

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

API 47 - 095 - 02538 County Tyler District Meade  
Quad Middlebourne 7.5' Pad Name Rush Fork Pad Field/Pool Name -----  
Farm name Joseph R. Rymer Jr. Well Number Gauge 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 4363053m Easting 502628m  
Landing Point of Curve Northing 4362909.57m Easting 502630.90m  
Bottom Hole Northing 4359519m Easting 503860m

Elevation (ft) 986' 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 11/9/2018 Date drilling commenced 1/1/2019 Date drilling ceased 4/28/2019  
Date completion activities began 9/11/2019 Date completion activities ceased 11/25/2019  
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A RECEIVED  
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Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug **AUG 31 2020**

Freshwater depth(s) ft 30, 81 Open mine(s) (Y/N) depths No WV Department of  
Salt water depth(s) ft 1461, 1485, 1510 Void(s) encountered (Y/N) depths No Environmental Protection  
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No  
Is coal being mined in area (Y/N) No

Reviewed by:

*ASB*  
9/17/2020

API 47-095 - 02538 Farm name Joseph R. Rymer Jr. Well number Gauge 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"	95'	New	94#, H-40	N/A	Y	
Surface	17-1/2"	13-3/8"	379'	New	54.5#, J-55	N/A	Y	
Coal								
Intermediate 1	12-1/4"	9-5/8"	2578'	New	36#, J-55	N/A	Y	
Intermediate 2								
Intermediate 3								
Production	8-3/4"/8-1/2"	5-1/2"	18731'	New	23#, HCP-110	N/A	Y	
Tubing		2-3/8"	6365'		4.7#, P-110			
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	300 sx	15.6	1.18	241	0'	8 Hrs.
Surface	Class A	373 sx	15.6	1.20	635	0'	8 Hrs.
Coal							
Intermediate 1	Class A	890 sx	15.6	1.19	1082	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	792 sx (Lead) 3300sx (Tail)	14.5 (Lead), 15.2(Tail)	1.4 (Lead), 1.6 (Tail)	3003	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 18751' MD, 6308' TVD (BHL), 6310' (Deepest Point Drilled) Loggers TD (ft) 18751' MD

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

Plug back procedure N/A

Kick off depth (ft) 5500'

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 \_\_\_\_\_ RECEIVED  
 Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface Office of Oil and Gas  
 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  
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WAS WELL COMPLETED AS SHOT HOLE  Yes  No  DETAILS \_\_\_\_\_ WV Department of  
 Environmental Protection

WAS WELL COMPLETED OPEN HOLE?  Yes  No  DETAILS \_\_\_\_\_

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

API 47- 095 - 02538 Farm name Joseph R. Rymer Jr. Well number Gauge Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
<b>*PLEASE SEE ATTACHED EXHIBIT 1</b>					

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 (bbls)	Amount of Nitrogen/other (units)
<b>*PLEASE SEE ATTACHED EXHIBIT 2</b>								

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Please insert additional pages as applicable.

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PRODUCING FORMATION(S)

DEPTHS

Marcellus  
6151' (TOP) TVD 6429' (TOP) MD  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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 9834 mcfpd 481 bpd --- bpd NGL Water 4689 bpd GAS MEASURED BY  
Oil 481 bpd --- bpd  Estimated  Orifice  Pilot

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

**\*PLEASE SEE ATTACHED EXHIBIT 3**

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

Please insert additional pages as applicable.

Drilling Contractor Frontier Drilling LLC City Pennsboro State WV Zip 26415  
Address 562 Spring Run Road

Logging Company KLX Energy Services City Bridgeport State WV Zip 26330  
Address 6072 W Veterans Memorial Hwy

Cementing Company Schlumberger Oilfield Services City Sugarland State TX Zip 77478 RECEIVED  
Address 300 Schlumberger Dr Office of Oil and Gas

Stimulating Company CalFrac Well Services City Denver State CO Zip 80202 AUG 31 2020  
Address 171 17th Street, Wuite 1445

Please insert additional pages as applicable.

Completed by Megan Griffith Telephone 303-357-7223  
Signature [Signature] Title Permitting Agent Date 4-9-20

Submittal of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry  
WV Department of Environmental Protection

