

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

RECEIVED
Office of Oil and Gas

OCT 12 2017

WV Department of
Environmental Protection

API 47 - 085 - 10273 County Ritchie District Clay
Quad Pennsboro 7.5' Pad Name Zinn Pad Field/Pool Name -----
Farm name Ernest E. Zinn et al Well Number Earnest 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 4352308m Easting 505340m
Landing Point of Curve Northing 4352197.142m Easting 505604.004m
Bottom Hole Northing 4350013m Easting 506489m

Elevation (ft) 1120' 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 01/29/2016 Date drilling commenced 02/07/2016 Date drilling ceased 05/24/2016
Date completion activities began 11/01/2016 Date completion activities ceased 04/09/2017
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 107' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1567' 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

APPROVED

NAME: Michael Doff
DATE: 10-25-17

Reviewed by: _____

01/05/2018

API 47-085 - 10273 Farm name Ernest E. Zinn et al Well number Earnest Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	40'	New	94#, K-55	N/A	Y
Surface	17-1/2"	13-3/8"	636'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2519'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	14825'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6561'		5.95#, 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	95 sx	15.6	1.18	112	0'	8 Hrs.
Surface	Class A	745 sx	15.6	1.18	879	0'	8 Hrs.
Coal							
Intermediate 1	Class A	970 sx	15.6	1.18	1145	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	879 sx (Lead) 1451 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.84 (Tail)	3936	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15674' MD, 6430' TVD (BHL), 6445' (Deepest Point Drilled) Loggers TD (ft) 14812' MD

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

Plug back procedure N/A

Kick off depth (ft) 5804'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Norma Unit 1H API #47-085-10169). Please reference the wireline logs submitted with Form WR-35 for Norma Unit 1H. A Cement Bond Log has been included with this submittal.

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- 085 - 10273 Farm name Ernest E. Zinn et al Well number Earnest Unit 1H

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 (bbbls)	Amount of Nitrogen/other (units)
*PLEASE SEE ATTACHED EXHIBIT 2								

Please insert additional pages as applicable.

API 47- 085 - 10273 Farm name Ernest E. Zinn et al Well number Earnest Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6388' (TOP)</u>	<u>TVD</u>	<u>6650' (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 3000 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 7955 mcfpd Oil 106 bpd NGL --- bpd Water 712 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**

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 Allied Horizontal Wireline Services
Address 381 Colonial Manor Rd. City North Huntingdon State PA Zip 15642

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

Stimulating Company Halliburton
Address 121 Champion Way Suite 200 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

Completed by Samantha Klaas Telephone 303-357-6759
Signature [Signature] Title Permitting Agent Date 10/11/2017

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

API 47-085-10273 Farm Name Ernest E. Zinn et al Well Number Earnest Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	11/1/2016	14527	14696	60	Marcellus
2	11/14/2016	14326	14495	60	Marcellus
3	11/14/2016	14125	14294	60	Marcellus
4	11/16/2016	13924	14094	60	Marcellus
5	11/17/2016	13723	13893	60	Marcellus
6	11/18/2016	13523	13692	60	Marcellus
7	11/19/2016	13322	13491	60	Marcellus
8	11/19/2016	13121	13290	60	Marcellus
9	11/20/2016	12920	13089	60	Marcellus
10	11/21/2016	12719	12889	60	Marcellus
11	11/22/2016	12518	12688	60	Marcellus
12	11/22/2016	12318	12487	60	Marcellus
13	11/23/2016	12117	12286	60	Marcellus
14	11/25/2016	11916	12085	60	Marcellus
15	11/26/2016	11715	11885	60	Marcellus
16	11/27/2016	11514	11684	60	Marcellus
17	11/27/2016	11314	11483	60	Marcellus
18	11/28/2016	11113	11282	60	Marcellus
19	11/29/2016	10912	11081	60	Marcellus
20	11/29/2016	10711	10880	60	Marcellus
21	11/30/2016	10510	10680	60	Marcellus
22	12/1/2016	10309	10479	60	Marcellus
23	12/1/2016	10109	10278	60	Marcellus
24	12/26/2016	9908	10077	60	Marcellus
25	12/27/2016	9707	9876	60	Marcellus
26	12/28/2016	9506	9676	60	Marcellus
27	12/29/2016	9305	9475	60	Marcellus
28	12/29/2016	9105	9274	60	Marcellus
29	12/30/2016	8904	9073	60	Marcellus
30	12/31/2016	8703	8872	60	Marcellus
31	1/1/2017	8502	8671	60	Marcellus
32	1/1/2017	8301	8471	60	Marcellus
33	1/2/2017	8100	8270	60	Marcellus
34	1/3/2017	7900	8069	60	Marcellus
35	1/3/2017	7699	7868	60	Marcellus
36	1/4/2017	7498	7667	60	Marcellus
37	1/5/2017	7297	7466	60	Marcellus
38	1/6/2017	7096	7266	60	Marcellus
39	1/7/2017	6895	7065	60	Marcellus
40	1/7/2017	6695	6864	60	Marcellus

