

Reviewed

12/21/2018

Page 1 of 4

WR-35
Rev. 8/23/13

W. L. H. 12/19/18

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

API 47 - 017 - 06717 County Doddridge District Central
Quad West Union 7.5' Pad Name Balli Pad Field/Pool Name -----
Farm name Jeffrey K. Jones Sr. et al Well Number Ridge 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 4350342m Easting 513460m
Landing Point of Curve Northing 4350212.79m Easting 513047.87m
Bottom Hole Northing 4347933m Easting 513803m

Elevation (ft) 1135.5' 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 3/13/2015 Date drilling commenced 1/28/2016 Date drilling ceased 5/11/2016
Date completion activities began 9/23/2017 Date completion activities ceased 4/18/2018
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 107', 192' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 737' 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

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WR-35
Rev. 8/23/13

API 47-017 - 06717 Farm name Jeffrey K. Jones Sr. et al Well number Ridge 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"	72'	New	94#, K-55	N/A	Y
Surface	17-1/2"	13-3/8"	373'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2520'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15274'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7079'		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	200 sx	15.6	1.18	236	0'	8 Hrs.
Surface	Class A	437 sx	15.6	1.18	516	0'	8 Hrs.
Coal							
Intermediate 1	Class A	929sx	15.6	1.18	1096	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1003sx (Lead) 1332 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.31 (Lead), 1.83 (Tail)	3751	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15274' MD, 6704' TVD (BHL), 6704' (Deepest Point Drilled) Loggers TD (ft) 15274' MD

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

Plug back procedure N/A

Kick off depth (ft) 6231'

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

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____

Conductor - 0
Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface
Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface
Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____

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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

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API 47- 017 - 06717 Farm name Jeffrey K. Jones Sr. et al Well number Ridge Unit 2H

PERFORATION RECORD

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

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)
*PLEASE SEE ATTACHED EXHIBIT 2								

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Please insert additional pages as applicable.

SEP 10 2018
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WR-35
Rev. 8/23/13

API 47- 017 - 06717 Farm name Jeffrey K. Jones Sr. et al Well number Ridge Unit 2H

PRODUCING FORMATION(S)

DEPTHS

Marcellus	6556' (TOP)	TVD	7142' (TOP)	MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3600 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 8225.84 mcfd Oil 105.3 bpd NGL --- bpd Water 41.53 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
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***PLEASE SEE ATTACHED EXHIBIT 3**

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Please insert additional pages as applicable.

Drilling Contractor Frontier Drilling LLC
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

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

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

Stimulating Company CalFrac Well Services
Address 717 17th Street, Suite 1445 City Denver State CO Zip 80202

Please insert additional pages as applicable.

Completed by Karin Cox Telephone 303-357-6820
Signature *Karin Cox* Title Permitting Agent Date 9/7/2018

API 47-017-06717 Farm Name Jeffrey K. Jones Sr. et al Well Number Ridge Unit 2H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	9/23/2017	15014	15183	48	Marcellus
2	10/31/2017	14813	14982	48	Marcellus
3	10/31/2017	14613	14782	48	Marcellus
4	11/1/2017	14412	14581	48	Marcellus
5	11/1/2017	14212	14381	48	Marcellus
6	11/2/2017	14011	14180	48	Marcellus
7	11/2/2017	13811	13980	48	Marcellus
8	11/3/2017	13610	13779	48	Marcellus
9	11/3/2017	13410	13579	48	Marcellus
10	11/4/2017	13209	13378	48	Marcellus
11	11/5/2017	13009	13178	48	Marcellus
12	11/5/2017	12808	12977	48	Marcellus
13	11/6/2017	12608	12777	48	Marcellus
14	11/6/2017	12407	12576	48	Marcellus
15	11/7/2017	12206	12376	48	Marcellus
16	11/7/2017	12006	12175	48	Marcellus
17	11/8/2017	11805	11975	48	Marcellus
18	11/9/2017	11605	11774	48	Marcellus
19	11/9/2017	11404	11574	48	Marcellus
20	11/10/2017	11204	11373	48	Marcellus
21	11/10/2017	11003	11173	48	Marcellus
22	11/11/2017	10803	10972	48	Marcellus
23	11/12/2017	10602	10772	48	Marcellus
24	11/12/2017	10402	10571	48	Marcellus
25	11/13/2017	10201	10371	48	Marcellus
26	11/13/2017	10001	10170	48	Marcellus
27	11/14/2017	9800	9969	48	Marcellus
28	11/15/2017	9600	9769	48	Marcellus
29	11/15/2017	9399	9568	48	Marcellus
30	11/16/2017	9199	9368	48	Marcellus
31	11/16/2017	8998	9167	48	Marcellus
32	11/17/2017	8798	8967	48	Marcellus
33	11/17/2017	8597	8766	48	Marcellus
34	11/18/2017	8397	8566	48	Marcellus
35	11/18/2017	8196	8365	48	Marcellus
36	11/19/2017	7996	8165	48	Marcellus
37	11/19/2017	7795	7964	48	Marcellus
38	11/20/2017	7595	7764	48	Marcellus
39	11/20/2017	7394	7563	48	Marcellus
40	11/21/2017	7194	7363	48	Marcellus

