

APPROVED

WR-35
Rev. 8/23/15

Page ___ of ___

NAME: Judy A Horton
DATE: 5/20/16

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

API 47-017-06660 County Doddridge District Central
Quad Oxford 7.5' Pad Name Fritz Pad Field/Pool Name ----
Farm name Horton, Judy A. Well Number Hileman Unit 2H
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 4342775m Easting 513812m
Landing Point of Curve Northing 4342627.52m Easting 514012.84m
Bottom Hole Northing 4340175m Easting 515206m

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 2/12/2015 Date drilling ceased 4/2/2015
Date completion activities began 11/11/2015 Date completion activities ceased 2/12/2016
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 - 06660

Farm name Horton, Judy A.

Well number Hileman Unit 2H

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# H-40	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"	2531'	New	36# J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4" & 8-1/2"	5-1/2"	16029'	New	23# P-110	N/A	Y
Tubing		2-3/8"	6693'		4.6# 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	100 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	450 sx	15.6	1.19	251	0'	8 Hrs.
Coal							
Intermediate 1	Class A	938 sx	15.6	1.18	793	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	960 sx (Lead) 1465 sx (Tail)	14.5 Lead 15.2 Tail	1.30 Lead 1.86 Tail	3207	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16029' MD, 6462' TVD (BHL), 6587' (Deepest Point Drilled) Loggers TD (ft) 15979'

Deepest formation penetrated Marcellus Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 5831'

** 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 _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

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API 47- 017 - 06660 Farm name Horton, Judy A. Well number Hileman Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
Marcellus	6537' (TOP) TVD	6744' (TOP) 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 11734 mcfpd Oil 227 bpd NGL --- bpd Water 666 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	0		0		
*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 5/10/2016

Submittal 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	11-Nov-15	15,807	15,936	60	Marcellus
2	1-Dec-15	15,655	15,784	60	Marcellus
3	1-Dec-15	15,502	15,631	60	Marcellus
4	1-Dec-15	15,350	15,479	60	Marcellus
5	2-Dec-15	15,197	15,326	60	Marcellus
6	2-Dec-15	15,045	15,174	60	Marcellus
7	2-Dec-15	14,892	15,021	60	Marcellus
8	2-Dec-15	14,740	14,869	60	Marcellus
9	3-Dec-15	14,587	14,717	60	Marcellus
10	3-Dec-15	14,435	14,564	60	Marcellus
11	3-Dec-15	14,283	14,412	60	Marcellus
12	3-Dec-15	14,130	14,259	60	Marcellus
13	4-Dec-15	13,978	14,107	60	Marcellus
14	4-Dec-15	13,825	13,954	60	Marcellus
15	4-Dec-15	13,673	13,802	60	Marcellus
16	4-Dec-15	13,520	13,649	60	Marcellus
17	5-Dec-15	13,368	13,497	60	Marcellus
18	5-Dec-15	13,215	13,344	60	Marcellus
19	5-Dec-15	13,063	13,192	60	Marcellus
20	5-Dec-15	12,910	13,039	60	Marcellus
21	6-Dec-15	12,758	12,887	60	Marcellus
22	6-Dec-15	12,605	12,735	60	Marcellus
23	6-Dec-15	12,453	12,582	60	Marcellus
24	6-Dec-15	12,301	12,430	60	Marcellus
25	6-Dec-15	12,148	12,277	60	Marcellus
26	7-Dec-15	11,996	12,125	60	Marcellus
27	7-Dec-15	11,843	11,972	60	Marcellus
28	7-Dec-15	11,691	11,820	60	Marcellus
29	7-Dec-15	11,538	11,667	60	Marcellus
30	8-Dec-15	11,386	11,515	60	Marcellus
31	8-Dec-15	11,233	11,362	60	Marcellus
32	8-Dec-15	11,081	11,210	60	Marcellus
33	8-Dec-15	10,928	11,057	60	Marcellus
34	8-Dec-15	10,776	10,905	60	Marcellus
35	9-Dec-15	10,624	10,753	60	Marcellus
36	9-Dec-15	10,471	10,600	60	Marcellus
37	9-Dec-15	10,319	10,448	60	Marcellus
38	9-Dec-15	10,166	10,295	60	Marcellus
39	9-Dec-15	10,014	10,143	60	Marcellus
40	10-Dec-15	9,861	9,990	60	Marcellus
41	10-Dec-15	9,709	9,838	60	Marcellus
42	10-Dec-15	9,556	9,685	60	Marcellus
43	10-Dec-15	9,404	9,533	60	Marcellus
44	10-Dec-15	9,251	9,380	60	Marcellus
45	11-Dec-15	9,099	9,228	60	Marcellus
46	11-Dec-15	8,946	9,076	60	Marcellus
47	11-Dec-15	8,794	8,923	60	Marcellus
48	11-Dec-15	8,642	8,771	60	Marcellus
49	11-Dec-15	8,489	8,618	60	Marcellus
50	12-Dec-15	8,337	8,466	60	Marcellus
51	12-Dec-15	8,184	8,313	60	Marcellus
52	12-Dec-15	8,032	8,161	60	Marcellus
53	12-Dec-15	7,879	8,008	60	Marcellus
54	12-Dec-15	7,727	7,856	60	Marcellus
55	12-Dec-15	7,574	7,703	60	Marcellus
56	13-Dec-15	7,422	7,551	60	Marcellus
57	13-Dec-15	7,269	7,398	60	Marcellus
58	13-Dec-15	7,117	7,246	60	Marcellus
59	13-Dec-15	6,964	7,094	60	Marcellus
60	13-Dec-15	6,812	6,941	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	30-Nov-15	61.0	8,195	5,907	3,970	83,650	6,377	N/A
2	1-Dec-15	55.0	7,383	6,562	4,114	6,600	6,464	N/A
3	1-Dec-15	63.8	6,894	6,384	3,011	237,220	6,334	N/A
4	1-Dec-15	65.0	7,119	6,836	2,830	236,830	5,937	N/A
5	2-Dec-15	62.0	7,206	6,303	3,791	107,890	6,643	N/A
6	2-Dec-15	64.0	7,434	6,206	3,700	236,620	5,961	N/A
7	2-Dec-15	63.0	7,066	7,233	3,160	236,750	5,887	N/A
8	2-Dec-15	63.0	6,834	6,866	3,911	236,130	5,857	N/A
9	3-Dec-15	66.0	7,371	5,843	4,650	183,740	6,635	N/A
10	3-Dec-15	63.0	7,177	5,841	4,968	209,860	6,624	N/A
11	3-Dec-15	64.0	7,026	5,896	4,060	183,030	6,584	N/A
12	3-Dec-15	61.0	7,006	5,682	3,667	142,880	6,594	N/A
13	4-Dec-15	64.9	7,376	6,136	3,763	237,650	6,457	N/A
14	4-Dec-15	64.8	7,278	6,409	4,057	185,720	6,586	N/A
15	4-Dec-15	68.5	7,225	5,412	4,056	239,430	6,430	N/A
16	4-Dec-15	67.0	7,082	5,716	4,582	239,500	6,451	N/A
17	5-Dec-15	67.0	7,053	6,052	5,142	238,640	6,231	N/A
18	5-Dec-15	68.4	7,070	6,484	5,066	239,850	6,200	N/A
19	5-Dec-15	69.2	6,887	5,560	4,958	239,500	6,178	N/A
20	5-Dec-15	67.0	6,883	6,158	3,559	239,290	6,148	N/A
21	6-Dec-15	68.0	7,087	6,247	3,977	187,530	6,531	N/A
22	6-Dec-15	69.1	6,841	5,903	4,093	239,880	6,204	N/A
23	6-Dec-15	69.3	7,177	6,508	4,603	204,800	6,690	N/A
24	6-Dec-15	68.0	6,803	5,452	4,490	208,880	6,685	N/A
25	6-Dec-15	73.0	6,716	5,249	4,574	238,880	6,076	N/A
26	7-Dec-15	75.9	7,037	5,209	4,632	240,700	6,074	N/A
27	7-Dec-15	75.8	6,973	5,374	4,678	238,730	6,071	N/A
28	7-Dec-15	76.0	7,004	6,090	3,888	236,110	6,064	N/A
29	7-Dec-15	75.0	7,141	6,084	3,959	239,580	6,140	N/A
30	8-Dec-15	73.0	7,182	6,150	3,230	239,050	6,115	N/A
31	8-Dec-15	75.9	7,090	5,428	3,775	239,580	6,012	N/A
32	8-Dec-15	75.5	7,209	5,708	4,936	209,175	5,653	N/A
33	8-Dec-15	71.0	7,080	5,298	4,489	238,500	5,979	N/A
34	8-Dec-15	78.0	7,196	6,281	5,032	228,475	6,034	N/A
35	9-Dec-15	75.0	7,236	5,504	3,500	240,440	5,957	N/A
36	9-Dec-15	76.0	7,248	5,549	4,951	228,580	6,442	N/A
37	9-Dec-15	74.8	7,277	6,092	4,838	197,205	6,382	N/A
38	9-Dec-15	67.0	7,527	5,800	4,916	146,100	6,088	N/A
39	9-Dec-15	70.0	6,950	6,363	5,008	193,700	5,669	N/A
40	10-Dec-15	66.0	7,217	5,737	3,695	123,050	6,434	N/A
41	10-Dec-15	67.0	6,706	6,375	3,960	203,540	5,959	N/A
42	10-Dec-15	65.0	6,932	6,657	3,411	235,830	5,961	N/A
43	10-Dec-15	70.0	6,716	6,519	5,047	239,600	6,002	N/A
44	10-Dec-15	68.0	6,322	5,196	4,922	235,000	5,757	N/A
45	11-Dec-15	74.0	6,658	5,184	5,084	240,200	5,835	N/A
46	11-Dec-15	70.0	6,341	5,296	5,071	238,620	5,813	N/A
47	11-Dec-15	70.0	6,933	5,714	4,817	238,890	5,793	N/A
48	11-Dec-15	74.0	6,509	5,908	3,362	238,710	5,794	N/A
49	11-Dec-15	72.0	6,537	5,810	4,174	238,750	5,772	N/A
50	12-Dec-15	71.0	6,756	5,882	4,382	190,450	5,950	N/A
51	12-Dec-15	69.0	6,724	5,108	4,247	238,650	5,747	N/A
52	12-Dec-15	69.0	6,585	6,464	3,821	238,950	5,738	N/A
53	12-Dec-15	70.0	6,699	5,879	3,710	238,900	5,725	N/A
54	12-Dec-15	71.0	6,873	5,247	4,197	235,900	5,725	N/A
55	12-Dec-15	75.0	6,677	5,787	4,504	235,550	5,709	N/A
56	13-Dec-15	76.0	6,893	5,245	4,675	236,200	5,673	N/A
57	13-Dec-15	71.0	6,385	5,324	3,929	237,850	5,676	N/A
58	13-Dec-15	69.0	6,119	5,337	3,821	236,150	5,651	N/A
59	13-Dec-15	71.0	6,356	5,565	4,835	238,450	5,642	N/A
60	13-Dec-15	75.0	6,132	6,008	3,401	238,000	5,644	N/A
AVG=		69.3	6,957	5,900	4,227	12,953,915	6,091	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	1967	est. 1909	1970
Big Lime	1967	2621	1970	2624
Fifty Foot Sandstone	2621	2680	2624	2683
Gordon	2680	2851	2683	2854
Fifth Sandstone	2851	3002	2854	3005
Bayard	3002	3876	3005	3879
Speechley	3876	4104	3879	4108
Baltown	4104	4537	4108	4541
Bradford	4537	4956	4541	4960
Benson	4956	5205	4960	5209
Alexander	5205	6186	5209	6227
Sycamore	6186	6361	6227	6439
Middlesex	6361	6481	6439	6618
Burkett	6481	6507	6618	6673
Tully	6507	6537	6673	6744
Marcellus	6537	NA	6744	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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Hileman Unit 2H
Doddridge County WV
 Northing: 14247208.27
 Easting: 1685682.68
 As Drilled



