

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

API 47 - 017 - 06382 County Doddridge District Greenbrier
Quad Salem Pad Name Leonard Pad Field/Pool Name _____
Farm name Davidson, Walter & Leonard Well Number Fuego 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 4,346,305.011m Easting 534,822.388m
Landing Point of Curve Northing 4,346,392.34m Easting 535,245.76m
Bottom Hole Northing 4,344,800.626m Easting 536,445.304m

Elevation (ft) 1320' 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

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Date permit issued 10/28/2013 Date drilling commenced 1/29/2014 Date drilling ceased 6/17/2014
Date completion activities began 7/24/2014 Date completion activities ceased 2/26/2015
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 113', 212' Open mine(s) (Y/N) depths N
Salt water depth(s) ft 1302', 1911' Void(s) encountered (Y/N) depths N
Coal depth(s) ft 517', 1077', 2013' Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

Reviewed by:
A.L. 5/27/15
W.S. 6/2/15
06/05/2015

API 47-017 - 06382 Farm name Davidson, Walter & Leonard Well number Fuego 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	106.5#/J-55	N/A	Y
Surface	17-1/2"	13-3/8"	400'	New	48#/H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2543'	New	36#/J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15,005'	New	23#/P-110	N/A	Y
Tubing		2-3/8"	7796'	New	4.7#/N-80	N/A	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	196 sx	15.6	1.18	38 Cu. Ft.	0'	8 Hrs.
Surface	Class A	478 sx	15.6	1.18	278 Cu. Ft.	0'	8 Hrs.
Coal							
Intermediate 1	Class A	950 sx	15.6	1.18	796 Cu. Ft.	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1180 sx (Lead), 1178 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.30 (Lead), 1.86 (Tail)	2970 Cu. Ft.	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15,005' MD, 7419' TVD (BHL); 7513'TVD (Deepest Point Drilled) Loggers TD (ft) 14,953' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 7112'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Rikk Unit 1H API# 47-017-06228). Please reference the wireline logs submitted with Form WR-35 for the Rikk Unit 1H. 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

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 N/A

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>7438' (Top)</u> TVD	<u>7929' (Top)</u> MD
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3600 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 4012 mcfpd Oil --- bpd NGL --- bpd Water --- bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	
	<u>0</u>		<u>0</u>		
			SEE ATTACHED EXHIBIT 3		

Please insert additional pages as applicable.

Drilling Contractor Patterson - UTI Drilling Company LLC
Address 207 Carlton Drive City Eight Four State PA Zip 15330

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

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

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

Please insert additional pages as applicable.

Completed by Natalie Komp Telephone 303-357-6820
Signature *Natalie Komp* Title Permitting Agent Date 5/6/2015