API 47-095-02580 Farm Name Joseph R. Rymer Jr., Well Number Gauge Unit 1H

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	9/13/2019	18623	18578	60	Marcellus
2	9/13/2019	18540.39	18374.34	60	Marcellus
3	9/13/2019	18338.73	18172.68	60	Marcellus
4	9/13/2019	18137.07	17971.02	60	Marcellus
5	9/14/2019	17935.41	17769.36	60	Marcellus
6	9/14/2019	17733.75	17567.7	60	Marcellus
7	9/14/2019	17532.09	17366.04	60	Marcellus
8	9/15/2019	17330.43	17164.38	60	Marcellus
9	9/15/2019	17128.77	16962.72	60	Marcellus
10	9/15/2019	16927.11	16761.06	60	Marcellus
11	9/16/2019	16725.45	16559.4	60	Marcellus
12	9/16/2019	16523.79	16357.74	60	Marcellus
13	9/16/2019	16322.13	16156.08	60	Marcellus
14	9/16/2019	16120.47	15954.42	60	Marcellus
15	9/17/2019	15918.81	15752.76	60	Marcellus
16	9/17/2019	15717.15	15551.1	60	Marcellus
17	9/17/2019	15515.49	15349.44	60	Marcellus
18	9/17/2019	15313.83	15147.78	60	Marcellus
19	9/18/2019	15112.17	14946.12	60	Marcellus
20	9/18/2019	14910.51	14744.46	60	Marcellus
21	9/18/2019	14708.85	14542.8	60	Marcellus
22	9/18/2019	14507.19	14341.14	60	Marcellus
23	9/19/2019	14305.53	14139.48	60	Marcellus
24	9/19/2019	14103.87	13937.82	60	Marcellus
25	9/19/2019	13902.21	13736.16	60	Marcellus
26	9/20/2019	13700.55	13534.5	60	Marcellus
27	9/20/2019	13498.89	13332.84	60	Marcellus
28	9/20/2019	13297.23	13131.18	60	Marcellus
29	9/20/2019	13095.57	12929.52	60	Marcellus
30	9/20/2019	12893.91	12727.86	60	Marcellus
31	9/21/2019	12692.25	12526.2	60	Marcellus
32	9/21/2019	12490.59	12324.54	60	Marcellus
33	9/21/2019	12288.93	12122.88	60	Marcellus
34	9/21/2019	12087.27	11921.22	60	Marcellus
35	9/22/2019	11885.61	11719.56	60	Marcellus
36	9/22/2019	11683.95	11517.9	60	Marcellus
37	9/22/2019	11482.29	11316.24	60	Marcellus
38	9/22/2019	11280.63	11114.58	60	Marcellus
39	9/23/2019	11078.97	10912.92	60	Marcellus
40	9/23/2019	10877.31	10711.26	60	Marcellus
41	9/23/2019	10675.65	10509.6	60	Marcellus
42	9/23/2019	10473.99	10307.94	60	Marcellus
43	9/24/2019	10272.33	10106.28	60	Marcellus
44	9/24/2019	10070.67	9904.62	60	Marcellus
45	9/24/2019	9869.01	9702.96	60	Marcellus
46	9/24/2019	9667.35	9501.3	60	Marcellus
47	9/25/2019	9465.69	9299.64	60	Marcellus
48	9/25/2019	9264.03	9097.98	60	Marcellus
49	9/25/2019	9062.37	8896.32	60	Marcellus
50	9/25/2019	8860.71	8694.66	60	Marcellus
51	9/26/2019	8659.05	8493	60	Marcellus
52	9/26/2019	8457.39	8291.34	60	Marcellus
53	9/26/2019	8255.73	8089.68	60	Marcellus
54	9/26/2019	8054.07	7888.02	60	Marcellus
55	9/27/2019	7852.41	7686.36	60	Marcellus
56	9/27/2019	7650.75	7484.7	60	Marcellus
57	9/27/2019	7449.09	7283.04	60	Marcellus
58	9/27/2019	7247.43	7081.38	60	Marcellus
59	9/27/2019	7045.77	6879.72	60	Marcellus

