID: **VL131008-7** Units: **UG/L** Analysis Date: **10/8/2013 12:56**
Client ID: Run ID: **VL131008-4A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	467	100	500		93	80-120			20	

LCSD Sample ID: **VL131008-4** Units: **UG/L** Analysis Date: **10/8/2013 14:29**
Client ID: Run ID: **VL131008-4A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	9.22	1	10		92	83-117	9.32	1	20	
TOLUENE	9.98	1	10		100	82-113	10.1	1	20	
ETHYLBENZENE	9.23	1	10		92	81-113	9.24	0	20	
M+P-XYLENE	20.1	1	20		101	82-115	20.2	1	20	
O-XYLENE	10.1	1	10		101	81-115	9.75	4	20	
Surr: DIBROMOFLUOROMETHA	23.7		25		95	84-118		0		
Surr: TOLUENE-D8	24.3		25		97	85-115		1		
Surr: 4-BROMOFLUOROBENZE	25.6		25		103	85-115		1		

LCSD Sample ID: **VL131008-7** Units: **UG/L** Analysis Date: **10/8/2013 13:19**
Client ID: Run ID: **VL131008-4A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
GASOLINE RANGE ORGANICS	455	100	500		91	80-120	467	3	20	

QC BATCH REPORT

Batch ID: **VL131008-4-1** Instrument ID **HPV1** Method: **SW8260_25**

MB Sample ID: **VL131008-4** Units: **UG/L** Analysis Date: **10/8/2013 15:15**

Client ID: Run ID: **VL131008-4A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BENZENE	ND	1								
TOLUENE	ND	1								
ETHYLBENZENE	ND	1								
M+P-XYLENE	ND	1								
O-XYLENE	ND	1								
GASOLINE RANGE ORGANICS	ND	100								
TOTAL XYLENES	ND	1								
Surr: DIBROMOFLUOROMETHA	23.2		25		93	84-118				
Surr: TOLUENE-D8	24.2		25		97	85-115				
Surr: 4-BROMOFLUOROBENZE	26.3		25		105	85-115				

The following samples were analyzed in this batch: 1310080-1 1310080-2 1310080-3

QC BATCH REPORT

Batch ID: **AK131007-2-1** Instrument ID **NONE** Method: **SM2320B**

LCS Sample ID: **AK131007-2** Units: **MG/L** Analysis Date: **10/7/2013**
Client ID: Run ID: **AK131007-1A** Prep Date: **10/7/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL ALKALINITY AS CaCO3	96.8	5	100		97	85-115			15	

MB Sample ID: **AK131007-2** Units: **MG/L** Analysis Date: **10/7/2013**
Client ID: Run ID: **AK131007-1A** Prep Date: **10/7/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
BICARBONATE AS CaCO3	ND	5								
CARBONATE AS CaCO3	ND	5								
TOTAL ALKALINITY AS CaCO3	ND	5								

The following samples were analyzed in this batch: 1310080-1 1310080-2

QC BATCH REPORT

Batch ID: **IC131004-1-2** Instrument ID **IC** Method: **EPA300.0**

LCS Sample ID: **IC131004-1** Units: **MG/L** Analysis Date: **10/4/2013 15:58**

Client ID: Run ID: **IC131004-1A1** Prep Date: **10/4/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	2.02	0.1	2		101	90-110			15	
CHLORIDE	5.09	0.2	5		102	90-110			15	
NITRITE AS N	2	0.1	2		100	90-110			15	
BROMIDE	5.36	0.2	5		107	90-110			15	
NITRATE AS N	5.25	0.2	5		105	90-110			15	
SULFATE	20	1	20		100	90-110			15	

MB Sample ID: **IC131004-1** Units: **MG/L** Analysis Date: **10/4/2013 16:12**

Client ID: Run ID: **IC131004-1A1** Prep Date: **10/4/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
FLUORIDE	ND	0.1								
CHLORIDE	ND	0.2								
NITRITE AS N	ND	0.1								
BROMIDE	ND	0.2								
NITRATE AS N	ND	0.2								
SULFATE	ND	1								

The following samples were analyzed in this batch: 1310080-1 1310080-2

QC BATCH REPORT

Batch ID: **pH131007-1-2** Instrument ID **pH-1** Method: **SM4500-H**

DUP Sample ID: **1310080-1** Units: **pH** Analysis Date: **10/7/2013**

Client ID: **Stokvis-61750-FR** Run ID: **pH131007-1A** Prep Date: **10/7/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
PH	7.44	0.1					7.42		0.2	

The following samples were analyzed in this batch: 1310080-1 1310080-2

QC BATCH REPORT

Batch ID: **SC131007-1-1** Instrument ID **pH-1** Method: **SM2510B**

DUP Sample ID: **1310080-1** Units: **umhos/cm** Analysis Date: **10/7/2013**

Client ID: **Stokvis-61750-FR** Run ID: **SC131007-1A** Prep Date: **10/7/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
SPECIFIC CONDUCTIVITY	1037	1					1027	1	10	

The following samples were analyzed in this batch: 1310080-1 1310080-2

QC BATCH REPORT

Batch ID: **TD131008-1-1** Instrument ID **Balance** Method: **SM2540C**

LCS Sample ID: **TD131008-1** Units: **MG/L** Analysis Date: **10/9/2013**
Client ID: Run ID: **TD131009-1A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	417	20	400		104	85-115			5	

MB Sample ID: **TD131008-1** Units: **MG/L** Analysis Date: **10/9/2013**
Client ID: Run ID: **TD131009-1A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL DISSOLVED SOLIDS	ND	20								

The following samples were analyzed in this batch: 1310080-1 1310080-2

QC BATCH REPORT

Batch ID: **TP131008-1-1** Instrument ID **Spec** Method: **EPA365.2**

LCS Sample ID: **TP131008-1** Units: **MG/L** Analysis Date: **10/8/2013**
Client ID: Run ID: **TP131008-1A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.52	0.05	0.5		104	80-120			20	

