

Reviewed

John R M 5/9/18

WR-35
Rev. 8/23/13

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

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WV Department of
Environmental Protection

API 47-017-06783 County Doddridge District Central
Quad West Union 7.5' Pad Name Long Run Pad Field/Pool Name ----
Farm name Richard F. McCullough, et al Well Number Hugle 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 4350114m Easting 511747m
Landing Point of Curve Northing 4350119.4m Easting 507452.67m
Bottom Hole Northing 4347122m Easting 512755m

Elevation (ft) 1021' 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 10/25/2016 Date drilling commenced 12/16/2016 Date drilling ceased 4/5/2017
Date completion activities began 6/16/2017 Date completion activities ceased 11/6/2017
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 53' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 884' Void(s) encountered (Y/N) depths No
Coal depth(s) ft N/A Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by: _____

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API 47-017 - 06783 Farm name Richard F. McCullough, et al Well number Hugle 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"	65'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	529'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2534'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	17467'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6340'		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	989 sx	15.6	1.19	1177	0'	8 Hrs.
Coal							
Intermediate 1	Class A	989 sx	15.6	1.18	1167	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	745 sx (Lead) 1539 sx (Tail)	13.50 (Lead), 15.20 (Tail)	1.56 (Lead), 1.83 (Tail)	3979	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17466' MD, 6569' TVD (BHL), 6569' (Deepest Point Drilled) Loggers TD (ft) 17466' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5957'

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

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WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS APR 30 2018

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____ WV Department of Environmental Protection

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

API 47- 017 - 06783 Farm name Richard F. McCullough, et al Well number Hugle Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6442' (TOP)</u> TVD	<u>6780' (TOP)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3100 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 10165 mcfpd Oil 52 bpd NGL --- bpd Water 2 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**

Please insert additional pages as applicable.

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

Logging Company Pro Oil & Gas Services LLC
Address 3035 Lynnwood Drive City Hermitage State PA Zip 16148

Cementing Company C&J Energy Services
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company Baker Hughes
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Please insert additional pages as applicable.

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Completed by Mallory Stanton Telephone 303-357-7182
Signature _____ Title Permitting Supervisor Date 4/27/2018 APR 30 2018

API 47-017-06783 Farm Name Richard F. McCullough et al Well Number Hugle Unit 2H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	9/11/2017	17196	17364	60	Marcellus
2	9/11/2017	16996	17164	60	Marcellus
3	9/12/2017	16796	16965	60	Marcellus
4	9/12/2017	16596	16765	60	Marcellus
5	9/12/2017	16396	16565	60	Marcellus
6	9/13/2017	16196	16365	60	Marcellus
7	9/13/2017	15996	16165	60	Marcellus
8	9/13/2017	15796	15965	60	Marcellus
9	9/14/2017	15596	15765	60	Marcellus
10	9/14/2017	15397	15565	60	Marcellus
11	9/14/2017	15197	15365	60	Marcellus
12	9/15/2017	14997	15165	60	Marcellus
13	9/15/2017	14797	14965	60	Marcellus
14	9/15/2017	14597	14765	60	Marcellus
15	9/15/2017	14397	14566	60	Marcellus
16	9/15/2017	14197	14366	60	Marcellus
17	9/16/2017	13997	14166	60	Marcellus
18	9/17/2017	13797	13966	60	Marcellus
19	9/17/2017	13597	13766	60	Marcellus
20	9/17/2017	13397	13566	60	Marcellus
21	9/17/2017	13197	13366	60	Marcellus
22	9/18/2017	12997	13166	60	Marcellus
23	9/18/2017	12798	12966	60	Marcellus
24	9/18/2017	12598	12766	60	Marcellus
25	9/19/2017	12398	12566	60	Marcellus
26	9/19/2017	12198	12366	60	Marcellus
27	9/19/2017	11998	12166	60	Marcellus
28	9/20/2017	11798	11967	60	Marcellus
29	9/20/2017	11598	11767	60	Marcellus
30	9/21/2017	11398	11567	60	Marcellus
31	9/21/2017	11198	11367	60	Marcellus
32	9/21/2017	10998	11167	60	Marcellus
33	9/22/2017	10798	10967	60	Marcellus
34	9/22/2017	10598	10767	60	Marcellus
35	9/22/2017	10399	10567	60	Marcellus
36	9/22/2017	10199	10367	60	Marcellus
37	9/23/2017	9999	10167	60	Marcellus
38	9/23/2017	9799	9967	60	Marcellus
39	9/23/2017	9599	9767	60	Marcellus
40	9/24/2017	9399	9568	60	Marcellus
41	9/24/2017	9199	9368	60	Marcellus
42	9/24/2017	8999	9168	60	Marcellus
43	9/24/2017	8799	8968	60	Marcellus
44	9/25/2017	8599	8768	60	Marcellus
45	9/25/2017	8399	8568	60	Marcellus
46	9/25/2017	8199	8368	60	Marcellus
47	9/25/2017	7999	8168	60	Marcellus
48	9/25/2017	7800	7968	60	Marcellus
49	9/26/2017	7600	7768	60	Marcellus
50	9/26/2017	7400	7568	60	Marcellus
51	9/26/2017	7200	7368	60	Marcellus
52	9/26/2017	7000	7168	60	Marcellus
53	9/26/2017	6800	6969	60	Marcellus

