



02231309

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

NOV 28 2012

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	4. Contact Name: Cole Kilstrom	Complete the Attachment Checklist
2. Name of Operator: Antero Resources Piceance Corporation	Cole Kilstrom	
3. Address: 1625 17th St STE 300 ATTN: Cole Kilstrom	Phone: 303-357-6709	OP OGCC
City: Denver State: CO Zip: 80202	Fax: 303-357-7315	
5. API Number 05-045-19958	OGCC Facility ID Number 419539	Survey Plat
6. Well/Facility Name: Frei	7. Well/Facility Number A1	Directional Survey
8. Location (CtrQtr, Sec, Twp, Rng, Meridian): SWSW 7 6S 91W 6		Surface Equip Diagram
9. County: Garfield	10. Field Name: Kokopelli	Technical Info Page
11. Federal, Indian or State Lease Number:		Other

General Notice

<input type="checkbox"/> CHANGE OF LOCATION: Attach New Survey Plat (a change of surface qtrqtr is substantive and requires a new permit)	
Change of Surface Footage from Exterior Section Lines:	<input type="checkbox"/> FNL/FSL <input type="checkbox"/> REL/FWL
Change of Surface Footage to Exterior Section Lines:	<input type="checkbox"/>
Change of Bottomhole Footage from Exterior Section Lines:	<input type="checkbox"/>
Change of Bottomhole Footage to Exterior Section Lines:	<input type="checkbox"/> attach directional survey
Bottomhole location CtrQtr, Sec, Twp, Rng, Mer	
Latitude	Distance to nearest property line
Longitude	Distance to nearest bldg, public rd, utility or RR
Ground Elevation	Distance to nearest lease line
	Is location in a High Density Area (rule 603b)? Yes/No
	Distance to nearest well same formation
	Surface owner consultation date:
GPS DATA:	
Date of Measurement	PDOP Reading
	Instrument Operator's Name
<input type="checkbox"/> CHANGE SPACING UNIT	
Formation	Formation Code
Spacing order number	Unit Acreage
	Unit configuration
<input type="checkbox"/> Remove from surface bond	
Signed surface use agreement attached	
<input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling):	
Effective Date:	
Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual	
<input type="checkbox"/> CHANGE WELL NAME	
From:	NUMBER
To:	
Effective Date:	
<input type="checkbox"/> ABANDONED LOCATION:	
Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Is site ready for inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Date Ready for Inspection:	
<input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS	
Date well shut in or temporarily abandoned:	
Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No	
MIT required if shut in longer than two years. Date of last MIT	
<input type="checkbox"/> SPUD DATE:	
<input type="checkbox"/> REQUEST FOR CONFIDENTIAL STATUS (6 mos from date casing set)	
<input type="checkbox"/> SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK	
Method used	Cementing tool setting/perf depth
Cement volume	Cement top
Cement bottom	Date
*submit cbl and cement job summaries	
<input type="checkbox"/> RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004.	
Final reclamation will commence on approximately	
<input type="checkbox"/> Final reclamation is completed and site is ready for inspection.	

Technical Engineering/Environmental Notice

<input type="checkbox"/> Notice of Intent	<input type="checkbox"/> Report of Work Done
Approximate Start Date:	Date Work Completed:
Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)	
<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flare
<input type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested
<input type="checkbox"/> Casing/Cementing Program Change	<input type="checkbox"/> Other:
<input type="checkbox"/> E&P Waste Disposal	<input type="checkbox"/> Beneficial Reuse of E&P Waste
<input checked="" type="checkbox"/> 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
Print Name: Cole KilstromDate: 11/19/12 Email: ckilstrom@anteroresources.com
Title: ENV SpecialistCOGCC Approved: [Signature]
CONDITIONS OF APPROVAL, IF ANY:Title: Env. Supv. Date: 12/14/12

See attached comments

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

1. OGCC Operator Number: 10079 API Number: 05-045-19958
2. Name of Operator: Antero Resources Piceance Corp. OGCC Facility ID # 419539
3. Well/Facility Name: Frei Well/Facility Number: A1
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): SWSW 7 6S 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 Spill Report Closure:

On October 29, 2011, 45 bbls of produced water escaped through a flapper valve on a pipeline between the Wasatch Bench facility and Antero's Frei A Pad in Garfield County due to an equipment malfunction. Antero immediately shut off the pump and vacuum trucks arrived within the hour and recovered all of the spill water. Antero then applied microblaze to the impacted area and replaced the malfunctioning flapper valve. Additionally, Antero took confirmation samples to test for Table 910-1 constituents.

COGCC Form 19 Spill Report # 2216952 required that Antero perform confirmation sampling on the site to test for Table 910-1 constituents.

Antero submitted a Form 4 on November 21, 2011, reporting the confirmation sampling results from the October 29, 2011 samples, also included here for your review. The results demonstrated that the site was in compliance.

Because Antero demonstrated site compliance with COGCC standards, Antero respectfully requests final COGCC closure of Spill Report # 2216952 in accordance with COGCC Rule 909(e).

COA:

Based on review of data presented, it appears that no further action is necessary at this time at this site. However, should future conditions at the site be discovered of contaminant concentrations in soils exceeding COGCC standards or if groundwater is found to be significantly impacted, COGCC may require that further investigation and/or remediation be conducted. ¶

State of Colorado
Oil and Gas Conservation Commission

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



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	4. Contact Name: Gerald G. Alberts	Complete the Attachment Checklist OP OGCC
2. Name of Operator: Antero Resources Corporation	Phone: 303-357-7341	
3. Address: 1625 17th Street City: Denver State: CO Zip: 80202	Fax: 303-357-7315	
5. API Number: 05-045-19958	OGCC Facility ID Number: 417777	Survey Plat
6. Well/Facility Name: Fret A Pad	7. Well/Facility Number: # A1	Directional Survey
8. Location (Qtr/Sec, Twp, Rng, Meridian): SWSW 7 6S 91W 6th		Surface Expt Diagram
9. County: Garfield County	10. Field Name: Piceance	Technical Info Page
11. Federal, Indian or State Lease Number:		Other

General Notice

<input type="checkbox"/> CHANGE OF LOCATION: Attach New Survey Plat (a change of surface rights is substantive and requires a new permit)	
Change of Surface Footage from Exterior Section Lines:	Change of Surface Footage to Exterior Section Lines:
Change of Bottomhole Footage from Exterior Section Lines:	Change of Bottomhole Footage to Exterior Section Lines:
Bottomhole location Qtr/Sec, Twp, Rng, Mer	Latitude
Longitude	Ground Elevation
Distance to nearest property line	Distance to nearest bldg, public rd, utility or RR
Distance to nearest lease line	Is location in a High Density Area (rule 603b)?
Distance to nearest well same formation	Surface owner consultation date:
GPS DATA: Date of Measurement POOP Reading Instrument Operator's Name	
<input type="checkbox"/> CHANGE SPACING UNIT	<input type="checkbox"/> Remove from surface bond
Formation Formation Code Spacing order number Unit Acreage Unit configuration	Signed surface use agreement attached
<input type="checkbox"/> CHANGE OF OPERATOR (prior to drilling): Effective Date: Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual	<input type="checkbox"/> CHANGE WELL NAME NUMBER From: To: Effective Date:
<input type="checkbox"/> ABANDONED LOCATION: Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No Is site ready for inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No Date Ready for inspection:	<input type="checkbox"/> NOTICE OF CONTINUED SHUT IN STATUS Date well shut in or temporarily abandoned: Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No MIT required if shut in longer than two years. Date of last MIT
<input type="checkbox"/> SPUD DATE:	<input type="checkbox"/> REQUEST FOR CONFIDENTIAL STATUS (if rose from date casing set)
<input type="checkbox"/> SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK Method used Cementing tool setting/peel depth Cement volume Cement top Cement bottom Date	
<input type="checkbox"/> RECLAMATION: Attach technical page describing final reclamation procedures per Rule 1004. Final reclamation will commence on approximately <input type="checkbox"/> Final reclamation is completed and site is ready for inspection.	

