

APPROVED

WR-35
Rev. 8/23/13

NAME: Paul G. M. Page of

DATE: 10/12/17

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

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API 47 - 017 - 06766 County Doddridge District Central
Quad Pennsboro 7.5' Pad Name Alvadore Pad Field/Pool Name
Farm name Alvadore McCloy Jr et ux Well Number Doak 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 4347118m Easting 510119m
Landing Point of Curve Northing 4347164.811m Easting 510347.014m
Bottom Hole Northing 4349440m Easting 509605m

Elevation (ft) 1057' 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 04/11/2016 Date drilling commenced 05/27/2016 Date drilling ceased 07/16/2016
Date completion activities began 12/05/2016 Date completion activities ceased 02/14/2017
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 332' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1546', 1567', 1571' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 207', 1187', 1727' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:

01/05/2018

WR-35
Rev. 8/23/13

API 47-017 - 06766 Farm name Alvadore McCloy Jr et ux Well number Doak 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"	65'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	495'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2620'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	14799'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6655'		4.7#, N-80		
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	102 sx	15.6	1.18	120	0'	8 Hrs.
Surface	Class A	596 sx	15.6	1.19	709	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1024 sx	15.6	1.18	1208	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	763 sx (Lead) 1276 sx (Tail)	13.5 (Lead), 16.2 (Tail)	1.62 (Lead), 1.83 (Tail)	3575	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 14799' MD, 6452' TVD (BHL) & 6481' TVD (Deepest Point Drilled) Loggers TD (ft) 14792' MD

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

Plug back procedure N/A

Kick off depth (ft) 6066'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Hudkins Unit 1H API #47-017-06415). Please reference the wireline logs submitted with Form WR-35 for Hudkins 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 _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED N/A

API 47- 017 - 06766 Farm name Alvadore McCloy Jr et ux Well number Doak Unit 1H

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PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)

***PLEASE SEE ATTACHED EXHIBIT 1**

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbbls)	Amount of Nitrogen/other (units)

***PLEASE SEE ATTACHED EXHIBIT 2**

Please insert additional pages as applicable.

API 47- 017 - 06766 Farm name Alvadore McCloy Jr et ux Well number Doak Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6432' (TOP)</u>	<u>TVD</u>	<u>6702' (TOP)</u> <u>MD</u>
_____	_____	_____	_____
_____	_____	_____	_____

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 12793 mcfpd Oil 62 bpd NGL --- bpd Water 1059 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	

***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 Drive 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 C&J Energy Services
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 Samantha Klaas Telephone 303-357-6759
Signature *Samantha Klaas* Title Permitting Agent Date 08/18/2017

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	12/5/2016	14528	14697	60	Marcellus
2	1/7/2017	14329	14497	60	Marcellus
3	1/7/2017	14129	14297	60	Marcellus
4	1/8/2017	13930	14098	60	Marcellus
5	1/8/2017	13730	13898	60	Marcellus
6	1/8/2017	13531	13699	60	Marcellus
7	1/9/2017	13331	13499	60	Marcellus
8	1/9/2017	13132	13300	60	Marcellus
9	1/9/2017	12932	13100	60	Marcellus
10	1/10/2017	12732	12901	60	Marcellus
11	1/11/2017	12533	12701	60	Marcellus
12	1/12/2017	12333	12502	60	Marcellus
13	1/12/2017	12134	12302	60	Marcellus
14	1/12/2017	11934	12103	60	Marcellus
15	1/13/2017	11735	11903	60	Marcellus
16	1/13/2017	11535	11704	60	Marcellus
17	1/13/2017	11336	11504	60	Marcellus
18	1/14/2017	11136	11304	60	Marcellus
19	1/14/2017	10937	11105	60	Marcellus
20	1/14/2017	10737	10905	60	Marcellus
21	1/15/2017	10538	10706	60	Marcellus
22	1/15/2017	10338	10506	60	Marcellus
23	1/15/2017	10139	10307	60	Marcellus
24	1/16/2017	9939	10107	60	Marcellus
25	1/16/2017	9740	9908	60	Marcellus
26	1/17/2017	9540	9708	60	Marcellus
27	1/17/2017	9340	9509	60	Marcellus
28	1/18/2017	9141	9309	60	Marcellus
29	1/18/2017	8941	9110	60	Marcellus
30	1/18/2017	8742	8910	60	Marcellus
31	1/19/2017	8542	8711	60	Marcellus
32	1/19/2017	8343	8511	60	Marcellus
33	1/19/2017	8143	8312	60	Marcellus
34	1/19/2017	7944	8112	60	Marcellus
35	1/20/2017	7744	7912	60	Marcellus
36	1/20/2017	7545	7713	60	Marcellus
37	1/20/2017	7345	7513	60	Marcellus
38	1/21/2017	7146	7314	60	Marcellus
39	1/21/2017	6946	7114	60	Marcellus
40	1/21/2017	6747	6915	60	Marcellus

