

Legend

- Sample Location
- Existing Road
- Existing Pad
Limit of Disturbance

RWF 33-23
Arsenic Background Sample Location Map
T6S R94W, Section 23

January 23, 2014





14-Jan-2014

Mark Mumby
HRL Compliance Solutions
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **WPX RWF 33-23 Cuttings 1.3.14**

Work Order: **1401099**

Dear Mark,

Revision: **1**

ALS Environmental received 1 sample on 04-Jan-2014 10:00 AM for the analyses presented in the following report.

This is a REVISED REPORT. The Case Narrative provides information discussing the reason for issuing a revised report. The total number of pages in this revision is 24.

If you have any questions regarding these test results, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston
Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

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Environmental 

www.alsglobal.com

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Client: HRL Compliance Solutions
Project: WPX RWF 33-23 Cuttings 1.3.14
Work Order: 1401099

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1401099-01	RWF 33-23 Cuttings	Soil		1/3/2014 12:30	1/4/2014 10:00	<input type="checkbox"/>

Client: HRL Compliance Solutions
Project: WPX RWF 33-23 Cuttings 1.3.14
Work Order: 1401099

Case Narrative

Batch 54690A sample 1401099-01 DRO surrogate recovery was high due to matrix interference. The DRO result may be biased high.

Batch 54703 MS/MSD data for Metals is not related to this project's samples. No data requires qualification.

Batch 54821 MS/MSD data for Hexavalent Chromium is not related to this project's samples. No data requires qualification.

The pH data was re-entered into the batch and is included in this revised report sent 1/14/14.

Client: HRL Compliance Solutions
Project: WPX RWF 33-23 Cuttings 1.3.14
WorkOrder: 1401099

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

ALS Group USA, Corp

Date: 14-Jan-14

Client: HRL Compliance Solutions
Project: WPX RWF 33-23 Cuttings 1.3.14
Sample ID: RWF 33-23 Cuttings
Collection Date: 1/3/2014 12:30 PM

Work Order: 1401099
Lab ID: 1401099-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
DRO (C10-C28)	460		SW8015M		Prep Date: 1/6/2014	Analyst: IT
			5.0	mg/Kg-dry	1	1/7/2014 08:43 PM
Surr: 4-Terphenyl-d14	347	S	39-115	%REC	1	1/7/2014 08:43 PM
GASOLINE RANGE ORGANICS BY GC-FID						
GRO (C6-C10)	ND		SW8015		Prep Date: 1/3/2014	Analyst: CW
			3.0	mg/Kg-dry	1	1/6/2014 06:22 PM
Surr: Toluene-d8	103		50-150	%REC	1	1/6/2014 06:22 PM
MERCURY BY CVAA						
Mercury	0.15		SW7471		Prep Date: 1/6/2014	Analyst: LR
			0.016	mg/Kg-dry	1	1/8/2014 12:59 PM
METALS BY ICP-MS						
Arsenic	4.7		SW6020A		Prep Date: 1/6/2014	Analyst: ML
			2.5	mg/Kg-dry	5	1/7/2014 02:31 AM
Barium	12,000		250	mg/Kg-dry	500	1/8/2014 02:01 AM
Cadmium	ND		1.0	mg/Kg-dry	5	1/7/2014 02:31 AM
Chromium	19		2.5	mg/Kg-dry	5	1/7/2014 02:31 AM
Copper	29		2.5	mg/Kg-dry	5	1/7/2014 02:31 AM
Lead	11		2.5	mg/Kg-dry	5	1/7/2014 02:31 AM
Nickel	20		2.5	mg/Kg-dry	5	1/7/2014 02:31 AM
Selenium	ND		2.5	mg/Kg-dry	5	1/7/2014 02:31 AM
Silver	ND		2.5	mg/Kg-dry	5	1/7/2014 02:31 AM
Zinc	55		5.0	mg/Kg-dry	5	1/7/2014 02:31 AM
SOLUBLE CATIONS FOR SAR						
Calcium	41		SW6020A		Prep Date: 1/8/2014	Analyst: ML
			10	mg/L	20	1/9/2014 02:18 AM
Magnesium	6.5		4.0	mg/L	20	1/9/2014 02:18 AM
Sodium	560		4.0	mg/L	20	1/9/2014 06:24 PM
SODIUM ADSORPTION RATIO						
Sodium Adsorption Ratio	21		USDA H60 METHO		Prep Date: 1/8/2014	Analyst: ML
			0.010	none	1	1/8/2014
SEMI-VOLATILE ORGANIC COMPOUNDS						
Acenaphthene	ND		SW8270		Prep Date: 1/6/2014	Analyst: HL
			8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Acenaphthylene	ND		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Anthracene	ND		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Benzo(a)anthracene	ND		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Benzo(a)pyrene	ND		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Benzo(b)fluoranthene	ND		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Benzo(g,h,i)perylene	ND		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Benzo(k)fluoranthene	ND		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Chrysene	ND		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Dibenzo(a,h)anthracene	ND		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Fluoranthene	ND		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

ALS Group USA, Corp

Date: 14-Jan-14

Client: HRL Compliance Solutions
Project: WPX RWF 33-23 Cuttings 1.3.14
Sample ID: RWF 33-23 Cuttings
Collection Date: 1/3/2014 12:30 PM