Technical Engineering/Environmental Notice

<input type="checkbox"/> Notice of Intent Approximate Start Date:	<input checked="" type="checkbox"/> Report of Work Done Date Work Completed: October 29, 2011
Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)	
<input type="checkbox"/> Intent to Recomplete (submit form 2)	<input type="checkbox"/> Request to Vent or Flare
<input type="checkbox"/> Change Drilling Plans	<input type="checkbox"/> Repair Well
<input type="checkbox"/> Gross Interval Changed?	<input type="checkbox"/> Rule 502 variance requested
<input type="checkbox"/> Casing/Cementing Program Change	<input type="checkbox"/> Other:
<input type="checkbox"/> E&P Waste Disposal	<input type="checkbox"/> Beneficial Reuse of E&P Waste
<input checked="" type="checkbox"/> 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: Gerald G. Alberts Date: Nov 21, 2011 Email: jalberts@anteroresources.com
Print Name: Gerald G. Alberts Title: Manager, Environmental and Regulatory

OGCC Approved: _____ Title: _____ Date: _____

CONDITIONS OF APPROVAL, IF ANY:



Page 2

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

- | | |
|--|----------------------------|
| 1. OGCC Operator Number: 10079 | API Number: 05-045-19958 |
| 2. Name of Operator: Antero Resources Corporation | OGCC Facility ID #: 417777 |
| 3. Well/Facility Name: Frel A Pad | Well/Facility Number: #A1 |
| 4. Location (QtrQtr, Sec, Twp, Rng, Meridian): SWSW 7 6S 81W 6th | |

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**

Please see attached analytical results in reference to Spill # 2218952. Confirmation sampling was completed on October 28, 2011.



07-Nov-2011

Mark Mumby
HRL Compliance Solutions
744 Horizon Ct. Suite 140
Grand Junction, CO 81506

Re: **Antero Frei A Pad Flowback Release 11-289 10/30/11**

Work Order: **1111063**

Dear Mark,

ALS Environmental received 4 samples on 02-Nov-2011 10:00 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 29.

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: IL100452

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 The ALS logo, a stylized 'A' inside a circle.

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

ALS Group USA, Corp

Date: 07-Nov-11

Client: HRL Compliance Solutions
Project: Antero Frei A Pad Flowback Release 11-289 10/30/11
Work Order: 1111063

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>
1111063-01	Background 1	Soil		10/30/2011 10:00	11/2/2011 10:00	<input type="checkbox"/>
1111063-02	Background 2	Soil		10/30/2011 10:05	11/2/2011 10:00	<input type="checkbox"/>
1111063-03	Background 3	Soil		10/30/2011 10:10	11/2/2011 10:00	<input type="checkbox"/>
1111063-04	On Pad	Soil		10/30/2011 10:15	11/2/2011 10:00	<input type="checkbox"/>

ALS Group USA, Corp*Date: 07-Nov-11*

Client: HRL Compliance Solutions
Project: Antero Frei A Pad Flowback Release 11-289 10/30/11
Work Order: 1111063

Case Narrative

Batch 37147 MS/MSD data for Hexavalent Chromium is not related to this project's samples.

Batch 37086 MS/MSD data for Metals is not related to this project's samples.

Client: HRL Compliance Solutions
Project: Antero Frei A Pad Flowback Release 11-289 10/30/11
WorkOrder: 1111063

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 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

<u>Acronym</u>	<u>Description</u>
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

<u>Units Reported</u>	<u>Description</u>
% of sample	Percent of Sample
µg/Kg-dry as noted	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight
s.u.	Standard Units

ALS Group USA, Corp

Date: 07-Nov-11

Client: HRL Compliance Solutions

Project: Antero Frei A Pad Flowback Release 11-289 10/30/11

Work Order: 1111063

Sample ID: Background 1

Lab ID: 1111063-01

Collection Date: 10/30/2011 10:00 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 11/2/2011	Analyst: CES
Arsenic	2.8		0.98	mg/Kg-dry	2	11/3/2011 02:06 PM
MOISTURE			A2540 G			Analyst: CG
Moisture	24		0.050	% of sample	1	11/2/2011 01:11 PM

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

ALS Group USA, Corp

Date: 07-Nov-11

Client: HRL Compliance Solutions

Project: Antero Frei A Pad Flowback Release 11-289 10/30/11

Work Order: 1111063

Sample ID: Background 2

Lab ID: 1111063-02

Collection Date: 10/30/2011 10:05 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 11/2/2011	Analyst: CES
Arsenic	4.0		0.97	mg/Kg-dry	2	11/3/2011 02:12 PM
MOISTURE			A2540 G			Analyst: CG
Moisture	21		0.050	% of sample	1	11/2/2011 01:11 PM

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

ALS Group USA, Corp**Date:** 07-Nov-11**Client:** HRL Compliance Solutions**Project:** Antero Frei A Pad Flowback Release 11-289 10/30/11**Work Order:** 1111063**Sample ID:** Background 3**Lab ID:** 1111063-03**Collection Date:** 10/30/2011 10:10 AM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: 11/2/2011	Analyst: CES
Arsenic	2.6		0.86	mg/Kg-dry	2	11/3/2011 02:17 PM
SUBCONTRACTED ANALYSES			SUBCONTRACT			Analyst: A&LGL
Subcontracted Analyses	Rcvd 11/5/11		as noted		1	11/5/2011
MOISTURE			A2540 G			Analyst: CG
Moisture	28		0.050	% of sample	1	11/2/2011 11:12 AM
PH			SW9045D			Analyst: JJG
pH	7.45		s.u.		1	11/2/2011 08:30 AM

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

ALS Group USA, Corp

Date: 07-Nov-11

Client: HRL Compliance Solutions

Project: Antero Frei A Pad Flowback Release 11-289 10/30/11

Work Order: 1111063

Sample ID: On Pad

Lab ID: 1111063-04

Collection Date: 10/30/2011 10:15 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep Date: 11/3/2011	Analyst: RM
DRO (C10-C28)	180		4.6	mg/Kg-dry	1	11/3/2011 11:55 AM
Surr: 4-Terphenyl-d14	73.7		39-115	%REC	1	11/3/2011 11:55 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015			Analyst: JD
GRO (C6-C10)	33		5.6	mg/Kg-dry	100	11/3/2011 07:15 AM
Surr: Toluene-d8	96.2		50-150	%REC	100	11/3/2011 07:15 AM
MERCURY BY CVAA						
			SW7471		Prep Date: 11/2/2011	Analyst: LR
Mercury	ND		0.020	mg/Kg-dry	1	11/3/2011 01:40 PM
METALS BY ICP-MS						
			SW6020A		Prep Date: 11/2/2011	Analyst: CES
Arsenic	1.6		0.98	mg/Kg-dry	2	11/3/2011 02:22 PM
Barium	5,500		98	mg/Kg-dry	200	11/3/2011 03:36 PM
Cadmium	ND		0.39	mg/Kg-dry	2	11/3/2011 02:22 PM
Chromium	11		0.98	mg/Kg-dry	2	11/3/2011 02:22 PM
Copper	14		0.98	mg/Kg-dry	2	11/3/2011 02:22 PM
Lead	6.3		0.98	mg/Kg-dry	2	11/3/2011 02:22 PM
Nickel	9.9		0.98	mg/Kg-dry	2	11/3/2011 02:22 PM
Selenium	ND		0.98	mg/Kg-dry	2	11/3/2011 02:22 PM
Silver	ND		0.98	mg/Kg-dry	2	11/3/2011 02:22 PM
Zinc	200		2.0	mg/Kg-dry	2	11/3/2011 02:22 PM
SUBCONTRACTED ANALYSES						
			SUBCONTRACT			Analyst: A&LGL
Subcontracted Analyses	Rcvd 11/5/11		as noted		1	11/5/2011
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW8270		Prep Date: 11/3/2011	Analyst: JJ
Acenaphthene	ND		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Anthracene	37		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Benzo(a)anthracene	ND		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Benzo(a)pyrene	ND		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Benzo(b)fluoranthene	ND		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Benzo(g,h,i)perylene	ND		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Benzo(k)fluoranthene	ND		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Chrysene	ND		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Dibenzo(a,h)anthracene	ND		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Fluoranthene	ND		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Fluorene	ND		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Indeno(1,2,3-cd)pyrene	ND		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Naphthalene	ND		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Pyrene	ND		33	µg/Kg-dry	1	11/3/2011 12:22 PM
Surr: 2,4,6-Tribromophenol	93.8		34-140	%REC	1	11/3/2011 12:22 PM

