

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

RECEIVED  
Office of Oil and Gas

JUL 28 2017

API 47 - 095 - 02163 County Tyler District McElroy **WV Department of Environmental Protection**  
Quad Centerpoint 7.5' Pad Name Coastal 2 Pad Field/Pool Name \_\_\_\_\_  
Farm name Coastal Lumber Company Well Number Banner 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 4364397m Easting 523590m  
Landing Point of Curve Northing 4364204.106m Easting 523392.745m  
Bottom Hole Northing 4361192m Easting 524369m

Elevation (ft) 1188' 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 05/19/2014 Date drilling commenced 06/22/2015 Date drilling ceased 12/01/2015  
Date completion activities began 09/19/2016 Date completion activities ceased 01/10/2017  
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 60', 180', 220' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 1723', 1893' Void(s) encountered (Y/N) depths No  
Coal depth(s) ft 1301', 1561', 1701' Cavern(s) encountered (Y/N) depths No  
Is coal being mined in area (Y/N) No

**APPROVED** Reviewed by:

NAME: [Signature] OFFICE OF OIL AND GAS  
DATE: 8-16-17 **09/15/2017**

API 47-095 - 02163 Farm name Coastal Lumber Company Well number Banner Unit 2H

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#, K-55	N/A	Y
Surface	17-1/2"	13-3/8"	401'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2532'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	18200'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7306'		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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	100 sx	10.7	1.18	118	0'	8 Hrs.
Surface	Class A	472 sx	15.6	1.18	557	0'	8 Hrs.
Coal							
Intermediate 1	Class A	931 sx	15.6	1.18	1099	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1135 sx (Lead) 1682 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.33 (Lead), 1.83 (Tail)	4588'	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 18200' MD, 7140' TVD (BHL) & 7141' TVD (Deepest Point Drilled) Loggers TD (ft) 18150' MD  
 Deepest formation penetrated Marcellus Plug back to (ft) N/A  
 Plug back procedure N/A

Kick off depth (ft) 6705'

\*\* This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Tabor Unit 2H API #47-095-02165). Please reference the wireline logs submitted with Form WR-35 for Tabor 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 shoes, 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- 095 - 02163 Farm name Coastal Lumber Company Well number Banner Unit 2H

PRODUCING FORMATION(S)	DEPTHS		
<u>Marcellus</u>	<u>7046' (TOP)</u>	TVD	<u>7272' (TOP)</u> MD
_____	_____	_____	_____
_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST  Build up  Drawdown  Open Flow OIL TEST  Flow  Pump

SHUT-IN PRESSURE Surface 3550 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 13891 mcfpd Oil 50 bpd NGL --- bpd Water 2 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 Precision Drilling Company, LP  
Address 2640 Reach Road City Williamsport State PA Zip 17701

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

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

Stimulating Company CalFrac  
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 07/27/2017

