

APPROVED

NAME: [Signature]
DATE: 6/21/2016



Antero Resources
1615 Wynkoop Street
Denver, CO 80202
Office 303.357.7310
Fax 303.357.7315

May 25, 2016

West Virginia Department of Environmental Protection
Office of Oil and Gas
Attn: John Kearney
601 57th Street
Charleston, WV 25304

Mr. Kearney:

Please find enclosed the Well Operator's Report of Well Work, Form WR-35 (including As-Drilled Survey Plat, Directional Survey and FracFocus report) and corresponding logs for the following well:

- Sheep Run Unit 1H (API# 47-017-06657) – Fritz Pad ✗
- Sheep Run Unit 2H (API# 47-017-06658) – Fritz Pad

If you have any questions please feel free to contact me at (303) 357-7233.

Sincerely,

[Signature]

Kara Quackenbush
Permitting Agent
Antero Resources Corporation

Enclosures

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AX
RBDM 6/21/2016

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Well Operator's Report of Well Work

API 47-017-06657 County Doddridge District Central
Quad Oxford 7.5' Pad Name Fritz Pad Field/Pool Name ---
Farm name Horton, Judy A. Well Number Sheep Run Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop St. City Denver State CO Zip 80202

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing 4342771m Easting 513808m
Landing Point of Curve Northing 4342820.24m Easting 514178.18m
Bottom Hole Northing 4340604m Easting 515227m

Elevation (ft) 1053' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)

Air- Foam & 4% KCL

Mud- Polymer

Date permit issued 1/26/2015 Date drilling commenced 3/9/2015 Date drilling ceased 5/27/2015
Date completion activities began 11/7/2015 Date completion activities ceased 2/27/2016
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 97' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1143', 1529' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 1429' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

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API 47-017 - 06657 Farm name Horton, Judy A. Well number Sheep Run Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/N) * Provide details below*
Conductor	30"	20"	40'	New	94# J-55	N/A	Y
Surface	17- 1/2"	13- 3/8"	362'	New	48# H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2529'	New	36# J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5-1/2"	15054'	New	23# P-110	N/A	Y
Tubing		2-3/8"	6776'		4.7# N-80	N/A	
Packer type and depth set		N/A					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	150 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	410 sx	15.6	1.19	251	0'	8 Hrs.
Coal							
Intermediate 1	Class A	930 sx	15.4	1.18	792	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1046 sx (Lead) 1271 sx (Tail)	14.5 Lead 15.2 Tail	1.30 Lead 1.85 Tail	2984	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15058' MD, 6498' TVD (BHL), 6568' (Deepest Point Drilled) Loggers TD (ft) 15058'
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6410'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Washington Unit 2H API #47-017-06371). Please reference the wireline logs submitted with Form WR-35 for Washington Unit 2H. A Cement Bond Log has been included with this submittal.

Check all wireline logs run caliper density deviated/directional induction neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Conductor- 0
 Surface- 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface
 Intermediate- 1 above float joint, 1 above float collar, 1 every 4th joint to surface
 Production- 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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WERE TRACERS USED Yes No TYPE OF TRACER(S) USED _____

API 47- 017 - 06657 Farm name Horton, Judy A. Well number Sheep Run Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
*PLEASE SEE ATTACHED EXHIBIT 1					

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
*PLEASE SEE ATTACHED EXHIBIT 2								

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Please insert additional pages as applicable.

API 47- 017 - 06657 Farm name Horton, Judy A. Well number Sheep Run Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6526' (TOP)</u> TVD	<u>6826' (TOP)</u> MD
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump
 SHUT-IN PRESSURE Surface 3000 psi Bottom Hole --- psi DURATION OF TEST --- hrs
 OPEN FLOW Gas 382 mcfpd Oil 0 bpd NGL --- bpd Water 14 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP DEPTH IN FT NAME TVD</u>	<u>BOTTOM DEPTH IN FT TVD</u>	<u>TOP DEPTH IN FT MD</u>	<u>BOTTOM DEPTH IN FT MD</u>	<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>0</u>		<u>0</u>		

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Frontier Drilling LLC
 Address 562 Spring Run Rd. City Pennsboro State WV Zip 26415

Logging Company Rush Wellsite Services
 Address 600 Alpha Drive City Canonsburg State PA Zip 15317

Cementing Company Nabors Completion & Production Services, Co.
 Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company US Well Services
 Address 533 Industrial Park Dr. City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Kara Quackenbush Telephone 303-357-7233
 Signature *Kara Quackenbush* Title Permit Representative Date 5/24/2016

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Submission of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	7-Nov-15	14,832	14,959	60	Marcellus
2	14-Dec-15	14,681	14,809	60	Marcellus
3	15-Dec-15	14,531	14,658	60	Marcellus
4	15-Dec-15	14,381	14,508	60	Marcellus
5	15-Dec-15	14,231	14,358	60	Marcellus
6	15-Dec-15	14,081	14,208	60	Marcellus
7	15-Dec-15	13,930	14,058	60	Marcellus
8	16-Dec-15	13,780	13,907	60	Marcellus
9	16-Dec-15	13,630	13,757	60	Marcellus
10	16-Dec-15	13,480	13,607	60	Marcellus
11	17-Dec-15	13,330	13,457	60	Marcellus
12	17-Dec-15	13,180	13,307	60	Marcellus
13	17-Dec-15	13,029	13,156	60	Marcellus
14	17-Dec-15	12,879	13,006	60	Marcellus
15	18-Dec-15	12,729	12,856	60	Marcellus
16	19-Dec-15	12,579	12,706	60	Marcellus
17	19-Dec-15	12,429	12,556	60	Marcellus
18	19-Dec-15	12,278	12,406	60	Marcellus
19	20-Dec-15	12,128	12,255	60	Marcellus
20	21-Dec-15	11,978	12,105	60	Marcellus
21	21-Dec-15	11,828	11,955	60	Marcellus
22	21-Dec-15	11,678	11,805	60	Marcellus
23	21-Dec-15	11,527	11,655	60	Marcellus
24	22-Dec-15	11,377	11,504	60	Marcellus
25	22-Dec-15	11,227	11,354	60	Marcellus
26	22-Dec-15	11,077	11,204	60	Marcellus
27	22-Dec-15	10,927	11,054	60	Marcellus
28	22-Dec-15	10,776	10,904	60	Marcellus
29	23-Dec-15	10,626	10,753	60	Marcellus
30	23-Dec-15	10,476	10,603	60	Marcellus
31	23-Dec-15	10,326	10,453	60	Marcellus
32	23-Dec-15	10,176	10,303	60	Marcellus
33	23-Dec-15	10,025	10,153	60	Marcellus
34	26-Dec-15	9,875	10,002	60	Marcellus
35	26-Dec-15	9,725	9,852	60	Marcellus
36	26-Dec-15	9,575	9,702	60	Marcellus
37	27-Dec-15	9,425	9,552	60	Marcellus
38	27-Dec-15	9,275	9,402	60	Marcellus
39	27-Dec-15	9,124	9,252	60	Marcellus
40	27-Dec-15	8,974	9,101	60	Marcellus
41	27-Dec-15	8,824	8,951	60	Marcellus
42	28-Dec-15	8,674	8,801	60	Marcellus
43	28-Dec-15	8,524	8,651	60	Marcellus
44	28-Dec-15	8,373	8,501	60	Marcellus
45	28-Dec-15	8,223	8,350	60	Marcellus
46	28-Dec-15	8,073	8,200	60	Marcellus
47	29-Dec-15	7,923	8,050	60	Marcellus
48	29-Dec-15	7,773	7,900	60	Marcellus
49	29-Dec-15	7,622	7,750	60	Marcellus
50	29-Dec-15	7,472	7,599	60	Marcellus
51	29-Dec-15	7,322	7,449	60	Marcellus
52	29-Dec-15	7,172	7,299	60	Marcellus
53	30-Dec-15	7,022	7,149	60	Marcellus
54	30-Dec-15	6,871	6,999	60	Marcellus

