

OCT 12 2017

WV Department of  
Environmental Protection

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

API 47 - 085 - 10170 County Ritchie District Clay  
Quad Pennsboro 7.5' Pad Name Zinn Pad Field/Pool Name ----  
Farm name Ernest E. Zinn et al Well Number Norma 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 4352318m Easting 505333m  
Landing Point of Curve Northing 4352548.554m Easting 505506.075m  
Bottom Hole Northing 4354931m Easting 504476m

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 12/16/2014 Date drilling commenced 02/08/2016 Date drilling ceased 06/10/2016  
Date completion activities began 10/30/2016 Date completion activities ceased 03/25/2017  
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 - 10170 Farm name Ernest E. Zinn et al Well number Norma 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#, K-55	N/A	Y
Surface	17-1/2"	13-3/8"	637'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2536'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15420'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6605'		4.70#, 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 <sup>3</sup> /sks)	Volume (ft <sup>3</sup> )	Cement Top (MD)	WOC (hrs)
Conductor	Class A	95 sx	15.5	1.19	113	0'	8 Hrs.
Surface	Class A	750 sx	15.6	1.18	885	0'	8 Hrs.
Coal							
Intermediate 1	Class A	980 sx	15.6	1.18	1156	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	887 sx (Load) 1375 sx (Tail)	13.41 (Load), 15.1 (Tail)	1.44 (Load), 1.84 (Tail)	3778	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15420' MD, 6437' TVD (BHL), 6450' (Deepest Point Drilled) Loggers TD (ft) 15403' MD

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

Plug back procedure N/A

Kick off depth (ft) 5988'

\*\* 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 - 10170 Farm name Ernest E. Zinn et al Well number Norma Unit 2H

PERFORATION RECORD

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

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)
<b>*PLEASE SEE ATTACHED EXHIBIT 2</b>								

Please insert additional pages as applicable.

API 47- 085 - 10170 Farm name Ernest E. Zinn et al Well number Norma Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6390' (TOP)</u>	<u>TVD</u>	<u>6648' (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 8945 mcfpd Oil 138 bpd NGL --- bpd Water 839 bpd GAS MEASURED BY  Estimated  Orifice  Pilot

LITHOLOGY/ FORMATION	TOP	BOTTOM	TOP	BOTTOM	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H <sub>2</sub> S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	

**\*PLEASE SEE ATTACHED EXHIBIT 3**


Please insert additional pages as applicable.

Drilling Contractor 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  Title Permitting Agent Date 10/11/2017

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

**API 47-085-10170 Farm Name Ernest E. Zinn et al Well Number Norma Unit 2H**

**EXHIBIT 1**

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	10/30/2016	15124	15293	60	Marcellus
2	1/27/2017	14923	15092	60	Marcellus
3	1/27/2017	14722	14892	60	Marcellus
4	1/28/2017	14522	14691	60	Marcellus
5	1/28/2017	14321	14490	60	Marcellus
6	1/29/2017	14120	14289	60	Marcellus
7	1/30/2017	13919	14089	60	Marcellus
8	1/30/2017	13719	13888	60	Marcellus
9	1/31/2017	13518	13687	60	Marcellus
10	1/31/2017	13317	13486	60	Marcellus
11	2/1/2017	13116	13286	60	Marcellus
12	2/1/2017	12916	13085	60	Marcellus
13	2/2/2017	12715	12884	60	Marcellus
14	2/2/2017	12514	12683	60	Marcellus
15	2/3/2017	12313	12483	60	Marcellus
16	2/3/2017	12113	12282	60	Marcellus
17	2/4/2017	11912	12081	60	Marcellus
18	2/5/2017	11711	11880	60	Marcellus
19	2/5/2017	11510	11680	60	Marcellus
20	2/6/2017	11310	11479	60	Marcellus
21	2/6/2017	11109	11278	60	Marcellus
22	2/7/2017	10908	11078	60	Marcellus
23	2/7/2017	10708	10877	60	Marcellus
24	2/7/2017	10507	10676	60	Marcellus
25	2/8/2017	10306	10475	60	Marcellus
26	2/8/2017	10105	10275	60	Marcellus
27	2/9/2017	9905	10074	60	Marcellus
28	2/9/2017	9704	9873	60	Marcellus
29	2/9/2017	9503	9672	60	Marcellus
30	2/10/2017	9302	9472	60	Marcellus
31	2/11/2017	9102	9271	60	Marcellus
32	2/11/2017	8901	9070	60	Marcellus
33	2/11/2017	8700	8869	60	Marcellus
34	2/12/2017	8499	8669	60	Marcellus
35	2/12/2017	8299	8468	60	Marcellus
36	2/13/2017	8098	8267	60	Marcellus
37	2/13/2017	7897	8067	60	Marcellus
38	2/14/2017	7696	7866	60	Marcellus
39	2/14/2017	7496	7665	60	Marcellus
40	2/15/2017	7295	7464	60	Marcellus
41	2/15/2017	7094	7264	60	Marcellus
42	2/16/2017	6894	7063	60	Marcellus
43	2/16/2017	6693	6862	60	Marcellus

