02232255

Page 1

FORM 4
Rev 12/05

State of Colorado
Oil and Gas Conservation Commission

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

RECEIVED
MAR - 1 2013
COGCC

SUNDRY NOTICE

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

1. OGCC Operator Number: 10079
2. Name of Operator: Antero Resources Piceance Corporation
3. Address: 1625 17th St STE 300 ATTN: Cole Kilstrom
City: Denver State: CO Zip: 80202
4. Contact Name: Cole Kilstrom
Phone: 303-357-6709
Fax: 303-357-7315

5. API Number 05- 045 06273
6. Well/Facility Name: Castle Springs W Pad
7. Well/Facility Number 1-10W
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): NESW 10 7S 91W 6
9. County: Garfield
10. Field Name: Wildcat
11. Federal, Indian or State Lease Number: COC 66580
OGCC Facility ID Number 322442

Complete the Attachments Checklist

	OP	OGCC
Survey Plat		
Directional Survey		
Surface Eqpmt Diagram		
Technical Info Page	X	
Other		

General Notice

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

	FNL/FSL		FEL/FWL	
Change of Surface Footage from Exterior Section Lines:				
Change of Surface Footage to Exterior Section Lines:				
Change of Bottomhole Footage from Exterior Section Lines:				
Change of Bottomhole Footage to Exterior Section Lines:				

attach directional survey

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

Latitude — Distance to nearest property line — Distance to nearest bldg, public rd, utility or RR

Longitude — Distance to nearest lease line — Is location in a High Density Area (rule 603b)? Yes/No

Ground Elevation — Distance to nearest well same formation — Surface owner consultation date:

GPS DATA:
Date of Measurement — PDOP Reading — Instrument Operator's Name

☐ CHANGE SPACING UNIT

Formation	Formation Code	Spacing order number	Unit Acreage	Unit configuration

☐ Remove from surface bond
Signed surface use agreement attached

☐ CHANGE OF OPERATOR (prior to drilling):
Effective Date:
Plugging Bond: ☐ Blanket ☐ Individual

☐ CHANGE WELL NAME NUMBER
From:
To:
Effective Date:

☐ ABANDONED LOCATION:
Was location ever built? ☐ Yes ☐ No
Is site ready for Inspection? ☐ Yes ☐ No
Date Ready for Inspection:

☐ NOTICE OF CONTINUED SHUT IN STATUS
Date well shut in or temporarily abandoned:
Has Production Equipment been removed from site? ☐ Yes ☐ No
MIT required if shut in longer than two years. Date of last MIT

☐ SPUD DATE:

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

☐ SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK *submit cbl and cement job summaries

Method used	Cementing tool setting/perf depth	Cement volume	Cement top	Cement bottom	Date

☐ RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004.
Final reclamation will commence on approximately
☐ Final reclamation is completed and site is ready for inspection.

Technical Engineering/Environmental Notice

☐ Notice of Intent
Approximate Start Date:

☐ Report of Work Done
Date Work Completed:

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

☐ Intent to Recomplete (submit form 2)
☐ Change Drilling Plans
☐ Gross Interval Changed?
☐ Casing/Cementing Program Change
☐ Request to Vent or Flare
☐ Repair Well
☐ Rule 502 variance requested
☐ Other:
☐ E&P Waste Disposal
☐ Beneficial Reuse of E&P Waste
☒ Status Update/Change of Remediation Plans for Spills and Releases

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

Signed: Cole Kilstrom Date: 2/28/2013 Email: CKilstrom@anteroresources.com

Print Name: Cole Kilstrom Title: ENV Specialist

COGCC Approved: Carly Beyche Title: FOR Date: 03/06/2013

CONDITIONS OF APPROVAL, IF ANY:

Alex Fischer
Supervisor
Western Region

FORM 4 Rev 12/05

TECHNICAL INFORMATION PAGE

FOR OGCC USE ONLY

1. OGCC Operator Number: 10079 API Number: 05-045-06273
2. Name of Operator: Antero Resources Piceance Corp. OGCC Facility ID # 322442
3. Well/Facility Name: Castle Springs W Pad Well/Facility Number: 1-10W
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): NESW 10 7S 91W 6

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

5. **DESCRIBE PROPOSED OR COMPLETED OPERATIONS**

Summary of Corrective Actions and Request for Remediation Closure:

As discussed in COGCC Remediation Plan #4381, as well as a BLM sundry notice (attached hereto as Attachment 2), O&G Environmental Consulting, LLC (O&G) identified stained soils and dead vegetation along the northwest slope of Antero's Castle Springs Federal W pad. O&G conducted soil analysis and determined the presence of TPH on the slope at a 6" depth. The contamination is suspected to have arisen from overtopping of the prior operator's previously removed containment barrel.

In-situ bioremediation was conducted on behalf of Antero on August 1, 2008, and approximately 20 cubic yards of soil was removed on August 5, 2008. The soil was taken to the West Garfield County Landfill on August 29, 2008. Haul tickets could not reasonably be located at this time. The site was re-contoured to its previous grade with cut slope fill material.

Antero then applied oakbrush seeding to the western slopes of the pad in 2008, and by December of 2009 the vegetation on the north, west and south side of the pad was vigorous and dense. The impacted area has been re-contoured and is experiencing re-vegetation.

Antero conducted confirmation sampling of the impacted area on January 4, 2013 and the results demonstrate that the area is in compliance with COGCC Table 910 standards. The confirmation sample report and associated sample location map are attached hereto as Attachment 1 and Attachment 1-A, respectively.

Because Antero has remediated the impacted area, and the impacted area has been re-contoured and re-vegetated, Antero respectfully requests final COGCC closure of Remediation Project # 4381 in accordance with COGCC Rule 909(e).

ATTACHMENT 1

16-Jan-2013

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

Re: **Antero Castle Springs W Confirmation 1/4/13** Work Order: **1301184**

Dear Mark,

ALS Environmental received 5 samples on 08-Jan-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.

QC sample results for this data met 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 30.

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

Sincerely,

Ann Preston

Electronically approved by: Ann Preston

Ann Preston
Project Manager

Certificate No: MN331938

ALS Group USA, Corp

Date: 16-Jan-13

Client: HRL Compliance Solutions
Project: Antero Castle Springs W Confirmation 1/4/13
Work Order: **1301184**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1301184-01	Castle Springs W Sample Point 1	Soil		1/4/2013 12:10	1/8/2013 09:30	☐
1301184-02	Castle Springs W Sample Point 2	Soil		1/4/2013 12:20	1/8/2013 09:30	☐
1301184-03	BKGD 1	Soil		1/4/2013 12:30	1/8/2013 09:30	☐
1301184-04	BKGD 2	Soil		1/4/2013 12:35	1/8/2013 09:30	☐
1301184-05	BKGD 3	Soil		1/4/2013 12:40	1/8/2013 09:30	☐

ALS Group USA, Corp

Date: 16-Jan-13

Client: HRL Compliance Solutions
Project: Antero Castle Springs W Confirmation 1/4/13
Work Order: 1301184

Case Narrative

Batch 45802 sample BKGD 1 MS/MSD recoveries for Barium and Zinc were above control limits, however, the results in the parent sample were greater than 4x the spiked amount. No qualification is required for Barium or Zinc.

ALS Group USA, Corp

Date: 16-Jan-13

Client: HRL Compliance Solutions
Project: Antero Castle Springs W Confirmation 1/4/13
WorkOrder: **1301184**

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	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 detected below quantitation 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

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
SD	Serial Dilution
TDL	Target Detection Limit

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight
µmhos/cm @25°	
none	
s.u.	Standard Units

