

Reviewed

Delaney
10/6/18

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 . 06480 County Doddridge District Grant
Quad West Union 7.5' Pad Name Melody Pad Field/Pool Name -----
Farm name Melody Brown, et al Well Number Kreitler 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 4356681m Easting 520759m
Landing Point of Curve Northing 4356680.17m Easting 520778.95m
Bottom Hole Northing 4358415m Easting 520093m

Elevation (ft) 1135' 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 3/25/2014 Date drilling commenced 4/13/2016 Date drilling ceased 7/8/2016
Date completion activities began 9/25/2017 Date completion activities ceased 11/26/2017
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 31', 36', 45', 46' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 865', 1391', 1509' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 1821' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by: _____

07/20/2018

API 47-017 - 06480 Farm name Melody Brown, et al Well number Kreitler Unit 2H

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"	40'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	542'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2489'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	13492'	New	23#, P-110	N/A	Y
Tubing		2-3/8"			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	304 sx	15.6	1.18		0'	8 Hrs.
Surface	Class A	670 sx	15.6	1.19		0'	8 Hrs.
Coal							
Intermediate 1	Class A	937 sx	15.6	1.18		0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1129 sx (Lead) 1030 sx (Tail)	14.44 (Lead), 15.21 (Tail)	(Lead), (Tail)		-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15500' MD, 7200' TVD (BHL), 6898' (Deepest Point Drilled) Loggers TD (ft) 15500' MD
 Deepest formation penetrated Marcellus Office of Oil and Gas (ft) N/A
 Plug back procedure N/A
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Kick off depth (ft) 6192' WV Department of Environmental Protection

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 _____

WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

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

API 47- 017 - 06480 Farm name Melody Brown, et al Well number Kreitler Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6860' (TOP)</u> TVD	<u>7141' (TOP)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2950 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 13301 mcfpd Oil 25.45 bpd NGL --- bpd Water 0 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 NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	

***PLEASE SEE ATTACHED EXHIBIT 3**

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Please insert additional pages as applicable.

Drilling Contractor Patterson - UTI Drilling Company LLC
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

Logging Company Nine Energy
Address 125 Museum Road City Washington State PA Zip 15301

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

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

Please insert additional pages as applicable.

Completed by Mallory Stanton Telephone 303-357-7182
Signature  Title Permitting Supervisor Date 4/23/2018

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

API 47-017-06480 Farm Name Melody Brown et al Well Number Kreitler Unit 2H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	9/26/2017	13206	13375	60	Marcellus
2	9/26/2017	13004	13174	60	Marcellus
3	9/26/2017	12803	12972	60	Marcellus
4	9/26/2017	12601	12771	60	Marcellus
5	9/27/2017	12400	12569	60	Marcellus
6	9/27/2017	12198	12368	60	Marcellus
7	9/27/2017	11997	12167	60	Marcellus
8	9/27/2017	11795	11965	60	Marcellus
9	9/27/2017	11594	11764	60	Marcellus
10	9/28/2017	11392	11562	60	Marcellus
11	9/28/2017	11191	11361	60	Marcellus
12	9/28/2017	10989	11159	60	Marcellus
13	9/29/2017	10788	10958	60	Marcellus
14	9/29/2017	10586	10756	60	Marcellus
15	9/29/2017	10385	10555	60	Marcellus
16	9/29/2017	10183	10353	60	Marcellus
17	9/30/2017	9982	10152	60	Marcellus
18	9/30/2017	9780	9950	60	Marcellus
19	9/30/2017	9579	9749	60	Marcellus
20	9/30/2017	9377	9547	60	Marcellus
21	9/30/2017	9176	9346	60	Marcellus
22	9/30/2017	8974	9144	60	Marcellus
23	10/1/2017	8773	8943	60	Marcellus
24	10/1/2017	8571	8741	60	Marcellus
25	10/1/2017	8370	8540	60	Marcellus
26	10/1/2017	8169	8338	60	Marcellus
27	10/1/2017	7967	8137	60	Marcellus
28	10/2/2017	7766	7935	60	Marcellus
29	10/2/2017	7564	7734	60	Marcellus
30	10/2/2017	7363	7532	60	Marcellus
31	10/2/2017	7161	7331	60	Marcellus