MB Sample ID: **TP131008-1** Units: **MG/L** Analysis Date: **10/8/2013**
Client ID: Run ID: **TP131008-1A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	ND	0.05								

MS Sample ID: **1310080-1** Units: **MG/L** Analysis Date: **10/8/2013**
Client ID: **Stokvis-61750-FR** Run ID: **TP131008-1A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.54	0.05	0.0005	0.05	108	80-120			20	

MSD Sample ID: **1310080-1** Units: **MG/L** Analysis Date: **10/8/2013**
Client ID: **Stokvis-61750-FR** Run ID: **TP131008-1A** Prep Date: **10/8/2013** DF: **1**

Analyte	Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	RPD	RPD Limit	Qual
TOTAL PHOSPHORUS	0.541	0.05	0.0005	0.05	108	80-120	0.54	0	20	

The following samples were analyzed in this batch: 1310080-1 1310080-2

Mountain States ACCUTEST LABORATORIES

11/06/13

Technical Report for

WPX Energy Rocky Mountain, LLC

WWLCOGJ: RMV 15-35

Accutest Job Number: D50936

Sampling Date: 09/25/13

Report to:

Western Water and Land, Inc.

bsmith@westernwaterandland.com
jpahler@westernwaterandland.com
ATTN: Bruce Smith

Total number of pages in report: **50**

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.

Scott Heideman
Laboratory Director

Client Service contact: Renea Jackson 303-425-6021

Certifications: CO (CO00049), ID, NE (CO00049), ND (R-027), NJ (CO 0007), OK (D9942), UT (NELAP CO00049), TX (T104704511)

Sections: 1 2 3 4 5 6 7 8 9 10

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Sample Summary

WPX Energy Rocky Mountain, LLC

Job No: D50936

WWLCOGJ: RMV 15-35

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
D50936-1	09/25/13	11:02	SG	09/26/13	AQ	Water	CROWLEY 44489-FR
D50936-1B	09/25/13	11:02	SG	09/26/13	AQ	Water	CROWLEY 44489-FR
D50936-1F	09/25/13	11:02	SG	09/26/13	AQ	Water Filtered	CROWLEY 44489-FR

CASE NARRATIVE / CONFORMANCE SUMMARY

Client:	WPX Energy Rocky Mountain, LLC	**Job No**	D50936
Site:	WWLCOGJ: RMV 15-35	**Report Date**	10/8/2013 9:52:17 AM

On 09/26/2013, 1 sample(s), 0 Trip Blank(s), and 0 Field Blank(s) were received at Accutest Mountain States (AMS) at a temperature of 3.6 °C. The samples were intact and properly preserved, unless noted below. An AMS Job Number of D50936 was assigned to the project. The lab sample ID, client sample ID, 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 GCMS By Method SW846 8260B

Matrix AQ **Batch ID:** V3V1577

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D50766-1DUP, D50976-7MS were used as the QC samples indicated.
- The matrix spike (MS) recovery(s) of Xylene (total), TPH-GRO (C6-C10) are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- D50976-7MS for TPH-GRO (C6-C10): Outside control limits due to possible matrix interference.

Volatiles by GC By Method RSK175 MOD

Matrix AQ **Batch ID:** GFB417

- All samples were analyzed within the recommended method holding time.
- Sample(s) D50788-1MS, D50788-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- D50936-1: The pH of the sample was >2 at time of analysis.

Extractables by GC By Method SW846-8015B

Matrix AQ **Batch ID:** OP8653

- All samples were extracted and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D48570-27MS, D48570-27MSD were used as the QC samples indicated.

Metals By Method EPA 200.7

Matrix AQ **Batch ID:** MP11218

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D50869-1AMS, D50869-1AMSD were used as the QC samples for the metals analysis.

Metals By Method EPA 200.8

Matrix	AQ	Batch ID:	MP11204

- All samples were digested and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D50977-1AMS, D50977-1AMSD were used as the QC samples for the metals analysis.

Wet Chemistry By Method EPA 300.0/SW846 9056

Matrix	AQ	Batch ID:	GP11019

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D50923-1MS, D50923-1MSD were used as the QC samples for the Bromide, Chloride, Fluoride, Nitrogen, Nitrate, Nitrogen, Nitrite, Sulfate, Bromide analysis.
- D50936-1 for Nitrogen, Nitrite: Elevated detection limit due to matrix interference.
- D50936-1 for Bromide: Elevated detection limit due to matrix interference.

Wet Chemistry By Method HACH IRB-BART

Matrix	AQ	Batch ID:	MB256

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method HACH SLYM-BART

Matrix	AQ	Batch ID:	MB254

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method HACH SRB-BART

Matrix	AQ	Batch ID:	MB255

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method HACH8190/SM4500P-B/E

Matrix	AQ	Batch ID:	GP11036

- All samples were prepared and analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D50909-2DUP, D50909-2MS, D50909-2MSD were used as the QC samples for the Phosphorus, Total analysis.

Wet Chemistry By Method SM 2320B-2011

Matrix	AQ	Batch ID:	GN22069

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D50945-1DUP, D50945-1MS, D50945-1MSD were used as the QC samples for the Alkalinity, Total as CaCO3 analysis.

Matrix	AQ	Batch ID:	GN22070

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Matrix	AQ	Batch ID:	GN22071

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.

Wet Chemistry By Method SM 2510B-2011

Matrix	AQ	Batch ID:	GP11073

- Sample(s) D50934-1DUP were used as the QC samples for the Specific Conductivity analysis.

Wet Chemistry By Method SM 2540C-2011

Matrix	AQ	Batch ID:	GN22105

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) D50934-1DUP were used as the QC samples for the Solids, Total Dissolved analysis.