ALS Group USA, Corp

Date: *16-Jan-13*

Client: HRL Compliance Solutions
Project: Antero Castle Springs W Confirmation 1/4/13 **Work Order:** 1301184
Sample ID: Castle Springs W Sample Point 1 **Lab ID:** 1301184-01
Collection Date: 1/4/2013 12:10 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep Date: **1/9/2013**	Analyst: **RM**
DRO (C10-C28)	**360**		**4.5**	**mg/Kg-dry**	1	1/10/2013 11:08 AM
Surr: 4-Terphenyl-d14	*66.6*		*39-115*	*%REC*	1	1/10/2013 11:08 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015**			Analyst: **JD**
GRO (C6-C10)	ND		2.7	mg/Kg-dry	50	1/9/2013 01:41 PM
Surr: Toluene-d8	*113*		*50-150*	*%REC*	50	1/9/2013 01:41 PM
MERCURY BY CVAA			**SW7471**		Prep Date: **1/14/2013**	Analyst: **LR**
Mercury	ND		0.018	mg/Kg-dry	1	1/14/2013 04:05 PM
METALS BY ICP-MS			**SW6020A**		Prep Date: **1/9/2013**	Analyst: **RH**
Arsenic	**2.7**		**0.77**	**mg/Kg-dry**	2	1/11/2013 03:14 AM
Barium	**320**		**7.7**	**mg/Kg-dry**	20	1/11/2013 02:19 AM
Cadmium	**0.34**		**0.31**	**mg/Kg-dry**	2	1/11/2013 03:14 AM
Chromium	**9.5**		**0.77**	**mg/Kg-dry**	2	1/11/2013 03:14 AM
Copper	**9.9**		**0.77**	**mg/Kg-dry**	2	1/11/2013 03:14 AM
Lead	**8.1**		**0.77**	**mg/Kg-dry**	2	1/11/2013 03:14 AM
Nickel	**9.5**		**0.77**	**mg/Kg-dry**	2	1/11/2013 03:14 AM
Selenium	ND		0.77	mg/Kg-dry	2	1/11/2013 03:14 AM
Silver	ND		0.77	mg/Kg-dry	2	1/11/2013 03:14 AM
Zinc	**40**		**1.5**	**mg/Kg-dry**	2	1/11/2013 03:14 AM
SOLUBLE CATIONS FOR SAR			**SW6020A**		Prep Date: **1/10/2013**	Analyst: **RH**
Calcium	**35**		**5.4**	**mg/L-dry**	10	1/10/2013 09:43 PM
Magnesium	**5.1**		**2.2**	**mg/L-dry**	10	1/10/2013 09:43 PM
Sodium	**500**		**2.2**	**mg/L-dry**	10	1/11/2013 04:29 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep Date: **1/10/2013**	Analyst: **RH**
Sodium Adsorption Ratio	**20**		**0.010**	**none**	1	1/14/2013
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270**		Prep Date: **1/9/2013**	Analyst: **RM**
Acenaphthene	ND		16	µg/Kg-dry	1	1/9/2013 06:40 PM
Acenaphthylene	ND		32	µg/Kg-dry	1	1/9/2013 06:40 PM
Anthracene	ND		16	µg/Kg-dry	1	1/9/2013 06:40 PM
Benzo(a)anthracene	ND		18	µg/Kg-dry	1	1/9/2013 06:40 PM
Benzo(a)pyrene	ND		18	µg/Kg-dry	1	1/9/2013 06:40 PM
Benzo(b)fluoranthene	ND		19	µg/Kg-dry	1	1/9/2013 06:40 PM
Benzo(g,h,i)perylene	ND		30	µg/Kg-dry	1	1/9/2013 06:40 PM
Benzo(k)fluoranthene	ND		19	µg/Kg-dry	1	1/9/2013 06:40 PM
Chrysene	ND		16	µg/Kg-dry	1	1/9/2013 06:40 PM
Dibenzo(a,h)anthracene	ND		19	µg/Kg-dry	1	1/9/2013 06:40 PM
Fluoranthene	ND		16	µg/Kg-dry	1	1/9/2013 06:40 PM

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

Client: HRL Compliance Solutions
Project: Antero Castle Springs W Confirmation 1/4/13 **Work Order:** 1301184
Sample ID: Castle Springs W Sample Point 1 **Lab ID:** 1301184-01
Collection Date: 1/4/2013 12:10 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		16	µg/Kg-dry	1	1/9/2013 06:40 PM
Indeno(1,2,3-cd)pyrene	ND		22	µg/Kg-dry	1	1/9/2013 06:40 PM
Naphthalene	ND		16	µg/Kg-dry	1	1/9/2013 06:40 PM
Pyrene	ND		16	µg/Kg-dry	1	1/9/2013 06:40 PM
Surr: 2-Fluorobiphenyl	*78.7*		*12-100*	*%REC*	1	1/9/2013 06:40 PM
Surr: 4-Terphenyl-d14	*112*		*25-137*	*%REC*	1	1/9/2013 06:40 PM
Surr: Nitrobenzene-d5	*80.1*		*37-107*	*%REC*	1	1/9/2013 06:40 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260**		Prep Date: **1/8/2013**	Analyst: **BG**
Benzene	ND		33	µg/Kg-dry	1	1/8/2013 01:17 PM
Ethylbenzene	ND		33	µg/Kg-dry	1	1/8/2013 01:17 PM
m,p-Xylene	ND		65	µg/Kg-dry	1	1/8/2013 01:17 PM
o-Xylene	ND		33	µg/Kg-dry	1	1/8/2013 01:17 PM
Toluene	ND		33	µg/Kg-dry	1	1/8/2013 01:17 PM
Xylenes, Total	ND		98	µg/Kg-dry	1	1/8/2013 01:17 PM
Surr: 1,2-Dichloroethane-d4	*97.4*		*70-130*	*%REC*	1	1/8/2013 01:17 PM
Surr: 4-Bromofluorobenzene	*99.7*		*70-130*	*%REC*	1	1/8/2013 01:17 PM
Surr: Dibromofluoromethane	*96.6*		*70-130*	*%REC*	1	1/8/2013 01:17 PM
Surr: Toluene-d8	*97.3*		*70-130*	*%REC*	1	1/8/2013 01:17 PM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep Date: **1/10/2013**	Analyst: **JB**
Electrical Conductivity @ Saturation	**2.6**		**0.050**	**mmhos/cm @25**	10	1/16/2013 09:45 AM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **MB**
Chromium, Trivalent	**9.5**		**0.54**	**mg/Kg-dry**	1	1/14/2013 02:45 PM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep Date: **1/10/2013**	Analyst: **MB**
Chromium, Hexavalent	ND		0.54	mg/Kg-dry	1	1/14/2013 09:30 AM
MOISTURE			**A2540 G**			Analyst: **LR**
Moisture	**7.8**		**0.050**	**% of sample**	1	1/9/2013 09:15 AM
PH			**SW9045D**			Analyst: **LR**
pH	**9.17**			**s.u.**	1	1/8/2013 08:45 AM

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

ALS Group USA, Corp

Date: *16-Jan-13*

Client: HRL Compliance Solutions
Project: Antero Castle Springs W Confirmation 1/4/13 **Work Order:** 1301184
Sample ID: Castle Springs W Sample Point 2 **Lab ID:** 1301184-02
Collection Date: 1/4/2013 12:20 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep Date: **1/9/2013**	Analyst: **RM**
DRO (C10-C28)	**76**		**4.5**	**mg/Kg-dry**	1	1/10/2013 11:33 AM
Surr: 4-Terphenyl-d14	*54.4*		*39-115*	*%REC*	1	1/10/2013 11:33 AM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015**			Analyst: **JD**
GRO (C6-C10)	ND		2.7	mg/Kg-dry	50	1/9/2013 02:06 PM
Surr: Toluene-d8	*109*		*50-150*	*%REC*	50	1/9/2013 02:06 PM
MERCURY BY CVAA			**SW7471**		Prep Date: **1/14/2013**	Analyst: **LR**
Mercury	**0.31**		**0.036**	**mg/Kg-dry**	2	1/14/2013 04:38 PM
METALS BY ICP-MS			**SW6020A**		Prep Date: **1/9/2013**	Analyst: **RH**
Arsenic	**2.0**		**0.63**	**mg/Kg-dry**	2	1/11/2013 03:19 AM
Barium	**130**		**0.63**	**mg/Kg-dry**	2	1/11/2013 03:19 AM
Cadmium	ND		0.25	mg/Kg-dry	2	1/11/2013 03:19 AM
Chromium	**7.7**		**0.63**	**mg/Kg-dry**	2	1/11/2013 03:19 AM
Copper	**6.4**		**0.63**	**mg/Kg-dry**	2	1/11/2013 03:19 AM
Lead	**4.8**		**0.63**	**mg/Kg-dry**	2	1/11/2013 03:19 AM
Nickel	**7.3**		**0.63**	**mg/Kg-dry**	2	1/11/2013 03:19 AM
Selenium	ND		0.63	mg/Kg-dry	2	1/11/2013 03:19 AM
Silver	ND		0.63	mg/Kg-dry	2	1/11/2013 03:19 AM
Zinc	**25**		**1.3**	**mg/Kg-dry**	2	1/11/2013 03:19 AM
SOLUBLE CATIONS FOR SAR			**SW6020A**		Prep Date: **1/10/2013**	Analyst: **RH**
Calcium	**33**		**5.4**	**mg/L-dry**	10	1/10/2013 09:48 PM
Magnesium	**4.9**		**2.2**	**mg/L-dry**	10	1/10/2013 09:48 PM
Sodium	**910**		**2.2**	**mg/L-dry**	10	1/11/2013 04:34 PM
SODIUM ADSORPTION RATIO			**USDA H60 METHO**		Prep Date: **1/10/2013**	Analyst: **RH**
Sodium Adsorption Ratio	**38**		**0.010**	**none**	1	1/14/2013
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270**		Prep Date: **1/9/2013**	Analyst: **RM**
Acenaphthene	ND		16	µg/Kg-dry	1	1/9/2013 05:49 PM
Acenaphthylene	ND		32	µg/Kg-dry	1	1/9/2013 05:49 PM
Anthracene	ND		16	µg/Kg-dry	1	1/9/2013 05:49 PM
Benzo(a)anthracene	ND		18	µg/Kg-dry	1	1/9/2013 05:49 PM
Benzo(a)pyrene	ND		18	µg/Kg-dry	1	1/9/2013 05:49 PM
Benzo(b)fluoranthene	ND		19	µg/Kg-dry	1	1/9/2013 05:49 PM
Benzo(g,h,i)perylene	ND		30	µg/Kg-dry	1	1/9/2013 05:49 PM
Benzo(k)fluoranthene	ND		19	µg/Kg-dry	1	1/9/2013 05:49 PM
Chrysene	ND		16	µg/Kg-dry	1	1/9/2013 05:49 PM
Dibenzo(a,h)anthracene	ND		19	µg/Kg-dry	1	1/9/2013 05:49 PM
Fluoranthene	ND		16	µg/Kg-dry	1	1/9/2013 05:49 PM