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API 47-017-06766 Farm Name Alvadore McCloy Jr et ux Well Number Doak Unit 1H

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	1/7/2017	76.7	7423	0	4256	352820	7812	N/A
2	1/7/2017	73.1	7100	5039	4338	353700	7812	N/A
3	1/7/2017	72.4	7287	5143	4113	353100	7926	N/A
4	1/8/2017	74.9	7238	5143	4428	353270	7779	N/A
5	1/8/2017	76.4	7307	4960	4231	353500	7784	N/A
6	1/8/2017	74.3	7147	4988	4431	353250	7752	N/A
7	1/9/2017	76.4	7203	5019	4578	352600	7771	N/A
8	1/9/2017	75.8	7183	4982	4710	353700	7747	N/A
9	1/9/2017	75.9	7320	5209	4697	352395	7718	N/A
10	1/10/2017	67.9	6871	5028	3805	352000	7727	N/A
11	1/11/2017	75.9	7241	4989	4775	351345	7724	N/A
12	1/12/2017	74.5	7131	5146	4610	351975	7694	N/A
13	1/12/2017	77.9	7186	5139	4903	352500	7736	N/A
14	1/12/2017	76.7	6871	5003	4606	352800	7732	N/A
15	1/13/2017	76.7	6928	5118	4951	351380	7670	N/A
16	1/13/2017	76.9	7125	4939	4542	354000	7732	N/A
17	1/13/2017	75.6	6935	5012	5074	351880	7650	N/A
18	1/14/2017	76.4	7030	5178	4925	351275	7640	N/A
19	1/14/2017	76.3	7320	4853	4689	352100	8557	N/A
20	1/14/2017	73.5	7266	4756	4381	353100	7626	N/A
21	1/15/2017	74.1	7018	4903	4356	353865	7618	N/A
22	1/15/2017	76.3	6940	5182	4306	353000	7671	N/A
23	1/15/2017	77.7	6569	4739	4531	352100	7654	N/A
24	1/16/2017	76.1	6643	5028	4903	352100	7607	N/A
25	1/16/2017	74.5	6692	4917	4939	353200	7587	N/A
26	1/17/2017	78.0	6692	5101	4996	354100	7644	N/A
27	1/17/2017	78.0	6697	5114	4842	354100	7619	N/A
28	1/18/2017	72.9	6518	4946	4803	353900	7560	N/A
29	1/18/2017	77.5	6831	5318	4953	353200	8457	N/A
30	1/18/2017	77.6	6497	5014	5060	354200	7606	N/A
31	1/19/2017	78.5	6614	5282	5132	352400	7532	N/A
32	1/19/2017	75.1	6400	5425	5032	353400	7477	N/A
33	1/19/2017	76.5	6355	5375	4424	354500	7508	N/A
34	1/19/2017	76.7	6352	5375	4939	353500	7433	N/A
35	1/20/2017	75.3	6407	5289	5150	354300	7398	N/A
36	1/20/2017	76.1	6571	5275	5114	355000	7441	N/A
37	1/20/2017	78.7	6280	5157	4817	353200	7405	N/A
38	1/21/2017	75.7	6261	5668	5279	354400	7456	N/A
39	1/21/2017	76.4	6196	5786	5082	353300	7411	N/A
40	1/21/2017	76.7	6248	6233	4588	352600	7370	N/A
AVG=		75.8	6,847	5,019	4,707	14,123,055	307,043	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	332'	N/A	332'	N/A
Shale/ Sandstone	0	207	0	207
Shale/ Trace Coal	est. 207	247	est. 207	247
Sandstone	est. 247	467	est. 247	467
Shale/ Limestone	est. 467	567	est. 467	567
Sandstone	est. 567	627	est. 567	627
Shale/ Trace Limestone	est. 627	787	est. 627	787
Siltstone	est. 787	812	est. 787	812
Shale/ Limestone	est. 812	967	est. 812	967
Sandstone	est. 967	1047	est. 967	1047
Shale/ Limestone	est. 1047	1147	est. 1047	1147
Shale/ Trace Coal	est. 1147	1187	est. 1147	1187
Sandstone/ Trace Coal	est. 1187	1247	est. 1187	1247
Shale/ Trace Limestone	est. 1247	1327	est. 1247	1327
Sandstone/ Shale	est. 1327	1427	est. 1327	1427
Sanstone/ Coal	est. 1427	1567	est. 1427	1567
Shale/ Trace Coal	est. 1567	1727	est. 1567	1727
Siltstone/ Trace Coal	est. 1727	1933	est. 1727	1945
Big Lime	1933	2891	1945	2922
Fifth Sandstone	2891	3130	2922	3166
Bayard	3130	3802	3166	3852
Speechley	3802	4116	3852	4172
Baltown	4116	4545	4172	4609
Bradford	4545	4936	4609	5008
Benson	4936	5207	5008	5284
Alexander	5207	5354	5284	5434
Elk	5354	5839	5434	5930
Rhinestreet	5839	6104	5930	6207
Sycamore	6104	6263	6207	6396
Middlesex	6263	6375	6396	6570
Burkett	6375	6404	6570	6630
Tully	6404	6432	6630	6702
Marcellus	6432	NA	6702	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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Hydraulic Fracturing Fluid Product Component Information Disclosure