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

ALS Group USA, Corp

Date: 07-Nov-11

Client: HRL Compliance Solutions

Project: Antero Frei A Pad Flowback Release 11-289 10/30/11

Work Order: 1111063

Sample ID: On Pad

Lab ID: 1111063-04

Collection Date: 10/30/2011 10:15 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorobiphenyl	77.1		12-100	%REC	1	11/3/2011 12:22 PM
Surr: 2-Fluorophenol	85.0		33-117	%REC	1	11/3/2011 12:22 PM
Surr: 4-Terphenyl-d14	99.3		25-137	%REC	1	11/3/2011 12:22 PM
Surr: Nitrobenzene-d5	90.0		37-107	%REC	1	11/3/2011 12:22 PM
Surr: Phenol-d6	90.8		40-106	%REC	1	11/3/2011 12:22 PM
VOLATILE ORGANIC COMPOUNDS			SW8260			Analyst: BG
Benzene	ND		110	µg/Kg-dry	100	11/3/2011 05:36 AM
Ethylbenzene	ND		220	µg/Kg-dry	100	11/3/2011 05:36 AM
m,p-Xylene	790		220	µg/Kg-dry	100	11/3/2011 05:36 AM
o-Xylene	150		110	µg/Kg-dry	100	11/3/2011 05:36 AM
Toluene	190		170	µg/Kg-dry	100	11/3/2011 05:36 AM
Xylenes, Total	950		330	µg/Kg-dry	100	11/3/2011 05:36 AM
Surr: 1,2-Dichloroethane-d4	106		70-120	%REC	100	11/3/2011 05:36 AM
Surr: 4-Bromofluorobenzene	101		75-120	%REC	100	11/3/2011 05:36 AM
Surr: Dibromofluoromethane	98.0		85-115	%REC	100	11/3/2011 05:36 AM
Surr: Toluene-d8	101		85-115	%REC	100	11/3/2011 05:36 AM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: MB
Chromium, Trivalent	10		0.56	mg/Kg-dry	1	11/3/2011 05:00 PM
CHROMIUM, HEXAVALENT			SW7196A		Prep Date: 11/3/2011	Analyst: MB
Chromium, Hexavalent	ND		0.51	mg/Kg-dry	1	11/3/2011 04:30 PM
MOISTURE			A2540 G			Analyst: CG
Moisture	10		0.050	% of sample	1	11/2/2011 11:12 AM
PH			SW9045D			Analyst: JJG
pH	9.79			s.u.	1	11/2/2011 08:30 AM

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

Report Number: F11307-0733

Account Number: 91000

A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 260-483-4759 • Fax 260-483-5274

www.algreatlakes.com • lab@algreatlakes.com

QUALITY ANALYSES FOR INFORMED DECISIONS



TO: ALS LABORATORY GROUP
3352 128TH AVE
HOLLAND, MI 49424-9263

RE: 1111063

DATE RECEIVED: 11/03/2011

DATE REPORTED: 11/05/2011

PAGE: 1

P.O. NUMBER: 20-122011145

ATTN: ANN PRESTON

REPORT OF ANALYSIS

Sample ID	Location	Test Method	Value	Units	Reference
43754	03B	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	0.20	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	25	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	8	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	15	ppm	USDA Handbook 60
		Sodium Adsorption Ratio	0.7	-	USDA Handbook 60
43755	04C	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	2.01	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	10	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	3	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	1351	ppm	USDA Handbook 60
		Sodium Adsorption Ratio	95.9	-	USDA Handbook 60

ALS Group USA, Corp

Date: 07-Nov-11

Client: HRL Compliance Solutions

Work Order: 1111063

Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: 37092

Instrument ID GC8

Method: SW8015M

MBLK Sample ID: DBLKS1-37092-37092 Units: mg/Kg Analysis Date: 11/3/2011 11:55 AM
Client ID: Run ID: GC8_111103A SeqNo: 1806126 Prep Date: 11/3/2011 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	1.151	0	1.667	0	69	39-115	0			

LCS Sample ID: DLCSS1-37092-37092 Units: mg/Kg Analysis Date: 11/3/2011 11:10 AM
Client ID: Run ID: GC8_111103A SeqNo: 1810008 Prep Date: 11/3/2011 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	161.8	4.2	166.7	0	97.1	60-130	0			
Surr: 4-Terphenyl-d14	1.102	0	1.667	0	66.1	39-115	0			

LCSD Sample ID: DLCSDS1-37092-37092 Units: mg/Kg Analysis Date: 11/3/2011 11:10 AM
Client ID: Run ID: GC8_111103A SeqNo: 1810010 Prep Date: 11/3/2011 DF: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	164.1	4.2	166.7	0	98.5	60-130	161.8	1.43	30	
Surr: 4-Terphenyl-d14	1.044	0	1.667	0	62.6	39-115	1.102	5.44	30	

The following samples were analyzed in this batch:

1111063-04B

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

Client: HRL Compliance Solutions
Work Order: 1111063
Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: **R97189** Instrument ID **GC10** Method: **SW8015**

MBLK		Sample ID: MBLK-R97189-R97189			Units: µg/L		Analysis Date: 11/3/2011 01:51 AM			
Client ID:		Run ID: GC10_111103A			SeqNo: 1805947		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	200								
Surr: Toluene-d8	93.35	0	100	0	93.4	70-130	0			

LCS		Sample ID: LCS-R97189-R97189			Units: µg/L		Analysis Date: 11/3/2011 12:36 PM			
Client ID:		Run ID: GC10_111103A			SeqNo: 1805948		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)	25710	200	25000	0	103	70-130	0			
Surr: Toluene-d8	89.25	0	100	0	89.2	70-130	0			

LCSD		Sample ID: LCSD-R97189-R97189			Units: µg/L		Analysis Date: 11/3/2011 01:01 AM			
Client ID:		Run ID: GC10_111103A			SeqNo: 1805946		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)	24860	200	25000	0	99.4	70-130	25710	3.36	30	
Surr: Toluene-d8	90.34	0	100	0	90.3	70-130	89.25	1.21	30	

The following samples were analyzed in this batch:

1111063-04A

Client: HRL Compliance Solutions
 Work Order: 1111063
 Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: 37082 Instrument ID HG1 Method: SW7471

MBLK		Sample ID: MBLK-37082-37082				Units: mg/Kg		Analysis Date: 11/3/2011 01:12 PM		
Client ID:		Run ID: HG1_111103A		SeqNo: 1805727		Prep Date: 11/2/2011		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-37082-37082				Units: mg/Kg				Analysis Date: 11/3/2011 01:14 PM									
Client ID:				Run ID: HG1_111103A				SeqNo: 1805728				Prep Date: 11/2/2011				DF: 1					
Analyte		Result		PQL		SPK Val		SPK Ref Value		%REC		Control Limit		RPD Ref Value		%RPD		RPD Limit		Qual	