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EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbbls)	Amount of Nitrogen/ other (units)
1	9/26/2017	78.1	7268.572	7073	5200	422470	8997.786	N/A
2	9/26/2017	77.618	7438.419	6200	4898	420700	8495.357	N/A
3	9/26/2017	75.7566	7492.13	6230	5147	421520	8810	N/A
4	9/26/2017	73.912	7011.851	5964	5339	420860	8681	N/A
5	9/27/2017	75.7149	7136.774	5893	4307	420090	8648	N/A
6	9/27/2017	80.0776	7542.066	6213	4919	419870	8473.119	N/A
7	9/27/2017	79.8992	7479.999	6101	4408	419290	8491.476	N/A
8	9/27/2017	78.4229	7399.223	5822	4486	420490	8504	N/A
9	9/27/2017	78.9304	7621.725	6002	4622	419880	8540	N/A
10	9/28/2017	78.7522	7591.583	5976	5114	419350	8470	N/A
11	9/28/2017	73.9458	7528.331	6027	5147	420250	8496.476	N/A
12	9/28/2017	70.8	7423	5824	5630	419190	10571.71	N/A
13	9/29/2017	75.6003	7398.569	5967	4196	418470	8443	N/A
14	9/29/2017	75.8111	7389.841	6212	5454	420650	8480.762	N/A
15	9/29/2017	72.8626	7636.28	6162	5067	348580	8431.548	N/A
16	9/29/2017	78.1	7337.069	5955	5870	420450	8655	N/A
17	9/30/2017	77.2853	7645.34	6119	5457	420050	8466	N/A
18	9/30/2017	77.6273	7181.065	6108	4361	419950	8381	N/A
19	9/30/2017	78.2136	7379.047	5945	5334	418830	8476.595	N/A
20	9/30/2017	78.2453	7120.545	6100	5702	421250	8317.929	N/A
21	9/30/2017	69.6029	7781.935	5948	5412	420200	10027.24	N/A
22	9/30/2017	74.3011	7279.846	6312	5127	419910	8400	N/A
23	10/1/2017	77.6214	7082.454	5854	4268	420170	8375	N/A
24	10/1/2017	77.3333	7133.189	5918	5028	420030	8774.048	N/A
25	10/1/2017	73.3591	7424.459	5975	4760	379400	8454.667	N/A
26	10/1/2017	67.6389	7554.489	5612	4387	420100	9608.262	N/A
27	10/1/2017	76.7896	7082.139	5907	4159	415650	8197	N/A
28	10/2/2017	74.2205	7052.094	5602	4289	420100	8538	N/A
29	10/2/2017	71.7406	7291.783	5852	5197	420950	9861	N/A
30	10/2/2017	75.8339	7235.738	5861	4036	419700	8327	N/A
31	10/2/2017	74.859	6743.861	6042	3912	420930	8209	N/A
	AVG=	75.8	7,345	6,025	4,878	12,909,330	269,602	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	31'	N/A	N/A	N/A
Fresh Water	36'	N/A	N/A	N/A
Fresh Water	45'	N/A	N/A	N/A
Fresh Water	46'	N/A	N/A	N/A
Silt	0	100	0	81
Sandstone	100	300	81	281
Siltstone (tr coal)	300	420	281	401
Silty Sandstone	420	600	401	581
Sandy siltstone	600	780	581	761
Limestone	780	800	761	781
Sandy siltstone	800	880	781	861
Limey Siltstone	880	980	861	961
Sandy shale	980	1,300	961	1,281
Sandstone	1,300	1,420	1,281	1,401
Sandy shale	1,420	1,580	1,401	1,561
Silty Sandstone (tr coal)	1,580	1,780	1,561	1,761
Sandstone	1,780	1,840	1,761	1,821
Coal	1,840	2,020	1,821	2,001
Limey Siltstone	2,020	2,087	2,001	2,089
Big Lime	2,087	2,634	2,089	2,637
Gantz Sand	2,634	2,769	2,637	2,772
Fifty Foot Sandstone	2,769	2,852	2,772	2,855
Gordon	2,852	3,161	2,855	3,164
Fifth Sandstone	3,161	3,183	3,164	3,186
Bayard	3,183	3,984	3,186	3,987
Speechley	3,984	4,205	3,987	4,208
Baltown	4,205	4,706	4,208	4,717
Bradford	4,706	5,166	4,717	5,190
Benson	5,166	5,442	5,190	5,474
Alexander	5,442	5,608	5,474	5,644
Elk	5,608	6,124	5,644	6,174
Rhinestreet	6,124	6,457	6,174	6,521
Sycamore	6,471	6,646	6,521	6,734
Middlesex	6,646	6,780	6,734	6,945
Burkett	6,780	6,810	6,945	7,004
Tully	6,810	6,860	7,004	7,122
Marcellus	6,860	NA	7,091	NA

*Please note Antero developed 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:	9/26/2017
Job End Date:	10/2/2017
State:	West Virginia
County:	Doddridge
API Number:	47-017-06480-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Kreitler 2H
Latitude:	39.35835278
Longitude:	-80.75921944
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,898
Total Base Water Volume (gal):	11,573,693
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	Antero Resources	Carrier/Base Fluid	Water	7732-18-5	100.00000	88.01217	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	11.77087	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	0.10956	
			Hydrogen Chloride	7647-01-0	17.50000	0.02547	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.01933	
			Petroleum Distillates	64742-47-8	60.00000	0.01831	
			Suspending agent (solid)	14808-60-7	3.00000	0.00296	
			Surfactant	68439-51-0	3.00000	0.00116	
WFRA-405	U.S. Well Services, LLC	Friction Reducer	2-Propenoic acid, polymer with 2-propanamide	9003-06-9	30.00000	0.01769	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01424	