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

ALS Group USA, Corp

Date: *16-Jan-13*

Client: HRL Compliance Solutions
Project: Antero Castle Springs W Confirmation 1/4/13 **Work Order:** 1301184
Sample ID: Castle Springs W Sample Point 2 **Lab ID:** 1301184-02
Collection Date: 1/4/2013 12:20 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluorene	ND		16	µg/Kg-dry	1	1/9/2013 05:49 PM
Indeno(1,2,3-cd)pyrene	ND		21	µg/Kg-dry	1	1/9/2013 05:49 PM
Naphthalene	ND		16	µg/Kg-dry	1	1/9/2013 05:49 PM
Pyrene	ND		16	µg/Kg-dry	1	1/9/2013 05:49 PM
Surr: 2-Fluorobiphenyl	*75.0*		*12-100*	*%REC*	1	1/9/2013 05:49 PM
Surr: 4-Terphenyl-d14	*101*		*25-137*	*%REC*	1	1/9/2013 05:49 PM
Surr: Nitrobenzene-d5	*76.8*		*37-107*	*%REC*	1	1/9/2013 05:49 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260**		Prep Date: **1/8/2013**	Analyst: **BG**
Benzene	ND		32	µg/Kg-dry	1	1/8/2013 01:41 PM
Ethylbenzene	ND		32	µg/Kg-dry	1	1/8/2013 01:41 PM
m,p-Xylene	ND		65	µg/Kg-dry	1	1/8/2013 01:41 PM
o-Xylene	ND		32	µg/Kg-dry	1	1/8/2013 01:41 PM
Toluene	ND		32	µg/Kg-dry	1	1/8/2013 01:41 PM
Xylenes, Total	ND		97	µg/Kg-dry	1	1/8/2013 01:41 PM
Surr: 1,2-Dichloroethane-d4	*96.5*		*70-130*	*%REC*	1	1/8/2013 01:41 PM
Surr: 4-Bromofluorobenzene	*99.6*		*70-130*	*%REC*	1	1/8/2013 01:41 PM
Surr: Dibromofluoromethane	*97.0*		*70-130*	*%REC*	1	1/8/2013 01:41 PM
Surr: Toluene-d8	*98.2*		*70-130*	*%REC*	1	1/8/2013 01:41 PM
ELECTRICAL CONDUCTIVITY (SAR)			**USDA H60 METHO**		Prep Date: **1/10/2013**	Analyst: **JB**
Electrical Conductivity @ Saturation	**4.4**		**0.025**	**mmhos/cm @25**	5	1/16/2013 09:45 AM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **MB**
Chromium, Trivalent	**7.7**		**0.54**	**mg/Kg-dry**	1	1/14/2013 02:45 PM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep Date: **1/10/2013**	Analyst: **MB**
Chromium, Hexavalent	ND		0.53	mg/Kg-dry	1	1/14/2013 09:30 AM
MOISTURE			**A2540 G**			Analyst: **LR**
Moisture	**7.0**		**0.050**	**% of sample**	1	1/9/2013 09:15 AM
PH			**SW9045D**			Analyst: **LR**
pH	**9.46**			**s.u.**	1	1/8/2013 08:45 AM

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

ALS Group USA, Corp

Date: *16-Jan-13*

Client: HRL Compliance Solutions
Project: Antero Castle Springs W Confirmation 1/4/13 **Work Order:** 1301184
Sample ID: BKGD 1 **Lab ID:** 1301184-03
Collection Date: 1/4/2013 12:30 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **1/9/2013**	Analyst: **RH**
Arsenic	**3.9**		**0.74**	**mg/Kg-dry**	2	1/10/2013 05:56 PM
MOISTURE			**A2540 G**			Analyst: **LR**
Moisture	**12**		**0.050**	**% of sample**	1	1/9/2013 09:15 AM

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

ALS Group USA, Corp

Date: *16-Jan-13*

Client: HRL Compliance Solutions
Project: Antero Castle Springs W Confirmation 1/4/13 **Work Order:** 1301184
Sample ID: BKGD 2 **Lab ID:** 1301184-04
Collection Date: 1/4/2013 12:35 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **1/9/2013**	Analyst: **RH**
Arsenic	**4.2**		**0.83**	**mg/Kg-dry**	2	1/11/2013 03:24 AM
MOISTURE			**A2540 G**			Analyst: **LR**
Moisture	**18**		**0.050**	**% of sample**	1	1/9/2013 09:15 AM

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

ALS Group USA, Corp

Date: *16-Jan-13*

Client: HRL Compliance Solutions
Project: Antero Castle Springs W Confirmation 1/4/13 **Work Order:** 1301184
Sample ID: BKGD 3 **Lab ID:** 1301184-05
Collection Date: 1/4/2013 12:40 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **1/9/2013**	Analyst: **RH**
Arsenic	**4.7**		**0.88**	**mg/Kg-dry**	2	1/11/2013 03:29 AM
MOISTURE			**A2540 G**			Analyst: **LR**
Moisture	**31**		**0.050**	**% of sample**	1	1/9/2013 09:15 AM

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

ALS Group USA, Corp

Date: 16-Jan-13

Client: HRL Compliance Solutions

QC BATCH REPORT

Work Order: 1301184

Project: Antero Castle Springs W Confirmation 1/4/13

Batch ID: **45793** Instrument ID **GC8** Method: **SW8015M**

MBLK Sample ID: **DBLKS1-45793-45793** Units: **mg/Kg** Analysis Date: **1/10/2013 09:28 AM**

Client ID: Run ID: **GC8_130110A** SeqNo: **2189119** Prep Date: **1/9/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	4.2								
Surr: 4-Terphenyl-d14	*0.827*	0	*1.667*	0	*49.6*	*39-115*	0			

LCS Sample ID: **DLCSS1-45793-45793** Units: **mg/Kg** Analysis Date: **1/10/2013 09:53 AM**

Client ID: Run ID: **GC8_130110A** SeqNo: **2189120** Prep Date: **1/9/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	146.2	4.2	166.7	0	87.7	49-124	0			
Surr: 4-Terphenyl-d14	*0.924*	0	*1.667*	0	*55.4*	*39-115*	0			

MS Sample ID: **1301189-01B MS** Units: **mg/Kg** Analysis Date: **1/10/2013 10:18 AM**

Client ID: Run ID: **GC8_130110A** SeqNo: **2189121** Prep Date: **1/9/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	506.9	11	455.5	0	111	49-130	0			
Surr: 4-Terphenyl-d14	*2.878*	0	*4.555*	0	*63.2*	*39-115*	0			

MSD Sample ID: **1301189-01B MSD** Units: **mg/Kg** Analysis Date: **1/10/2013 10:43 AM**

Client ID: Run ID: **GC8_130110A** SeqNo: **2189122** Prep Date: **1/9/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	546.4	12	486.7	0	112	49-130	506.9	7.51	30	
Surr: 4-Terphenyl-d14	*2.971*	0	*4.867*	0	*61*	*39-115*	2.878	*3.17*	*30*	

The following samples were analyzed in this batch: 1301184-01B 1301184-02B

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **R114862** Instrument ID **GC10** Method: **SW8015**

MBLK Sample ID: **GBLK1-130109-R114862** Units: **µg/Kg** Analysis Date: **1/9/2013 01:17 PM**
Client ID: Run ID: **GC10_130109A** SeqNo: **2188435** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	50								
Surr: Toluene-d8	*116.2*	0	*100*	0	*116*	*50-150*	0			

LCS Sample ID: **GLCS1-130109-R114862** Units: **µg/Kg** Analysis Date: **1/9/2013 12:52 PM**
Client ID: Run ID: **GC10_130109A** SeqNo: **2188434** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	9107	50	10000	0	91.1	70-130	0			
Surr: Toluene-d8	*103.7*	0	*100*	0	*104*	*50-150*	0			

MS Sample ID: **1301208-01A MS** Units: **µg/Kg** Analysis Date: **1/9/2013 04:57 PM**
Client ID: Run ID: **GC10_130109A** SeqNo: **2188444** Prep Date: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	475600	2,500	500000	0	95.1	70-130	0			
Surr: Toluene-d8	*5278*	0	*5000*	0	*106*	*50-150*	0			

MSD Sample ID: **1301208-01A MSD** Units: **µg/Kg** Analysis Date: **1/9/2013 05:21 PM**
Client ID: Run ID: **GC10_130109A** SeqNo: **2188445** Prep Date: DF: **50**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	457700	2,500	500000	0	91.5	70-130	475600	3.85	30	
Surr: Toluene-d8	*5152*	0	*5000*	0	*103*	*50-150*	5278	*2.42*	*30*	

The following samples were analyzed in this batch: 1301184-01A 1301184-02A

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **45873** Instrument ID **HG1** Method: **SW7471**

MBLK Sample ID: **MBLK-45873-45873** Units: **mg/Kg** Analysis Date: **1/14/2013 03:59 PM**
Client ID: Run ID: **HG1_130114A** SeqNo: **2191359** Prep Date: **1/14/2013** 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-45873-45873** Units: **mg/Kg** Analysis Date: **1/14/2013 04:01 PM**
Client ID: Run ID: **HG1_130114A** SeqNo: **2191360** Prep Date: **1/14/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1819	0.020	0.1665	0	109	80-120	0			