Genie Lightfoot
 Scientific Drilling
 11220 NW 10th Street
 Yukon, OK 73099
 405-787-3663

WELL DETAILS							Hileman Unit 2H
			Ground Level:	1053.0			
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude		
0.0	0.0	14247208.27	1685682.68	39° 14' 2.715 N	80° 50' 24.507 W		

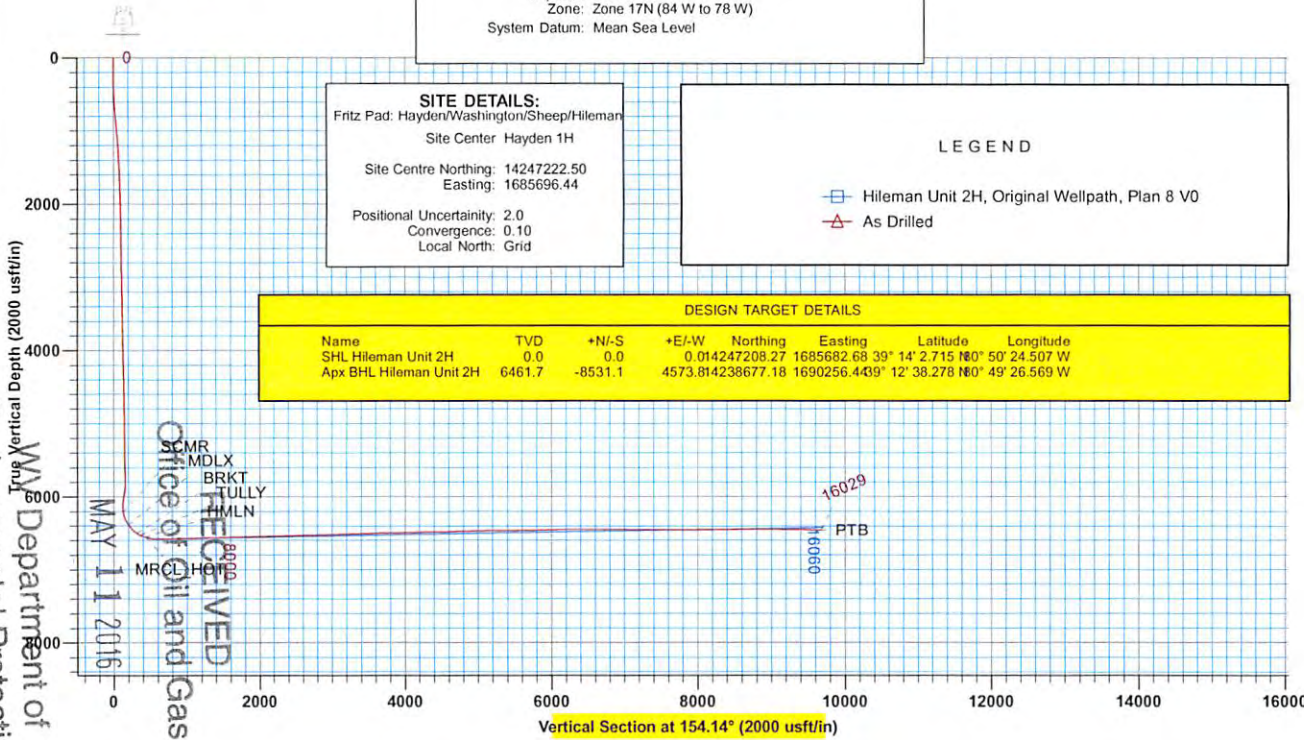
PROJECT DETAILS:		Doddridge County WV
Geodetic System:	Universal Transverse Mercator (US Survey Feet)	
Datum:	NAD 1927 (NADCON CONUS)	
Ellipsoid:	Clarke 1866	
Zone:	Zone 17N (84 W to 78 W)	
System Datum:	Mean Sea Level	

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

LEGEND	
	Hileman Unit 2H, Original Wellpath, Plan 8 V0
	As Drilled

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
SHL Hileman Unit 2H	0.0	0.0	0.014247208.27	1685682.68	39° 14' 2.715 N	80° 50' 24.507 W	
ApX BHL Hileman Unit 2H	6461.7	-8531.1	4573.814238677.18	1690256.4439°	12° 38.278 N	00° 49' 26.569 W	

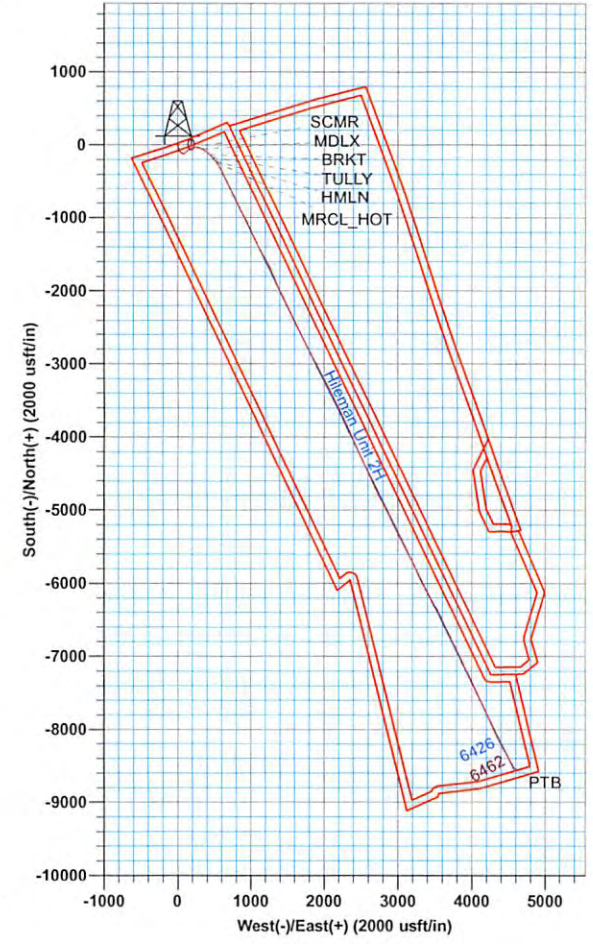
Frontier 22: GL 1053' + KB 25' @ 1078.0usft
 Gr: 1053.0