Bioclear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent				
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00396
			Deionized Water	7732-18-5	28.00000	0.00226
SI-1200s	U.S. Well Services, LLC	Scale Inhibitor				
			Proprietary Scale Inhibitor	Proprietary	10.00000	0.00129
AP One	U.S. Well Services, LLC	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00065
AI-303	U.S. Well Services, LLC	Acid Corrosion Inhibitors				
			Ethylene glycol	107-21-1	40.00000	0.00004
			Formic acid	64-18-6	20.00000	0.00002
			Cinnamaldehyde	104-55-2	20.00000	0.00002
			Butyl cellosolve	111-76-2	20.00000	0.00001
			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.

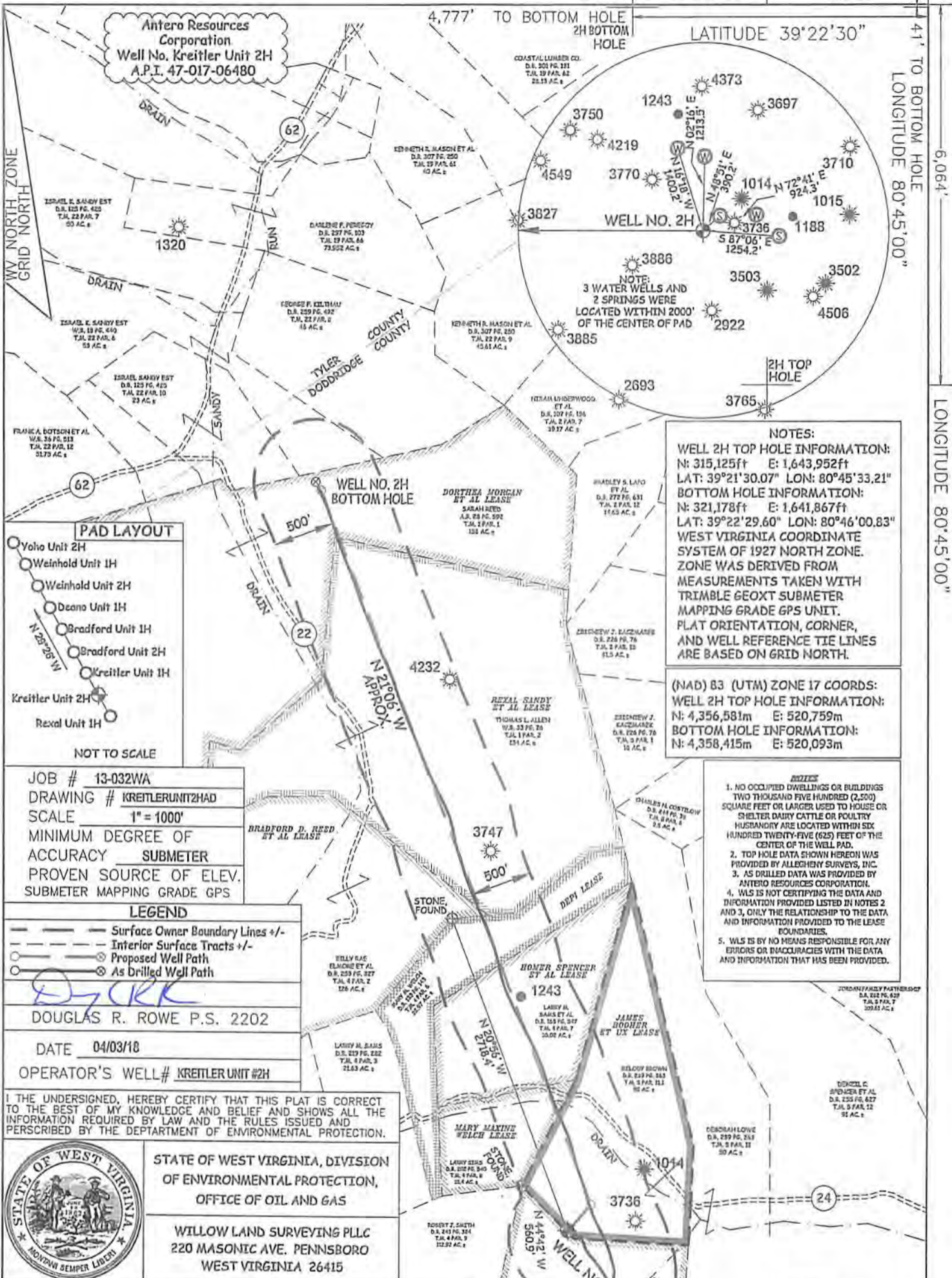
Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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LATITUDE 39°22'30"

2,608'

