



Legend

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

GM 44-1
Arsenic Background Sample Location Map
T7S R96W, Section 1

August 15, 2013





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

Tax I.D. 62-0814289

Est. 1970

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

Report Summary

Tuesday August 06, 2013

Report Number: L648861

Samples Received: 07/27/13

Client Project:

Description: GM 44-1 Cuttings

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

Entire Report Reviewed By:

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364

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

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REPORT OF ANALYSIS

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

August 06, 2013

Date Received : July 27, 2013
Description : GM 44-1 Cuttings
Sample ID : GM 44-1
Collected By :
Collection Date : 07/26/13 08:00

ESC Sample # : L648861-01

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021/8015	07/29/13	5
Toluene	BDL	0.025	mg/kg	8021/8015	07/29/13	5
Ethylbenzene	BDL	0.0025	mg/kg	8021/8015	07/29/13	5
Total Xylene	BDL	0.0075	mg/kg	8021/8015	07/29/13	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	GRO	07/29/13	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	106.		% Rec.	8021/8015	07/29/13	5
a,a,a-Trifluorotoluene(PID)	110.		% Rec.	8021/8015	07/29/13	5
TPH (GC/FID) High Fraction	120	4.0	mg/kg	3546/DRO	08/06/13	1
Surrogate recovery(%)						
o-Terphenyl	82.9		% Rec.	3546/DRO	08/06/13	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	0.0091	0.0060	mg/kg	8270C-SIM	08/02/13	1
Acenaphthene	0.0094	0.0060	mg/kg	8270C-SIM	08/02/13	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	08/02/13	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	08/02/13	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	08/02/13	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	08/02/13	1
Chrysene	0.016	0.0060	mg/kg	8270C-SIM	08/02/13	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	08/02/13	1
Fluoranthene	0.0068	0.0060	mg/kg	8270C-SIM	08/02/13	1
Fluorene	0.035	0.0060	mg/kg	8270C-SIM	08/02/13	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	08/02/13	1
Naphthalene	0.13	0.020	mg/kg	8270C-SIM	08/02/13	1
Pyrene	0.014	0.0060	mg/kg	8270C-SIM	08/02/13	1
Surrogate Recovery						
Nitrobenzene-d5	83.3		% Rec.	8270C-SIM	08/02/13	1
2-Fluorobiphenyl	78.8		% Rec.	8270C-SIM	08/02/13	1
p-Terphenyl-d14	94.5		% Rec.	8270C-SIM	08/02/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Reported: 08/06/13 14:56 Printed: 08/06/13 14:56



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August 06, 2013

Date Received : July 27, 2013
Description : GM 44-1 Cuttings

Sample ID : GM 44-1

Collected By :
Collection Date : 07/26/13 08:00

ESC Sample # : L648861-02

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	10.	mg/kg	3060A/7196A	07/31/13	5
Chromium, Trivalent	12.	0.50	mg/kg	Calc.	07/31/13	1
ORP	140		mV	2580 B-2011	07/31/13	1
pH	8.6		su	9045D	08/01/13	1
Sodium Adsorption Ratio	16.			Calc.	07/31/13	1
Specific Conductance	2100		umhos/cm	9050AMod	07/31/13	1
Mercury	0.027	0.020	mg/kg	7471	07/31/13	1
Arsenic	14.	1.0	mg/kg	6010B	07/31/13	1
Barium	2600	0.25	mg/kg	6010B	07/31/13	1
Cadmium	BDL	0.25	mg/kg	6010B	07/31/13	1
Chromium	12.	0.50	mg/kg	6010B	07/31/13	1
Copper	19.	1.0	mg/kg	6010B	07/31/13	1
Lead	23.	0.25	mg/kg	6010B	07/31/13	1
Nickel	15.	1.0	mg/kg	6010B	07/31/13	1
Selenium	1.2	1.0	mg/kg	6010B	07/31/13	1
Silver	BDL	0.50	mg/kg	6010B	07/31/13	1
Zinc	48.	1.5	mg/kg	6010B	07/31/13	1