To convert Magnetic North to Grid, Subtract 7.80°
 To convert True North to Grid, Subtract 0.10°

Azimuths to Grid North
 True North: -0.10°
 Magnetic North: -7.80°

Magnetic Field
 Strength: 52206.8snT
 Dip Angle: 66.70°
 Date: 1/7/2015
 Model: HDGM





Antero

Doddridge County WV
Fritz Pad: Hayden/Washington/Sheep/Hileman
Hileman Unit 2H
Original Wellpath

Design: As Drilled

EOW Completion Report

09 April, 2015

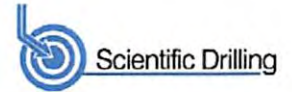


MAY 11 2016

WV Department of Environmental Protection 07/22/2016



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Hileman Unit 2H
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:	Hileman Unit 2H	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	Hileman Unit 2H, Marcellus				
-------------	----------------------------	--	--	--	--

Well Position	+N/-S	0.0 usft	Northing:	14,247,208.27 usft	Latitude:	39° 14' 2.715 N
	+E/-W	0.0 usft	Easting:	1,685,682.68 usft	Longitude:	80° 50' 24.507 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	1,078.0 usft	Ground Level:	1,053.0 usft

Wellbore	Original Wellpath				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/7/2015	-7.70	66.70	52,207

Design	As Drilled				
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Audit Notes:

Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
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Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	154.14

Survey Program	Date 4/9/2015				
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From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
112.0	5,759.0	Survey #6 Final Gyro (Original Wellpath)	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4
5,799.0	16,029.0	Survey #7 SDI MWD (Original Wellpath)	MWD SDI	MWD - Standard ver 1.0.1

Survey								
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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
112.0	0.22	74.68	112.0	0.1	0.2	0.0	0.20
137.0	0.27	73.86	137.0	0.1	0.3	0.1	0.20
162.0	0.29	57.06	162.0	0.1	0.4	0.1	0.34
187.0	0.30	69.61	187.0	0.2	0.5	0.1	0.26
212.0	0.36	78.32	212.0	0.2	0.7	0.1	0.31
237.0	0.35	79.96	237.0	0.3	0.8	0.1	0.06
262.0	0.30	89.24	262.0	0.3	1.0	0.2	0.29
287.0	0.30	79.48	287.0	0.3	1.1	0.2	0.20
312.0	0.32	91.75	312.0	0.3	1.2	0.3	0.28
337.0	0.29	112.78	337.0	0.3	1.4	0.3	0.46

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EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Hileman Unit 2H
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:	Hileman Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

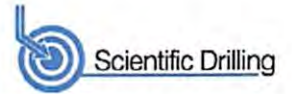
Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
362.0	0.29	119.53	362.0	0.2	1.5	0.4	0.14	
387.0	0.37	127.19	387.0	0.1	1.6	0.6	0.36	
412.0	0.84	151.92	412.0	-0.1	1.7	0.8	2.11	
437.0	1.16	157.07	437.0	-0.5	1.9	1.3	1.33	
462.0	1.86	162.02	462.0	-1.1	2.1	1.9	2.85	
487.0	2.67	163.17	487.0	-2.0	2.4	2.9	3.24	
512.0	2.83	165.87	511.9	-3.2	2.8	4.1	0.82	
537.0	3.13	169.56	536.9	-4.5	3.0	5.3	1.42	
562.0	3.11	170.40	561.9	-5.8	3.3	6.6	0.20	
587.0	3.30	170.94	586.8	-7.2	3.5	8.0	0.77	
612.0	3.90	170.31	611.8	-8.7	3.8	9.5	2.41	
637.0	4.21	169.31	636.7	-10.5	4.1	11.2	1.27	
662.0	4.54	170.07	661.6	-12.3	4.4	13.0	1.34	
687.0	5.30	170.20	686.5	-14.5	4.8	15.1	3.04	
712.0	5.96	169.18	711.4	-16.9	5.2	17.5	2.67	
737.0	5.96	168.60	736.3	-19.4	5.7	20.0	0.24	
762.0	6.12	168.95	761.2	-22.0	6.2	22.5	0.66	
787.0	6.09	169.25	786.0	-24.6	6.7	25.1	0.18	
812.0	5.98	168.68	810.9	-27.2	7.2	27.6	0.50	
837.0	5.86	168.90	835.7	-29.7	7.7	30.1	0.49	
862.0	5.56	168.25	860.6	-32.2	8.2	32.5	1.23	
887.0	5.42	168.23	885.5	-34.5	8.7	34.8	0.56	
912.0	5.28	167.35	910.4	-36.8	9.2	37.1	0.65	
937.0	5.19	167.14	935.3	-39.0	9.7	39.3	0.37	
962.0	5.02	167.09	960.2	-41.2	10.2	41.5	0.68	
987.0	4.83	167.73	985.1	-43.3	10.7	43.6	0.79	
1,012.0	4.66	166.80	1,010.0	-45.3	11.1	45.6	0.75	
1,037.0	4.69	166.80	1,034.9	-47.3	11.6	47.6	0.12	
1,062.0	4.52	166.22	1,059.8	-49.2	12.1	49.5	0.71	
1,087.0	4.38	165.83	1,084.8	-51.1	12.5	51.4	0.57	
1,112.0	4.14	165.26	1,109.7	-52.9	13.0	53.3	0.97	
1,137.0	4.00	165.09	1,134.6	-54.6	13.5	55.0	0.56	
1,162.0	3.76	164.63	1,159.6	-56.2	13.9	56.7	0.97	
1,187.0	3.59	163.52	1,184.5	-57.8	14.3	58.2	0.74	
1,212.0	3.51	164.00	1,209.5	-59.3	14.8	59.8	0.34	
1,237.0	3.31	164.00	1,234.4	-60.7	15.2	61.2	0.80	
1,262.0	3.11	163.03	1,259.4	-62.0	15.6	62.6	0.83	
1,287.0	3.04	161.98	1,284.4	-63.3	16.0	63.9	0.36	
1,312.0	2.88	162.05	1,309.3	-64.5	16.4	65.2	0.64	
1,337.0	2.87	160.97	1,334.3	-65.7	16.8	66.5	0.22	
1,362.0	2.73	159.16	1,359.3	-66.9	17.2	67.7	0.66	
1,387.0	2.59	158.10	1,384.2	-68.0	17.6	68.8	0.59	
1,412.0	2.54	157.80	1,409.2	-69.0	18.0	70.0	0.21	
1,437.0	2.63	157.21	1,434.2	-70.0	18.5	71.1	0.38	

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EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Hileman Unit 2H
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:	Hileman Unit 2H	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)	
1,462.0	2.59	157.93	1,459.2	-71.1	18.9	72.2	0.21	
1,487.0	2.44	158.25	1,484.1	-72.1	19.3	73.3	0.60	
1,512.0	2.32	156.34	1,509.1	-73.1	19.7	74.3	0.58	
1,537.0	2.26	157.34	1,534.1	-74.0	20.1	75.3	0.29	
1,562.0	2.13	158.15	1,559.1	-74.9	20.5	76.3	0.53	
1,587.0	2.17	159.04	1,584.1	-75.7	20.8	77.2	0.21	
1,612.0	2.10	158.74	1,609.0	-76.6	21.1	78.2	0.28	
1,637.0	2.04	157.26	1,634.0	-77.5	21.5	79.1	0.32	
1,662.0	1.81	158.52	1,659.0	-78.2	21.8	79.9	0.94	
1,687.0	1.81	157.83	1,684.0	-79.0	22.1	80.7	0.09	
1,712.0	1.86	156.64	1,709.0	-79.7	22.4	81.5	0.25	
1,737.0	1.84	154.94	1,734.0	-80.4	22.7	82.3	0.23	
1,762.0	1.68	154.17	1,759.0	-81.1	23.1	83.1	0.65	
1,787.0	1.73	152.69	1,784.0	-81.8	23.4	83.8	0.27	
1,812.0	1.70	150.80	1,808.9	-82.5	23.7	84.6	0.26	
1,837.0	1.76	152.09	1,833.9	-83.1	24.1	85.3	0.29	
1,862.0	1.64	149.40	1,858.9	-83.8	24.5	86.1	0.58	
1,887.0	1.47	144.49	1,883.9	-84.3	24.8	86.7	0.86	
1,912.0	1.41	141.20	1,908.9	-84.8	25.2	87.3	0.41	
1,937.0	1.44	141.00	1,933.9	-85.3	25.6	87.9	0.12	
1,962.0	1.43	139.13	1,958.9	-85.8	26.0	88.6	0.19	
1,987.0	1.35	140.88	1,983.9	-86.3	26.4	89.1	0.36	
2,012.0	1.33	137.94	2,008.9	-86.7	26.8	89.7	0.29	
2,037.0	1.32	142.09	2,033.9	-87.2	27.1	90.3	0.39	
2,062.0	1.30	140.45	2,058.9	-87.6	27.5	90.8	0.17	
2,087.0	1.34	142.40	2,083.9	-88.0	27.9	91.4	0.24	
2,112.0	1.28	138.61	2,108.8	-88.5	28.2	91.9	0.42	
2,137.0	1.18	137.90	2,133.8	-88.9	28.6	92.5	0.40	
2,162.0	1.18	138.38	2,158.8	-89.3	28.9	93.0	0.04	
2,187.0	1.04	138.62	2,183.8	-89.6	29.2	93.4	0.56	
2,212.0	1.21	141.80	2,208.8	-90.0	29.6	93.9	0.72	
2,237.0	1.12	133.72	2,233.8	-90.4	29.9	94.4	0.75	
2,262.0	1.10	137.63	2,258.8	-90.7	30.2	94.8	0.31	
2,287.0	1.24	140.73	2,283.8	-91.1	30.6	95.3	0.61	
2,312.0	1.10	136.10	2,308.8	-91.5	30.9	95.8	0.68	
2,337.0	1.19	143.99	2,333.8	-91.9	31.2	96.3	0.73	
2,362.0	1.30	139.33	2,358.8	-92.3	31.6	96.8	0.60	
2,387.0	1.18	141.58	2,383.8	-92.7	31.9	97.4	0.52	
2,412.0	1.21	139.49	2,408.8	-93.1	32.2	97.9	0.21	
2,437.0	1.26	140.16	2,433.8	-93.5	32.6	98.4	0.21	
2,462.0	1.22	136.06	2,458.8	-93.9	33.0	98.9	0.39	
2,487.0	1.30	137.85	2,483.8	-94.3	33.3	99.4	0.36	
2,512.0	1.22	138.30	2,508.8	-94.8	33.7	100.0	0.32	
2,537.0	1.12	134.27	2,533.8	-95.1	34.0	100.5	0.52	
2,562.0	1.16	132.32	2,558.7	-95.5	34.4	100.9	0.22	