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**EXHIBIT 2**

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)
1	9/13/2019	77.02056	8458.102	6436	4604	402640	8686.896	N/A
2	9/13/2019	77.59763	8096.562	5296	4303	403320	8870.75	N/A
3	9/13/2019	77.84327	8068.895	5579	4328	403460	8752.04	N/A
4	9/13/2019	82.90334	8427.724	5408	4007	399800	8751.29	N/A
5	9/14/2019	78.55514	8101.236	5250	4213	403920	8853.63	N/A
6	9/14/2019	77.67484	8230.568	5551	4337	406060	8782.8	N/A
7	9/14/2019	80.79147	8521.521	5072	3985	402120	8651.29	N/A
8	9/15/2019	72.47672	8250.284	5237	4838	398800	10281.71	N/A
9	9/15/2019	83.13228	8246.778	6191	4751	399920	8744.48	N/A
10	9/15/2019	84.32548	8378.155	5494	4445	399300	8487	N/A
11	9/16/2019	85.6356	8463.615	5412	4190	407960	8736.99	N/A
12	9/16/2019	82.00856	8276.917	6622	3880	403880	8776.52	N/A
13	9/16/2019	85.08897	8360.438	6506	4344	406840	10775.77	N/A
14	9/16/2019	86.17883	8494.988	2765	4156	405380	8547.14	N/A
15	9/17/2019	83.82288	8276.142	5793	3798	402790	8688.14	N/A
16	9/17/2019	84.14203	8418.994	5080	3801	404660	8494.24	N/A
17	9/17/2019	83.81683	8531.449	5210	402980	404660	8454.37	N/A
18	9/17/2019	83.63277	8550.024	5083	4416	408740	8536.99	N/A
19	9/18/2019	81.51775	8418.637	5253	3756	409680	8583.06	N/A
20	9/18/2019	85.68179	8446.476	5863	4059	408800	8550.34	N/A
21	9/18/2019	85.0171	8343.807	6502	4313	404160	8477.33	N/A
22	9/18/2019	83.14903	8496.692	5490	3886	406860	8487.84	N/A
23	9/19/2019	83	8345	6548	3852	409540	8489.8	N/A
24	9/19/2019	82.6	8373	5323	3831	413920	8528.7	N/A
25	9/19/2019	83.20493	8385.021	5663	4021	403560	8490.99	N/A
26	9/20/2019	85.06788	8352.67	5236	4217	405680	8496.28	N/A
27	9/20/2019	83.19961	8304.41	5569	3754	403060	8629.87	N/A
28	9/20/2019	83.21852	8040.347	5013	3847	403380	8552.39	N/A
29	9/20/2019	84.88129	8201.019	5035	4025	401340	8451.13	N/A
30	9/20/2019	83.91179	8189.267	5017	4090	400240	8387.49	N/A
31	9/21/2019	84.4	8331	5099	3931	401180	8384.1	N/A
32	9/21/2019	81.8	7973	5273	3956	403840	11099	N/A
33	9/21/2019	76.69206	7759.056	5277	4082	406020	8472.43	N/A
34	9/21/2019	84.84536	8417.26	6558	4030	406620	8454.84	N/A
35	9/22/2019	83.82148	8477.884	4906	3756	408680	8586.99	N/A
36	9/22/2019	85.69071	7912.786	5469	3769	410480	8554.47	N/A
37	9/22/2019	84.3	7746	5469	3905	405580	8383.6	N/A
38	9/22/2019	87.34547	7865.171	4328	3965	402100	8369.89	N/A
39	9/23/2019	85.2	7876	5386	3907	408580	8438	N/A
40	9/23/2019	85.4	7997	5119	3897	404800	8321.4	N/A
41	9/23/2019	85.62885	8083.804	5520	3810	405660	8436.71	N/A
42	9/23/2019	87.76625	8065.501	4830	4003	402520	8414.5	N/A
43	9/24/2019	88.51626	7800.002	5135	4043	403780	8380.36	N/A
44	9/24/2019	87.30491	7785.394	5269	3969	407180	8230.94	N/A
45	9/24/2019	87.25887	8509.74	5712	4037	404140	8372	N/A
46	9/24/2019	89.56537	7969.75	5513	4050	406980	8411	N/A
47	9/25/2019	84.61899	7695.059	5486	4012	411100	8410.6	N/A
48	9/25/2019	85.62368	7774.413	4869	3569	411960	8478.29	N/A
49	9/25/2019	83.95529	7755.61	5769	3601	394620	8235.35	N/A
50	9/25/2019	88.8	7916	6093	3981	398150	8299.3	N/A
51	9/26/2019	84.5	8019	6419	3809	401440	8442.6	N/A
52	9/26/2019	84.35829	7800.221	5669	3505	402260	8419.69	N/A
53	9/26/2019	84.97858	7948.636	5769	4069	404720	8343.76	N/A
54	9/26/2019	86.1	8110	5854	3586	406600	8225.7	N/A
55	9/27/2019	87.1	7793	5671	3962	400640	8213.2	N/A
56	9/27/2019	85.26083	7438.264	5169	3589	401980	8396.23	N/A
57	9/27/2019	83.7066	7162.143	5269	3598	404920	8391.58	N/A
58	9/27/2019	84.15876	7230.342	5269	3456	403980	8456.52	N/A
59	9/27/2019	88.1	7421	5435	3795	402760	8229.4	N/A
	AVG=	<b>82</b>	<b>8,306</b>	<b>5,459</b>	<b>4,135</b>	<b>13,343,830</b>	<b>289,953</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	
Sandstone	0		215		0		215	
Sandy Siltstone	215		385		215		385	
Shaly Siltstone	385		585		385		585	
Silty sandstone	585		625		585		625	
Shaly Siltstone	625		745		625		745	
Silty sandstone	745		805		745		805	
Sandy Siltstone	805		865		805		865	
Shaly Siltstone	865		985		865		985	
Silty Shale	985		1,185		985		1,185	
Silty Sandstone	1,185		1,475		1,185		1,475	
Sandstone	1,475		1,645		1,475		1,645	
Sandy Siltstone	1,645		1,745		1,645		1,745	
Silty sandstone	1,745		1,786		1,745		1,801	
Big Lime	1,801		2,718		1,776		2,718	
Fifty Foot Sandstone	2,718		2,835		2,693		2,835	
Gordon	2,835		3,186		2,810		3,189	
Fifth Sandstone	3,186		3,346		3,164		3,351	
Bayard	3,346		4,088		3,326		4,109	
Speechley	4,088		4,387		4,084		4,415	
Balltown	4,387		4,581		4,390		4,613	
Bradford	4,581		4,750		4,588		4,786	
Benson	4,750		4,935		4,761		4,975	
Alexander	4,935		6,058		4,950		6,192	
Sycamore	5,936		6,033		6,027		6,167	
Middlesex	6,033		6,126		6,167		6,354	
Burkett	6,126		6,144		6,354		6,405	
Tully	6,144		6,151		6,405		6,429	
Marcellus	6,151		NA		6,429		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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Environmental Protection

# ANTERO RESOURCES CORPORATION

Location: Tyler County, WV  
 Field: Tyler  
 Facility: Rush Fork Pad  
 Slot: Slot #07  
 Well: Gauge Unit 1H  
 Wellbore: Gauge Unit 1H PWB

Grid System: NAD83 / UTM Zone 17 North, US feet  
 True vertical depths are referenced to H&P 317 (RKB)  
 North Reference: Grid north  
 Scale: True distance  
 Measured depths are referenced to H&P 317 (RKB)  
 H&P 317 (RKB) to Mean Sea Level: 1011.5 feet  
 Depths are in feet  
 Created by: delat on 2018-05-08  
 Coordinates are in feet referenced to Slot

Facility Name  
 Grid East (US ft)    Grid North (US ft)  
 Longitude    Latitude