Wet Chemistry By Method SM4500HB+-2011/9040C

Matrix	AQ	Batch ID:	GN22076

- The following samples were run outside of holding time for method SM4500HB+-2011/9040C: D50936-1 Analysis performed past the required 15 minutes from collection time/holding time.

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: D50936
Account: WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35
Collected: 09/25/13

Lab Sample ID / Analyte	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
D50936-1	**CROWLEY 44489-FR**					
Methane [a]		0.0751	0.00080	0.00040	mg/l	RSK175 MOD
Alkalinity, Bicarbonate as CaCO3		395	5.0	2.0	mg/l	SM 2320B-2011
Alkalinity, Total as CaCO3		395	5.0	2.0	mg/l	SM 2320B-2011
Bromide [b]		0.061 B	0.10	0.050	mg/l	EPA 300.0/SW846 9056
Chloride		6.8	1.0	0.40	mg/l	EPA 300.0/SW846 9056
Fluoride		0.44	0.20	0.10	mg/l	EPA 300.0/SW846 9056
Nitrogen, Nitrate		2.1	0.050	0.030	mg/l	EPA 300.0/SW846 9056
Solids, Total Dissolved		920	10	5.0	mg/l	SM 2540C-2011
Specific Conductivity		1090	1.0		umhos/cm	SM 2510B-2011
Sulfate		344	10	4.0	mg/l	EPA 300.0/SW846 9056
pH [c]		7.58			su	SM4500HB+ -2011/9040C
D50936-1B	**CROWLEY 44489-FR**					
Iron Reducing Bacteria		9000	25		CFU/ml	HACH IRB-BART
Slime Forming Bacteria		66500	500		CFU/ml	HACH SLYM-BART
Sulfate Reducing Bacteria		18000	200		CFU/ml	HACH SRB-BART
D50936-1F	**CROWLEY 44489-FR**					
Barium		27.4	10	1.4	ug/l	EPA 200.7
Boron		53.9	50	6.6	ug/l	EPA 200.7
Calcium		121000	400	66	ug/l	EPA 200.7
Magnesium		71000	200	29	ug/l	EPA 200.7
Manganese		23.9	5.0	0.29	ug/l	EPA 200.7
Potassium		6250	1000	230	ug/l	EPA 200.7
Selenium		3.8	0.80	0.42	ug/l	EPA 200.8
Sodium		57700	400	36	ug/l	EPA 200.7
Strontium		1250	5.0	0.12	ug/l	EPA 200.7

(a) The pH of the sample was > 2 at time of analysis.
(b) Elevated detection limit due to matrix interference.
(c) Analysis performed past the required 15 minutes from collection time/holding time.

Mountain States ACCUTEST LABORATORIES

Sample Results

Report of Analysis

Report of Analysis

Client Sample ID: CROWLEY 44489-FR
Lab Sample ID: D50936-1
Matrix: AQ - Water
Method: SW846 8260B
Project: WWLCOGJ: RMV 15-35

Date Sampled: 09/25/13
Date Received: 09/26/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	3V26949.D	1	09/30/13	BR	n/a	n/a	V3V1577
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Purgeable Aromatics+ GRO

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.25	ug/l	
1330-20-7	Xylene (total)	ND	3.0	2.0	ug/l	
	TPH-GRO (C6-C10)	ND	200	200	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	108%		62-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	94%		69-130%

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

Client Sample ID:	CROWLEY 44489-FR		
Lab Sample ID:	D50936-1	**Date Sampled:**	09/25/13
Matrix:	AQ - Water	**Date Received:**	09/26/13
Method:	RSK175 MOD	**Percent Solids:**	n/a
Project:	WWLCOGJ: RMV 15-35		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 [a]	FB09471.D	1	09/27/13	SM	n/a	n/a	GFB417
Run #2							

	Initial Volume	Headspace Volume	Volume Injected	Temperature
Run #1	39.0 ml	4.0 ml	500 ul	20.0 Deg. C
Run #2				

Methane, Ethane and Propane

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	0.0751	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-98-6	Propane	ND	0.022	0.011	mg/l	

(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

Client Sample ID: CROWLEY 44489-FR
Lab Sample ID: D50936-1
Matrix: AQ - Water
Method: SW846-8015B SW846 3510C
Project: WWLCOGJ: RMV 15-35

Date Sampled: 09/25/13
Date Received: 09/26/13
Percent Solids: n/a

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	FH013527.D	1	09/30/13	TU	09/28/13	OP8653	GFH717
Run #2							

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

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.19	0.17	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
84-15-1	o-Terphenyl	75%		20-140%

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

Client Sample ID: CROWLEY 44489-FR
Lab Sample ID: D50936-1
Matrix: AQ - Water
Project: WWLCOGJ: RMV 15-35

Date Sampled: 09/25/13
Date Received: 09/26/13
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	MDL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate as CaC	395	5.0	2.0	mg/l	1	09/27/13	KB	SM 2320B-2011
Alkalinity, Carbonate	2.0 U	5.0	2.0	mg/l	1	09/27/13	KB	SM 2320B-2011
Alkalinity, Total as CaCO3	395	5.0	2.0	mg/l	1	09/27/13	KB	SM 2320B-2011
Bromide [a]	0.061 B	0.10	0.050	mg/l	2	09/26/13 14:33	KB	EPA 300.0/SW846 9056
Chloride	6.8	1.0	0.40	mg/l	2	09/26/13 14:33	KB	EPA 300.0/SW846 9056
Fluoride	0.44	0.20	0.10	mg/l	2	09/26/13 14:33	KB	EPA 300.0/SW846 9056
Nitrogen, Nitrate	2.1	0.050	0.030	mg/l	5	09/26/13 18:22	KB	EPA 300.0/SW846 9056
Nitrogen, Nitrite [a]	0.0060 U	0.0080	0.0060	mg/l	2	09/26/13 14:33	KB	EPA 300.0/SW846 9056
Phosphorus, Total	0.0080 U	0.010	0.0080	mg/l	1	09/27/13	BF	HACH8190/SM4500P-B/E
Solids, Total Dissolved	920	10	5.0	mg/l	1	10/01/13	JD	SM 2540C-2011
Specific Conductivity	1090	1.0		umhos/cm	1	10/03/13	JD	SM 2510B-2011
Sulfate	344	10	4.0	mg/l	20	09/26/13 18:34	KB	EPA 300.0/SW846 9056
pH [b]	7.58			su	1	09/27/13 16:15	AK	SM4500HB+ -2011/9040C