MS Sample ID: **1301334-06AMS** Units: **mg/Kg** Analysis Date: **1/14/2013 04:46 PM**
Client ID: Run ID: **HG1_130114A** SeqNo: **2191394** Prep Date: **1/14/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1475	0.015	0.1258	0.005931	113	75-125	0			

MSD Sample ID: **1301334-06AMSD** Units: **mg/Kg** Analysis Date: **1/14/2013 04:49 PM**
Client ID: Run ID: **HG1_130114A** SeqNo: **2191395** Prep Date: **1/14/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.149	0.016	0.1292	0.005931	111	75-125	0.1475	1	35	

The following samples were analyzed in this batch: 1301184-01B 1301184-02B

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **45802** Instrument ID **ICPMS2** Method: **SW6020A**

MBLK Sample ID: **MBLK-45802-45802** Units: **mg/Kg** Analysis Date: **1/10/2013 05:32 PM**
Client ID: Run ID: **ICPMS2_130110A** SeqNo: **2189392** Prep Date: **1/9/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.10								
Chromium	0.0207	0.25								J
Copper	0.02452	0.25								J
Lead	ND	0.25								
Nickel	0.0272	0.25								J
Selenium	ND	0.25								
Silver	ND	0.25								
Zinc	0.0731	0.50								J

LCS Sample ID: **LCS-45802-45802** Units: **mg/Kg** Analysis Date: **1/10/2013 05:37 PM**
Client ID: Run ID: **ICPMS2_130110A** SeqNo: **2189393** Prep Date: **1/9/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.903	0.25	5	0	98.1	80-120	0			
Barium	5.075	0.25	5	0	102	80-120	0			
Cadmium	5.305	0.10	5	0	106	80-120	0			
Chromium	4.932	0.25	5	0	98.6	80-120	0			
Copper	5.06	0.25	5	0	101	80-120	0			
Lead	5.105	0.25	5	0	102	80-120	0			
Nickel	5.095	0.25	5	0	102	80-120	0			
Selenium	4.93	0.25	5	0	98.6	80-120	0			
Silver	4.831	0.25	5	0	96.6	80-120	0			
Zinc	5.115	0.50	5	0	102	80-120	0			

MS Sample ID: **1301184-03AMS** Units: **mg/Kg** Analysis Date: **1/10/2013 06:01 PM**
Client ID: **BKGD 1** Run ID: **ICPMS2_130110A** SeqNo: **2189398** Prep Date: **1/9/2013** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	9.807	0.65	6.51	3.391	98.6	75-125	0			
Barium	88.62	0.65	6.51	69.55	293	75-125	0			SO
Cadmium	7.182	0.26	6.51	0.298	106	75-125	0			
Chromium	13.61	0.65	6.51	6.026	116	75-125	0			
Copper	11.93	0.65	6.51	6.155	88.6	75-125	0			
Lead	15.87	0.65	6.51	9.021	105	75-125	0			
Nickel	15.1	0.65	6.51	8.017	109	75-125	0			
Selenium	6.405	0.65	6.51	0.5294	90.2	75-125	0			
Silver	5.555	0.65	6.51	0.01544	85.1	75-125	0			
Zinc	41.45	1.3	6.51	32.36	140	75-125	0			SO

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **45802** Instrument ID **ICPMS2** Method: **SW6020A**

MSD Sample ID: **1301184-03AMSD** Units: **mg/Kg** Analysis Date: **1/10/2013 06:06 PM**
Client ID: **BKGD 1** Run ID: **ICPMS2_130110A** SeqNo: **2189399** Prep Date: **1/9/2013** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.839	0.63	6.305	3.391	86.4	75-125	9.807	10.4	25	
Barium	84.3	0.63	6.305	69.55	234	75-125	88.62	5	25	SO
Cadmium	6.922	0.25	6.305	0.298	105	75-125	7.182	3.69	25	
Chromium	13.32	0.63	6.305	6.026	116	75-125	13.61	2.16	25	
Copper	11.55	0.63	6.305	6.155	85.6	75-125	11.93	3.17	25	
Lead	15.62	0.63	6.305	9.021	105	75-125	15.87	1.58	25	
Nickel	13.51	0.63	6.305	8.017	87	75-125	15.1	11.2	25	
Selenium	6.396	0.63	6.305	0.5294	93	75-125	6.405	0.14	25	
Silver	5.557	0.63	6.305	0.01544	87.9	75-125	5.555	0.0484	25	
Zinc	41.22	1.3	6.305	32.36	141	75-125	41.45	0.537	25	SO

The following samples were analyzed in this batch: 1301184-01B 1301184-02B 1301184-03A 1301184-04A 1301184-05A

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **45827** Instrument ID **ICPMS2** Method: **SW6020A** **(Dissolve)**

DUP Sample ID: **1301184-02C DUP** Units: **mg/L** Analysis Date: **1/10/2013 09:53 PM**
Client ID: **Castle Springs W Sample Point 2** Run ID: **ICPMS2_130110A** SeqNo: **2189444** Prep Date: **1/10/2013** DF: **10**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	26.64	5.0	0	0	0	0-0	30.76	14.4		
Magnesium	4.204	2.0	0	0	0	0-0	4.578	8.52		

DUP Sample ID: **1301184-02C DUP** Units: **none** Analysis Date: **1/14/2013**
Client ID: **Castle Springs W Sample Point 2** Run ID: **SAR_130114A** SeqNo: **2191087** Prep Date: **1/10/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	35	0.010	0	0	0		0			

The following samples were analyzed in this batch: 1301184-01C 1301184-02C

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **45792** Instrument ID **SVMS6** Method: **SW8270**

MBLK Sample ID: **SBLKS1-45792-45792** Units: **µg/Kg** Analysis Date: **1/9/2013 06:14 PM**
Client ID: Run ID: **SVMS6_130109A** SeqNo: **2188450** Prep Date: **1/9/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	30								
Acenaphthylene	ND	30								
Anthracene	ND	30								
Benzo(a)anthracene	ND	30								
Benzo(a)pyrene	ND	30								
Benzo(b)fluoranthene	ND	30								
Benzo(g,h,i)perylene	ND	30								
Benzo(k)fluoranthene	ND	30								
Chrysene	ND	30								
Dibenzo(a,h)anthracene	ND	30								
Fluoranthene	ND	30								
Fluorene	ND	30								
Indeno(1,2,3-cd)pyrene	ND	30								
Naphthalene	ND	30								
Pyrene	ND	30								
Surr: 2-Fluorobiphenyl	*1245*	0	*1667*	0	*74.7*	*12-100*	0			
Surr: 4-Terphenyl-d14	*1901*	0	*1667*	0	*114*	*25-137*	0			
Surr: Nitrobenzene-d5	*1295*	0	*1667*	0	*77.7*	*37-107*	0			

LCS Sample ID: **SLCSS1-45792-45792** Units: **µg/Kg** Analysis Date: **1/9/2013 04:31 PM**
Client ID: Run ID: **SVMS6_130109A** SeqNo: **2188446** Prep Date: **1/9/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	483.3	30	666.7	0	72.5	45-110	0			
Acenaphthylene	503.3	30	666.7	0	75.5	45-105	0			
Anthracene	564.7	30	666.7	0	84.7	55-105	0			
Benzo(a)anthracene	529	30	666.7	0	79.3	50-110	0			
Benzo(a)pyrene	606.3	30	666.7	0	90.9	50-110	0			
Benzo(b)fluoranthene	565.7	30	666.7	0	84.8	45-115	0			
Benzo(g,h,i)perylene	580.3	30	666.7	0	87	40-125	0			
Benzo(k)fluoranthene	595.3	30	666.7	0	89.3	45-115	0			
Chrysene	582.3	30	666.7	0	87.3	55-110	0			
Dibenzo(a,h)anthracene	620	30	666.7	0	93	40-125	0			
Fluoranthene	602.7	30	666.7	0	90.4	55-115	0			
Fluorene	517.3	30	666.7	0	77.6	50-110	0			
Indeno(1,2,3-cd)pyrene	580.3	30	666.7	0	87	40-120	0			
Naphthalene	484.7	30	666.7	0	72.7	40-105	0			
Pyrene	562.7	30	666.7	0	84.4	45-125	0			
Surr: 2-Fluorobiphenyl	*1189*	0	*1667*	0	*71.3*	*12-100*	0			
Surr: 4-Terphenyl-d14	*1725*	0	*1667*	0	*104*	*25-137*	0			
Surr: Nitrobenzene-d5	*1249*	0	*1667*	0	*74.9*	*37-107*	0			

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **45792** Instrument ID **SVMS6** Method: **SW8270**