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EOW Completion Report



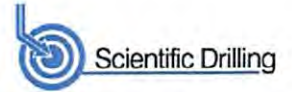
Company:	Antero	Local Co-ordinate Reference:	Well Hileman Unit 2H
Project:	Doddridge County WV	TVD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Site:	Fritz Pad: Hayden/Washington/Sheep/Hileman	MD Reference:	Frontier 22: GL 1053' + KB 25' @ 1078.0usft
Well:	Hileman Unit 2H	North Reference:	Grid
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)	
2,587.0	1.17	132.88	2,583.7	-95.8	34.8	101.4	0.06	
2,612.0	1.13	130.86	2,608.7	-96.1	35.2	101.9	0.23	
2,637.0	1.17	133.35	2,633.7	-96.5	35.5	102.3	0.26	
2,662.0	1.05	129.81	2,658.7	-96.8	35.9	102.8	0.55	
2,687.0	1.22	135.13	2,683.7	-97.1	36.3	103.2	0.80	
2,712.0	1.11	132.38	2,708.7	-97.5	36.6	103.7	0.49	
2,737.0	1.18	125.99	2,733.7	-97.8	37.0	104.2	0.58	
2,762.0	1.08	130.80	2,758.7	-98.1	37.4	104.6	0.55	
2,787.0	1.13	131.03	2,783.7	-98.4	37.8	105.0	0.20	
2,812.0	1.15	128.33	2,808.7	-98.7	38.1	105.5	0.23	
2,837.0	1.00	127.87	2,833.7	-99.0	38.5	105.9	0.60	
2,862.0	0.98	126.41	2,858.7	-99.3	38.9	106.3	0.13	
2,887.0	0.97	122.36	2,883.7	-99.5	39.2	106.7	0.28	
2,912.0	0.98	122.62	2,908.7	-99.8	39.6	107.0	0.04	
2,937.0	1.04	123.87	2,933.7	-100.0	39.9	107.4	0.26	
2,962.0	1.04	123.20	2,958.7	-100.3	40.3	107.8	0.05	
2,987.0	0.97	122.31	2,983.7	-100.5	40.7	108.2	0.29	
3,012.0	1.00	120.17	3,008.7	-100.7	41.0	108.5	0.19	
3,037.0	0.92	122.36	3,033.7	-100.9	41.4	108.9	0.35	
3,062.0	1.02	117.84	3,058.7	-101.1	41.8	109.2	0.50	
3,087.0	1.05	118.41	3,083.7	-101.4	42.2	109.6	0.13	
3,112.0	0.96	116.72	3,108.7	-101.6	42.6	110.0	0.38	
3,137.0	1.00	120.38	3,133.6	-101.8	42.9	110.3	0.30	
3,162.0	1.07	118.31	3,158.6	-102.0	43.3	110.7	0.32	
3,187.0	1.01	118.97	3,183.6	-102.2	43.7	111.0	0.24	
3,212.0	1.01	115.22	3,208.6	-102.4	44.1	111.4	0.26	
3,237.0	1.09	117.26	3,233.6	-102.6	44.5	111.8	0.35	
3,262.0	1.05	118.01	3,258.6	-102.8	44.9	112.1	0.17	
3,287.0	1.05	117.79	3,283.6	-103.0	45.3	112.5	0.02	
3,312.0	1.02	116.54	3,308.6	-103.2	45.7	112.9	0.15	
3,337.0	1.08	117.22	3,333.6	-103.5	46.2	113.2	0.25	
3,362.0	1.06	117.13	3,358.6	-103.7	46.6	113.6	0.08	
3,387.0	1.13	118.75	3,383.6	-103.9	47.0	114.0	0.31	
3,412.0	1.11	118.65	3,408.6	-104.1	47.4	114.4	0.08	
3,437.0	1.12	120.16	3,433.6	-104.4	47.8	114.8	0.12	
3,462.0	1.01	120.01	3,458.6	-104.6	48.2	115.2	0.44	
3,487.0	1.09	119.25	3,483.6	-104.8	48.6	115.5	0.32	
3,512.0	1.08	121.92	3,508.6	-105.1	49.1	115.9	0.21	
3,537.0	0.99	120.57	3,533.6	-105.3	49.4	116.3	0.37	
3,562.0	1.05	121.79	3,558.6	-105.5	49.8	116.7	0.26	
3,587.0	1.07	120.84	3,583.6	-105.8	50.2	117.1	0.11	
3,612.0	1.05	122.31	3,608.6	-106.0	50.6	117.5	0.14	
3,637.0	1.08	123.60	3,633.6	-106.3	51.0	117.9	0.15	
3,662.0	1.06	122.64	3,658.6	-106.5	51.4	118.3	0.11	

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EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Hileman Unit 2H
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:	Hileman Unit 2H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

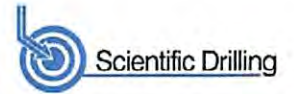
Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
3,687.0	1.05	120.96	3,683.6	-106.8	51.8	118.7	0.13	
3,712.0	1.08	122.87	3,708.6	-107.0	52.2	119.0	0.19	
3,737.0	1.09	124.04	3,733.5	-107.3	52.6	119.5	0.10	
3,762.0	1.13	121.90	3,758.5	-107.5	53.0	119.9	0.23	
3,787.0	1.11	123.07	3,783.5	-107.8	53.4	120.3	0.12	
3,812.0	1.12	121.94	3,808.5	-108.1	53.8	120.7	0.10	
3,837.0	1.13	123.17	3,833.5	-108.3	54.2	121.1	0.10	
3,862.0	1.19	122.56	3,858.5	-108.6	54.6	121.5	0.25	
3,887.0	1.12	124.31	3,883.5	-108.9	55.1	122.0	0.31	
3,912.0	1.16	120.61	3,908.5	-109.1	55.5	122.4	0.34	
3,937.0	1.18	123.50	3,933.5	-109.4	55.9	122.8	0.25	
3,962.0	1.19	123.03	3,958.5	-109.7	56.3	123.3	0.06	
3,987.0	1.20	122.10	3,983.5	-110.0	56.8	123.7	0.09	
4,012.0	1.19	125.13	4,008.5	-110.3	57.2	124.2	0.26	
4,037.0	1.24	125.67	4,033.5	-110.6	57.6	124.6	0.21	
4,062.0	1.31	126.04	4,058.5	-110.9	58.1	125.1	0.28	
4,087.0	1.40	124.48	4,083.5	-111.2	58.6	125.6	0.39	
4,112.0	1.44	126.64	4,108.5	-111.6	59.1	126.2	0.27	
4,137.0	1.41	127.96	4,133.5	-112.0	59.6	126.7	0.18	
4,162.0	1.38	124.80	4,158.4	-112.3	60.1	127.3	0.33	
4,187.0	1.47	127.86	4,183.4	-112.7	60.6	127.8	0.47	
4,212.0	1.52	125.46	4,208.4	-113.1	61.1	128.4	0.32	
4,237.0	1.56	127.04	4,233.4	-113.5	61.6	129.0	0.23	
4,262.0	1.62	126.82	4,258.4	-113.9	62.2	129.6	0.24	
4,287.0	1.68	125.81	4,283.4	-114.3	62.8	130.3	0.27	
4,312.0	1.67	127.43	4,308.4	-114.8	63.4	130.9	0.19	
4,337.0	1.76	126.05	4,333.4	-115.2	64.0	131.6	0.40	
4,362.0	1.79	127.09	4,358.4	-115.7	64.6	132.3	0.18	
4,387.0	1.80	127.31	4,383.4	-116.1	65.2	133.0	0.05	
4,412.0	2.01	126.47	4,408.3	-116.6	65.9	133.7	0.85	
4,437.0	1.93	127.25	4,433.3	-117.2	66.6	134.5	0.34	
4,462.0	1.95	128.14	4,458.3	-117.7	67.2	135.2	0.14	
4,487.0	2.02	126.13	4,483.3	-118.2	67.9	136.0	0.39	
4,512.0	1.94	127.18	4,508.3	-118.7	68.6	136.8	0.35	
4,537.0	2.05	126.79	4,533.3	-119.2	69.3	137.5	0.44	
4,562.0	1.97	129.14	4,558.3	-119.8	70.0	138.3	0.46	
4,587.0	1.86	130.63	4,583.2	-120.3	70.6	139.1	0.48	
4,612.0	1.71	133.74	4,608.2	-120.8	71.2	139.8	0.71	
4,637.0	1.64	133.16	4,633.2	-121.3	71.7	140.5	0.29	
4,662.0	1.59	133.71	4,658.2	-121.8	72.3	141.1	0.21	
4,687.0	1.47	133.40	4,683.2	-122.3	72.7	141.8	0.48	
4,712.0	1.27	133.27	4,708.2	-122.7	73.1	142.3	0.80	
4,737.0	1.13	134.80	4,733.2	-123.1	73.6	142.8	0.57	
4,762.0	0.96	136.47	4,758.2	-123.4	73.9	143.2	0.69	