Work Order: 1401099
Lab ID: 1401099-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	29		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Indeno(1,2,3-cd)pyrene	ND		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Naphthalene	90		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Pyrene	ND		8.0	µg/Kg-dry	1	1/7/2014 02:45 PM
Surr: 2-Fluorobiphenyl	79.4		12-100	%REC	1	1/7/2014 02:45 PM
Surr: 4-Terphenyl-d14	114		25-137	%REC	1	1/7/2014 02:45 PM
Surr: Nitrobenzene-d5	59.8		37-107	%REC	1	1/7/2014 02:45 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep Date: 1/3/2014 Analyst: BG		
Benzene	140		36	µg/Kg-dry	1	1/7/2014 03:21 PM
Ethylbenzene	ND		36	µg/Kg-dry	1	1/7/2014 03:21 PM
m,p-Xylene	140		73	µg/Kg-dry	1	1/7/2014 03:21 PM
o-Xylene	ND		36	µg/Kg-dry	1	1/7/2014 03:21 PM
Toluene	230		36	µg/Kg-dry	1	1/7/2014 03:21 PM
Xylenes, Total	160		110	µg/Kg-dry	1	1/7/2014 03:21 PM
Surr: 1,2-Dichloroethane-d4	98.0		70-130	%REC	1	1/7/2014 03:21 PM
Surr: 4-Bromofluorobenzene	97.5		70-130	%REC	1	1/7/2014 03:21 PM
Surr: Dibromofluoromethane	95.0		70-130	%REC	1	1/7/2014 03:21 PM
Surr: Toluene-d8	97.8		70-130	%REC	1	1/7/2014 03:21 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHO	Prep Date: 1/8/2014 Analyst: JB		
Electrical Conductivity @ Saturation	3.2		0.050	mmhos/cm @25	10	1/8/2014 02:45 PM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: JJG		
Chromium, Trivalent	19		0.61	mg/Kg-dry	1	1/13/2014 07:47 AM
CHROMIUM, HEXAVALENT			SW7196A	Prep Date: 1/9/2014 Analyst: MB		
Chromium, Hexavalent	ND		0.62	mg/Kg-dry	1	1/10/2014 02:00 PM
MOISTURE			A2540 G	Analyst: AT		
Moisture	17		0.050	% of sample	1	1/7/2014 02:09 PM
PH			SW9045D	Prep Date: 1/6/2014 Analyst: KF		
pH	9.0			s.u.	1	1/6/2014 03:40 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Revision: 1

Client: HRL Compliance Solutions

Work Order: 1401099

Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54690A**

Instrument ID **GC8**

Method: **SW8015M**

MBLK		Sample ID: DBLKS1-54690-54690A				Units: mg/Kg		Analysis Date: 1/7/2014 12:46 PM		
Client ID:		Run ID: GC8_140107B				SeqNo: 2605646		Prep Date: 1/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	1.172	0	2	0	58.6	39-115	0			

LCS		Sample ID: DLCSS1-54690-54690A				Units: mg/Kg		Analysis Date: 1/7/2014 01:15 PM		
Client ID:		Run ID: GC8_140107B				SeqNo: 2605647		Prep Date: 1/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	208.5	5.0	200	0	104	49-124	0			
Surr: 4-Terphenyl-d14	1.233	0	2	0	61.6	39-115	0			

MS		Sample ID: 1401077-01B MS				Units: mg/Kg		Analysis Date: 1/7/2014 03:15 PM		
Client ID:		Run ID: GC8_140107B				SeqNo: 2605650		Prep Date: 1/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	369.1	8.1	325.7	38.45	102	49-130	0			
Surr: 4-Terphenyl-d14	2.455	0	3.257	0	75.4	39-115	0			

MSD		Sample ID: 1401077-01B MSD				Units: mg/Kg		Analysis Date: 1/7/2014 03:45 PM		
Client ID:		Run ID: GC8_140107B				SeqNo: 2605651		Prep Date: 1/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	379	8.1	323.9	38.45	105	49-130	369.1	2.63	30	
Surr: 4-Terphenyl-d14	2.455	0	3.239	0	75.8	39-115	2.455	0.0101	30	

The following samples were analyzed in this batch: | 1401099-01B |

Client: HRL Compliance Solutions
 Work Order: 1401099
 Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54688** Instrument ID **GC10** Method: **SW8015**

MBLK		Sample ID: MBLK-54688-54688				Units: µg/Kg		Analysis Date: 1/6/2014 02:20 PM		
Client ID:		Run ID: GC10_140106A				SeqNo: 2604611		Prep Date: 1/3/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	2,500								
Surr: Toluene-d8	5717	0	5000	0	114	50-150	0			

LCS		Sample ID: LCS-54688-54688				Units: µg/Kg		Analysis Date: 1/6/2014 12:42 PM		
Client ID:		Run ID: GC10_140106A				SeqNo: 2604609		Prep Date: 1/3/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	408100	2,500	500000	0	81.6	70-130	0			
Surr: Toluene-d8	5538	0	5000	0	111	50-150	0			

MS		Sample ID: 1401099-01A MS				Units: µg/Kg		Analysis Date: 1/6/2014 07:11 PM		
Client ID: RWF 33-23 Cuttings		Run ID: GC10_140106A				SeqNo: 2604622		Prep Date: 1/3/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	436600	2,500	500000	0	87.3	70-130	0			
Surr: Toluene-d8	5508	0	5000	0	110	50-150	0			

MSD		Sample ID: 1401099-01A MSD				Units: µg/Kg		Analysis Date: 1/6/2014 07:35 PM		
Client ID: RWF 33-23 Cuttings		Run ID: GC10_140106A				SeqNo: 2604623		Prep Date: 1/3/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	424400	2,500	500000	0	84.9	70-130	436600	2.82	30	
Surr: Toluene-d8	5506	0	5000	0	110	50-150	5508	0.0272	30	

The following samples were analyzed in this batch:

1401099-01A

Client: HRL Compliance Solutions
Work Order: 1401099
Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54698** Instrument ID **HG1** Method: **SW7471**