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EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	14-Dec-15	60.0	6,744	5,362	3,809	122,110	6,588	N/A
2	14-Dec-15	62.0	7,005	6,244	4,355	177,300	6,407	N/A
3	15-Dec-15	62.0	7,005	5,543	4,060	219,640	5,990	N/A
4	15-Dec-15	63.0	7,153	5,480	3,667	189,440	6,235	N/A
5	15-Dec-15	69.0	7,422	6,717	3,992	211,530	6,212	N/A
6	15-Dec-15	72.0	7,193	5,907	4,843	227,375	6,234	N/A
7	15-Dec-15	73.0	7,311	5,664	4,327	232,450	6,199	N/A
8	16-Dec-15	71.0	7,287	6,634	3,876	217,800	6,074	N/A
9	16-Dec-15	72.0	7,130	5,827	3,579	233,490	6,191	N/A
10	16-Dec-15	73.0	7,316	5,687	4,299	230,250	6,211	N/A
11	17-Dec-15	74.0	7,267	6,161	5,169	234,949	6,182	N/A
12	17-Dec-15	71.0	6,996	5,588	4,443	218,060	5,954	N/A
13	17-Dec-15	71.0	7,021	5,661	4,755	232,640	6,107	N/A
14	17-Dec-15	75.0	7,016	5,488	4,760	232,600	6,145	N/A
15	18-Dec-15	71.0	6,942	6,032	4,229	225,520	6,061	N/A
16	19-Dec-15	72.0	6,805	5,718	4,481	233,640	6,082	N/A
17	19-Dec-15	76.0	7,164	5,340	4,308	220,500	6,586	N/A
18	19-Dec-15	71.0	6,682	6,290	4,766	220,300	5,938	N/A
19	20-Dec-15	74.0	7,214	5,801	4,165	204,025	5,872	N/A
20	21-Dec-15	77.0	7,030	5,969	4,335	205,720	5,700	N/A
21	21-Dec-15	71.0	6,514	5,665	4,090	233,290	6,030	N/A
22	21-Dec-15	73.0	6,746	6,477	4,297	234,010	6,028	N/A
23	21-Dec-15	72.0	6,679	5,392	4,660	233,189	5,995	N/A
24	22-Dec-15	73.0	6,825	5,517	5,265	196,309	6,559	N/A
25	22-Dec-15	72.0	6,585	6,282	4,624	233,820	5,988	N/A
26	22-Dec-15	72.0	6,553	5,663	3,608	232,550	5,978	N/A
27	22-Dec-15	73.0	6,745	5,949	5,283	231,613	5,935	N/A
28	22-Dec-15	73.0	6,840	5,794	4,936	232,826	5,942	N/A
29	23-Dec-15	73.0	6,566	5,471	4,569	232,770	5,921	N/A
30	23-Dec-15	72.0	6,589	5,422	4,175	231,550	5,888	N/A
31	23-Dec-15	72.0	6,701	5,544	4,084	232,450	5,965	N/A
32	23-Dec-15	73.0	6,560	5,752	5,364	232,673	5,881	N/A
33	23-Dec-15	73.0	6,317	5,645	5,094	232,058	5,865	N/A
34	26-Dec-15	71.0	6,541	5,588	4,830	196,300	6,193	N/A
35	26-Dec-15	72.0	6,879	6,149	4,772	210,690	6,411	N/A
36	26-Dec-15	70.0	6,996	5,968	4,162	198,240	5,651	N/A
37	27-Dec-15	73.0	6,879	5,855	4,073	233,350	5,813	N/A
38	27-Dec-15	73.0	6,639	5,642	4,212	232,450	5,772	N/A
39	27-Dec-15	72.0	6,620	6,414	3,986	200,750	6,219	N/A
40	27-Dec-15	70.0	6,844	6,088	3,786	232,990	5,799	N/A
41	27-Dec-15	73.0	6,791	6,129	3,890	233,250	5,819	N/A
42	28-Dec-15	71.0	6,639	6,436	3,924	145,950	5,947	N/A
43	28-Dec-15	78.0	6,713	5,573	4,210	233,310	5,947	N/A
44	28-Dec-15	73.0	6,658	5,795	4,734	232,070	5,794	N/A
45	28-Dec-15	71.0	6,511	5,486	5,012	232,950	5,594	N/A
46	28-Dec-15	70.0	6,304	5,985	4,647	232,950	6,216	N/A
47	29-Dec-15	73.0	6,309	5,624	4,669	234,100	5,686	N/A
48	29-Dec-15	73.0	6,184	5,857	5,076	237,800	5,732	N/A
49	29-Dec-15	73.0	6,230	5,888	4,941	235,000	5,659	N/A
50	29-Dec-15	73.0	6,258	6,186	5,031	239,900	5,736	N/A
51	29-Dec-15	73.0	6,118	5,894	4,111	234,950	5,661	N/A
52	29-Dec-15	72.0	6,184	6,291	4,038	234,050	5,627	N/A
53	30-Dec-15	72.0	6,095	5,744	4,754	234,250	5,615	N/A
54	30-Dec-15	73.0	6,207	5,927	3,986	232,900	5,627	N/A
AVG=		71.7	6,750	5,856	4,428	11,962,347	5,985	TOTAL

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EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Fresh Water	97'	N/A	97'	N/A
Siltstone/Sandstone	0	109	0	109
Shale/ Siltstone	est. 109	169	est. 109	169
Siltstone/ Trace Coal	est. 169	329	est. 169	329
Siltstone/ Shale	est. 329	429	est. 329	429
Shale	est. 429	509	est. 429	509
Sandstone	est. 509	549	est. 509	549
Shale/ Siltstone	est. 549	629	est. 549	629
Limestone/ Shale	est. 629	689	est. 629	689
Shale/ Siltstone	est. 689	829	est. 689	829
Shale/ Limestone	est. 829	909	est. 829	909
Sandstone	est. 909	969	est. 909	969
Shale	est. 969	1089	est. 969	1089
Siltstone/ Trace Coal	est. 1089	1429	est. 1089	1429
Coal	est. 1429	1549	est. 1429	1549
Siltstone/ Trace Coal	est. 1549	1689	est. 1549	1689
Shale/ Siltstone	est. 1689	1909	est. 1689	1909
Sandstone	est. 1909	1957	est. 1909	1960
Big Lime	1957	2612	1960	2616
Fifty Foot Sandstone	2612	2672	2616	2675
Gordon	2672	2837	2675	2842
Fifth Sandstone	2837	2989	2842	2997
Bayard	2989	3868	2997	3905
Speechley	3868	4103	3905	4152
Baltown	4103	4533	4152	4609
Bradford	4533	4952	4609	5052
Benson	4952	5196	5052	5308
Alexander	5196	6171	5308	6330
Sycamore	6171	6345	6330	6520
Middlesex	6345	6467	6520	6680
Burkett	6467	6494	6680	6732
Tully	6494	6526	6732	6826
Marcellus	6526	NA	6826	NA

*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

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**Sheep Run Unit 1H
Doddridge County WV
Northing: 14247194.04
Easting: 1685668.92
As Drilled**



To convert Magnetic North to Grid, Subtract 8.54°
To convert True North to Grid, Subtract 0.10°

Azimuths to Grid North
True North: -0.10°
Magnetic North: -8.54°
Magnetic Field
Strength: 52125.2nT
Dip Angle: 66.76°
Date: 5/5/2015
Model: BGGM2014

Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Gr: 1053.0

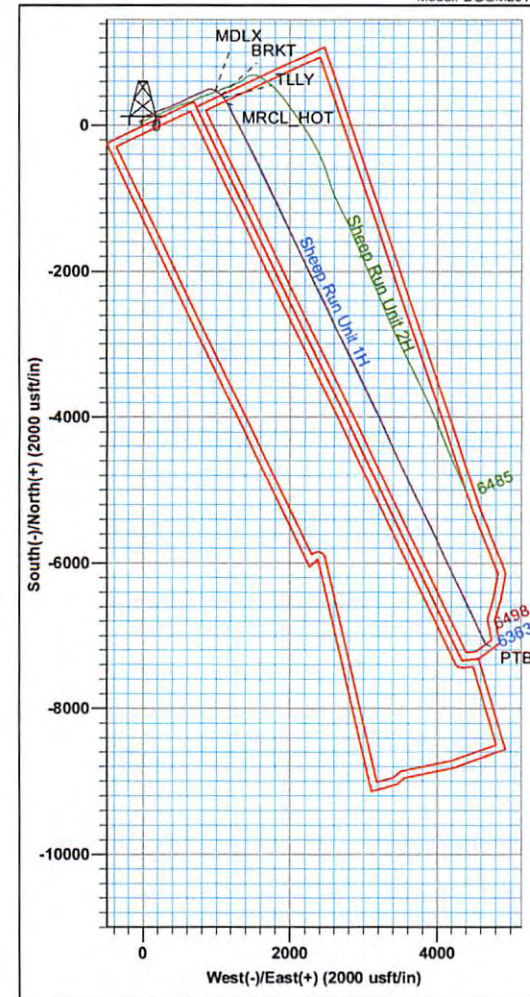
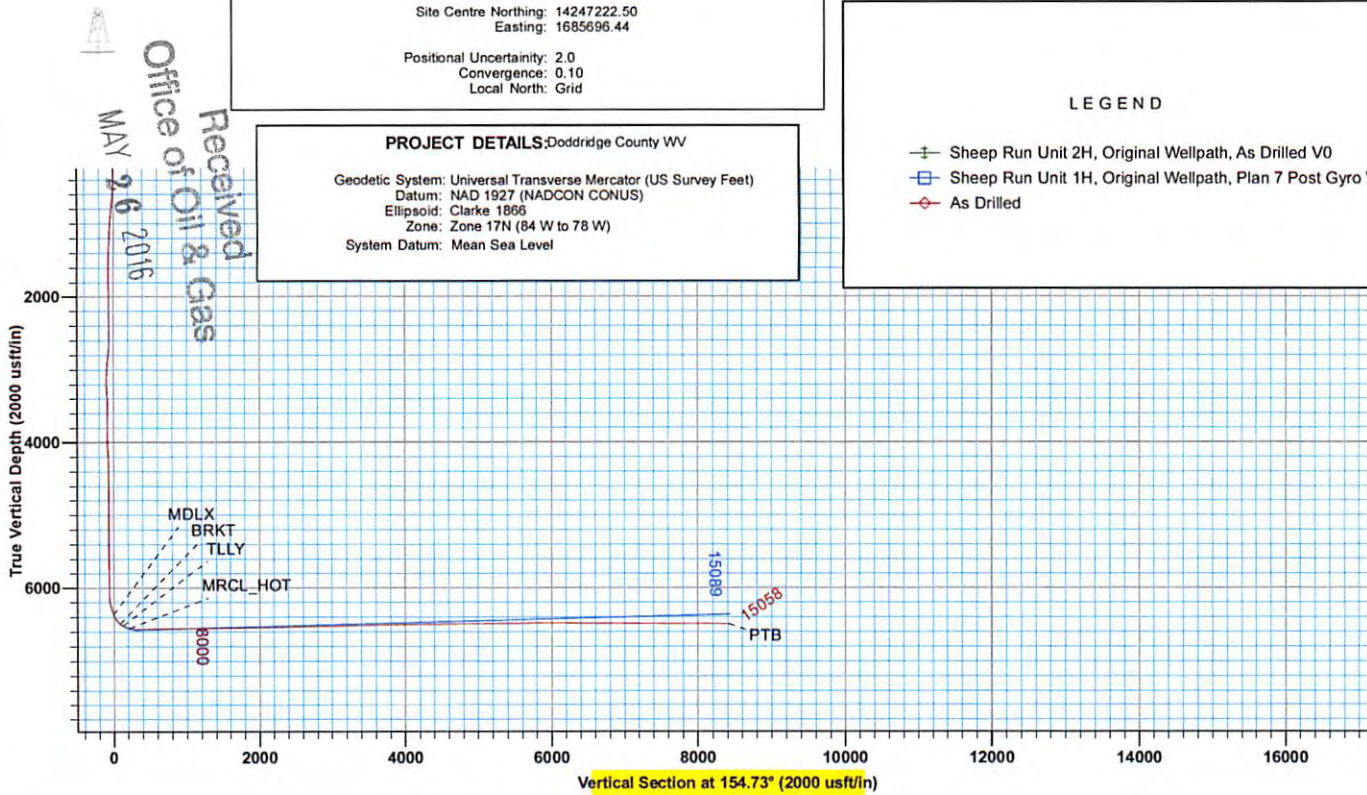
		WELL DETAILS		Sheep Run Unit 1H		
+N/-S	+E/-W	Ground Level:	1053.0	Longitude		
0.0	0.0	Northing	14247194.04	Easting	1685668.92	Latitude Longitude
						14° 2.575' N 80° 50' 24.683' W

Genie Lightfoot
15:42, June 01 2015
Scientific Drilling
11220 NW 10th Street
Yukon OK 73099

SITE DETAILS: Fritz Pad: Hayden/Washington/Sheep/Hileman
Site Center Hayden 1H
Site Centre Northing: 14247222.50
Easting: 1685696.44
Positional Uncertainty: 2.0
Convergence: 0.10
Local North: Grid

PROJECT DETAILS: Doddridge County WV
Geodetic System: Universal Transverse Mercator (US Survey Feet)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: Zone 17N (84 W to 78 W)
System Datum: Mean Sea Level

LEGEND
 Sheep Run Unit 2H, Original Wellpath, As Drilled V0
 Sheep Run Unit 1H, Original Wellpath, Plan 7 Post Gyro V0
 As Drilled





Antero

Doddridge County WV
Fritz Pad: Hayden/Washington/Sheep/Hileman
Sheep Run Unit 1H
Original Wellpath

Design: As Drilled

EOW Completion Report

01 June, 2015

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EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Sheep Run Unit 1H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Site:	Fritz Pad: Hayden/Washington/Sheep/Hileman	MD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Well:	Sheep Run Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Project	Doddridge County WV, McClellan District		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	Fritz Pad: Hayden/Washington/Sheep/Hileman				
Site Position:	Northing:	14,247,222.50 usft	Latitude:	39° 14' 2.856 N	
From: Map	Easting:	1,685,696.44 usft	Longitude:	80° 50' 24.332 W	
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.10 °

Well	Sheep Run Unit 1H, Marcellus				
Well Position	+N/-S	0.0 usft	Northing:	14,247,194.04 usft	
	+E/-W	0.0 usft	Easting:	1,685,668.92 usft	
Position Uncertainty	2.0 usft	Wellhead Elevation:	1,078.0 usft	Ground Level:	1,053.0 usft

Wellbore	Original Wellpath			
-----------------	-------------------	--	--	--

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	5/5/2015	-8.44	66.76	52,125

Design	As Drilled			
---------------	------------	--	--	--

Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	154.73	

Survey Program	Date 6/1/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
25.0	5,441.0	Survey #6 Def KOP Gyro (Original Wellpa	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
5,576.0	15,058.0	Survey #7 SDI MWD (Original Wellpath)	MWD SDI	MWD - Standard ver 1.0.1

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00
25.0	0.10	141.29	25.0	0.0	0.0	0.0	0.40
50.0	0.21	141.29	50.0	-0.1	0.1	0.1	0.44
75.0	0.31	141.29	75.0	-0.2	0.1	0.2	0.40
100.0	0.41	140.52	100.0	-0.3	0.2	0.3	0.40
125.0	0.34	126.72	125.0	-0.4	0.3	0.5	0.46
150.0	0.34	128.99	150.0	-0.5	0.5	0.6	0.05
175.0	0.31	135.47	175.0	-0.6	0.6	0.8	0.19
200.0	0.19	117.40	200.0	-0.6	0.6	0.9	0.57
225.0	0.18	123.06	225.0	-0.7	0.7	0.9	0.08
250.0	0.23	132.50	250.0	-0.7	0.7	1.0	0.24

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MAY 26 2016



EOW Completion Report



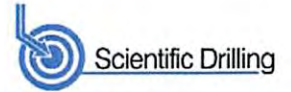
Company:	Antero	Local Co-ordinate Reference:	Well Sheep Run Unit 1H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Site:	Fritz Pad: Hayden/Washington/Sheep/Hileman	MD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Well:	Sheep Run Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey									
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)		
275.0	0.24	120.52	275.0	-0.8	0.9	1.1	0.20		
300.0	0.22	100.67	300.0	-0.8	1.0	1.2	0.33		
325.0	0.22	126.78	325.0	-0.9	1.0	1.2	0.40		
350.0	0.24	110.18	350.0	-0.9	1.1	1.3	0.28		
375.0	0.03	175.27	375.0	-0.9	1.2	1.4	0.92		
400.0	0.31	304.96	400.0	-0.9	1.1	1.3	1.32		
425.0	0.77	297.61	425.0	-0.8	0.9	1.1	1.86		
450.0	1.25	295.55	450.0	-0.6	0.5	0.8	1.93		
475.0	1.88	300.21	475.0	-0.3	-0.1	0.2	2.57		
500.0	2.13	301.56	500.0	0.2	-0.8	-0.5	1.02		
525.0	2.80	310.50	524.9	0.8	-1.7	-1.4	3.08		
550.0	3.23	318.48	549.9	1.7	-2.6	-2.7	2.40		
575.0	4.01	322.58	574.9	3.0	-3.6	-4.2	3.29		
600.0	4.57	326.93	599.8	4.5	-4.7	-6.1	2.59		
625.0	5.19	329.01	624.7	6.3	-5.8	-8.2	2.58		
650.0	5.93	331.13	649.6	8.4	-7.0	-10.6	3.07		
675.0	6.63	333.84	674.4	10.8	-8.3	-13.3	3.04		
700.0	7.37	336.45	699.2	13.6	-9.6	-16.4	3.22		
725.0	7.90	339.29	724.0	16.7	-10.8	-19.7	2.60		
750.0	8.00	342.38	748.8	19.9	-11.9	-23.1	1.76		
775.0	7.92	344.01	773.5	23.2	-12.9	-26.5	0.96		
800.0	7.61	346.71	798.3	26.5	-13.8	-29.9	1.91		
825.0	7.31	347.15	823.1	29.7	-14.5	-33.0	1.22		
850.0	7.01	347.69	847.9	32.7	-15.2	-36.1	1.23		
875.0	6.42	348.83	872.7	35.6	-15.8	-38.9	2.42		
900.0	6.03	349.63	897.6	38.2	-16.3	-41.5	1.60		
925.0	5.71	350.10	922.5	40.7	-16.8	-44.0	1.29		
950.0	5.31	351.64	947.3	43.1	-17.1	-46.3	1.71		
975.0	4.94	350.80	972.2	45.3	-17.5	-48.4	1.51		
1,000.0	4.50	351.70	997.2	47.4	-17.8	-50.4	1.78		
1,025.0	4.29	353.42	1,022.1	49.3	-18.0	-52.2	0.99		
1,050.0	4.04	354.18	1,047.0	51.1	-18.2	-54.0	1.02		
1,075.0	3.67	355.18	1,072.0	52.7	-18.4	-55.5	1.50		
1,100.0	3.52	355.08	1,096.9	54.3	-18.5	-57.0	0.60		
1,125.0	3.17	357.87	1,121.9	55.8	-18.6	-58.4	1.54		
1,150.0	2.89	356.16	1,146.8	57.1	-18.7	-59.6	1.18		
1,175.0	2.68	0.13	1,171.8	58.3	-18.7	-60.7	1.14		
1,200.0	2.52	1.61	1,196.8	59.4	-18.7	-61.7	0.69		
1,225.0	2.36	5.44	1,221.8	60.5	-18.6	-62.7	0.91		
1,250.0	1.88	2.78	1,246.7	61.4	-18.6	-63.5	1.96		
1,275.0	1.63	4.21	1,271.7	62.2	-18.5	-64.1	1.02		
1,300.0	1.49	5.51	1,296.7	62.8	-18.5	-64.7	0.58		
1,325.0	1.37	4.36	1,321.7	63.5	-18.4	-65.3	0.49		
1,350.0	1.17	8.60	1,346.7	64.0	-18.4	-65.7	0.88		