01/05/2018

API 47-085-10170 Farm Name Ernest E. Zinn et al Well Number Norma Unit 2H

**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	1/26/2017	73.0	7209	0.0	3333.0	356032	9618.4	N/A
2	1/27/2017	77.0	7197	5564.0	3169.0	358401	7968.3	N/A
3	1/27/2017	73.9	6959	5646.0	3875.0	360491	8263.7	N/A
4	1/28/2017	71.2	6957	5306.0	3668.0	360199	7892.4	N/A
5	1/28/2017	74.2	7009	5627.0	3635.0	360161	7875.0	N/A
6	1/29/2017	74.4	7081	5727.0	4620.0	359794	10263.8	N/A
7	1/30/2017	74.2	6953	5351.0	3977.0	360576	8046.5	N/A
8	1/30/2017	75.9	7022	5349.0	3644.0	363517	7917.2	N/A
9	1/31/2017	73.3	7043	5186.0	3430.0	359491	9433.5	N/A
10	1/31/2017	65.7	7134	5472.0	4218.0	358042	10877.4	N/A
11	2/1/2017	77.4	6998	5292.0	3438.0	359170	7713.0	N/A
12	2/1/2017	75.5	7081	5438.0	3114.0	360162	7618.6	N/A
13	2/2/2017	74.3	7318	5647.0	3231.0	359078	7728.4	N/A
14	2/2/2017	64.1	7687	5232.0	4526.0	359461	9880.1	N/A
15	2/3/2017	77.7	7411	5633.0	2891.0	358860	9334.4	N/A
16	2/3/2017	76.2	7166	5664.0	3334.0	361909	7791.2	N/A
17	2/4/2017	78.4	7112	5573.0	3900.0	363536	7736.8	N/A
18	2/5/2017	77.8	7173	5260.0	3549.0	365343	7764.8	N/A
19	2/5/2017	76.3	6893	5672.0	3348.0	364625	7563.7	N/A
20	2/6/2017	76.5	6859	5683.0	3214.0	359724	7560.4	N/A
21	2/6/2017	79.2	7167	5893.0	4022.0	361595	7727.2	N/A
22	2/7/2017	77.4	6975	5740.0	3382.0	360891	7639.9	N/A
23	2/7/2017	78.6	7174	5942.0	4247.0	360440	7855.7	N/A
24	2/7/2017	77.9	7122	5390.0	4148.0	360051	7587.6	N/A
25	2/8/2017	78.1	6901	5371.0	3506.0	359734	7620.6	N/A
26	2/8/2017	80.0	7237	5511.0	3576.0	361197	8269.8	N/A
27	2/9/2017	73.7	6914	5681.0	3694.0	362158	7833.8	N/A
28	2/9/2017	78.5	6822	5027.0	2949.0	362647	7672.5	N/A
29	2/9/2017	74.3	6708	5031.0	2776.0	360628	7578.2	N/A
30	2/10/2017	77.3	7102	5361.0	3221.0	362673	7751.8	N/A
31	2/11/2017	76.3	6564	5422.0	3269.0	361292	7591.3	N/A
32	2/11/2017	78.8	6883	5722.0	3461.0	360877	7599.8	N/A
33	2/11/2017	75.0	6520	5285.0	3426.0	360668	7521.1	N/A
34	2/12/2017	79.8	6645	5508.0	3511.0	361642	7967.5	N/A
35	2/12/2017	77.5	7097	5288.0	3244.0	359528	8805.6	N/A
36	2/13/2017	80.3	6669	5305.0	3676.0	360208	7483.2	N/A
37	2/13/2017	78.0	6421	5155.0	3676.0	359430	7638.3	N/A
38	2/14/2017	80.4	6493	5795.0	3535.0	361582	7572.3	N/A
39	2/14/2017	77.0	6252	5965.0	3411.0	360364	7477.7	N/A
40	2/15/2017	77.8	6442	5758.0	3568.0	360941	7452.0	N/A
41	2/15/2017	77.7	6198	5807.0	3689.0	362252	7503.5	N/A
42	2/16/2017	77.7	6286	5822.0	3483.0	360997	7377.1	N/A
43	2/16/2017	78.7	6337	5529.0	3967.0	359991	7575.2	N/A
