

Reviewed

John C. W. 7/9/16

WR-35
Rev. 8/23/13

Page 1 of 4

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

API 47 - 017 - 06531 County Doddridge District West Union
Quad West Union 7.5' Pad Name Yvonne Pad Field/Pool Name -----
Farm name Yvonne Foster Well Number Brocade 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 4355522m Easting 519878m
Landing Point of Curve Northing 4355696.65m Easting 520074.32m
Bottom Hole Northing 4357974m Easting 519177m

Elevation (ft) 1229' 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

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Date permit issued 9/3/2014 Date drilling commenced 6/29/2016 Date drilling ceased 11/23/2016
Date completion activities began 10/11/2017 Date completion activities ceased 2/14/2018
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 225' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1400' Void(s) encountered (Y/N) depths No
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:

07/20/2018

API 47- 017 - 06531 Farm name Yvonne Foster Well number Brocade Unit 1H

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"	53'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	587'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2523'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15771'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7171'		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	705 sx	15.6	1.19	839	0'	8 Hrs.
Coal							
Intermediate 1	Class A	976 sx	15.6	1.18	1152	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	908 sx (Lead) 1212 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.87 (Tail)	3574	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15771' MD, 6919' TVD (BHL), 7726' (Deepest Point Drilled) Loggers TD (ft) 15771' MD

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

Plug back procedure N/A

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Kick off depth (ft) 6501'

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Check all wireline logs run caliper density deviated/directional induction neutron resistivity gamma ray temperature sonic

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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 - 06531 Farm name Yvonne Foster Well number Brocade Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>			
<u>Marcellus</u>	<u>6885' (TOP)</u>	<u>TVD</u>	<u>7208' (TOP)</u>	<u>MD</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

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

OPEN FLOW Gas 12935.15 mcfpd Oil 83.47 bpd NGL --- bpd Water 11.51 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>		<u>BOTTOM</u>		<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT</u>	<u>DEPTH IN FT</u>	<u>DEPTH IN FT</u>	<u>DEPTH IN FT</u>	
	<u>NAME</u>	<u>TVD</u>	<u>MD</u>	<u>MD</u>	

***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 VA Zip 15330

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Logging Company Kodiak Services Int'l
Address 2219 Sawdust Road, Unit 1604-1605 City The Woodlands State TX Zip 77380

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Cementing Company BJ Services
Address 1036 East Main Street City Bridgeport State WV Zip 26330

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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 Karin Cox Telephone 303-357-6820
Signature [Signature] Title Permitting Agent Date 7/3/2018

Submission of Hydraulic Fracturing Chemical Disclosure Information Attach copy of FRACFOCUS Registry

07/20/2018

API 47-017-06531 Farm Name Yvonne Foster Well Number Brocade Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	10/11/2017	15500	15666	48	Marcellus
2	11/26/2017	15304	15469	48	Marcellus
3	11/27/2017	15107	15273	48	Marcellus
4	11/27/2017	14911	15077	48	Marcellus
5	11/27/2017	14715	14880	48	Marcellus
6	11/28/2017	14518	14684	48	Marcellus
7	11/28/2017	14322	14488	48	Marcellus
8	11/28/2017	14126	14291	48	Marcellus
9	11/29/2017	13929	14095	48	Marcellus
10	11/29/2017	13733	13898	48	Marcellus
11	11/30/2017	13536	13702	48	Marcellus
12	11/30/2017	13340	13506	48	Marcellus
13	11/30/2017	13144	13309	48	Marcellus
14	12/1/2017	12947	13113	48	Marcellus
15	12/1/2017	12751	12917	48	Marcellus
16	12/1/2017	12555	12720	48	Marcellus
17	12/2/2017	12358	12524	48	Marcellus
18	12/2/2017	12162	12328	48	Marcellus
19	12/2/2017	11966	12131	48	Marcellus
20	12/3/2017	11769	11935	48	Marcellus
21	12/3/2017	11573	11739	48	Marcellus
22	12/4/2017	11377	11542	48	Marcellus
23	12/4/2017	11180	11346	48	Marcellus
24	12/4/2017	10984	11149	48	Marcellus
25	12/5/2017	10787	10953	48	Marcellus
26	12/5/2017	10591	10757	48	Marcellus
27	12/5/2017	10395	10560	48	Marcellus
28	12/5/2017	10198	10364	48	Marcellus
29	12/6/2017	10002	10168	48	Marcellus
30	12/7/2017	9806	9971	48	Marcellus
31	12/7/2017	9609	9775	48	Marcellus
32	12/7/2017	9413	9579	48	Marcellus
33	12/7/2017	9217	9382	48	Marcellus
34	12/8/2017	9020	9186	48	Marcellus
35	12/8/2017	8824	8990	48	Marcellus
36	12/9/2017	8628	8793	48	Marcellus
37	12/9/2017	8431	8597	48	Marcellus
38	12/10/2017	8235	8400	48	Marcellus
39	12/10/2017	8038	8204	48	Marcellus
40	12/10/2017	7842	8008	48	Marcellus
41	12/10/2017	7646	7811	48	Marcellus
42	12/11/2017	7449	7615	48	Marcellus
43	12/11/2017	7253	7419	48	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	10/11/2017	70.8734	7789.613	5015	3635	408,420	9950	N/A
2	11/26/2017	69.8063	7855.023	5307	4666	407,880	10679	N/A
3	11/27/2017	73.3043	7897.001	5172	4286	406,250	8908	N/A
4	11/27/2017	72.6745	7729.097	5421	5264	407,420	8512	N/A
5	11/27/2017	72.1759	8051.154	5437	4624	405,950	10920.86	N/A
6	11/28/2017	71.2308	7803.696	5434	5388	379,250	8966	N/A
7	11/28/2017	67.0475	7628.832	5886	5068	407,830	8752	N/A
8	11/28/2017	62.6157	8155.606	5539	4441	405,210	12605.24	N/A
9	11/29/2017	74.154	7932.954	5019	5990	407,750	8724	N/A
10	11/29/2017	70.6276	7394.471	5047	4598	408,140	8650	N/A
11	11/30/2017	70.6094	7391.025	5148	4669	406,750	8767.143	N/A
12	11/30/2017	72.9342	7446.02	5107	5348	408,790	8759	N/A
13	11/30/2017	70.8994	7409.017	5203	5569	409,360	8714.833	N/A
14	12/1/2017	74.7862	7524.335	5408	5852	406,980	8772.667	N/A
15	12/1/2017	73.7088	7530.023	5274	5249	407,290	8517	N/A
16	12/1/2017	72.2609	7302.461	5381	5538	406,570	8656.643	N/A
17	12/2/2017	71.543	7362.952	5365	4494	406,620	8500.619	N/A
18	12/2/2017	72.6557	7370.269	5469	5304	408,380	8475.452	N/A
19	12/2/2017	68.4845	6888.228	5451	5063	408,400	8568.024	N/A
20	12/3/2017	63.6376	6814.073	5458	4556	407,280	8698.262	N/A
21	12/3/2017	71.8228	7151.721	5217	4782	406,640	8441.857	N/A
22	12/4/2017	70.0276	7130.066	5626	5670	407,780	8561.524	N/A
23	12/4/2017	66.6	6923	5451	3978	408,450	8805.071	N/A
24	12/4/2017	73.742	7189.451	5470	4059	407,950	8549.905	N/A