BDL - Below Detection Limit

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L648861-02 (PH) - 8.6@20.9c

L648861-02 (CR6) - diluted due to sample color



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Parachute, CO 81635

Date Received : July 27, 2013
Description : GM 44-1 Cuttings
Sample ID : GM 44-1-B-1
Collected By :
Collection Date : 07/26/13 08:10

ESC Sample # : L648861-03

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	4.7	1.0	mg/kg	6010B	07/31/13	1

BDL - Below Detection Limit

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Date Received : July 27, 2013
Description : GM 44-1 Cuttings
Sample ID : GM 44-1-B-2
Collected By :
Collection Date : 07/26/13 08:15

ESC Sample # : L648861-04
Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	5.4	1.0	mg/kg	6010B	07/31/13	1

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August 06, 2013

Date Received : July 27, 2013
Description : GM 44-1 Cuttings
Sample ID : GM 44-1-B-3
Collected By :
Collection Date : 07/26/13 08:20

ESC Sample # : L648861-05
Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	8.9	1.0	mg/kg	6010B	07/31/13	1

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Det. Limit - Practical Quantitation Limit(PQL)
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Date Received : July 27, 2013
Description : GM 44-1 Cuttings
Sample ID : GM 44-1-B-4
Collected By :
Collection Date : 07/26/13 08:25

ESC Sample # : L648861-06
Site ID :
Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	7.9	1.0	mg/kg	6010B	07/31/13	1

BDL - Below Detection Limit
Det. Limit - Practical Quantitation Limit(PQL)
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Date Received : July 27, 2013
Description : GM 44-1 Cuttings
Sample ID : GM 44-1-B-5
Collected By :
Collection Date : 07/26/13 08:30

ESC Sample # : L648861-07

Site ID :

Project # :

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Arsenic	6.7	1.0	mg/kg	6010B	07/31/13	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L648861-02	WG674315	SAMP	Chromium, Hexavalent	R2762382	O
L648861-07	WG674433	SAMP	Arsenic	R2768540	J3J6

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low
O	(ESC) Sample diluted due to matrix interferences that impaired the ability to make an accurate analytical determination. The detection limit is elevated in order to reflect the necessary dilution.

Qualifier Report Information

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

Definitions

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

Summary of Remarks For Samples Printed
08/06/13 at 14:56:47

TSR Signing Reports: 364
R5 - Desired TAT

on 910 list samples, please log BTEXGRO, DRO and PAHSIM to separate dash numbers.

Sample: L648861-01 Account: WILPCO Received: 07/27/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:56

Sample: L648861-02 Account: WILPCO Received: 07/27/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:56

Sample: L648861-03 Account: WILPCO Received: 07/27/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:56

Sample: L648861-04 Account: WILPCO Received: 07/27/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:56

Sample: L648861-05 Account: WILPCO Received: 07/27/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:56

Sample: L648861-06 Account: WILPCO Received: 07/27/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:56

Sample: L648861-07 Account: WILPCO Received: 07/27/13 09:30 Due Date: 08/02/13 00:00 RPT Date: 08/06/13 14:56



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Quality Assurance Report
Level II