Mercury 0.1666 0.020 0.1665 0 100 80-120 0

LCSD				Sample ID: LCSD-37082-37082				Units: mg/Kg				Analysis Date: 11/3/2011 01:16 PM									
Client ID:				Run ID: HG1_111103A				SeqNo: 1805729				Prep Date: 11/2/2011				DF: 1					
Analyte		Result		PQL		SPK Val		SPK Ref Value		%REC		Control Limit		RPD Ref Value		%RPD		RPD Limit		Qual	

Mercury 0.1668 0.020 0.1665 0 100 80-120 0.1666 0.15 20

MS		Sample ID: 1111055-02BMS				Units: mg/Kg		Analysis Date: 11/3/2011 01:25 PM		
Client ID:		Run ID: HG1_111103A				SeqNo: 1805733		Prep Date: 11/2/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1482 0.017 0.1409 0.001573 104 75-125 0

MSD		Sample ID: 1111055-02BMSD				Units: mg/Kg		Analysis Date: 11/3/2011 01:27 PM		
Client ID:		Run ID: HG1_111103A				SeqNo: 1805734		Prep Date: 11/2/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1491 0.017 0.1452 0.001573 102 75-125 0.1482 0.599 35

The following samples were analyzed in this batch:

1111063-04B

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

Client: HRL Compliance Solutions
Work Order: 1111063
Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: 37086 Instrument ID ICPMS1 Method: SW6020A

MBLK		Sample ID: MBLK-37086-37086				Units: mg/Kg		Analysis Date: 11/3/2011 01:35 PM		
Client ID:		Run ID: ICPMS1_111103A				SeqNo: 1805872		Prep Date: 11/2/2011		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	ND	0.25								
Copper	ND	0.25								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.25								
Silver	ND	0.25								
Zinc	ND	0.50								

LCS		Sample ID: LCS-37086-37086				Units: mg/Kg		Analysis Date: 11/3/2011 01:40 PM		
Client ID:		Run ID: ICPMS1_111103A				SeqNo: 1805873		Prep Date: 11/2/2011		DF: 2
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.219	0.50	5	0	84.4	80-120	0			
Barium	4.283	0.50	5	0	85.7	80-120	0			
Cadmium	4.552	0.20	5	0	91	80-120	0			
Chromium	4.311	0.50	5	0	86.2	80-120	0			
Copper	4.364	0.50	5	0	87.3	80-120	0			
Lead	4.319	0.50	5	0	86.4	80-120	0			
Nickel	4.377	0.50	5	0	87.5	80-120	0			
Selenium	4.056	0.50	5	0	81.1	80-120	0			
Zinc	4.374	1.0	5	0	87.5	80-120	0			

LCS		Sample ID: LCS-37086-37086				Units: mg/Kg		Analysis Date: 11/3/2011 02:54 PM		
Client ID:		Run ID: ICPMS1_111103A				SeqNo: 1805884		Prep Date: 11/2/2011		DF: 2
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Silver	4.012	0.50	5	0	80.2	80-120	0			

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

Client: HRL Compliance Solutions
 Work Order: 1111063
 Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: 37086 Instrument ID ICPMS1 Method: SW6020A

LCSD		Sample ID: LCSD-37086-37086				Units: mg/Kg		Analysis Date: 11/3/2011 01:46 PM			
Client ID:		Run ID: ICPMS1_111103A				SeqNo: 1805874		Prep Date: 11/2/2011		DF: 2	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	4.523	0.50	5	0	90.5	80-120	4.33	4.36	20		
Barium	4.52	0.50	5	0	90.4	80-120	4.669	3.24	20		
Cadmium	4.848	0.20	5	0	97	80-120	4.795	1.1	20		
Chromium	4.583	0.50	5	0	91.7	80-120	4.428	3.44	20		
Copper	4.869	0.50	5	0	97.4	80-120	4.601	5.66	20		
Lead	4.645	0.50	5	0	92.9	80-120	4.565	1.74	20		
Nickel	4.654	0.50	5	0	93.1	80-120	4.428	4.98	20		
Selenium	4.434	0.50	5	0	88.7	80-120	4.303	3	20		
Silver	4.093	0.50	5	0	81.9	80-120	4.012	2	20		
Zinc	4.772	1.0	5	0	95.4	80-120	4.59	3.89	20		

MS		Sample ID: 1111055-02BMS				Units: mg/Kg		Analysis Date: 11/3/2011 01:56 PM		
Client ID:		Run ID: ICPMS1_111103A				SeqNo: 1805876		Prep Date: 11/2/2011		DF: 2
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	7.534	0.80	8	0.7559	84.7	80-120		0		
Barium	13.04	0.80	8	6.206	85.4	80-120		0		
Cadmium	7.374	0.32	8	0.02514	91.9	80-120		0		
Chromium	13.19	0.80	8	4.449	109	80-120		0		
Copper	9.734	0.80	8	2.927	85.1	80-120		0		
Lead	8.701	0.80	8	1.352	91.9	80-120		0		
Nickel	9.648	0.80	8	2.859	84.9	80-120		0		
Selenium	6.624	0.80	8	0.08396	81.8	80-120		0		
Silver	5.666	0.80	8	0.001869	70.8	80-120		0		S
Zinc	12.82	1.6	8	7.04	72.2	80-120		0		S

MSD				Sample ID: 1111055-02BMSD		Units: mg/Kg		Analysis Date: 11/3/2011 02:01 PM			
Client ID:				Run ID: ICPMS1_111103A		SeqNo: 1805877		Prep Date: 11/2/2011		DF: 2	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	7.447	0.79	7.924	0.7559	84.4	80-120	7.534	1.17	25		
Barium	14.33	0.79	7.924	6.206	102	80-120	13.04	9.44	25		
Cadmium	7.258	0.32	7.924	0.02514	91.3	80-120	7.374	1.59	25		
Chromium	10.6	0.79	7.924	4.449	77.7	80-120	13.19	21.8	25	S	
Copper	9.087	0.79	7.924	2.927	77.7	80-120	9.734	6.88	25	S	
Lead	8.588	0.79	7.924	1.352	91.3	80-120	8.701	1.31	25		
Nickel	9.431	0.79	7.924	2.859	82.9	80-120	9.648	2.27	25		
Selenium	6.536	0.79	7.924	0.08396	81.4	80-120	6.624	1.34	25		
Silver	5.583	0.79	7.924	0.001869	70.4	80-120	5.666	1.47	25	S	
Zinc	12.99	1.6	7.924	7.04	75	80-120	12.82	1.29	25	S	

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

Client: HRL Compliance Solutions
Work Order: 1111063
Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: 37086 Instrument ID ICPMS1 Method: SW6020A

The following samples were analyzed in this batch:

1111063-01A	1111063-02A	1111063-03A
1111063-04B		

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

Client: HRL Compliance Solutions
 Work Order: 1111063
 Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: 37090 Instrument ID SVMS5 Method: SW8270

MBLK Sample ID: SBLKS1-37090-37090 Units: µg/Kg Analysis Date: 11/3/2011 10:34 AM

Client ID: Run ID: SVMS5 111103A SeqNo: 1805577 Prep Date: 11/3/2011 ID: 1

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	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: 2,4,6-Tribromophenol	1286	0	1667	0	77.2	34-140	0			
Surr: 2-Fluorobiphenyl	1352	0	1667	0	81.1	12-100	0			
Surr: 2-Fluorophenol	1487	0	1667	0	89.2	33-117	0			
Surr: 4-Terphenyl-d14	1831	0	1667	0	110	25-137	0			
Surr: Nitrobenzene-d5	1426	0	1667	0	85.6	37-107	0			
Surr: Phenol-d6	1523	0	1667	0	91.4	40-106	0			

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

Client: HRL Compliance Solutions
 Work Order: 1111063
 Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: 37090 Instrument ID SVMS5 Method: SW8270