01/05/2018

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	11/14/2016	77.7	7615	5109.0	4104.0	516292	12348.1	N/A
2	11/14/2016	76.8	7368	5665.0	3895.0	517947	11709.1	N/A
3	11/14/2016	79.0	7468	5622.0	3801.0	518679	11601.5	N/A
4	11/16/2016	79.0	7400	5595.0	3454.0	514585	11048.7	N/A
5	11/17/2016	79.2	7513	5624.0	3726.0	514565	10876.2	N/A
6	11/18/2016	77.5	7193	5675.0	3162.0	515835	10686.7	N/A
7	11/19/2016	77.3	7295	5819.0	3278.0	516480	10489.1	N/A
8	11/19/2016	75.9	6958	5823.0	3154.0	517709	10495.2	N/A
9	11/20/2016	76.8	7141	5560.0	2856.0	522716	10655.0	N/A
10	11/21/2016	65.3	6757	6066.0	3006.0	521249	12158.3	N/A
11	11/22/2016	76.0	7153	5847.0	2683.0	515092	10480.0	N/A
12	11/22/2016	78.5	7121	5468.0	3456.0	517166	10566.4	N/A
13	11/23/2016	77.5	7146	5426.0	3389.0	515370	10579.9	N/A
14	11/25/2016	78.1	6966	5723.0	3023.0	517249	10536.4	N/A
15	11/26/2016	78.1	6746	5579.0	3157.0	512794	10336.2	N/A
16	11/27/2016	79.5	6784	5478.0	2826.0	510134	10396.9	N/A
17	11/27/2016	78.7	6661	5106.0	3388.0	516762	10422.0	N/A
18	11/28/2016	78.4	6633	5294.0	3583.0	516287	10512.1	N/A
19	11/29/2016	79.4	6688	5833.0	2968.0	516181	10447.6	N/A
20	11/29/2016	77.2	6908	5664.0	3138.0	515015	10544.1	N/A
21	11/30/2016	78.9	6732	5322.0	3693.0	516041	10397.4	N/A
22	12/1/2016	73.6	6519	5380.0	3193.0	515412	10648.3	N/A
23	12/1/2016	74.6	6549	5699.0	8851.0	488234	11364.8	N/A
24	12/26/2016	77.9	6514	5407.0	3438.0	515410	11810.6	N/A
25	12/27/2016	79.6	6819	5879.0	3632.0	514532	10620.3	N/A
26	12/28/2016	77.0	6875	5661.0	3643.0	515930	10433.7	N/A
27	12/29/2016	80.2	6803	5445.0	3811.0	515562	10338.6	N/A
28	12/29/2016	79.1	6653	5530.0	3785.0	516920	10338.3	N/A
29	12/30/2016	77.2	6732	5907.0	3819.0	516456	10518.0	N/A
30	12/31/2016	79.0	6888	5712.0	3929.0	513903	10309.9	N/A
31	1/1/2017	80.1	6835	5952.0	3757.0	517054	10321.6	N/A
32	1/1/2017	77.9	6644	5517.0	3469.0	517082	10298.7	N/A
33	1/2/2017	78.5	6463	5669.0	3485.0	515413	10417.5	N/A
34	1/3/2017	80.2	6457	5940.0	3487.0	515052	10344.5	N/A
35	1/3/2017	77.3	6360	5315.0	3382.0	513798	10277.8	N/A
36	1/4/2017	79.2	6760	5353.0	3616.0	515105	10374.8	N/A
37	1/5/2017	78.2	6417	5912.0	3759.0	515372	10444.9	N/A
38	1/6/2017	78.7	6750	5822.0	3384.0	515789	10367.5	N/A
39	1/7/2017	78.6	6774	5596.0	4088.0	516138	10418.3	N/A
40	1/7/2017	79.2	6681	5482.0	2790.0	514466	10343.0	N/A
	AVG=	77.8	6,868	5,612	3,576	20,611,776	427,278	TOTAL