L648861

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Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Benzene	< .0005	mg/kg			WG674322	07/29/13 14:25
Ethylbenzene	< .0005	mg/kg			WG674322	07/29/13 14:25
Toluene	< .005	mg/kg			WG674322	07/29/13 14:25
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG674322	07/29/13 14:25
Total Xylene	< .0015	mg/kg			WG674322	07/29/13 14:25
a,a,a-Trifluorotoluene(FID)		% Rec.	105.7	59-128	WG674322	07/29/13 14:25
a,a,a-Trifluorotoluene(PID)		% Rec.	109.8	54-144	WG674322	07/29/13 14:25
Mercury	< .02	mg/kg			WG674298	07/31/13 12:22
Chromium,Hexavalent	< 2	mg/kg			WG674315	07/31/13 13:25
Specific Conductance	1.10	umhos/cm			WG674570	07/31/13 14:15
Arsenic	< 1	mg/kg			WG674433	07/31/13 12:12
Barium	< .25	mg/kg			WG674433	07/31/13 12:12
Cadmium	< .25	mg/kg			WG674433	07/31/13 12:12
Chromium	< .5	mg/kg			WG674433	07/31/13 12:12
Copper	< 1	mg/kg			WG674433	07/31/13 12:12
Lead	< .25	mg/kg			WG674433	07/31/13 12:12
Nickel	< 1	mg/kg			WG674433	07/31/13 12:12
Selenium	< 1	mg/kg			WG674433	07/31/13 12:12
Silver	< .5	mg/kg			WG674433	07/31/13 12:12
Zinc	< 1.5	mg/kg			WG674433	07/31/13 12:12
TPH (GC/FID) High Fraction	< 4	mg/kg			WG675248	08/06/13 09:47
o-Terphenyl		% Rec.	82.10	50-150	WG675248	08/06/13 09:47

Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Mercury	mg/kg	0	0.00608	1.89	20	L648787-01	WG674298
Chromium,Hexavalent	mg/kg	0	0	0	20	L648905-06	WG674315
Chromium,Hexavalent	mg/kg	69.0	71.0	2.86	20	L648388-14	WG674315
Specific Conductance	umhos/cm	3300	3400	2.99	20	L648846-01	WG674570
Specific Conductance	umhos/cm	140.	130.	5.97	20	L648948-07	WG674570
ORP	mV	190.	190.	0.525	20	L648405-01	WG674566
ORP	mV	150.	150.	0.669	20	L648948-05	WG674566
pH	su	7.70	7.70	0.389	1	L648824-01	WG674834
pH	su	6.80	6.90	1.61*	1	L648948-07	WG674834
Arsenic	mg/kg	5.40	6.70	21.5*	20	L648861-07	WG674433
Barium	mg/kg	290.	337.	15.0	20	L648861-07	WG674433
Cadmium	mg/kg	0.350	0.410	15.8	20	L648861-07	WG674433
Chromium	mg/kg	14.0	16.9	18.8	20	L648861-07	WG674433

* Performance of this Analyte is outside of established criteria.

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



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Analyte	Units	Duplicate		RPD	Limit	Ref Samp	Batch
		Result	Duplicate				
Copper	mg/kg	5.20	6.41	20.8*	20	L648861-07	WG674433
Lead	mg/kg	12.0	14.4	18.2	20	L648861-07	WG674433
Nickel	mg/kg	17.0	19.6	14.2	20	L648861-07	WG674433
Selenium	mg/kg	1.10	0	NA	20	L648861-07	WG674433
Silver	mg/kg	0	0	0	20	L648861-07	WG674433
Zinc	mg/kg	60.0	72.9	19.4	20	L648861-07	WG674433

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Benzene	mg/kg	.05	0.0514	103.	70-130	WG674322
Ethylbenzene	mg/kg	.05	0.0533	107.	70-130	WG674322
Toluene	mg/kg	.05	0.0521	104.	70-130	WG674322
Total Xylene	mg/kg	.15	0.157	105.	70-130	WG674322
a,a,a-Trifluorotoluene(PID)				109.4	54-144	WG674322
TPH (GC/FID) Low Fraction	mg/kg	5.5	7.11	129.	63.6-136	WG674322
a,a,a-Trifluorotoluene(FID)				111.7	59-128	WG674322
Mercury	mg/kg	12.4	14.3	116.	71.6-128	WG674298
Chromium, Hexavalent	mg/kg	146	137.	93.8	80-120	WG674315
Specific Conductance	umhos/cm	1140	1200	105.	85-115	WG674570
ORP	mV	228	220.	96.5	95.6-104.	WG674566
pH	su	6.96	6.90	99.1	98.3-101.7	WG674834
Arsenic	mg/kg	237	234.	98.7	83.1-117	WG674433
Barium	mg/kg	252	252.	100.	84.1-116	WG674433
Cadmium	mg/kg	191	176.	92.1	83.2-117	WG674433
Chromium	mg/kg	128	121.	94.5	81.3-118	WG674433
Copper	mg/kg	123	114.	92.7	83.7-116	WG674433
Lead	mg/kg	103	99.0	96.1	83.1-117	WG674433
Nickel	mg/kg	118	102.	86.4	82-118	WG674433
Selenium	mg/kg	110	108.	98.2	78.7-122	WG674433
Silver	mg/kg	47.3	46.0	97.3	66.2-134	WG674433
Zinc	mg/kg	183	177.	96.7	82-118	WG674433
TPH (GC/FID) High Fraction	mg/kg	60	51.4	85.7	50-150	WG675248
o-Terphenyl				89.60	50-150	WG675248