LCS		Sample ID: SLCSS1-37090-37090				Units: µg/Kg		Analysis Date: 11/3/2011 11:10 AM		
Client ID:		Run ID: SVMS5_111103A				SeqNo: 1805578		Prep Date: 11/3/2011		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1016	30	1333	0	76.2	45-110	0			
Anthracene	1036	30	1333	0	77.7	55-105	0			
Benzo(a)anthracene	1085	30	1333	0	81.4	50-110	0			
Benzo(a)pyrene	1106	30	1333	0	83	50-110	0			
Benzo(b)fluoranthene	1069	30	1333	0	80.2	45-115	0			
Benzo(g,h,i)perylene	1192	30	1333	0	89.4	40-125	0			
Benzo(k)fluoranthene	1302	30	1333	0	97.6	45-115	0			
Chrysene	1054	30	1333	0	79.1	55-110	0			
Dibenzo(a,h)anthracene	1200	30	1333	0	90	40-125	0			
Fluoranthene	1123	30	1333	0	84.3	55-115	0			
Fluorene	1087	30	1333	0	81.6	50-110	0			
Indeno(1,2,3-cd)pyrene	1188	30	1333	0	89.1	40-120	0			
Naphthalene	996.3	30	1333	0	74.7	40-105	0			
Pyrene	1101	30	1333	0	82.6	45-125	0			
Surr: 2,4,6-Tribromophenol	1397	0	1667	0	83.8	34-140	0			
Surr: 2-Fluorobiphenyl	1218	0	1667	0	73.1	12-100	0			
Surr: 2-Fluorophenol	1250	0	1667	0	75	33-117	0			
Surr: 4-Terphenyl-d14	1457	0	1667	0	87.4	25-137	0			
Surr: Nitrobenzene-d5	1290	0	1667	0	77.4	37-107	0			
Surr: Phenol-d6	1264	0	1667	0	75.8	40-106	0			

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

Client: HRL Compliance Solutions
 Work Order: 1111063
 Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: 37090 Instrument ID SVMS5 Method: SW8270

LCSD Sample ID: SLCSDS1-37090-37090				Units: µg/Kg		Analysis Date: 11/3/2011 11:46 AM				
Client ID:		Run ID: SVMS5_111103A			SeqNo: 1805579		Prep Date: 11/3/2011		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1137	30	1333	0	85.3	45-110	1016	11.2	25	
Anthracene	1126	30	1333	0	84.5	55-105	1036	8.39	25	
Benzo(a)anthracene	1196	30	1333	0	89.7	50-110	1085	9.7	25	
Benzo(a)pyrene	1205	30	1333	0	90.4	50-110	1106	8.57	25	
Benzo(b)fluoranthene	1239	30	1333	0	92.9	45-115	1069	14.7	25	
Benzo(g,h,i)perylene	1285	30	1333	0	96.4	40-125	1192	7.54	25	
Benzo(k)fluoranthene	1290	30	1333	0	96.7	45-115	1302	0.926	25	
Chrysene	1106	30	1333	0	83	55-110	1054	4.78	25	
Dibenzo(a,h)anthracene	1309	30	1333	0	98.2	40-125	1200	8.69	25	
Fluoranthene	1225	30	1333	0	91.9	55-115	1123	8.63	25	
Fluorene	1202	30	1333	0	90.1	50-110	1087	9.99	25	
Indeno(1,2,3-cd)pyrene	1288	30	1333	0	96.6	40-120	1188	8.05	25	
Naphthalene	1108	30	1333	0	83.1	40-105	996.3	10.6	25	
Pyrene	1192	30	1333	0	89.4	45-125	1101	7.88	25	
Surr: 2,4,6-Tribromophenol	1491	0	1667	0	89.4	34-140	1397	6.51	40	
Surr: 2-Fluorobiphenyl	1354	0	1667	0	81.2	12-100	1218	10.6	40	
Surr: 2-Fluorophenol	1416	0	1667	0	85	33-117	1250	12.5	40	
Surr: 4-Terphenyl-d14	1559	0	1667	0	93.6	25-137	1457	6.79	40	
Surr: Nitrobenzene-d5	1462	0	1667	0	87.7	37-107	1290	12.5	40	
Surr: Phenol-d6	1381	0	1667	0	82.9	40-106	1264	8.9	40	

The following samples were analyzed in this batch: 1111063-04B

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

Client: HRL Compliance Solutions
 Work Order: 1111063
 Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: R97163 Instrument ID VMS6 Method: SW8260

MBLK Sample ID: VBLKW2-111102-R97163				Units: µg/L		Analysis Date: 11/2/2011 10:57 PM				
Client ID:		Run ID: VMS6_111102A			SeqNo: 1805525		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
m,p-Xylene	ND	2.0								
o-Xylene	ND	1.0								
Toluene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 1,2-Dichloroethane-d4	102.2	0	100	0	102	70-120		0		
Surr: 4-Bromofluorobenzene	97.87	0	100	0	97.9	75-120		0		
Surr: Dibromofluoromethane	101	0	100	0	101	85-115		0		
Surr: Toluene-d8	99.49	0	100	0	99.5	85-120		0		

LCS Sample ID: VLCSW1-111102-R97163				Units: µg/L		Analysis Date: 11/2/2011 09:43 PM				
Client ID:		Run ID: VMS6_111102A			SeqNo: 1805523		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	21.22	1.0	20	0	106	80-120	0			
Ethylbenzene	21.43	1.0	20	0	107	75-125	0			
m,p-Xylene	43.16	2.0	40	0	108	75-130	0			
o-Xylene	21.05	1.0	20	0	105	80-120	0			
Toluene	21.56	1.0	20	0	108	75-120	0			
Xylenes, Total	64.21	3.0	60	0	107	75-130	0			
Surr: 1,2-Dichloroethane-d4	100.7	0	100	0	101	70-120	0			
Surr: 4-Bromofluorobenzene	100.4	0	100	0	100	75-120	0			
Surr: Dibromofluoromethane	103.4	0	100	0	103	85-115	0			
Surr: Toluene-d8	100.4	0	100	0	100	85-120	0			

LCSD	Sample ID: VLCSDW1-111102-R97163					Units: µg/L	Analysis Date: 11/2/2011 10:07 PM			
Client ID:	Run ID: VMS6_111102A				SeqNo: 1805524	Prep Date:			DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.48	1.0	20	0	112	80-120	21.22	5.77	30	
Ethylbenzene	22.5	1.0	20	0	112	75-125	21.43	4.87	30	
m,p-Xylene	45.58	2.0	40	0	114	75-130	43.16	5.45	30	
o-Xylene	22.27	1.0	20	0	111	80-120	21.05	5.63	30	
Toluene	22.67	1.0	20	0	113	75-120	21.56	5.02	30	
Xylenes, Total	67.85	3.0	60	0	113	75-130	64.21	5.51	30	
Surr: 1,2-Dichloroethane-d4	101.1	0	100	0	101	70-120	100.7	0.327	30	
Surr: 4-Bromofluorobenzene	99.53	0	100	0	99.5	75-120	100.4	0.88	30	
Surr: Dibromofluoromethane	103	0	100	0	103	85-115	103.4	0.329	30	
Surr: Toluene-d8	100.2	0	100	0	100	85-120	100.4	0.189	30	

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

Client: HRL Compliance Solutions
 Work Order: 1111063
 Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: R97163 Instrument ID VMS6 Method: SW8260