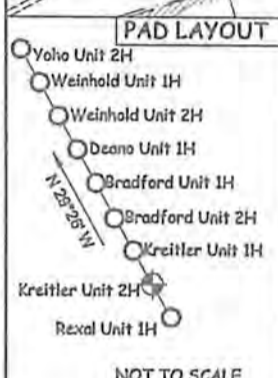
41' TO BOTTOM HOLE
LONGITUDE 80°45'00"
6,064'
LONGITUDE 80°45'00"



NOTES:
WELL 2H TOP HOLE INFORMATION:
 N: 315,125ft E: 1,643,952ft
BOTTOM HOLE INFORMATION:
 N: 321,178ft E: 1,641,867ft
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: 4,356,581m E: 520,759m
BOTTOM HOLE INFORMATION:
 N: 4,358,415m E: 520,093m

- NOTES**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
 2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
 3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
 4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



JOB # 13-032WA
 DRAWING # KREITLERUNIT2HAD
 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

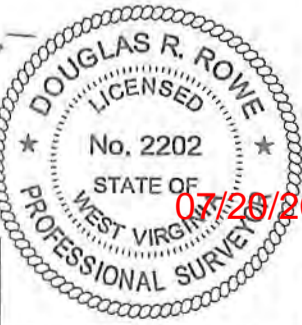
DOUGLAS R. ROWE P.S. 2202
 DATE 04/03/18
 OPERATOR'S WELL # KREITLER UNIT #2H

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 PERSERIBED 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 1,135' WATERSHED McELROY CREEK
 QUADRANGLE WEST UNION 7.5 (TH) SMITHBURG 7.5 (TH) DISTRICT GRANT COUNTY DODDRIDGE
 SURFACE OWNER MELODY BROWN ACREAGE 50 ACRES +/-
 OIL & GAS ROYALTY OWNER JAMES BOOHER ET UX; CAROLYN E. FARR; MARY MAXINE WELCH; HOMER SPENCER ET AL; DEPI; BRADFORD D. REED ET AL; REXAL SANDY ET AL; DORTHEA MORGAN ET AL



LEASE ACREAGE 50 AC±; 50 AC±; 15 AC±; 35 AC±; 22.97 AC±; 126 AC±; 134 AC±; 159 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
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,872' TVD 13,493' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM-DIANNA STAMPER
 ADDRESS 1615 WYNKOOP ST ADDRESS 5400 D BIG TYLER ROAD
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

07/26/2018

COUNTY NAME PERMIT

LATITUDE 39°22'30"

2,608'

