

# APPROVED

NAME: [Signature]

DATE: 10/18/17

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

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Approved  
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WV Department of Environmental Protection

API 47-017-06773 County Doddridge District Central  
Quad Pennsboro 7.5' Pad Name Alvadore Pad Field/Pool Name ----  
Farm name Alvadore McCloy Jr et ux Well Number O'Donnell Unit 2H  
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 4347116m Easting 510116m  
Landing Point of Curve Northing 4347189.676m Easting 510119.570m  
Bottom Hole Northing 4349791m Easting 509272m

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 05/26/2016 Date drilling commenced 05/27/2016 Date drilling ceased 07/24/2016  
Date completion activities began 12/04/2016 Date completion activities ceased 02/10/2017  
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

API 47-017 - 06773 Farm name Alvadore McCloy Jr et ux Well number O'Donnell Unit 2H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/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"	456'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2613'	New	36#, J-55	N/A	
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	16010'	New	23#, P-110	N/A	
Tubing		2-3/8"	6485'		4.7#, N-80		
Packer type and depth set		N/A					

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Comment Details \_\_\_\_\_

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	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	1022 sx	15.6	1.18	1206	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	758 sx (Lead) 1468 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.82 (Lead), 1.83 (Tail)	3914	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16010' MD, 6450' TVD (BHL) & 6470' TVD (Deepest Point Drilled)      Loggers TD (ft) 15986' MD  
 Deepest formation penetrated Marcellus      Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6019'

\*\* 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 - 06773 Farm name Alvadore McCloy Jr et ux Well number O'Donnell Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>			
<u>Marcellus</u>	<u>6423' (TOP)</u>	<u>TVD</u>	<u>6629' (TOP)</u>	<u>MD</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

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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 12688 mcfpd Oil 117 bpd NGL --- bpd Water 919 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