MBLK		Sample ID: MBLK-54698-54698				Units: mg/Kg		Analysis Date: 1/6/2014 04:27 PM		
Client ID:		Run ID: HG1_140106A				SeqNo: 2604301		Prep Date: 1/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

LCS		Sample ID: LCS-54698-54698				Units: mg/Kg		Analysis Date: 1/6/2014 04:29 PM		
Client ID:		Run ID: HG1_140106A				SeqNo: 2604302		Prep Date: 1/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1717 0.020 0.1665 0 103 80-120 0

MS		Sample ID: 1401005-01BMS				Units: mg/Kg		Analysis Date: 1/6/2014 04:33 PM		
Client ID:		Run ID: HG1_140106A				SeqNo: 2604304		Prep Date: 1/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.153 0.013 0.1114 0.03838 103 75-125 0

MSD		Sample ID: 1401005-01BMSD				Units: mg/Kg		Analysis Date: 1/6/2014 04:36 PM		
Client ID:		Run ID: HG1_140106A				SeqNo: 2604305		Prep Date: 1/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1553 0.013 0.1116 0.03838 105 75-125 0.153 1.45 35

The following samples were analyzed in this batch:

1401099-01B

Client: HRL Compliance Solutions
Work Order: 1401099
Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54668** Instrument ID **ICPMS1** Method: **SW6020A**

DUP		Sample ID: 1401073-01BDUP				Units: mg/L		Analysis Date: 1/9/2014 01:43 AM		
Client ID:		Run ID: ICPMS1_140108A				SeqNo: 2606474		Prep Date: 1/8/2014		DF: 20
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	124.9	10	0	0	0	0-0	116	7.41		
Magnesium	12.1	4.0	0	0	0	0-0	11.15	8.14		

DUP		Sample ID: 1401073-01BDUP				Units: none		Analysis Date: 1/8/2014		
Client ID:		Run ID: SAR_140108A				SeqNo: 2606775		Prep Date: 1/8/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	0.1864	0.010	0	0	0		0.1836	1.49	50	

DUP		Sample ID: 1401073-01BDUP				Units: mg/L		Analysis Date: 1/9/2014 05:49 PM		
Client ID:		Run ID: ICPMS1_140109A				SeqNo: 2607106		Prep Date: 1/8/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium	8.145	0.20	0	0	0	0-0	7.729	5.24		

The following samples were analyzed in this batch:

1401099-01C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

QC Page: 4 of 15

Client: HRL Compliance Solutions
Work Order: 1401099
Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54703** Instrument ID **ICPMS1** Method: **SW6020A**

Sample ID: MBLK-54703-54703				Units: mg/Kg			Analysis Date: 1/6/2014 11:12 PM			
Client ID:		Run ID: ICPMS1_140106B			SeqNo: 2604536		Prep Date: 1/6/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	0.02831	0.25								J
Cadmium	ND	0.10								
Chromium	ND	0.25								
Copper	ND	0.25								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.25								
Silver	ND	0.25								
Zinc	0.1136	0.50								J

LCS					Sample ID: LCS-54703-54703			Units: mg/Kg		Analysis Date: 1/6/2014 11:18 PM		
Client ID:			Run ID: ICPMS1_140106B			SeqNo: 2604537		Prep Date: 1/6/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
Arsenic	4.616	0.25	5	0	92.3	80-120	0					
Barium	4.834	0.25	5	0	96.7	80-120	0					
Cadmium	4.733	0.10	5	0	94.7	80-120	0					
Chromium	4.792	0.25	5	0	95.8	80-120	0					
Copper	4.88	0.25	5	0	97.6	80-120	0					
Lead	4.986	0.25	5	0	99.7	80-120	0					
Nickel	4.84	0.25	5	0	96.8	80-120	0					
Selenium	4.458	0.25	5	0	89.2	80-120	0					
Silver	4.804	0.25	5	0	96.1	80-120	0					
Zinc	4.665	0.50	5	0	93.3	80-120	0					

MS				Sample ID: 1401074-01BMS			Units: mg/Kg		Analysis Date: 1/7/2014 01:39 AM		
Client ID:			Run ID: ICPMS1_140106B			SeqNo: 2604577		Prep Date: 1/6/2014		DF: 5	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	9.981	1.9	7.764	3.059	89.1	75-125	0				
Barium	281.3	1.9	7.764	275.5	74.6	75-125	0			SO	
Cadmium	7.516	0.78	7.764	0.1758	94.5	75-125	0				
Chromium	18.52	1.9	7.764	9.616	115	75-125	0				
Copper	21.79	1.9	7.764	15.82	76.9	75-125	0				
Lead	21.76	1.9	7.764	15.79	76.9	75-125	0				
Nickel	15.86	1.9	7.764	8.656	92.8	75-125	0				
Selenium	7.589	1.9	7.764	0.9078	86.1	75-125	0				
Silver	7.147	1.9	7.764	0.03639	91.6	75-125	0				
Zinc	48.84	3.9	7.764	40.86	103	75-125	0			O	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
Work Order: 1401099
Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54703** Instrument ID **ICPMS1** Method: **SW6020A**

MSD		Sample ID: 1401074-01BMSD				Units: mg/Kg		Analysis Date: 1/7/2014 01:44 AM		
Client ID:		Run ID: ICPMS1_140106B				SeqNo: 2604580		Prep Date: 1/6/2014		DF: 5
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	10.13	1.9	7.645	3.059	92.4	75-125	9.981	1.45	25	
Barium	312.9	1.9	7.645	275.5	488	75-125	281.3	10.6	25	SO
Cadmium	7.515	0.76	7.645	0.1758	96	75-125	7.516	0.00316	25	
Chromium	18.62	1.9	7.645	9.616	118	75-125	18.52	0.533	25	
Copper	22.52	1.9	7.645	15.82	87.7	75-125	21.79	3.29	25	
Lead	20.77	1.9	7.645	15.79	65.2	75-125	21.76	4.64	25	S
Nickel	16.49	1.9	7.645	8.656	103	75-125	15.86	3.94	25	
Selenium	8.054	1.9	7.645	0.9078	93.5	75-125	7.589	5.94	25	
Silver	7.064	1.9	7.645	0.03639	91.9	75-125	7.147	1.16	25	
Zinc	48.7	3.8	7.645	40.86	103	75-125	48.84	0.277	25	O