(a) Elevated detection limit due to matrix interference.
(b) Analysis performed past the required 15 minutes from collection time/holding time.

RL = Reporting Limit
MDL = Method Detection Limit
U = Indicates a result < MDL
B = Indicates a result > = MDL but < RL

Report of Analysis

Client Sample ID: CROWLEY 44489-FR
Lab Sample ID: D50936-1B
Matrix: AQ - Water
Project: WWLCOGJ: RMV 15-35

Date Sampled: 09/25/13
Date Received: 09/26/13
Percent Solids: n/a

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Iron Reducing Bacteria	9000	25	CFU/ml	1	09/30/13	MM	HACH IRB-BART
Slime Forming Bacteria	66500	500	CFU/ml	1	09/30/13	MM	HACH SLYM-BART
Sulfate Reducing Bacteria	18000	200	CFU/ml	1	09/30/13	MM	HACH SRB-BART

RL = Reporting Limit

Report of Analysis

Client Sample ID: CROWLEY 44489-FR
Lab Sample ID: D50936-1F
Matrix: AQ - Water Filtered
Project: WWLCOGJ: RMV 15-35

Date Sampled: 09/25/13
Date Received: 09/26/13
Percent Solids: n/a

Dissolved Metals Analysis

Analyte	Result	RL	MDL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Barium	27.4	10	1.4	ug/l	1	09/30/13	09/30/13	JM	EPA 200.7 [1]	EPA 200.7 [4]
Boron	53.9	50	6.6	ug/l	1	09/30/13	09/30/13	JM	EPA 200.7 [1]	EPA 200.7 [4]
Calcium	121000	400	66	ug/l	1	09/30/13	09/30/13	JM	EPA 200.7 [1]	EPA 200.7 [4]
Iron	3.2 U	10	3.2	ug/l	1	09/30/13	09/30/13	JM	EPA 200.7 [1]	EPA 200.7 [4]
Magnesium	71000	200	29	ug/l	1	09/30/13	09/30/13	JM	EPA 200.7 [1]	EPA 200.7 [4]
Manganese	23.9	5.0	0.29	ug/l	1	09/30/13	09/30/13	JM	EPA 200.7 [1]	EPA 200.7 [4]
Potassium	6250	1000	230	ug/l	1	09/30/13	09/30/13	JM	EPA 200.7 [1]	EPA 200.7 [4]
Selenium	3.8	0.80	0.42	ug/l	2	09/27/13	09/30/13	JB	EPA 200.8 [2]	EPA 200.8 [3]
Sodium	57700	400	36	ug/l	1	09/30/13	09/30/13	JM	EPA 200.7 [1]	EPA 200.7 [4]
Strontium	1250	5.0	0.12	ug/l	1	09/30/13	09/30/13	JM	EPA 200.7 [1]	EPA 200.7 [4]

(1) Instrument QC Batch: MA4017
(2) Instrument QC Batch: MA4019
(3) Prep QC Batch: MP11204
(4) Prep QC Batch: MP11218

RL = Reporting Limit
MDL = Method Detection Limit

U = Indicates a result < MDL
J = Indicates a result > = MDL but < RL

Mountain States ACCUTEST LABORATORIES

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

PAGE ___ OF ___

ACCUTEST LABORATORIES

4036 Youngfield Street, Wheat Ridge, CO 80033
TEL. 303-425-6021 FAX: 303-425-6854
www.accutest.com

FED-EX Tracking # | Bottle Order Control #

Accutest Quote # | Accutest Job # D50936

Client / Reporting Information

Company Name: Western Water and Land, Inc.
Street Address: 743 Horizon Ct., Suite 330
City: Grand Junction, CO 81506
Project Contact: Bruce Smith bsmith@westernwaterandland.com
Phone #: (970) 242-0170
Sampler(s) Name(s): Shelby Goodwin

Project Information

Project Name: RMV 15-35
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager: Renea Jackson

Billing Information (If different from Report to)

Company Name: WPX Energy
Street Address: 1058 CR 215
City: Parachute, CO 81635
Attention: Brandon Danforth

Requested Analysis (see TEST CODE sheet)

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 #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	PH, SCON, TDS	XCARBICALK	BRO, CHL, F, NO2, NO30, SO4	TPO4	*Dissolved Metals - Lab Filtered	VRSK175DGMEP NOT preserved	V8260BTXGRO	B8015DRO	BART	**Isotopic Methane	LAB USE ONLY
	Crowley-44489-FR		9-25-13	1102	SG	W	15	3	0	0	1	1	0	0	0	1	1	1	1	1	3	3	2	1	1	01

TB-9-25-13 Broken
NOTB 9/26/13

Turnaround Time (Business days)

- [ ] Std. 15 Business Days
- [X] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day Emergency
- [ ] 2 Day Emergency
- [ ] 1 Day Emergency
- [ ]

Approved By (Accutest PM): / Date:

Emergency & Rush T/A data available VIA Labilink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] COMMBN
- [ ] COMMBN+
- [ ]
- [ ] State Forms Required
- [ ] Send Forms to State
- [ ] Report by Fax
- [X] Report by PDF
- [X] EDD Format

Commercial "A" = Results Only
Commercial "B" = Results + QC Summary
Commercial BN = Results/QC/Narrative (+ = chromatograms)

Comments / Special Instructions

*Dissolved Metals (200.7/200.8): Ba, B, Ca, Fe,Mg, Mn, K, SeMS, Na, Sr

**Hold pending RSK175 results

Not Field Filtered

Relinquished by Sampler:	Received By:	Relinquished By:	Date Time:	Received By:
1 Shelby Goodwin	1	2		2 10:30
Relinquished by Sampler:	Received By:	Relinquished By:	Date Time:	Received By:
3	3	4		4 9/26/13
Relinquished by:	Received By:	Custody Seal #	Intact / Not Intact	Preserved where applicable	On Ice	Cooler Temp.
5	5					3.6

D50936: Chain of Custody
Page 1 of 2

Accutest Laboratories Sample Receipt Summary

Accutest Job Number: D50936 **Client:** WESTERN WATER **Immediate Client Services Action Required:** No

Date / Time Received: 9/26/2013 10:30:00 AM **No. Coolers:** 1 **Client Service Action Required at Login:** No

Project: RMV **Airbill #'s:** UPS

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:	Infared gun		
3. Cooler media:	Ice (bag)		

Quality Control Preservation	Y	or	N	N/A
1. Trip Blank present / cooler:	☑		☐	
2. Trip Blank listed on COC:	☑		☐	
3. Samples preserved properly:	☑		☐	
4. VOCs headspace free:	☑		☐	☐

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume rec'd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Accutest Laboratories
V:(303) 425-6021

4036 Youngfield Street
F: (303) 425-6854

Wheat Ridge, CO
www/accutest.com

D50936: Chain of Custody
Page 2 of 2

Mountain States ACCUTEST LABORATORIES

GC/MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D50936
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1577-MB	3V26944.D	1	09/30/13	BR	n/a	n/a	V3V1577

The QC reported here applies to the following samples: **Method:** SW846 8260B

D50936-1

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	1.0	0.25	ug/l	
100-41-4	Ethylbenzene	ND	2.0	0.25	ug/l	
108-88-3	Toluene	ND	2.0	1.0	ug/l	
1330-20-7	Xylene (total)	ND	3.0	2.0	ug/l	
	TPH-GRO (C6-C10)	ND	200	200	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4	102%	62-130%
2037-26-5	Toluene-D8	102%	70-130%
460-00-4	4-Bromofluorobenzene	97%	69-130%

Blank Spike Summary

Job Number: D50936
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1577-BS	3V26945.D	1	09/30/13	BR	n/a	n/a	V3V1577

The QC reported here applies to the following samples: **Method:** SW846 8260B

D50936-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
71-43-2	Benzene	50	52.0	104	70-130
100-41-4	Ethylbenzene	50	54.5	109	70-130
108-88-3	Toluene	50	53.3	107	70-130
1330-20-7	Xylene (total)	150	167	111	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	100%	62-130%
2037-26-5	Toluene-D8	100%	70-130%
460-00-4	4-Bromofluorobenzene	103%	69-130%

* = Outside of Control Limits.

Blank Spike Summary

Job Number: D50936
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V3V1577-BS	3V26946.D	1	09/30/13	BR	n/a	n/a	V3V1577

The QC reported here applies to the following samples: **Method:** SW846 8260B

D50936-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
	TPH-GRO (C6-C10)	2200	2300	105	39-144

CAS No.	Surrogate Recoveries	BSP	Limits
17060-07-0	1,2-Dichloroethane-D4	99%	62-130%
2037-26-5	Toluene-D8	102%	70-130%
460-00-4	4-Bromofluorobenzene	100%	69-130%

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: D50936
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D50976-7MS	3V26953.D	20	09/30/13	BR	n/a	n/a	V3V1577
D50976-7	3V26952.D	20	09/30/13	BR	n/a	n/a	V3V1577

The QC reported here applies to the following samples: **Method:** SW846 8260B

D50936-1

CAS No.	Compound	D50976-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
71-43-2	Benzene	146		1000	1210	106	62-130
100-41-4	Ethylbenzene	ND		1000	1180	118	63-130
108-88-3	Toluene	381		1000	1520	114	60-130
1330-20-7	Xylene (total)	9070		3000	13400	144* [a]	67-130

CAS No.	Surrogate Recoveries	MS	D50976-7	Limits
17060-07-0	1,2-Dichloroethane-D4	99%	105%	62-130%
2037-26-5	Toluene-D8	109%	105%	70-130%
460-00-4	4-Bromofluorobenzene	118%	114%	69-130%

(a) Outside control limits due to high level in sample relative to spike amount.

* = Outside of Control Limits.

Matrix Spike Summary

Job Number: D50936
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D50976-7MS	3V26954.D	20	09/30/13	BR	n/a	n/a	V3V1577
D50976-7	3V26952.D	20	09/30/13	BR	n/a	n/a	V3V1577

The QC reported here applies to the following samples: **Method:** SW846 8260B

D50936-1

CAS No.	Compound	D50976-7 ug/l	Q	Spike ug/l	MS ug/l	MS %	Limits
	TPH-GRO (C6-C10)	62400		44000	140000	176* [a]	19-168

CAS No.	Surrogate Recoveries	MS	D50976-7	Limits
17060-07-0	1,2-Dichloroethane-D4	97%	105%	62-130%
2037-26-5	Toluene-D8	107%	105%	70-130%
460-00-4	4-Bromofluorobenzene	118%	114%	69-130%

(a) Outside control limits due to possible matrix interference.

* = Outside of Control Limits.