MS		Sample ID: 1110959-01A MS				Units: µg/L		Analysis Date: 11/3/2011 07:41 AM		
Client ID:		Run ID: VM56_111102A				SeqNo: 1805538		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	23.18	1.0	20	0	116	80-120	0			
Ethylbenzene	22.12	1.0	20	0	111	75-125	0			
m,p-Xylene	45.17	2.0	40	0	113	75-130	0			
o-Xylene	21.77	1.0	20	0	109	80-120	0			
Toluene	22.61	1.0	20	0	113	75-120	0			
Xylenes, Total	66.94	3.0	60	0	112	75-130	0			
Surr: 1,2-Dichloroethane-d4	104	0	100	0	104	70-120	0			
Surr: 4-Bromofluorobenzene	100.2	0	100	0	100	75-120	0			
Surr: Dibromofluoromethane	103.8	0	100	0	104	85-115	0			
Surr: Toluene-d8	99.18	0	100	0	99.2	85-120	0			

MSD		Sample ID: 1110959-01A MSD				Units: µg/L		Analysis Date: 11/3/2011 08:06 AM		
Client ID:		Run ID: VMS6_111102A				SeqNo: 1805539		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	22.88	1.0	20	0	114	80-120	23.18	1.3	30	
Ethylbenzene	21.95	1.0	20	0	110	75-125	22.12	0.771	30	
m,p-Xylene	44.48	2.0	40	0	111	75-130	45.17	1.54	30	
o-Xylene	21.81	1.0	20	0	109	80-120	21.77	0.184	30	
Toluene	22.49	1.0	20	0	112	75-120	22.61	0.532	30	
Xylenes, Total	66.29	3.0	60	0	110	75-130	66.94	0.976	30	
Surr: 1,2-Dichloroethane-d4	103.7	0	100	0	104	70-120	104	0.327	30	
Surr: 4-Bromofluorobenzene	98.84	0	100	0	98.8	75-120	100.2	1.38	30	
Surr: Dibromofluoromethane	104.2	0	100	0	104	85-115	103.8	0.327	30	
Surr: Toluene-d8	99.76	0	100	0	99.8	85-120	99.18	0.583	30	

The following samples were analyzed in this batch:

1111063-04A

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

Client: HRL Compliance Solutions
 Work Order: 1111063
 Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: 37147 Instrument ID WETCHEM Method: SW7196A

MBLK				Sample ID: MBLK-37147-37147				Units: mg/Kg				Analysis Date: 11/3/2011 04:30 PM					
Client ID:				Run ID: WETCHEM_1111030				SeqNo: 1806147				Prep Date: 11/3/2011				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-37147-37147				Units: mg/Kg		Analysis Date: 11/3/2011 04:30 PM				
Client ID:		Run ID: WETCHEM_1111030		SeqNo: 1806145		Prep Date: 11/3/2011		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.972	0.50	2	0	98.6	75-110	0			

LCSD				Sample ID: LCSD-37147-37147				Units: mg/Kg				Analysis Date: 11/3/2011 04:30 PM					
Client ID:				Run ID: WETCHEM_1111030				SeqNo: 1806146				Prep Date: 11/3/2011				DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual						
Chromium, Hexavalent		1.924	0.50	2	0	96.2	75-110	1.972	2.46	20							

MS				Sample ID: 1111083-01B MS				Units: mg/Kg				Analysis Date: 11/3/2011 04:30 PM									
Client ID:				Run ID: WETCHEM_1111030				SeqNo: 1806143				Prep Date: 11/3/2011				DF: 1					
Analyte		Result		PQL		SPK Val		SPK Ref Value		%REC		Control Limit		RPD Ref Value		%RPD		RPD Limit		Qual	
Chromium, Hexavalent		0.7448		0.50		1.991		0		37.4		60-130		0						S	

MSD				Sample ID: 1111083-01B MSD				Units: mg/Kg				Analysis Date: 11/3/2011 04:30 PM					
Client ID:				Run ID: WETCHEM_1111030				SeqNo: 1806144				Prep Date: 11/3/2011				DF: 1	
Analyte		Result		PQL	SPK Val		SPK Ref Value		%REC	Control Limit		RPD Ref Value		%RPD	RPD Limit		Qual
Chromium, Hexavalent		0.7797		0.49	1.949		0		40	60-130		0.7448		4.59	30		S

The following samples were analyzed in this batch:

1111063-04B

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

Client: HRL Compliance Solutions
 Work Order: 1111063
 Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: R97104 Instrument ID WETCHEM Method: A4500-H B

LCS Sample ID: LCS-R97104-R97104				Units: s.u.		Analysis Date: 11/2/2011 08:30 AM				
Client ID:		Run ID: WETCHEM_111102D		SeqNo: 1804045		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: LCS-R97104-R97104				Units: s.u.		Analysis Date: 11/2/2011 08:30 AM				
Client ID:		Run ID: WETCHEM_111102D			SeqNo: 1804048		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: 1111061-01B DUP			Units: s.u.		Analysis Date: 11/2/2011 08:30 AM		
Client ID:		Run ID: WETCHEM 111102D			SeqNo: 1804047		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH	7.3	0	0	0	0	0-0	7.3	0	20		

DUP				Sample ID: 1111041-01A DUP			Units: s.u.		Analysis Date: 11/2/2011 08:30 AM		
Client ID:			Run ID: WETCHEM_111102D			SeqNo: 1804050		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH	7.77	0	0	0	0	0-0	7.77	0	20		

DUP		Sample ID: 1111055-05B DUP				Units: s.u.		Analysis Date: 11/2/2011 08:30 AM		
Client ID:		Run ID: WETCHEM_111102D				SeqNo: 1804061		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.46	0	0	0	0	0-0	8.46	0	20	

The following samples were analyzed in this batch:

1111063-03A 1111063-04B

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

Client: HRL Compliance Solutions
 Work Order: 1111063
 Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: R97155 Instrument ID MOIST Method: A2540 G

MBLK		Sample ID: WBLKS1-R97155				Units: % of sample		Analysis Date: 11/2/2011 11:12 AM		
Client ID:		Run ID: MOIST_111102C				SeqNo: 1805296		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-R97155				Units: % of sample				Analysis Date: 11/2/2011 11:12 AM			
Client ID:				Run ID: MOIST_111102C				SeqNo: 1805295				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: 1111032-06BDUP				Units: % of sample		Analysis Date: 11/2/2011 11:12 AM		
Client ID:		Run ID: MOIST_111102C				SeqNo: 1805278		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 12.21 0.050 0 0 0 0-0 11.81 3.33 20

DUP				Sample ID: 1111055-05BDUP				Units: % of sample				Analysis Date: 11/2/2011 11:12 AM							
Client ID:				Run ID: MOIST_111102C				SeqNo: 1805292				Prep Date:				DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual									

Moisture 15.74 0.050 0 0 0 0-0 16.18 2.76 20

The following samples were analyzed in this batch:

1111063-03A 1111063-04B

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

Client: HRL Compliance Solutions
 Work Order: 1111063
 Project: Antero Frei A Pad Flowback Release 11-289 10/30/

QC BATCH REPORT

Batch ID: R97156 Instrument ID MOIST Method: A2540 G

MBLK		Sample ID: WBLKS1-R97156				Units: % of sample		Analysis Date: 11/2/2011 01:11 PM		
Client ID:		Run ID: MOIST-111102D				SeqNo: 1805320		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-R97156				Units: % of sample				Analysis Date: 11/2/2011 01:11 PM									
Client ID:				Run ID: MOIST_111102D				SeqNo: 1805319				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: 1111043-01ADUP		Units: % of sample		Analysis Date: 11/2/2011 01:11 PM		
Client ID:		Run ID: MOIST_111102D		SeqNo: 1805298		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	13.55	0.050	0	0	0	0-0	13.9	2.55	20	

DUP	Sample ID: 1111043-05ADUP				Units: % of sample		Analysis Date: 11/2/2011 01:11 PM			
Client ID:	Run ID: MOIST_111102D				SeqNo: 1805303		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	14.87	0.050	0	0	0	0-0	14.28	4.05	20	

The following samples were analyzed in this batch:

1111063-01A 1111063-02A



ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
 Tel: (800) 443-1511 Fax: (970) 490-1511 Fax: (970) 490-1522