Slot  
 Local N (ft)    Local E (ft)    Grid East (US ft)    Grid North (US ft)  
 Longitude    Latitude  
 H&P 317 (RKB) to Ground level (at Slot: Slot #07)  
 25.5ft  
 Mean Sea Level to Ground level (at Slot: Slot #07)  
 -88ft  
 H&P 317 (RKB) to Mean Sea Level  
 1011.5ft

Well Profile Data

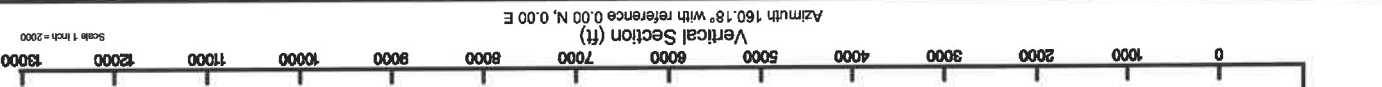
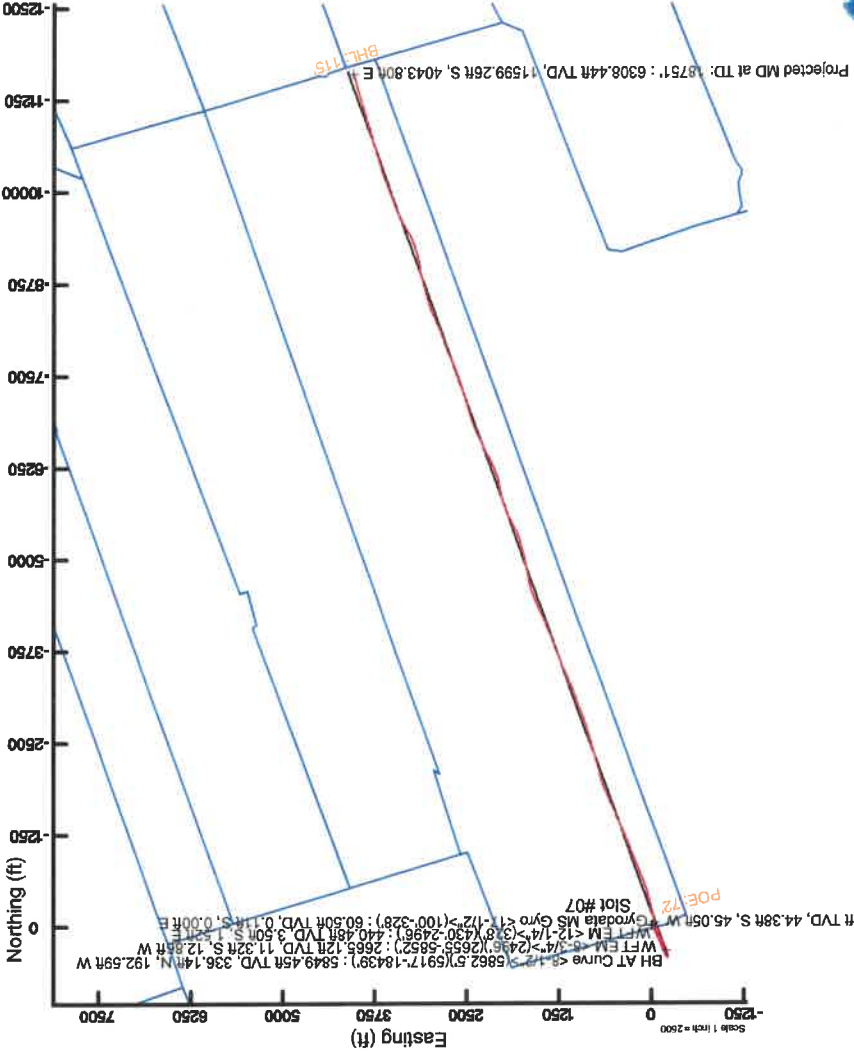
Design Comment	MD (ft)	Inc. °	Az. °	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tit On	592.50	25.480	164.870	5801.18	380.39	-189.71	8.17	-408.75
Proj. To Bottom	594.50	30.700	161.100	5884.88	328.02	-189.71	7.66	-372.92
End of 3D Arc	8149.77	47.888	158.087	6030.89	200.51	-143.08		-297.14
POE	6421.31	160.178	6168.00	-17.20	-82.52	8.50		-5.01
Landing Pt.	6645.89	80.000	160.178	6205.00	-224.41	12.17		216.24
BHL	18789.52	90.000	160.178	6205.00	-11829.89	4123.45		0.00

Well	Wellbore	Wellpath
Slot #07	Gauge Unit 1H	Gauge Unit 1H AWS
Slot #07	Gauge Unit 1H	Gauge Unit 1H AWP Proj: 18751'

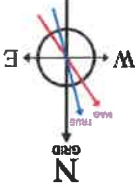
Well	Gauge Unit 1H	Gauge Unit 1H	Gauge Unit 1H
WFT EM <12-1/4> (328)(430-2496) : 0.35° Inc. 440.50ft MD, 440.48ft TVD, 3.80ft VS	WFT EM <8-3/4> (2496)(2655-5852) : 0.25° Inc. 2655.50ft MD, 2665.12ft TVD, 6.29ft VS	WFT EM <17-1/2> (100-328) : 0.35° Inc. 60.50ft MD, 60.50ft TVD, 0.10ft VS	Gyrodala MS Gyro <17-1/2> (100-328) : 0.35° Inc. 60.50ft MD, 60.50ft TVD, 0.10ft VS