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EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Hileman Unit 2H
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:	Hileman Unit 2H	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)	
4,787.0	0.74	135.70	4,783.2	-123.7	74.1	143.6	0.88	
4,812.0	0.63	133.86	4,808.2	-123.9	74.3	143.9	0.45	
4,837.0	0.43	138.89	4,833.2	-124.0	74.5	144.1	0.82	
4,862.0	0.53	135.37	4,858.2	-124.2	74.6	144.3	0.42	
4,887.0	0.52	131.01	4,883.2	-124.3	74.8	144.5	0.16	
4,912.0	0.53	131.20	4,908.2	-124.5	75.0	144.7	0.04	
4,937.0	0.50	133.00	4,933.2	-124.6	75.1	144.9	0.14	
4,962.0	0.50	124.82	4,958.2	-124.8	75.3	145.1	0.29	
4,987.0	0.56	124.99	4,983.2	-124.9	75.5	145.3	0.24	
5,012.0	0.54	115.79	5,008.2	-125.0	75.7	145.5	0.36	
5,037.0	0.61	113.73	5,033.2	-125.1	75.9	145.7	0.29	
5,062.0	0.67	105.24	5,058.2	-125.2	76.2	145.9	0.45	
5,087.0	0.66	104.09	5,083.2	-125.3	76.5	146.1	0.07	
5,112.0	0.64	97.55	5,108.2	-125.4	76.8	146.3	0.31	
5,137.0	0.71	100.75	5,133.2	-125.4	77.1	146.5	0.32	
5,162.0	0.63	98.92	5,158.2	-125.5	77.3	146.6	0.33	
5,187.0	0.66	101.34	5,183.2	-125.5	77.6	146.8	0.16	
5,212.0	0.74	95.72	5,208.2	-125.5	77.9	147.0	0.42	
5,237.0	0.74	100.85	5,233.2	-125.6	78.2	147.1	0.26	
5,262.0	0.72	97.62	5,258.2	-125.6	78.6	147.3	0.18	
5,287.0	0.77	96.48	5,283.2	-125.7	78.9	147.5	0.21	
5,312.0	0.73	97.60	5,308.1	-125.7	79.2	147.7	0.17	
5,337.0	0.76	103.08	5,333.1	-125.8	79.5	147.9	0.31	
5,362.0	0.74	91.31	5,358.1	-125.8	79.8	148.0	0.62	
5,387.0	0.76	94.04	5,383.1	-125.8	80.2	148.2	0.16	
5,412.0	0.79	94.29	5,408.1	-125.9	80.5	148.4	0.12	
5,437.0	0.79	92.15	5,433.1	-125.9	80.9	148.5	0.12	
5,462.0	0.76	106.16	5,458.1	-125.9	81.2	148.7	0.77	
5,487.0	0.85	98.64	5,483.1	-126.0	81.5	148.9	0.55	
5,512.0	0.83	96.47	5,508.1	-126.1	81.9	149.2	0.15	
5,537.0	0.83	98.07	5,533.1	-126.1	82.2	149.3	0.09	
5,562.0	0.73	108.30	5,558.1	-126.2	82.6	149.6	0.68	
5,587.0	0.93	102.83	5,583.1	-126.3	82.9	149.8	0.86	
5,612.0	0.84	106.81	5,608.1	-126.4	83.3	150.0	0.44	
5,637.0	1.02	101.72	5,633.1	-126.5	83.7	150.3	0.79	
5,662.0	0.93	110.66	5,658.1	-126.6	84.1	150.6	0.71	
5,687.0	0.92	111.41	5,683.1	-126.7	84.5	150.9	0.06	
5,712.0	1.02	107.42	5,708.1	-126.9	84.9	151.2	0.48	
5,737.0	0.97	108.83	5,733.1	-127.0	85.3	151.5	0.22	
5,759.0	1.07	107.72	5,755.1	-127.1	85.7	151.8	0.46	
5,799.0	1.07	74.53	5,795.1	-127.1	86.4	152.1	1.53	
5,831.0	3.94	52.40	5,827.1	-126.4	87.5	151.9	9.30	
5,863.0	7.99	47.91	5,858.9	-124.2	90.1	151.1	12.73	
5,895.0	11.96	43.70	5,890.4	-120.3	94.0	149.3	12.61	

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WV Department of Environmental Protection



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Hileman Unit 2H
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:	Hileman Unit 2H	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)	
5,928.0	15.36	41.14	5,922.5	-114.6	99.2	146.4	10.46	
5,959.0	18.93	41.48	5,952.1	-107.7	105.3	142.8	11.52	
5,991.0	22.90	42.44	5,982.0	-99.2	112.9	138.5	12.45	
6,023.0	25.58	43.06	6,011.1	-89.6	121.8	133.8	8.41	
6,055.0	27.96	42.90	6,039.7	-79.0	131.7	128.6	7.44	
6,087.0	29.54	47.59	6,067.8	-68.2	142.6	123.6	8.60	
6,120.0	30.08	56.76	6,096.4	-58.2	155.5	120.2	13.90	
6,152.0	30.34	62.59	6,124.1	-50.1	169.4	119.0	9.20	
6,183.0	29.95	66.47	6,150.9	-43.4	183.5	119.1	6.41	
6,216.0	29.90	74.15	6,179.5	-37.8	198.9	120.8	11.60	
6,248.0	30.45	80.47	6,207.2	-34.3	214.6	124.5	10.07	
6,252.0	30.45	81.32	6,210.6	-34.0	216.6	125.1	10.75	
SCMR								
6,280.0	30.60	87.24	6,234.7	-32.6	230.7	130.0	10.75	
6,312.0	32.21	94.08	6,262.1	-32.8	247.4	137.4	12.21	
6,344.0	33.96	97.86	6,288.9	-34.6	264.8	146.6	8.45	
6,376.0	34.95	101.27	6,315.3	-37.6	282.6	157.1	6.78	
6,408.0	35.44	108.35	6,341.4	-42.4	300.4	169.1	12.84	
6,440.0	36.93	114.12	6,367.2	-49.2	318.0	183.0	11.61	
6,464.0	38.64	117.04	6,386.2	-55.6	331.2	194.5	10.33	
MDLX								
6,472.0	39.23	117.97	6,392.4	-57.9	335.7	198.5	10.33	
6,505.0	42.44	121.26	6,417.4	-68.6	354.4	216.3	11.71	
6,537.0	45.66	124.61	6,440.4	-80.7	373.1	235.3	12.42	
6,569.0	48.92	128.13	6,462.1	-94.6	392.0	256.1	13.00	
6,600.0	52.50	131.33	6,481.7	-110.0	410.4	278.0	14.04	
6,632.0	56.60	133.55	6,500.3	-127.6	429.7	302.2	14.00	
6,643.0	58.19	134.08	6,506.2	-134.0	436.4	310.9	14.98	
BRKT								
6,664.0	61.22	135.05	6,516.8	-146.7	449.3	328.0	14.98	
6,696.0	65.54	136.87	6,531.2	-167.3	469.1	355.1	14.43	
6,698.0	65.79	137.05	6,532.0	-168.6	470.4	356.9	15.09	
TULLY								
6,728.0	69.61	139.68	6,543.4	-189.3	488.8	383.6	15.09	
6,760.0	72.70	140.44	6,553.7	-212.6	508.3	413.0	9.91	
6,769.0	73.15	141.12	6,556.3	-219.2	513.7	421.3	8.83	
HMLN								
6,789.0	74.16	142.63	6,562.0	-234.3	525.5	440.1	8.83	
MRCL_HOT								
6,792.0	74.31	142.86	6,562.8	-236.6	527.3	442.9	8.83	
6,824.0	76.83	145.95	6,570.8	-261.8	545.3	473.5	12.22	
6,857.0	80.14	149.12	6,577.3	-289.1	562.7	505.6	13.75	
6,888.0	82.84	151.39	6,581.9	-315.7	577.9	536.2	11.33	
6,949.0	88.79	154.40	6,586.4	-369.8	605.6	596.9	10.92	
6,981.0	89.36	154.07	6,586.9	-398.7	619.5	628.9	2.06	