	AVG=	76.2	6,911	5,387	3,571	15,510,358	345,949	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	1978	est. 1685	1978
Big Lime	1978	2555	1978	2555
Gantz	2555	2841	2555	2841
Fifty Foot Sandstone	2841	2969	2841	2969
Gordon	2969	3341	2969	3349
Fifth Sandstone	3341	3414	3349	3424
Bayard	3414	3910	3424	3935
Speechley	3910	4160	3935	4193
Baltown	4160	4633	4193	4682
Bradford	4633	4996	4682	5057
Benson	4996	5233	5057	5301
Alexander	5233	5514	5301	5591
Elk	5514	5812	5591	5898
Rhinestreet	5812	6137	5898	6247
Sycamore	6137	6232	6247	6364
Middlesex	6232	6337	6364	6521
Burkett	6337	6367	6521	6585
Tully	6367	6390	6585	6648
Marcellus	6390	NA	6648	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:	1/26/2017
Job End Date:	2/17/2017
State:	West Virginia
County:	Ritchie
API Number:	47-085-10170-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Norma 2H
Latitude:	39.32017222
Longitude:	-80.93830278
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,450
Total Base Water Volume (gal):	14,989,413
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	88.68823	Density = 8.330
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.22984	



SP BREAKER	Halliburton	Breaker					
				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				Listed Below			
HYDROCHLORIC ACID	Halliburton	Solvent					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
MC S-2510T	Halliburton	Scale Inhibitor					
				Listed Below			
FR-76	Halliburton	Friction Reducer					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			

MC B-8614	Halliburton	Biocide					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Crystalline silica, quartz	14808-60-7	100.00000	11.01701	
			Guar gum	9000-30-0	100.00000	0.03068	
			Hydrochloric acid	7647-01-0	15.00000	0.02616	
			Inorganic salt	Proprietary	30.00000	0.01993	
			Acrylamide acrylate copolymer	Proprietary	30.00000	0.01993	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01993	
			Ethylene Glycol	107-21-1	60.00000	0.00840	
			Glutaraldehyde	111-30-8	30.00000	0.00261	
			Neutralized Polyacrylic Emulsion	Proprietary	10.00000	0.00140	
			Sodium persulfate	7775-27-1	100.00000	0.00046	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00043	
			Methanol	67-56-1	60.00000	0.00009	
			Ethanol	64-17-5	1.00000	0.00009	
			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1	30.00000	0.00004	
			Fatty acids, tall oil	Proprietary	30.00000	0.00004	
			Ethoxylated alcohols	Proprietary	30.00000	0.00004	
			Olefins	Proprietary	5.00000	0.00002	
			Propargyl alcohol	107-19-7	10.00000	0.00001	
			Phosphoric acid	7664-38-2	0.10000	0.00001	