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EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	9/11/2017	74.3	7668	5804	3575	404500	8744	N/A
2	9/11/2017	74.5	7527	6179	4039	404200	8711	N/A
3	9/12/2017	70.6	7232	7212	5076	404350	8689	N/A
4	9/12/2017	76.9	7295	6098	5364	404800	9062	N/A
5	9/12/2017	75.8	7554	5959	4112	404500	8628	N/A
6	9/13/2017	75.5	7459	6339	4085	404650	8548	N/A
7	9/13/2017	75.7	7345	7111	4143	403750	8795	N/A
8	9/13/2017	70	7482	6344	3775	403061	8779	N/A
9	9/14/2017	74.6	7361	6470	4071	404400	8628	N/A
10	9/14/2017	73.1	7593	6564	4117	404000	8826	N/A
11	9/14/2017	75.8	7452	6428	4187	405050	8514	N/A
12	9/15/2017	76.1	7334	6379	4000	405500	8432	N/A
13	9/15/2017	74.5	7000	6428	4378	404450	8586	N/A
14	9/15/2017	75.3	7360	6292	3975	404950	8424	N/A
15	9/15/2017	72.2	7686	6547	4044	406210	8459	N/A
16	9/15/2017	74.5	7149	6455	4671	404300	8467	N/A
17	9/16/2017	77.4	7210	6486	4155	405100	8498	N/A
18	9/17/2017	75.8	7366	6574	4129	405700	8995	N/A
19	9/17/2017	74.1	7320	6404	4236	404000	8443	N/A
20	9/17/2017	74.2	7213	6283	4151	404300	8434	N/A
21	9/17/2017	75.4	7066	6279	4235	405630	8466	N/A
22	9/18/2017	75.1	6842	6099	4530	403850	8306	N/A
23	9/18/2017	74.1	7138	6079	4382	403750	8638	N/A
24	9/18/2017	76.2	7173	5612	4298	406650	8347	N/A
25	9/19/2017	78.1	7583	5825	4259	404150	9700	N/A
26	9/19/2017	77.3	6793	6092	4918	404100	8420	N/A
27	9/19/2017	44.6	7832	6258	4972	185150	11104	N/A
28	9/20/2017	75.5	6929	5723	4582	404450	8234	N/A
29	9/20/2017	65	7433	5799	4364	405250	11061	N/A
30	9/21/2017	77.2	6844	6147	4254	405850	8350	N/A
31	9/21/2017	77.5	6834	5833	4287	404200	8257	N/A
32	9/21/2017	76.6	7098	6373	4055	404100	8301	N/A
33	9/22/2017	72.9	7509	5576	4176	405250	9949	N/A
34	9/22/2017	75.4	6856	5825	4305	405250	8375	N/A
35	9/22/2017	76.9	7004	5790	4209	405450	8381	N/A
36	9/22/2017	74.2	6778	6018	4320	406600	8243	N/A
37	9/23/2017	76.7	6857	6070	4212	404450	8280	N/A
38	9/23/2017	78.8	6716	6538	4357	405600	8239	N/A
39	9/23/2017	77	6920	5759	4243	406100	8450	N/A
40	9/24/2017	75.9	6600	6370	4209	406000	8330	N/A
41	9/24/2017	77.2	6699	6086	4187	404500	8368	N/A
42	9/24/2017	77.5	6688	6023	4005	405100	8169	N/A
43	9/24/2017	77.2	6868	5891	4209	405100	8295	N/A
44	9/25/2017	76.7	6559	5938	3950	405350	8207	N/A
45	9/25/2017	74.4	6431	6241	4049	404350	8157	N/A
46	9/25/2017	75	6553	6388	4178	404900	8123	N/A
47	9/25/2017	76.3	6368	6017	4187	404200	8139	N/A
48	9/25/2017	76.3	6522	6243	3988	405350	8218	N/A
49	9/26/2017	79.5	6407	6044	4022	405350	8171	N/A
50	9/26/2017	75.2	6357	6273	4032	404650	8102	N/A
51	9/26/2017	78.2	6553	6364	4310	404350	8115	N/A
52	9/26/2017	70.5	6696	5315	4000	406200	9978	N/A
53	9/26/2017	75.7	5863		4298	404950	8125	N/A
AVG=		73.9	7,287	6,265	4,294	12,728,901	279,846	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	53'	N/A	N/A	N/A
Sandy siltstone	0	0	0	80
Silty sandstone	80	120	80	120
Sandy siltstone	120	400	120	400
Silty sandstone (tr coal)	400	600	400	600
Sandy shale	600	640	600	640
Silty limestone	640	720	640	720
Silty shale	720	800	720	800
Siltstone	800	880	800	880
Sandstone	880	960	880	960
Shaly sandstone	960	1,080	960	1,080
Silty sandstone (tr coal)	1,080	1,280	1,080	1,280
Silty shale	1,280	1,520	1,280	1,520
Sandy shale (tr coal)	1,520	1,690	1,520	1,690
Shaly sandstone	1,690	1,740	1,690	1,740
Silty shale	1,740	1,873	1,740	1,873
Big Lime	1,873	2,557	1,873	2,557
Fifty Foot Sandstone	2,557	2,640	2,557	2,640
Gordon	2,640	3,154	2,640	3,158
Fifth Sandstone	3,154	3,208	3,158	3,213
Bayard	3,208	3,687	3,213	3,709
Speechley	3,687	4,002	3,709	4,040
Baltown	4,002	4,488	4,040	4,549
Bradford	4,488	4,895	4,549	4,977
Benson	4,895	5,155	4,977	5,251
Alexander	5,155	5,765	5,251	5,880
Rhinestreet	5,765	6,099	5,880	6,223
Sycamore	6,099	6,261	6,223	6,416
Middlesex	6,261	6,383	6,416	6,612
Burkett	6,383	6,411	6,612	6,679
Tully	6,411	6,442	6,679	6,780
Marcellus	6,442	NA	6,780	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:	9/11/2017
Job End Date:	9/26/2017
State:	West Virginia
County:	Doddridge
API Number:	47-017-06783-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Hugle Unit 2H
Latitude:	39.30032800
Longitude:	-80.86376400
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,566
Total Base Water Volume (gal):	19,906,251
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	70.00000	88.30257	
DAP-103	CWS	Iron Control					
				Listed Below			