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	107'	N/A	107'	N/A
Shale/ Siltstone	est. 30	285	est. 30	285
Sandstone	est. 285	425	est. 285	425
Shale/ Siltstone	est. 425	645	est. 425	645
Sandstone	est. 645	725	est. 645	725
Limestone	est. 725	805	est. 725	805
Sandstone/ Shale	est. 805	905	est. 805	905
Shale	est. 905	985	est. 905	985
Sandstone	est. 985	1305	est. 985	1305
Siltstone	est. 1305	1405	est. 1305	1405
Sandstone	est. 1405	1465	est. 1405	1465
Sandstone	est. 1465	1625	est. 1465	1625
Shale / Sandstone	est. 1625	1685	est. 1625	1685
Sandstone	est. 1685	1981	est. 1685	1983
Big Lime	1981	2557	1983	2559
Gantz	2557	2839	2559	2841
Fifty Foot Sandstone	2839	2970	2841	2971
Gordon	2970	3346	2971	3348
Fifth Sandstone	3346	3417	3348	3420
Bayard	3417	3910	3420	3920
Speechley	3910	4160	3920	4177
Baltown	4160	4636	4177	4669
Bradford	4636	5000	4669	5045
Benson	5000	5236	5045	5286
Alexander	5236	5521	5286	5576
Elk	5521	5810	5576	5874
Rhinestreet	5810	6135	5874	6218
Sycamore	6135	6229	6218	6335
Middlesex	6229	6337	6335	6509
Burkett	6337	6365	6509	6574
Tully	6365	6388	6574	6650
Marcellus	6388	NA	6650	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.

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/14/2016
Job End Date:	1/11/2017
State:	West Virginia
County:	Ritchie
API Number:	47-085-10273-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Earnest 1H
Latitude:	39.19122900
Longitude:	-80.56176100
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,443
Total Base Water Volume (gal):	17,945,676
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
Fresh Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	98.62059	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.02069	

HYDROCHLORIC ACID	Halliburton	Solvent					
				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				Listed Below			
SCALECHECK LP-70	Halliburton	Scale Inhibitor					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
SP BREAKER	Halliburton	Breaker					
				Listed Below			
FR-76	Halliburton	Friction Reducer					
				Listed Below			

SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				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	1.35440	
			Hydrochloric acid	7647-01-0	15.00000	0.00910	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.00188	
			Inorganic salt	Proprietary	30.00000	0.00188	
			Acrylamide acrylate copolymer	Proprietary	30.00000	0.00188	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Guar gum	9000-30-0	100.00000	0.00098	
			Ethylene Glycol	107-21-1	60.00000	0.00094	
			Glutaraldehyde	111-30-8	30.00000	0.00029	
			Telomer	Proprietary	10.00000	0.00016	
			Quaternary ammonium compounds, benzyl-C12- 16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00005	
			Sodium persulfate	7775-27-1	100.00000	0.00002	
			Sodium polyacrylate	9003-04-7	1.00000	0.00002	
			Ethanol	64-17-5	1.00000	0.00001	
			Methanol	67-56-1	60.00000	0.00001	
			Ethoxylated alcohols	Proprietary	30.00000	0.00000	
			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1	30.00000	0.00000	
			Fatty acids, tall oil	Proprietary	30.00000	0.00000	
			Olefins	Proprietary	5.00000	0.00000	

			Propargyl alcohol	107-19-7	10.00000	0.00000	
			Phosphoric acid	7664-38-2	0.10000	0.00000	
			Acrylic acid	79-10-7	0.01000	0.00000	
			Sodium sulfate	7757-82-6	0.10000	0.00000	

* 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)

18/05/2021



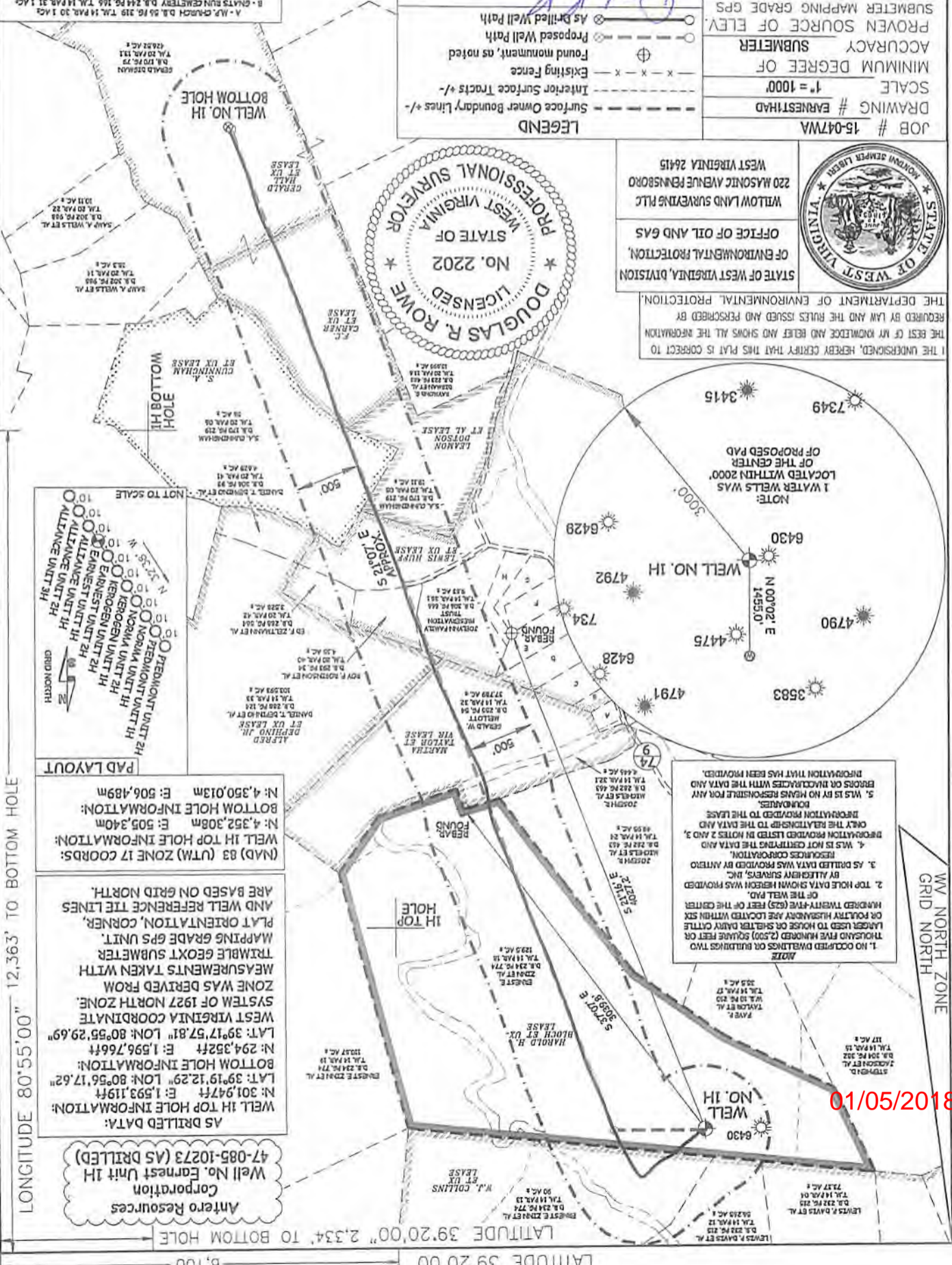
STATE OF WEST VIRGINIA
DIVISION OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS
WILLOW LAND SURVEYS PLLC
220 MASONIC AVENUE PENNSBORO
WEST VIRGINIA 26415

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 PERFORMED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.

JOB # 15-047WA
DRAWING # EARNESTHAD
SCALE 1" = 1000'
MINIMUM DEGREE OF ACCURACY
SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS
STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS

DATE 09/29/17
DOUGLAS R. ROWE P.S., 2202
LEGEND
Surface Owner Boundary Lines +/-
Intersection Surface Tracts +/-
Existing Fence
Found monument, as noted
Proposed Well Path
As Drilled Well Path