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	9/19/2016	17943	18087	60	Marcellus
2	10/7/2016	17743	17912	60	Marcellus
3	10/8/2016	17542	17711	60	Marcellus
4	10/9/2016	17341	17510	60	Marcellus
5	10/9/2016	17141	17310	60	Marcellus
6	10/10/2016	16940	17109	60	Marcellus
7	10/11/2016	16739	16909	60	Marcellus
8	10/11/2016	16539	16708	60	Marcellus
9	10/12/2016	16338	16507	60	Marcellus
10	10/13/2016	16138	16307	60	Marcellus
11	10/13/2016	15937	16106	60	Marcellus
12	10/14/2016	15736	15906	60	Marcellus
13	10/15/2016	15536	15705	60	Marcellus
14	10/14/2016	15335	15504	60	Marcellus
15	10/16/2016	15135	15304	60	Marcellus
16	10/17/2016	14934	15103	60	Marcellus
17	10/17/2016	14733	14903	60	Marcellus
18	10/18/2016	14533	14702	60	Marcellus
19	10/19/2016	14332	14501	60	Marcellus
20	10/19/2016	14132	14301	60	Marcellus
21	10/20/2016	13931	14100	60	Marcellus
22	10/20/2016	13730	13899	60	Marcellus
23	10/21/2016	13530	13699	60	Marcellus
24	10/22/2016	13329	13498	60	Marcellus
25	10/22/2016	13128	13298	60	Marcellus
26	10/23/2016	12928	13097	60	Marcellus
27	10/24/2016	12727	12896	60	Marcellus
28	10/24/2016	12527	12696	60	Marcellus
29	10/24/2016	12326	12495	60	Marcellus
30	10/26/2016	12125	12295	60	Marcellus
31	10/27/2016	11925	12094	60	Marcellus
32	10/27/2016	11724	11893	60	Marcellus
33	10/28/2016	11524	11693	60	Marcellus
34	10/28/2016	11323	11492	60	Marcellus
35	10/29/2016	11122	11292	60	Marcellus
36	10/29/2016	10922	11091	60	Marcellus
37	10/30/2016	10721	10890	60	Marcellus
38	10/30/2016	10521	10690	60	Marcellus
39	10/31/2016	10320	10489	60	Marcellus
40	10/31/2016	10119	10289	60	Marcellus
41	11/1/2016	9919	10088	60	Marcellus
42	11/2/2016	9718	9887	60	Marcellus
43	11/2/2016	9518	9687	60	Marcellus
44	11/3/2016	9317	9486	60	Marcellus
45	11/3/2016	9116	9285	60	Marcellus
46	11/4/2016	8916	9085	60	Marcellus
47	11/4/2016	8715	8884	60	Marcellus
48	11/5/2016	8514	8684	60	Marcellus
49	11/5/2016	8314	8483	60	Marcellus
50	11/6/2016	8113	8282	60	Marcellus
51	11/6/2016	7913	8082	60	Marcellus
52	11/6/2016	7712	7881	60	Marcellus
53	11/7/2016	7511	7681	60	Marcellus
54	11/7/2016	7311	7480	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	10/6/2016	65.6	7218	6487	4668	406850	11098	N/A
2	10/7/2016	72.8	7647	5773	5193	405300	11498	N/A
3	10/8/2016	78.6	7489	5411	4419	406750	9302	N/A
4	10/9/2016	74.3	7462	5645	4576	405300	9197	N/A
5	10/9/2016	75.0	7854	5629	4378	361550	11468	N/A
6	10/10/2016	80.6	7968	5834	5338	406250	11705	N/A
7	10/11/2016	72.9	7907	5634	5444	405500	9137	N/A
8	10/11/2016	57.4	7948	5505	4047	335700	16688	N/A
9	10/12/2016	74.1	8028	5834	4784	405200	10100	N/A
10	10/13/2016	70.0	7257	5500	4576	405100	9129	N/A
11	10/13/2016	76.4	7607	5551	5583	406100	9125	N/A
12	10/14/2016	62.6	7373	5529	5465	406550	10998	N/A
13	10/15/2016	68.0	6999	5517	5545	406000	9029	N/A
14	10/14/2016	77.2	7617	5514	5508	405900	9093	N/A
15	10/16/2016	73.0	7852	5636	5404	405900	10445	N/A
16	10/17/2016	68.7	7408	5565	5143	405450	10327	N/A
17	10/17/2016	73.9	7771	5599	4927	403950	10119	N/A
18	10/18/2016	71.8	7391	5427	5079	404700	12254	N/A
19	10/19/2016	71.9	7670	5526	5425	405250	11426	N/A
20	10/19/2016	72.4	7051	5583	5215	405450	8956	N/A
21	10/20/2016	70.6	7278	5745	5922	385900	8910	N/A
22	10/20/2016	66.8	6850	5622	5552	405350	9323	N/A
23	10/21/2016	72.9	7241	5513	5112	405750	8913	N/A
24	10/22/2016	67.8	7743	5581	5477	405200	12514	N/A
25	10/22/2016	71.9	7045	5465	5097	405700	8946	N/A
26	10/23/2016	74.3	7395	5521	5759	405850	8917	N/A
27	10/24/2016	67.1	6698	5622	5451	405450	8920	N/A
28	10/24/2016	75.1	6924	5484	5254	405450	8880	N/A
29	10/24/2016	75.2	7142	5641	5421	405700	8914	N/A
30	10/26/2016	77.0	6911	5222	5561	387450	8843	N/A
31	10/27/2016	70.2	6717	5230	5273	405600	8965	N/A
32	10/27/2016	78.3	7423	5603	5154	404900	8813	N/A
33	10/28/2016	79.3	7241	5628	4087	406200	8906	N/A
34	10/28/2016	79.3	7326	5616	4965	406200	8835	N/A
35	10/29/2016	76.1	7147	5368	5121	405700	8872	N/A
36	10/29/2016	80.3	7191	5467	5187	406500	8864	N/A
37	10/30/2016	74.9	7274	5617	5056	406050	8967	N/A
38	10/30/2016	80.9	7405	5760	5104	405600	8840	N/A
39	10/31/2016	75.0	7343	5650	4716	406000	9191	N/A
40	10/31/2016	77.5	7592	5619	5453	405750	8943	N/A
41	11/1/2016	76.5	7373	5741	5503	401800	8931	N/A
42	11/2/2016	82.2	7396	5566	5569	406850	8744	N/A
43	11/2/2016	69.5	6653	5703	5246	405150	8820	N/A
44	11/3/2016	79.5	7198	5503	5440	406600	8781	N/A
45	11/3/2016	77.4	7163	5680	4939	406350	8779	N/A
46	11/4/2016	78.3	7051	5726	5295	405700	8964	N/A
47	11/4/2016	73.9	6930	5621	5642	406350	8777	N/A
48	11/5/2016	80.8	7359	5560	5504	406500	8766	N/A
49	11/5/2016	76.5	7243	5673	5543	406200	8821	N/A
50	11/6/2016	80.2	7170	5641	5401	406900	8717	N/A
51	11/6/2016	78.6	6835	5917	5200	405250	8774	N/A
52	11/6/2016	78.9	7022	5641	5104	407200	8704	N/A
53	11/7/2016	74.9	6765	5516	5414	406150	8730	N/A
54	11/7/2016	81.0	6697	5657	4502	405100	8916	N/A
AVG=		74.4	7301	5608	5180	21757150	516594	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	60'	N/A	60'	N/A
Fresh Water	180'	N/A	180'	N/A
Fresh Water	220'	N/A	220'	N/A
Shale and Sandstone	0	401	0	401
Shale	est. 401	741	est. 401	741
Limestone	est. 741	801	est. 741	801
Shale	est. 801	921	est. 801	921
Limestone	est. 921	941	est. 921	941
Shale	est. 941	981	est. 941	981
Sandstone	est. 981	1001	est. 981	1001
Shale	est. 1001	1121	est. 1001	1121
Sandstone	est. 1121	1141	est. 1121	1141
Shale	est. 1141	1301	est. 1141	1301
Coal	est. 1301	1321	est. 1301	1321
Shale	est. 1321	1341	est. 1321	1341
Sandstone	est. 1341	1381	est. 1341	1381
Shale and Coal	est. 1381	1441	est. 1381	1441
Sandstone	est. 1441	1501	est. 1441	1501
Shale and Siltstone	est. 1501	1561	est. 1501	1561
Coal	est. 1561	1581	est. 1561	1581
Sandstone and Limestone	est. 1581	1621	est. 1581	1621
Shale	est. 1621	1701	est. 1621	1701
Sandstone and Coal	est. 1701	1841	est. 1701	1841
Shale	est. 1841	2021	est. 1841	2021
Sandstone	est. 2021	2286	est. 2021	2191
Big Lime	2286	2320	2191	2325
Big Injun	2320	2768	2325	2773
Gantz Sand	2768	2907	2773	2912
Fifty Foot Sandstone	2907	2982	2912	2987
Gordon	2982	3270	2987	3277
Fifth Sandstone	3270	3293	3277	3300
Bayard	3293	3712	3300	3726
Warren	3712	4078	3726	4100
Speechley	4078	4378	4100	4408
Baltown	4378	4868	4408	4911
Bradford	4868	5327	4911	5385
Benson	5327	5581	5385	5649
Alexander	5581	5785	5649	5860
Elk	5785	6286	5860	6379
Rhinestreet	6286	6660	6379	6765
Sycamore	6660	6822	6765	6944
Middlesex	6822	6955	6944	7115
Burkett	6955	6983	7115	7157
Tully	6983	7046	7157	7272
Marcellus	7046	NA	7272	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:	10/6/2016
Job End Date:	11/7/2016
State:	West Virginia
County:	Tyler
API Number:	47-095-02163-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Banner Unit 2H
Latitude:	39.42870600
Longitude:	-80.72608600
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,140
Total Base Water Volume (gal):	22,527,506
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	89.47683	
Sand (Proppant)	CWS	Propping Agent					
				Listed Below			