		Sodium sulfate	7757-82-6	0.10000	0.00000
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- \* 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)



LATITUDE 39°20'00"

6,121'

8,925' TO BOTTOM HOLE

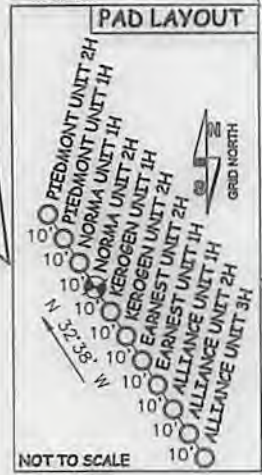
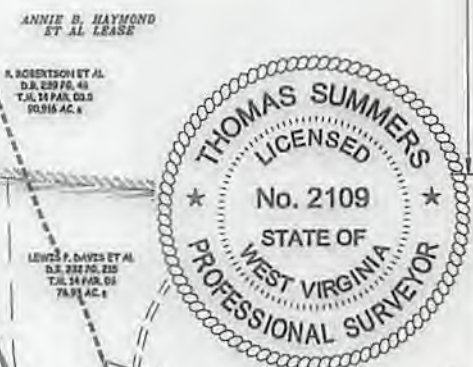
LATITUDE 39°22'30"

Antero Resources Corporation  
Well No. Norma Unit 2H  
47-085-10170 AS DRILLED

AS DRILLED DATA:  
WELL 2H TOP HOLE INFORMATION:  
N: 301,980ft E: 1,593,099ft  
LAT: 39°19'12.62" LON: 80°56'17.89"  
BOTTOM HOLE INFORMATION:  
N: 310,602ft E: 1,590,430ft  
LAT: 39°20'37.40" LON: 80°56'53.60"  
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: 4,352,318m E: 505,333m  
BOTTOM HOLE INFORMATION:  
N: 4,354,931m E: 504,476m