Job Start Date:	1/7/2017
Job End Date:	1/21/2017
State:	West Virginia
County:	Doddridge
API Number:	47-017-06766-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Doak 1H
Latitude:	39.27327222
Longitude:	-80.88286111
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,479
Total Base Water Volume (gal):	13,316,666
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	Carrier/Base Fluid	Water	7732-18-5	100.00000	88.47402	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	11.25079	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	0.13632	
			Hydrogen Chloride	7647-01-0	17.50000	0.03169	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.02909	
			Petroleum Distillates	64742-47-8	60.00000	0.02755	
			Suspending agent (solid)	14808-60-7	3.00000	0.00445	
			Surfactant	68439-51-0	3.00000	0.00175	
WFRA-405	U.S. Well Services, LLC	Friction Reducer	2-Propenoic acid, polymer with 29	9003-06-9	30.00000	0.01330	
			propenamide Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01071	

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SI-1100	U.S. Well Services, LLC	Scale Inhibitor					
			Ethylene Glycol	107-21-1	40.00000	0.00687	
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00142	
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	3.00000	0.00049	
			Hexamethylene triamine penta (methylene phosphonic acid)	34690-00-1	3.00000	0.00047	
			Phosphino carboxylic acid polymer	71050-62-9	3.00000	0.00047	
Bioclear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent					
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00436	
			Deionized Water	7732-18-5	28.00000	0.00249	
WFRA-500	U.S. Well Services, LLC	Friction Reducer					
			2-Propenoic acid, polymer with 2-propenamide	9003-06-9	30.00000	0.00140	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.00112	
AP One	U.S. Well Services, LLC	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00115	
AI-303	U.S. Well Services, LLC	Acid Corrosion Inhibitors					
			Ethylene glycol	107-21-1	40.00000	0.00005	
			Cinnamaldehyde	104-55-2	20.00000	0.00002	
			Formic acid	64-18-6	20.00000	0.00002	
			Polyether	Proprietary	10.00000	0.00001	
			Butyl cellosolve	111-76-2	20.00000	0.00001	
			Acetophenone,thiourea,formaldehyde polymer	68527-49-1	5.00000	0.00000	