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

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EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	24-Jul-14	14748'	14913'	60	Marcellus
2	4-Jan-15	14553'	14717'	60	Marcellus
3	4-Jan-15	14357'	14522'	60	Marcellus
4	5-Jan-15	14162'	14327'	60	Marcellus
5	5-Jan-15	13966'	14131'	60	Marcellus
6	5-Jan-15	13771'	13936'	60	Marcellus
7	6-Jan-15	13576'	13740'	60	Marcellus
8	7-Jan-15	13380'	13545'	60	Marcellus
9	8-Jan-15	13185'	13350'	60	Marcellus
10	8-Jan-15	12989'	13154'	60	Marcellus
11	8-Jan-15	12794'	12959'	60	Marcellus
12	9-Jan-15	12599'	12764'	60	Marcellus
13	10-Jan-15	12403'	12568'	60	Marcellus
14	10-Jan-15	12208'	12373'	60	Marcellus
15	10-Jan-15	12013'	12177'	60	Marcellus
16	11-Jan-15	11817'	11982'	60	Marcellus
17	11-Jan-15	11622'	11787'	60	Marcellus
18	12-Jan-15	11426'	11591'	60	Marcellus
19	12-Jan-15	11231'	11396'	60	Marcellus
20	12-Jan-15	11036'	11200'	60	Marcellus
21	12-Jan-15	10432'	10605'	60	Marcellus
22	13-Jan-15	10227'	10400'	60	Marcellus
23	13-Jan-15	10022'	10195'	60	Marcellus
24	13-Jan-15	9817'	9990'	60	Marcellus
25	14-Jan-15	9612'	9785'	60	Marcellus
26	14-Jan-15	9407'	9580'	60	Marcellus
27	14-Jan-15	9202'	9375'	60	Marcellus
28	14-Jan-15	8997'	9170'	60	Marcellus
29	15-Jan-15	8792'	8965'	60	Marcellus
30	15-Jan-15	8587'	8760'	60	Marcellus
31	15-Jan-15	8382'	8555'	60	Marcellus
32	15-Jan-15	8177'	8350'	60	Marcellus
33	15-Jan-15	7972'	8145'	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	4-Jan-15	66.5	7,268	N/A	5,241	264,820	7,019	N/A
2	4-Jan-15	67.2	7,167	5,995	5,516	264,630	7,011	N/A
3	4-Jan-15	64.0	7,111	6,522	5,215	263,520	7,011	N/A
4	5-Jan-15	69.2	7,244	6,349	5,999	263,890	7,011	N/A
5	5-Jan-15	69.2	7,234	5,672	5,861	263,560	6,928	N/A
6	5-Jan-15	65.0	7,256	6,040	5,491	264,460	7,028	N/A
7	6-Jan-15	63.0	7,291	5,983	5,194	265,390	6,919	N/A
8	7-Jan-15	62.0	7,366	5,875	6,133	259,170	6,680	N/A
9	8-Jan-15	66.1	7,280	5,849	5,570	267,250	6,907	N/A
10	8-Jan-15	67.7	7,387	5,898	5,385	271,280	6,846	N/A
11	8-Jan-15	65.0	7,322	5,920	5,051	264,000	6,842	N/A
12	9-Jan-15	67.0	7,329	6,000	5,126	264,660	7,407	N/A
13	10-Jan-15	63.9	7,143	6,208	5,969	261,450	7,465	N/A
14	10-Jan-15	67.3	7,335	5,844	5,555	267,100	6,787	N/A
15	10-Jan-15	63.0	7,479	5,996	4,837	263,778	6,735	N/A
16	11-Jan-15	65.0	7,136	5,706	5,270	264,370	6,748	N/A
17	11-Jan-15	64.0	7,361	5,808	5,243	155,780	5,194	N/A
18	12-Jan-15	65.7	6,924	5,746	5,876	260,030	6,707	N/A