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EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Sheep Run Unit 1H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Site:	Fritz Pad: Hayden/Washington/Sheep/Hileman	MD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Well:	Sheep Run Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
1,375.0	0.98	10.64	1,371.7	64.5	-18.3	-66.1	0.78	
1,400.0	0.91	14.62	1,396.7	64.9	-18.2	-66.4	0.38	
1,425.0	0.73	24.33	1,421.7	65.2	-18.1	-66.7	0.91	
1,450.0	0.58	19.22	1,446.7	65.5	-18.0	-66.9	0.64	
1,475.0	0.55	16.81	1,471.7	65.7	-17.9	-67.1	0.15	
1,500.0	0.35	20.42	1,496.7	65.9	-17.8	-67.2	0.81	
1,525.0	0.31	26.83	1,521.7	66.0	-17.8	-67.3	0.22	
1,550.0	0.34	11.86	1,546.7	66.2	-17.7	-67.4	0.36	
1,575.0	0.33	36.81	1,571.7	66.3	-17.7	-67.5	0.58	
1,600.0	0.22	49.65	1,596.7	66.4	-17.6	-67.5	0.50	
1,625.0	0.26	41.60	1,621.7	66.5	-17.5	-67.6	0.21	
1,650.0	0.34	74.13	1,646.7	66.5	-17.4	-67.6	0.74	
1,675.0	0.27	91.74	1,671.7	66.5	-17.3	-67.6	0.46	
1,700.0	0.29	115.36	1,696.7	66.5	-17.2	-67.5	0.47	
1,725.0	0.45	134.15	1,721.7	66.4	-17.0	-67.3	0.80	
1,750.0	0.47	113.60	1,746.7	66.3	-16.9	-67.2	0.66	
1,775.0	0.40	128.02	1,771.7	66.2	-16.7	-67.0	0.52	
1,800.0	0.47	134.73	1,796.7	66.1	-16.6	-66.8	0.35	
1,825.0	0.39	141.60	1,821.7	65.9	-16.4	-66.7	0.38	
1,850.0	0.45	138.62	1,846.7	65.8	-16.3	-66.5	0.26	
1,875.0	0.40	131.48	1,871.7	65.7	-16.2	-66.3	0.29	
1,900.0	0.39	131.20	1,896.7	65.6	-16.1	-66.1	0.04	
1,925.0	0.33	138.03	1,921.7	65.5	-15.9	-66.0	0.29	
1,950.0	0.44	123.22	1,946.7	65.3	-15.8	-65.8	0.59	
1,975.0	0.46	123.69	1,971.7	65.2	-15.7	-65.7	0.08	
2,000.0	0.38	128.38	1,996.7	65.1	-15.5	-65.5	0.35	
2,025.0	0.49	144.87	2,021.7	65.0	-15.4	-65.3	0.66	
2,050.0	0.44	132.66	2,046.7	64.8	-15.3	-65.1	0.44	
2,075.0	0.40	130.54	2,071.7	64.7	-15.1	-65.0	0.17	
2,100.0	0.36	138.96	2,096.7	64.6	-15.0	-64.8	0.27	
2,125.0	0.52	137.37	2,121.7	64.5	-14.9	-64.6	0.64	
2,150.0	0.48	131.35	2,146.7	64.3	-14.7	-64.4	0.26	
2,175.0	0.43	131.75	2,171.7	64.2	-14.6	-64.3	0.20	
2,200.0	0.45	140.81	2,196.7	64.0	-14.4	-64.1	0.29	
2,225.0	0.40	135.75	2,221.7	63.9	-14.3	-63.9	0.25	
2,250.0	0.42	134.32	2,246.7	63.8	-14.2	-63.7	0.09	
2,275.0	0.28	126.23	2,271.7	63.7	-14.1	-63.6	0.59	
2,300.0	0.38	129.38	2,296.7	63.6	-14.0	-63.5	0.41	
2,325.0	0.31	126.95	2,321.7	63.5	-13.8	-63.3	0.29	
2,350.0	0.42	132.04	2,346.7	63.4	-13.7	-63.2	0.46	
2,375.0	0.38	142.70	2,371.7	63.3	-13.6	-63.0	0.34	
2,400.0	0.38	125.69	2,396.7	63.1	-13.5	-62.9	0.45	
2,425.0	0.41	132.42	2,421.7	63.0	-13.4	-62.7	0.22	
2,450.0	0.51	125.32	2,446.7	62.9	-13.2	-62.5	0.46	
2,475.0	0.45	129.35	2,471.7	62.8	-13.0	-62.3	0.28	

Received
Office of Oil & Gas
MAY 13 2016

Company:	Antero	Local Co-ordinate Reference:	Well Sheep Run Unit 1H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Site:	Fritz Pad: Hayden/Washington/Sheep/Hileman	MD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Well:	Sheep Run Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
2,500.0	0.39	130.55	2,496.7	62.7	-12.9	-62.2	0.24	
2,525.0	0.34	131.88	2,521.7	62.6	-12.8	-62.0	0.20	
2,550.0	0.44	117.44	2,546.7	62.5	-12.6	-61.9	0.56	
2,575.0	0.49	116.45	2,571.7	62.4	-12.4	-61.7	0.20	
2,600.0	0.61	102.10	2,596.7	62.3	-12.2	-61.6	0.73	
2,625.0	1.26	59.73	2,621.7	62.4	-11.8	-61.5	3.63	
2,650.0	2.33	40.71	2,646.6	62.9	-11.3	-61.7	4.84	
2,675.0	3.93	33.05	2,671.6	64.0	-10.5	-62.4	6.60	
2,700.0	5.27	30.00	2,696.5	65.8	-9.4	-63.5	5.45	
2,725.0	6.46	29.23	2,721.4	68.0	-8.2	-65.0	4.77	
2,750.0	7.38	27.47	2,746.2	70.6	-6.7	-66.7	3.78	
2,775.0	8.05	20.80	2,771.0	73.7	-5.4	-68.9	4.47	
2,800.0	8.77	18.22	2,795.7	77.1	-4.2	-71.5	3.25	
2,825.0	9.65	19.38	2,820.4	80.9	-2.9	-74.4	3.60	
2,850.0	10.11	23.57	2,845.0	84.9	-1.3	-77.3	3.41	
2,875.0	10.39	26.03	2,869.6	88.9	0.6	-80.2	2.08	
2,900.0	10.72	29.69	2,894.2	93.0	2.7	-82.9	2.99	
2,925.0	11.25	33.30	2,918.7	97.1	5.2	-85.5	3.47	
2,950.0	11.50	35.57	2,943.3	101.1	8.0	-88.0	2.05	
2,975.0	12.02	38.97	2,967.7	105.2	11.1	-90.4	3.46	
3,000.0	12.49	42.67	2,992.2	109.2	14.5	-92.5	3.66	
3,025.0	12.77	45.99	3,016.6	113.1	18.4	-94.4	3.11	
3,050.0	12.92	49.19	3,040.9	116.8	22.5	-96.1	2.91	
3,075.0	12.73	52.20	3,065.3	120.3	26.8	-97.4	2.78	
3,100.0	12.51	55.08	3,089.7	123.6	31.1	-98.5	2.67	
3,125.0	12.16	58.93	3,114.1	126.5	35.6	-99.2	3.57	
3,150.0	12.02	61.02	3,138.6	129.1	40.2	-99.6	1.84	
3,175.0	11.86	63.42	3,163.0	131.5	44.7	-99.8	2.09	
3,200.0	11.85	68.01	3,187.5	133.6	49.4	-99.8	3.77	
3,225.0	11.66	71.96	3,212.0	135.4	54.2	-99.3	3.31	
3,250.0	11.72	74.76	3,236.5	136.8	59.0	-98.5	2.28	
3,275.0	11.88	76.74	3,260.9	138.1	64.0	-97.6	1.74	
3,300.0	12.34	79.37	3,285.4	139.2	69.1	-96.3	2.87	
3,325.0	12.80	81.20	3,309.8	140.1	74.5	-94.9	2.43	
3,350.0	13.47	80.83	3,334.1	141.0	80.1	-93.3	2.70	
3,375.0	14.05	79.81	3,358.4	142.0	86.0	-91.7	2.51	
3,400.0	14.37	77.87	3,382.6	143.2	92.0	-90.2	2.29	
3,425.0	14.70	74.61	3,406.8	144.7	98.1	-88.9	3.53	
3,450.0	14.88	71.13	3,431.0	146.5	104.2	-88.0	3.63	
3,475.0	15.26	68.27	3,455.1	148.8	110.3	-87.5	3.34	
3,500.0	15.47	65.29	3,479.3	151.4	116.4	-87.2	3.27	
3,525.0	15.84	64.08	3,503.3	154.3	122.4	-87.3	1.97	
3,550.0	16.01	63.02	3,527.4	157.3	128.6	-87.4	1.35	
3,575.0	16.14	61.93	3,551.4	160.5	134.7	-87.7	1.31	