MS Sample ID: **1301184-02B MS** Units: **µg/Kg** Analysis Date: **1/9/2013 04:57 PM**
Client ID: **Castle Springs W Sample Point 2** Run ID: **SVMS6_130109A** SeqNo: **2188447** Prep Date: **1/9/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	983.2	59	1310	0	75	45-110	0			
Acenaphthylene	1003	59	1310	0	76.5	45-105	0			
Anthracene	1222	59	1310	0	93.3	55-105	0			
Benzo(a)anthracene	1144	59	1310	0	87.3	50-110	0			
Benzo(a)pyrene	1303	59	1310	0	99.4	50-110	0			
Benzo(b)fluoranthene	1129	59	1310	0	86.2	45-115	0			
Benzo(g,h,i)perylene	1365	59	1310	0	104	40-125	0			
Benzo(k)fluoranthene	1399	59	1310	0	107	45-115	0			
Chrysene	1232	59	1310	0	94	55-110	0			
Dibenzo(a,h)anthracene	1376	59	1310	0	105	40-125	0			
Fluoranthene	1307	59	1310	0	99.8	55-115	0			
Fluorene	1110	59	1310	0	84.7	50-110	0			
Indeno(1,2,3-cd)pyrene	1365	59	1310	0	104	40-120	0			
Naphthalene	919	59	1310	0	70.1	40-105	0			
Pyrene	1153	59	1310	0	88	45-125	0			
Surr: 2-Fluorobiphenyl	*2348*	0	*3275*	0	*71.7*	*12-100*	0			
Surr: 4-Terphenyl-d14	*3565*	0	*3275*	0	*109*	*25-137*	0			
Surr: Nitrobenzene-d5	*2362*	0	*3275*	0	*72.1*	*37-107*	0			

MSD Sample ID: **1301184-02B MSD** Units: **µg/Kg** Analysis Date: **1/9/2013 05:23 PM**
Client ID: **Castle Springs W Sample Point 2** Run ID: **SVMS6_130109A** SeqNo: **2188448** Prep Date: **1/9/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1009	60	1330	0	75.9	45-110	983.2	2.6	30	
Acenaphthylene	1025	60	1330	0	77.1	45-105	1003	2.19	30	
Anthracene	1266	60	1330	0	95.2	55-105	1222	3.49	30	
Benzo(a)anthracene	1224	60	1330	0	92.1	50-110	1144	6.83	30	
Benzo(a)pyrene	1371	60	1330	0	103	50-110	1303	5.13	30	
Benzo(b)fluoranthene	1199	60	1330	0	90.1	45-115	1129	5.96	30	
Benzo(g,h,i)perylene	1396	60	1330	0	105	40-125	1365	2.24	30	
Benzo(k)fluoranthene	1429	60	1330	0	107	45-115	1399	2.13	30	
Chrysene	1273	60	1330	0	95.7	55-110	1232	3.27	30	
Dibenzo(a,h)anthracene	1363	60	1330	0	102	40-125	1376	0.932	30	
Fluoranthene	1395	60	1330	0	105	55-115	1307	6.51	30	
Fluorene	1134	60	1330	0	85.3	50-110	1110	2.12	30	
Indeno(1,2,3-cd)pyrene	1396	60	1330	0	105	40-120	1365	2.24	30	
Naphthalene	943.3	60	1330	0	70.9	40-105	919	2.61	30	
Pyrene	1199	60	1330	0	90.1	45-125	1153	3.83	30	
Surr: 2-Fluorobiphenyl	*2393*	0	*3324*	0	*72*	*12-100*	2348	*1.9*	*40*	
Surr: 4-Terphenyl-d14	*3626*	0	*3324*	0	*109*	*25-137*	3565	*1.72*	*40*	
Surr: Nitrobenzene-d5	*2426*	0	*3324*	0	*73*	*37-107*	2362	*2.69*	*40*	

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **45792** Instrument ID **SVMS6** Method: **SW8270**

The following samples were analyzed in this batch: 1301184-01B 1301184-02B

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **45774** Instrument ID **VMS5** Method: **SW8260**

MBLK Sample ID: **MBLK-45774-45774** Units: **µg/Kg** Analysis Date: **1/8/2013 11:40 AM**
Client ID: Run ID: **VMS5_130108A** SeqNo: **2187425** Prep Date: **1/8/2013** 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	*980.5*	0	*1000*	0	*98*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1000*	0	*1000*	0	*100*	*70-130*	0			
Surr: Dibromofluoromethane	*982*	0	*1000*	0	*98.2*	*70-130*	0			
Surr: Toluene-d8	*981.5*	0	*1000*	0	*98.2*	*70-130*	0			

MBLK Sample ID: **MBLK-45774-45774** Units: **µg/Kg** Analysis Date: **1/9/2013 02:04 PM**
Client ID: Run ID: **VMS9_130109A** SeqNo: **2188419** Prep Date: **1/8/2013** 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	*992.5*	0	*1000*	0	*99.2*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*972.5*	0	*1000*	0	*97.2*	*70-130*	0			
Surr: Dibromofluoromethane	*966.5*	0	*1000*	0	*96.6*	*70-130*	0			
Surr: Toluene-d8	*942.5*	0	*1000*	0	*94.2*	*70-130*	0			

LCS Sample ID: **LCS-45774-45774** Units: **µg/Kg** Analysis Date: **1/8/2013 10:28 AM**
Client ID: Run ID: **VMS5_130108A** SeqNo: **2187424** Prep Date: **1/8/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1022	30	1000	0	102	75-125	0			
Ethylbenzene	1013	30	1000	0	101	75-125	0			
m,p-Xylene	2002	60	2000	0	100	80-125	0			
o-Xylene	1007	30	1000	0	101	75-125	0			
Toluene	1028	30	1000	0	103	70-125	0			
Xylenes, Total	3008	90	3000	0	100	75-125	0			
Surr: 1,2-Dichloroethane-d4	*972*	0	*1000*	0	*97.2*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1014*	0	*1000*	0	*101*	*70-130*	0			
Surr: Dibromofluoromethane	*993*	0	*1000*	0	*99.3*	*70-130*	0			
Surr: Toluene-d8	*983*	0	*1000*	0	*98.3*	*70-130*	0			

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **45774** Instrument ID **VMS5** Method: **SW8260**

LCS Sample ID: **LCS-45774-45774** Units: **µg/Kg** Analysis Date: **1/9/2013 12:47 PM**
Client ID: Run ID: **VMS9_130109A** SeqNo: **2188418** Prep Date: **1/8/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	903.5	30	1000	0	90.4	75-125	0			
Ethylbenzene	937	30	1000	0	93.7	75-125	0			
m,p-Xylene	1930	60	2000	0	96.5	80-125	0			
o-Xylene	952.5	30	1000	0	95.2	75-125	0			
Toluene	905.5	30	1000	0	90.6	70-125	0			
Xylenes, Total	2883	90	3000	0	96.1	75-125	0			
Surr: 1,2-Dichloroethane-d4	*986*	0	*1000*	0	*98.6*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1030*	0	*1000*	0	*103*	*70-130*	0			
Surr: Dibromofluoromethane	*1006*	0	*1000*	0	*101*	*70-130*	0			
Surr: Toluene-d8	*979*	0	*1000*	0	*97.9*	*70-130*	0			

MS Sample ID: **1301160-01A MS** Units: **µg/Kg** Analysis Date: **1/8/2013 02:05 PM**
Client ID: Run ID: **VMS5_130108A** SeqNo: **2187503** Prep Date: **1/8/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	962.5	30	1000	0	96.2	75-125	0			
Ethylbenzene	943.5	30	1000	0	94.4	75-125	0			
m,p-Xylene	1910	60	2000	0	95.5	80-125	0			
o-Xylene	956.5	30	1000	0	95.6	75-125	0			
Toluene	960.5	30	1000	0	96	70-125	0			
Xylenes, Total	2866	90	3000	0	95.6	75-125	0			
Surr: 1,2-Dichloroethane-d4	*960*	0	*1000*	0	*96*	*70-130*	0			
Surr: 4-Bromofluorobenzene	*1021*	0	*1000*	0	*102*	*70-130*	0			
Surr: Dibromofluoromethane	*955.5*	0	*1000*	0	*95.6*	*70-130*	0			
Surr: Toluene-d8	*969*	0	*1000*	0	*96.9*	*70-130*	0			

MSD Sample ID: **1301160-01A MSD** Units: **µg/Kg** Analysis Date: **1/8/2013 02:29 PM**
Client ID: Run ID: **VMS5_130108A** SeqNo: **2187504** Prep Date: **1/8/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	968.5	30	1000	0	96.8	75-125	962.5	0.621	30	
Ethylbenzene	961	30	1000	0	96.1	75-125	943.5	1.84	30	
m,p-Xylene	1922	60	2000	0	96.1	80-125	1910	0.652	30	
o-Xylene	987	30	1000	0	98.7	75-125	956.5	3.14	30	
Toluene	967	30	1000	0	96.7	70-125	960.5	0.674	30	
Xylenes, Total	2910	90	3000	0	97	75-125	2866	1.49	30	
Surr: 1,2-Dichloroethane-d4	*972*	0	*1000*	0	*97.2*	*70-130*	960	*1.24*	*30*	
Surr: 4-Bromofluorobenzene	*1001*	0	*1000*	0	*100*	*70-130*	1021	*1.98*	*30*	
Surr: Dibromofluoromethane	*959*	0	*1000*	0	*95.9*	*70-130*	955.5	*0.366*	*30*	
Surr: Toluene-d8	*967.5*	0	*1000*	0	*96.8*	*70-130*	969	*0.155*	*30*	

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **45774** Instrument ID **VMS5** Method: **SW8260**

The following samples were analyzed in this batch: 1301184-01A 1301184-02A

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **45827** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP Sample ID: **1301184-02C DUP** Units: **mmhos/cm @25°F** Analysis Date: **1/16/2013 09:45 AM**
Client ID: **Castle Springs W Sample Point 2** Run ID: **WETCHEM_130116B** SeqNo: **2192745** Prep Date: **1/10/2013** DF: **5**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	3.91	0.025	0	0	0		4.435	12.6	50	