DWP-111	CWS	Gel Slurry					
				Listed Below			
DAP-902	CWS	Scale Inhibitor					
				Listed Below			
SANIFRAC 8844	CWS	Biocide					
				Listed Below			
Sand (Proppant)	CWS	Propping Agent					
				Listed Below			
Hydrochloric Acid	CWS	Clean Perforations					
				Listed Below			
Calbreak 5501	CWS	Breaker					
				Listed Below			
CI-9100G	CWS	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	11.30024	
			Calcite	471-34-1	1.00000	0.08702	
			Hydrochloric acid	7647-01-0	37.00000	0.05512	
			Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.04911	
			Guar gum	9000-30-0	60.00000	0.04911	
			Polymer	26100-47-0	45.00000	0.02615	
			Illite	12173-60-3	1.00000	0.02594	
			Distillates (petroleum), hydrotreated light	64742-47-8	30.00000	0.01743	
			Ammonium Persulfate	64742-47-8	100.00000	0.01301	
			Goethite	1310-14-1	0.10000	0.01130	
			Apatite	64476-38-6	0.10000	0.01130	
			Biotite	1302-27-8	0.10000	0.01130	
			Ammonium chloride	12125-02-9	11.00000	0.00639	
			Polyethylene glycol mixture	25322-68-3	54.50000	0.00621	
			2-Propenoic acid, homopolymer, sodium salt	9003-04-7	40.00000	0.00597	
			Quaternary ammonium compounds, bis (hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00409	
			Vinylidene chloride-methyl acrylate copolymer	69418-26-4	20.00000	0.00260	
			Ilmenite	98072-94-7	0.10000	0.00259	
			Sorbitan monooleate	1338-43-8	4.00000	0.00232	
			2,2-Dibromo-3-Nitrilopropionamide	10222-01-2	20.00000	0.00228	
			Polyethylene glycol monooleate	9004-96-0	3.00000	0.00174	