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

**\*PLEASE SEE ATTACHED EXHIBIT 3**


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	12/4/2016	15738	15908	60	Marcellus
2	12/17/2016	15536	15706	60	Marcellus
3	12/17/2016	15335	15505	60	Marcellus
4	12/17/2016	15134	15303	60	Marcellus
5	12/18/2016	14932	15102	60	Marcellus
6	12/18/2016	14731	14901	60	Marcellus
7	12/18/2016	14529	14699	60	Marcellus
8	12/19/2016	14328	14498	60	Marcellus
9	12/19/2016	14126	14296	60	Marcellus
10	12/19/2016	13925	14095	60	Marcellus
11	12/20/2016	13724	13894	60	Marcellus
12	12/20/2016	13522	13692	60	Marcellus
13	12/20/2016	13321	13491	60	Marcellus
14	12/21/2016	13119	13289	60	Marcellus
15	12/22/2016	12918	13088	60	Marcellus
16	12/22/2016	12717	12886	60	Marcellus
17	12/22/2016	12515	12685	60	Marcellus
18	12/23/2016	12314	12484	60	Marcellus
19	12/23/2016	12112	12282	60	Marcellus
20	12/23/2016	11911	12081	60	Marcellus
21	12/26/2016	11710	11879	60	Marcellus
22	12/27/2016	11508	11678	60	Marcellus
23	12/27/2016	11307	11477	60	Marcellus
24	12/27/2016	11105	11275	60	Marcellus
25	12/28/2016	10904	11074	60	Marcellus
26	12/28/2016	10703	10872	60	Marcellus
27	12/28/2016	10501	10671	60	Marcellus
28	12/29/2016	10300	10470	60	Marcellus
29	12/29/2016	10098	10268	60	Marcellus
30	12/31/2016	9897	10067	60	Marcellus
31	12/31/2016	9696	9865	60	Marcellus
32	12/31/2016	9494	9664	60	Marcellus
33	12/31/2016	9293	9463	60	Marcellus
34	1/1/2017	9091	9261	60	Marcellus
35	1/1/2017	8890	9060	60	Marcellus
36	1/1/2017	8688	8858	60	Marcellus
37	1/2/2017	8487	8657	60	Marcellus
38	1/2/2017	8286	8456	60	Marcellus
39	1/2/2017	8084	8254	60	Marcellus
40	1/3/2017	7883	8053	60	Marcellus
41	1/3/2017	7681	7851	60	Marcellus
42	1/4/2017	7480	7650	60	Marcellus
43	1/4/2017	7279	7448	60	Marcellus
44	1/4/2017	7077	7247	60	Marcellus
45	1/5/2017	6876	7046	60	Marcellus
46	1/5/2017	6674	6844	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 (bbbls)	Amount of Nitrogen other (units)
1	12/16/2016	76.4	8163	0	4008	404535	8864	N/A
2	12/17/2016	76.6	7686	6452	4091	407400	8871	N/A
3	12/17/2016	75.5	7655	5401	4134	406855	8872	N/A
4	12/17/2016	78.0	7533	5214	3712	407200	8827	N/A
5	12/18/2016	77.8	7562	5157	4685	407300	8810	N/A
6	12/18/2016	76.2	7556	5201	3927	407105	8832	N/A
7	12/18/2016	78.4	7642	5068	3612	407200	8791	N/A
8	12/19/2016	78.2	7406	4985	4402	407500	8788	N/A
9	12/19/2016	75.6	7228	5349	4284	405770	8769	N/A
10	12/19/2016	77.6	7298	5239	3719	407400	8775	N/A
11	12/20/2016	74.7	7153	5204	4499	406175	8752	N/A
12	12/20/2016	75.8	7089	5178	4882	405585	8742	N/A
13	12/20/2016	71.6	7054	5111	4339	93755	8900	N/A
14	12/21/2016	76.9	7339	5304	3541	407100	8660	N/A
15	12/22/2016	76.7	7068	5214	4547	407080	9589	N/A
16	12/22/2016	76.9	7166	5017	4871	406970	8737	N/A
17	12/22/2016	76.6	7182	5132	4570	407100	8662	N/A
18	12/23/2016	75.6	7015	5128	4837	408800	8590	N/A
19	12/23/2016	76.1	7055	5133	4545	408400	8588	N/A
20	12/23/2016	77.6	7067	5293	4613	407600	8603	N/A
21	12/26/2016	76.9	7000	5336	4520	407600	8630	N/A
22	12/27/2016	76.5	6923	5121	4739	408300	8668	N/A
23	12/27/2016	75.4	7072	5647	3744	406400	8546	N/A
24	12/27/2016	77.9	7138	5075	4503	405800	8634	N/A
25	12/28/2016	77.7	6951	5196	4653	409300	8596	N/A
26	12/28/2016	77.2	6899	5032	3659	406500	8671	N/A
27	12/28/2016	77.4	7113	5593	4478	406040	8533	N/A
28	12/29/2016	78.1	7282	5239	5010	407920	8791	N/A
29	12/29/2016	76.2	6721	4860	4066	406800	8534	N/A
30	12/31/2016	77.0	7069	5282	4120	407940	8569	N/A
31	12/31/2016	77.8	6862	5068	3902	409400	8480	N/A
32	12/31/2016	76.3	6851	5311	4202	406500	8505	N/A
33	12/31/2016	79.0	6913	5307	4814	407500	8544	N/A
34	1/1/2017	76.6	6772	5536	4914	407100	8589	N/A
35	1/1/2017	78.2	6748	5493	4402	407200	8444	N/A
36	1/1/2017	77.8	6932	5776	3730	409200	8560	N/A
37	1/2/2017	78.8	6774	5261	3666	407500	8509	N/A
38	1/2/2017	75.9	6535	5740	5221	408100	8444	N/A
39	1/2/2017	77.7	6451	5357	5008	408035	8725	N/A
40	1/3/2017	79.7	6644	5443	4978	406300	8419	N/A
41	1/3/2017	77.8	6460	5881	4617	406025	8482	N/A
42	1/4/2017	76.9	6446	5549	4914	407090	8473	N/A
43	1/4/2017	77.0	6499	5454	5068	407100	8389	N/A
44	1/4/2017	78.9	6665	5507	4916	407205	8375	N/A
45	1/5/2017	78.9	6512	5468	4693	407635	8362	N/A
46	1/5/2017	78.1	6501	5517	4070	407595	8446	N/A
<b>AVG=</b>		<b>77.1</b>	<b>7,036</b>	<b>5,214</b>	<b>4,401</b>	<b>18,418,915</b>	<b>397,940</b>	<b>TOTAL</b>

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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	1932	est. 1727	1932
Big Lime	1932	2887	1932	2888
Fifth Sandstone	2887	3136	2888	3137
Bayard	3136	3815	3137	3825
Speechley	3815	4104	3825	4119
Baltown	4104	4539	4119	4561
Bradford	4539	4929	4561	4957
Benson	4929	5209	4957	5240
Alexander	5209	5358	5240	5391
Elk	5358	5825	5391	5865
Rhinestreet	5825	6088	5865	6131
Sycamore	6088	6249	6131	6312
Middlesex	6249	6366	6312	6486
Burkett	6366	6394	6486	6546
Tully	6394	6423	6546	6629
Marcellus	6423	NA	6629	NA

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\*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.

# Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/16/2016
Job End Date:	1/5/2017
State:	West Virginia
County:	Doddridge
API Number:	47-017-06773-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	O'Donnell 2H
Latitude:	39.27325556
Longitude:	-80.88288889
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,470
Total Base Water Volume (gal):	17,241,162
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	88.42508	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	11.32679	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.40000	0.11867	
			Hydrogen Chloride	7647-01-0	17.50000	0.02759	
LGC-15	U.S. Well Services, LLC	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.02582	
			Petroleum Distillates	64742-47-8	60.00000	0.02445	
			Suspending agent (solid)	14808-60-7	3.00000	0.00395	
			Surfactant	68439-51-0	3.00000	0.00155	
WFRA-405	U.S. Well Services, LLC	Friction Reducer					
			2-Propenoic acid, polymer with 2-propenamide	29003-06-9	30.00000	0.01602	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01290	

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SI-1100	J.S. Well Services, LLC	Scale Inhibitor						
			Ethylene Glycol	107-21-1		40.00000		0.00696
			Copolymer of Maleic and Acrylic acid	52255-49-9		10.00000		0.00143
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8		3.00000		0.00049
			Phosphino carboxylic acid polymer	71050-62-9		3.00000		0.00047
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1		3.00000		0.00047
Bioclear 2000	J.S. Well Services, LLC	Anti-Bacterial Agent						
			2,2-dibromo-3-nitropropionamide	10222-01-2		20.00000		0.00399
			Deionized Water	7732-18-5		28.00000		0.00228
AP One	J.S. Well Services, LLC	Gel Breakers						
			Ammonium Persulfate	7727-54-0		100.00000		0.00098
AI-303	J.S. Well Services, LLC	Acid Corrosion Inhibitors						
			Ethylene glycol	107-21-1		40.00000		0.00004
			Butyl cellosolve	111-76-2		20.00000		0.00001
			Cinnamaldehyde	104-55-2		20.00000		0.00001
			Formic acid	64-18-6		20.00000		0.00001
			Polyether	Proprietary		10.00000		0.00001
			Acetophenone,thiourea,formaldehyde polymer	88527-49-1		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)

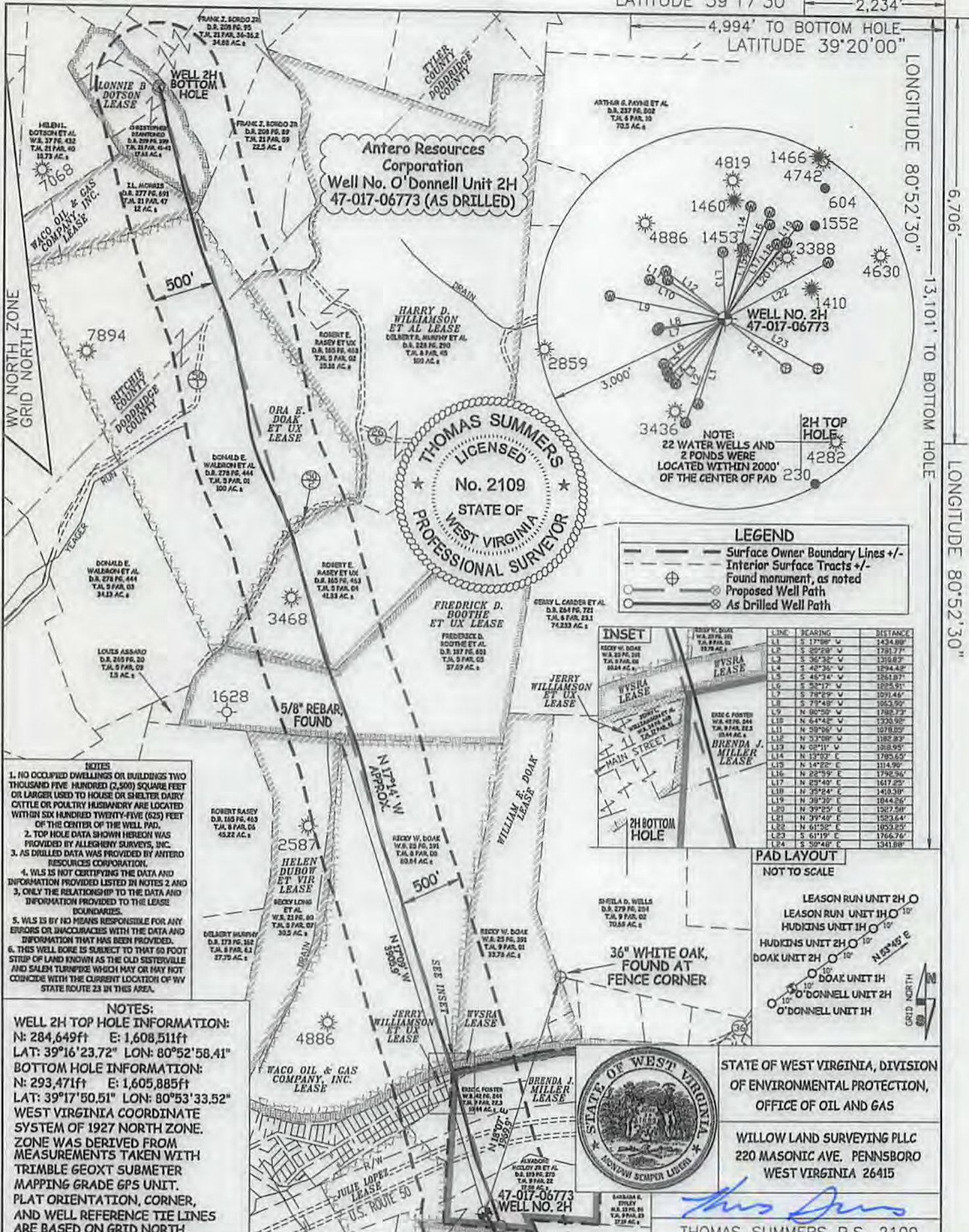
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LATITUDE 39°17'30" 2,234'  
 4,994' TO BOTTOM HOLE  
 LATITUDE 39°20'00"