Received
Office of
MAY 26 2015

Company:	Antero	Local Co-ordinate Reference:	Well Sheep Run Unit 1H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Site:	Fritz Pad: Hayden/Washington/Sheep/Hileman	MD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Well:	Sheep Run Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
3,600.0	16.19	60.84	3,575.4	163.9	140.8	-88.1	1.23	
3,625.0	16.19	60.78	3,599.4	167.3	146.9	-88.6	0.07	
3,650.0	15.93	60.59	3,623.4	170.7	153.0	-89.0	1.06	
3,675.0	15.86	61.23	3,647.5	174.0	158.9	-89.5	0.75	
3,700.0	16.15	62.48	3,671.5	177.2	165.0	-89.8	1.80	
3,725.0	16.32	64.13	3,695.5	180.4	171.3	-90.0	1.97	
3,750.0	16.52	64.88	3,719.5	183.4	177.6	-90.0	1.17	
3,775.0	16.60	65.17	3,743.5	186.4	184.1	-90.0	0.46	
3,800.0	16.80	65.27	3,767.4	189.4	190.6	-89.9	0.81	
3,825.0	16.91	65.32	3,791.3	192.5	197.2	-89.9	0.44	
3,850.0	16.97	64.77	3,815.2	195.5	203.8	-89.8	0.68	
3,875.0	17.19	64.98	3,839.1	198.7	210.5	-89.8	0.91	
3,900.0	17.46	65.95	3,863.0	201.8	217.2	-89.7	1.58	
3,925.0	17.55	67.69	3,886.9	204.7	224.1	-89.4	2.12	
3,950.0	17.92	68.89	3,910.7	207.5	231.2	-89.0	2.08	
3,975.0	18.06	69.76	3,934.4	210.3	238.4	-88.4	1.21	
4,000.0	18.22	69.63	3,958.2	213.0	245.7	-87.7	0.66	
4,025.0	18.28	69.83	3,981.9	215.7	253.1	-87.0	0.35	
4,050.0	18.21	70.16	4,005.7	218.3	260.4	-86.3	0.50	
4,075.0	18.52	70.87	4,029.4	221.0	267.9	-85.5	1.53	
4,100.0	18.60	71.60	4,053.1	223.5	275.4	-84.6	0.98	
4,125.0	18.83	73.00	4,076.8	226.0	283.0	-83.5	2.02	
4,150.0	19.03	74.27	4,100.4	228.3	290.8	-82.3	1.83	
4,175.0	19.28	75.66	4,124.1	230.4	298.7	-80.8	2.08	
4,200.0	19.36	76.92	4,147.6	232.3	306.8	-79.2	1.70	
4,225.0	19.37	77.12	4,171.2	234.2	314.9	-77.4	0.27	
4,250.0	19.39	76.40	4,194.8	236.1	322.9	-75.7	0.96	
4,275.0	19.32	75.46	4,218.4	238.1	331.0	-74.0	1.28	
4,300.0	19.10	71.40	4,242.0	240.5	338.8	-72.8	5.41	
4,325.0	19.04	68.78	4,265.6	243.2	346.5	-72.0	3.43	
4,350.0	19.23	66.45	4,289.3	246.4	354.1	-71.6	3.15	
4,375.0	19.37	64.87	4,312.9	249.8	361.6	-71.5	2.16	
4,400.0	19.53	63.83	4,336.4	253.4	369.1	-71.6	1.53	
4,425.0	19.86	62.99	4,360.0	257.1	376.7	-71.7	1.74	
4,450.0	20.10	63.51	4,383.5	261.0	384.3	-72.0	1.19	
4,475.0	19.85	62.76	4,407.0	264.8	391.9	-72.2	1.43	
4,500.0	19.63	62.53	4,430.5	268.7	399.4	-72.5	0.93	
4,525.0	19.52	62.96	4,454.0	272.6	406.9	-72.8	0.73	
4,550.0	19.65	63.64	4,477.6	276.3	414.3	-73.0	1.05	
4,575.0	19.54	64.26	4,501.1	280.0	421.9	-73.1	0.94	
4,600.0	19.74	64.92	4,524.7	283.6	429.5	-73.1	1.19	
4,625.0	19.82	66.14	4,548.2	287.1	437.2	-73.0	1.68	
4,650.0	19.65	68.23	4,571.7	290.4	444.9	-72.7	2.90	
4,675.0	19.59	69.64	4,595.3	293.4	452.8	-72.0	1.91	

Received
Office of Oil & Gas
MAY 26 2016

Company:	Antero	Local Co-ordinate Reference:	Well Sheep Run Unit 1H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Site:	Fritz Pad: Hayden/Washington/Sheep/Hileman	MD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Well:	Sheep Run Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
4,700.0	19.57	70.20	4,618.9	296.3	460.6	-71.3	0.75
4,725.0	19.52	70.47	4,642.4	299.1	468.5	-70.5	0.41
4,750.0	19.53	70.63	4,666.0	301.9	476.4	-69.6	0.22
4,775.0	19.40	70.54	4,689.5	304.7	484.3	-68.8	0.53
4,800.0	19.22	69.19	4,713.1	307.5	492.0	-68.0	1.93
4,825.0	18.93	68.00	4,736.8	310.5	499.6	-67.5	1.94
4,850.0	18.94	66.63	4,760.4	313.6	507.1	-67.1	1.78
4,875.0	18.81	66.54	4,784.1	316.8	514.5	-66.9	0.53
4,900.0	18.37	65.66	4,807.8	320.1	521.8	-66.7	2.09
4,925.0	18.12	65.10	4,831.5	323.3	528.9	-66.6	1.22
4,950.0	18.07	64.10	4,855.3	326.6	535.9	-66.6	1.26
4,975.0	17.93	63.68	4,879.0	330.0	542.9	-66.7	0.76
5,000.0	17.49	63.06	4,902.9	333.5	549.7	-66.9	1.91
5,025.0	17.83	62.70	4,926.7	336.9	556.4	-67.1	1.43
5,050.0	18.35	62.85	4,950.4	340.5	563.3	-67.4	2.09
5,075.0	18.62	62.86	4,974.2	344.1	570.4	-67.7	1.08
5,100.0	17.94	61.92	4,997.9	347.7	577.3	-68.0	2.96
5,125.0	17.60	62.58	5,021.7	351.3	584.1	-68.3	1.58
5,150.0	17.15	64.43	5,045.6	354.6	590.8	-68.5	2.85
5,175.0	16.89	65.77	5,069.5	357.7	597.4	-68.4	1.88
5,200.0	16.51	64.78	5,093.4	360.7	603.9	-68.4	1.90
5,225.0	16.73	63.84	5,117.4	363.8	610.4	-68.4	1.39
5,250.0	17.55	63.70	5,141.3	367.0	617.0	-68.5	3.28
5,275.0	18.21	63.00	5,165.1	370.5	623.8	-68.7	2.78
5,300.0	18.47	62.75	5,188.8	374.1	630.8	-69.0	1.09
5,325.0	18.23	62.27	5,212.5	377.7	637.8	-69.3	1.13
5,350.0	17.89	62.31	5,236.3	381.3	644.7	-69.6	1.36
5,375.0	17.51	61.80	5,260.1	384.9	651.4	-70.0	1.64
5,400.0	17.31	62.63	5,284.0	388.4	658.0	-70.3	1.28
5,425.0	17.57	65.00	5,307.8	391.7	664.7	-70.4	3.03
5,441.0	17.44	66.85	5,323.1	393.6	669.1	-70.3	3.57
5,576.0	16.47	66.81	5,452.2	409.1	705.3	-68.9	0.72
5,673.0	15.98	64.85	5,545.3	420.2	730.1	-68.3	0.76
5,769.0	15.35	67.26	5,637.8	430.7	753.7	-67.7	0.94
5,866.0	16.89	69.35	5,730.9	440.7	778.8	-66.0	1.70
5,961.0	19.73	70.94	5,821.1	450.8	806.8	-63.2	3.04
6,057.0	18.42	62.44	5,911.9	463.1	835.6	-62.1	3.20
6,127.0	16.56	57.74	5,978.6	473.5	853.9	-63.7	3.33
6,153.0	15.98	58.84	6,003.6	477.3	860.1	-64.5	2.53
6,185.0	15.76	60.87	6,034.4	481.7	867.6	-65.3	1.87
6,217.0	16.49	67.01	6,065.1	485.6	875.6	-65.4	5.79
6,249.0	18.20	70.59	6,095.7	489.1	884.5	-64.7	6.30
6,282.0	19.53	74.66	6,126.9	492.2	894.7	-63.2	5.67
6,314.0	20.35	80.78	6,157.0	494.5	905.3	-60.8	7.00