The following samples were analyzed in this batch: | 1401099-01B |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
Work Order: 1401099
Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54689** Instrument ID **SVMS4** Method: **SW8270**

MBLK		Sample ID: SBLKS1-54689-54689				Units: µg/Kg		Analysis Date: 1/7/2014 06:48 PM		
Client ID:		Run ID: SVMS4_140107A				SeqNo: 2605699		Prep Date: 1/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	6.7								
Acenaphthylene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(g,h,i)perylene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
<i>Surr: 2-Fluorobiphenyl</i>	1203	0	1667	0	72.2	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1410	0	1667	0	84.6	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1268	0	1667	0	76.1	37-107	0			

LCS		Sample ID: SLCSS1-54689-54689				Units: µg/Kg		Analysis Date: 1/7/2014 03:50 PM		
Client ID:		Run ID: SVMS4_140107A				SeqNo: 2605696		Prep Date: 1/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	579.7	6.7	666.7	0	86.9	45-110	0			
Acenaphthylene	575.3	6.7	666.7	0	86.3	45-105	0			
Anthracene	629.7	6.7	666.7	0	94.4	55-105	0			
Benzo(a)anthracene	683.7	6.7	666.7	0	103	50-110	0			
Benzo(a)pyrene	658	6.7	666.7	0	98.7	50-110	0			
Benzo(b)fluoranthene	662.3	6.7	666.7	0	99.3	45-115	0			
Benzo(g,h,i)perylene	685.7	6.7	666.7	0	103	40-125	0			
Benzo(k)fluoranthene	600.3	6.7	666.7	0	90	45-115	0			
Chrysene	626	6.7	666.7	0	93.9	55-110	0			
Dibenzo(a,h)anthracene	691	6.7	666.7	0	104	40-125	0			
Fluoranthene	648.3	6.7	666.7	0	97.2	55-115	0			
Fluorene	618.3	6.7	666.7	0	92.7	50-110	0			
Indeno(1,2,3-cd)pyrene	685.3	6.7	666.7	0	103	40-120	0			
Naphthalene	577.7	6.7	666.7	0	86.6	40-105	0			
Pyrene	616.7	6.7	666.7	0	92.5	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1339	0	1667	0	80.3	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1568	0	1667	0	94.1	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1350	0	1667	0	81	37-107	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
 Work Order: 1401099
 Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54689** Instrument ID **SVMS4** Method: **SW8270**

MS				Sample ID: 1401077-01B MS			Units: µg/Kg		Analysis Date: 1/7/2014 05:36 PM	
Client ID:		Run ID: SVMS4_140107A			SeqNo: 2605697		Prep Date: 1/6/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1037	13	1256	8.091	82	45-110	0			
Acenaphthylene	966.9	13	1256	0	77	45-105	0			
Anthracene	1148	13	1256	34.95	88.6	55-105	0			
Benzo(a)anthracene	1381	13	1256	110	101	50-110	0			
Benzo(a)pyrene	1283	13	1256	117.5	92.8	50-110	0			
Benzo(b)fluoranthene	1269	13	1256	144.7	89.5	45-115	0			
Benzo(g,h,i)perylene	1098	13	1256	52.43	83.2	40-125	0			
Benzo(k)fluoranthene	1254	13	1256	69.91	94.3	45-115	0			
Chrysene	1258	13	1256	127.2	90	55-110	0			
Dibenzo(a,h)anthracene	1119	13	1256	17.15	87.8	40-125	0			
Fluoranthene	1529	13	1256	270.6	100	55-115	0			
Fluorene	1116	13	1256	8.091	88.2	50-110	0			
Indeno(1,2,3-cd)pyrene	1144	13	1256	54.69	86.7	40-120	0			
Naphthalene	835.7	13	1256	8.091	65.9	40-105	0			
Pyrene	1360	13	1256	221	90.7	45-125	0			
Surr: 2-Fluorobiphenyl	2132	0	3139	0	67.9	12-100	0			
Surr: 4-Terphenyl-d14	2737	0	3139	0	87.2	25-137	0			
Surr: Nitrobenzene-d5	1990	0	3139	0	63.4	37-107	0			