Acetic Acid	CWS	Acid					
				Listed Below			
DWP-975	CWS	Breaker					
				Listed Below			
DAP-902	CWS	Scale Inhibitor					
				Listed Below			
DWP-844	CWS	Microbiocide					
				Listed Below			
DWP-111	CWS	Gel Slurry					
				Listed Below			
DAP-103	CWS	Iron Control					
				Listed Below			
DAP-925	CWS	Acid Corrosion Inhibitor					
				Listed Below			
DWP-641	CWS	Friction Reducer					
				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	10.31031	
			Hydrochloric acid	7647-01-0	37.00000	0.04810	
			Polymer	26100-47-0	45.00000	0.03629	
			Paraffinic hydrocarbon solvent	64742-47-8	30.00000	0.02419	
			Calcite	471-34-1	1.00000	0.01836	
			Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.01669	
			Guar gum	9000-30-0	60.00000	0.01669	
			Ammonium chloride	12125-02-9	11.00000	0.00887	
			2-Propenoic acid, homopolymer, sodium salt	9003-04-7	40.00000	0.00634	
			Polyethylene glycol mixture	25322-68-3	54.50000	0.00624	
			Illite	12173-60-3	1.00000	0.00433	
			Goethite	1310-14-1	0.10000	0.00423	
			Sorbitan monooleate	1338-43-8	4.00000	0.00323	
			Biolite	1302-27-8	0.10000	0.00248	
			Apatite	64476-38-6	0.10000	0.00248	
			Polyethylene glycol monooleate	9004-96-0	3.00000	0.00242	
			2,2-Dibromo-3-Nitrilopropionamide	10222-01-2	20.00000	0.00229	
			Sorbitol tetraoleate	61723-83-9	2.00000	0.00161	
			Ilmenite	98072-94-7	0.10000	0.00160	
			1,2-Propanediol	57-55-6	10.00000	0.00159	
			Quaternary ammonium compounds, bis (hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00139	
			Amines, tallow alkyl, ethoxylated	61791-26-2	1.00000	0.00081	