19	12-Jan-15	68.5	7,014	5,818	5,838	268,550	6,713	N/A
20	12-Jan-15	68.0	7,074	5,728	5,370	263,590	6,677	N/A
21	12-Jan-15	62.9	7,137	6,317	4,796	246,090	6,816	N/A
22	13-Jan-15	67.8	7,364	6,626	5,308	258,190	6,697	N/A
23	13-Jan-15	65.3	7,396	6,461	5,505	263,060	6,615	N/A
24	13-Jan-15	52.7	7,715	6,352	4,776	107,110	6,919	N/A
25	14-Jan-15	66.0	6,998	6,168	5,489	265,560	6,589	N/A
26	14-Jan-15	67.1	6,997	5,660	5,716	251,610	6,354	N/A
27	14-Jan-15	67.4	7,146	5,616	4,782	228,380	7,057	N/A
28	14-Jan-15	66.0	6,912	6,167	5,858	251,330	6,320	N/A
29	15-Jan-15	64.5	7,159	6,723	5,367	260,230	6,470	N/A
30	15-Jan-15	65.9	6,792	6,063	5,659	257,620	6,489	N/A
31	15-Jan-15	65.4	6,835	6,184	5,523	257,630	6,549	N/A
32	15-Jan-15	65.6	6,702	6,637	5,127	263,450	6,448	N/A
33	15-Jan-15	65.5	6,494	6,149	5,123	260,430	6,407	N/A
AVG=		65.4	7,163	6,065	5,417	8,351,968	222,365	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
Freshwater	113	NA	113	NA
Freshwater	212	NA	212	NA
Siltstone	0	217	0	217
Sand	est. 217	457	est. 217	457
Siltstone	est. 457	497	est. 457	497
Sandstone	est. 497	517	est. 497	517
Coal	est. 517	657	est. 517	657
Siltstone	est. 657	697	est. 657	697
Sandstone	est. 697	857	est. 697	857
Siltstone	est. 857	927	est. 857	927
Limestone	est. 927	1,057	est. 927	1,057
Sandstone/Silt	est. 1057	1,077	est. 1057	1,077
Coal	est. 1077	1,477	est. 1077	1,477
Limestone/Silt	est. 1477	1,577	est. 1477	1,577
Siltstone	est. 1577	1,737	est. 1577	1,737
Sandstone/Limestone	est. 1737	2,004	est. 1737	2,004
Sandstone/Silt	est. 2004	2,013	est. 2004	2,013
Coal	est. 2013	2,317	est. 2013	2,317
Sandstone/Silt	est. 2317	2,399	est. 2317	2,399
Big Lime	2,399	2,512	2,399	2,512
Big Injun	2,512	2,840	2,512	2,840
Gantz Sand	2,840	2,970	2,840	2,970
Fifty Foot Sandstone	2,970	3,132	2,970	3,132
Gordon	3,132	3,396	3,132	3,397
Fifth Sandstone	3,396	3,481	3,397	3,482
Bayard	3,481	3,747	3,482	3,749
Warren	3,747	3,987	3,749	3,991
Spechley	3,987	4,300	3,991	4,305
Baltown	4,300	4,759	4,305	4,770
Bradford	4,759	5,359	4,770	5,397
Benson	5,359	5,630	5,397	5,697
Alexander	5,630	5,830	5,697	5,920
Elk	5,830	6,390	5,920	6,541
Rhinestreet	6,390	6,916	6,541	7,112
Sycamore	6,916	7,163	7,112	7,410
Middlesex	7,163	7,281	7,410	7,576
Burkett	7,281	7,310	7,576	7,623
Tully	7,310	7,438	7,623	7,929
Marcellus	7,438	NA	7,929	NA
Onondaga**	7,489	NA	10,602	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 see wireline logs for Rikk Unit 1H, API# 47-017-06228). The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