MSD				Sample ID: 1401077-01B MSD			Units: µg/Kg		Analysis Date: 1/7/2014 06:12 PM	
Client ID:		Run ID: SVMS4_140107A			SeqNo: 2605698		Prep Date: 1/6/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1146	13	1302	8.091	87.4	45-110	1037	10	30	
Acenaphthylene	1096	13	1302	0	84.1	45-105	966.9	12.5	30	
Anthracene	1226	13	1302	34.95	91.5	55-105	1148	6.63	30	
Benzo(a)anthracene	1488	13	1302	110	106	50-110	1381	7.41	30	
Benzo(a)pyrene	1358	13	1302	117.5	95.3	50-110	1283	5.65	30	
Benzo(b)fluoranthene	1310	13	1302	144.7	89.5	45-115	1269	3.22	30	
Benzo(g,h,i)perylene	985.6	13	1302	52.43	71.7	40-125	1098	10.7	30	
Benzo(k)fluoranthene	1141	13	1302	69.91	82.2	45-115	1254	9.51	30	
Chrysene	1245	13	1302	127.2	85.9	55-110	1258	0.979	30	
Dibenzo(a,h)anthracene	1084	13	1302	17.15	81.9	40-125	1119	3.23	30	
Fluoranthene	1569	13	1302	270.6	99.7	55-115	1529	2.55	30	
Fluorene	1208	13	1302	8.091	92.2	50-110	1116	7.96	30	
Indeno(1,2,3-cd)pyrene	1083	13	1302	54.69	79	40-120	1144	5.45	30	
Naphthalene	993.4	13	1302	8.091	75.7	40-105	835.7	17.2	30	
Pyrene	1376	13	1302	221	88.7	45-125	1360	1.19	30	
Surr: 2-Fluorobiphenyl	2521	0	3255	0	77.4	12-100	2132	16.7	40	
Surr: 4-Terphenyl-d14	3008	0	3255	0	92.4	25-137	2737	9.45	40	
Surr: Nitrobenzene-d5	2450	0	3255	0	75.3	37-107	1990	20.7	40	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
Work Order: 1401099
Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54689** Instrument ID **SVMS4** Method: **SW8270**

The following samples were analyzed in this batch:

1401099-01B

Client: HRL Compliance Solutions
Work Order: 1401099
Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54687** Instrument ID **VMS5** Method: **SW8260B**

MBLK				Sample ID: MBLK-54687-54687				Units: µg/Kg			Analysis Date: 1/6/2014 11:03 PM		
Client ID:			Run ID: VMS5_140106A				SeqNo: 2604547			Prep Date: 1/3/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Benzene	ND	30											
Ethylbenzene	ND	30											
m,p-Xylene	ND	60											
o-Xylene	ND	30											
Toluene	ND	30											
Xylenes, Total	ND	90											
Surr: 1,2-Dichloroethane-d4	1003	0	1000	0	100	70-130		0					
Surr: 4-Bromofluorobenzene	980.5	0	1000	0	98	70-130		0					
Surr: Dibromofluoromethane	995.5	0	1000	0	99.6	70-130		0					
Surr: Toluene-d8	987.5	0	1000	0	98.8	70-130		0					

LCS				Sample ID: LCS-54687-54687			Units: µg/Kg		Analysis Date: 1/6/2014 09:46 PM		
Client ID:			Run ID: VMS5_140106A			SeqNo: 2604546		Prep Date: 1/3/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1041	30	1000	0	104	75-125	0				
Ethylbenzene	1079	30	1000	0	108	75-125	0				
m,p-Xylene	2154	60	2000	0	108	80-125	0				
o-Xylene	1104	30	1000	0	110	75-125	0				
Toluene	1051	30	1000	0	105	70-125	0				
Xylenes, Total	3258	90	3000	0	109	75-125	0				
Surr: 1,2-Dichloroethane-d4	990	0	1000	0	99	70-130	0				
Surr: 4-Bromofluorobenzene	1011	0	1000	0	101	70-130	0				
Surr: Dibromofluoromethane	983	0	1000	0	98.3	70-130	0				
Surr: Toluene-d8	1002	0	1000	0	100	70-130	0				

MS					Sample ID: 1401122-03B MS			Units: µg/Kg		Analysis Date: 1/7/2014 09:54 PM	
Client ID:			Run ID: VMS8_140107A			SeqNo: 2605373		Prep Date: 1/3/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	889.5	30	1000	0	89	75-125	0				
Ethylbenzene	962.5	30	1000	0	96.2	75-125	0				
m,p-Xylene	1924	60	2000	0	96.2	80-125	0				
o-Xylene	1003	30	1000	0	100	75-125	0				
Toluene	909	30	1000	0	90.9	70-125	0				
Xylenes, Total	2928	90	3000	0	97.6	75-125	0				
Surr: 1,2-Dichloroethane-d4	995	0	1000	0	99.5	70-130	0				
Surr: 4-Bromofluorobenzene	1066	0	1000	0	107	70-130	0				
Surr: Dibromofluoromethane	1006	0	1000	0	101	70-130	0				
Surr: Toluene-d8	957	0	1000	0	95.7	70-130	0				

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
Work Order: 1401099
Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54687** Instrument ID **VMS5** Method: **SW8260B**

MSD				Sample ID: 1401122-03B MSD			Units: µg/Kg		Analysis Date: 1/7/2014 10:22 PM	
Client ID:				Run ID: VMS8_140107A			SeqNo: 2605375		Prep Date: 1/3/2014	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	879.5	30	1000	0	88	75-125	889.5	1.13	30	
Ethylbenzene	948.5	30	1000	0	94.8	75-125	962.5	1.47	30	
m,p-Xylene	1898	60	2000	0	94.9	80-125	1924	1.39	30	
o-Xylene	992	30	1000	0	99.2	75-125	1003	1.1	30	
Toluene	896.5	30	1000	0	89.6	70-125	909	1.38	30	
Xylenes, Total	2890	90	3000	0	96.3	75-125	2928	1.29	30	
Surr: 1,2-Dichloroethane-d4	980	0	1000	0	98	70-130	995	1.52	30	
Surr: 4-Bromofluorobenzene	1048	0	1000	0	105	70-130	1066	1.66	30	
Surr: Dibromofluoromethane	1011	0	1000	0	101	70-130	1006	0.496	30	
Surr: Toluene-d8	960	0	1000	0	96	70-130	957	0.313	30	

The following samples were analyzed in this batch: 1401099-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
Work Order: 1401099
Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54668** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP		Sample ID: 1401073-01B DUP				Units: mmhos/cm @25°C		Analysis Date: 1/8/2014 02:45 PM		
Client ID:		Run ID: WETCHEM_140108E				SeqNo: 2605990		Prep Date: 1/8/2014		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	1.031	0.050	0	0	0		0.975	5.58	50	