			1,2-Propanediol	57-55-6	10.00000	0.00149	
			Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1.50000	0.00123	
			Sorbitol tetraoleate	61723-83-9	2.00000	0.00116	
			Amines, tallow alkyl, ethoxylated	61791-26-2	1.00000	0.00058	
			Citric acid	77-92-9	60.00000	0.00050	
			Sodium bromide	7647-15-6	4.00000	0.00046	
			Dibromoacetonitrile	3252-43-5	3.00000	0.00034	
			Alkyloxypolyethyleneoxy ethanol	84133-50-6	0.50000	0.00029	
			Acrylamide	79-06-1	0.10000	0.00006	
			Ethylene glycol	107-21-1	40.00000	0.00003	
			Diethylene glycol (mono) methyl ether	34590-94-8	20.00000	0.00002	
			Isopropanol	67-63-0	5.00000	0.00001	
			Cinnamaldehyde	104-55-2	10.00000	0.00001	
			Tar bases, quinolone derivs	68513-87-1	1.00000	0.00001	
			Diethylene glycol	111-46-6	1.00000	0.00001	
			Ethoxylated alcohols	Proprietary	10.00000	0.00001	Proprietary CAS
			Formic Acid	64-18-6	10.00000	0.00001	
			Tar bases, quinolone derivs, benzyl chloride- quatenized	72480-70-7	10.00000	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(l) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)