Analyte	Units	Laboratory Control Sample Duplicate		Limit	RPD	Limit	Batch
		Result	Ref				
Benzene	mg/kg	0.0535	0.0514	107.	70-130	3.94	WG674322
Ethylbenzene	mg/kg	0.0561	0.0533	112.	70-130	5.12	WG674322
Toluene	mg/kg	0.0542	0.0521	108.	70-130	3.96	WG674322
Total Xylene	mg/kg	0.165	0.157	110.	70-130	5.23	WG674322
a,a,a-Trifluorotoluene(PID)				109.3	54-144		WG674322
TPH (GC/FID) Low Fraction	mg/kg	7.17	7.11	130.	63.6-136	0.820	WG674322
a,a,a-Trifluorotoluene(FID)				112.0	59-128		WG674322

* Performance of this Analyte is outside of established criteria.

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



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August 06, 2013

L648861

Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Chromium,Hexavalent	mg/kg	146.	137.	100.	80-120	6.36	20	WG674315
Specific Conductance	umhos/	1200	1200	105.	85-115	0	20	WG674570
ORP	mV	220.	220.	96.0	95.6-104.	0	20	WG674566
pH	su	6.90	6.90	99.0	98.3-101.7	0	20	WG674834
TPH (GC/FID) High Fraction	mg/kg	53.7	51.4	89.0	50-150	4.26	20	WG675248
o-Terphenyl				91.30	50-150			WG675248

Analyte	Units	Matrix Spike				Limit	Ref Samp	Batch
		MS Res	Ref Res	TV	% Rec			
Benzene	mg/kg	0.287	0.000402	.05	114.	49.7-127	L648861-01	WG674322
Ethylbenzene	mg/kg	0.296	0	.05	118.	40.8-141	L648861-01	WG674322
Toluene	mg/kg	0.289	0.000477	.05	116.	49.8-132	L648861-01	WG674322
Total Xylene	mg/kg	0.853	0.000708	.15	114.	41.2-140	L648861-01	WG674322
a,a,a-Trifluorotoluene(PID)					109.2	54-144		WG674322
TPH (GC/FID) Low Fraction	mg/kg	34.9	0	5.5	127.	29-139	L648861-01	WG674322
a,a,a-Trifluorotoluene(FID)					112.0	59-128		WG674322
Mercury	mg/kg	0.266	0.00608	.25	104.	80-120	L648787-01	WG674298
Chromium,Hexavalent	mg/kg	18.1	0	20	90.5	75-125	L648846-01	WG674315
Arsenic	mg/kg	40.1	6.70	50	66.8*	75-125	L648861-07	WG674433
Barium	mg/kg	311.	337.	50	0*	75-125	L648861-07	WG674433
Cadmium	mg/kg	39.7	0.410	50	78.6	75-125	L648861-07	WG674433
Chromium	mg/kg	52.0	16.9	50	70.2*	75-125	L648861-07	WG674433
Copper	mg/kg	44.5	6.41	50	76.2	75-125	L648861-07	WG674433
Lead	mg/kg	49.2	14.4	50	69.6*	75-125	L648861-07	WG674433
Nickel	mg/kg	50.8	19.6	50	62.4*	75-125	L648861-07	WG674433
Selenium	mg/kg	30.0	0	50	60.0*	75-125	L648861-07	WG674433
Silver	mg/kg	39.5	0	50	79.0	75-125	L648861-07	WG674433
Zinc	mg/kg	94.8	72.9	50	43.8*	75-125	L648861-07	WG674433