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Hileman Unit 2H
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:	Hileman Unit 2H	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)
7,077.0	92.38	155.55	6,585.4	-485.5	660.3	724.9	3.50
7,173.0	91.64	155.03	6,582.1	-572.7	700.4	820.8	0.94
7,268.0	89.50	153.49	6,581.1	-658.2	741.7	915.8	2.78
7,364.0	92.02	155.35	6,579.9	-744.8	783.1	1,011.8	3.26
7,459.0	91.98	153.67	6,576.5	-830.5	824.0	1,106.7	1.77
7,556.0	91.58	151.93	6,573.5	-916.7	868.3	1,203.6	1.84
7,652.0	91.58	150.53	6,570.9	-1,000.8	914.5	1,299.5	1.46
7,748.0	91.14	155.60	6,568.6	-1,086.4	957.9	1,395.4	5.30
7,844.0	91.95	154.28	6,566.0	-1,173.3	998.6	1,491.4	1.61
7,941.0	90.98	155.27	6,563.5	-1,261.0	1,039.9	1,588.3	1.43
8,037.0	90.77	153.45	6,562.1	-1,347.5	1,081.4	1,684.3	1.91
8,134.0	92.08	151.93	6,559.7	-1,433.7	1,125.9	1,781.2	2.07
8,230.0	92.18	149.26	6,556.1	-1,517.3	1,173.0	1,877.0	2.78
8,326.0	92.45	151.62	6,552.2	-1,600.7	1,220.4	1,972.7	2.47
8,422.0	92.05	156.37	6,548.4	-1,686.9	1,262.4	2,068.6	4.96
8,518.0	91.71	156.68	6,545.3	-1,774.9	1,300.6	2,164.5	0.48
8,614.0	90.37	155.92	6,543.5	-1,862.8	1,339.2	2,260.4	1.60
8,710.0	90.94	155.67	6,542.4	-1,950.3	1,378.6	2,356.3	0.65
8,806.0	90.97	154.40	6,540.8	-2,037.4	1,419.1	2,452.3	1.32
8,902.0	91.48	154.81	6,538.8	-2,124.1	1,460.2	2,548.3	0.68
8,998.0	91.54	153.84	6,536.3	-2,210.5	1,501.8	2,644.2	1.01
9,093.0	91.78	155.31	6,533.5	-2,296.3	1,542.6	2,739.2	1.57
9,188.0	92.05	154.56	6,530.3	-2,382.3	1,582.8	2,834.1	0.84
9,284.0	91.31	154.38	6,527.5	-2,468.9	1,624.2	2,930.1	0.79
9,380.0	91.68	154.37	6,525.0	-2,555.4	1,665.7	3,026.1	0.39
9,477.0	92.08	153.50	6,521.8	-2,642.5	1,708.3	3,123.0	0.99
9,573.0	91.51	153.00	6,518.8	-2,728.2	1,751.4	3,218.9	0.79
9,669.0	91.68	152.40	6,516.2	-2,813.5	1,795.5	3,314.9	0.65
9,765.0	92.02	152.39	6,513.1	-2,898.5	1,839.9	3,410.8	0.35
9,860.0	91.74	151.39	6,509.9	-2,982.3	1,884.7	3,505.7	1.09
9,957.0	90.84	152.40	6,507.8	-3,067.8	1,930.3	3,602.6	1.39
10,053.0	91.31	152.77	6,506.0	-3,153.0	1,974.5	3,698.5	0.62
10,150.0	91.88	154.42	6,503.3	-3,239.8	2,017.6	3,795.5	1.80
10,246.0	89.60	152.60	6,502.0	-3,325.7	2,060.5	3,891.4	3.04
10,343.0	91.37	153.85	6,501.2	-3,412.3	2,104.2	3,988.4	2.23
10,439.0	92.28	154.94	6,498.1	-3,498.9	2,145.6	4,084.4	1.48
10,535.0	92.58	153.93	6,494.1	-3,585.4	2,187.0	4,180.3	1.10
10,631.0	92.35	154.51	6,489.9	-3,671.7	2,228.7	4,276.2	0.65
10,726.0	89.80	154.72	6,488.2	-3,757.6	2,269.4	4,371.1	2.69
10,821.0	89.66	154.19	6,488.6	-3,843.3	2,310.4	4,466.1	0.58
10,917.0	90.60	155.74	6,488.4	-3,930.2	2,351.0	4,562.1	1.89
11,014.0	91.34	156.36	6,486.7	-4,018.9	2,390.4	4,659.1	1.00
11,109.0	91.98	156.04	6,484.0	-4,105.8	2,428.7	4,754.0	0.75
11,205.0	92.41	155.76	6,480.3	-4,193.3	2,467.9	4,849.8	0.53



EOW Completion Report



Company:	Antero	Local Co-ordinate Reference:	Well Hileman Unit 2H
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:	Hileman Unit 2H	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)
11,301.0	90.37	155.17	6,478.0	-4,280.6	2,507.7	4,945.8	2.21
11,398.0	90.64	155.19	6,477.1	-4,368.7	2,548.5	5,042.8	0.28
11,494.0	90.77	155.56	6,476.0	-4,455.9	2,588.5	5,138.7	0.41
11,591.0	91.08	156.76	6,474.4	-4,544.6	2,627.7	5,235.7	1.28
11,687.0	90.37	155.86	6,473.2	-4,632.5	2,666.2	5,331.6	1.19
11,783.0	89.87	154.80	6,473.0	-4,719.8	2,706.3	5,427.6	1.22
11,873.0	90.50	153.40	6,472.7	-4,800.7	2,745.6	5,517.6	1.71
11,964.0	91.04	153.26	6,471.5	-4,882.0	2,786.4	5,608.5	0.61
12,054.0	91.48	153.12	6,469.5	-4,962.3	2,827.0	5,698.5	0.51
12,144.0	91.85	152.93	6,466.9	-5,042.5	2,867.8	5,788.4	0.46
12,235.0	91.48	154.02	6,464.2	-5,123.9	2,908.5	5,879.4	1.26
12,325.0	91.65	153.87	6,461.8	-5,204.7	2,948.0	5,969.4	0.25
12,416.0	92.76	154.77	6,458.3	-5,286.7	2,987.4	6,060.3	1.57
12,507.0	91.63	154.85	6,454.8	-5,369.0	3,026.1	6,151.2	1.24
12,598.0	91.01	153.44	6,452.7	-5,450.8	3,065.7	6,242.2	1.69
12,689.0	89.90	152.82	6,452.0	-5,532.0	3,106.9	6,333.2	1.40
12,780.0	90.10	152.67	6,452.0	-5,612.9	3,148.5	6,424.2	0.27
12,870.0	90.27	154.45	6,451.7	-5,693.5	3,188.6	6,514.1	1.99
12,967.0	89.43	155.11	6,451.9	-5,781.2	3,230.0	6,611.1	1.10
13,061.0	89.76	154.22	6,452.6	-5,866.2	3,270.2	6,705.1	1.01
13,157.0	90.94	154.90	6,452.0	-5,952.9	3,311.4	6,801.1	1.42
13,253.0	89.93	153.04	6,451.3	-6,039.1	3,353.5	6,897.1	2.20
13,348.0	88.12	150.24	6,452.9	-6,122.7	3,398.6	6,992.0	3.51
13,445.0	88.89	151.49	6,455.4	-6,207.4	3,445.9	7,088.8	1.51
13,540.0	90.34	151.50	6,456.1	-6,290.9	3,491.2	7,183.7	1.53
13,634.0	90.47	152.72	6,455.4	-6,374.0	3,535.2	7,277.6	1.31
13,730.0	90.71	154.64	6,454.4	-6,460.0	3,577.7	7,373.6	2.02
13,826.0	89.56	155.21	6,454.2	-6,547.0	3,618.4	7,469.6	1.34
13,922.0	89.76	154.89	6,454.7	-6,634.0	3,658.9	7,565.6	0.39
14,018.0	90.00	155.12	6,454.9	-6,721.0	3,699.5	7,661.6	0.35
14,113.0	89.93	153.90	6,455.0	-6,806.7	3,740.3	7,756.6	1.29
14,209.0	90.47	154.37	6,454.7	-6,893.1	3,782.2	7,852.6	0.75
14,306.0	90.87	153.89	6,453.5	-6,980.4	3,824.5	7,949.6	0.64
14,402.0	90.34	155.07	6,452.5	-7,067.0	3,865.9	8,045.6	1.35
14,498.0	90.81	155.73	6,451.6	-7,154.3	3,905.9	8,141.5	0.84
14,594.0	89.50	154.11	6,451.3	-7,241.3	3,946.6	8,237.5	2.17
14,690.0	89.77	154.13	6,451.9	-7,327.6	3,988.5	8,333.5	0.28
14,787.0	90.77	154.54	6,451.5	-7,415.1	4,030.5	8,430.5	1.11
14,883.0	91.31	154.87	6,449.7	-7,501.8	4,071.5	8,526.5	0.66
14,979.0	90.37	155.75	6,448.3	-7,589.0	4,111.6	8,622.5	1.34
15,075.0	90.44	155.91	6,447.6	-7,676.6	4,150.9	8,718.4	0.18
15,171.0	90.44	155.55	6,446.9	-7,764.1	4,190.3	8,814.4	0.37
15,268.0	89.76	155.86	6,446.7	-7,852.6	4,230.2	8,911.3	0.77
15,364.0	89.19	155.19	6,447.6	-7,939.9	4,270.0	9,007.3	0.92
15,460.0	89.53	154.91	6,448.7	-8,027.0	4,310.5	9,103.3	0.46