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API: 47-095-02538-0000  
 BHI Job #: 109770853  
 Rig: H&P 317  
 Duration: 04/22/2019-04/25/2019



User specified (HDGM) Dip: 66.49° Field: 51747 nt  
 Magnetic North is 7.76 degrees West of True North (at 4/18/2019)  
 Grid North is 0.02 degrees East of True North  
 To correct azimuth from True to Grid subtract 0.02 degrees  
 To correct azimuth from Magnetic to Grid subtract 7.78 degrees







CI-9100G	CWS	Corrosion Inhibitor	Listed Below			
CalGel 4000	CWS	Gel Slurry				
DAP-103	CWS	Iron Control	Listed Below			
			Listed Below			
SaniFrac 8844	CWS	Biocide				
			Listed Below			
Hydrochloric Acid	CWS	Clean Perforations				
			Listed Below			
Calbreak 5501	CWS	Breaker				
			Listed Below			
Other Chemical (s)	Listed Above	See Trade Name (s) List				
Items above are Trade Names with the exception of Base Water : Items below are the individual ingredients.						
		Hydrochloric acid	7647-01-0	37.00000	0.05952	
		Copolymer of 2-propenamide	69418-26-4	30.00000	0.01591	
		Guar gum	9000-30-0	60.00000	0.01195	
		Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.01195	

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	0.01061	20.00000	64742-47-8	Distillates (petroleum), hydrotreated light
	0.00670	54.50000	25322-68-3	Polyethylene glycol mixture
	0.00424	8.00000	12125-02-9	Ammonium chloride
	0.00246	20.00000	10222-01-2	2,2-Dibromo-3-Nitripropionamide
	0.00106	2.00000	93-83-4	Oleic Acid Diethanolamide
	0.00100	5.00000	14808-60-7	Crystalline silica (Quartz)
	0.00100	5.00000	68953-58-2	Quaternary ammonium compounds, bis (hydrogenated tallow alkyl)dimethyl, salts with bentonite
	0.00054	60.00000	77-92-9	Citric acid
	0.00049	4.00000	7647-15-6	Sodium bromide
	0.00037	3.00000	3252-43-5	Dibromoacetoneitrile
	0.00030	100.00000	7727-54-0	Ammonium Persulfate
	0.00030	1.50000	37251-67-5	Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether
	0.00006	20.00000	25038-72-6	Vinylidene chloride-methyl acrylate copolymer
	0.00003	40.00000	107-21-1	Ethylene Glycol
	0.00002	20.00000	34590-94-8	Diethylene glycol, monomethyl ether
	0.00001	10.00000	64-18-6	Formic acid
	0.00001	10.00000	68131-39-5	Ethoxylated Alcohols
	0.00001	10.00000	72480-70-7	Tar bases, quinolone derivs, benzyl chloride-quetenized
	0.00001	10.00000	104-55-2	Cinnamaldehyde
	0.00001	5.00000	67-63-0	Isopropyl alcohol

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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)

\* 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

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LATITUDE 39°27'30"

10,932' TO BOTTOM HOLE

LONGITUDE 80°55'00"

15,085'

11,509' TO BOTTOM HOLE

LONGITUDE 80°57'30"

Antero Resources Corporation Well No. Gauge Unit 1H

AS DRILLED DATA: WELL 1H TOP HOLE INFORMATION: N: 337,356ft E: 1,584,811ft LAT: 39°25'00.91" LON: 80°58'10.69" BOTTOM HOLE INFORMATION: N: 325,692ft E: 1,588,661ft LAT: 39°23'06.25" LON: 80°57'19.24" WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRUMBLE 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: 4,363,053m E: 502,628m BOTTOM HOLE INFORMATION: N: 4,359,519m E: 503,860m

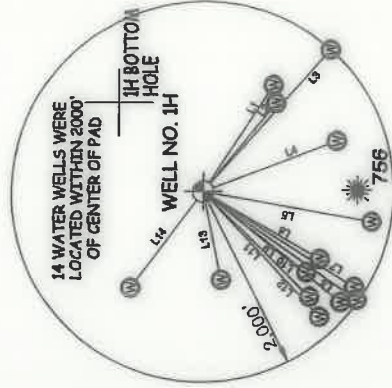
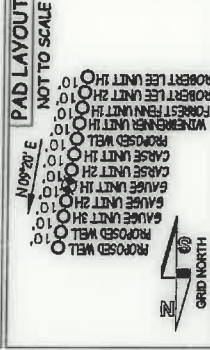


Table with 3 columns: Well No., Acres, and Owner/Leaseholder. Lists various wells and their associated acreage and owners.

Table with 3 columns: LINE, BEARING, DISTANCE. Lists line bearings and distances for various well paths.

I, 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

Form containing job details, drawing information, legend, and permit information. Includes fields for job #, drawing #, scale, accuracy, proven source, submeter, date, well type, production, location, surface owner, oil & gas royalty owner, proposed work, plug off old formation, target formation, well operator, address, county name, and permit number.