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Office of Oil & Gas
MAY 26 2015



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Sheep Run Unit 1H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Site:	Fritz Pad: Hayden/Washington/Sheep/Hileman	MD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Well:	Sheep Run Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
6,346.0	20.01	89.14	6,187.0	495.5	916.3	-57.0	9.07
6,378.0	20.09	97.85	6,217.1	494.9	927.2	-51.7	9.33
6,410.0	21.04	104.25	6,247.1	492.7	938.2	-45.0	7.62
6,442.0	22.10	108.59	6,276.8	489.4	949.5	-37.2	5.98
6,474.0	23.85	110.92	6,306.3	485.1	961.2	-28.4	6.16
6,506.0	25.71	114.46	6,335.3	479.9	973.6	-18.4	7.43
6,538.0	28.53	117.37	6,363.8	473.5	986.7	-7.0	9.74
6,545.0	29.19	118.21	6,369.9	472.0	989.7	-4.3	11.12
MDLX							
6,570.0	31.60	120.96	6,391.5	465.7	1,000.7	6.0	11.12
6,602.0	34.75	123.15	6,418.3	456.4	1,015.5	20.8	10.53
6,634.0	39.64	126.76	6,443.8	445.3	1,031.4	37.6	16.73
6,666.0	45.98	130.97	6,467.2	431.6	1,048.2	57.1	21.73
6,698.0	52.29	135.10	6,488.2	415.1	1,065.9	79.6	21.99
6,705.0	53.68	135.92	6,492.4	411.1	1,069.8	84.9	21.91
BRKT							
6,729.0	58.47	138.53	6,505.8	396.5	1,083.3	103.9	21.91
6,757.0	62.59	142.95	6,519.6	377.6	1,098.7	127.5	20.12
TLLY							
6,762.0	63.34	143.70	6,521.8	374.1	1,101.4	131.9	20.12
6,794.0	68.13	146.76	6,535.0	350.1	1,118.0	160.7	17.32
6,819.0	72.99	148.07	6,543.3	330.2	1,130.7	184.0	20.06
6,851.0	78.85	151.91	6,551.1	303.4	1,146.2	214.9	21.70
MRCL_HOT							
6,883.0	80.82	153.76	6,556.7	275.4	1,160.6	246.4	8.38
6,915.0	82.36	154.28	6,561.4	246.9	1,174.4	278.1	5.07
6,947.0	84.12	154.23	6,565.2	218.3	1,188.2	309.9	5.50
6,979.0	88.08	153.55	6,567.3	189.6	1,202.3	341.8	12.56
7,011.0	90.17	153.51	6,567.8	161.0	1,216.5	373.8	6.53
7,043.0	90.24	153.31	6,567.7	132.4	1,230.9	405.7	0.66
7,075.0	91.51	152.54	6,567.2	103.9	1,245.4	437.7	4.64
7,172.0	92.04	152.19	6,564.2	18.0	1,290.4	534.6	0.65
7,269.0	91.78	151.85	6,561.0	-67.6	1,335.9	631.4	0.44
7,364.0	91.24	152.65	6,558.5	-151.7	1,380.1	726.3	1.02
7,460.0	90.20	151.46	6,557.3	-236.5	1,425.1	822.2	1.65
7,556.0	90.34	153.46	6,556.8	-321.6	1,469.5	918.1	2.09
7,652.0	90.27	154.45	6,556.3	-407.8	1,511.6	1,014.1	1.03
7,749.0	90.47	154.42	6,555.7	-495.3	1,553.5	1,111.1	0.21
7,845.0	90.81	154.52	6,554.6	-582.0	1,594.8	1,207.1	0.37
7,942.0	90.61	154.42	6,553.4	-669.5	1,636.6	1,304.1	0.23
8,037.0	89.93	155.14	6,553.0	-755.4	1,677.1	1,399.1	1.04
8,134.0	89.77	153.62	6,553.2	-842.9	1,719.1	1,496.1	1.58
8,230.0	90.20	155.23	6,553.3	-929.5	1,760.5	1,592.1	1.74
8,325.0	90.71	155.47	6,552.5	-1,015.8	1,800.1	1,687.1	0.59
8,422.0	91.84	155.25	6,550.3	-1,104.0	1,840.6	1,784.0	1.19

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EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Sheep Run Unit 1H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Site:	Fritz Pad: Hayden/Washington/Sheep/Hileman	MD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Well:	Sheep Run Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
8,518.0	90.87	155.66	6,548.1	-1,191.3	1,880.4	1,880.0	1.10
8,613.0	90.54	155.30	6,546.9	-1,277.7	1,919.8	1,975.0	0.51
8,710.0	90.10	154.30	6,546.4	-1,365.5	1,961.1	2,072.0	1.13
8,805.0	91.04	154.49	6,545.4	-1,451.1	2,002.2	2,167.0	1.01
8,900.0	90.44	154.88	6,544.2	-1,537.0	2,042.8	2,262.0	0.75
8,995.0	91.34	155.73	6,542.7	-1,623.3	2,082.5	2,356.9	1.30
9,092.0	92.45	154.90	6,539.5	-1,711.4	2,123.0	2,453.9	1.43
9,188.0	91.75	155.54	6,536.0	-1,798.5	2,163.2	2,549.8	0.99
9,284.0	91.04	155.41	6,533.6	-1,885.8	2,203.0	2,645.8	0.75
9,380.0	91.68	155.08	6,531.4	-1,972.9	2,243.2	2,741.7	0.75
9,476.0	91.44	153.06	6,528.8	-2,059.2	2,285.2	2,837.7	2.12
9,572.0	90.77	152.78	6,526.9	-2,144.7	2,328.9	2,933.6	0.76
9,668.0	89.66	153.02	6,526.5	-2,230.2	2,372.6	3,029.6	1.18
9,763.0	90.57	153.52	6,526.4	-2,315.0	2,415.3	3,124.5	1.09
9,859.0	92.04	154.90	6,524.2	-2,401.4	2,457.1	3,220.5	2.10
9,956.0	92.01	154.58	6,520.7	-2,489.1	2,498.5	3,317.5	0.33
10,052.0	91.78	156.35	6,517.6	-2,576.4	2,538.3	3,413.4	1.86
10,149.0	91.58	157.13	6,514.7	-2,665.4	2,576.6	3,510.3	0.83
10,245.0	90.84	157.20	6,512.7	-2,753.9	2,613.8	3,606.2	0.77
10,341.0	90.00	153.87	6,512.0	-2,841.3	2,653.6	3,702.2	3.58
10,437.0	91.21	152.75	6,511.0	-2,927.0	2,696.7	3,798.1	1.72
10,533.0	91.11	154.32	6,509.0	-3,013.0	2,739.5	3,894.1	1.64
10,629.0	91.14	153.51	6,507.1	-3,099.2	2,781.7	3,990.0	0.84
10,725.0	90.97	152.78	6,505.4	-3,184.8	2,825.0	4,086.0	0.78
10,821.0	91.04	155.22	6,503.7	-3,271.1	2,867.1	4,182.0	2.54
10,915.0	90.70	155.21	6,502.3	-3,356.4	2,906.5	4,275.9	0.36
11,011.0	89.73	155.03	6,501.9	-3,443.5	2,946.9	4,371.9	1.03
11,108.0	90.91	155.85	6,501.4	-3,531.7	2,987.2	4,468.9	1.48
11,205.0	91.04	155.12	6,499.7	-3,619.9	3,027.5	4,565.9	0.76
11,301.0	90.37	155.36	6,498.5	-3,707.1	3,067.7	4,661.9	0.74
11,397.0	90.71	152.86	6,497.6	-3,793.5	3,109.6	4,757.9	2.63
11,493.0	91.71	154.04	6,495.6	-3,879.3	3,152.5	4,853.8	1.61
11,589.0	91.45	155.80	6,493.0	-3,966.2	3,193.1	4,949.8	1.85
11,686.0	90.37	156.61	6,491.4	-4,055.0	3,232.3	5,046.7	1.39
11,782.0	90.17	155.50	6,491.0	-4,142.7	3,271.2	5,142.7	1.17
11,878.0	89.73	155.45	6,491.0	-4,230.0	3,310.3	5,238.7	0.46
11,974.0	90.60	156.31	6,490.8	-4,317.7	3,350.3	5,334.7	1.27
12,070.0	90.13	156.45	6,490.2	-4,405.6	3,388.8	5,430.6	0.51
12,166.0	89.66	155.31	6,490.3	-4,493.2	3,428.6	5,526.6	1.28
12,261.0	92.02	155.14	6,488.9	-4,579.5	3,467.8	5,621.6	2.49
12,357.0	91.21	155.11	6,486.2	-4,666.5	3,508.2	5,717.6	0.84
12,454.0	90.67	156.01	6,484.6	-4,754.8	3,548.3	5,814.5	1.08
12,550.0	90.50	156.15	6,483.7	-4,842.6	3,587.2	5,910.5	0.23
12,647.0	89.73	153.41	6,483.5	-4,930.3	3,628.6	6,007.5	2.93