Duplicate Summary

Job Number: D50936
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D50766-1DUP	3V26961.D	10	10/01/13	BR	n/a	n/a	V3V1577
D50766-1	3V26960.D	10	10/01/13	BR	n/a	n/a	V3V1577

The QC reported here applies to the following samples: **Method:** SW846 8260B

D50936-1

CAS No.	Compound	D50766-1 ug/l	Q	DUP ug/l	Q	RPD	Limits
71-43-2	Benzene	1310		1200		9	30
100-41-4	Ethylbenzene	174		158		10	30
108-88-3	Toluene	1080		984		9	30
1330-20-7	Xylene (total)	1100		990		11	30
	TPH-GRO (C6-C10)	18100		16600		9	30

CAS No.	Surrogate Recoveries	DUP	D50766-1	Limits
17060-07-0	1,2-Dichloroethane-D4	98%	99%	62-130%
2037-26-5	Toluene-D8	100%	101%	70-130%
460-00-4	4-Bromofluorobenzene	101%	101%	69-130%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D50936
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB417-MB	FB09457.D	1	09/27/13	SM	n/a	n/a	GFB417

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D50936-1

CAS No.	Compound	Result	RL	MDL	Units	Q
74-82-8	Methane	ND	0.00080	0.00040	mg/l	
74-84-0	Ethane	ND	0.0016	0.00080	mg/l	
74-98-6	Propane	ND	0.022	0.011	mg/l	

Blank Spike Summary

Job Number: D50936
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GFB417-BS	FB09458.D	10	09/27/13	SM	n/a	n/a	GFB417

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D50936-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
74-82-8	Methane	0.51	0.595	117	70-130
74-84-0	Ethane	0.956	0.923	97	70-130
74-98-6	Propane	1.4	1.46	104	67-130

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D50936
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
D50788-1MS	FB09460.D	10	09/27/13	SM	n/a	n/a	GFB417
D50788-1MSD	FB09461.D	10	09/27/13	SM	n/a	n/a	GFB417
D50788-1	FB09459.D	1	09/27/13	SM	n/a	n/a	GFB417

The QC reported here applies to the following samples: **Method:** RSK175 MOD

D50936-1

CAS No.	Compound	D50788-1 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
74-82-8	Methane	ND		0.51	0.484	95	0.494	97	2	51-155/30
74-84-0	Ethane	ND		0.956	0.745	78	0.758	79	2	58-130/30
74-98-6	Propane	ND		1.4	1.18	84	1.20	86	2	46-130/30

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

GC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: D50936
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8653-MB	FH013514.D	1	09/30/13	TU	09/28/13	OP8653	GFH716

The QC reported here applies to the following samples: **Method:** SW846-8015B

D50936-1

CAS No.	Compound	Result	RL	MDL	Units	Q
	TPH-DRO (C10-C28)	ND	0.20	0.18	mg/l	

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	49%	20-140%

Blank Spike Summary

Job Number: D50936
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8653-BS	FH013516.D	1	09/30/13	TU	09/28/13	OP8653	GFH716

The QC reported here applies to the following samples: **Method:** SW846-8015B

D50936-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	Limits
	TPH-DRO (C10-C28)	20	10.4	52	36-140

CAS No.	Surrogate Recoveries	BSP	Limits
84-15-1	o-Terphenyl	56%	20-140%

8.2.1

8

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: D50936
Account: WILLCOP WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP8653-MS	FH013518.D	1	09/30/13	TU	09/28/13	OP8653	GFH716
OP8653-MSD	FH013520.D	1	09/30/13	TU	09/28/13	OP8653	GFH716
D48570-27	FH013524.D	1	09/30/13	TU	09/28/13	OP8653	GFH716

The QC reported here applies to the following samples: **Method:** SW846-8015B

D50936-1

CAS No.	Compound	D48570-27 mg/l	Q	Spike mg/l	MS mg/l	MS %	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	ND		20	11.3	57	10.6	53	6	28-140/30

CAS No.	Surrogate Recoveries	MS	MSD	D48570-27	Limits
84-15-1	o-Terphenyl	69%	67%	55%	20-140%

* = Outside of Control Limits.

Mountain States ACCUTEST LABORATORIES

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

QC Batch ID: MP11204
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 09/27/13

Metal	RL	IDL	MDL	MB raw	final
Aluminum	50	1.1	2		
Antimony	0.40	.0022	.011		
Arsenic	0.20	.017	.044		
Barium	2.0	.016	.079		
Beryllium	0.20	.016	.069		
Boron	40	.49	2.1		
Cadmium	0.10	.036	.042		
Calcium	400	5.6	12		
Chromium	2.0	.053	.053		
Cobalt	0.20	.0049	.015		
Copper	2.0	.06	.13		
Iron	10	3.5	4.6		
Lead	0.50	.0079	.008		
Magnesium	100	1.3	1.3		
Manganese	1.0	.12	.13		
Molybdenum	1.0	.049	.029		
Nickel	2.0	.0088	.027		
Phosphorus	60	2.6	4.3		
Potassium	200	2.9	2.9		
Selenium	0.40	.06	.21	-0.010	<0.40
Silver	0.10	.0019	.008		
Sodium	500	4.9	4.9		
Strontium	20	.01	.015		
Thallium	0.20	.0024	.005		
Tin	10	.063	1.3		
Titanium	2.0	.059	.092		
Uranium	0.20	.0017	.002		
Vanadium	1.0	.037	.2		
Zinc	10	.21	.96		

Associated samples MP11204: D50936-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

QC Batch ID: MP11204
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 09/27/13