DEWELP CO 80505

ADDRESS 1819 WALKOOD ST. WELL OPERATOR WILCO BECKWITH CORP. TARGET FORMATION MARYSETTLE (SPECIALLY AS DRILLED) DESIGNATED AGENT DIVINA STAMBER - CL CORP/OPERATION SYSTEMS 8'308.7AD 10'191.MD ESTIMATED DEPTH 8'308.7AD 10'191.MD CLEAN OUT & BELOGIC STEAM OUT & BELOGIC OTHER PHYSICAL CHANGE IN WELL PROPOSED WORK: DRILL COMPLET DRIFT DEEBER BEDRIFT FRACTURE OR STIMULATE PERMIT COUNTY NAME

WELL NAME: WILCO BECKWITH CORP. WALKOOD ST. 8'308.7AD 10'191.MD. COUNTY: BERKLEY. WELT TYPE: OIL. DISTRICT: WEAVER. COUNTY: BERKLEY. COUNTY NAME: BERKLEY. WELT NO. 11-0355M. WELT TYPE: OIL. STORAGE: DEEP. WASTE DISPOSAL: WASTE DISPOSAL.



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

DESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION INFORMATION RECEIVED BY TVA AND THE BUREAU ISSUED AND TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS THAT THE INFORMATION DESCRIBED HEREIN CORRECTLY SHOWS THAT THE UNDESIGNED HEREIN CORRECTLY SHOWS THAT THE UNDESIGNED

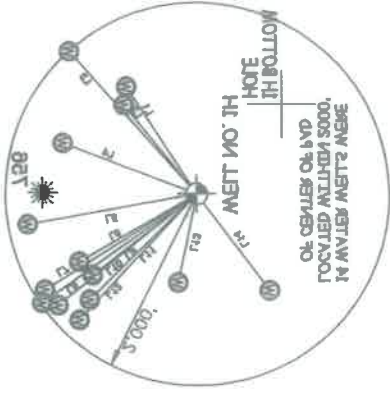


Table with 3 columns: TIME, BEYOND, DISTANCE. Lists various time intervals and distances.

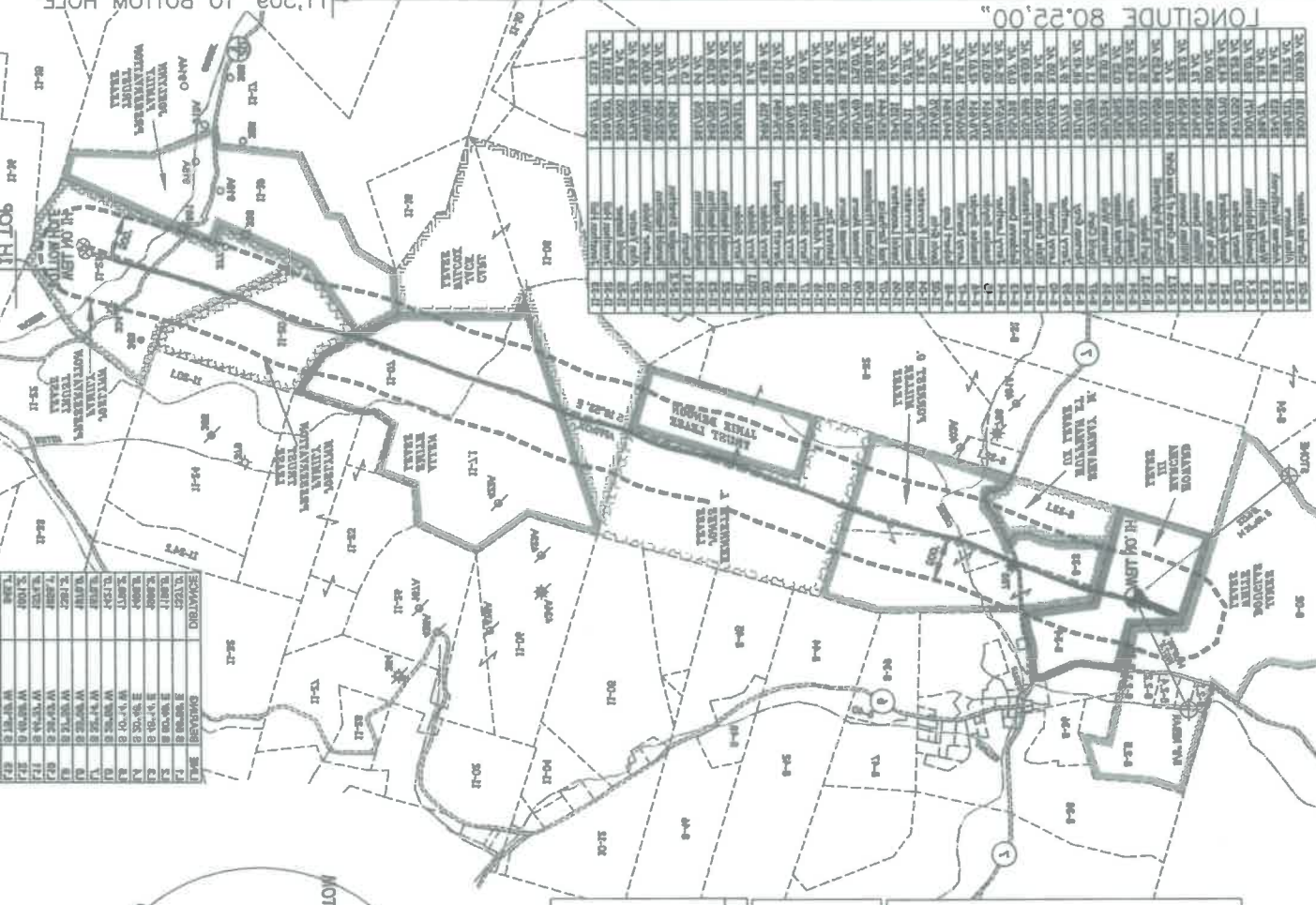
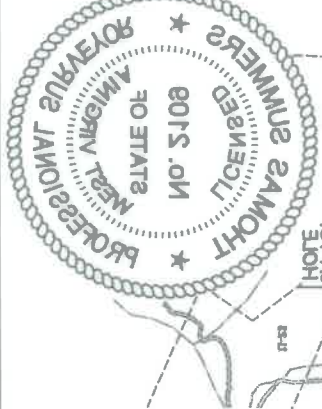


Table with 2 columns: WELT NO. 11-0355M, WELT NO. 11-0355M. Lists well numbers and coordinates.