Company:	Antero	Local Co-ordinate Reference:	Well Hileman Unit 2H
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:	Hileman Unit 2H	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)
15,556.0	88.89	153.10	6,450.0	-8,113.2	4,352.6	9,199.3	2.00
15,653.0	89.06	153.02	6,451.7	-8,199.7	4,396.5	9,296.2	0.19
15,748.0	89.40	152.73	6,453.0	-8,284.2	4,439.8	9,391.2	0.47
15,844.0	87.92	151.63	6,455.2	-8,369.1	4,484.6	9,487.1	1.92
15,941.0	88.05	151.40	6,458.7	-8,454.3	4,530.8	9,584.0	0.27
15,968.0	88.02	150.69	6,459.6	-8,477.9	4,543.9	9,610.9	2.63
16,029.0	88.02	150.69	6,461.7	-8,531.1	4,573.8	9,671.8	0.00

PTB

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,252.0	6,210.6	-34.0	216.6	SCMR
6,464.0	6,386.2	-55.6	331.2	MDLX
6,643.0	6,506.2	-134.0	436.4	BRKT
6,698.0	6,532.0	-168.6	470.4	TULLY
6,769.0	6,556.3	-219.2	513.7	HMLN
6,789.0	6,562.0	-234.3	525.5	MRCL_HOT
16,029.0	6,461.7	-8,531.1	4,573.8	PTB

Checked By: _____ Approved By: _____ Date: _____

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/30/2015
Job End Date:	12/13/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06660-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Hileman 2H
Longitude:	-80.83996400
Latitude:	39.23416700
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	6,586
Total Base Water Volume (gal):	16,073,968
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	90.84850	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	8.77869	
LGC-15	U.S. Well Services	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.07518	
			Petroleum Distillates	64742-47-8	60.00000	0.07120	
			Suspending agent (solid)	14808-60-7	3.00000	0.01150	
			Surfactant	68439-51-0	3.00000	0.00451	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.08275	
			Hydrogen Chloride	7647-01-0	18.00000	0.01977	
WFRA-405	U.S. Well Services	Friction Reducer					
			Water	7732-18-5	60.00000	0.04096	
			2-Propenoic acid, polymer with 2-propenamide	9003-06-9	30.00000	0.02048	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01649	
			Ethoxylated alcohol blend	68002-97-1	4.00000	0.00273	

SI-1100	U.S. Well Services	Scale Inhibitor				
			Water	7732-18-5	80.00000	0.01009
			Ethylene Glycol	107-21-1	25.00000	0.00356
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00149
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	7.50000	0.00128
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00082
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00082
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00033
K-BAC 1020	U.S. Well Services	Anti-Bacterial Agent				
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00408
			Deionized Water	7732-18-5	28.00000	0.00233
AP One	U.S. Well Services	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00201
AI-302	U.S. Well Services	Acid Corrosion Inhibitors				
			Water	7732-18-5	95.00000	0.00036
			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.

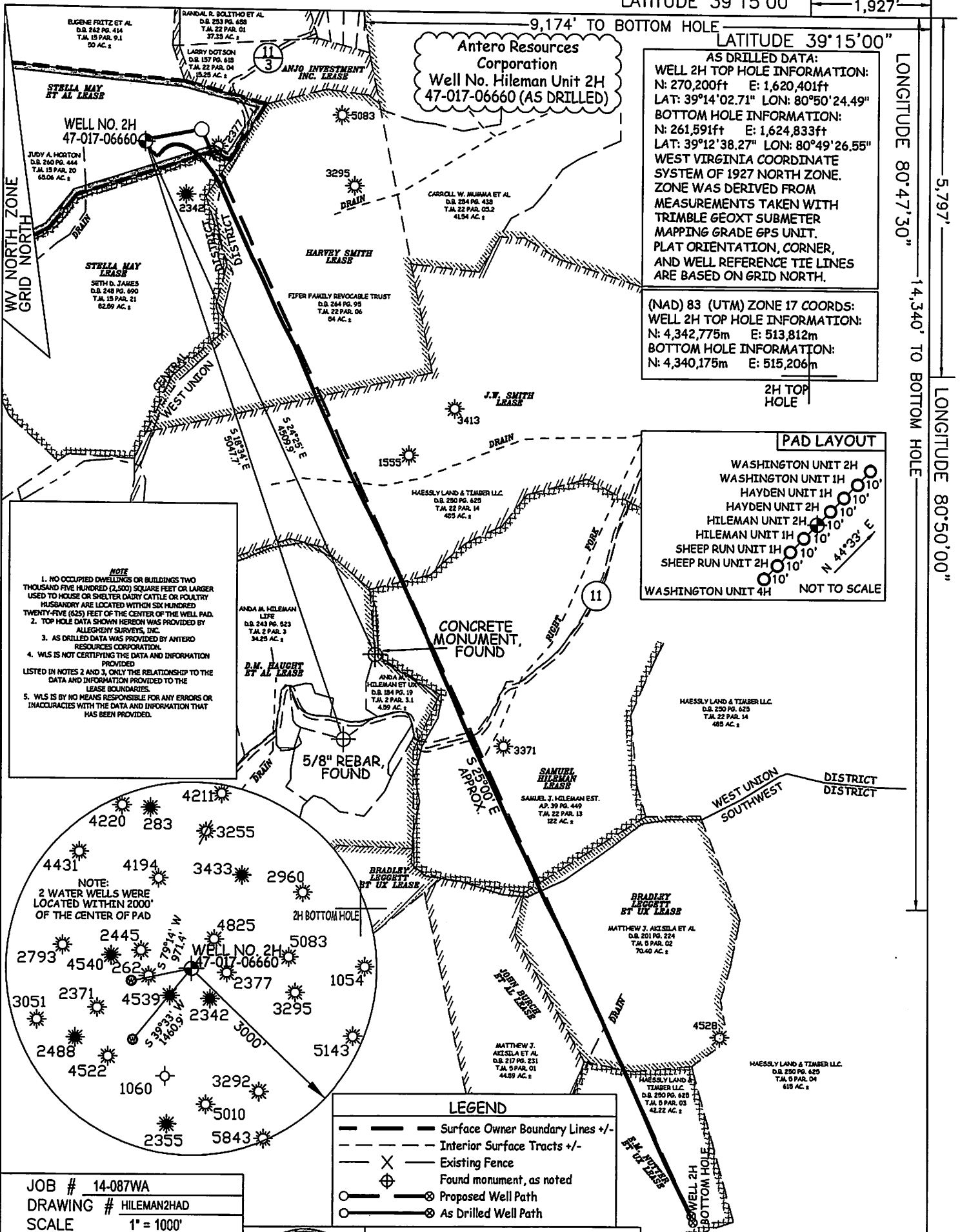
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

LATITUDE 39°15'00" 1,927'

LATITUDE 39°15'00"

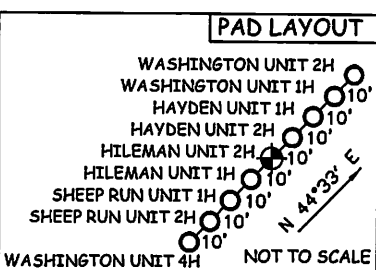
LONGITUDE 80°47'30"

5,797' LONGITUDE 80°50'00"