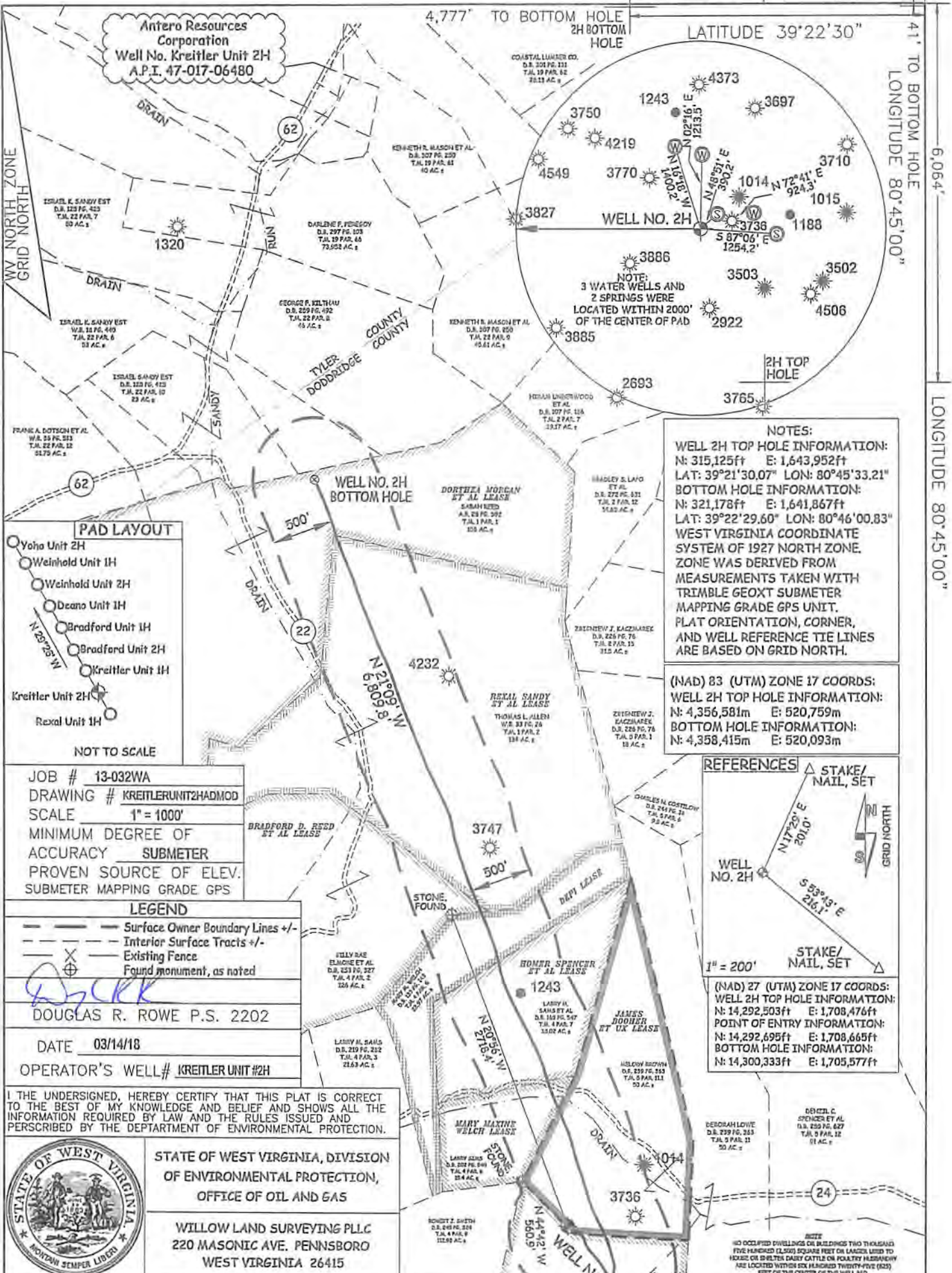
41' TO BOTTOM HOLE

LONGITUDE 80°45'00"

LONGITUDE 80°45'00"

COUNTY NAME

PERMIT

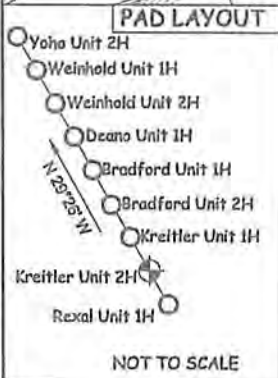


NOTES:
 WELL 2H TOP HOLE INFORMATION:
 N: 315,125ft E: 1,643,952ft
 LAT: 39°21'30.07" LON: 80°45'33.21"
 BOTTOM HOLE INFORMATION:
 N: 321,178ft E: 1,641,867ft
 LAT: 39°22'29.60" LON: 80°46'00.83"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE 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: 4,356,581m E: 520,759m
 BOTTOM HOLE INFORMATION:
 N: 4,358,415m E: 520,093m



(NAD) 27 (UTM) ZONE 17 COORDS:
 WELL 2H TOP HOLE INFORMATION:
 N: 14,292,503ft E: 1,708,476ft
 POINT OF ENTRY INFORMATION:
 N: 14,292,695ft E: 1,708,665ft
 BOTTOM HOLE INFORMATION:
 N: 14,300,333ft E: 1,705,577ft



JOB # 13-032WA
 DRAWING # KREITLERUNIT2HADMOD
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND
 - - - Surface Owner Boundary Lines +/-
 - - - Interior Surface Tracts +/-
 - - - Existing Fence
 X Found monument, as noted

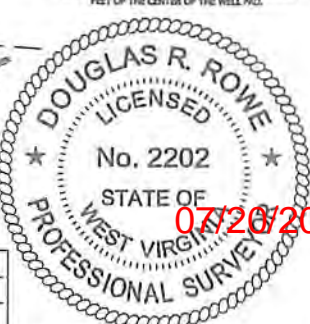
DOUGLAS R. ROWE P.S. 2202
 DATE 03/14/18
 OPERATOR'S WELL # KREITLER UNIT #2H

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 DEPARTMENT OF ENERGY API WELL # 47 - 017 - 06480
 DIVISION OF OIL AND GAS STATE COUNTY PERMIT
 WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 1,135' WATERSHED McELROY CREEK
 QUADRANGLE WEST UNION 7.5 (TH) SMITHBURG 7.5 (TH) DISTRICT GRANT COUNTY DODDRIDGE
 SURFACE OWNER MELODY BROWN ACREAGE 50 ACRES +/-
 OIL & GAS ROYALTY OWNER JAMES BOOHER ET UX; CAROLYN E. FARR; MARY MAXINE WELCH; HOMER SPENCER ET AL; DEPI; BRADFORD D. REED ET AL; REXAL SANDY ET AL; DORTHEA MORGAN ET AL
 LEASE ACREAGE 50 AC±; 50 AC±; 15 AC±; 35 AC±; 22.97 AC±; 126 AC±; 134 AC±; 159 AC±



PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) POE MOD PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,872' TVD 13,493' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT CT CORPORATION SYSTEM-DIANNA STAMPER
 ADDRESS 1615 WYNKOOP ST ADDRESS 5400 D BIG TYLER ROAD
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