WELL NO. 11-0355M COORDINATES: WELT NO. 11-0355M COORDINATES: WELT NO. 11-0355M COORDINATES:

WELL NO. 11-0355M COORDINATES: WELT NO. 11-0355M COORDINATES: WELT NO. 11-0355M COORDINATES:

WELL NO. 11-0355M COORDINATES: WELT NO. 11-0355M COORDINATES: WELT NO. 11-0355M COORDINATES:

LONGITUDE 80.52,30" LONGITUDE 80.52,00" LONGITUDE 80.52,30" LONGITUDE 80.52,00"

LATITUDE 39°27'30"

3,193'

10,932' TO BOTTOM HOLE

LATITUDE 39°25'00"

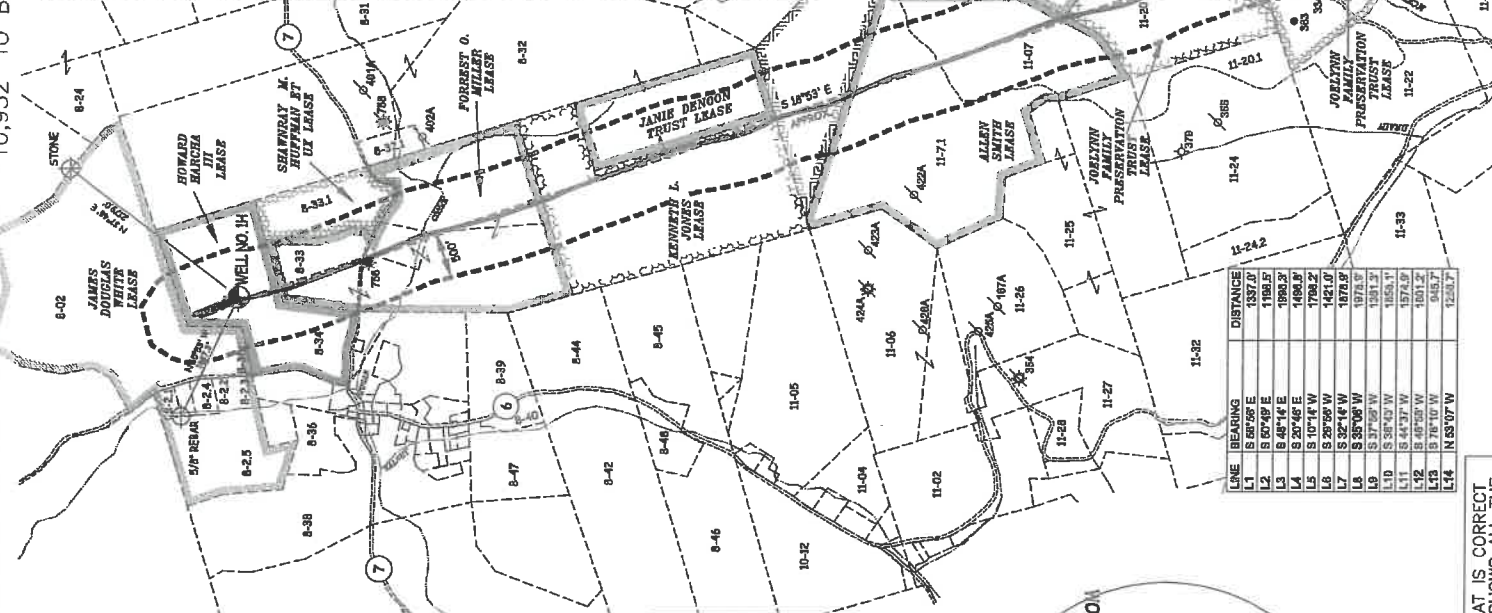
LONGITUDE 80°55'00"

15,085'

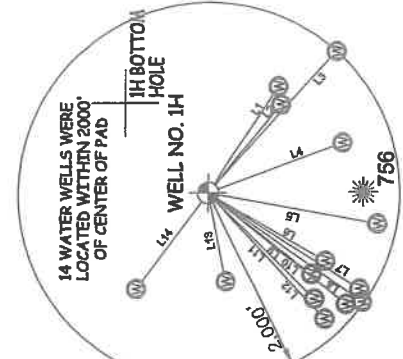
LONGITUDE 80°57'30"