25	12/5/2017	75.1122	7278.572	5518	3816	408,730	8704	N/A
26	12/5/2017	74.1	6928	5503	4667	408,400	8466.667	N/A
27	12/5/2017	74.841	7399.793	5498	5078	409,200	8357	N/A
28	12/5/2017	74.1901	7332.536	5464	4119	407,310	8454	N/A
29	12/6/2017	74.8	7155	5357	4257	407,800	8453.667	N/A
30	12/7/2017	73.591	7425.068	5704	3921	406,050	8345.476	N/A
31	12/7/2017	74.9	7269	5471	4276	407,260	8358.905	N/A
32	12/7/2017	70.222	7335.631	5803	4454	407,650	8312.024	N/A
33	12/7/2017	69.5916	7345.296	5536	5278	408,150	8648	N/A
34	12/8/2017	69.7	7035	5512	5080	407,250	8398.833	N/A
35	12/8/2017	68.4157	7159.433	5263	5213	407,970	8558.405	N/A
36	12/9/2017	64.5	7012	5201	4074	408,500	10222.86	N/A
37	12/9/2017	68.1709	6924.36	5401	4563	406,780	8185.357	N/A
38	12/10/2017	67.3658	6654.958	6133	4570	405,120	8220	N/A
39	12/10/2017	66.4	6881	5420	4389	407,940	8438	N/A
40	12/10/2017	69.5771	6997.545	5379	4408	407,990	8218.905	N/A
41	12/10/2017	65.4	7121	5947	4553	406,950	9709	N/A
42	12/11/2017	65.7772	6614.634	5585	4882	408,060	8633.69	N/A
43	12/11/2017	69.5692	6770.93	4908	4765	407,190	8320.619	N/A
AVG=		70.6	7,310	5,416	4,755	17,495,640	380,461	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	225'	N/A	225'	N/A
Siltstone/Sandstone	0	147	0	87
Silty shale	est. 147	205	est. 87	227
Sandstone/Siltstone/Shale	est. 205	327	est. 227	347
Silty shale	est. 327	447	est. 347	565
Siltstone	est. 447	547	est. 565	607
Silty shale	est. 547	607	est. 607	1,127
Shale	est. 607	687	est. 1127	1,387
Silty sandstone	est. 687	727	est. 1387	1,507
Silty shale	est. 727	767	est. 1507	1,727
Sandstone tr coal	est. 767	787	est. 1727	1,767
Sandy shale	est. 787	907	est. 1767	1,807
Silty shale	est. 907	1,147	est. 1807	1,847
Silty sandstone	est. 1147	2,148	est. 1847	2,149
Big Lime	2,148	2,823	2,149	2,824
Fifty Foot Sandstone	2,823	2,911	2,824	2,912
Gordon	2,911	3,220	2,912	3,222
Fifth Sandstone	3,220	3,244	3,222	3,246
Bayard	3,244	4,009	3,246	4,044
Speechley	4,009	4,276	4,044	4,323
Balltown	4,276	4,772	4,323	4,846
Bradford	4,772	5,214	4,846	5,312
Benson	5,214	5,471	5,312	5,583
Alexander	5,471	6,501	5,583	6,660
Sycamore	6,501	6,673	6,660	6,857
Middlesex	6,673	6,802	6,857	7,040
Burkett	6,802	6,834	7,040	7,099
Tully	6,834	6,885	7,099	7,208
Marcellus	6,885	NA	7,208	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:	11/26/2017
Job End Date:	12/11/2017
State:	West Virginia
County:	Doddridge
API Number:	47-017-06531-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Brocade 1H
Latitude:	39.34882778
Longitude:	-80.76947778
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,955
Total Base Water Volume (gal):	16,414,478
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	88.43648	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	11.30234	
HCL Acid (12.6% 17.5%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	0.11760	
			Hydrogen Chloride	7647-01-0	17.50000	0.02734	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.03513	
			Petroleum Distillates	64742-47-8	60.00000	0.03327	
			Suspending agent (solid)	14808-60-7	3.00000	0.00537	
			Surfactant	68439-51-0	3.00000	0.00211	
WFRA-405	U.S. Well Services, LLC	Friction Reducer	2-Propenoic acid, polymer with 2 propenamide	9003-06-9	30.00000	0.01724	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01388	

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Bioclear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent					
			2,2-dibromo-3-nitripropionamide	10222-01-2	20.00000	0.00433	
			Deionized Water	7732-18-5	28.00000	0.00247	
SI-1200s	U.S. Well Services, LLC	Scale Inhibitor					
			Proprietary Scale Inhibitor	Proprietary	10.00000	0.00134	
AP One	U.S. Well Services, LLC	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00099	
AI-303	U.S. Well Services, LLC	Acid Corrosion Inhibitors					
			Ethylene glycol	107-21-1	40.00000	0.00005	
			Cinnamaldehyde	104-55-2	20.00000	0.00002	
			Formic acid	64-18-6	20.00000	0.00002	
			Butyl cellosolve	111-76-2	20.00000	0.00002	
			Polyether	60828-78-6	10.00000	0.00001	
			Acetophenone, thiourea, formaldehyde polymer	68527-49-1	5.00000	0.00000	

Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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LATITUDE 39°22'30"

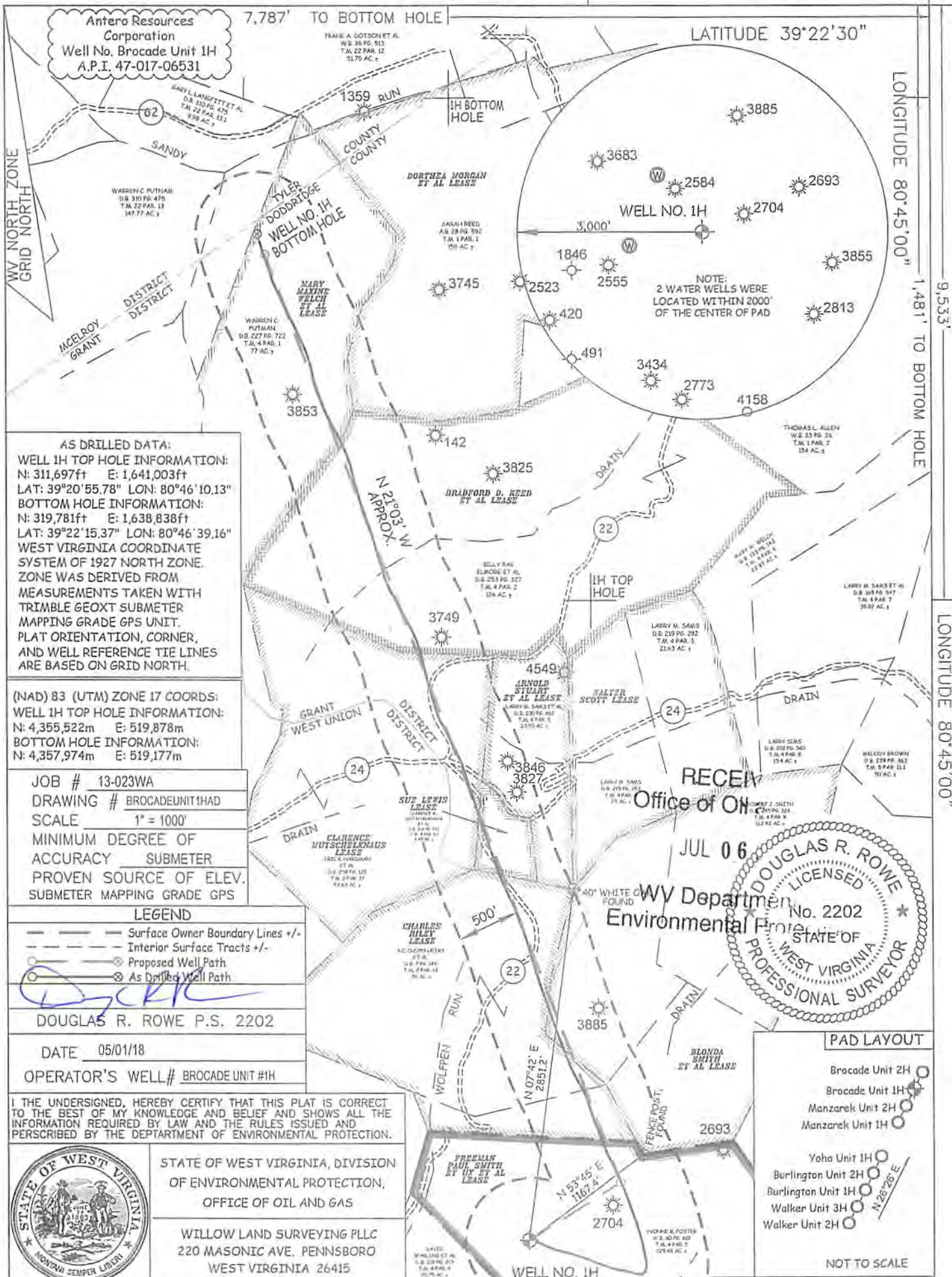
5,509'

LATITUDE 39°22'30"

LONGITUDE 80°45'00"

1,481' TO BOTTOM HOLE

LONGITUDE 80°45'00"



AS DRILLED DATA:
 WELL 1H TOP HOLE INFORMATION:
 N: 311,697ft E: 1,641,003ft
 LAT: 39°20'55.78" LON: 80°46'10.13"
 BOTTOM HOLE INFORMATION:
 N: 319,781ft E: 1,638,838ft
 LAT: 39°22'15.37" LON: 80°46'39.16"
 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: 4,355,522m E: 519,878m
 BOTTOM HOLE INFORMATION:
 N: 4,357,974m E: 519,177m

JOB # 13-023WA
 DRAWING # BROCADEUNIT1HAD
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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

DOUGLAS R. ROWE P.S. 2202

DATE 05/01/18
 OPERATOR'S WELL# BROCADE UNIT #1H

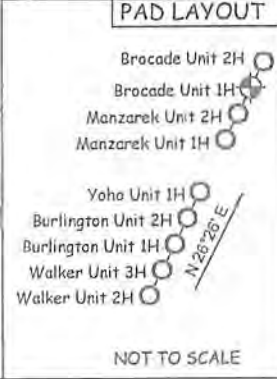
I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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

STATE OF WEST VIRGINIA API WELL # 47 - 017 - 06531
 DEPARTMENT OF ENERGY
 DIVISION OF OIL AND GAS STATE COUNTY PERMIT
 WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
 LOCATION: ELEVATION 1,229' AS DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 QUADRANGLE WEST UNION 7.5' DISTRICT WEST UNION COUNTY DODDRIDGE
 SURFACE OWNER YVONNE R. FOSTER ACREAGE 125.48 ACRES +/-
 OIL & GAS ROVINY OWNER FREEMAN PAUL SMITH ET UX ET AL; CHARLES RILEY; BLONDA SMITH ET AL; SUE LEWIS;
 CLARENCE MUTSCHELKNAUS; BRADFORD D. REED ET AL; MARY MAXINE WELCH ET AL
 LEASE ACREAGE 125 AC±; 78 AC±; 114 AC±; 4.45 AC±; 92.63 AC±; 126 AC±; 78.973 AC±
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION X OTHER PHYSICAL CHANGE IN WELL
 (SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,919' TVD 15,771' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM-DIANNA STAMPER
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

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 DOUGLAS R. ROWE
 LICENSED PROFESSIONAL SURVEYOR
 No. 2202
 STATE OF WEST VIRGINIA



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 UNDER THIS PERMIT.
 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

COUNTY NAME PERMIT

07/20/2018

LATITUDE 39°22'30"

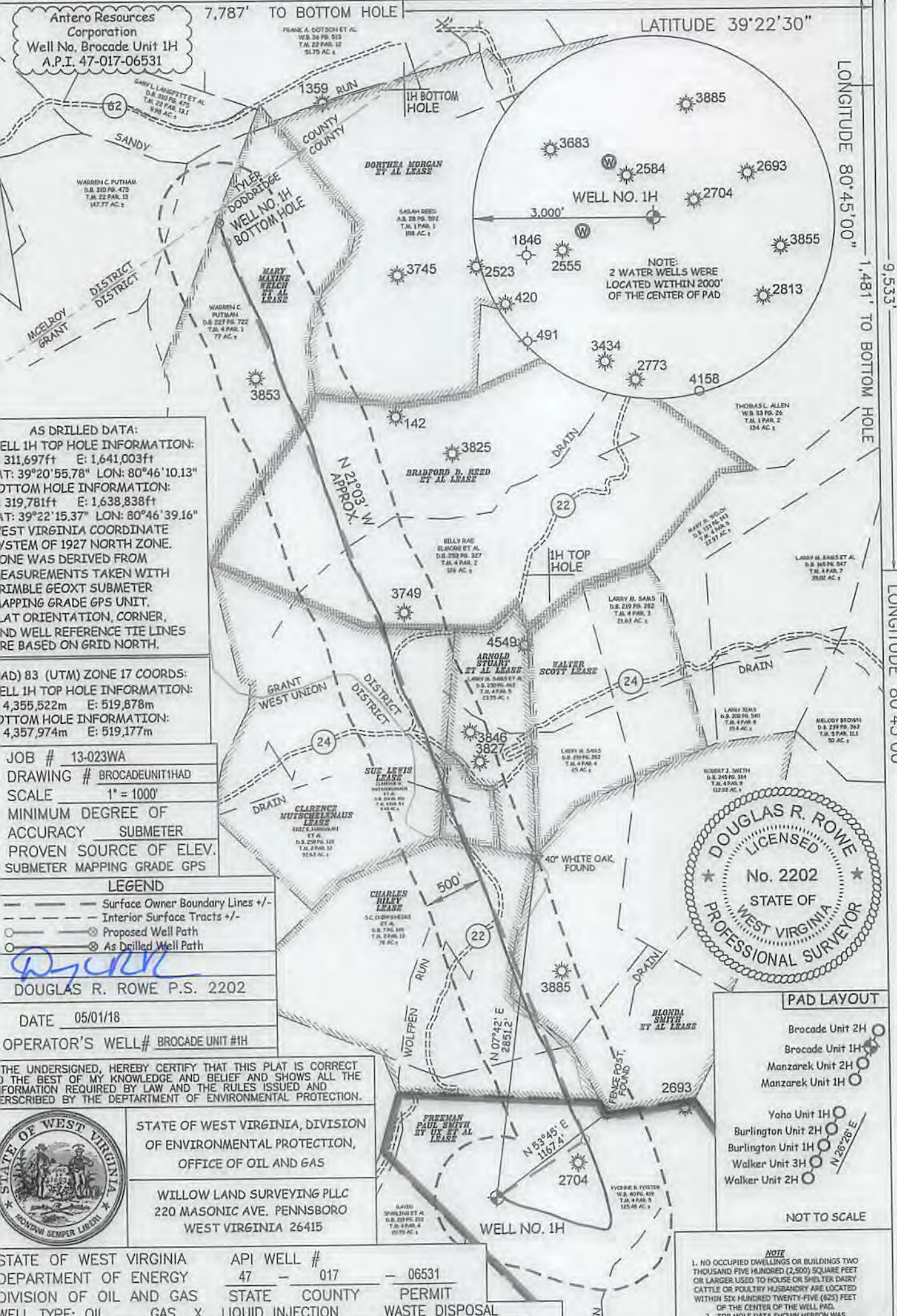
5,509'

LATITUDE 39°22'30"

LONGITUDE 80°45'00"

LONGITUDE 80°45'00"

Antero Resources Corporation
Well No. Brocade Unit 1H
A.P.I. 47-017-06531



AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
311,697ft E: 1,641,003ft
T: 39°20'55.78" LON: 80°46'10.13"
BOTTOM HOLE INFORMATION:
319,781ft E: 1,638,838ft
T: 39°22'15.37" LON: 80°46'39.16"
BEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. AT ORIENTATION CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

UTM ZONE 17 COORDS:
WELL 1H TOP HOLE INFORMATION:
4,355,522m E: 519,878m
BOTTOM HOLE INFORMATION:
4,357,974m E: 519,177m

JOB # 13-023WA
DRAWING # BROCADEUNIT1HAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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

DOUGLAS R. ROWE P.S. 2202

DATE 05/01/18
OPERATOR'S WELL# BROCADE UNIT #1H

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 DESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



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

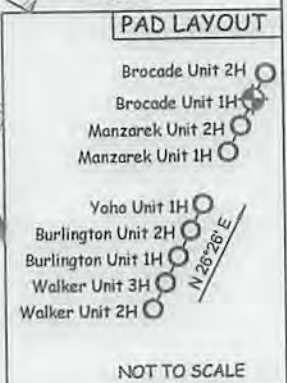
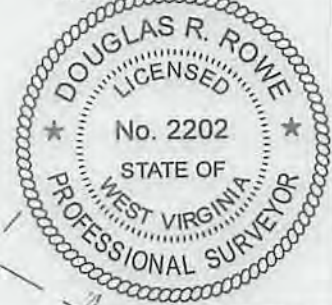
WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS
WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW

LOCATION: ELEVATION 1,229' AS DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
QUADRANGLE WEST UNION 7.5' DISTRICT WEST UNION COUNTY DODDRIDGE
SURFACE OWNER YVONNE R. FOSTER ACREAGE 125.48 ACRES +/-

OIL & GAS ROVITY OWNER FREEMAN PAUL SMITH ET UX ET AL; CHARLES RILEY; BLONDA SMITH ET AL; SUE LEWIS;
CLARENCE MUTSCHELNAUS; BRADFORD D. REED ET AL; MARY MAXINE WELCH ET AL
LEASE ACREAGE 125 AC±; 78 AC±; 114 AC±; 4.45 AC±; 92.63 AC±; 126 AC±; 78.973 AC±

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,919' TVD 15,771' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM-DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313



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