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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WELL OPERATOR: ANTERO RESOURCES CORP., 1615 WYNNKOP STREET, DENVER, CO 80202
 DESIGNATED AGENT: DIANNA STAMPER, CT CORPORATION SYSTEM, 5400 D BIG TYLER ROAD, CHARLESTON, WV 25313
 TARGET FORMATION: MARCELLUS
 ESTIMATED DEPTH: 6,452 TVD 14,799 MD
 PLUG & ABANDON: AS DRILLED
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
 (SPECIFY) AS DRILLED

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL SHALLOW X DEEP
 LOCATION: ELEVATION 1,057' AS BUILT WATERSHED NORTH FORK HUGHES RIVER
 QUADRANGLE PENNSBORO 7.5 DISTRICT CENTRAL COUNTY DODDRIDGE
 SURFACE OWNER: ALVADORE MCCLOY JR ET UX ACRES +/- 17.98 ACRES +/-
 OIL & GAS ROYALTY OWNER: BRENDA J MILLER, GAIL MASON, ROBERT SMITH ET AL, WSKA, WILLIAM E DOAK
 WACO OIL & GAS CO, INC, FREDRICK D BOOTH ET UX, HARRY D WILLIAMSON ET AL, ORA E DOAK ET UX, SHARON A DRAIN
 COUNTY NAME: PERMIT: 017 - 06766

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS
 BOTTOM HOLE INFORMATION: N: 4,347.118m E: 510.119m
 WELL IH TOP HOLE INFORMATION: N: 4,349.440m E: 509.605m
 (NAD) 83 (UTM) ZONE 17 COORDS: N: 4,347.118m E: 510.119m
 PLAT ORIENTATION, CORNER, MAPPING GRADE GPS UNIT, TRIMBLE 660XT SUBMETER, MEASUREMENTS TAKEN WITH SYSTEM OF 1927 NORTH ZONE, WEST VIRGINIA COORDINATE, ZONE WAS DERIVED FROM MAPPING GRADE GPS UNIT.

WELL IH TOP HOLE INFORMATION: N: 284,654ft E: 1,608,519ft
 BOTTOM HOLE INFORMATION: N: 292,301ft E: 1,606,606ft
 LAT: 39°17'39.11" LON: 80°53'19.63"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE, ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE 660XT SUBMETER, MAPPING GRADE GPS UNIT. ARE BASED ON GRID NORTH, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

NOTES:
 1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FEET (610) SQUARE FEET OR LARGER USED TO HOUSE OR SHEDDLE MATERIAL OR POLYETHYLENE HOUSING ARE LOCATED WITHIN 500 METERS (1640) FEET OF THE CENTER OF THE WELL HOLES.
 2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ANTERO SURVEY, INC.
 3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
 4. THIS WAS NOT A FIELD SURVEY. THE DATA AND INFORMATION PROVIDED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
 5. THIS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.
 6. THIS WELL BORE IS SUBJECT TO THAT FOOT STAMP OR LAND SURVEY WHICH IS KNOWN AS THE OLD SYSTEM AND SAME THEREAFTER WHICH MAY OR MAY NOT COINCIDE WITH THE CURRENT LOCATION OF WY STATE ROUTE 23 IN THIS AREA.



LEGEND:
 - Surface Owner Boundary Lines +/-
 - Interior Surface Tracts +/-
 - Found monument, as noted
 - Proposed Well Path
 - As Drilled Well Path

PAD LAYOUT (NOT TO SCALE):

124	S	507.48	E	1341.80
123	S	619.1	E	1768.70
122	N	61.52	E	1803.20
121	N	59.40	E	1523.44
120	N	57.20	E	1527.50
119	N	56.20	E	1644.20
118	N	55.20	E	1410.50
117	N	54.20	E	1617.20
116	N	53.20	E	1782.90
115	N	52.20	E	1114.90
114	N	51.20	E	1785.80
113	N	50.20	E	1016.50
112	N	49.20	E	1187.80
111	N	48.20	E	1078.00
110	N	47.20	E	1330.00
109	N	46.20	E	1291.70
108	N	45.20	E	1050.00
107	N	44.20	E	1091.40
106	N	43.20	E	1223.90
105	N	42.20	E	1291.80
104	N	41.20	E	1294.40
103	N	40.20	E	1310.80
102	N	39.20	E	1281.20
101	N	38.20	E	144.80
100	N	37.20	E	144.80