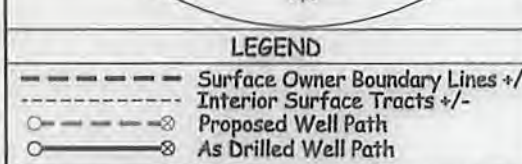
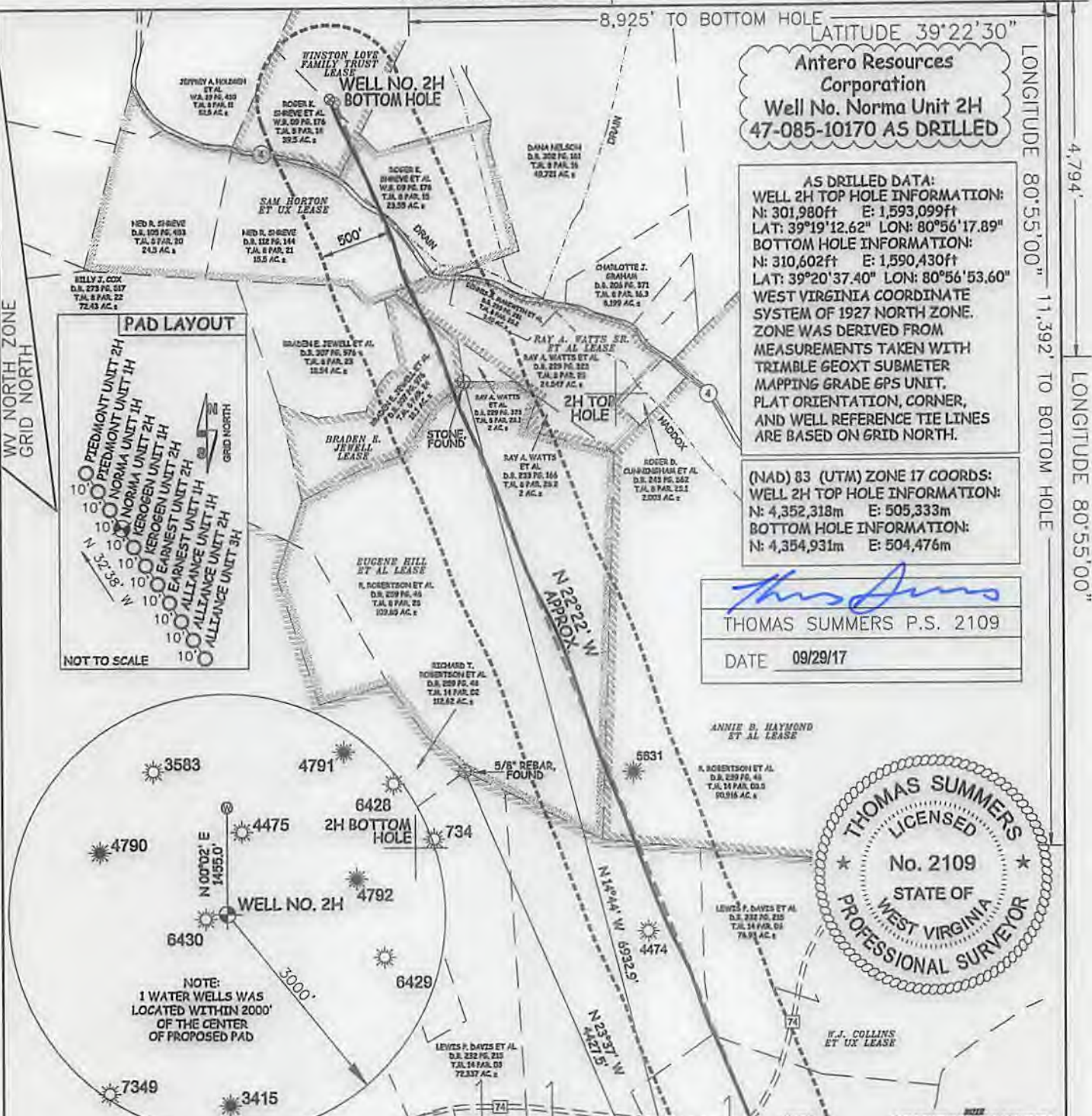
*Thomas Summers*  
THOMAS SUMMERS P.S. 2109  
DATE 09/29/17



WV NORTH ZONE GRID NORTH

LONGITUDE 80°55'00" 11,392' TO BOTTOM HOLE

4,794' LONGITUDE 80°55'00"



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

JOB # 14-069WA  
DRAWING # NORMA2HAD  
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  
WELL TYPE: OIL \_\_\_ GAS X LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
(IF "GAS") PRODUCTION X STORAGE \_\_\_ DEEP \_\_\_ SHALLOW X  
LOCATION: ELEVATION AS DRILLED - 1,120' WATERSHED NORTH FORK HUGHES RIVER  
QUADRANGLE PENNSBORO 7.5' DISTRICT CLAY  
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; ANNIE B. HAYMOND ET AL; LEASE ACREAGE 131.5 ACRES+; 575 ACRES+; 630.06 ACRES+; EUGENE HILL ET AL; BRADEN E. JEWELL; RAY A WATTS SR. ET AL; SAM HORTON ET UX; WINSTON LOVE FAMILY TRUST 102 ACRES+; 18.1 ACRES+; 27.997 ACRES+; 63.55 ACRES+; 29.15 ACRES+  
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 6,437' TVD 15,420' MD  
TARGET FORMATION MARCELLUS  
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER  
ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD  
DENVER, CO 80202 CHARLESTON, WV 25313

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



01/05/2018