The following samples were analyzed in this batch: 1301184-01C 1301184-02C

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **45836** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK Sample ID: **MBLK-45836-45836** Units: **mg/Kg** Analysis Date: **1/14/2013 09:30 AM**
Client ID: Run ID: **WETCHEM_130114C** SeqNo: **2190796** Prep Date: **1/10/2013** 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-45836-45836** Units: **mg/Kg** Analysis Date: **1/14/2013 09:30 AM**
Client ID: Run ID: **WETCHEM_130114C** SeqNo: **2190795** Prep Date: **1/10/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.933	0.50	2	0	96.7	75-110	0			

MS Sample ID: **1301184-02B MS** Units: **mg/Kg** Analysis Date: **1/14/2013 09:30 AM**
Client ID: **Castle Springs W Sample Point 2** Run ID: **WETCHEM_130114C** SeqNo: **2190792** Prep Date: **1/10/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.766	0.50	1.984	0.04027	87	60-130	0			

MSD Sample ID: **1301184-02B MSD** Units: **mg/Kg** Analysis Date: **1/14/2013 09:30 AM**
Client ID: **Castle Springs W Sample Point 2** Run ID: **WETCHEM_130114C** SeqNo: **2190793** Prep Date: **1/10/2013** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.708	0.49	1.976	0.04027	84.4	60-130	1.766	3.31	30	

The following samples were analyzed in this batch: 1301184-01B 1301184-02B

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **R114827** Instrument ID **WETCHEM** Method: **SW9040**

LCS Sample ID: **WLCSS1_130108-R114827** Units: **s.u.** Analysis Date: **1/8/2013 08:45 AM**
Client ID: Run ID: **WETCHEM_130108I** SeqNo: **2187819** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	4.43	0	4.4	0	101	90-110	0			

LCS Sample ID: **WLCSW1_130108-R114827** Units: **s.u.** Analysis Date: **1/8/2013 08:45 AM**
Client ID: Run ID: **WETCHEM_130108I** SeqNo: **2187821** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	4.43	0	4.4	0	101	90-110	0			

DUP Sample ID: **1301184-01B DUP** Units: **s.u.** Analysis Date: **1/8/2013 08:45 AM**
Client ID: **Castle Springs W Sample Point 1** Run ID: **WETCHEM_130108I** SeqNo: **2187823** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	9.17	0	0	0	0	0-0	9.17	0	20	

The following samples were analyzed in this batch: 1301184-01B 1301184-02B

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

Client: HRL Compliance Solutions
Work Order: 1301184
Project: Antero Castle Springs W Confirmation 1/4/13

QC BATCH REPORT

Batch ID: **R114880** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS1-R114880** Units: **% of sample** Analysis Date: **1/9/2013 09:15 AM**
Client ID: Run ID: **MOIST_130109A** SeqNo: **2188780** 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-R114880** Units: **% of sample** Analysis Date: **1/9/2013 09:15 AM**
Client ID: Run ID: **MOIST_130109A** SeqNo: **2188776** 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: **1301208-01B DUP** Units: **% of sample** Analysis Date: **1/9/2013 09:15 AM**
Client ID: Run ID: **MOIST_130109A** SeqNo: **2188765** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	15.91	0.050	0	0	0	0-0	13.76	14.5	20	

DUP Sample ID: **1301225-25B DUP** Units: **% of sample** Analysis Date: **1/9/2013 09:15 AM**
Client ID: Run ID: **MOIST_130109A** SeqNo: **2188774** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	10.69	0.050	0	0	0	0-0	11.44	6.78	20	

The following samples were analyzed in this batch:

1301184-01B	1301184-02B	1301184-03A
1301184-04A	1301184-05A	

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 # 1301184

		SAMPLER	Reed Wold	DATE	1/7/2013	PAGE	1 of 1
PROJECT NAME	Castle Springs W Confirmation Samples	SITE ID	Castle Springs W pad	TURNAROUND	5 day	DISPOSAL	By Lab or Return to Client
PROJECT No.		EDD FORMAT					
		PURCHASE ORDER					
COMPANY NAME	HCSI	BILL TO COMPANY	Antero Resources				
SEND REPORT TO	Mark Mumby	INVOICE ATTN TO	Cole Kilstrom				
ADDRESS	2385 F1/2 Rd	ADDRESS	1625 17th St.				
CITY / STATE / ZIP	Grand Junction CO 81506	CITY / STATE / ZIP	Denver CO 80202				
PHONE	970-243-3271	PHONE	303-357-7341				
FAX	970-243-3280	FAX					
E-MAIL	Mmumby@hrlcomp.com rwold@hrlcomp.com	E-MAIL	Ckilstrom@anteroresources.com				

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	GRO/ BTEX	DRO/ PAH/ Metals (table 910-1)	SAR/ Ec/ pH	Arsenic
1	Castle Srings W Sample Point 1	SO	1/4/2013	12:10	3	8		X	X	X	
2	Castle Srings W Sample Point 2	SO	1/4/2013	12:20	3	8		X	X	X	
3	BKGD 1	SO	1/4/2013	12:30	1	8					X
4	BKGD 2	SO	1/4/2013	12:35	1	8					X
5	BKGD 3	SO	1/4/2013	12:40	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 = filter

For metals or anions, please detail analytes below.

Comments: 3.6°c

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		Reed Wold	1/7/13	5:00
RECEIVED BY		Diane F Shea	1/8/13	0930
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **HRL** Date/Time Received: **08-Jan-13 09:30**

Work Order: **1301184** Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 08-Jan-13 (Date) Reviewed by: Ann Preston (eSignature) 08-Jan-13 (Date)

Matrices: Soil
Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.6 c		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	1/8/2013 11:17:45 AM		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:			

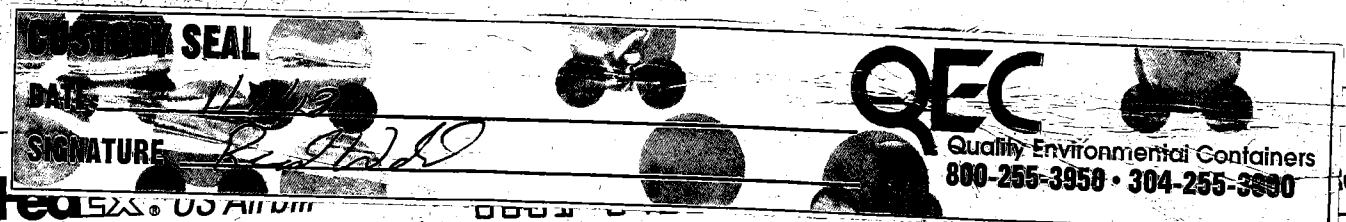
Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:



FedEx® US Airbill
Express

Retrieval Copy

1 From

Date 11/7/13 Sender's FedEx Account Number

Sender's Name Ronald Phone 970 243-3271

Company 112 compliance

Address 2385 F ½ Rd Dept./Floor/Suite/Room

City Grand Junction State Co ZIP 81505

2 Your Internal Billing Reference

3 To

Recipient's Name Sample Recieving Phone 616 399-6070

Company ALS Group

Recipient's Address 3352 128th Ave Dept./Floor/Suite/Room

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address

To request a package be held at a specific FedEx location, print FedEx address here.

City Holland State MI ZIP 49424

8681 6428 9973

4a Express Package Service — *Packages up to 150 lbs.*

1 ☐ FedEx Priority Overnight — Next business morning.* Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

5 ☑ FedEx Standard Overnight — Next business afternoon.* Saturday Delivery NOT available.

6 ☐ FedEx First Overnight — Earliest next business morning delivery to select locations.* Saturday Delivery NOT available.

3 ☐ FedEx 2Day — Second business day.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver — Third business day.* Saturday Delivery NOT available.

FedEx Envelope rate not available. Minimum charge: One-pound rate.

*To most locations.

4b Express Freight Service — *Packages over 150 lbs.*

7 ☐ FedEx 1Day Freight* — Next business day.** Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

8 ☐ FedEx 2Day Freight — Second business day.** Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

83 ☐ FedEx 3Day Freight — Third business day.** Saturday Delivery NOT available.

**To most locations.

* Call for Confirmation:

5 Packaging

6 ☐ FedEx Envelope* 2 ☐ FedEx Pak* — Includes FedEx Small Pak, FedEx Large Pak, and FedEx Sturdy Pak. 3 ☐ FedEx Box 4 ☐ FedEx Tube 1 ☑ Other

* Declared value limit $500.

6 Special Handling — Include FedEx address in Section 3.

3 ☐ SATURDAY Delivery — Not available for FedEx Standard Overnight, FedEx First Overnight, FedEx Express Saver, or FedEx 3Day Freight.

1 ☐ HOLD Weekday at FedEx Location — Not available for FedEx First Overnight.

31 ☐ HOLD Saturday at FedEx Location — Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.

Does this shipment contain dangerous goods? One box must be checked.

☑ No 4 ☐ Yes — As per attached Shipper's Declaration. ☐ Yes — Shipper's Declaration not required. 6 ☐ Dry Ice — Dry ice, 9, UN 1845 ____ x ____ kg

☐ Cargo Aircraft Only

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging.

7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below.