Metal	D50977-1A Original MS		Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr				
Antimony	anr				
Arsenic	anr				
Barium	anr				
Beryllium	anr				
Boron					
Cadmium	anr				
Calcium					
Chromium	anr				
Cobalt					
Copper	anr				
Iron	anr				
Lead	anr				
Magnesium					
Manganese	anr				
Molybdenum	anr				
Nickel	anr				
Phosphorus					
Potassium					
Selenium	0.0	186	200	93.0	70-130
Silver	anr				
Sodium					
Strontium					
Thallium	anr				
Tin					
Titanium					
Uranium	anr				
Vanadium					
Zinc	anr				

Associated samples MP11204: D50936-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

QC Batch ID: MP11204 Methods: EPA 200.8
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/27/13

Metal	D50977-1A Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum	anr					
Antimony	anr					
Arsenic	anr					
Barium	anr					
Beryllium	anr					
Boron						
Cadmium	anr					
Calcium						
Chromium	anr					
Cobalt						
Copper	anr					
Iron	anr					
Lead	anr					
Magnesium						
Manganese	anr					
Molybdenum	anr					
Nickel	anr					
Phosphorus						
Potassium						
Selenium	0.0	181	200	90.5	2.7	20
Silver	anr					
Sodium						
Strontium						
Thallium	anr					
Tin						
Titanium						
Uranium	anr					
Vanadium						
Zinc	anr					

Associated samples MP11204: D50936-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

QC Batch ID: MP11204
Matrix Type: AQUEOUS

Methods: EPA 200.8
Units: ug/l

Prep Date: 09/27/13

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum	anr			
Antimony	anr			
Arsenic	anr			
Barium	anr			
Beryllium	anr			
Boron				
Cadmium	anr			
Calcium				
Chromium	anr			
Cobalt				
Copper	anr			
Iron	anr			
Lead	anr			
Magnesium				
Manganese	anr			
Molybdenum	anr			
Nickel	anr			
Phosphorus				
Potassium				
Selenium	195	200	97.5	85-115
Silver	anr			
Sodium				
Strontium				
Thallium	anr			
Tin				
Titanium				
Uranium	anr			
Vanadium				
Zinc	anr			

Associated samples MP11204: D50936-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

QC Batch ID: MP11218
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 09/30/13

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	11	11		
Antimony	30	2.1	21		
Arsenic	25	3.8	9		
Barium	10	.2	1.4	0.10	<10
Beryllium	10	.9	1.7		
Boron	50	.8	6.6	-3.8	<50
Cadmium	10	.2	.36		
Calcium	400	2.4	66	4.0	<400
Chromium	10	.3	1.4		
Cobalt	5.0	.5	.51		
Copper	10	.8	1.5		
Iron	10	1.5	3.2	2.4	<10
Lead	50	2.1	4.1		
Lithium	5.0	.4	1.9		
Magnesium	200	6.8	29	1.6	<200
Manganese	5.0	.5	.29	0.0	<5.0
Molybdenum	10	.4	1.1		
Nickel	30	.5	.87		
Phosphorus	100	15	24		
Potassium	1000	99	230	-84	<1000
Selenium	50	7.1	9.3		
Silicon	50	4.7	5.6		
Silver	30	.3	.4		
Sodium	400	7.3	36	-14	<400
Strontium	5.0	.01	.12	0.0	<5.0
Thallium	10	1.8	4.9		
Tin	50	12	13		
Titanium	10	.1	.43		
Uranium	50	2.9	3.9		
Vanadium	10	.4	.39		
Zinc	30	.4	1.9		

Associated samples MP11218: D50936-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

QC Batch ID: MP11218
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

QC Batch ID: MP11218
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 09/30/13

Metal	D50869-1A Original	MS	Spikelot ICPALL2	% Rec	QC Limits
Aluminum					
Antimony					
Arsenic	anr				
Barium	17.1	2040	2000	101.1	70-130
Beryllium					
Boron	77.0	1140	1000	106.3	70-130
Cadmium	anr				
Calcium	24000	49500	25000	102.0	70-130
Chromium	anr				
Cobalt					
Copper					
Iron	500	5380	5000	97.6	70-130
Lead	anr				
Lithium					
Magnesium	2970	27200	25000	96.9	70-130
Manganese	7.9	493	500	97.0	70-130
Molybdenum					
Nickel					
Phosphorus					
Potassium	2080	27400	25000	101.3	70-130
Selenium					
Silicon					
Silver					
Sodium	63000	86900	25000	95.6	70-130
Strontium	114	611	500	99.4	70-130
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc					

Associated samples MP11218: D50936-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

QC Batch ID: MP11218
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

QC Batch ID: MP11218
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 09/30/13

Metal	D50869-1A Original	MSD	Spikelot ICPALL2	% Rec	MSD RPD	QC Limit
Aluminum						
Antimony						
Arsenic	anr					
Barium	17.1	2050	2000	101.6	0.5	20
Beryllium						
Boron	77.0	1140	1000	106.3	0.0	20
Cadmium	anr					
Calcium	24000	49600	25000	102.4	0.2	20
Chromium	anr					
Cobalt						
Copper						
Iron	500	5380	5000	97.6	0.0	20
Lead	anr					
Lithium						
Magnesium	2970	27300	25000	97.3	0.4	20
Manganese	7.9	492	500	96.8	0.2	20
Molybdenum						
Nickel						
Phosphorus						
Potassium	2080	27500	25000	101.7	0.4	20
Selenium						
Silicon						
Silver						
Sodium	63000	88400	25000	101.6	1.7	20
Strontium	114	615	500	100.2	0.7	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc						

Associated samples MP11218: D50936-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

QC Batch ID: MP11218
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

QC Batch ID: MP11218
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date: 09/30/13