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

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

STATE COUNTY PERMIT
47 017 - 06783

DATE 01/24/18
OPERATOR'S WELL # HUGLE UNIT #2H
THOMAS SUMMERS P.S. 2109

Thomas Summers

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

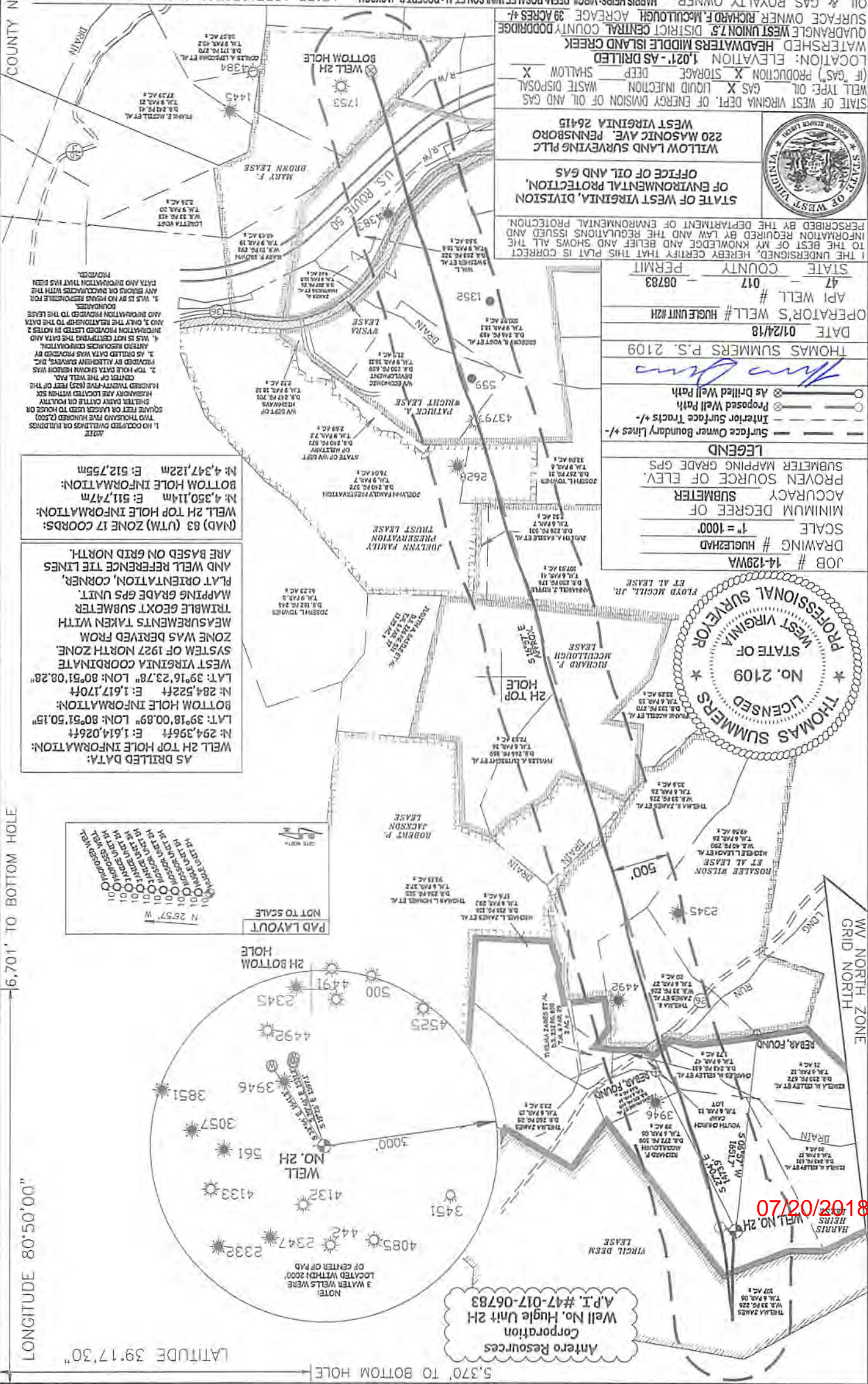
JOB # 14-129WA
DRAWING # HUGLE2HAD
SCALE 1" = 100'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

FORM W-6
ADDRESS 1615 WYNNKOP STREET DENVER, CO 80202
WELL OPERATOR ANTERO RESOURCES CORP.
DESIGNATED AGENT DIANNA STAMPER-CT CORPORATION SYSTEM
5400 D BIG TYLER ROAD CHARLESTON, WV 25313

TARGET FORMATION MARCELLUS
ESTIMATED DEPTH 6,569' TVD 17,466' MD
CLEAN OUT & REPLUG
FRACURE OR STIMULATE
OTHER PHYSICAL CHANGE IN WELL
REDRILL
CONVERT DRILL DEEPER
PERFORATE NEW FORMATION
PLUG & ABANDON
FRACURE OR STIMULATE

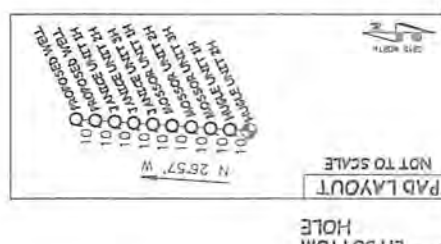
PROPOSED WORK: DRILL
CONVERT DRILL DEEPER
PERFORATE NEW FORMATION
PLUG & ABANDON
FRACURE OR STIMULATE

OIL & GAS ROYALTY OWNER HARRIS HEIRS, VIRGIL DEEM, ROSALEE WILSON ET AL, ROBERT P. JACKSON, LEASE ACRES: 217 AC.; 107 AC.; 107 AC.; 94 AC.;
RICHARD F. MCCULLOUGH, FLOYD MCCILL, JR. ET AL, JOCELYN FAMILY PRESERVATION TRUST, PATRICK A WRIGHT, WISRA, MARY F. BROWN, 72.83 AC.; 107 AC.; 76.04 AC.; 222 AC.; 301.19 AC.; 55.65 AC.



AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
LAT: 39°18'00.89" LON: 80°51'50.15"
N: 294,396ft E: 1,614,026ft
WELL 2H TOP HOLE INFORMATION:
LAT: 39°16'23.78" LON: 80°51'08.28"
N: 284,522ft E: 1,617,107ft
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE MEASUREMENTS TAKEN WITH TRIMBLE GEOMX 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: 4,350,114m E: 511,747m
BOTTOM HOLE INFORMATION:
N: 4,347,122m E: 512,755m



LONGITUDE 80°50'00"
LONGITUDE 80°50'00"
LONGITUDE 80°50'00"
LONGITUDE 80°50'00"

12,051' LONGITUDE 80°50'00"
5,370' TO BOTTOM HOLE
6,701' TO BOTTOM HOLE

Antero Resources Corporation
Well No. Hogle Unit 2H
A.P.I. #47-017-06783

07/20/17

LATITUDE 39°20'00"

8,659'

5,370' TO BOTTOM HOLE

LATITUDE 39°17'30"

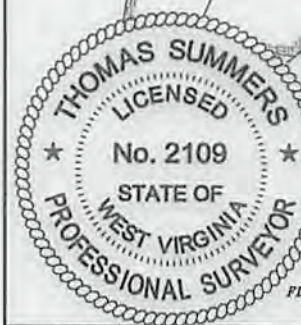
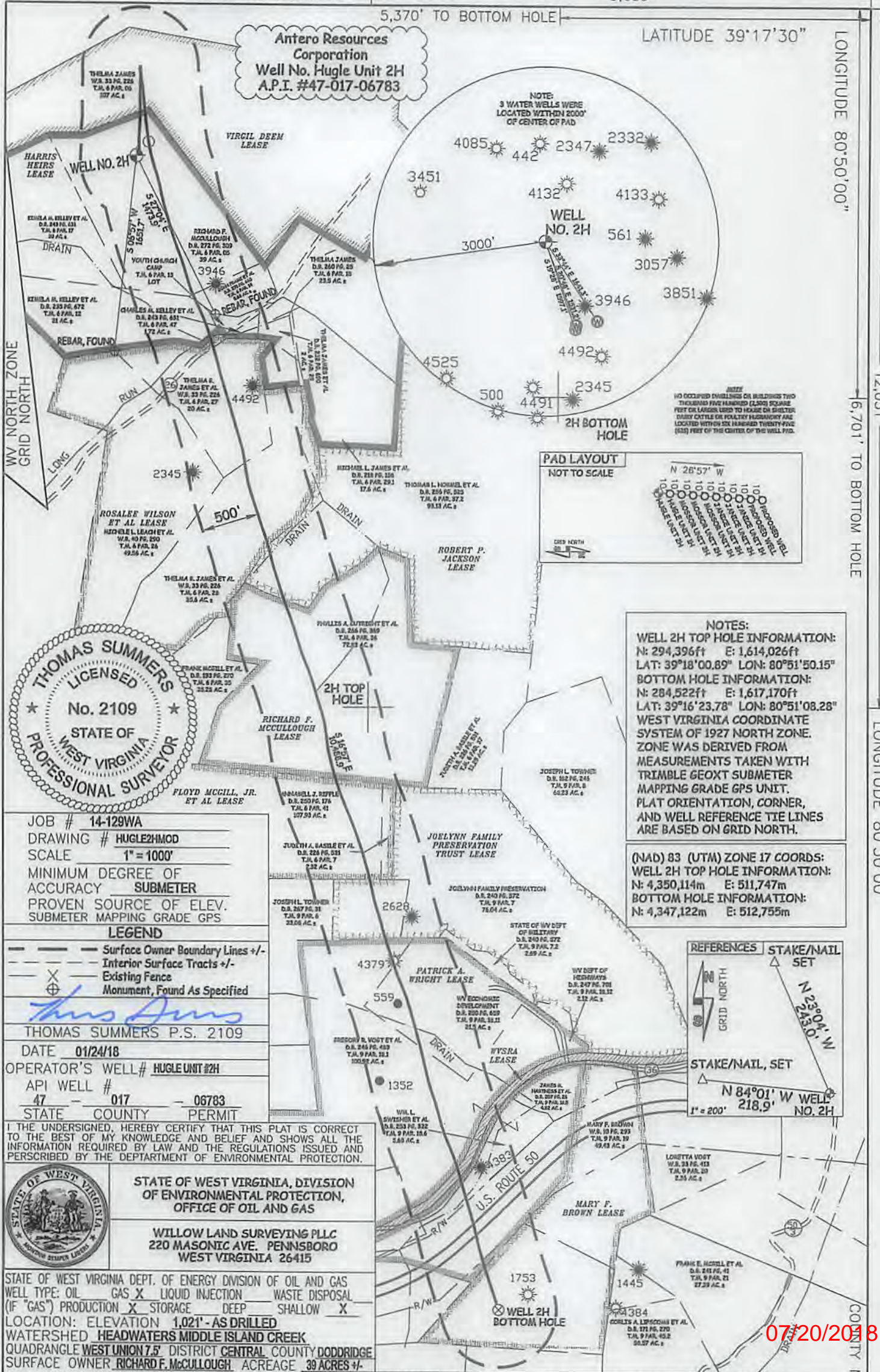
LONGITUDE 80°50'00"