RECEIVED AUG 2 1 2017
 OFFICE OF OIL AND GAS
 STATE OF WEST VIRGINIA
 LICENSED PROFESSIONAL SURVEYOR
 NO. 2202
 DOUGLAS R. ROWE

WELL NO. 1H 47-017-06766
 3,902' TO BOTTOM HOLE
 14,255' TO BOTTOM HOLE
 6,700'
 LONGITUDE 80°52'30"
 LONGITUDE 39°20'00"
 LATITUDE 39°17'30"
 2,226'

ANTERO RESOURCES CORPORATION
 Well No. Doak Unit 1H
 47-017-06766 (AS DRILLED)
 8102/50/10



FORM WW-6

LATITUDE 39°17'30"

2,226'

LATITUDE 39°20'00"

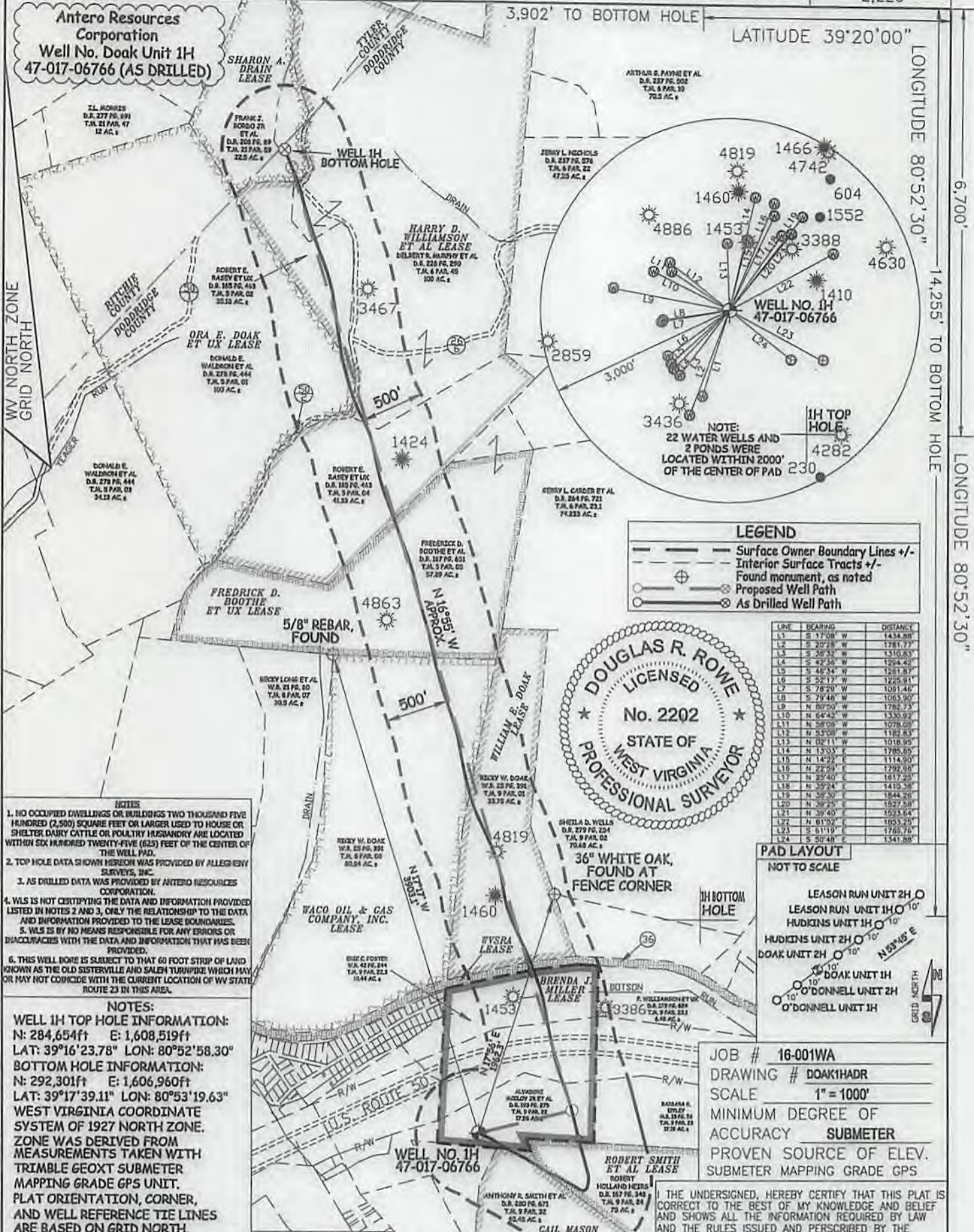
3,902' TO BOTTOM HOLE

LONGITUDE 80°52'30"

LONGITUDE 80°52'30"

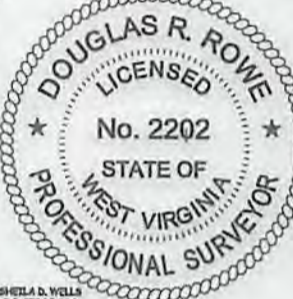
LONGITUDE 80°52'30"

COUNTY NAME PERMIT

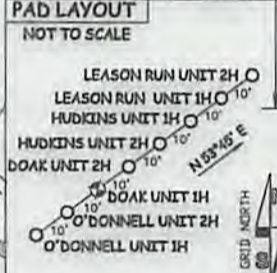


LEGEND

- Surface Owner Boundary Lines +/-
- Interior Surface Tracts +/-
- Proposed Well Path
- As Drilled Well Path



LINE	BEARING	DISTANCE
L1	S 17°08' W	1434.88
L2	S 20°28' W	1281.77
L3	S 26°32' W	1310.83
L4	S 42°34' W	1264.42
L5	S 48°34' W	1261.87
L6	S 52°17' W	1225.91
L7	S 78°20' W	1091.46
L8	S 79°48' W	1063.90
L9	N 80°50' W	1782.73
L10	N 64°42' W	1330.92
L11	N 58°58' W	1078.05
L12	N 53°20' W	1182.83
L13	N 02°11' W	1016.95
L14	N 13°03' E	1785.85
L15	N 14°22' E	1114.90
L16	N 22°52' E	1782.98
L17	N 25°40' E	1617.25
L18	N 32°24' E	1410.35
L19	N 38°30' E	1844.26
L20	N 39°25' E	1827.58
L21	N 39°40' E	1823.64
L22	N 61°52' E	1853.25
L23	S 11°19' W	1766.76