Analyte	Units	Matrix Spike Duplicate			Limit	RPD	Limit	Ref Samp	Batch
		MSD	Ref	%Rec					
Benzene	mg/kg	0.278	0.287	111.	49.7-127	3.07	23.5	L648861-01	WG674322
Ethylbenzene	mg/kg	0.281	0.296	112.	40.8-141	5.07	23.8	L648861-01	WG674322
Toluene	mg/kg	0.278	0.289	111.	49.8-132	3.88	23.5	L648861-01	WG674322
Total Xylene	mg/kg	0.817	0.853	109.	41.2-140	4.34	23.7	L648861-01	WG674322
a,a,a-Trifluorotoluene(PID)				109.2	54-144				WG674322
TPH (GC/FID) Low Fraction	mg/kg	35.0	34.9	127.	29-139	0.500	22.4	L648861-01	WG674322
a,a,a-Trifluorotoluene(FID)				111.6	59-128				WG674322
Mercury	mg/kg	0.255	0.266	99.5	80-120	4.28	20	L648787-01	WG674298

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



YOUR LAB OF CHOICE

WPX Energy
Karolina Blaney
1058 County Road 215

Parachute, CO 81635

Quality Assurance Report
Level II

L648861

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

Tax I.D. 62-0814289

Est. 1970

August 06, 2013

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Chromium,Hexavalent	mg/kg	18.2	18.1	91.0	75-125	0.551	20	L648846-01	WG674315
Arsenic	mg/kg	40.5	40.1	67.6*	75-125	0.993	20	L648861-07	WG674433
Barium	mg/kg	310.	311.	0*	75-125	0.322	20	L648861-07	WG674433
Cadmium	mg/kg	39.8	39.7	78.8	75-125	0.252	20	L648861-07	WG674433
Chromium	mg/kg	52.0	52.0	70.2*	75-125	0	20	L648861-07	WG674433
Copper	mg/kg	45.5	44.5	78.2	75-125	2.22	20	L648861-07	WG674433
Lead	mg/kg	50.3	49.2	71.8*	75-125	2.21	20	L648861-07	WG674433
Nickel	mg/kg	52.8	50.8	66.4*	75-125	3.86	20	L648861-07	WG674433
Selenium	mg/kg	26.2	30.0	52.4*	75-125	13.5	20	L648861-07	WG674433
Silver	mg/kg	39.1	39.5	78.2	75-125	1.02	20	L648861-07	WG674433
Zinc	mg/kg	98.8	94.8	51.8*	75-125	4.13	20	L648861-07	WG674433

Serial Dilution

Batch number /Run number / Sample number cross reference

WG674322: R2760281: L648861-01
WG674298: R2762302: L648861-02
WG674315: R2762382: L648861-02
WG674570: R2762420: L648861-02
WG674566: R2762560: L648861-02
WG674328: R2762641: L648861-02
WG674834: R2764322: L648861-02
WG674806: R2767001: L648861-01
WG674433: R2768540 R2768541: L648861-02 03 04 05 06 07 02
WG675248: R2769620: L648861-01

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

* Performance of this Analyte is outside of established criteria.

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



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WPX Energy
Karolina Blaney
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Est. 1970

August 06, 2013

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

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

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

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



24-Sep-2013

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

Re: **WPX GM 44-1 Pit Closure 9/13/13**

Work Order: **1309533**

Dear Mark,

ALS Environmental received 3 samples on 14-Sep-2013 09:30 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 11.