**A portion of this well drilled less than 5 feet into the Onondaga from 10,625'-11,016' (MD) in the lateral, but this section was not perforated or completed.

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	1/4/2015
Job End Date:	1/15/2015
State:	West Virginia
County:	Doddridge
API Number:	47-017-06382-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Fuego Unit 1H
Longitude:	-80.59635000
Latitude:	39.26538600
Datum:	NAD83
Federal/Tribal Well:	NO
True Vertical Depth:	7,513
Total Base Water Volume (gal):	9,339,330
Total Base Non Water Volume:	419,056

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	90.02260	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	9.65292	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.50000	0.08426	
			Hydrogen Chloride	7641-01-1	18.00000	0.02013	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.04544	
			Petroleum Distillates	64742-47-8	60.00000	0.04304	
			Suspending agent (solid)	14808-60-7	3.00000	0.00695	
			Surfactant	68439-51-0	3.00000	0.00273	
WFRRA-405	U.S. Well Services, LLC	Friction Reducer	Water	7732-18-5	40.00000	0.02867	
			Anionic Polyacrylamide	Proprietary		0.02867	
			Petroleum Distillates	64742-47-8	22.00000	0.02308	
			Crystalline Salt	12125-02-9	5.00000	0.00358	



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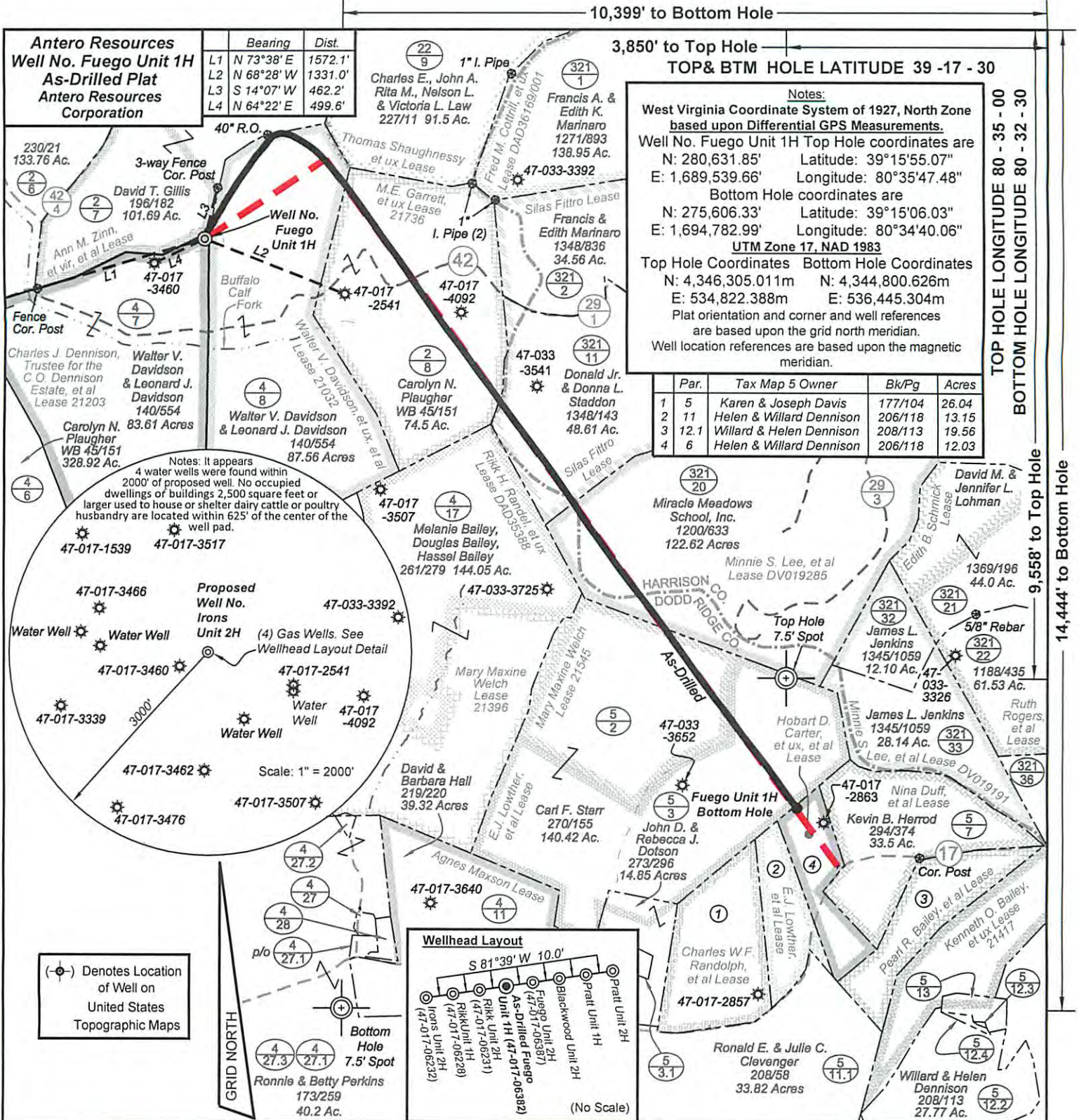
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SI-1100	U.S. Well Services	Scale Inhibitor	Ethoxylated alcohol blend	Proprietary	5.00000	0.00358
			DI Water	7732-18-5	80.00000	0.01036
			Ethylene Glycol	107-21-1	40.00000	0.00586
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	10.00000	0.00175
			2-Phosphonobutane 1,2,4 tricarboxylic salt	37971-36-1	10.00000	0.00167
			hexamethylenediamine tetra (methylene phosphonic acid)	38820-59-6	10.00000	0.00162
			Copolymer of Maleic and Acrylic acid	26677-99-6	10.00000	0.00153
			bis (hexamethylene) triamine penta (methylene phosphonic acid) - phosphate acid	40623-75-4	10.00000	0.00149
			Acrylic polymer	62255-49-9	5.00000	0.00065
K-BAC 1020	U.S. Well Services, LLC	Anti-Bacterial Agent				
			2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00471
			Deionized Water	7732-18-5	28.00000	0.00269
AP One	U.S. Well Services, LLC	Gel Breakers	Ammonium Persulfate	7727-54-0	100.00000	0.00170
AI-301	U.S. Well Services, LLC	Acid Corrosion Inhibitors	Diethylene Glycol	111-46-6	30.00000	0.00013
			Methanamine	100-97-0	20.00000	0.00010
			Polyethylene polyamine	68603-67-8	10.00000	0.00004
			Hydrogen Chloride	7647-01-0	10.00000	0.00004
			Coco amine	61791-14-8	5.00000	0.00002
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)