Metal	BSP Result	Spikelot ICPALL2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic	anr			
Barium	2030	2000	101.5	85-115
Beryllium				
Boron	1060	1000	106.0	85-115
Cadmium	anr			
Calcium	26100	25000	104.4	85-115
Chromium	anr			
Cobalt				
Copper				
Iron	4910	5000	98.2	85-115
Lead	anr			
Lithium				
Magnesium	24300	25000	97.2	85-115
Manganese	497	500	99.4	85-115
Molybdenum				
Nickel				
Phosphorus				
Potassium	24900	25000	99.6	85-115
Selenium				
Silicon				
Silver				
Sodium	24400	25000	97.6	85-115
Strontium	503	500	100.6	85-115
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc				

Associated samples MP11218: D50936-1F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

QC Batch ID: MP11218
Matrix Type: AQUEOUS

Methods: EPA 200.7
Units: ug/l

Prep Date:

Metal

(anr) Analyte not requested

Mountain States ACCUTEST LABORATORIES

General Chemistry

QC Data Summaries

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate as CaC	GN22070	5.0	0.0	mg/l	100.0	96.7	96.7	90-110%
Alkalinity, Carbonate	GN22071	5.0	0.0	mg/l	100.0	96.7	96.7	80-120%
Alkalinity, Total as CaCO3	GN22069	5.0	0.0	mg/l	100	97	96.7	90-110%
Bromide	GP11019/GN22054	0.050	0.0	mg/l	20	20.7	103.5	90-110%
Chloride	GP11019/GN22054	0.50	0.0	mg/l	20	20.6	103.0	90-110%
Fluoride	GP11019/GN22054	0.10	0.0	mg/l	10	9.95	99.5	90-110%
Iron Reducing Bacteria	MB256	25	<25	CFU/ml				
Nitrogen, Nitrate	GP11019/GN22054	0.010	0.0	mg/l	4.52	4.59	101.6	90-110%
Nitrogen, Nitrite	GP11019/GN22054	0.0040	0.0	mg/l	6.09	6.14	100.8	90-110%
Phosphorus, Total	GP11036/GN22075	0.010	0.0	mg/l	0.304	0.30	99.9	80-120%
Slime Forming Bacteria	MB254	500	<500	CFU/ml				
Solids, Total Dissolved	GN22105	10	0.0	mg/l	400	403	100.8	90-110%
Specific Conductivity	GP11073/GN22139			umhos/cm	99.7	98.7	99.0	90-110%
Sulfate	GP11019/GN22054	0.50	0.0	mg/l	30	30.6	102.0	90-110%
Sulfate Reducing Bacteria	MB255	200	<200	CFU/ml				
pH	GN22076			su	8.00	8.00	100.0	99.3-100.7%

Associated Samples:
Batch MB254: D50936-1B
Batch MB255: D50936-1B
Batch MB256: D50936-1B
Batch GN22069: D50936-1
Batch GN22070: D50936-1
Batch GN22071: D50936-1
Batch GN22076: D50936-1
Batch GN22105: D50936-1
Batch GP11019: D50936-1
Batch GP11036: D50936-1
Batch GP11073: D50936-1
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN22069	D50945-1	mg/l	97.2	112	14.3	0-20%
Phosphorus, Total	GP11036/GN22075	D50909-2	mg/l	0.066	0.066	0.0	0-20%
Solids, Total Dissolved	GN22105	D50934-1	mg/l	608	612	0.7	0-20%
Specific Conductivity	GP11073/GN22139	D50934-1	umhos/cm	809	812	0.4	0-20%

Associated Samples:
Batch GN22069: D50936-1
Batch GN22105: D50936-1
Batch GP11036: D50936-1
Batch GP11073: D50936-1
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN22069	D50945-1	mg/l	97.2	100	194	96.6	80-120%
Bromide	GP11019/GN22054	D50923-1	mg/l	0.081	2.5	2.8	108.8	80-120%
Chloride	GP11019/GN22054	D50923-1	mg/l	9.5	10	20.7	112.0	80-120%
Fluoride	GP11019/GN22054	D50923-1	mg/l	0.18	2.5	2.7	100.8	80-120%
Nitrogen, Nitrate	GP11019/GN22054	D50923-1	mg/l	0.26	0.565	0.90	113.3	80-120%
Nitrogen, Nitrite	GP11019/GN22054	D50923-1	mg/l	0.0	0.305	0.33	108.4	80-120%
Phosphorus, Total	GP11036/GN22075	D50909-2	mg/l	0.066	0.40	0.47	101.0	80-120%
Sulfate	GP11019/GN22054	D50923-1	mg/l	10.8	10	21.9	111.0	80-120%

Associated Samples:
Batch GN22069: D50936-1
Batch GP11019: D50936-1
Batch GP11036: D50936-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits

MATRIX SPIKE DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: D50936
Account: WILLCOP - WPX Energy Rocky Mountain, LLC
Project: WWLCOGJ: RMV 15-35

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MSD Result	RPD	QC Limit
Alkalinity, Total as CaCO3	GN22069	D50945-1	mg/l	97.2	100	194	0.1	20%
Bromide	GP11019/GN22054	D50923-1	mg/l	0.081	2.5	2.8	0.0	20%
Chloride	GP11019/GN22054	D50923-1	mg/l	9.5	10	20.6	0.5	20%
Fluoride	GP11019/GN22054	D50923-1	mg/l	0.18	2.5	2.6	3.8	20%
Nitrogen, Nitrate	GP11019/GN22054	D50923-1	mg/l	0.26	0.565	0.89	1.1	20%
Nitrogen, Nitrite	GP11019/GN22054	D50923-1	mg/l	0.0	0.305	0.32	3.1	20%
Phosphorus, Total	GP11036/GN22075	D50909-2	mg/l	0.066	0.40	0.470	0.0	20%
Sulfate	GP11019/GN22054	D50923-1	mg/l	10.8	10	21.8	0.5	20%

Associated Samples:
Batch GN22069: D50936-1
Batch GP11019: D50936-1
Batch GP11036: D50936-1
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits