

APPROVED

WR-35
Rev. 8/23/13

Page ___ of ___

NAME: [Signature]

DATE 6/14/17

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Office of Oil & Gas

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

MAY 2017

API 47-017-06718 County Doddridge District Central
 Quad West Union 7.5' Pad Name Rock Run Pad Field/Pool Name -----
 Farm name George D. Lambert Well Number Devonian 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 4350635m Easting 515978m
 Landing Point of Curve Northing 4350704.367m Easting 515805.566m
 Bottom Hole Northing 4353752m Easting 514564m

Elevation (ft) 1171' 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 5/28/2015 Date drilling commenced 5/30/2015 Date drilling ceased 8/23/2015
 Date completion activities began 7/25/2016 Date completion activities ceased 10/15/2016
 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 112', 147', 295' Open mine(s) (Y/N) depths No
 Salt water depth(s) ft 750', 987' Void(s) encountered (Y/N) depths No
 Coal depth(s) ft 1580' Cavern(s) encountered (Y/N) depths No
 Is coal being mined in area (Y/N) No

Reviewed by:

09/15/2017

API 47-017 - 06718 Farm name George D. Lambert Well number Devonian 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#, 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"	2580'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	14057**	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6917'		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details *Please note this well was drilled to 17961' however casing was only ran to 14057'

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	114 sx	15.6	1.20	38	0'	8 Hrs.
Surface	Class A	443 sx	15.6	1.18	251	0'	8 Hrs.
Coal							
Intermediate 1	Class A	991 sx	15.1	1.18	808	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	877 sx (Lead) 1175 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.84 (Tail)	2744	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17961' MD, 6708' TVD (BHL) & 6751' TVD (Deepest Point Drilled) Loggers TD (ft) 17912' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6022'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Wentz Unit 1H API #47-017-06476). Please reference the wireline logs submitted with Form WR-35 for Wentz 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 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 N/A

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API 47- 017 - 06718 Farm name George D. Lambert Well number Devonian Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6690' (TOP)</u> TVD	<u>6905' (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 11662 mcfpd Oil 110 bpd NGL --- bpd Water 264 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>		<u>BOTTOM</u>		<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	
*PLEASE SEE ATTACHED EXHIBIT 3					

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Please insert additional pages as applicable.

Drilling Contractor Patterson - UTI Drilling Company, LLC
 Address 207 Carlton Dr. City Eighty Four State PA Zip 15330

Logging Company Allied Horizontal Wireline Services
 Address 381 Colonial Manor Rd. City North Huntingdon State PA Zip 15642

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

Stimulating Company Cal Frac Well Services
 Address 717 17th Street Suite 1448 City Denver State CO Zip 80202

Please insert additional pages as applicable.

Completed by Samantha Klaas Telephone 303-357-6759
 Signature *Samantha Klaas* Title Permitting Agent Date 05/05/2017

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	7/25/2016	13803	13948	60	Marcellus
2	8/22/2016	13601	13771	60	Marcellus
3	8/22/2016	13400	13570	60	Marcellus
4	8/23/2016	13198	13368	60	Marcellus
5	8/24/2016	12997	13167	60	Marcellus
6	8/24/2016	12795	12965	60	Marcellus
7	8/25/2016	12594	12764	60	Marcellus
8	8/25/2016	12392	12562	60	Marcellus
9	8/26/2016	12190	12360	60	Marcellus
10	8/26/2016	11989	12159	60	Marcellus
11	8/27/2016	11787	11957	60	Marcellus
12	8/27/2016	11586	11756	60	Marcellus
13	8/28/2016	11384	11554	60	Marcellus
14	8/29/2016	11183	11353	60	Marcellus
15	8/30/2016	10981	11151	60	Marcellus
16	8/30/2016	10779	10949	60	Marcellus
17	8/31/2016	10578	10748	60	Marcellus
18	8/31/2016	10376	10546	60	Marcellus
19	9/1/2016	10175	10345	60	Marcellus
20	9/1/2016	9973	10143	60	Marcellus
21	9/2/2016	9772	9942	60	Marcellus
22	9/2/2016	9570	9740	60	Marcellus
23	9/3/2016	9368	9538	60	Marcellus
24	9/3/2016	9167	9337	60	Marcellus
25	9/4/2016	8965	9135	60	Marcellus
26	9/4/2016	8764	8934	60	Marcellus
27	9/5/2016	8562	8732	60	Marcellus
28	9/5/2016	8361	8531	60	Marcellus
29	9/6/2016	8159	8329	60	Marcellus
30	9/6/2016	7957	8127	60	Marcellus
31	9/7/2016	7756	7926	60	Marcellus
32	9/7/2016	7554	7724	60	Marcellus
33	9/7/2016	7353	7523	60	Marcellus
34	9/8/2016	7151	7321	60	Marcellus
35	9/8/2016	6950	7120	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	8/21/2016	71.0	7372	0	4716	357115	8393	N/A
2	8/22/2016	60.5	6878	5643	6017	357300	8437	N/A
3	8/22/2016	59.3	6912	5560	5004	357500	8448	N/A
4	8/23/2016	69.1	7035	5381	4960	358450	8360	N/A
5	8/24/2016	73.1	7400	5422	5165	356950	8331	N/A
6	8/24/2016	79.7	7564	5391	4780	357100	8320	N/A
7	8/25/2016	72.8	7412	5622	5098	337410	8304	N/A
8	8/25/2016	77.2	7576	5446	4042	356600	8332	N/A
9	8/26/2016	78.8	7336	5378	4787	357350	8300	N/A
10	8/26/2016	78.5	7365	5483	5457	357250	8294	N/A
11	8/27/2016	78.7	7323	5606	5086	357950	8310	N/A
12	8/27/2016	79.7	7394	5737	5060	357450	8264	N/A
13	8/28/2016	83.6	7808	5683	5015	358470	8179	N/A
14	8/29/2016	71.0	7704	5422	4137	286750	10240	N/A
15	8/30/2016	79.6	7140	5555	4750	358750	10917	N/A
16	8/30/2016	84.3	7520	5336	4858	336300	10559	N/A
17	8/31/2016	78.9	6922	5292	5039	356900	8224	N/A
18	8/31/2016	84.8	7106	5306	5539	357200	8185	N/A
19	9/1/2016	83.1	7109	5522	5143	357650	8297	N/A
20	9/1/2016	83.9	7020	5400	4387	357600	8408	N/A
21	9/2/2016	74.1	7381	5385	5154	296650	9904	N/A
22	9/2/2016	84.7	6809	5208	5352	357450	8311	N/A
23	9/3/2016	85.7	6838	5218	4776	357600	8090	N/A
24	9/3/2016	83.6	7061	5278	5355	356200	8867	N/A
25	9/4/2016	85.2	6717	5130	4017	357300	8072	N/A
26	9/4/2016	67.6	7535	5173	4892	233250	8148	N/A
27	9/5/2016	84.8	6698	4978	5350	357500	8239	N/A
28	9/5/2016	86.5	6562	5398	5013	356600	8006	N/A
29	9/6/2016	82.8	6626	5366	5109	357100	8015	N/A
30	9/6/2016	84.2	6565	5170	5114	357300	8009	N/A
31	9/7/2016	81.7	6795	5329	4636	357600	9412	N/A
32	9/7/2016	85.3	6784	5361	5170	358000	7843	N/A
33	9/7/2016	82.9	6653	4382	4674	356750	8227	N/A
34	9/8/2016	82.8	6542	5431	4701	357950	8255	N/A
35	9/8/2016	84.2	6517	5436	4540	357000	8535	N/A
AVG=		79.0	7,085	5,212	4,940	12,212,295	8,544	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	112'	N/A	112'	N/A
Fresh Water	147'	N/A	147'	N/A
Fresh Water	295'	N/A	295'	N/A
Sandstone	0	97	0	97
Shale	est. 97	577	est. 97	577
Sandstone	est. 577	777	est. 577	777
Shale	est. 777	1,017	est. 777	1,017
Sandstone	est. 1017	1097	est. 1017	1097
Shale	est. 1097	1177	est. 1097	1177
Sandstone	est. 1177	1217	est. 1177	1217
Shale	est. 1217	1317	est. 1217	1317
Sandstone/siltstone	est. 1317	1357	est. 1317	1357
Shale	est. 1357	1417	est. 1357	1417
Sandstone	est. 1417	1557	est. 1417	1557
Trace Coal/Sandstone	est. 1557	1597	est. 1557	1597
Sandstone	est. 1597	1737	est. 1597	1737
Shale	est. 1737	1837	est. 1737	1837
Sandstone	est. 1837	1877	est. 1837	1877
Shale	est.1877	1637	est.1877	1637
Sandstone	est. 1637	1997	est. 1637	1997
Shale	est. 1997	2103	est. 1997	2107
Big Lime	2103	2612	2107	2616
Gantz Sand	2612	2702	2616	2706
Fifty Foot Sandstone	2702	2821	2706	2825
Gordon	2821	3146	2825	3150
Fifth Sandstone	3146	3817	3150	3821
Speechley	3817	4169	3821	4173
Baltown	4169	4619	4173	4623
Bradford	4619	5056	4623	5060
Benson	5056	5359	5060	5363
Alexander	5359	5499	5363	5503
Elk	5499	6008	5503	6012
Rhinestreet	6008	6334	6012	6365
Sycamore	6334	6501	6365	6581
Middlesex	6501	6624	6581	6769
Burkett	6624	6652	6769	6820
Tully	6652	6690	6820	6905
Marcellus	6690	N/A	6905	N/A

*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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Hydraulic Fracturing Fluid Product Component Information Disclosure

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Job Start Date:	8/21/2016
Job End Date:	9/8/2016
State:	West Virginia
County:	Doddridge
API Number:	47-017-06718-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Devonian Unit 1H
Latitude:	39.30486940
Longitude:	-80.81484170
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,748
Total Base Water Volume (gal):	12,761,370
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	Supplied by Operator	Base Fluid					
			Water	7732-18-5	100.00000	89.54745	
DAP-925	CWS	Acid Corrosion Inhibitor					
				Listed Below			

DWP-975	CWS	Breaker					
				Listed Below			
DWP-844	CWS	Microbiocide					
				Listed Below			
DWP-641	CWS	Friction Reducer					
				Listed Below			
Acetic Acid	CWS	Acid					
				Listed Below			
DAP-902	CWS	Scale Inhibitor					
				Listed Below			
DWP-111	CWS	Gel Slurry					
				Listed Below			
Sand (Proppant)	CWS	Propping Agent					
				Listed Below			
DWP-901	CWS	Breaker					
				Listed Below			
DAP-103	CWS	Iron Control					

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				Listed Below			
Other Chemical (s)	Listed Above	See Trade Name (s) List					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Crystalline silica (Quartz)	14808-60-7	100.00000	10.22747	
			Hydrochloric acid	7647-01-0	37.00000	0.05850	
			Polymer	26100-47-0	45.00000	0.03040	
			Guar gum	9000-30-0	60.00000	0.02468	
			Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.02468	
			Paraffinic hydrocarbon solvent	64742-47-8	30.00000	0.02027	
			Calcite	471-34-1	1.00000	0.01932	
			Ammonium chloride	12125-02-9	11.00000	0.00743	
			2-Propenoic acid, homopolymer, sodium salt	9003-04-7	40.00000	0.00641	
			Polyethylene glycol mixture	25322-68-3	54.50000	0.00600	
			Goethite	1310-14-1	0.10000	0.00382	
			Illite	12173-60-3	1.00000	0.00285	
			Sorbitan monooleate	1338-43-8	4.00000	0.00270	
			2,2-Dibromo-3-Nitrilopropionamide	10222-01-2	20.00000	0.00220	
			Quaternary ammonium compounds, bis (hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00206	
			Polyethylene glycol monooleate	9004-96-0	3.00000	0.00203	
			Apatite	64476-38-6	0.10000	0.00198	
			Biotite	1302-27-8	0.10000	0.00198	
			1,2-Propanediol	57-55-6	10.00000	0.00160	

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			Sorbitol tetraoleate	61723-83-9	2.00000	0.00135
			Ilmenite	98072-94-7	0.10000	0.00106
			Amines, tallow alkyl, ethoxylated	61791-26-2	1.00000	0.00068
			Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1.50000	0.00062
			Ammonium Persulfate	7727-54-0	100.00000	0.00056
			Citric acid	77-92-9	60.00000	0.00055
			Sodium bromide	7647-15-6	4.00000	0.00044
			Alcohols, C12-14, ethoxylated	84133-50-6	0.50000	0.00034
			Dibromoacetonitrile	3252-43-5	3.00000	0.00033
			Acrylamide	79-06-1	0.10000	0.00007
			Vinylidene chloride-methyl acrylate copolymer	25038-72-6	30.00000	0.00007
			Methanol	67-56-1	60.00000	0.00004
			Alcohols, C14-15, ethoxylated	68951-67-7	30.00000	0.00002
			Modified thiourea polymer	68527-49-1	30.00000	0.00002
			Fatty acids, tall-oil	61790-12-3	30.00000	0.00002
			Hydrated magnesium silicate	14807-96-6	1.00000	0.00001
			Sodium chloride	7647-14-5	1.00000	0.00001
			Poly(tetrafluoroethylene)	9002-84-0	1.00000	0.00001
			Alkenes, C>10 a-	64743-02-8	5.00000	0.00001
			Formaldehyde	50-00-0	0.10000	0.00001
			Propargyl Alcohol	107-19-7	10.00000	0.00001

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* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

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

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

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)

COUNTY NAME PERMIT NAME COUNTY STATE COUNTY PERMIT
 47 017 06718
 COUNTY DODDRIDGE STATE 47 COUNTY PERMIT
 SURFACE OWNER: GEORGE D. LAMBERT ACREAGE: 37.51 ACRES +/-
 OIL & GAS ROYALTY OWNER: FLORENCE SWEENEY ET AL; G.W. PEGGOTT ET AL; JONATHAN DAVIS ET AL; NANCY HELLER ET AL; LEASE ACREAGE: 103 ACRES; 174.6 ACRES; 62 ACRES; 69 ACRES;
 GLADYS VIRGINIA HILTON; SON, EUGENE V. CHERRY, JR.; CARL JAMES, JAMES DONK ET AL; T.M. POWELL; DOROTHY A. PEGGOTT; 60 ACRES; 120 ACRES; 60 ACRES; 60 ACRES; 60 ACRES; 60 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 & REFLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,708' TVD 17,961' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP STREET DENVER, CO 80202
 FORM WW-8

JOB # 15-003VA DRAWING # DEVONIAN/HAD
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMITTER
 PROVEN SOURCE OF ELEVATION SUBMITTER MAPPING GRADE GPS
 STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS
 WASTE DISPOSAL GAS X LIQUID INJECTION
 (IF GAS) PRODUCTION X STORAGE DEEP SHALLOW X
 LOCATION: ELEVATION 1,177' AS-DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 QUADRANGLE WEST UNION 7.6 DISTRICT CENTRAL
 SURFACE OWNER: GEORGE D. LAMBERT ACREAGE: 37.51 ACRES +/-
 OIL & GAS ROYALTY OWNER: FLORENCE SWEENEY ET AL; G.W. PEGGOTT ET AL; JONATHAN DAVIS ET AL; NANCY HELLER ET AL; LEASE ACREAGE: 103 ACRES; 174.6 ACRES; 62 ACRES; 69 ACRES;
 GLADYS VIRGINIA HILTON; SON, EUGENE V. CHERRY, JR.; CARL JAMES, JAMES DONK ET AL; T.M. POWELL; DOROTHY A. PEGGOTT; 60 ACRES; 120 ACRES; 60 ACRES; 60 ACRES; 60 ACRES; 60 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 & REFLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,708' TVD 17,961' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP STREET DENVER, CO 80202
 FORM WW-8



WELL 1H TOP HOLE INFORMATION:
 N: 295.873ft E: 1,627.940ft
 LAT: 39°18'17.54" LON: 80°48'53.45"
 BOTTOM HOLE INFORMATION:
 N: 306.181ft E: 1,623.470ft
 LAT: 39°19'58.75" LON: 80°49'52.26"
WELL 1H (UTM) ZONE 17 COORDS:
 N: 4,350.635m E: 515.978m
 N: 4,353.752m E: 514.564m
BOTTOM HOLE INFORMATION:
 N: 4,350.635m E: 515.978m
 N: 4,353.752m E: 514.564m

AS DRILLED DATA:
 WELLS 1H TOP HOLE INFORMATION:
 N: 295.873ft E: 1,627.940ft
 LAT: 39°18'17.54" LON: 80°48'53.45"
 BOTTOM HOLE INFORMATION:
 N: 306.181ft E: 1,623.470ft
 LAT: 39°19'58.75" LON: 80°49'52.26"
WELL 1H (UTM) ZONE 17 COORDS:
 N: 4,350.635m E: 515.978m
 N: 4,353.752m E: 514.564m
BOTTOM HOLE INFORMATION:
 N: 4,350.635m E: 515.978m
 N: 4,353.752m E: 514.564m



LATITUDE 39.20'00" LONGITUDE 80.47'30"

LATITUDE 39°20'00"

6,560'

11,178' TO BOTTOM HOLE

LATITUDE 39°20'00"

LONGITUDE 80°47'30"

10,387'

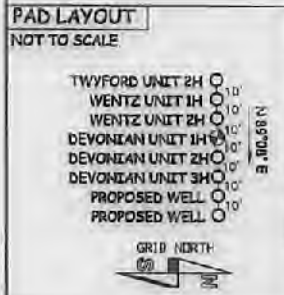
LONGITUDE 80°47'30"

Antero Resources Corporation
Well No. Devonian Unit 1H
47-017-06718 (AS DRILLED)

NOTE:
1 WATER WELL WAS
LOCATED WITHIN 2000'
OF THE CENTER OF PAD

AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
N: 295,873ft E: 1,627,940ft
LAT: 39°18'17.54" LON: 80°48'53.45"
BOTTOM HOLE INFORMATION:
N: 306,181ft E: 1,623,470ft
LAT: 39°19'58.75" LON: 80°49'52.26"
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 1H TOP HOLE INFORMATION:
N: 4,350,635m E: 515,978m
BOTTOM HOLE INFORMATION:
N: 4,353,752m E: 514,564m



- NOTE: 1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER 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 ALLEGHENY SURVEYS, INC. 3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION. 4. WLS IS NOT CERTIFYING THE DATA AND DEFORMATION PROVIDED LISTED IN NOTES 1 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 DEFORMATION THAT HAS BEEN PROVIDED.



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

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

JOB # 15-003WA
DRAWING # DEVONIANHAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS

LEGEND

---	Surface Owner Boundary Lines +/-
---	Interior Surface Tracts +/-
⊕	Found monument, as noted
○	Proposed Well Path
⊗	As Drilled Well Path

DATE 01/08/15
OPERATOR'S WELL# DEVONIAN UNIT #1H

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
LOCATION: ELEVATION 1,181' ORIGINAL-1,171' AS-DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
QUADRANGLE WEST UNION 7.5' DISTRICT CENTRAL COUNTY DODDRIDGE STATE STATE COUNTY PERMIT
SURFACE OWNER GEORGE D. LAMBERT ACREAGE 37.51 ACRES +/-
OIL & GAS ROYALTY OWNER FLORA SWEENEY ET AL; G.W. PIGGOTT ET UX; JONATHAN DAVIS ET AL; NANCY HELLER ET VIR. LEASE ACREAGE 103 ACRES +/- 124.5 ACRES +/- 52 ACRES +/- 69 ACRES +/-
GLADYS VIRGINIA HILEY NELSON; EUGENE V. CHIPPS, JR.; CARL JAMES; JAMES DOWK ET UX; ILA M. POWELL; DOUG JAMES; MARGARET MILLER; DOROTHY A. PIGGOTT 60.55 ACRES +/- 120 ACRES +/- 30 ACRES +/- 30 ACRES +/- 59 ACRES +/- 30.1 ACRES +/- 17.5 ACRES +/- 46 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 6,708' TVD 17,961' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
ADDRESS 1815 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313

09/15/2017

DEVONIAN UNIT 1H (ROCK RUN PAD) - DATA COLLECTED ON OFFSET WELLS PER ADDENDUM PG 2

UWI (APINum)	Well Name	Well Number	Operator	Hist Oper	TD	ELEV_GR	TD (SSTVD)	Perfs (shallowest, deepest)
47017039420000	CHIPPS II EUGENE VANCE CHIPPS	CHIPPS2	DEVONIAN APPALACHIAN	DEVONIAN APPALACHIAN	5900	759	-5141	no perfs recorded
47017028140000	MCCUTCHEON W P	J-17	ENERGY CORP OF AMER	J & J ENTERPRISES	5497	1000	-4497	5299'-5331' (Alexander)
47017038900000	SHINN S A HEIRS	JK-1045	SENECA-UPSHR PET LLC	J & J ENTERPRISES	5321	866	-4455	4315'-4343' (Riley), 5017'-5064' (Alexander)
47017024370000	HAUGHT W R & LENNAG	H-745	POSTROCK EASTERN PRO	HAUGHT G L & SONS	5421	968	-4453	5128'-5176' (Alexander)
47017032520000	MCCUTCCHAN & HAINES	J-793	ENERGY CORP OF AMER	J & J ENTERPRISES	5500	1092	-4408	4989'-4992' (Benson)
47017032490000	MCCUTCCHAN & HAINES	J-795	ENERGY CORP OF AMER	J & J ENTERPRISES	5363	963	-4400	2915' (Fifth), 5209' (Alexander)
47017043220000	MORRIS C BURKE & SMITH S A HEIRS	2	KEY OIL COMPANY	KEY OIL INCORPORATED	5663	1265	-4398	3945'-4990' (Balltown), 5436'-5526' (Alexander)
47017043490000	MURRAY GLENVA ET AL	2	MURVIN&MEIER OIL CO	MURVIN&MEIER OIL CO	5590	1196	-4394	3472'-3916' (Speechley-Balltown), 5008'-5097' (Riley-Benson)
47017032530000	MCCUTCCHAN & HAINES	J-794	ENERGY CORP OF AMER	J & J ENTERPRISES	5576	1184	-4392	2262' (Big Injun), 5364'-5374' (Alexander)
47017041610000	SHEPHERD HOLDING CO ET AL	1	KEY OIL COMPANY	KEY OIL INCORPORATED	5336	962	-4374	4429'-4478' (Riley), 5126'-5173' (Alexander)
47017028110000	DOAK ALEXANDER HEIR	J-178	ENERGY CORP OF AMER	J & J ENTERPRISES	5409	1050	-4359	2664' (Gordon), 5255' (Alexander)
47017041600000	MILLER MARGARET	1	KEY OIL COMPANY	KEY OIL INCORPORATED	5320	965	-4355	4435'-4461' (Riley), 5120'-5258' (Alexander)
47017038990000	CHIPPS EUGENE VANCE II & CHIPPS BRIDGE	1	NEW FREEDOM ENERGY	DEVONIAN APPALACHIAN	5148	797	-4351	1782'-1783' (Big Injun), 4928'-4961' (Alexander)
47017038590000	JAMES LAWRENCE ETAL	1	MAY GAS CO	RARE EARTH ENERGY	5091	748	-4343	3965'-3972' (Bradford), 4899'-4949' (Alexander)
47017042510000	JAMES CARL G	2	MURVIN&MEIER OIL CO	MURVIN OIL COMPANY	5073	755	-4318	3483'-3661' (Balltown), 4637'-4639' (Benson)
47017038650000	DOAK LAWRENCE HEIRS	2	MAY GAS CO	RARE EARTH ENERGY	5346	1052	-4294	4499'-4547' (Riley), 5200'-5251' (Alexander)
47017029540000	HAMMER LORENA	J-390	ENERGY CORP OF AMER	J & J ENTERPRISES	5267	985	-4282	4493' (Riley), 5215' (Alexander)
47017035590000	WAGNER	1	CONSOL GAS COMPANY	STONEWALL GAS	4972	832	-4140	4299'-4324' (Riley), 4709'-4712' (Benson)
47017019440001	SUMMERS DONALD L	3611	CONSOL GAS COMPANY	DOMINION TRANSMISSION	4404	955	-3449	
47017024380000	HAUGHT W R & L G	H-746	POSTROCK EASTERN PRO	HAUGHT G L & SONS	3615	1052	-2563	
47017309480000	JOHN R HILEY	2	UNKNOWN	UNKNOWN	2748	835	-1913	
47017301990000	J I HILEY	C-109	HOPE CONSTR & REFG	HOPE CONSTR & REFG	2950	1071	-1879	
47017000210000	W V HOGUE	4982	MT ST WELL TENDING	THE PHILADELPHIA CO	2843	1054	-1789	
47017010790000	ELIZABETH THOMAS	1	PRIOR FERRELL L	PRIOR FERRELL L	2553	771	-1782	
47017000150000	W V HOGUE	2	PHILADELPHIA OIL	PHILADELPHIA OIL	2749	973	-1776	
47017000010000	LEWIS MAXWELL	1	CARNegie PRODUCTION	PHILADELPHIA OIL	2681	934	-1747	
47017000160000	G W PIGOTT	1140	HOPE CONSTR & REFG	HOPE CONSTR & REFG	2780	1070	-1710	
47017000340000	J R HILEY	1	SHINN GAS CO	SHINN GAS CO	2425	734	-1691	
47017303970000	J W MULLIGAN	1	PHILADELPHIA OIL	PHILADELPHIA OIL	2753	1074	-1679	
47017307090000	J I HILEY	4728	GRIBBLE W D	GRIBBLE W D	2838	1168	-1670	
47017000200000	HELEN V HUDSON	4976	MT ST WELL TENDING	PHILADELPHIA OIL	2770	1105	-1665	
47017310540000	H V HUDSON	1	MOSES WILLIAM	MOSES WILLIAM	2712	1061	-1651	
47017000120000	J R HILEY	1	SHINN GAS CO	SHINN GAS CO	2734	1090	-1644	
47017306770000	S L FORD	3	PITTSBURGH&W VA GAS	PITTSBURGH&W VA GAS	2692	1061	-1631	
47017309300000	W K SHINN	4773	GRIBBLE W D	GRIBBLE W D	2615	997	-1618	
47017310120000	JOHN R RILEY	1	UNKNOWN	UNKNOWN	2734	1117	-1617	
47017002190000	C POWELL & V C DAVIS	1	MOUNTAINEER OIL&GAS	MOUNTAINEER OIL&GAS	2610	1001	-1609	
47017000350000	J R HILEY	4	DROPPELMAN J P	DROPPELMAN J P	2491	917	-1574	
47017023610000	HAMMER & MCCUTCCHAN	2	DUPKE ROGER C OIL CO	INDUSTRIAL GAS ASSOC	2396	990	-1406	
47017023560000	SHEPARD N ET AL	1	DUPKE ROGER C OIL CO	INDUSTRIAL GAS ASSOC	2303	920	-1383	
47017023590000	L G HAMMER ET AL	1	DUPKE ROGER C OIL CO	INDUSTRIAL GAS ASSOC	2300	918	-1382	
47017025140000	HAMMER G HANES L	1	DUPKE ROGER C OIL CO	INDUSTRIAL GAS ASSOC	2380	1000	-1380	
47017033820000	HILEY H H HEIRS	2	SPENCER HUGH	SPENCER HUGH	2228	897	-1331	
47017301020000	OKEY WASHBURN	112	DEEM F S	DEEM F S	1987	826	-1161	
47017303960000	C F HUDSON	1	PHILADELPHIA OIL	PHILADELPHIA OIL	2299	1176	-1123	
47017014020000	MARY HILEY	1	CUTLIP J H	CUTLIP J H	1965	848	-1117	
47017012470000	JOHN M L SMITH	1	MUTSCHELKNAUS C W	CUTLIP & CREMER	1964	849	-1115	
47017306920000	HEZEKIAH HILEY	1	GRIBBLE W D	GRIBBLE W D	2100	990	-1110	
47017301010000	HENDERSON WALTON	1	DEEM F S	DEEM F S	1880	802	-1078	
47017302660000	B W FOLEY	4428	BEREN I H	BEREN I H	2017	945	-1072	
47017301600000	E A HENDERSHOT	3733	HOPE NATURAL GAS	HOPE NATURAL GAS	1930	870	-1060	
47017301830000	W V HOGE/SMITH	1	PHILADELPHIA OIL	PHILADELPHIA OIL	2180	1120	-1060	
47017019440000	CAIN EDWIN	3611	CONSOL GAS SUPPLY CRP	CONSOL GAS SUPPLY CRP	2010	955	-1055	
47017307100000	G W PIGOTT	4209	GRIBBLE W D	GRIBBLE W D	2192	1138	-1054	
47017002030000	MARY C SHINN	1	P & M OIL CO	P & M OIL CO	1862	815	-1047	
47017300560000	E A HENDERSHOT/A DOAK	4089	HOPE NATURAL GAS	HOPE NATURAL GAS	1800	759	-1041	
47017023890000	H H HILEY	80745	SPENCER ENTERPRISES	HOPE NATURAL GAS	2026	991	-1035	
47017002040000	BRUCE JAMES	1	P & M OIL CO	P & M OIL CO	1916	883	-1033	
47017004470000	EUGENE V CHIPPS	1	DODD OIL & GAS	DODD OIL & GAS	1886	947	-939	
47017002050000	BRUCE JAMES	2	P & M OIL CO	P & M OIL CO	1006	870	-136	

RECEIVED
 Office of Oil and Gas
 MAY 8 2017
 WV Department of
 Environmental Protection