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API 47-017-06717 Farm Name <u>Jeffrey K. Jones Sr. et al</u> Well Number <u>Ridge Unit 2H</u>								
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	9/23/2017	72.5	7470	7190	4580	509800	10252	N/A
2	10/31/2017	73.4	7388	6291	4434	507975	10198	N/A
3	10/31/2017	72.7	7407	6092	3944	507800	10319	N/A
4	11/1/2017	70.1	7756	6079	3566	508050	13190	N/A
5	11/1/2017	72.5	7484	5828	4160	508250	10277	N/A
6	11/2/2017	73.5	7382	6009	3628	509700	10356	N/A
7	11/2/2017	71.5	7518	6076	3964	507200	11415	N/A
8	11/3/2017	70	7555	5677	3889	508600	11797	N/A
9	11/3/2017	70.2	7297	5562	3698	509100	10542	N/A
10	11/4/2017	70	7575	5708	3524	509100	12012	N/A
11	11/5/2017	74.3	7254	6612	3733	508800	9851	N/A
12	11/5/2017	70.2	7450	6096	4300	508200	11340	N/A
13	11/6/2017	73.5	7285	5528	3836	508500	10262	N/A
14	11/6/2017	72.2	7046	6544	4220	510950	9792	N/A
15	11/7/2017	69.9	7117	2598	4279	508900	9984	N/A
16	11/7/2017	75.8	7254	5653	4000	508150	9800	N/A
17	11/8/2017	76	7115	6138	3877	508750	9769	N/A
18	11/9/2017	69.2	7192	6576	3828	509000	9804	N/A
19	11/9/2017	73.8	7264	5722	4943	508050	9755	N/A
20	11/10/2017	75.8	7472	6038	3545	508100	9868	N/A
21	11/10/2017	74.4	7390	6606	3577	508100	9726	N/A
22	11/11/2017	72.3	7244	5882	3447	508950	9829	N/A
23	11/12/2017	75.8	7361	6473	3680	507750	9638	N/A
24	11/12/2017	75.6	7581	6008	3828	508100	9753	N/A
25	11/13/2017	79.1	7715	6342	3953	507900	9659	N/A
26	11/13/2017	78.6	7199	6209	3603	507650	9770	N/A
27	11/14/2017	73.4	6741	6584	3801	508250	9746	N/A
28	11/15/2017	78.8	6760	6945	3809	507800	9749	N/A
29	11/15/2017	78.8	7094	7090	3833	507400	9742	N/A
30	11/16/2017	78.3	7085	6625	3727	508700	9739	N/A
31	11/16/2017	78.2	7060	6795	3856	507500	9887	N/A
32	11/17/2017	72.5	7054	7258	3712	510150	9944	N/A
33	11/17/2017	76.8	7108	7368	3766	507550	9711	N/A
34	11/18/2017	76.5	7256	7397	5569	508850	10045	N/A
35	11/18/2017	76.9	6884	6337	4980	507700	9556	N/A
36	11/19/2017	73.7	6921	6451	4093	510350	10644	N/A
37	11/19/2017	74.4	6735	7034	5252	508200	9754	N/A
38	11/20/2017	78.3	7162	6464	4092	507650	9544	N/A
39	11/20/2017	65.5	7636	6462	3414	508330	12627	N/A
40	11/21/2017	73.1	6806	6470	3313	508150	9642	N/A
	AVG=	74.0	7,252	6,270	3,981	20,338,005	409,288	TOTAL

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API 47-017-06717 Farm Name Jeffrey K. Jones Sr. et al Well Number Ridge Unit 2H				
EXHIBIT 3				
LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Freshwater	107'	N/A	107'	N/A
Freshwater	192'	N/A	192'	N/A
Siltstone/Sandstone	0	147	0	147
Sandstone	est. 147	205	est. 147	205
Sandstone/Siltstone/Shale	est. 205	327	est. 205	327
Sandstone/Shale/Trace Coal	est. 327	447	est. 327	447
Sandstone	est. 447	547	est. 447	547
Sandstone/Shale	est. 547	607	est. 547	607
Sandstone	est. 607	687	est. 607	687
Siltstone	est. 687	727	est. 687	727
Shale	est. 727	767	est. 727	767
Limestone	est. 767	787	est. 767	787
Siltstone	est. 787	907	est. 787	907
Shale	est. 907	1,147	est. 907	1,147
Shale/Tr Coal	est. 1147	1,167	est. 1147	1,167
Shale	est. 1167	1,207	est. 1167	1,207
Sandstone	est. 1207	1,227	est. 1207	1,227
Shale	est. 1227	1,245	est. 1227	1,245
Sandstone	est. 1245	1,307	est. 1245	1,307
Shale/Siltstone	est. 1307	1,367	est. 1307	1,367
Limestone	est. 1367	1,387	est. 1367	1,387
Sandstone	est. 1387	1,447	est. 1387	1,447
Siltstone	est. 1447	1,489	est. 1447	1,489
Sandstone/Shale/Siltstone	est. 1489	2,008	est. 1489	2,009
Big Lime	2,008	2,617	2,009	2,618
Fifty Foot Sandstone	2,617	2,690	2,618	2,691
Gordon	2,690	3,090	2,691	3,092
Fifth Sandstone	3,090	3,126	3,092	3,128
Bayard	3,126	3,752	3,128	3,785
Speechley	3,752	4,102	3,785	4,166
Balltown	4,102	4,521	4,166	4,627
Bradford	4,521	5,004	4,627	5,162
Benson	5,004	5,282	5,162	5,477
Alexander	5,282	6,205	5,477	6,515
Sycamore	6,205	6,373	6,515	6,749
Middlesex	6,373	6,495	6,749	6,965
Burkett	6,495	6,521	6,965	7,029
Tully	6,521	6,556	7,029	7,142
Marcellus	6,556	NA	7,142	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:	11/1/2017
Job End Date:	11/23/2017
State:	West Virginia
County:	Doddridge
API Number:	47-017-06717-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Ridge 2H
Latitude:	39.30237420
Longitude:	-80.84386010
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,702
Total Base Water Volume (gal):	17,622,784
Total Base Non Water Volume:	0



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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	0.70000	87.49685	
DWP-111	CWS	Gel Slurry					
				Listed Below			

DAP-103	CWS	Iron Control					
				Listed Below			
CI-9100G	CWS	Corrosion Inhibitor					
				Listed Below			
Hydrochloric Acid	CWS	Clean Perforations					
				Listed Below			
Sand (Proppant)	CWS	Propping Agent					
				Listed Below			
Calbreak 5501	CWS	Breaker					
				Listed Below			
SANIFRAC 8844	CWS	Biocide					
				Listed Below			
DWP-641	CWS	Friction Reducer					
				Listed Below			
DAP-902	CWS	Scale Inhibitor					
				Listed Below			
Other Chemical (s)	Listed Above	See Trade Name (s) List					

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				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	1.00000	12.11107	
			Calcite	471-34-1	0.01000	0.08786	
			Hydrochloric acid	7647-01-0	0.37000	0.04639	
			Guar gum	9000-30-0	0.60000	0.04097	
			Distillates (petroleum), hydrotreated middle	64742-46-7	0.60000	0.04097	
			Illite	12173-60-3	0.01000	0.03322	
			Polymer	26100-47-0	0.45000	0.03185	
			Distillates (petroleum), hydrotreated light	64742-47-8	0.30000	0.02124	
			Biotite	1302-27-8	0.00100	0.01211	
			Goethite	1310-14-1	0.00100	0.01211	
			Apatite	64476-38-6	0.00100	0.01211	
			Ammonium Persulfate	64742-47-8	1.00000	0.01083	
			Ammonium chloride	12125-02-9	0.11000	0.00779	
			Polyethylene glycol mixture	25322-68-3	0.54500	0.00612	
			2-Propenoic acid, homopolymer, sodium salt	9003-04-7	0.40000	0.00607	
			Quaternary ammonium compounds, bis (hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	0.05000	0.00341	
			Ilmenite	98072-94-7	0.00100	0.00332	
			Sorbitan monooleate	1338-43-8	0.04000	0.00283	
			2,2-Dibromo-3-Nitrilopropionamide	10222-01-2	0.20000	0.00225	
			Vinylidene chloride-methyl acrylate copolymer	69418-26-4	0.20000	0.00217	
			Polyethylene glycol monooleate	9004-96-0	0.03000	0.00212	

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			1,2-Propanediol	57-55-6	0.10000	0.00152	
			Sorbitol tetraoleate	61723-83-9	0.02000	0.00142	
			Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	0.01500	0.00102	
			Amines, tallow alkyl, ethoxylated	61791-26-2	0.01000	0.00071	
			Sodium bromide	7647-15-6	0.04000	0.00045	
			Citric acid	77-92-9	0.60000	0.00042	
			Alkyloxypolyethyleneoxy ethanol	84133-50-6	0.00500	0.00035	
			Dibromoacetonitrile	3252-43-5	0.03000	0.00034	
			Acrylamide	79-06-1	0.00100	0.00007	
			Ethylene glycol	107-21-1	0.40000	0.00003	
			Diethylene glycol	111-46-6	0.01000	0.00001	
			Isopropanol	67-63-0	0.05000	0.00001	
			Cinnamaldehyde	104-55-2	0.10000	0.00001	
			Diethylene glycol (mono) methyl ether	34590-94-8	0.20000	0.00001	
			Formic Acid	64-18-6	0.10000	0.00001	
			Tar bases, quinolone derivs, benzyl chloride- quatenized	72480-70-7	0.10000	0.00001	
			Tar bases, quinolone derivs	68513-87-1	0.01000	0.00001	
			Ethoxylated alcohols	Proprietary	0.10000	0.00001	Proprietary CAS

* 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)

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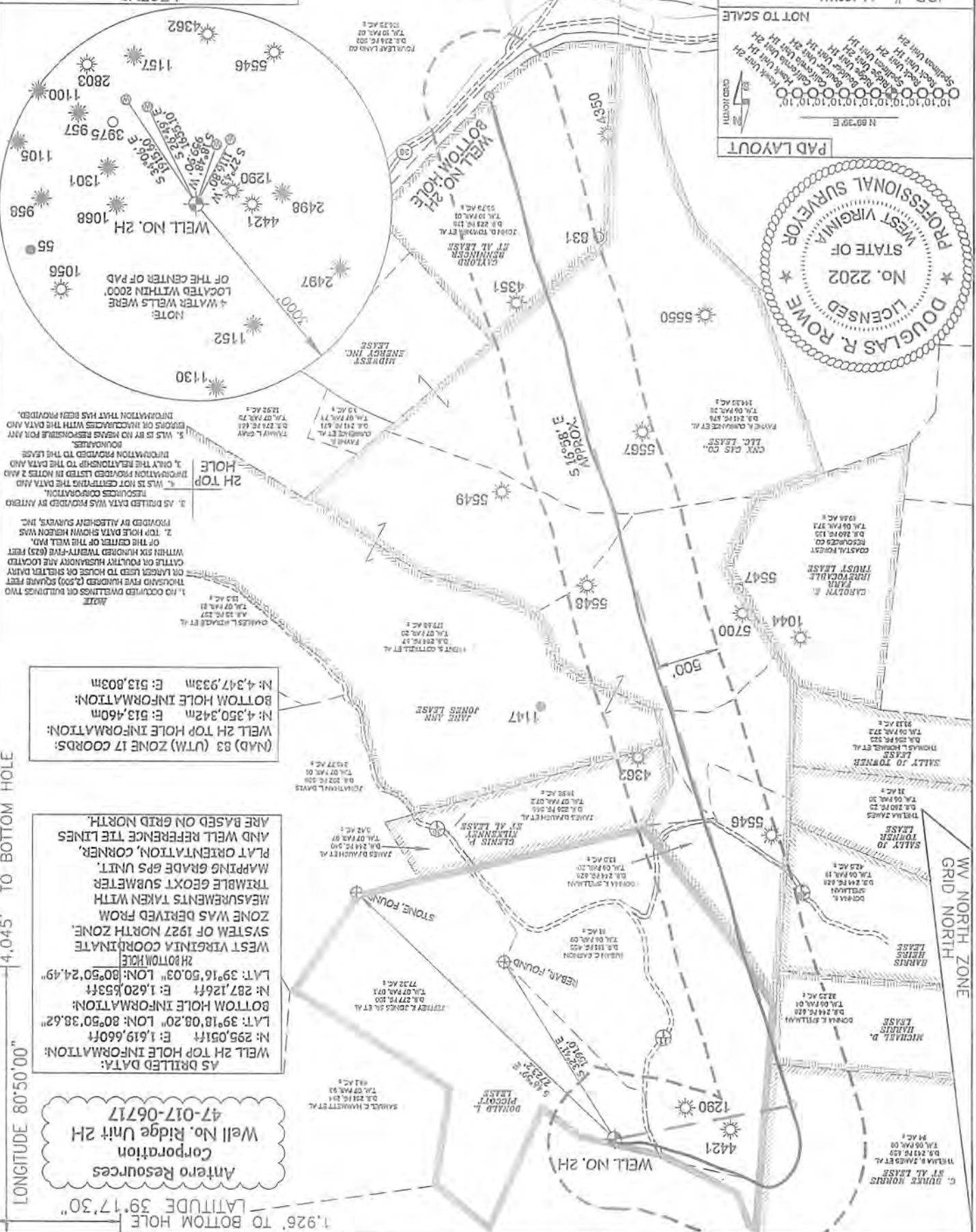
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12/21/2018

FORM W-6
 WELL OPERATOR: ANTERO RESOURCES CORP., 1615 WYNKOP STREET, DENVER, CO 80202
 ADDRESS: 5400 D BIG TYLER ROAD, CHARLESTON, WV 25313
 TARGET FORMATION: MARCELLUS
 ESTIMATED DEPTH: 6,704' TVD 15,274' MD
 DESIGNATED AGENT: DIANNA STAMPER-CI CORPORATION SYSTEM
 (SPECIFY) AS DRILLED
 PLUG OFF OLD FORMATION: PERFORATE NEW FORMATION
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 SURFACE OWNER: JEFFREY K. JONES SR. ET AL
 OIL & GAS ROYALTY OWNER: DONALD L. PIGGOTT, C. BURKE MORRIS ET AL
 MICHAEL D. HARRIS, CNX GAS CO. LLC, GAYLORD BENNINGER ET AL
 COUNTY NAME: WEST VIRGINIA
 COUNTY: CENTRAL
 DISTRICT: WEST UNION 7.5
 QUADRANGLE: WEST UNION 7.5
 LOCATION: ELEVATION 1,135.5' AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
 DIVISION OF OIL AND GAS: DEPARTMENT OF ENERGY
 STATE OF WEST VIRGINIA
 PROVEN SOURCE OF ELEVATION: SUBMETER MAPPING GRADE GPS
 ACCURACY: SUBMETER
 MINIMUM DEGREE OF: 1" = 1000'
 SCALE: DRAWING # RIDGEHAD
 JOB # 14-120WA
 NOT TO SCALE
 PAD LAYOUT

DATE: 07/17/18
 OPERATOR'S WELL # / RIDGE UNIT # 2H
 API WELL #
 STATE: 47
 COUNTY: 017
 PERMIT: 06717
 LEGEND:
 - - - Surface Owner Boundary Lines +/-
 - - - Interior Surface Tracts +/-
 - - - Proposed Well Path
 - - - As Drilled Well Path

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY
 DIVISION OF OIL AND GAS
 OFFICE OF OIL AND GAS
 WILLow LAND SURVEYING PLC
 220 WASHINGTON AVE, PENNSBORO
 WEST VIRGINIA 26415
 I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN 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.



AS DRILLED DATA:
 WELL 2H TOP HOLE INFORMATION:
 N: 295,051ft E: 1,619,660ft
 LAT: 39°18'08.20" LON: 80°50'38.62"
 BOTTOM HOLE INFORMATION:
 N: 287,126ft E: 1,620,653ft
 LAT: 39°16'50.03" LON: 80°50'24.49"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE THE LINES ARE BASED ON GRID NORTH.

2H BOTTOM HOLE
 (NAD) 83 (UTM) ZONE 17 COORDS:
 WELL 2H TOP HOLE INFORMATION:
 N: 4,350,42m E: 513,460m
 BOTTOM HOLE INFORMATION:
 N: 4,347,933m E: 513,803m

LATITUDE 39.20'00" LONGITUDE 80.50'00"
 1.926' TO BOTTOM HOLE
 4.045' TO BOTTOM HOLE
 11.311'
 3.036'

12/21/2018

RECEIVED
Office of Oil and Gas
SEP 10 2018
WV Department of
Environmental Protection

LATITUDE 39°20'00" 3,036'

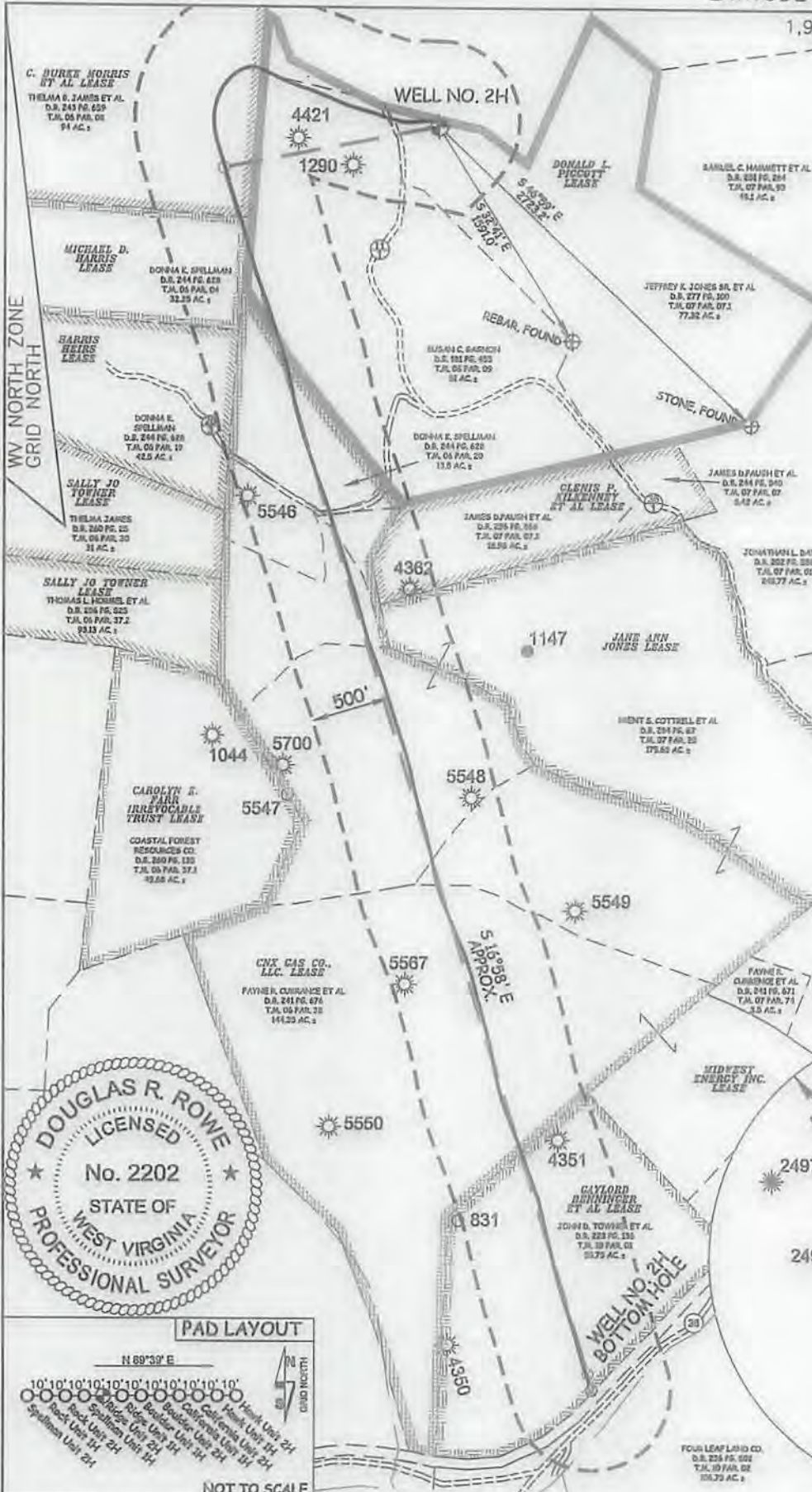
1,926' TO BOTTOM HOLE
LATITUDE 39°17'30"

LONGITUDE 80°50'00"

4,045' TO BOTTOM HOLE

11,311'

LONGITUDE 80°50'00"

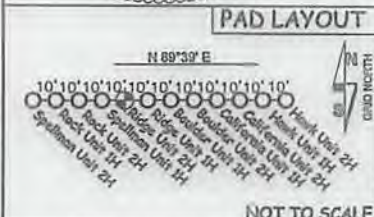
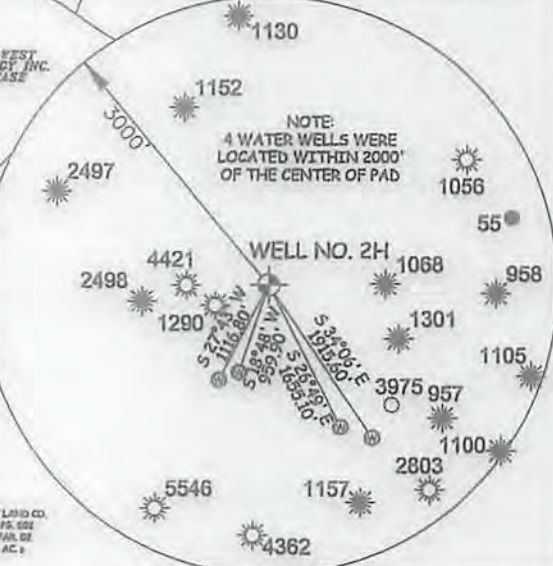


Antero Resources Corporation
Well No. Ridge Unit 2H
47-017-06717

AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
N: 295,051ft E: 1,619,660ft
LAT: 39°18'08.20" LON: 80°50'38.62"
BOTTOM HOLE INFORMATION:
N: 287,126ft E: 1,620,553ft
LAT: 39°16'50.03" LON: 80°50'24.49"
2H BOTTOM HOLE
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: 4,350,342m E: 513,460m
BOTTOM HOLE INFORMATION:
N: 4,347,933m E: 513,803m

- NOTE**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAILY 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.



JOB # 14-120WA
DRAWING # RIDGE2HAD
SCALE 1" = 1000'

MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

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

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

DOUGLAS R. ROWE P.S. 2202
DATE 07/17/18
OPERATOR'S WELL# RIDGE UNIT #2H
API WELL # 47 - 017 - 06717
STATE COUNTY PERMIT

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 1,135.5' AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK
QUADRANGLE WEST UNION 7.5 DISTRICT CENTRAL COUNTY DODDRIDGE
SURFACE OWNER JEFFREY K. JONES SR. ET AL ACREAGE 77.32 ACRES +/-
OIL & GAS ROYALTY OWNER DONALD L. PIGGOTT; C. BURKE MORRIS ET AL; LEASE ACREAGE 81 ACRES±; 94 ACRES±;
MICHAEL D. HARRIS; CNX GAS CO., LLC; GAYLORD BENNINGER ET AL 32.25 ACRES±; 230.04 ACRES±; 57 ACRES± X
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 6,704' TVD 15,274' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313

FORM MM-8
 ADDRESS 1812 WILCOX STREET ADDRESS 2400 D BIG LAYER ROAD
 METT OPERATOR UNITED RESOURCES CORP DESIGNATED AGENT DIMMY SWANER - CI CORPORATION SYSTEM
 LARGE FORMATION MHCETTS ESTIMATED DEPTH 8204. TAD 12214. MD
 (SPECIES) AS DRILLED BCUC & ANHONION GRAIN OIL & BERCUC
 BCUC OF OLD FORMATION BEFORATE NEM FORMATION OTHER PHYSICAL CHANGE IN METT
 PROPOSED WORK: DRIFT CORNER DRIFT DEEPER BEDDING FRACTURE OR STIMULATE
 MICHAEL D HARRIS SIX GAS CO LLC: CALVORN BEHINGER ET AL 3520 ACRES: 53070 ACRES: 21 ACRES: X
 OIG & GAS BOUATLY OMIES DONALD G BIGGOTTI: C BURKE MORRIS ET AL GEAGE ACRES: 18 ACRES: 64 ACRES:
 SURFACE OMIES JEFFREY K TOMES JR ET AL ACRES: 11325 ACRES +

12/21/2018

LOCATION: ELEVATION 1132.5 AS DRIFT WATER-SHED HEADWATERS MIDDLE ISLAND CREEK
 (IF "GAS") PRODUCTION X STORAGE DEEP X SHALLOM X
 METT TYPE: OIG GAS X FLUID INJECTION WASTE DISPOSAL
 DIVISION OF OIG AND GAS WEST VIRGINIA STATE DEPARTMENT OF ENERGY
 STATE OF WEST VIRGINIA

