

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

API 47-017-06139 County Doddridge District Greenbrier
Quad Big Isaac Pad Name Reed Pad Field/Pool Name _____
Farm name Reed, Linn A. et al Well Number Furbey Unit 1H
Operator (as registered with the OOG) Antero Resources Corporation
Address 1615 Wynkoop Street 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 4,339,102.736m Easting 540,369.338m
Landing Point of Curve Northing 4,338,855.80m Easting 540,300.22m
Bottom Hole Northing 4,337,055.305m Easting 540,878.356m

Elevation (ft) 1,360' 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 12/06/2012 Date drilling commenced 08/04/2013 Date drilling ceased 02/04/2014
Date completion activities began 03/24/2014 Date completion activities ceased 08/12/2014
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 67' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1287', 2229' Void(s) encountered depths None
Coal depth(s) ft 259', 340', 837', 1167', 1238' Cavern(s) encountered (Y/N) depths None
Is coal being mined in area (Y/N) No

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Reviewed by:
AL S/26/15
U.S. 06/05/2015

API 47-017 - 06139 Farm name Reed, Linn A. et al Well number Furbey 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	24"	20"	40'	New	94#; J-55	N/A	Yes
Surface	17 1/2"	13 3/8"	603'	New	48#; H-40	N/A	Yes
Coal							
Intermediate 1	12 1/4"	9 5/8"	2,625'	New	36#; J-55	N/A	Yes
Intermediate 2							
Intermediate 3							
Production	8 3/4" & 8 1/2"	5 1/2"	14,146'	New	20#; P-110	N/A	Yes
Tubing		2 3/8"	7,482'		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	200 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	711 sx	15.6	1.18	419	0'	8 Hrs.
Coal							
Intermediate 1	Class A	964 sx	15.2	1.86	822	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1,107 sx (Lead); 1,085 sx (Tail)	14.5 (Lead); 16.2 (Tail)	1.3 (Lead); 1.86 (Tail)	2,754	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 14,146 (MD) 7,297' TVD (BHL), 7,366' TVD (Deepest Point Drilled) Loggers TD (ft) 14,146'
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6,877'

**This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Furbey Unit 2H, API #47-017-06138). Please reference the wireline logs submitted with Form WR-35 for the Furbey 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 _____