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 GM 44-1 Pit Closure 9/13/13
Work Order: 1309533

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>
1309533-01	Point 1	Soil		9/13/2013 09:10	9/14/2013 09:30	<input type="checkbox"/>
1309533-02	Point 2	Soil		9/13/2013 09:15	9/14/2013 09:30	<input type="checkbox"/>
1309533-03	Point 3	Soil		9/13/2013 09:20	9/14/2013 09:30	<input type="checkbox"/>

Client: HRL Compliance Solutions
Project: WPX GM 44-1 Pit Closure 9/13/13
WorkOrder: 1309533

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: 24-Sep-13

Client: HRL Compliance Solutions

Project: WPX GM 44-1 Pit Closure 9/13/13

Work Order: 1309533

Sample ID: Point 1

Lab ID: 1309533-01

Collection Date: 9/13/2013 09:10 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 9/18/2013	Analyst: ML
Arsenic	4.4		1.8	mg/Kg-dry	5	9/19/2013 08:42 AM
MOISTURE			A2540 G			Analyst: MEB
Moisture	5.4		0.050	% of sample	1	9/18/2013 07:30 PM

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

ALS Group USA, Corp

Date: 24-Sep-13

Client: HRL Compliance Solutions

Project: WPX GM 44-1 Pit Closure 9/13/13

Work Order: 1309533

Sample ID: Point 2

Lab ID: 1309533-02

Collection Date: 9/13/2013 09:15 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 9/18/2013	Analyst: ML
Arsenic	6.1		1.8	mg/Kg-dry	5	9/19/2013 08:48 AM
MOISTURE			A2540 G			Analyst: MEB
Moisture	5.0		0.050	% of sample	1	9/18/2013 07:30 PM

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

ALS Group USA, Corp

Date: 24-Sep-13

Client: HRL Compliance Solutions

Project: WPX GM 44-1 Pit Closure 9/13/13

Sample ID: Point 3

Collection Date: 9/13/2013 09:20 AM

Work Order: 1309533

Lab ID: 1309533-03

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 9/18/2013	Analyst: ML
Arsenic	5.8		1.9	mg/Kg-dry	5	9/19/2013 08:54 AM
MOISTURE			A2540 G			Analyst: MEB
Moisture	5.4		0.050	% of sample	1	9/18/2013 07:30 PM

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

Client: HRL Compliance Solutions
Work Order: 1309533
Project: WPX GM 44-1 Pit Closure 9/13/13

QC BATCH REPORT

Batch ID: **51450** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK		Sample ID: MBLK-51450-51450				Units: mg/Kg		Analysis Date: 9/19/2013 08:29 AM		
Client ID:		Run ID: ICPMS1_130918A				SeqNo: 2453999		Prep Date: 9/18/2013		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-51450-51450				Units: mg/Kg		Analysis Date: 9/19/2013 08:35 AM		
Client ID:		Run ID: ICPMS1_130918A				SeqNo: 2454000		Prep Date: 9/18/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.529	0.25	5	0	90.6	80-120	0			

MS		Sample ID: 1309559-08AMS				Units: mg/Kg		Analysis Date: 9/19/2013 11:00 AM		
Client ID:		Run ID: ICPMS1_130918A				SeqNo: 2454023		Prep Date: 9/18/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.056	0.34	6.821	1.82	91.4	75-125	0			

MSD		Sample ID: 1309559-08AMSD				Units: mg/Kg		Analysis Date: 9/19/2013 11:06 AM		
Client ID:		Run ID: ICPMS1_130918A				SeqNo: 2454024		Prep Date: 9/18/2013		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	7.598	0.34	6.766	1.82	85.4	75-125	8.056	5.85	25	

The following samples were analyzed in this batch:

1309533-01A	1309533-02A	1309533-03A
-------------	-------------	-------------

Client: HRL Compliance Solutions
Work Order: 1309533
Project: WPX GM 44-1 Pit Closure 9/13/13