11,509' TO BOTTOM HOLE

8-02	Charles Messer	330/193	103.93 AC
8-21	Allen Means	404/217	127.9 AC
8-22	Andrew Warbrock	324/213	1.89 AC
8-23	Wesley Smith	394/77	1.81 AC
8-24	Bonard Bushman	394/71	58.07 AC
8-25	Nancy Hudson	547/285	22.29 AC
8-26	Nancy Hudson	288/270	44.26 AC
8-27	Gene Welton	342/658	300 AC
8-28	Gene Welton	331/353	73 AC
8-32	William Jones	340/316	4 AC
8-32.1	Coon, Check of Coal Dept	340/316	4 AC
8-33	Richard Brigham	383/609	84.25 AC
8-33.1	Carl Baker	321/333	19 AC
8-34	Joseph Byrner	339/238	44.33 AC
8-35	Charles Messer	305/662	0.29 AC
8-36	Theresa Wells	291/224	19.10 AC
8-37	Wendy Clevy	437/359	11 AC
8-38	Wendy Clevy	327/77	19 AC
8-39	Jerry Leubner	260/687	3.09 AC
8-40	Jerry Leubner	351/638	39 AC
8-41	Eliza Durham	393/249	49.03 AC
8-42	Richard Brigham	305/798	0.67 AC
8-43	Goldiana Downum	305/798	0.67 AC
8-44	Jerry Leubner	276/614	40.84 AC
8-45	Robert Lema	260/687	1.8 AC
8-47	Jerry Leubner	344/384	12.16 AC
11-02	Leif Gryn	333/678	36 AC
11-04	Normi Forrester	278/776	1.82 AC
11-05	Normi Forrester	304/781	62 AC
11-06	Michael Forrester	331/218	153 AC
11-06.1	Michael Forrester	331/218	153 AC
11-07	Theresa Moore	300/749	175.07 AC
11-10	Theresa Moore	390/749	18.28 AC
11-15	Hunter Inc.	195/782	93.78 AC
11-16	Earl Adelfon	311/790	84.81 AC
11-17	Terry Snider	349/716	200 AC
11-18	Terry Snider	330/662	20 AC
11-19	Theresa Moore	349/716	83.84 AC
11-20	Terry Snider	349/716	8 AC
11-20.1	Terry Snider	349/716	8 AC
11-21	Terry Snider	304/317	73.49 AC
11-22	Ronald Hamilton	322/733	62.98 AC
11-23	Ronald Hamilton	349/701	73.08 AC
11-24	Ronald Hamilton	251/726	64 AC
11-25	Church	313/674	15 AC
11-26	Shelbyton	313/674	17 AC
11-26.1	Shelbyton	313/674	17 AC
11-26.2	Shelbyton	313/674	17 AC
11-27	Alan Veater	379/609	31.23 AC
11-28	Daniel Leubner	309/500	8.21 AC
11-29	Jameson Hall	338/787	59.11 AC
11-33	Jameson Hall	338/787	23.15 AC



LINE	BEARING	DISTANCE
L1	S 68°56' E	1337.0'
L2	S 60°49' E	1186.5'
L3	S 48°14' E	1886.3'
L4	S 20°46' E	1488.3'
L5	S 10°14' W	1788.2'
L6	S 29°58' W	1421.0'
L7	S 32°14' W	1876.9'
L8	S 38°06' W	1978.9'
L9	S 37°06' W	1911.3'
L10	S 38°43' W	1853.1'
L11	S 44°37' W	1574.9'
L12	S 49°38' W	1811.2'
L13	S 18°10' W	945.7'
L14	N 83°07' W	1258.7'



I, 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

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AUG 31 2020  
WV Department of Environmental Protection



JOB # 17-022WA  
DRAWING # GAUGE:1HAD  
SCALE 1" = 2000'  
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

DATE 03/09/20  
OPERATOR'S WELL # GAUGE UNIT #1H

THOMAS SUMMERS P.S. 2109  
*Thomas Summers*

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL  
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X  
LOCATION: ELEVATION 986' AS BUILT WATERSHED QUADRANGLE MIDDLEBOURNE 7.5' DISTRICT MEADE COUNTY TYLER ACREAGE 44.33 ACRES +/- PERMIT 02538

SURFACE OWNER JOSEPH R. RYMER JR.  
OIL & GAS ROYALTY OWNER HOWARD HARCHA III; FORREST MILLER; KENNETH JONES; CARL JACK WILCOX; LEASE ACREAGE 44.33 AC +/- 84.88 AC +/- 85.5 AC +/- 129.86 AC +/-  
ALLEN SMITH; JOE LYNN FAMILY PRESERVATION TRUST; JOE LYNN FAMILY PRESERVATION TRUST  
PROPOSED WORK: DRILL CONVERT DRILL DEEPER DRILL DEEPER OR STIMULATE  
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED  
TARGET FORMATION MARCELLUS  
WELL OPERATOR ANTERO RESOURCES CORP.  
ADDRESS 1615 WYNKOOP ST. DENVER, CO 80202

DIANNA STAMPER - CT CORPORATION SYSTEM  
5400 D BIG TYLER ROAD  
CHARLESTON, WV 25313

- NOTES
- NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHEPHERD DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF WELL NO. 1H.
  - TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
  - AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
  - WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED 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 INCONGRUITIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

Antero Resources Corporation  
Well No. Gauge Unit 1H

AS DRILLED DATA:  
WELL 1H TOP HOLE INFORMATION:  
N: 337,356ft E: 1,584,811ft  
LAT: 39°25'00.91" N: 80°58'10.69"  
BOTTOM HOLE INFORMATION:  
N: 325,692ft E: 1,588,661ft  
LAT: 39°23'06.25" N: 80°57'19.24"  
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: 4,363,053m E: 502,628m  
BOTTOM HOLE INFORMATION:  
N: 4,359,519m E: 503,860m

PAD LAYOUT NOT TO SCALE

WV NORTH ZONE GRID NORTH