The following samples were analyzed in this batch:

1401099-01C

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

Client: HRL Compliance Solutions
Work Order: 1401099
Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54706** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-54706-54706				Units: s.u.			Analysis Date: 1/6/2014 03:40 PM			
Client ID:				Run ID: WETCHEM_140106E				SeqNo: 2604129			Prep Date: 1/6/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		4.01	0	4	0	100	90-110	0						

DUP					Sample ID: 1401099-01B DUP			Units: s.u.		Analysis Date: 1/6/2014 03:40 PM		
Client ID: RWF 33-23 Cuttings				Run ID: WETCHEM_140106E			SeqNo: 2604131		Prep Date: 1/6/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
pH	9.21	0	0	0	0	0-0	9.01	2.2	20			

The following samples were analyzed in this batch:

1401099-01B

Client: HRL Compliance Solutions
Work Order: 1401099
Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **54821** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-54821-54821				Units: mg/Kg		Analysis Date: 1/10/2014 02:00 PM		
Client ID:		Run ID: WETCHEM_140110I				SeqNo: 2607936		Prep Date: 1/9/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.50

LCS		Sample ID: LCS-54821-54821				Units: mg/Kg		Analysis Date: 1/10/2014 02:00 PM		
Client ID:		Run ID: WETCHEM_140110I				SeqNo: 2607935		Prep Date: 1/9/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.8 0.50 2 0 90 80-120 0

MS		Sample ID: 13121018-09B MS				Units: mg/Kg		Analysis Date: 1/10/2014 02:00 PM		
Client ID:		Run ID: WETCHEM_140110I				SeqNo: 2607913		Prep Date: 1/9/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.751 0.49 1.946 0.2392 77.7 75-125 0

MS		Sample ID: 13121018-09B MSI				Units: mg/Kg		Analysis Date: 1/10/2014 02:00 PM		
Client ID:		Run ID: WETCHEM_140110I				SeqNo: 2607915		Prep Date: 1/9/2014		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1246 48 954.2 0.2392 131 75-125 0 S

MSD		Sample ID: 13121018-09B MSD				Units: mg/Kg		Analysis Date: 1/10/2014 02:00 PM		
Client ID:		Run ID: WETCHEM_140110I				SeqNo: 2607914		Prep Date: 1/9/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.859 0.49 1.953 0.2392 83 75-125 1.751 6.01 20

The following samples were analyzed in this batch:

1401099-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

QC Page: 14 of 15

Client: HRL Compliance Solutions
Work Order: 1401099
Project: WPX RWF 33-23 Cuttings 1.3.14

QC BATCH REPORT

Batch ID: **R133657** Instrument ID **MOIST** Method: **A2540 G**

MBLK		Sample ID: WBLKS-R133657				Units: % of sample		Analysis Date: 1/7/2014 02:09 PM		
Client ID:		Run ID: MOIST_140107A				SeqNo: 2605614		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture ND 0.050

LCS		Sample ID: LCS-R133657				Units: % of sample		Analysis Date: 1/7/2014 02:09 PM		
Client ID:		Run ID: MOIST_140107A				SeqNo: 2605610		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP		Sample ID: 1312870-09A DUP				Units: % of sample		Analysis Date: 1/7/2014 02:09 PM		
Client ID:		Run ID: MOIST_140107A				SeqNo: 2605598		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 24.43 0.050 0 0 0 0-0 24.18 1.03 20 H

DUP		Sample ID: 1401099-01B DUP				Units: % of sample		Analysis Date: 1/7/2014 02:09 PM		
Client ID: RWF 33-23 Cuttings		Run ID: MOIST_140107A				SeqNo: 2605604		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 18.62 0.050 0 0 0 0-0 17.47 6.37 20

The following samples were analyzed in this batch:

1401099-01B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Revision: 1

QC Page: 15 of 15



1401099

Form 202r8

*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.

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	<i>[Signature]</i>	<i>[Signature]</i>	1/3/14	1:20
RECEIVED BY	<i>[Signature]</i>	Colby Koerner	1/3/14	1:20
RELINQUISHED BY	<i>[Signature]</i>	Colby Koerner	1/3/14	1:40
RECEIVED BY	FedEx			
RELINQUISHED BY	FedEx			
RECEIVED BY	<i>[Signature]</i>	KETH WIERENCA	1/4/14	1000

Sample Receipt Checklist

Client Name: HRL

Date/Time Received: 04-Jan-14 10:00

Work Order: 1401099

Received by: KRW

Checklist completed by Keith Wurenga
eSignature

04-Jan-14
Date

Reviewed by: Chad Whelton
eSignature

06-Jan-14
Date

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2 C</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>1/4/2014</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

Revision: 1

From: (970) 424-4749
Lab Hub, LLC
127 E First Street
PARACHUTE, CO 81635

Origin ID: RILA



Ship Date: 03JAN14
Act/Vgt: 35.0 LB
CAD: 103923490/MNET3430
Dims: 25 X 14 X 15 IN

Delivery Address Bar Code



Ref # 1001-0100314-2
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BILL RECIPIENT