1 ☐ Sender Acct. No. in Section 1 will be billed. 2 ☑ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Check Obtain Recip. Acct. No. ☐

[redacted] 22

Total Packages 1 Total Weight [redacted] 34

†Our liability is limited to $100 unless you declare a higher value. See the current FedEx Service Guide for details. Credit Card Auth.

8 Residential Delivery Signature Options If you require a signature, check Direct or Indirect.

☐ No Signature Required — Package may be left without obtaining a signature for delivery.

10 ☐ Direct Signature — Someone at recipient's address may sign for delivery. *Fee applies.*

34 ☐ Indirect Signature — If no one is available at recipient's address, someone at a neighboring address may sign for delivery. *Fee applies.*

520

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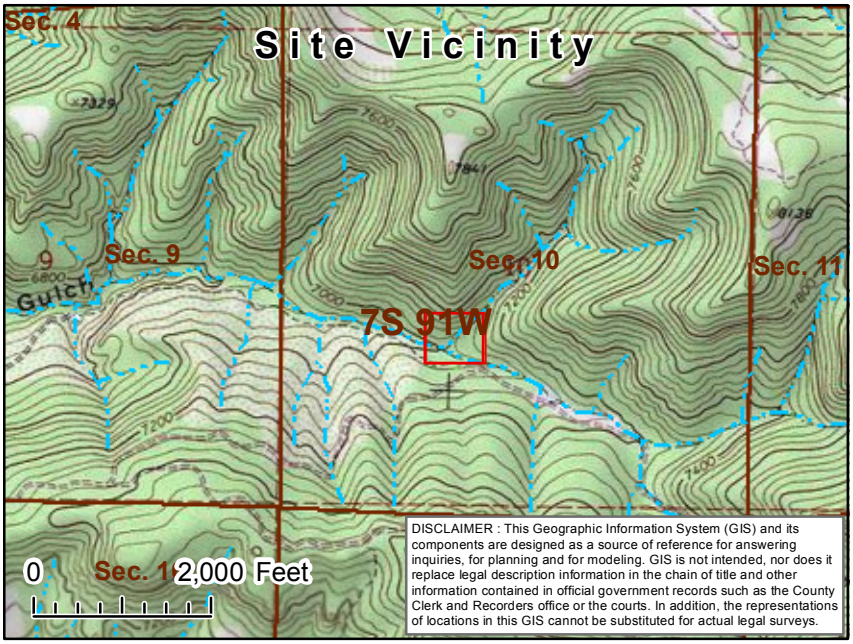
ATTACHMENT 1-A



Attachment A--Spill Location Map

Location: Castle Springs W

Antero Resources Piceance Corp.

Legend

- Sample Location
- Impacted Area

PLSS

- Township
- Section

Hydrographic Features

- Perennial Stream
- Intermittent Stream
- Ditch/Canal

N
W E
S

0 50 100 Feet

HCSI
ENVIRONMENTAL CONSULTANTS

T:\Client_Specific\2008\Antero\Spills\2012\Castle Springs W\Castle Springs W 2013-01-22.mxd HCSI_jharris

Revision Date: 1/22/2013 10:40:09 AM

ATTACHMENT 2

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.

***SUBMIT IN TRIPLICATE** – Other instructions on page 2.*

5. Lease Serial No.
COC 66580

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.

1. Type of Well
☐ Oil Well ☐ Gas Well ☑ Other Injection Well

8. Well Name and No.
CSF #1-10W

2. Name of Operator
Antero Resources Piceance Corporation

9. API Well No.
05-045-06273

3a. Address
795 Buckhorn Drive. Rifle, CO 81650

3b. Phone No. *(include area code)*
303-357-7341

10. Field and Pool or Exploratory Area
Castle Springs Facility

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
NESW, Sec 10, T7S, R91W, 6PM

11. Country or Parish, State
United States of America, Colorado

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
☐ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☑ Reclamation	☐ Well Integrity
☑ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other W Pad findings and reclamation update
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

O&G Environmental Consulting, LLC (O&G) identified stained soils and dead vegetation on northwestern slope (15 feet down gradient) of the W Pad berm. O&G characterized the extent of soil contamination through sample analysis. Total petroleum hydrocarbon (TPH) concentrations were approximately 1789 mg/Kg at the surface (6" depth) of stained soils (see location 'C' attached). Core soil samples taken at 4 feet and 5 feet below the surface of the staining at location 'C' had non-detectable TPH concentrations (see samples #1 and #2 attached).

The previous facility owner collected injection-pump lubrication discharge in partially submerged containment barrel located on the northwestern edge of the W Pad. It is likely that some fluids historically overtopped the containment barrel and traveled down gradient to collect in the stained area (location 'C'). Upon removal of the plastic barrel, no holes were identified. Overtopping likely occurred when winter weather conditions prevented pumper from periodically emptying the containment barrel. The new facility owner, Antero Resources, has remedied the situation by installing a new containment tank, which has been implemented with a control-switch to kill the pump engine prior to containment barrel overflow.

In-situ bioremediation was conducted by BioResources, Inc. on 8/1/08. Approximately 100 gallons of proprietary microbe mixture was pumped subsurface beneath visibly stained soils behind pumphouse. Approximately 200 gallons were sprayed on the soil surface in general area behind pumphouse and along drainage (see attached receipt). This precautionary measure was taken by Antero to ensure environmental protection amidst initial uncertainty. Approximately 20 cubic yards of soil were removed on 8/5/08. Investigation of soils during removal (visual, odor, etc) confirmed the likely source of contamination and ensured that all contaminated soil was removed. The soil was taken to the West Garfield County Landfill on 8/29/08. (Description continued on page 3...)

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*
David C. Simon

Title Environmental Scientist - O&G Grand Junction Office Manager

Signature

Date 09/17/2008

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by	Title	Date
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office	

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

GENERAL INSTRUCTIONS

This form is designed for submitting proposals to perform certain well operations and reports of such operations when completed as indicated on Federal and Indian lands pursuant to applicable Federal law and regulations. Any necessary special instructions concerning the use of this form and the number of copies to be submitted, particularly with regard to local area or regional procedures and practices, are either shown below, will be issued by or may be obtained from the local Federal office.

SPECIFIC INSTRUCTIONS

Item 4 - Locations on Federal or Indian land should be described in accordance with Federal requirements. Consult the local Federal office for specific instructions.

Item 13 - Proposals to abandon a well and subsequent reports of abandonment should include such special information as is required by the local Federal office. In addition, such proposals and reports should include reasons for the abandonment; data on any former or present productive zones or other zones with present significant fluid contents not sealed off by cement or otherwise; depths (top and bottom) and method of placement of cement plugs; mud or other material placed below, between and above plugs; amount, size, method of parting of any casing, liner or tubing pulled and the depth to the top of any tubing left in the hole; method of closing top of well and date well site conditioned for final inspection looking for approval of the abandonment.

NOTICES

The Privacy Act of 1974 and the regulation in 43 CFR 2.48(d) provide that you be furnished the following information in connection with information required by this application.

AUTHORITY: 30 U.S.C. 181 et seq., 351 et seq., 25 U.S.C. 396; 43 CFR 3160.

PRINCIPAL PURPOSE: The information is used to: (1) Evaluate, when appropriate, approve applications, and report completion of subsequent well operations, on a Federal or Indian lease; and (2) document for administrative use, information for the management, disposal and use of National Resource lands and resources, such as: (a) evaluating the equipment and procedures to be used during a proposed subsequent well operation and reviewing the completed well operations for compliance with the approved plan; (b) requesting and grantingapproval to perform those actions covered by 43 CFR 3162.3-2, 3162.3-3, and 3162.3-4; (c) reporting the beginning or resumption of production, as required by 43 CFR 3162.4-1(c)and (d) analyzing future applications to drill or modify operations in light of data obtained and methods used.

ROUTINE USES: Information from the record and/or the record will be transferred to appropriate Federal, State, local or foreign agencies, when relevant to civil, criminal or regulatory investigations or prosecutions in connection with congressional inquiries or to consumer reporting agencies to facilitate collection of debts owed the Government.

EFFECT OF NOT PROVIDING THE INFORMATION: Filing of this notice and report and disclosure of the information is mandatory for those subsequent well operations specified in 43 CFR 3162.3-2, 3162.3-3, 3162.3-4.

The Paperwork Reduction Act of 1995 requires us to inform you that:

The BLM collects this information to evaluate proposed and/or completed subsequent well operations on Federal or Indian oil and gas leases.

Response to this request is mandatory.

The BLM would like you to know that you do not have to respond to this or any other Federal agency-sponsored information collection unless it displays a currently valid OMB control number.

BURDEN HOURS STATEMENT: Public reporting burden for this form is estimated to average 8 hours per response, including the time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding the burden estimate or any other aspect of this form to U.S. Department of the Interior, Bureau of Land Management (1004-0137), Bureau Information Collection Clearance Officer (WO-630), 1849 C St., N.W., Mail Stop 401 LS, Washington, D.C. 20240

Item 13. Describe Proposed or Completed Operation:

…*Continued from page 1.*

The groundwater has not been impacted as core sampling indicates hydrocarbons have not penetrated the upper horizons of soil beneath the stained area. The hydraulic conductivity of the underlying clay soils is low.