			Sodium bromide	7647-15-6	4.00000	0.00046
			Citric acid	77-92-9	60.00000	0.00045
			Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1.50000	0.00042
			Alcohols, C12-14, ethoxylated	84133-50-6	0.50000	0.00040
			Dibromoacetonitrile	3252-43-5	3.00000	0.00034
			Ammonium Persulfate	7727-54-0	100.00000	0.00032
			Acrylamide	79-06-1	0.10000	0.00008
			Vinylidene chloride-methyl acrylate copolymer	25038-72-6	30.00000	0.00007
			Methanol	67-56-1	60.00000	0.00003
			Modified thiourea polymer	68527-49-1	30.00000	0.00002
			Fatty acids, tall-oil	61790-12-3	30.00000	0.00002
			Alcohols, C14-15, ethoxylated	68951-67-7	30.00000	0.00002
			Propargyl Alcohol	107-19-7	10.00000	0.00001
			Alkenes, C>10 a-	64743-02-8	5.00000	0.00001
			Poly(tetrafluoroethylene)	9002-84-0	1.00000	0.00001
			Hydrated magnesium silicate	14807-96-6	1.00000	0.00001
			Sodium chloride	7647-14-5	1.00000	0.00001
			Formaldehyde	50-00-0	0.10000	0.00001

\* 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)



LATITUDE 39°27'30"

5,015'

2,493' TO BOTTOM HOLE

LATITUDE 39°25'00"

LONGITUDE 80°42'30"

10,791'

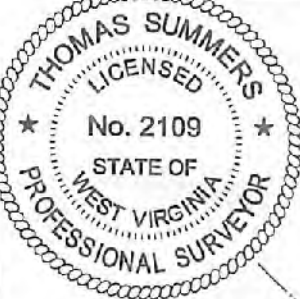
6,141' TO BOTTOM HOLE

LONGITUDE 80°42'30"

COUNTY NAME

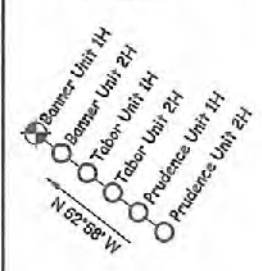
PERMIT

Antero Resources Corporation  
Well No. Banner Unit 2H  
47-095-02163 (AS DRILLED)



- NOTE**
1. 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.
  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 INFORMATION PROVIDED LISTED IN NOTES 2 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 INFORMATION THAT HAS BEEN PROVIDED.