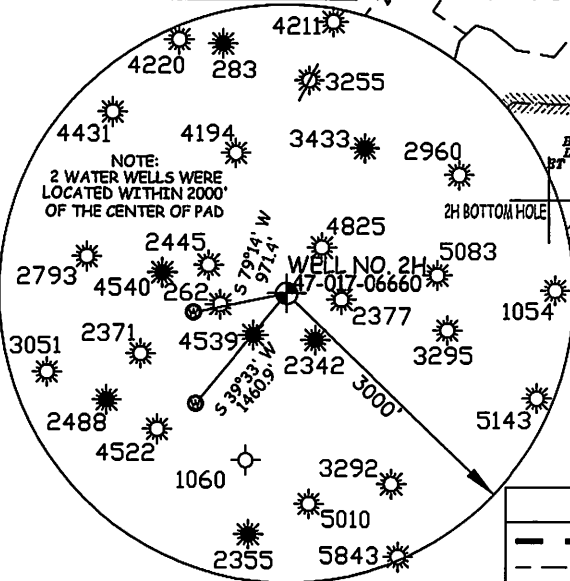
AS DRILLED DATA:
 WELL 2H TOP HOLE INFORMATION:
 N: 270,200ft E: 1,620,401ft
 LAT: 39°14'02.71" LON: 80°50'24.49"
 BOTTOM HOLE INFORMATION:
 N: 261,591ft E: 1,624,833ft
 LAT: 39°12'38.27" LON: 80°49'26.55"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT 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 2H TOP HOLE INFORMATION:
 N: 4,342,775m E: 513,812m
 BOTTOM HOLE INFORMATION:
 N: 4,340,175m E: 515,206m



NOTE

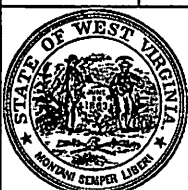
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- TOP HOLE DATA SICHIN HERRON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
- AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
- WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
- WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



LEGEND

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

JOB # 14-087WA
 DRAWING # HILEMAN2HAD
 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

DATE 07/16/15 OPERATOR'S WELL# HILEMAN UNIT #2H

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

RECEIVED # 47-017-06660-06660
 Office of Oil and Gas STATE COUNTY PERMIT
 MAY 11 COUNTY DODDRIDGE
 07/22/2016

SURFACE OWNER JUDY A. HORTON ACREAGE 65.06 ACRES +/-
 OIL & GAS ROYALTY OWNER STELLA MAY ET AL; STELLA MAY; HARVEY SMITH; J.W. SMITH; SAMUEL HILEMAN; BRADLEY LEGGETT ET UX; E.M. NUTTER ET UX LEASE ACREAGE 125.5 ACRES +/-; 83 ACRES +/-; 450 ACRES +/-; 40 ACRES +/-; 126.31 ACRES +/-; 42.36 ACRES +/-
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
 (SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,462' TVD 16,029' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
 ADDRESS 1615 WYNKOOP STREET ADDRESS CT CORPORATION SYSTEM
 DENVER, CO 80202 CHARLESTON, WV 25313

LATITUDE 39°15'00"

1,927'

9,174' TO BOTTOM HOLE

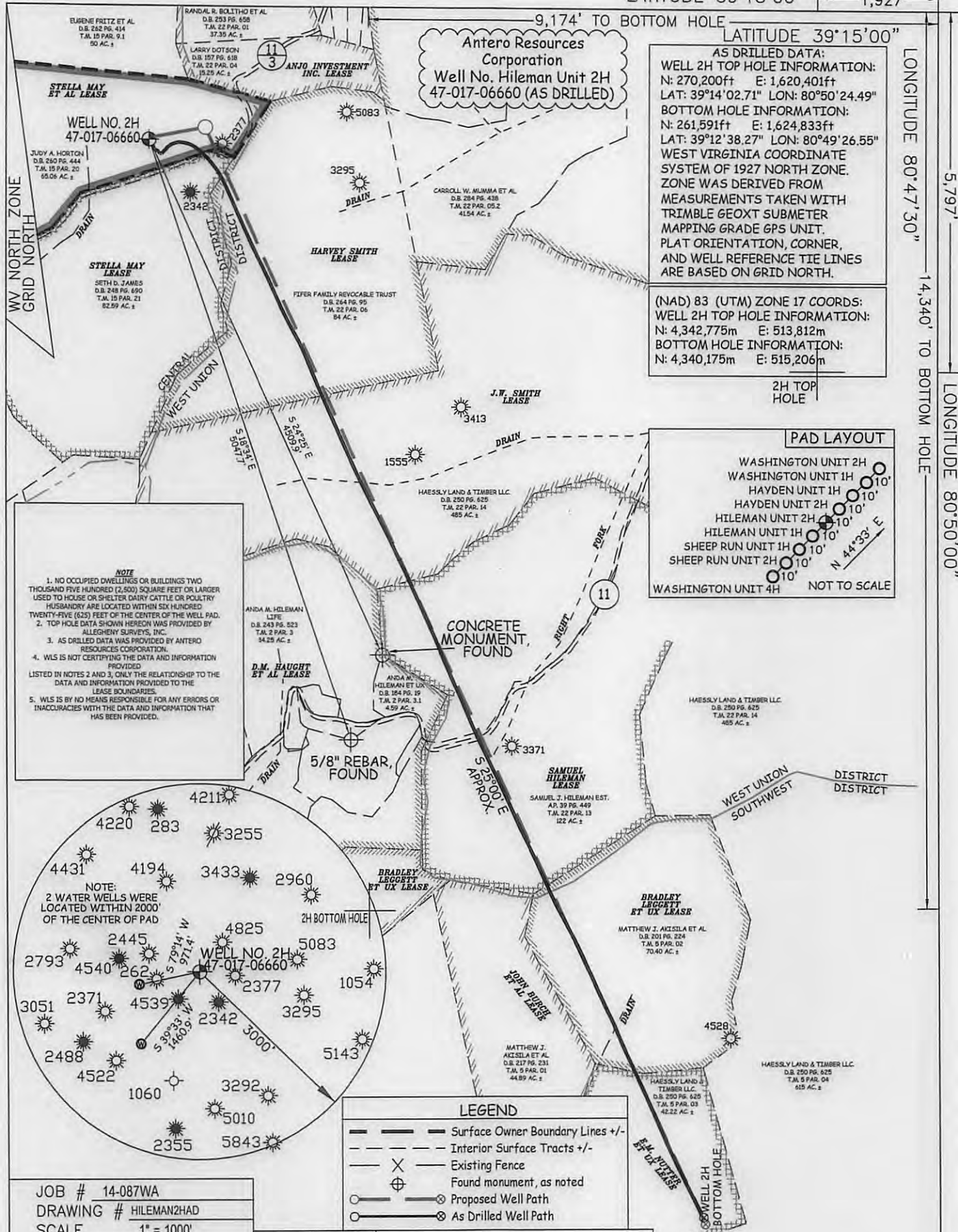
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LONGITUDE 80°47'30"

5,797'

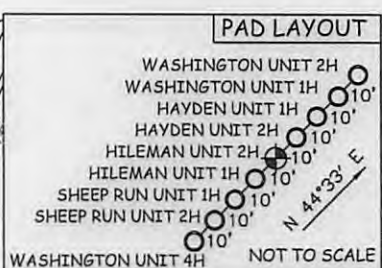
14,340' TO BOTTOM HOLE

LONGITUDE 80°50'00"



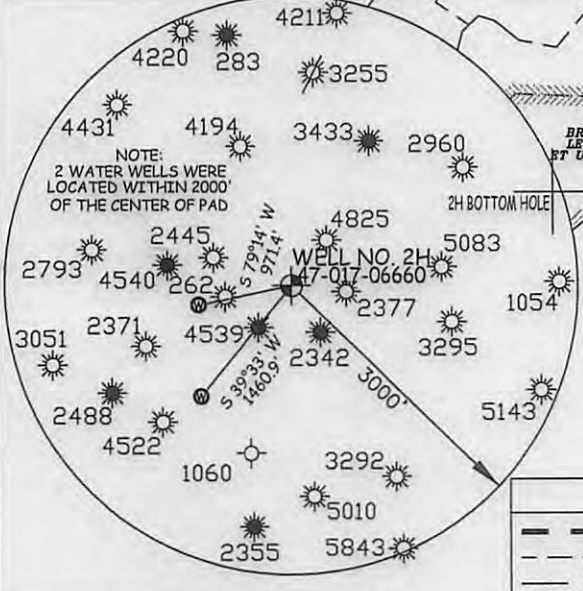
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NOTE

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- ⊕ Found monument, as noted
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JOB # 14-087WA
 DRAWING # HILEMAN2HAD
 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

DATE 07/16/15
 OPERATOR'S WELL# HILEMAN UNIT #2H
 API WELL # 47 - 017 - 06660
 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
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 SURFACE OWNER JUDY A. HORTON ACREAGE 65.06 ACRES +/-
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DIANNA STAMPER
 CT CORPORATION SYSTEM
 5400 D BIG TYLER ROAD
 CHARLESTON, WV 25313

07/22/2016

COUNTY NAME PERMIT