07/26/2018

STATE OF WEST VIRGINIA
 DEPARTMENT OF ENERGY
 DIVISION OF OIL AND GAS
 PERMIT # 06480 - 017
 API WELL # 47 - 017
 WASTE DISPOSAL DEEP SHALLOW X
 WELLS TYPE: OIL GAS X LIQUID INJECTION
 (IF "GAS") PRODUCTION X STORAGE
 LOCATION: ELEVATION 1,135' WATERSHED MCELROY CREEK
 QUADRANGLE WEST VIRGINIA 75 (TH SUTTON) DISTRICT GRANT COUNTY DODDRIDGE
 SURFACE OWNER MELROY BROWN ACREAGE 50 ACRES +/-
 OIL & GAS ROVARY OWNER JAMES BOOHER ET UX, CAROLYN E. FARR, MARY MAXINE MORGAN ET AL, DORTHEA MORGAN ET AL
 BRADFORD D. REED ET AL, REYAL SANDY ET AL, DORTHEA MORGAN ET AL
 LEASE ACREAGE 50 AC.; 50 AC.; 15 AC.; 35 AC.; 22.97 AC.; 126 AC.; 134 AC.; 159 AC.

PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL OTHER PHYSICAL CHANGE IN WELL
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION
 (SPECIFY) AS-DRILLED
 TARGET FORMATION MARCELLUS
 WELL OPERATOR ANTERO RESOURCES CORP.
 ADDRESS 1615 WYMKOP ST DENVER, CO 80202
 PERMIT 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

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

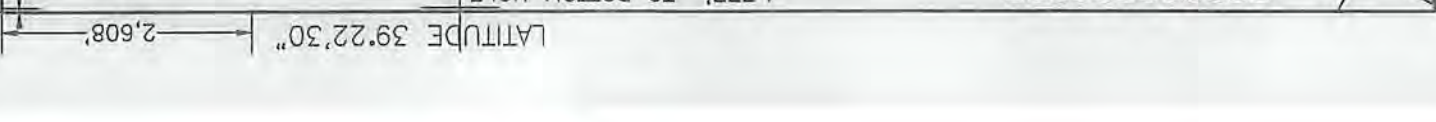
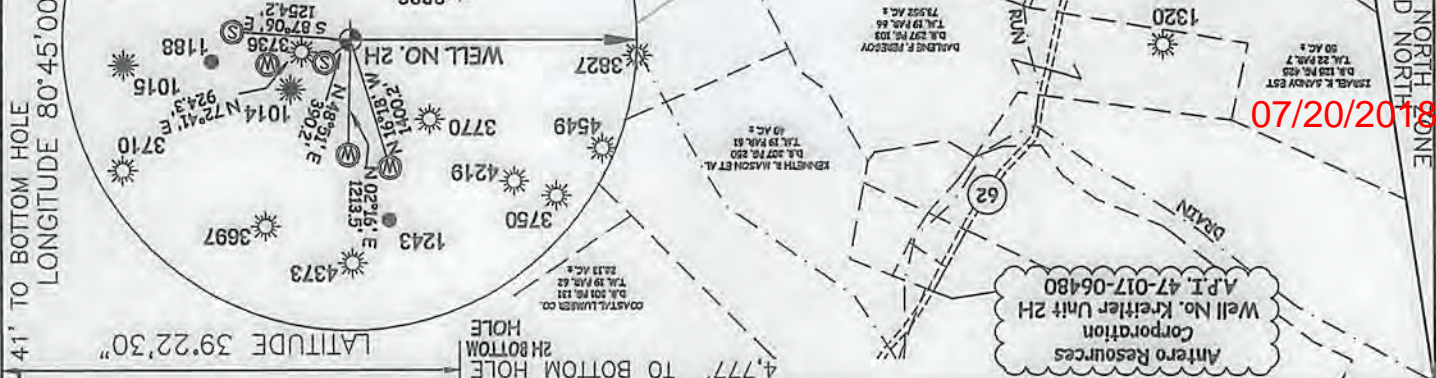
DATE 04/03/18
 OPERATOR'S WELL # KREITER UNIT #2H
 DOUGLAS R. ROWE P.S. 2202
 LEGEND:
 - Surface Owner Boundary Lines +/-
 - Interior Surface Tracts +/-
 - Proposed Well Path
 - As Drilled Well Path

JOB # 13-032WA
 DRAWING # KREITERUNIT#2HAD
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS
 I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN IS CORRECT
 INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND ALL THE
 PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