**PAD LAYOUT**



NOT TO SCALE

JOB # **13-120WA**  
 DRAWING # **BANNERUNIT2ADR**  
 SCALE **1" = 1000'**  
 MINIMUM DEGREE OF ACCURACY **SUBMETER**  
 PROVEN SOURCE OF ELEV. **SUBMETER MAPPING GRADE GPS**

**LEGEND**

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

*Thomas Summers*  
 THOMAS SUMMERS P.S. 2109  
 DATE **07/12/2017**  
 OPERATOR'S WELL# **BANNER UNIT #2H**



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

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

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY  
 DIVISION OF OIL AND GAS

API WELL # **47 - 095 - 02163**

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
 (IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW

LOCATION: ELEVATION **AS DRILLED - 1,188'** WATERSHED **MCELROY CREEK**

QUADRANGLE **CENTERPOINT 7.5'** DISTRICT **MCELROY COUNTY TYLER**

SURFACE OWNER **COASTAL LUMBER COMPANY** ACREAGE **766 ACRES +/-**

OIL & GAS ROYALTY OWNER **O.W.O. HARDMAN ET AL.; P. NICHOLS ET AL.; A. RICHARDS ET AL.; RONALD NOHE ET AL.; M. HEFLIN ET AL.; R. BERRY ET AL.; C. ANDERSON ET AL.; W.B. ALLEN ET AL.; R. SMITH; S.A. SMITH ET AL.**

LEASE ACREAGE **852.3 AC±; 14.43 AC±; 31.329 AC±; 50 AC±; 53.69 AC±; 49.12 AC±; 38 AC±; 334 AC±; 87.75 AC±; 443.68 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**

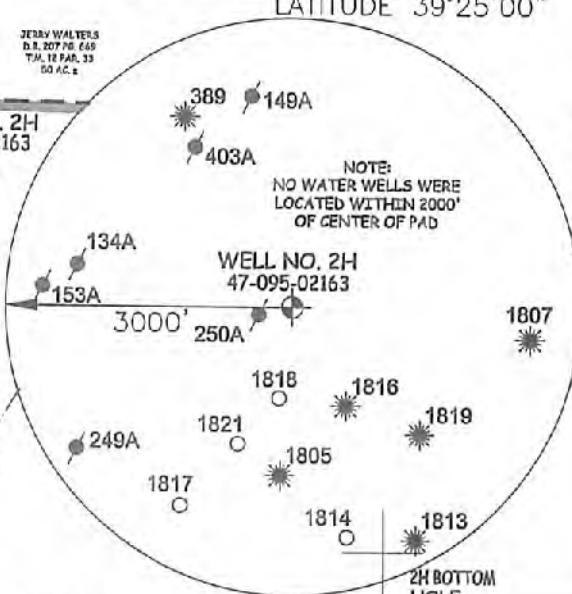
TARGET FORMATION **MARCELLUS** ESTIMATED DEPTH **7,140' TVD 18,200' MD**

WELL OPERATOR **ANTERO RESOURCES CORP.** DESIGNATED AGENT **CT CORPORATION SYSTEM-DIANNA STAMPER**

ADDRESS **1615 WYNKOOP STREET** ADDRESS **5400 D BIG TYLER ROAD**  
**DENVER, CO 80202** **CHARLESTON, WV 25313**

**AS DRILLED:**  
 WELL 2H TOP HOLE INFORMATION:  
 N: 340,617ft E: 1,653,671ft  
 LAT: 39°25'43.35" LON: 80°43'33.91"  
 BOTTOM HOLE INFORMATION:  
 N: 330,058ft E: 1,656,050ft  
 LAT: 39°23'59.30" LON: 80°43'01.77"  
 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 2H TOP HOLE INFORMATION:  
 N: 4,364,397m E: 523,590m  
 BOTTOM HOLE INFORMATION:  
 N: 4,361,192m E: 524,369m