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EOW Completion Report



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Project: Doddridge County WV	TVD Reference: Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Site: Fritz Pad: Hayden/Washington/Sheep/Hileman	MD Reference: Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Well: Sheep Run Unit 1H	North Reference: Grid
Wellbore: Original Wellpath	Survey Calculation Method: Minimum Curvature
Design: As Drilled	Database: Oklahoma District

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
12,743.0	89.80	154.00	6,483.9	-5,016.4	3,671.1	6,103.5	0.62
12,839.0	90.20	154.55	6,483.9	-5,102.9	3,712.7	6,199.5	0.71
12,935.0	88.56	154.71	6,484.9	-5,189.6	3,753.9	6,295.5	1.72
13,031.0	88.86	153.50	6,487.1	-5,275.9	3,795.8	6,391.4	1.30
13,127.0	89.56	151.97	6,488.4	-5,361.3	3,839.8	6,487.4	1.75
13,223.0	89.53	152.04	6,489.2	-5,446.0	3,884.8	6,583.2	0.08
13,320.0	89.67	153.10	6,489.8	-5,532.1	3,929.5	6,680.2	1.10
13,415.0	90.27	156.53	6,489.9	-5,618.1	3,969.9	6,775.2	3.67
13,511.0	89.90	157.02	6,489.7	-5,706.3	4,007.8	6,871.1	0.64
13,606.0	89.36	155.68	6,490.3	-5,793.3	4,045.9	6,966.1	1.52
13,702.0	89.19	154.50	6,491.6	-5,880.4	4,086.3	7,062.0	1.24
13,797.0	89.60	154.36	6,492.6	-5,966.1	4,127.3	7,157.0	0.46
13,893.0	90.67	155.51	6,492.3	-6,053.0	4,168.0	7,253.0	1.64
13,990.0	90.70	155.12	6,491.2	-6,141.1	4,208.5	7,350.0	0.40
14,086.0	89.87	155.03	6,490.7	-6,228.2	4,249.0	7,446.0	0.87
14,181.0	88.32	152.93	6,492.2	-6,313.6	4,290.6	7,541.0	2.75
14,277.0	90.07	154.47	6,493.6	-6,399.6	4,333.1	7,637.0	2.43
14,374.0	89.97	152.73	6,493.5	-6,486.5	4,376.3	7,733.9	1.80
14,469.0	91.11	154.23	6,492.6	-6,571.5	4,418.7	7,828.9	1.98
14,525.0	89.90	155.11	6,492.1	-6,622.1	4,442.6	7,884.9	2.67
14,565.0	91.14	156.24	6,491.8	-6,658.5	4,459.1	7,924.9	4.19
14,660.0	90.54	156.36	6,490.4	-6,745.5	4,497.3	8,019.8	0.64
14,756.0	87.99	157.87	6,491.6	-6,833.9	4,534.6	8,115.7	3.09
14,851.0	88.89	156.25	6,494.2	-6,921.4	4,571.6	8,210.6	1.95
14,948.0	89.16	155.43	6,495.8	-7,009.9	4,611.3	8,307.6	0.89
15,002.0	89.03	155.32	6,496.7	-7,059.0	4,633.8	8,361.6	0.32
15,058.0	89.03	155.32	6,497.6	-7,109.8	4,657.2	8,417.6	0.00

PTB

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,545.0	6,369.9	472.0	989.7	MDLX
6,705.0	6,492.4	411.1	1,069.8	BRKT
6,757.0	6,519.6	377.6	1,098.7	TLTY
6,851.0	6,551.1	303.4	1,146.2	MRCL_HOT
15,058.0	6,497.6	-7,109.8	4,657.2	PTB

Checked By: _____ Approved By: _____ Date: _____

Received
Office of Oil & Gas
MAY 26 2016

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/7/2015
Job End Date:	12/13/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06657-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Sheep Run 1H
Longitude:	-80.84001100
Latitude:	39.23413100
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,567
Total Base Water Volume (gal):	14,237,910
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Antero Resources	Base Fluid					
			Water	7732-18-5	100.00000	89.84485	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	9.80126	
LGC-15	U.S. Well Services	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.06900	
			Petroleum Distillates	64742-47-8	60.00000	0.06535	
			Suspending agent (solid)	14808-60-7	3.00000	0.01055	
			Surfactant	68439-51-0	3.00000	0.00414	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.08412	
			Hydrogen Chloride	7647-01-0	18.00000	0.02009	
WFRA-405	U.S. Well Services	Friction Reducer					
			Water	7732-18-5	60.00000	0.03745	
			2-Propenoic acid, polymer with 2-propenamide	9003-06-9	30.00000	0.01873	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01507	
			Ethoxylated alcohol blend	68002-97-1	4.00000	0.00250	

SI-1100	U.S. Well Services	Scale Inhibitor				
			Water	7732-18-5	80.00000	0.00990
			Ethylene Glycol	107-21-1	25.00000	0.00350
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00146
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	7.50000	0.00125
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00080
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00080
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00032
K-BAC 1020	U.S. Well Services	Anti-Bacterial Agent				
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00421
			Deionized Water	7732-18-5	28.00000	0.00241
AP One	U.S. Well Services	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00181
AI-302	U.S. Well Services	Acid Corrosion Inhibitors				
			Water	7732-18-5	95.00000	0.00037
			2-Propyn-1-olcompound with methyloxirane	38172-91-7	15.00000	0.00006
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.						