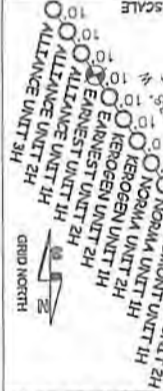
WELL TYPE: OIL
GAS X LIQUID INJECTION
WASTE DISPOSAL
API WELL #
OPERATOR'S WELL # EARNEST UNIT #1H
COUNTY NAME PERMIT
STATE COUNTY PERMIT
NORTH FORK HUGHES RIVER DISTRICT CLAY COUNTY RITCHIE
SURFACE OWNER ERNEST E. ZINN ET AL
OIL & GAS ROYALTY OWNER HAROLD H. BLOCH ET UX; W. J. COLLINS ET UX; MARTHA TAYLOR ET VIR; ALFRED DEPHINO JR. ET UX; LEWIS HUFF ET UX; LEAMON DOTSON ET AL; S.A. CUNNINGHAM ET UX; F.C. GARNER ET UX; GERALD HALL ET UX
PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL
STIMULATE PLUG OFF OLD FORMATION PERFORATE NEW FORMATION
OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED
TARGET FORMATION MARCELLUS
CLEAN OUT & REPLUG
WELL OPERATOR ANTERO RESOURCES CORP.
1615 WYNNKOP STREET DENVER, CO 80202
DESIGNATED AGENT DIANNA STAMPER
CT CORPORATION SYSTEM
5400 D BIG TYLER ROAD CHARLESTON, WV 25313
FORM WW-6



NOTE
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHEDDER DAIRY CATTLE OR FOURTY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED THIRTY-FIVE (635) FEET OF THE CENTER OF THE WELL PAD.
2. TOP HOLE DATA IS SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
4. WAS NOT CORRECTING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3.
5. WAS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR OMISSIONS WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

AS DRILLED DATA:
WELL IH TOP HOLE INFORMATION:
N: 301.947ft E: 1.593.119ft
LAT: 39°19'12.29" LON: 80°56'17.62"
BOTTOM HOLE INFORMATION:
N: 294.352ft E: 1.596.766ft
LAT: 39°17'57.81" LON: 80°55'29.69"
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE
ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIANGLE 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 IH TOP HOLE INFORMATION:
N: 4,352,308m E: 505,340m
BOTTOM HOLE INFORMATION:
N: 4,350,013m E: 506,489m



LONGITUDE 80°55'00"
LONGITUDE 80°55'00"
4,828'
6,100'
LATITUDE 39°20'00"
LATITUDE 39°20'00"
2,334' TO BOTTOM HOLE

LATITUDE 39°20'00"

6,100'

LATITUDE 39°20'00" 2,334' TO BOTTOM HOLE

Antero Resources Corporation
Well No. Earnest Unit 1H
47-085-10273 (AS DRILLED)

AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
N: 301,947ft E: 1,593,119ft
LAT: 39°19'12.29" LON: 80°56'17.62"
BOTTOM HOLE INFORMATION:
N: 294,352ft E: 1,596,766ft
LAT: 39°17'57.81" LON: 80°55'29.69"
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: 4,352,308m E: 505,340m
BOTTOM HOLE INFORMATION:
N: 4,350,013m E: 506,489m