WV NORTH ZONE GRID NORTH

COASTAL LUMBER COMPANY  
D.S. 277 PG. 123  
T.M. 12 PAR. 33  
91.27 AC ±

JERRY WALTERS  
D.S. 207 PG. 645  
T.M. 12 PAR. 33  
50 AC ±

WELL NO. 2H  
47-095-02163

250A

1821

269A

1803

272A

M. FOSTER LIVING TRUST LEASE

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

BARY LEE REYNOLDS ET AL.  
D.S. 253 PG. 700  
T.M. 10 PAR. 04  
152.78 AC ±

COASTAL LUMBER COMPANY  
D.S. 277 PG. 123  
T.M. 12 PAR. 33  
91.27 AC ±

ALTA NICHOLS ET AL.  
D.S. 36 PG. 402  
T.M. 17 PAR. 10  
15.62 AC ±

RONALD NOHE ET AL LEASE  
RONALD R. JONES SR.  
D.S. 293 PG. 431  
T.M. 17 PAR. 12  
50 AC ±

COASTAL LUMBER COMPANY  
D.S. 337 PG. 120A  
T.M. 17 PAR. 11  
17.5 AC ±

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

R. SMITH LEASE  
FOREST C. ANDERSON ET AL.  
D.S. 148 PG. 540  
T.M. 13 PAR. 03  
87.75 AC ±

COASTAL LUMBER COMPANY  
D.S. 277 PG. 123  
T.M. 12 PAR. 33  
91.27 AC ±

D.W.O. HARDMAN ET AL LEASE  
D.S. 199 PG. 267  
T.M. 17 PAR. 03  
75.6 AC ±

COASTAL LUMBER COMPANY  
D.S. 337 PG. 120A  
T.M. 17 PAR. 11  
17.5 AC ±

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

COASTAL LUMBER COMPANY  
D.S. 337 PG. 120A  
T.M. 17 PAR. 11  
17.5 AC ±

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

R. SMITH LEASE  
FOREST C. ANDERSON ET AL.  
D.S. 148 PG. 540  
T.M. 13 PAR. 03  
87.75 AC ±

COASTAL LUMBER COMPANY  
D.S. 277 PG. 123  
T.M. 12 PAR. 33  
91.27 AC ±

M. HEFLIN ET AL LEASE  
JACK D. MATHENY ET AL.  
D.S. 232 PG. 400  
T.M. 30 PAR. 10  
33 AC ±

COASTAL LUMBER COMPANY  
D.S. 337 PG. 120A  
T.M. 17 PAR. 11  
17.5 AC ±

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

COASTAL LUMBER COMPANY  
D.S. 337 PG. 120A  
T.M. 17 PAR. 11  
17.5 AC ±

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

R. SMITH LEASE  
FOREST C. ANDERSON ET AL.  
D.S. 148 PG. 540  
T.M. 13 PAR. 03  
87.75 AC ±

COASTAL LUMBER COMPANY  
D.S. 277 PG. 123  
T.M. 12 PAR. 33  
91.27 AC ±

P. BERRY ET AL LEASE  
COASTAL FOREST RESOURCES CO.  
D.S. 249 PG. 185  
T.M. 10 PAR. 08  
49.75 AC ±

COASTAL LUMBER COMPANY  
D.S. 337 PG. 120A  
T.M. 17 PAR. 11  
17.5 AC ±

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

COASTAL LUMBER COMPANY  
D.S. 337 PG. 120A  
T.M. 17 PAR. 11  
17.5 AC ±

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

R. SMITH LEASE  
FOREST C. ANDERSON ET AL.  
D.S. 148 PG. 540  
T.M. 13 PAR. 03  
87.75 AC ±