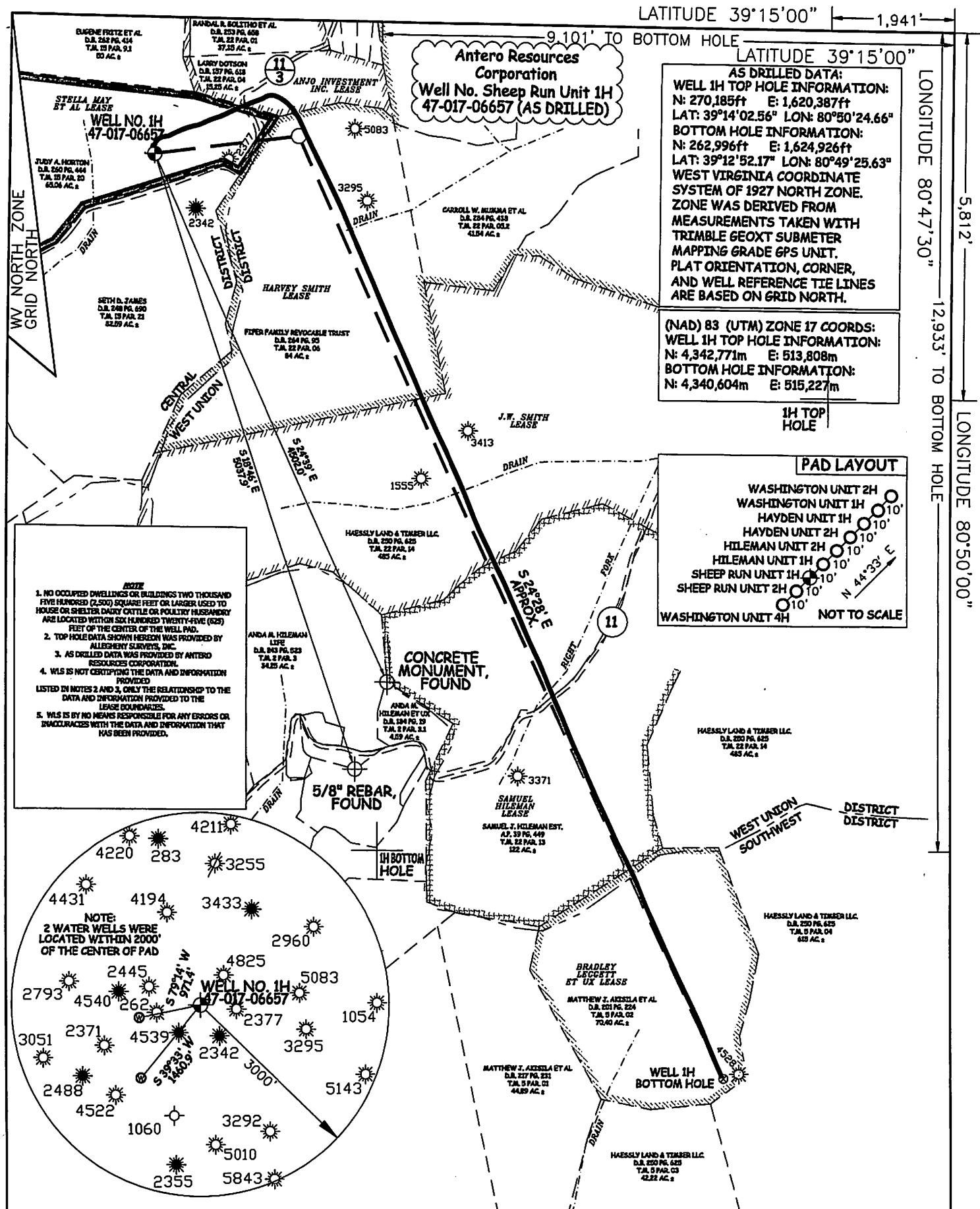
* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

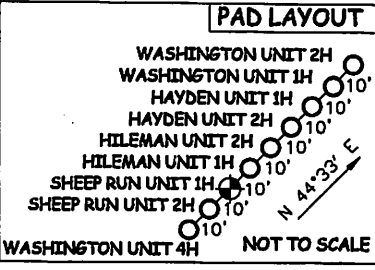
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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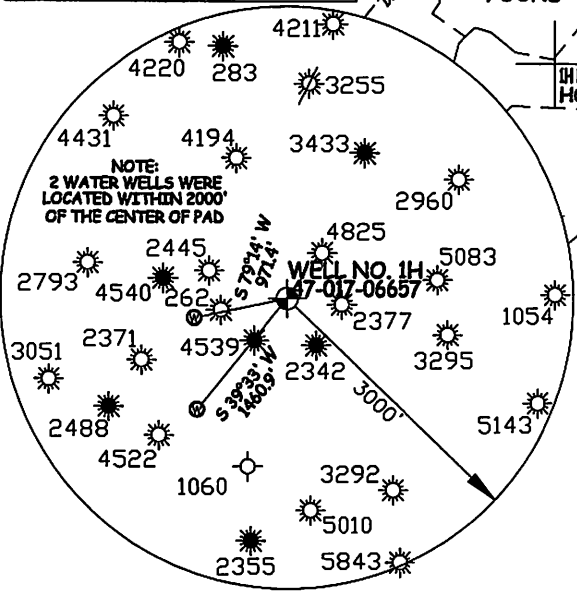


AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
 N: 270,185ft E: 1,620,387ft
 LAT: 39°14'02.56" LON: 80°50'24.66"
BOTTOM HOLE INFORMATION:
 N: 262,996ft E: 1,624,926ft
 LAT: 39°12'52.17" LON: 80°49'25.63"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIABLE 6EOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

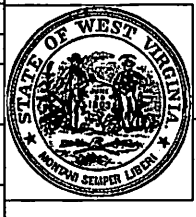
(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 1H TOP HOLE INFORMATION:
 N: 4,342,771m E: 513,808m
BOTTOM HOLE INFORMATION:
 N: 4,340,604m E: 515,227m



- NOTE**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
 2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGENT SURVEYS, INC.
 3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
 4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



JOB # **14-086WA**
 DRAWING # **SHEEPRUN1HAD**
 SCALE **1" = 1000'**
 MINIMUM DEGREE OF ACCURACY **SUBMETER**
 PROVEN SOURCE OF ELEV. **SUBMETER MAPPING GRADE GPS**



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
 WILLOW LAND SURVEYING PLLC
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

LEGEND

- Surface Owner Boundary Lines +/-
- - - Interior Surface Tracts +/-
- X Existing Fence
- ⊕ Found monument, as noted
- Proposed Well Path
- ⊙ As Drilled Well Path

DATE **07/16/15**
 OPERATOR'S WELL # **SHEEP RUN UNIT #1H**
 API WELL # **47 - 017 - 08657**
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS
 WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION **1,066' ORIGINAL - 1,053' AS DRILLED** WATERSHED **NORTH FORK HUGHES RIVER**
 QUADRANGLE **OXFORD 7.5** DISTRICT **CENTRAL (TH) WEST UNION (LP) SOUTHWEST (BH)** COUNTY **DODDRIDGE**

SURFACE OWNER **JUDY A. HORTON** ACREAGE **65.06 ACRES +/-**
 OIL & GAS ROYALTY OWNER **STELLA MAY ET AL; ANJO INVESTMENTS INC.; HARVEY SMITH; J.W. SMITH; SAMUEL HILEMAN; BRADLEY LEGGETT ET UX** LEASE ACREAGE **125.5 ACRES +/-; 50 ACRES +/-; 450 ACRES +/-; 486 ACRES +/-; 122 ACRES +/-; 70.4 ACRES +/-**

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) **(X) AS DRILLED** PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION **MARCELLUS** ESTIMATED DEPTH **6,498' TVD 15,058' MD**

WELL OPERATOR **ANTERO RESOURCES CORP.** DESIGNATED AGENT **DIANNA STAMPER**
 ADDRESS **1615 WYNKOOP STREET** ADDRESS **5400 D BIG TYLER ROAD**
DENVER, CO 80202 **CHARLESTON, WV 25313**

LATITUDE 39°15'00" | 1,941'
 LONGITUDE 80°47'30" | 12,933' TO BOTTOM HOLE
 LONGITUDE 80°50'00" | 5,812'
 COUNTY NAME PERMIT **02/2016**

LATITUDE 39°15'00" 1,941'

LATITUDE 39°15'00"

LONGITUDE 80°47'30"

5,812'

12,933' TO BOTTOM HOLE

LONGITUDE 80°50'00"

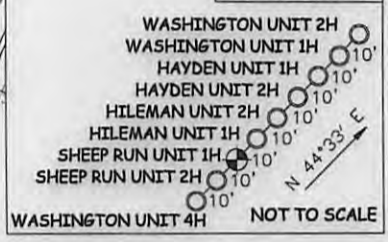
Antero Resources Corporation
Well No. Sheep Run Unit 1H
47-017-06657 (AS DRILLED)

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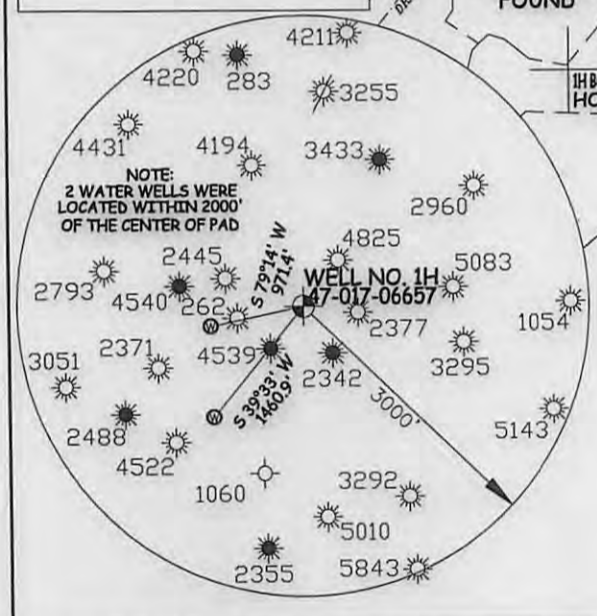
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1H TOP HOLE

PAD LAYOUT



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DRAWING # SHEEPRUN1HAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

LEGEND
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COUNTY NAME PERMIT