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API 47-017-06139 Farm Name Reed, Linn A. et al Well Number Furbey Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	24-Mar-14	13,872	14,058	60	Marcellus
2	10-Jul-14	13,672	13,840	60	Marcellus
3	10-Jul-14	13,471	13,640	60	Marcellus
4	11-Jul-14	13,271	13,440	60	Marcellus
5	11-Jul-14	13,071	13,240	60	Marcellus
6	12-Jul-14	12,871	13,040	60	Marcellus
7	12-Jul-14	12,671	12,840	60	Marcellus
8	12-Jul-14	12,471	12,640	60	Marcellus
9	12-Jul-14	12,271	12,440	60	Marcellus
10	13-Jul-14	12,071	12,240	60	Marcellus
11	13-Jul-14	11,871	12,040	60	Marcellus
12	14-Jul-14	11,671	11,840	60	Marcellus
13	14-Jul-14	11,471	11,639	60	Marcellus
14	14-Jul-14	11,271	11,439	60	Marcellus
15	15-Jul-14	11,071	11,239	60	Marcellus
16	15-Jul-14	10,871	11,039	60	Marcellus
17	15-Jul-14	10,670	10,839	60	Marcellus
18	15-Jul-14	10,470	10,639	60	Marcellus
19	15-Jul-14	10,270	10,439	60	Marcellus
20	16-Jul-14	10,070	10,239	60	Marcellus
21	16-Jul-14	9,870	10,039	60	Marcellus
22	17-Jul-14	9,670	9,839	60	Marcellus
23	17-Jul-14	9,470	9,639	60	Marcellus
24	17-Jul-14	9,270	9,439	60	Marcellus
25	18-Jul-14	9,070	9,239	60	Marcellus
26	18-Jul-14	8,870	9,039	60	Marcellus
27	21-Jul-14	8,670	8,839	60	Marcellus
28	21-Jul-14	8,470	8,638	60	Marcellus
29	22-Jul-14	8,270	8,438	60	Marcellus
30	22-Jul-14	8,070	8,238	60	Marcellus
31	22-Jul-14	7,870	8,038	60	Marcellus
32	22-Jul-14	7,669	7,838	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	10-Jul-14	42.0	8,913	8,837	4,567	2,700	6,530	N/A
2	10-Jul-14	79.0	7,206	6,122	4,281	254,980	6,587	N/A
3	10-Jul-14	79.0	7,359	6,223	4,653	255,690	6,999	N/A
4	11-Jul-14	79.0	7,367	6,137	4,985	256,080	6,659	N/A
5	11-Jul-14	77.0	7,370	5,883	5,436	229,280	6,944	N/A
6	12-Jul-14	80.0	7,214	6,051	4,481	256,280	6,447	N/A
7	12-Jul-14	79.0	7,319	5,579	5,175	226,850	7,075	N/A
8	12-Jul-14	80.0	7,158	5,829	5,121	238,600	6,958	N/A
9	12-Jul-14	79.0	7,459	6,101	4,606	236,790	7,023	N/A
10	13-Jul-14	80.0	7,318	5,808	5,697	256,260	6,062	N/A
11	13-Jul-14	79.0	7,080	5,965	4,528	252,200	6,394	N/A
12	14-Jul-14	79.0	7,269	5,908	4,545	255,675	6,408	N/A
13	14-Jul-14	79.0	7,555	6,251	4,320	179,340	6,817	N/A
14	14-Jul-14	79.0	7,368	6,301	4,610	254,945	6,321	N/A
15	15-Jul-14	77.0	6,907	6,073	4,510	255,260	6,304	N/A
16	15-Jul-14	78.0	7,101	5,851	4,946	255,120	6,333	N/A
17	15-Jul-14	79.0	7,069	5,804	4,842	247,840	6,418	N/A
18	15-Jul-14	79.0	6,913	5,672	4,907	205,600	6,895	N/A
19	15-Jul-14	77.0	6,977	5,618	5,407	255,120	6,372	N/A
20	16-Jul-14	78.0	7,038	5,797	5,479	257,140	6,287	N/A
21	16-Jul-14	80.0	6,996	5,715	5,300	249,960	6,244	N/A
22	16-Jul-14	79.0	6,995	5,579	4,699	157,600	6,793	N/A
23	17-Jul-14	79.0	6,954	5,876	4,488	243,570	6,517	N/A
24	17-Jul-14	79.0	7,050	5,987	5,490	255,230	6,398	N/A
25	18-Jul-14	80.0	7,252	6,183	5,175	254,840	6,319	N/A
26	18-Jul-14	80.0	7,073	5,915	4,438	256,180	6,235	N/A
27	21-Jul-14	80.0	7,115	5,858	4,581	253,780	6,171	N/A
28	21-Jul-14	79.0	6,905	5,568	4,592	255,420	6,183	N/A
29	22-Jul-14	79.0	7,155	6,155	4,660	254,270	6,159	N/A
30	22-Jul-14	80.0	6,960	6,248	4,785	257,250	6,133	N/A
31	22-Jul-14	79.0	6,961	6,033	5,046	244,260	6,084	N/A
32	22-Jul-14	79.0	6,651	6,402	4,781	255,810	6,145	N/A
	AVG=	77.8	7,188	6,042	4,848	7,569,920	207,214	TOTAL

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EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Fresh Water	67'	N/A	67'	N/A
Siltstone/Shale	0	272	0	259
Coal	Est. 272	293	Est. 259	280
Shale/Siltstone	Est. 293	353	Est. 280	340
Coal	Est. 353	374	Est. 340	361
Sand/Siltstone	Est. 374	850	Est. 361	837
Coal	Est. 850	880	Est. 837	867
Sand/Siltstone/Shale	Est. 880	1,180	Est. 867	1,167
Coal	Est. 1180	1,210	Est. 1167	1,197
Sand/Siltstone	Est. 1210	1,251	Est. 1197	1,238
Coal	Est. 1251	1,304	Est. 1238	1,291
Sand/Siltstone	Est. 1304	1,416	Est. 1291	1,403
Sandstone	Est. 1416	1,449	Est. 1403	1,436
Sand/Siltstone w/Trace Coals	Est. 1449	1,530	Est. 1436	1,517
Sand/Siltstone	Est. 1530	1,577	Est. 1517	1,564
Sandstone	Est. 1577	1,625	Est. 1564	1,612
Sand/Siltstone w/Trace Coals	Est. 1625	1,780	Est. 1612	1,767
Sand/Siltstone/Shale	Est. 1780	2,054	Est. 1767	2,055
Big Lime	2,054	2,168	2,055	2,170
Big Injun	2,168	2,357	2,170	2,359
Gantz Sand	2,357	2,475	2,359	2,477
Fifty Foot Sandstone	2,475	2,656	2,477	2,658
Gordon	2,656	2,976	2,658	2,977
Fifth Sandstone	2,976	3,021	2,977	3,023
Bayard	3,021	3,395	3,023	3,396
Warren	3,395	3,670	3,396	3,671
Speechley	3,670	3,912	3,671	3,914
Baltown	3,912	4,435	3,914	4,437
Bradford	4,435	4,981	4,437	4,983
Benson	4,981	5,185	4,983	5,187
Alexander	5,185	5,340	5,187	5,342
Elk	5,340	6,206	5,342	6,208
Rhinestreet	6,206	6,706	6,208	6,709
Sycamore	6,706	6,950	6,709	6,978
Middlesex	6,950	7,107	6,978	7,188
Burkett	7,107	7,135	7,188	7,232
Tully	7,135	7,305	7,232	7,626
Marcellus	7,305	NA	7,626	NA

*Please note Antero determines shallow formation tops based on mud and/or wireline logs that are only run on one well on a multi-well pad (please reference Wireline Logs submitted for the Furbey Unit 2H, API # 47-017-06138). The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/10/2014
Job End Date:	7/22/2014
State:	West Virginia
County:	Doddridge
API Number:	47-017-06139-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Furbey Unit 1H
Longitude:	-80.53247800
Latitude:	39.20025000
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,365
Total Base Water Volume (gal):	8,697,528
Total Base Non Water Volume:	327,402

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	91.53048	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	8.16768	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.50000	0.08969	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Hydrogen Chloride	7641-01-1	18.00000	0.02142	
WFRA-405	U.S. Well Services, LLC	Friction Reducer	Guar Gum	9000-30-0	50.00000	0.03862	
			Petroleum Distillates	64742-47-8	60.00000	0.03657	
			Suspending agent (solid)	14808-60-7	3.00000	0.00591	
			Surfactant	68439-51-0	3.00000	0.00232	
			Water	7732-18-5	40.00000	0.02645	
			Anionic Polyacrylamide	Proprietary		0.02645	
			Petroleum Distillates	64742-47-8	22.00000	0.02129	
			Ethoxylated alcohol blend	Proprietary	5.00000	0.00331	

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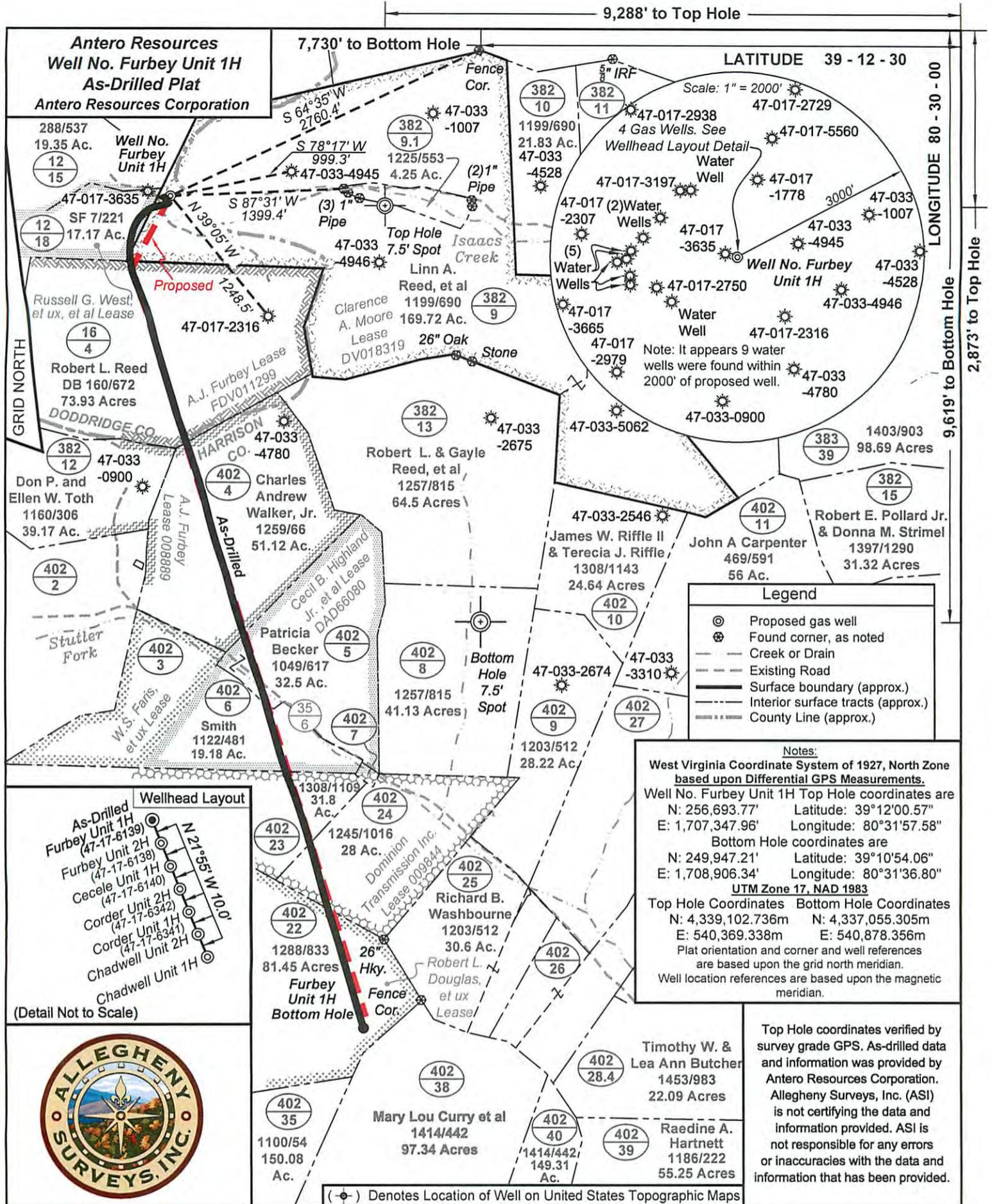
SI-1000	U.S. Well Services, LLC	Scale Inhibitor	Crystalline Salt	12125-02-9	5.00000	0.00331
			Anionic Copolymer	Proprietary		0.00469
			Ethylene Glycol	107-21-1	20.00000	0.00424
			Water	7732-18-5	30.00000	0.00354
K-BAC 1020	U.S. Well Services, LLC	Anti-Bacterial Agent				
			2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00742
			Deionized Water	7732-18-5	28.00000	0.00424
AP One	U.S. Well Services, LLC	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00182
AI-300	U.S. Well Services, LLC	Acid Corrosion Inhibitors				
			Ethylene Glycol	107-21-1	31.00000	0.00023
			N,N-Dimethylformamide	68-12-2	15.00000	0.00007
			Cinnamaldehyde	104-55-2	5.00000	0.00006
			2-Butoxyethanol	111-76-2	7.00000	0.00006
			Tar bases, quinoline derivs, benzyl chloride-quaternized	72480-70-7	13.00000	0.00006
			Water		20.00000	0.00002
			Ethoxylated Nonylphenol	68412-54-4	5.00000	0.00002
			Triethyl Phosphate	78-40-0	3.00000	0.00001
			Isopropyl Alcohol	67-63-0	3.00000	0.00001