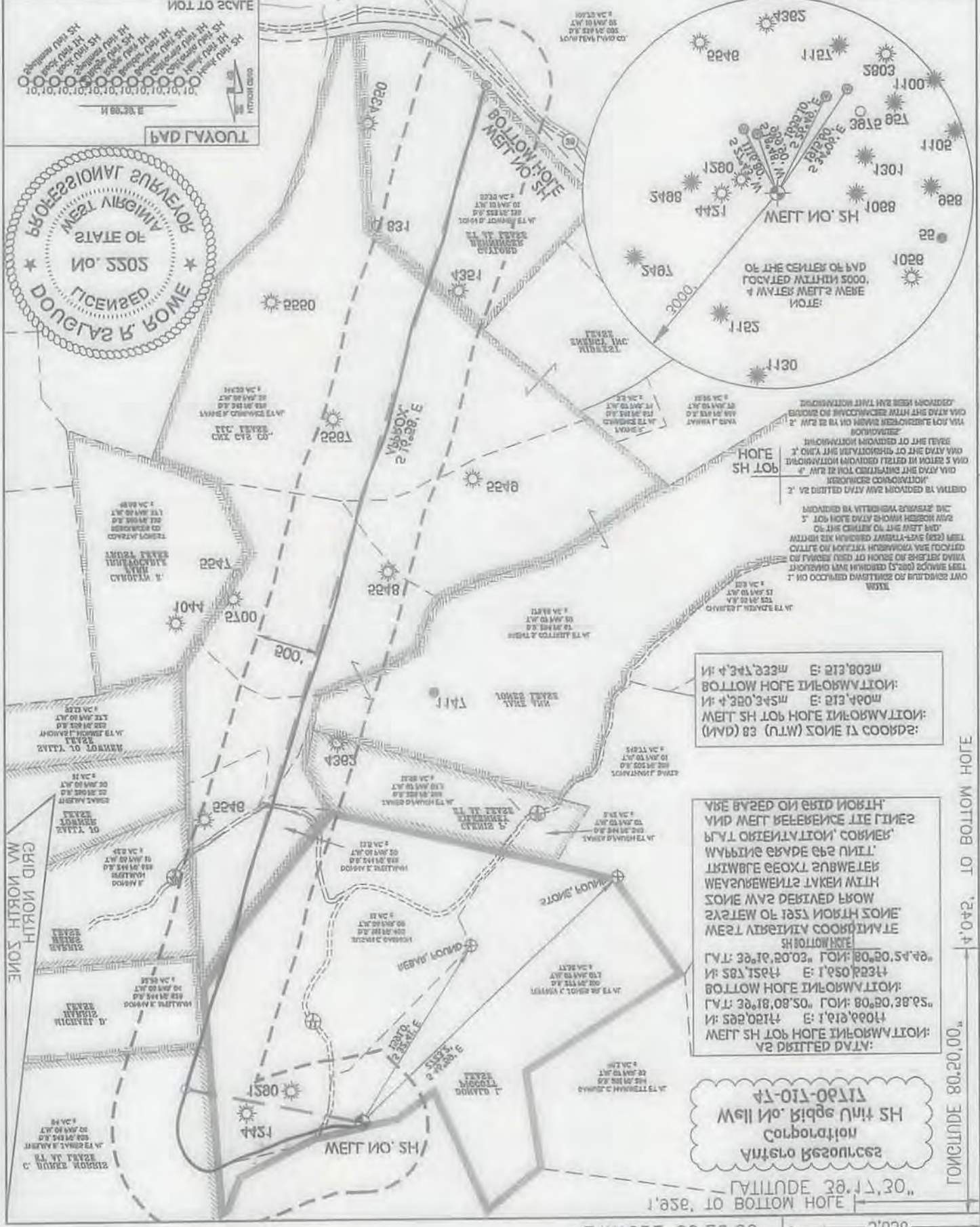


WEST VIRGINIA STATE
 550 WYOMING AVE. BEINGBOBO
 WILTON WVD 26107
 OFFICE OF OIG AND GAS
 OF ENVIRONMENTAL PROTECTION
 STATE OF WEST VIRGINIA DIVISION

STATE COUNTY BEHMIT
 11 011 08111
 WPI METT #
 OPERATOR, 2 METT # RIDGE UNIT 23H
 DATE 01/11/18
 DONALD B ROME P2 5505
 5505

SUBMETER MAPPING GRADE CBS
 PROVEN SOURCE OF ELEV.
 ACCURACY SUBMETER
 MINIMUM DEGREE OF
 SCALE 1: = 1000.
 DRAWING # RIDGEHAD
 JOB # 141504VA

DESCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION
 INFORMATION RECEIVED BY GYM AND THE BULGE ISSUED AND
 TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS AT THE
 THE UNDERSIGNED HEREBY CERTIFY THAT THIS PLAN IS CORRECT



LONGITUDE 80.20,00"

INFORMATION PROVIDED TO THE FIELD
 1. ONY THE ELEVATIONS TO THE ONLY WHO
 THROUGHOUT INCLUDING FILED IN NOTES 3 AND
 4. AND IN HOW CORRELATING THE ONLY WHO
 RESOURCES CORRELATION:
 2. AS DRILLED ONLY WPI PROVIDED BY VALUED
 PROVIDED BY VITROGENIA SWANER INC
 5. TOP HOPE ONLY SHOWN HEREON WPI
 OF THE CENTER OF THE METT AND
 WHICH ARE HIGHLIGHTED IMMEDIATELY BEHIND
 CIRCLE ON MAPPING INFORMATION ARE LOCATED
 OF PAPER THIS IS HOUSE OF BURGESS OVERA
 THROUGHOUT ARE HIGHLIGHTED (5"=100) ELEVATION
 1. NO OCCURRED DISTANCES OR DISTANCES AND
 WITH

WELL NO. SH TOP HOPE INFORMATION:
 E: 212'803"
 W: 4'8"34.2"4"

ARE BASED ON GRID NORTH
 AND METT REFERENCE LIE LINES
 THAT ORIENTATION CORNER
 WYPIING GRADE CBS UNIT.
 DISTANCE EXACT SUBMETER
 MEASUREMENTS TAKEN WITH
 WHICH WAS DERIVED FROM
 SYSTEM OF 1925 NORTH ZONE
 WEST VIRGINIA COORDINATE
 SH BOTTOM HOPE
 LAT: 38.12,2003. LON: 80.20,0803
 W: 1'52,12514. E: 1'88,22314
 BOTTOM HOPE INFORMATION:
 LAT: 38.12,18,08,30. LON: 80.20,38,28.
 W: 1'52,12514. E: 1'88,22314
 METT SH TOP HOPE INFORMATION:
 AS DRILLED DATA:

WATER RESOURCES
 CORPORATION
 1812 WILCOX STREET
 WHEELING, W. VA. 26061

LATITUDE 38.12,30" LONGITUDE 80.20,00"