Chain-of-Custody

WORKORDER #	1111063
-------------	---------

PROJECT NAME		Antero Frei A Pad Flowback Release		SAMPLER		Dan Pinegar		DATE		10/31/2011		PAGE		1 of 1	
PROJECT No.		11-289		SITE ID		Frei A Pad		TURNAROUND		24 HOUR		DISPOSAL		By Lab or Return to Client	
COMPANY NAME		HRL Compliance Solutions, Inc.		BILL TO COMPANY		Antero Resources		BTEX/TPH TEPH SEMI VOLS (Full Table 910.1) Metals (Full Table 910.1) SAR, EC, Ph Arsenic							
SEND REPORT TO		Mark Mumby		INVOICE ATTN TO		Amanda Femley									
ADDRESS		744 Horizon Ct. Suite 140		ADDRESS		1625 17th Street Suite 300									
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		303-357-7315									
E-MAIL		mmumby@hrlcomp.com		E-MAIL		afemley@anteroresources.com									
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC								
01	Background 1	soil	10/30/2011	10:00 AM	1	8									
02	Background 2	soil	10/30/2011	10:05 AM	1	8									
03	Background 3	soil	10/30/2011	10:10 AM	2	8									
04	On Pad	soil	10/30/2011	10:15 AM	3	8		X	X	X	X	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:	QC PACKAGE (check below)	
	x	LEVEL II (Standard QC)
		LEVEL III (Std QC + Ions)
		LEVEL IV (Std QC + Ions + 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	Daniel Pinegar	10/31/2011	1700
RECEIVED BY	Diane F. Shaw	11/2/11	1000
RELINQUISHED BY			
RECEIVED BY			
RELINQUISHED BY			
RECEIVED BY			



Environmental

Subcontractor:

A & L Great Lakes Agricultural Lab
3505 Conestoga Dr

TEL: (260) 483-4759

FAX: (260) 483-5274

Acct #: 91000

Ft. Wayne, IN 46808

Salesperson

Debbie Fazio

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: 02-Nov-11

COC ID: 3269

Due Date: 03-Nov-11

Customer Information		Project Information		Parameter/Method Reference for Analysis												
Purchase Order	20-122011145	Project Name	1111063	A	Subcontracted Analyses (SUBCONTRACT) SAR-EC											
Work Order		Project Number		B												
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C												
Send Report To	Ann Preston	Inv Attn	Accounts Payable	D												
Address	3352 128th Avenue	Address	3352 128th Avenue	E												
				F												
City/State/Zip	Holland, Michigan 49424-9263	City/State/Zip	Holland, Michigan 49424-9263	G												
Phone	(616) 399-6070	Phone	(616) 399-6070	H												
Fax	(616) 399-6185	Fax	(616) 399-6185	I												
eMail Address	ann.preston@alsglobal.com	eMail CC		J												
Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J			
1111063-03B	Soil	30/Oct/2011 10:10	(1) MISC	X												
1111063-04C	Soil	30/Oct/2011 10:15	(1) MISC	X												

Comments:

Please analyze for SAR-EC. Email results to Ann Preston.

Ann Preston 11/2/11 1230

Relinquished by:

Date/Time

Received by:

Date/Time

Cooler IDs

Report/QC Level

Relinquished by:

Date/Time

Received by:

Date/Time

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: HRL
Work Order: 1111063

Date/Time Received: 02-Nov-11 10:00
Received by: DS

Checklist completed by Diane Shaw 02-Nov-11 Reviewed by: Alan Casarez 02-Nov-11
eSignature Date 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"/>	
Temperature(s)/Thermometer(s):	<u>3.2 c</u>		
Cooler(s)/Kit(s):			
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:

PRIOR HISTORY

FORM

19

Rev 6/99

State of Colorado Oil and Gas Conservation Commission

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



FOR OGCC USE ONLY

Received 11/9/2011
Rifle COGCC

SPILL/RELEASE REPORT

This form is to be submitted by the party responsible for the oil and gas spill or release. Any spill or release which may impact waters of the State must be reported as soon as practicable; any spill over 20 bbls must be reported within 24 hours and all spills over five bbls must be reported within ten days. Submit a Site Investigation and Remediation Workplan (Form 27) when requested by the Director.

Spill report taken by:

Linda Spry O'Rourke

FACILITY ID:

OPERATOR INFORMATION

Name of Operator: Antero Resources Piceance Corporation OGCC Operator No: 10079Address: 1625 17th StreetCity: Denver State: CO Zip: 80202Contact Person: Gerard G. Alberts

Phone Numbers

No: 303-357-7341Fax: 303-357-7315E-Mail: jalberts@anteroresources.com

DESCRIPTION OF SPILL OR RELEASE

Date of Incident: 10/29/2011 Facility Name & No.: Frei A Pad #417777Type of Facility (well, tank battery, flow line, pit): Frac Tank Battery at well padWell Name and Number: Frei #A1API Number: 05-045-19958County: Garfield CountyQtrQtr: SWSW Section: 7Township: 6S Range: 91WMeridian: 6th

Specify volume spilled and recovered (in bbls) for the following materials:

Oil spilled: 0.036 Oil recov'd: 0.036 Water spilled: 45 Water recov'd: 45 Other spilled: _____ Other recov'd: _____Ground Water impacted? ☐ Yes ☒ NoSurface Water impacted? ☐ Yes ☒ NoContained within berm? ☒ Yes ☐ NoArea and vertical extent of spill: estimated 4268 sq. ft x ~6 inchesCurrent land use: Agriculture/pastureWeather conditions: cold, calmSoil/geology description: Ildefonso stony loam, 25 to 45 percent slopeIF LESS THAN A MILE, report distance IN FEET to nearest.... Surface water: 3328.13 wetlands: 3286 buildings: 511Livestock: _____ water wells: 589.85 Depth to shallowest ground water: 82Cause of spill (e.g., equipment failure, human error, etc.): equipment failure Detailed description of the spill/release incident:

On October 29, 2011 at 11:30 am on the Frei A Pad, located within 317B external buffer, frac water was being transferred from the Wasatch Bench Facility to frac tanks on site via an underground water pipeline network. At the conclusion of the water transfer, the gate valve, used to manage the connection between the water network pipeline and the site, was shut. However due to equipment malfunction the gate valve continued to allow water to flow through the pipeline at high pressures. The flapper valve located between the water pipeline and the pump on site was unable to handle the pressure and released approximately 45 barrels of frac water onto the pad. The pump was immediately shut off and a vacuum truck contacted. The vacuum truck arrived within 45 minutes and recovered all of the released fluids. Afterwards, approximately 15 gallons of Microblaze were applied to the area of impact.

CORRECTIVE ACTION

Describe immediate response (how stopped, contained and recovered):

Pump was immediately shut off. Vacuum truck arrived within an hour and recovered all the water. Microblaze was applied to the area of impact. Flapper valve was replaced on the pump and tested prior to resuming water transfer.

Describe any emergency pits constructed:

N/A

How was the extent of contamination determined:

Extent of contamination was determined using in-field measurements and Trimble GPS

Further remediation activities proposed (attach separate sheet if needed):

Confirmation sampling taken October 29, 2011 to test for Table 910-1 constituents.