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)

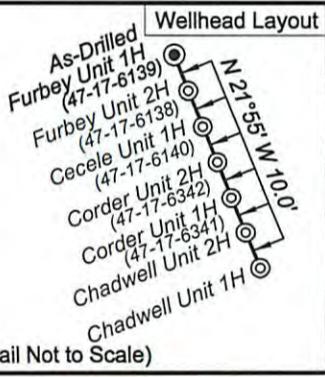
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Legend

- ⊗ Proposed gas well
- ⊕ Found corner, as noted
- Creek or Drain
- - - Existing Road
- Surface boundary (approx.)
- - - Interior surface tracts (approx.)
- County Line (approx.)

Notes:
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Furbey Unit 1H Top Hole coordinates are
 N: 256,693.77' Latitude: 39°12'00.57"
 E: 1,707,347.96' Longitude: 80°31'57.58"
 Bottom Hole coordinates are
 N: 249,947.21' Latitude: 39°10'54.06"
 E: 1,708,906.34' Longitude: 80°31'36.80"
 UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,339,102.736m N: 4,337,055.305m
 E: 540,369.338m E: 540,878.356m
 Plat orientation and corner and well references are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.



Top Hole coordinates verified by survey grade GPS. As-drilled data and information was provided by Antero Resources Corporation. Allegheny Surveys, Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

FILE NO: 187-36-U-12
 DRAWING NO: 187-12 Drilled Furbey 1H
 SCALE: 1" = 1000'
 MINIMUM DEGREE OF ACCURACY: Submeter
 PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

DATE: March 31 2015
 OPERATOR'S WELL NO. Furbey Unit 1H
 WELL NO
 47 - 017 - 06139
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: Existing Grade - 1360' Original Grade - 1365' WATERSHED: Headwaters Middle Branch QUADRANGLE: Big Isaac
 DISTRICT: Greenbrier COUNTY: Doddridge
 SURFACE OWNER: Linn A. Reed, et al Russell G. West, et ux, et al 008889; ACREAGE: 169.72 89.75
 ROYALTY OWNER: Clarence A. Moore; A.J. Furbey; A.J. Furbey; Cecil B. Highland Jr., et al Dominion Transmission Inc.; Robert L. Douglas, et ux DAD66080; 009844 ACREAGE: 184; 65; 100; 123; 60
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale DEPTH: 7,297' TVD 14,146' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
 ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
 Denver, CO 80202 Charleston, WV 25313

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