PAD LAYOUT

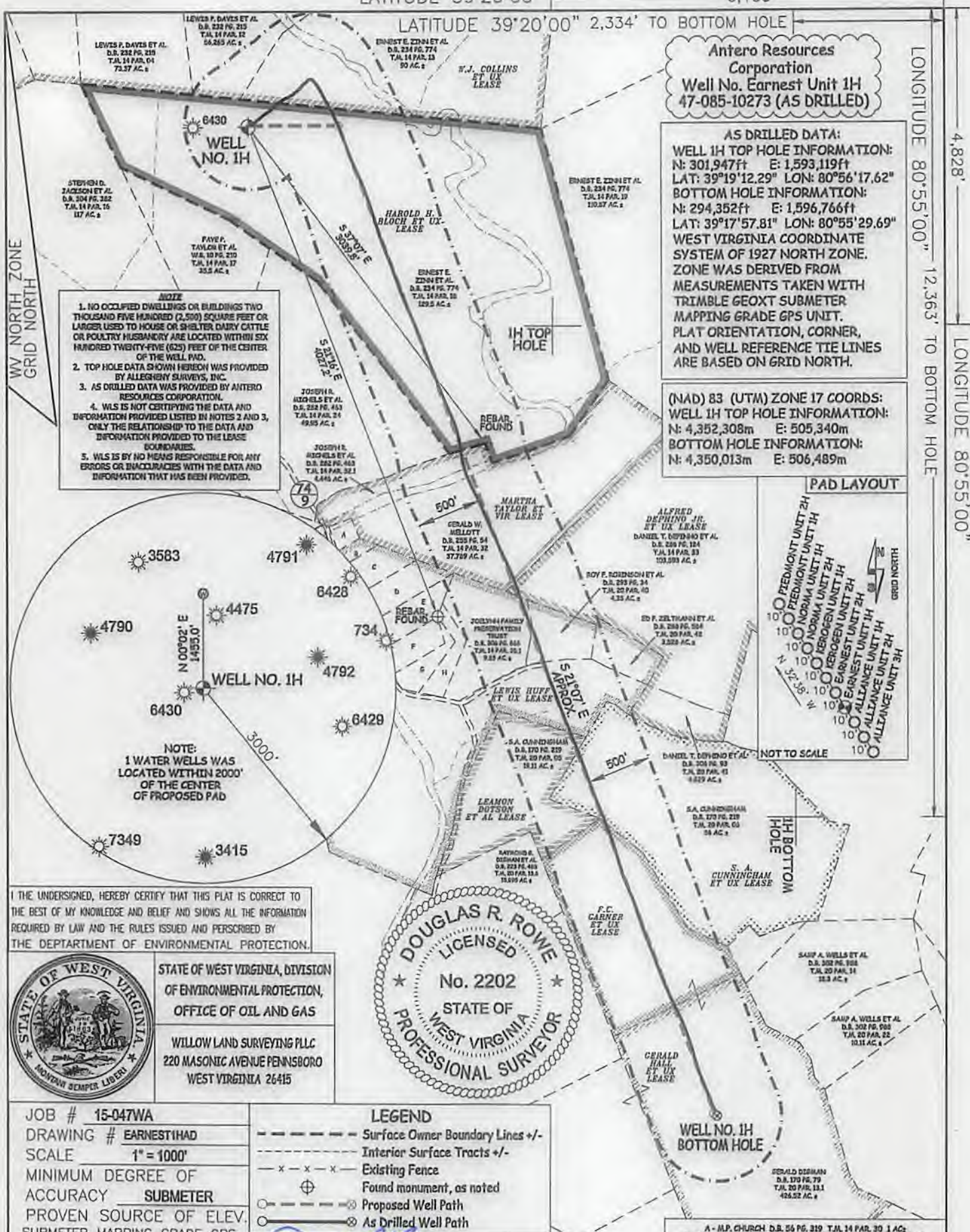


NOTE:
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED 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.

WN NORTH ZONE GRID NORTH

LONGITUDE 80°55'00" 12,363' TO BOTTOM HOLE

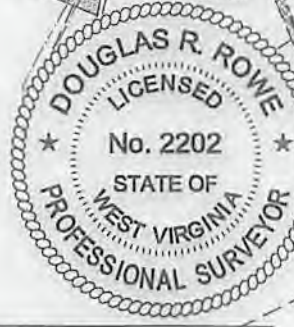
4,828' LONGITUDE 80°55'00"



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 AVENUE PENNSBORO WEST VIRGINIA 26415



JOB # 15-047WA
DRAWING # EARNEST1HAD
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 - x - Existing Fence
⊕ Found monument, as noted
○ Proposed Well Path
⊗ As Drilled Well Path
DOUGLAS R. ROWE P.S. 2202
DATE 09/29/17

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 AS DRILLED - 1,120' WATERSHED NORTH FORK HUGHES RIVER
QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY

OPERATOR'S WELL# EARNEST UNIT #1H
API WELL # 47 - 085 - 10273
STATE COUNTY PERMIT
COUNTY COUNTY RITCHIE

SURFACE OWNER ERNEST E. ZINN ET AL ACREAGE 129.5 ACRES +/-
OIL & GAS ROYALTY OWNER HAROLD H. BLOCH ET UX; W. J. COLLINS ET UX; MARTHA TAYLOR ET VIR;
ALFRED DEPHINO JR. ET UX; LEWIS HUFF ET UX; LEAMON DOTSON ET AL; S.A. CUNNINGHAM ET UX; F.C. GARNER ET UX; GERALD HALL ET UX
LEASE ACREAGE 131.5 AC; 575 AC; 44.48 AC; 112 AC; 164 AC; 20 AC; 55 AC; 30.5 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 ESTIMATED DEPTH 6,444' TVD 14,825' MD
TARGET FORMATION MARCELLUS
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS CT CORPORATION SYSTEM
DENVER, CO 80202 CHARLESTON, WV 25313

01/05/2018