Describe measures taken to prevent problem from reoccurring:

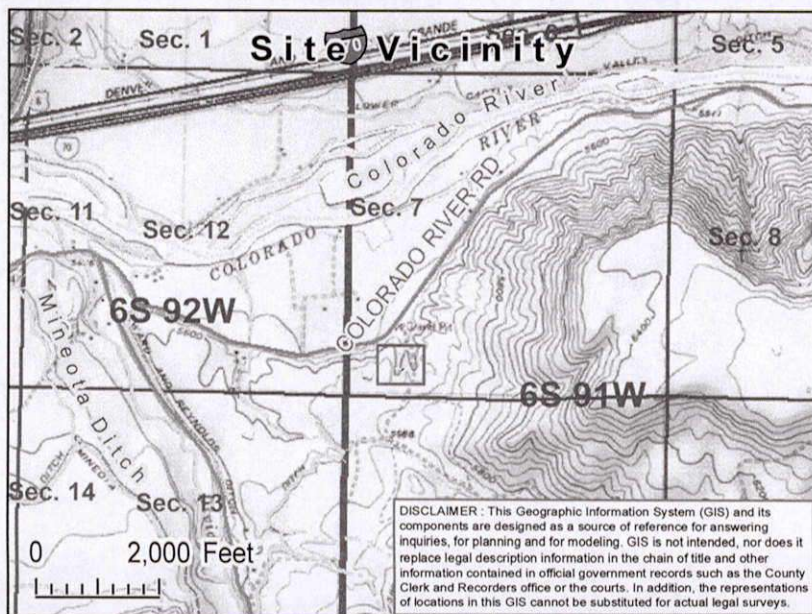
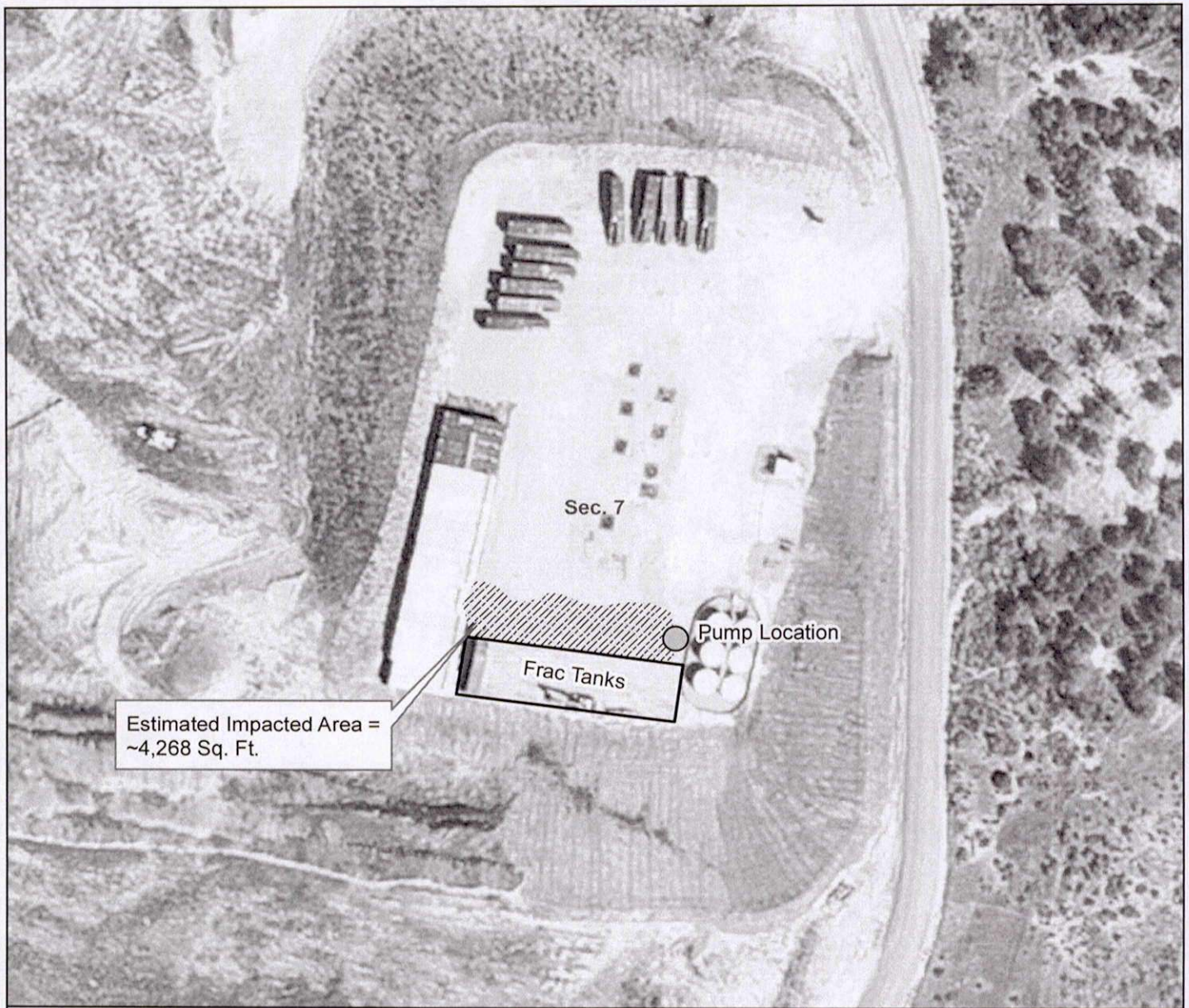
Flush the valve seat for existing debris, if unsuccessful restore the 10" gate valve on the water gathering line to ensure additional preventative measures. Complete full maintenance report on all pumps used for Antero operations.

OTHER NOTIFICATIONS

List the parties and agencies notified (County, BLM, EPA, DOT, Local Emergency Planning Coordinator or other).

Date	Agency	Contact	Phone	Response
October 29, 2011	CDPHE/ COGCC	Environmental Release/Spill Incident Hotline	1-877-518-5608	Left message with details regarding the spill
October 31, 2011	COGCC	Linda Spry O'Rourke	970-625-2497	Provided details regarding the spill and consequent actions
October 31, 2011	CDPHE/ COGCC	Environmental Release/Spill Incident Hotline	303-692-2709	Provided details regarding the spill and released Spill # 2011- 0794

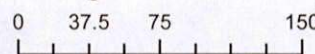
Spill/Release Tracking No: 2216952



Attachment A--Spill Location Map
Location: Frei A
Antero Resources Piceance Corp.

Legend

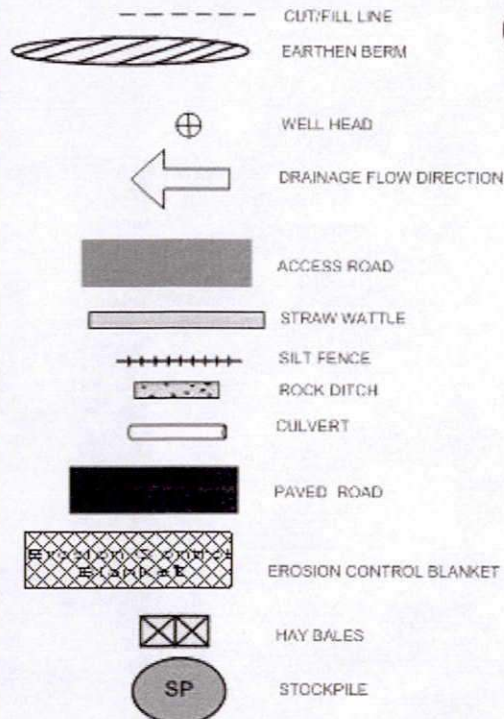
- | | |
|------------------------------|--------------------------------|
| PLSS | Transportation Features |
| Township | Highways |
| Section | Public Roads |
| Hydrographic Features | |
| | Perennial Stream |
| | Intermittent Stream |
| | Ditch/Canal |
| | River |



ANTERO RESOURCES

SITE ID: 045-00009
SITE NAME: Frei A Pad
SWSW SEC. 7 T6S R91W

LEGEND



ABANDONED
GRAVEL PIT

BMPs mark site
boundary / area of
disturbance



COLO. RIVER, ~¼ MI. NORTH

CR 355

ACCESS ROAD
(NOT ANTERO
RESPONSIBILITY)

FILL SLOPE $\leq 10\%$