LONGITUDE 80°52'30"  
 13,101' TO BOTTOM HOLE  
 LONGITUDE 80°52'30"

6,706'



Antero Resources Corporation  
 Well No. O'Donnell Unit 2H  
 47-017-06773 (AS DRILLED)

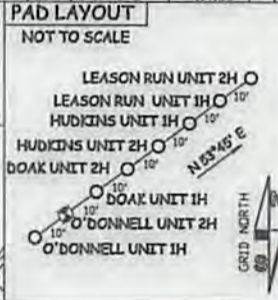
THOMAS SUMMERS  
 LICENSED  
 No. 2109  
 STATE OF WEST VIRGINIA  
 PROFESSIONAL SURVEYOR

**LEGEND**

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

**INSET**

LINE	BEARING	DISTANCE
L1	S 17°00' W	1434.88'
L2	S 20°20' W	1781.77'
L3	S 36°30' W	1318.87'
L4	S 48°35' W	1894.48'
L5	S 45°34' W	2841.97'
L6	S 52°17' W	1024.50'
L7	S 78°20' E	1051.45'
L8	S 77°48' E	1052.92'
L9	N 80°50' W	1782.73'
L10	N 64°42' W	1330.90'
L11	N 38°56' E	1078.25'
L12	N 32°58' E	1182.82'
L13	N 02°11' E	1010.92'
L14	N 13°02' E	1785.62'
L15	N 14°22' E	1114.90'
L16	N 22°59' E	1792.96'
L17	N 23°40' E	1617.25'
L18	N 32°24' E	1410.30'
L19	N 28°22' E	1044.25'
L20	N 39°25' E	1527.58'
L21	N 39°40' E	1523.64'
L22	N 61°58' E	1853.25'
L23	S 61°19' E	1766.76'
L24	S 59°48' E	1941.88'



- 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 50 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 2H TOP HOLE INFORMATION:  
 N: 284,649ft E: 1,608,511ft  
 LAT: 39°16'23.72" LON: 80°52'58.41"  
 BOTTOM HOLE INFORMATION:  
 N: 293,471ft E: 1,605,885ft  
 LAT: 39°17'50.51" LON: 80°53'33.52"  
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE 660XT 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: 4,347,116m E: 510,116m  
 BOTTOM HOLE INFORMATION:  
 N: 4,349,791m E: 509,272m

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.



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
 WILLOW LAND SURVEYING PLLC  
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

THOMAS SUMMERS P.S. 2109

JOB # 16-002WA  
 DRAWING # O'DONNELL2HADR  
 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

WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_ DATE 07/07/17  
 (IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X OPERATOR'S WELL# O'DONNELL UNIT #2H

LOCATION: ELEVATION 1,057' AS BUILT WATERSHED NORTH FORK HUGHES RIVER API WELL # 47-017  
 QUADRANGLE PENNSBORO 7.5' DISTRICT CENTRAL COUNTY DODDRIDGE 47-017-017

SURFACE OWNER ALVADORE MCCLOY JR ET UX ACREAGE 17.98 ACRES +/- STATE COUNTY PERMIT  
 OIL & GAS ROYALTY OWNER BRENDA J. MILLER; DALE L. SPRUNG; GAIL MASON; WYSRA; LEASE ACREAGE 39.15 AC±; 6.2 AC±; 148,793 AC±; 301.19 AC±  
 WACO OIL & GAS CO., INC.; FREDRICK D. BOOTHIE ET UX; HARRY D. WILLIAMSON ET AL; ORA E. DOAK ET UX; WACO OIL & GAS CO., INC.; LONNIE B. DOTSON 83 AC±; 62 AC±; 176 AC±; 100 AC±; 98.3 AC±; 17.62 AC±

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 6,450' TVD 16,010' MD

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

01/05/2018