COASTAL LUMBER COMPANY  
D.S. 277 PG. 123  
T.M. 12 PAR. 33  
91.27 AC ±

W.B. ALLEN ET AL LEASE  
W.B. 47 PG. 275  
T.M. 11 PAR. 12  
9.8 AC ±

COASTAL LUMBER COMPANY  
D.S. 337 PG. 120A  
T.M. 17 PAR. 11  
17.5 AC ±

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

COASTAL LUMBER COMPANY  
D.S. 337 PG. 120A  
T.M. 17 PAR. 11  
17.5 AC ±

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

R. SMITH LEASE  
FOREST C. ANDERSON ET AL.  
D.S. 148 PG. 540  
T.M. 13 PAR. 03  
87.75 AC ±

COASTAL LUMBER COMPANY  
D.S. 277 PG. 123  
T.M. 12 PAR. 33  
91.27 AC ±

MARY K. ARBOGAST  
W.B. 47 PG. 275  
T.M. 11 PAR. 12  
9.8 AC ±

COASTAL LUMBER COMPANY  
D.S. 337 PG. 120A  
T.M. 17 PAR. 11  
17.5 AC ±

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

COASTAL LUMBER COMPANY  
D.S. 337 PG. 120A  
T.M. 17 PAR. 11  
17.5 AC ±

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

R. SMITH LEASE  
FOREST C. ANDERSON ET AL.  
D.S. 148 PG. 540  
T.M. 13 PAR. 03  
87.75 AC ±

COASTAL LUMBER COMPANY  
D.S. 277 PG. 123  
T.M. 12 PAR. 33  
91.27 AC ±

JOYCE E. MCCARTHY (LIFE)  
D.S. 294 PG. 374  
T.M. 11 PAR. 11  
22 AC ±

BLAKE L. BAKER  
W.B. 30 PG. 522  
T.M. 10 PAR. 02  
35 AC ±

PAULA A. ASH ET AL  
W.B. 30 PG. 522  
T.M. 11 PAR. 22  
21.5 AC ±

W.B. ALLEN ET AL LEASE  
W.B. 47 PG. 275  
T.M. 11 PAR. 12  
9.8 AC ±

COASTAL LUMBER COMPANY  
D.S. 337 PG. 120A  
T.M. 17 PAR. 11  
17.5 AC ±

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

COASTAL LUMBER COMPANY  
D.S. 337 PG. 120A  
T.M. 17 PAR. 11  
17.5 AC ±

COASTAL LUMBER COMPANY  
D.S. 342 PG. 272  
T.M. 17 PAR. 14  
79.02 AC ±

R. SMITH LEASE  
FOREST C. ANDERSON ET AL.  
D.S. 148 PG. 540  
T.M. 13 PAR. 03  
87.75 AC ±

COASTAL LUMBER COMPANY  
D.S. 277 PG. 123  
T.M. 12 PAR. 33  
91.27 AC ±

JOYCE E. MCCARTHY (LIFE)  
D.S. 294 PG. 374  
T.M. 11 PAR. 11  
22 AC ±

BLAKE L. BAKER  
W.B. 30 PG. 522  
T.M. 10 PAR. 02  
35 AC ±

PAULA A. ASH ET AL  
W.B. 30 PG. 522  
T.M. 11 PAR. 22  
21.5 AC ±

OFFICE OF OIL AND GAS JUL 26 2017



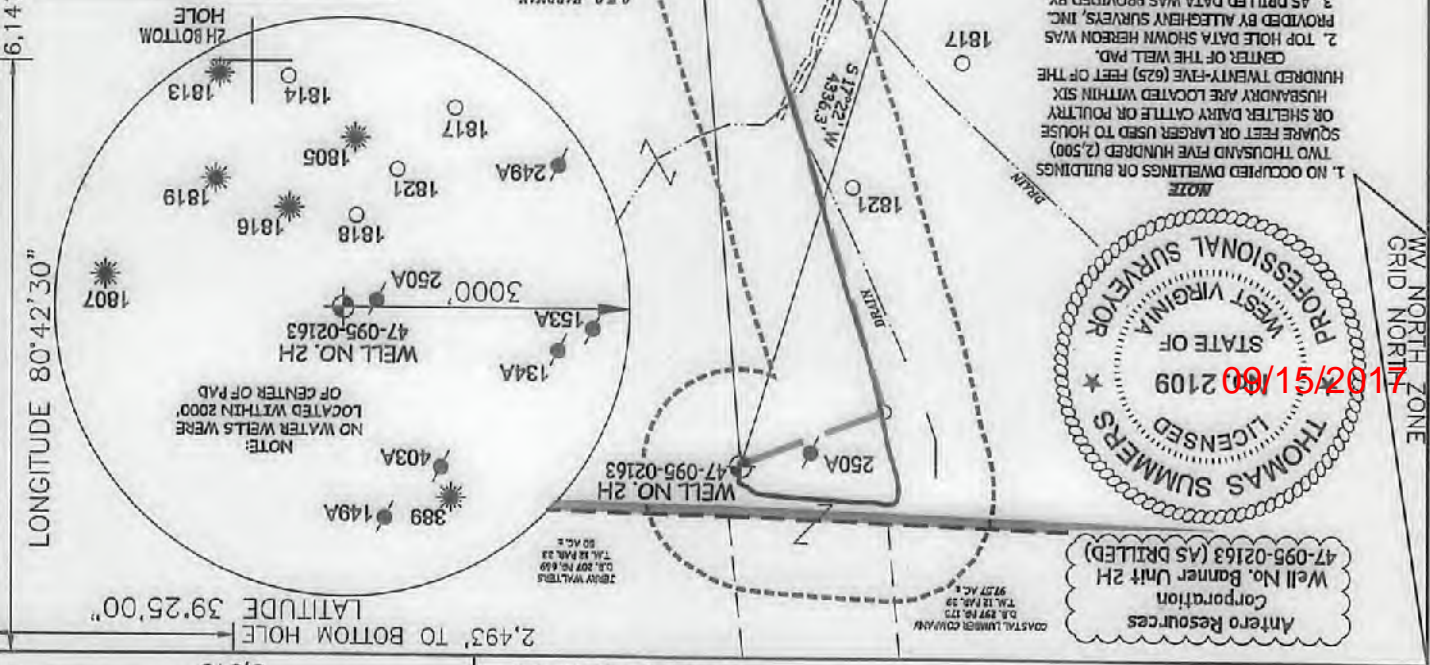
STATE OF WEST VIRGINIA  
 DEPARTMENT OF ENERGY  
 DIVISION OF OIL AND GAS  
 WASTE DISPOSAL PERMIT  
 STATE COUNTY PERMIT  
 47 - 085 - 02163  
 API WELL #  
 MARCELLUS  
 ESTIMATED DEPTH 7,140' TVD 18,200' MD  
 DESIGNATED AGENT CT CORPORATION SYSTEM-DIANNA STAMPER  
 ADDRESS 1615 WYNNKOOP STREET DENVER, CO 80202  
 FORM WW-6