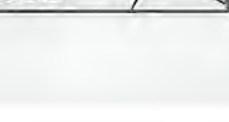
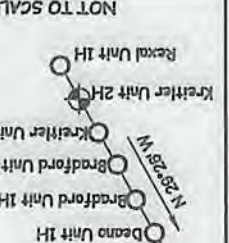
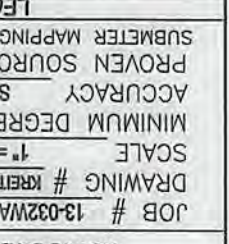
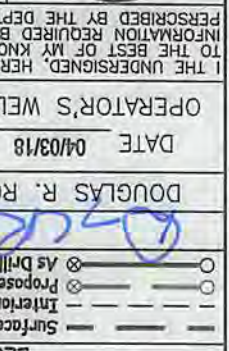
NOTES:
 1. NO OCCUPIED DWELLINGS OR BUILDINGS
 2. TWO THOUSAND FIVE HUNDRED (2,500)
 SQUARE FEET OR LARGER USED TO HOUSE OR
 SHELTER DAIRY CATTLE OR POULTRY
 HUSBANDRY ARE LOCATED WITHIN SIX
 HUNDRED TWENTY-FIVE (625) FEET OF THE
 CENTER OF THE WELL PAD.
 2. TOP HOLE DATA SHOWN HEREON WAS
 PROVIDED BY ALLEGHENY SURVEYS, INC.
 3. AS DRILLED DATA WAS PROVIDED BY
 ANTERO RESOURCES CORPORATION.
 4. THIS 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. THIS IS BY NO MEANS RESPONSIBLE FOR ANY
 ERRORS OR INACCURACIES WITH THE DATA
 AND INFORMATION THAT HAS BEEN PROVIDED.

WELL 2H TOP HOLE INFORMATION:
 N: 315.125ft E: 1,643.952ft
 LAT: 39°21'30.07" LON: 80°45'33.21"
 BOTTOM HOLE INFORMATION:
 N: 321.178ft E: 1,641.867ft
 LAT: 39°22'29.60" LON: 80°46'00.83"
 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.

WELL 2H TOP HOLE INFORMATION:
 N: 435.581m E: 520.759m
 N: 435.815m E: 520.093m
 BOTTOM HOLE INFORMATION:
 N: 435.815m E: 520.093m



LONGITUDE 80°45'00"
 LONGITUDE 80°45'00"
 LATITUDE 39°22'30"
 LATITUDE 39°22'30"
 6.064'
 4.777' TO BOTTOM HOLE
 2.608'



LATITUDE 39°22'30"

2.608'

41' TO BOTTOM HOLE
LONGITUDE 80°45'00"

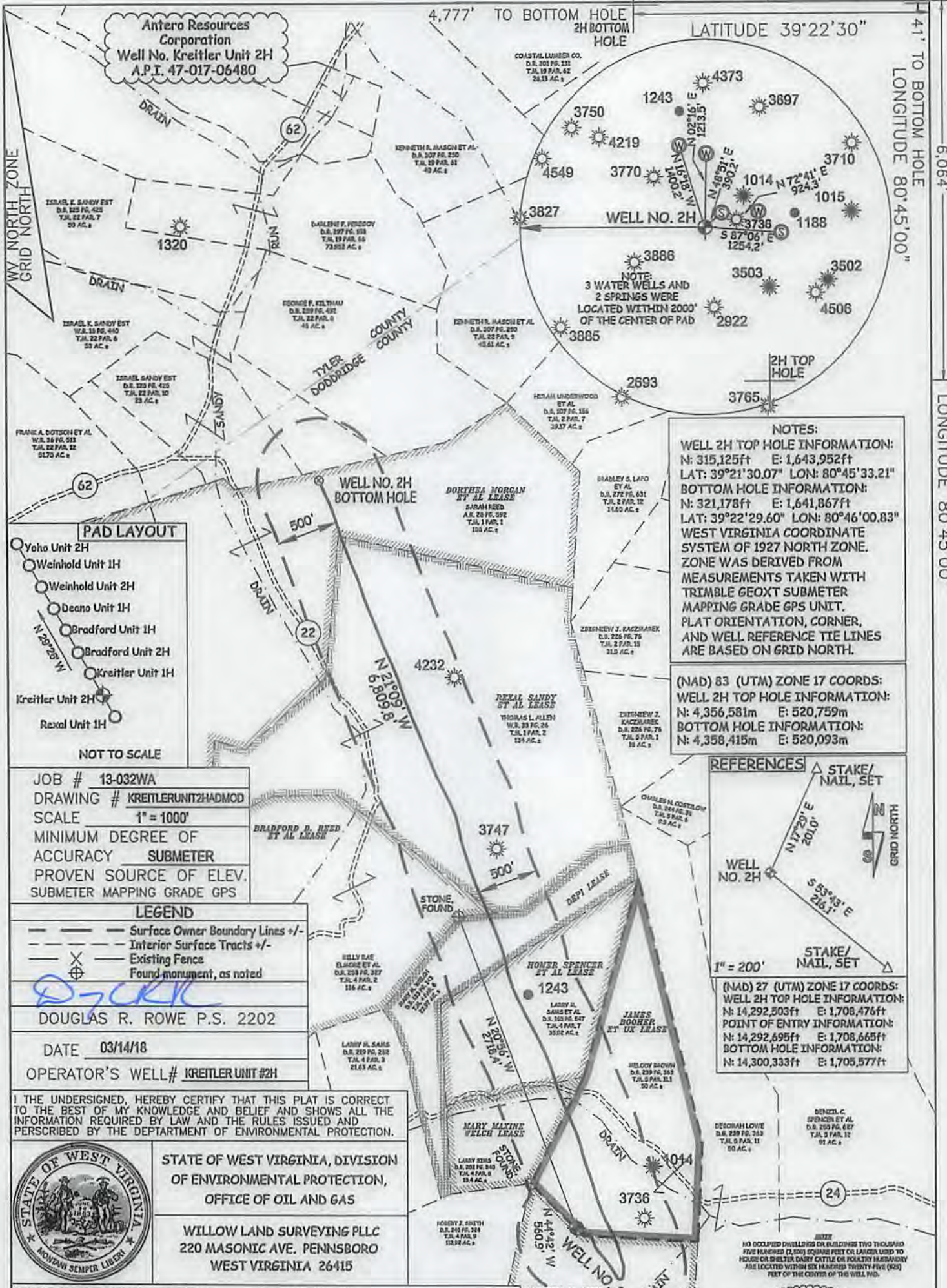
6.064'