L24	S 50°48' W	1341.88



- NOTES**
- NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
 - TOP HOLE DATA SHOWN HEREON 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.
 - THIS WELL BORE IS SUBJECT TO THAT 60 FOOT STRIP OF LAND KNOWN AS THE OLD SISTERVILLE AND SALEM TURNPIKE WHICH MAY OR MAY NOT COINCIDE WITH THE CURRENT LOCATION OF WV STATE ROUTE 23 IN THIS AREA.

NOTES:
WELL 1H TOP HOLE INFORMATION:
N: 284,654ft E: 1,608,519ft
LAT: 39°16'23.78" LON: 80°52'58.30"
BOTTOM HOLE INFORMATION:
N: 292,301ft E: 1,606,960ft
LAT: 39°17'39.11" LON: 80°53'19.63"
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: 4,347,118m E: 510,119m
BOTTOM HOLE INFORMATION:
N: 4,349,440m E: 509,605m



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 # 16-001WA
DRAWING # DOAK1HADR
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

DOUGLAS R. ROWE P.S. 2202

DATE 07/07/17
OPERATOR'S WELL# DOAK UNIT #1H

API WELL # 47 - 017 - 06766
STATE COUNTY PERMIT

DISTRICT CENTRAL COUNTY DODDRIDGE

ACREAGE 17.98 ACRES +/-
LEASE ACREAGE 30.15 AC; 148.793 AC; 75 AC; 301.19 AC; 35 AC; 83 ACRES; 62 ACRES; 176 ACRES; 100 ACRES; 22.5 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

TARGET FORMATION MARCELLUS
ESTIMATED DEPTH 6,452' TVD 14,799' MD

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

06/05/2018