WILLOW LAND SURVEYING PLLC  
 220 WASHINGTON AVE. PENNSBORO  
 WEST VIRGINIA 26415  
 STATE OF WEST VIRGINIA, DIVISION  
 OF ENVIRONMENTAL PROTECTION,  
 OFFICE OF OIL AND GAS  
 THOMAS SUMMERS P.S. 2109  
 DATE 07/12/2017  
 OPERATOR'S WELL # BANNER UNIT #2H

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

JOB # 13-120WA  
 DRAWING # BANNERUNIT2DR  
 SCALE 1" = 100'  
 MINIMUM DEGREE OF  
 ACCURACY  
 SUBMETER  
 PROVEN SOURCE OF ELEV.  
 SUBMETER MAPPING GRADE GPS  
 NOT TO SCALE

NOTE  
 1. 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.  
 2. TOP HOLE DATA SHOWN HEREON WAS  
 PROVIDED BY ATTERRO SURVEYS, INC.  
 3. AS DRILLED DATA WAS PROVIDED BY  
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 4. THIS IS NOT CERTIFYING THE DATA AND  
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 PROVIDED.



ANTERO RESOURCES CORPORATION  
 Well No. Banner Unit 2H (AS DRILLED)  
 47-095-02163  
 THOMAS SUMMERS  
 LICENSED PROFESSIONAL SURVEYOR  
 STATE OF WEST VIRGINIA  
 1102/15/2017

PERMIT  
 COUNTY NAME  
 WELL NO. 2H  
 BOTTOM HOLE  
 5.015'  
 2.493' TO BOTTOM HOLE  
 LATITUDE 39.27'30"  
 6.141' TO BOTTOM HOLE  
 LONGITUDE 80.42'30"  
 10.791'

WELL OPERATOR  
 TARGET FORMATION  
 (SPECIFY) (X) AS DRILLED  
 PLUG & ABANDON  
 CLEAN OUT & REPLUG  
 PLUG OFF OLD FORMATION  
 CONVERT DRILL DEEPER  
 REDRILL  
 FRACTURE OR STIMULATE  
 OTHER PHYSICAL CHANGE IN WELL  
 LEASE ACRES  
 952.3 AC. 14.3 AC. 31.32 AC. 50 AC. 53.69 AC. 49.12 AC. 36 AC. 39.4 AC. 87.75 AC. 44.68 AC.  
 M. HEJLUN ET AL.; R. BERRY ET AL.; G. ANDERSON ET AL.; W.B. ALLEN ET AL.; R. SMITH; S.A. SMITH ET AL.  
 DR. & GS. ROWLAND OWNER; W.O. HARMAN ET AL.; P. NICHOLS ET AL.; A. RICHARDS ET AL.; R. RONALD NOHE ET AL.  
 SURFACE OWNER  
 COASTAL LUMBER COMPANY  
 ACRES 766 ACRES +/-  
 QUADRANGLE CENTERPOINT 75  
 DISTRICT MCELROY COUNTY TYLER  
 LOCATION: ELEVATION AS DRILLED -1,188'  
 WATERSHED MCELROY CREEK  
 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X  
 WASTE DISPOSAL  
 WELL TYPE: OIL X LIQUID INJECTION  
 GAS X  
 DIVISION OF OIL AND GAS  
 DEPARTMENT OF ENERGY  
 STATE COUNTY PERMIT  
 47 - 085 - 02163  
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 MARCELLUS  
 ESTIMATED DEPTH 7,140' TVD 18,200' MD  
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