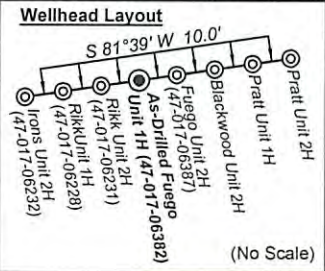
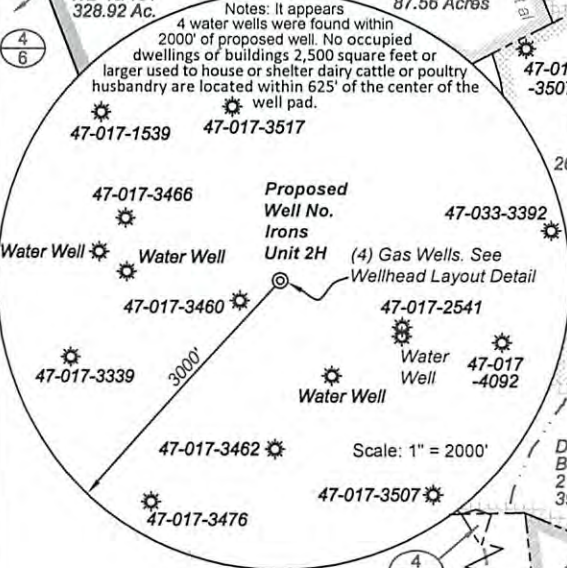
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TOP & BTM HOLE LATITUDE 39-17-30

Notes:
 West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Fuego Unit 1H Top Hole coordinates are
 N: 280,631.85' Latitude: 39°15'55.07"
 E: 1,689,539.66' Longitude: 80°35'47.48"
 Bottom Hole coordinates are
 N: 275,606.33' Latitude: 39°15'06.03"
 E: 1,694,782.99' Longitude: 80°34'40.06"
UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,346,305.011m N: 4,344,800.626m
 E: 534,822.388m E: 536,445.304m
 Plat orientation and corner and well references are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.

Par.	Tax Map 5 Owner	Bk/Pg	Acres
1	Karen & Joseph Davis	177/104	26.04
2	Helen & Willard Dennison	206/118	13.15
3	Willard & Helen Dennison	208/113	19.56
4	Helen & Willard Dennison	206/118	12.03



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.

Legend

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

FILE NO: 190-30-GR-13
 DRAWING NO: Fuego 1H Well Plat As-Drilled
 SCALE: 1" = 1200'
 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: February 26 2015
 OPERATOR'S WELL NO. Fuego Unit 1H
 API WELL NO
 47 - 017 - 06382
 STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 LOCATION: ELEVATION: 1320' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: Salem
 DISTRICT: Greenbrier COUNTY: Doddridge
 SURFACE OWNER: Walter V. Davidson & Leonard J. Davidson
 ROYALTY OWNER: Charles J. Dennison, Trustee for the C.O. Dennison Estate, et al LEASE NO: 21736; DV019285; 21545 ACREAGE: 83.61 45.75; 176
 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: 7,419' TVD 15,005' 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

06/05/2015