QC BATCH REPORT

Batch ID: **R126945** Instrument ID **MOIST** Method: **A2540 G**

MBLK		Sample ID: WBLKS-R126945				Units: % of sample		Analysis Date: 9/18/2013 07:30 PM		
Client ID:		Run ID: MOIST_130918D				SeqNo: 2454402		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-R126945				Units: % of sample		Analysis Date: 9/18/2013 07:30 PM		
Client ID:		Run ID: MOIST_130918D				SeqNo: 2454398		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: 1309536-01A DUP				Units: % of sample		Analysis Date: 9/18/2013 07:30 PM		
Client ID:		Run ID: MOIST_130918D				SeqNo: 2454376		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 13.16 0.050 0 0 0 0-0 13.49 2.48 20

DUP		Sample ID: 1309551-01A DUP				Units: % of sample		Analysis Date: 9/18/2013 07:30 PM		
Client ID:		Run ID: MOIST_130918D				SeqNo: 2454379		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 52.35 0.050 0 0 0 0-0 51.47 1.7 20

The following samples were analyzed in this batch:

1309533-01A	1309533-02A	1309533-03A
-------------	-------------	-------------

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



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
#

1309533

PROJECT NAME		WPX <i>GM44-1 pit closure</i>		SAMPLER		Reed Wold		DATE		9/13/13		PAGE		1 of 1	
PROJECT No.				SITE ID		GM44-1		TURNAROUND		5 Day		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@wpenergy.com									
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC								
01	Point 1	So	9/13/13	9:10	1	8	X								
02	Point 2	↓	↓	9:15	1	8	X								
03	Point 3	↓	↓	9:20	1	8	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: <i>4.3</i>	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>	Reed Wold	9/13/13	2:30
RECEIVED BY <i>MM</i>	MM	9-13	2:30
RELINQUISHED BY <i>MM</i>	MM	9-13	14:50
RECEIVED BY <i>Ashley Beard</i>	Ashley Beard	9/14/13	07:30
RELINQUISHED BY			
RECEIVED BY			

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **14-Sep-13 09:30**

Work Order: **1309533**

Received by: **AB**

Checklist completed by Ashley Beard 16-Sep-13
eSignature Date

Reviewed by: Ann Preston 17-Sep-13
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 checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input 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>4.3</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>9/16/2013 8:27:53 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

Origin ID: RILA



J13201306280326

127 E First Street

PARACHUTE, CO 81635

Ship Date: 13SEP13
ActWgt: 65.0 LB
CAD: 103923490/NET3430

Dims: 25 X 14 X 15 IN

Delivery Address Bar Code



Ref # 1001-091313-3
Invoice #
PO #
Dept #

SHIP TO: (616) 399-6070

BILL RECIPIENT

Sample recieving
ALS Holland
3352 128TH AVE

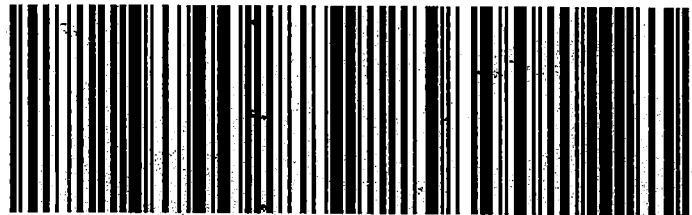
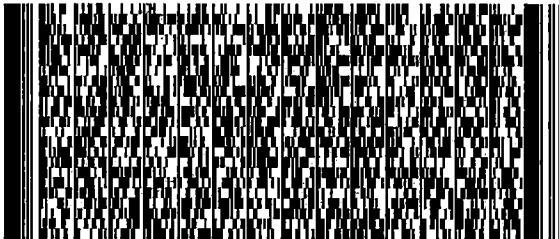
HOLLAND, MI 49424

SATURDAY 12:00P
PRIORITY OVERNIGHT

TRK# 7966 8787 1899
0201

X0 GRRRA

49424
MI-US
GRR



STAG192501A0E

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