12,051'

LONGITUDE 80°50'00"

COUNTY NAME PERMIT

Antero Resources Corporation
Well No. Hugel Unit 2H
A.P.I. #47-017-06783



JOB # 14-129WA
DRAWING # HUGLE2HMOD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND
- - - Surface Owner Boundary Lines +/-
- - - Interior Surface Tracts +/-
X Existing Fence
⊕ Monument, Found As Specified
Thomas Summers
THOMAS SUMMERS P.S. 2109
DATE 01/24/18
OPERATOR'S WELL # HUGLE UNIT #2H
API WELL # 47-017-06783
STATE COUNTY PERMIT

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 REGULATIONS ISSUED AND PRESCRIBED 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

STATE OF WEST VIRGINIA DEPT. OF ENERGY DIVISION OF OIL AND GAS
WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
LOCATION: ELEVATION 1,021' - AS DRILLED
WATERSHED HEADWATERS MIDDLE ISLAND CREEK
QUADRANGLE WEST UNION 7.5 DISTRICT CENTRAL COUNTY DODDRIDGE
SURFACE OWNER RICHARD F. McCULLOUGH ACREAGE 39 ACRES +/-

OIL & GAS ROYALTY OWNER HARRIS HEIRS; VIRGIL DEEM; ROSALEE WILSON ET AL; ROBERT P. JACKSON; LEASE ACREAGE 217 AC±; 107 AC±; 100 AC±; 94 AC±;
RICHARD F. McCULLOUGH; FLOYD MCGILL, JR. ET AL; JOE LYNN FAMILY PRESERVATION TRUST; PATRICK A WRIGHT; WVSRA; MARY F. BROWN 72.83 AC±; 107 AC±; 78.04 AC±; 222 AC±; 301.19 AC±; 55.05 AC±
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
(SPECIFY) MOD POE PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,569' TVD 17,466' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER-CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

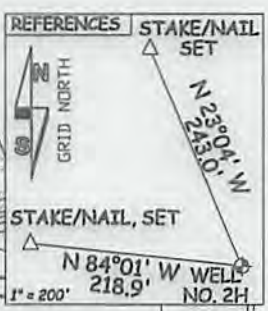
NOTE: 3 WATER WELLS WERE LOCATED WITHIN 2000' OF CENTER OF PAD

NOTE: NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,000) SQUARE FEET OR LARGER USED TO HOUSE OR SHEDDLE CATTLE OR POULTRY FEEDSTOCK ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.

PAD LAYOUT NOT TO SCALE

NOTES:
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07/20/2018