Sample recieving
ALS Holland
3352 128TH AVE

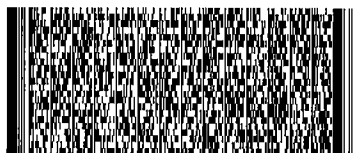
HOLLAND, MI 49424

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 7975 5509 8332
0201

X0 GRRA

49424
MI-US
GRR



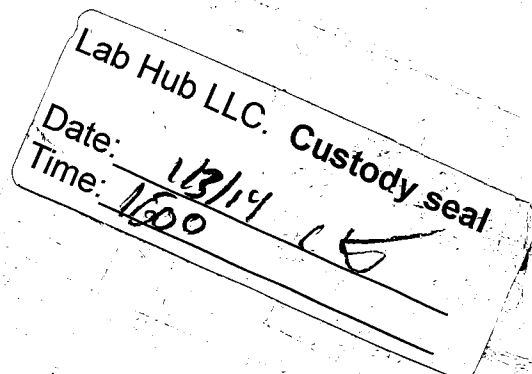
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15-Jan-2014

Mark Mumby
HRL Compliance Solutions
2385 F 1/2 Road
Grand Junction, CO 81505

Re: **WPX RWF 33-23 Background 1.10.14**

Work Order: **1401314**

Dear Mark,

ALS Environmental received 5 samples on 11-Jan-2014 11:15 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

Sample results are compliant with NELAP standard requirements and QC results achieved laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 13.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston
Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: HRL Compliance Solutions
Project: WPX RWF 33-23 Background 1.10.14
Work Order: 1401314

Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1401314-01	RWF 33-23-B-1	Soil		1/10/2014 14:30	1/11/2014 11:15	<input type="checkbox"/>
1401314-02	RWF 33-23-B-2	Soil		1/10/2014 14:35	1/11/2014 11:15	<input type="checkbox"/>
1401314-03	RWF 33-23-B-3	Soil		1/10/2014 14:40	1/11/2014 11:15	<input type="checkbox"/>
1401314-04	RWF 33-23-B-4	Soil		1/10/2014 14:45	1/11/2014 11:15	<input type="checkbox"/>
1401314-05	RWF 33-23-B-5	Soil		1/10/2014 14:50	1/11/2014 11:15	<input type="checkbox"/>

Client: HRL Compliance Solutions
Project: WPX RWF 33-23 Background 1.10.14
WorkOrder: 1401314

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte is present at an estimated concentration between the MDL and Report Limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

<u>Acronym</u>	<u>Description</u>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
mg/Kg-dry	Milligrams per Kilogram Dry Weight

ALS Group USA, Corp

Date: 15-Jan-14

Client: HRL Compliance Solutions

Project: WPX RWF 33-23 Background 1.10.14

Work Order: 1401314

Sample ID: RWF 33-23-B-1

Lab ID: 1401314-01

Collection Date: 1/10/2014 02:30 PM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
METALS BY ICP-MS			SW6020A		Prep Date: 1/14/2014	Analyst: RH
Arsenic	4.9		2.6	mg/Kg-dry	5	1/14/2014 06:21 PM
MOISTURE			A2540 G			Analyst: AT
Moisture	23		0.050	% of sample	1	1/13/2014 09:54 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp**Date:** 15-Jan-14

Client: HRL Compliance Solutions
Project: WPX RWF 33-23 Background 1.10.14
Sample ID: RWF 33-23-B-2
Collection Date: 1/10/2014 02:35 PM

Work Order: 1401314
Lab ID: 1401314-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 1/14/2014	Analyst: RH
Arsenic	5.3		2.2	mg/Kg-dry	5	1/14/2014 06:27 PM
MOISTURE			A2540 G			Analyst: AT
Moisture	18		0.050	% of sample	1	1/13/2014 09:54 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Jan-14

Client: HRL Compliance Solutions

Project: WPX RWF 33-23 Background 1.10.14

Work Order: 1401314

Sample ID: RWF 33-23-B-3

Lab ID: 1401314-03

Collection Date: 1/10/2014 02:40 PM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 1/14/2014	Analyst: RH
Arsenic	4.7		2.7	mg/Kg-dry	5	1/14/2014 06:33 PM
MOISTURE			A2540 G			Analyst: AT
Moisture	35		0.050	% of sample	1	1/13/2014 09:54 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: 15-Jan-14

Client: HRL Compliance Solutions
Project: WPX RWF 33-23 Background 1.10.14
Sample ID: RWF 33-23-B-4
Collection Date: 1/10/2014 02:45 PM

Work Order: 1401314
Lab ID: 1401314-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<hr/>						
METALS BY ICP-MS			SW6020A		Prep Date: 1/14/2014	Analyst: RH
Arsenic	4.0		2.2	mg/Kg-dry	5	1/14/2014 06:39 PM
MOISTURE			A2540 G			Analyst: AT
Moisture	25		0.050	% of sample	1	1/13/2014 09:54 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp**Date:** 15-Jan-14**Client:** HRL Compliance Solutions**Project:** WPX RWF 33-23 Background 1.10.14**Work Order:** 1401314**Sample ID:** RWF 33-23-B-5**Lab ID:** 1401314-05**Collection Date:** 1/10/2014 02:50 PM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 1/14/2014	Analyst: RH
Arsenic	3.1		2.9	mg/Kg-dry	5	1/14/2014 07:02 PM
MOISTURE			A2540 G			Analyst: AT
Moisture	35		0.050	% of sample	1	1/13/2014 09:54 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Client: HRL Compliance Solutions
Work Order: 1401314
Project: WPX RWF 33-23 Background 1.10.14

QC BATCH REPORT

Batch ID: **54876** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK		Sample ID: MBLK-54876-54876				Units: mg/Kg		Analysis Date: 1/14/2014 04:35 PM		
Client ID:		Run ID: ICPMS1_140114A				SeqNo: 2610387		Prep Date: 1/14/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								

LCS		Sample ID: LCS-54876-54876				Units: mg/Kg		Analysis Date: 1/14/2014 04:41 PM		
Client ID:		Run ID: ICPMS1_140114A				SeqNo: 2610388		Prep Date: 1/14/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.776	0.25	5	0	95.5	80-120	0			