Site recontoured to previous grade with cut slope fill material. Soil compaction from excavator is minimal. Topsoil will be distributed over the surface of disturbed location with soils from the W Pad topsoil pile. This will occur after construction has ceased on the pad. Temporary stormwater Best Management Practices (BMPs) were implemented during interim reclamation to prevent erosion. The disturbed location will be hydro-seeded with a BLM approved "Mountain Oakbrush" seed mix in September 2008. The site is included in a facility-wide noxious weed management plan with regularly scheduled inspections and herbicide treatments by certified applicators.

8/22/2008
O&G Environmental Consulting, LLC
Lab Results Summary Sheet

Sample Date	Sample I.D.	Depth	Pad	Location	GRO (mg/Kg)	DRO (mg/Kg)	TPH (mg/Kg)	Conductivity (µS)	pH (s.u.)	SAR
6/17/2008	A	Composite	W	Pumphouse Composite	2.9			447.0	8.60	2.97
6/17/2008	B	≤6 in	W	Blank Composite - E. of Pad	<0.1			21.8	6.80	0.05
6/17/2008	C	≤6 in	W	Dead Vegetation Line Stain	660	**1,127.9**	**1,788.9**	481.0	7.60	3.61
6/17/2008	D	≤6 in	W	Downstream Surface	70	42.2	112.2	315.0	7.80	3.63
6/17/2008	E	≤1.5 ft	W	Downstream Deeper	10			83.0	7.50	0.1
7/22/2008	#1	4ft	W	Dead Vegetation Line Stain	ND	ND	ND	1200.0	8.36	3.41
7/22/2008	#2	5ft	W	Dead Vegetation Line Stain	ND	ND	ND	1000.0	8.65	3.32
7/22/2008	#3	4ft	W	Behind Pumphouse 4 ft	ND	16	16	1100.0	7.20	2.27
	Allowable Limit (COGCC)				GRO + DRO = TPH		Sensitive Area: 1,000 mg/Kg	<4,0000 µmhos/cm or 2x background	6 to 9	<12

Legend

- Sample Locations
- Pumphouse
- Remediated Area

W Pad Soil Remediation Diagram

Garfield County, CO

0 25 50 100 Feet

1:1,500 (Portions of Diagram Not to Scale)

Datum: NAD 83 Zone 13 N
Creator: D.C. Simon
File Path:\\Antero\Wpad.mxd

ANTERO RESOURCES

115 North 5th Street, Suite 340
Grand Junction, CO 81501
tel (970) 243-7894 fax (970) 243-7896
www.ogenvironmental.com

PROJECT	DRAWING	SCALE	DATE	REVISION
191.27	N/A	1:1,500	8/22/08	1.3

BioResources, Inc 2003

PO Box 235
Huntley, MT 59037

Invoice

Date	Invoice #
8/4/2008	1470-C

Bill To	Ship To
Antero 795 Buckhorn Drive Rifle, CO 81650	Antero 795 Buckhorn Drive Rifle, CO 81650

P.O. Number	Terms	Rep	Ship	Via	F.O.B.	Project
W Pad	Due on receipt		7/28/2008			

Quantity	Item Code	Description	Price Each	Amount
600	Bacteria	600 Gallons Bacteria	6.80	4,080.00
2	Bio-Klean	2 Gallons Bio-Klean	20.00	40.00
7	Labor	7 hours labor	100.00	700.00
300	Bacteria	300 Gallons Bacteria 08/01/08	6.80	2,040.00
3	Bio-Klean	3 Gallons BioKlean	20.00	60.00
2	Labor	2 Hours Labor	100.00	200.00

Total $7,120.00

PRIOR HISTORY

01941036

9/16/08

FORM 27 Rev 6/99

State of Colorado #4381
Oil and Gas Conservation Commission

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

FOR OGCC USE ONLY

OGCC Employee:
☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV
Tracking No

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities Form 27 is intended to be used whenever possible Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas See Rule 910 Attach as many pages as needed to fully describe the proposed work

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☑ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☑ Other (describe) Soil remediation and removal

OGCC Operator Number 10079
Name of Operator Antero Resources Piceance Corporation
Address 795 Buckhorn Drive
City Rifle State CO Zip 81650

Contact Name and Telephone
Gerard G Alberts
No 303-357-7341
Fax 303-357-7315

API Number 05-045-06273 County Garfield
Facility Name Castle Springs Facility Number
Well Name CSF Well Number #1-10W
Location (QtrQtr, Sec, Twp, Rng, Meridian) NESW, 10, 7S, 91W, 6PM Latitude 39 460292 Longitude -107 541389

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc) Petroleum hydrocarbons - released from pumping mechanism

Site Conditions Is location within a sensitive area (according to Rule 901e)? ☑ Y ☐ N If yes, attach evaluation

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc) non-farm, moutainous shrubland, some cattle grazing

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan Torriorthents and similar soils 60 percent Rock outcrop, 25 percent

Potential receptors (water wells within 1/4 mi, surface waters, etc) No water wells within 1/4 mile radius

Situated in Gibson Gulch drainage, tributary to East Gulch, tributary to Divide Creek, tributary to Colorado River

Description of Impact (if previously provided, refer to that form or document)

Impacted Media (check)		Extent of Impact	How Determined
☑	Soils	Localized, less than 15 cubic yards	Soil Tests - See attached
☑	Vegetation	Localized, juniper and shrub oak	Visual defoliation and plant necrosis
☐	Groundwater	None	Core sampling beneath staining
☐	Surface Water	None	Localized contamination

REMEDIATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document)

O&G Environmental Consulting (O&G) identified stained soils and dead vegetation on northwestern slope (15 feet down-gradient) of the W Pad berm O&G characterized the extent of soil contamination through sample analysis Total petroleum hydrocarbon (TPH) concentrations were approximately 1789 mg/Kg at the surface (6" depth) of stained soils (see location 'C' attached) Core soil samples taken at 4 feet and 5 feet below the surface of the staining at location 'C' had non-detectable TPH concentrations (see samples #1 and #2 attached)

Describe how source is to be removed

The previous facility owner collected injection-pump lubrication discharge in partially submerged containment barrel located on the northwestern edge of the W Pad It is likely that some fluids historically overtopped the containment barrel and traveled down gradient to collect in the stained area (location 'C') Upon removal of the plastic barrel, no holes were identified Overtopping likely occurred when winter weather conditions prevented pumper from periodically emptying the containment barrel The new facility owner Antero Resources, has remedied the situation by installing a new containment tank which has been implemented with a control-switch to kill the pump engine prior to containment barrel overflow

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc

In-situ bioremediation was conducted by BioResources, Inc on 8/1/08 Approximately 100 gallons of proprietary microbe mixture was pumped subsurface beneath visibly stained soils behind pumphouse Approximately 200 gallons were sprayed on the soil surface in general area behind pumphouse and along drainage (see attached receipt) This precautionary measure was taken by Antero to ensure environmental protection amidst initial uncertainty Approximately 20 cubic yards of soil were removed on 8/5/08 Investigation of soils during removal (visual, odor, etc) confirmed the likely source of contamination and ensured that all contaminated soil was removed The soil was taken to the West Garfield County Landfill on 8/29/08

Submit Page 2 with Page 1

FORM 27 Rev 6/99

Page 2

State of Colorado
Oil and Gas Conservation Commission
1120 Lincoln Street, Suite 801, Denver Colorado 80203
(303)894 2100 Fax (303)894-2109

Tracking Number
Name of Operator
OGCC Operator No
Received Date
Well Name & No
Facility Name & No

REMEDIATION WORKPLAN (Cont.)

OGCC Employee

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule analytical methods, etc)

The groundwater has not been impacted Core sampling at depths of 4 and 5 feet indicates hydrocarbons have not penetrated the upper horizon of the soil beneath stained area The hydraulic conductivity of the underlying clay soil is low

Describe reclamation plan Discuss existing and new grade recontouring, method and testing of compaction alleviation, and reseeding program, including location of new seed seed mix and noxious weed prevention Attach diagram or drawing Use additional sheet for description if required

Site recontoured to previous grade with cut slope fill material As the remediated area is located off the pad, vehicle traffic will not occur Soil compaction from excavator is minimal Topsoil will be distributed over the surface of disturbed location with soils from the W Pad topsoil pile This will occur after construction has ceased on the pad Temporary stormwater Best Management Practices (BMPs) were implemented during interim reclamation to prevent erosion. The disturbed location will be hydro-seeded with a BLM approved "Mountain Oakbrush" seed mix in September 2008 The site is included in a facility-wide noxious weed management plan with regularly scheduled inspections and herbicide treatments by certified applicators Photos are available upon request

Attach samples and analytical results taken to verify remediation of impacts Show locations of samples on an onsite schematic or drawing

Is further site investigation required? ☐ Y ☑ N If yes, describe

See attached Detailed characterization of contamination as well as O&G's inspection during the soil removal process indicates all of the impacted soils were removed. No further investigation required

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc)

Approximately 20 cubic yards of soil, removed from the stained area, was taken to the West Garfield County Landfill on 8/29/08

IMPLEMENTATION SCHEDULE

Date Site Investigation Began 6/17/08	Date Site Investigation Completed 8/5/08	Date Remediation Plan Submitted 9/16/08
Remediation Start Date 8/1/08	Anticipated Completion Date 9/26/08	Actual Completion Date Late September 08

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

Print Name David C Simon Signed

Title Environmental Scientist Date 9/16/08

OGCC Approved Title EPS Date 9/17/08