LONGITUDE 80°45'00"

Antero Resources Corporation
Well No. Kreitler Unit 2H
A.P.I. 47-017-06480

4,777' TO BOTTOM HOLE
2H BOTTOM HOLE

LATITUDE 39°22'30"



NOTES:
WELL 2H TOP HOLE INFORMATION:
N: 315,125ft E: 1,643,952ft
LAT: 39°21'30.07" LON: 80°45'33.21"
BOTTOM HOLE INFORMATION:
N: 321,178ft E: 1,641,867ft
LAT: 39°22'29.60" LON: 80°46'00.83"
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH 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: 4,356,581m E: 520,759m
BOTTOM HOLE INFORMATION:
N: 4,358,415m E: 520,093m

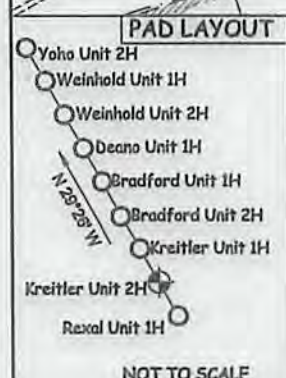
REFERENCES

STAKE/ NAIL, SET
WELL NO. 2H
N 17°20' E 201.0'
S 53°45' E 216.1'

1" = 200'

STAKE/ NAIL, SET

(NAD) 27 (UTM) ZONE 17 COORDS:
WELL 2H TOP HOLE INFORMATION:
N: 14,292,503ft E: 1,708,476ft
POINT OF ENTRY INFORMATION:
N: 14,292,695ft E: 1,708,665ft
BOTTOM HOLE INFORMATION:
N: 14,300,333ft E: 1,705,577ft



JOB # 13-032WA
DRAWING # KREITLERUNIT2HADMOD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

LEGEND

- Surface Owner Boundary Lines +/-
- Interior Surface Tracts +/-
- Existing Fence
- Found monument, as noted

DOUGLAS R. ROWE P.S. 2202

DATE 03/14/18
OPERATOR'S WELL# KREITLER UNIT #2H

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 DEPARTMENT OF ENERGY API WELL # 47 - 017 - 06480

DIVISION OF OIL AND GAS STATE COUNTY PERMIT

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

LOCATION: ELEVATION 1,135' WATERSHED McELROY CREEK

QUADRANGLE WEST UNION 7.5 (TH) SMITHBURG 7.5 (TH) DISTRICT GRANT COUNTY DODDRIDGE

SURFACE OWNER MELODY BROWN ACREAGE 50 ACRES +/-

OIL & GAS ROYALTY OWNER JAMES BOOHER ET UX; CAROLYN E. FARR; MARY MAXINE WELCH; HOMER SPENCER ET AL; DEPT; BRADFORD D. REED ET AL; REXAL SANDY ET AL; DORTHEA MORGAN ET AL

LEASE ACREAGE 50 AC±; 50 AC±; 15 AC±; 35 AC±; 22.97 AC±; 126 AC±; 134 AC±; 159 AC±

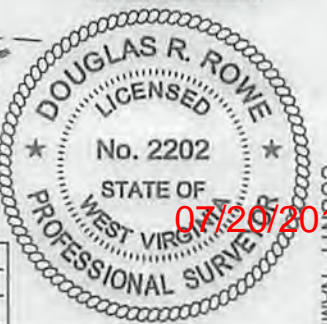
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) POE MOD PLUG & ABANDON CLEAN OUT & REPLUG

TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,872' TVD 13,493' MD

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

ADDRESS 1615 WYNKOOP ST ADDRESS 5400 D BIG TYLER ROAD

FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313



COUNTY NAME PERMIT

03/20/2018