MS		Sample ID: 13121026-18AMS				Units: mg/Kg		Analysis Date: 1/14/2014 05:11 PM		
Client ID:		Run ID: ICPMS1_140114A				SeqNo: 2610393		Prep Date: 1/14/2014		DF: 5
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.864	1.8	7.102	3.206	79.7	75-125	0			

MSD		Sample ID: 13121026-18AMSD				Units: mg/Kg		Analysis Date: 1/14/2014 05:16 PM		
Client ID:		Run ID: ICPMS1_140114A				SeqNo: 2610394		Prep Date: 1/14/2014		DF: 5
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	9.773	1.8	7.215	3.206	91	75-125	8.864	9.76	25	

The following samples were analyzed in this batch:

1401314-01A	1401314-02A	1401314-03A
1401314-04A	1401314-05A	

Client: HRL Compliance Solutions
Work Order: 1401314
Project: WPX RWF 33-23 Background 1.10.14

QC BATCH REPORT

Batch ID: **R133920** Instrument ID **MOIST** Method: **A2540 G**

MBLK		Sample ID: WBLKS-R133920				Units: % of sample			Analysis Date: 1/13/2014 09:54 AM		
Client ID:		Run ID: MOIST_140113A				SeqNo: 2609639			Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture ND 0.050

LCS		Sample ID: LCS-R133920				Units: % of sample			Analysis Date: 1/13/2014 09:54 AM		
Client ID:		Run ID: MOIST_140113A				SeqNo: 2609635			Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 100 0.050 100 0 100 99.5-100.5 0

DUP		Sample ID: 1401314-01A DUP				Units: % of sample			Analysis Date: 1/13/2014 09:54 AM		
Client ID: RWF 33-23-B-1		Run ID: MOIST_140113A				SeqNo: 2609627			Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 23.63 0.050 0 0 0 0-0 23.34 1.23 20

DUP		Sample ID: 1401315-01B DUP				Units: % of sample			Analysis Date: 1/13/2014 09:54 AM		
Client ID:		Run ID: MOIST_140113A				SeqNo: 2609633			Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 17.29 0.050 0 0 0 0-0 17.81 2.96 20

The following samples were analyzed in this batch:

1401314-01A	1401314-02A	1401314-03A
1401314-04A	1401314-05A	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.



ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
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Form 202r8

WORKORDER
#

1401314

PROJECT NAME		WPX <i>RWF 33-23 Backgrounds</i>		SAMPLER		Reed Wold		DATE		11/01/14		PAGE		1 of 1	
PROJECT No.				SITE ID		RWF 33-23		TURNAROUND		Standard		DISPOSAL		By Lab or Return to Client	
COMPANY NAME		HRL Compliance		BILL TO COMPANY		WPX		Arsenic							
SEND REPORT TO		Mark Mumby		INVOICE ATTN TO		Karolina Blaney									
ADDRESS		2385 F 1/2 Rd		ADDRESS		1058 Co Rd 215									
CITY / STATE / ZIP		Grand Junction, CO 81506		CITY / STATE / ZIP		Parachure CO 81635									
PHONE		970-243-3271		PHONE		970-683-2295									
FAX		970-243-3280		FAX											
E-MAIL		mmumby@hrlcomp.com rwold@hrlcomp.com		E-MAIL		Karolina.blaney@wpxenergy.com									
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC								
1	RWF 33-23-B-1	SO	11/01/14	2:30	1	8		x							
2	RWF 33-23-B-2	↓	↓	2:35	↓	↓		x							
3	RWF 33-23-B-3	↓	↓	2:40	↓	↓		x							
4	RWF 33-23-B-4	↓	↓	2:45	↓	↓		x							
5	RWF 33-23-B-5	↓	↓	2:50	↓	↓		x							

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

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)	
	X	LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
		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 <i>Reed Wold</i>	<i>Reed Wold</i>	11/01/14	4:00
RECEIVED BY <i>Colby Koerner</i>	<i>Colby Koerner</i>	11/01/14	1600
RELINQUISHED BY <i>Colby Koerner</i>	<i>Colby Koerner</i>	11/01/14	1600
RECEIVED BY <i>FedEx</i>			
RELINQUISHED BY <i>Diane F. Shaw</i>	<i>Diane F. Shaw</i>	11/11/14	1115
RECEIVED BY			

Sample Receipt Checklist

Client Name: HRL

Date/Time Received: 11-Jan-14 11:15

Work Order: 1401314

Received by: DS

Checklist completed by Diane Shaw 11-Jan-14
eSignature Date

Reviewed by: Ann Preston 13-Jan-14
eSignature Date

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2 c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>1/11/2014 11:49:31 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

From: (970) 424-4749
Lab Hub, LLC
127 E First Street
PARACHUTE, CO 81635

Origin ID: RILA



Ship Date: 10 JAN 14
Act Wgt: 43.0 LB
CAD: 103923480/INET3430

Dims: 23 X 14 X 15 IN

SHIP TO: (616) 399-6070
Sample receiving
ALS Holland
3352 128TH AVE

HOLLAND, MI 49424

BILL RECIPIENT

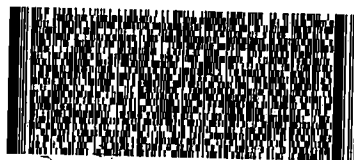
Delivery Address Bar Code



Ref # 1001-011074-1
Invoice #
PO #
Dept #

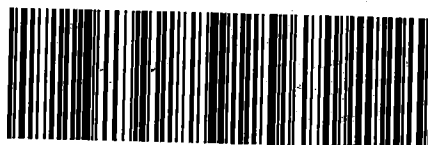
SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 7976 1028 1226
0201



X0 GRRR

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MI-US
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