

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

API 47 - 095 - 02379 County Tyler District Centerville
Quad Middlebourne 7.5' Pad Name Vera Pad Field/Pool Name -----
Farm name Vera O. Thomas Well Number Emerger Unit 3H
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 4363969m Easting 508279m
Landing Point of Curve Northing 4363975.07m Easting 508908.65m
Bottom Hole Northing 4361676m Easting 509743m

Elevation (ft) 1148.1' 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 1/24/2017 Date drilling commenced 3/22/2017 Date drilling ceased 8/15/2017
Date completion activities began 1/26/2018 Date completion activities ceased 6/27/2018
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 65', 215', 261', 399' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 620', 1614', 1974' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 620', 879' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed

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12/21/2019

API 47- 095 - 02379 Farm name Vera O. Thomas Well number Emerger Unit 3H

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"	95'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	722'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2608'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15857'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7076'		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	120	0'	8 Hrs.
Surface	Class A	600 sx	15.6	1.18	826	0'	8 Hrs.
Coal							
Intermediate 1	Class A	928 sx	15.6	1.18	1181	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	740 sx (Lead) 1585 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.53 (Lead), 1.83 (Tail)		-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15857 MD, 6597 TVD (BHL), 6799' (Deepest Point Drilled) Loggers TD (ft) 15857 MD

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

Plug back procedure N/A

Kick off depth (ft) 6150'

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

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<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6569' (TOP)</u>	<u>TVD</u>	<u>7166' (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 2800 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 8545 mcfpd Oil 171 bpd NGL --- bpd Water 27 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 ₂ 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 Frontier Drilling LLC
Address 562 Spring Run Road City Pennsboro State WV Zip 26415

Logging Company Schlumberger
Address 5599 San Felipe Street City Houston State TX Zip 77056

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

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

Please insert additional pages as applicable.

Completed by Megan Griffith Telephone 303-357-7223
Signature  Title Permitting Agent Date 2/8/2019

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

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API 47-095-02379 Farm Name Vera O. Thomas Well Number Emerger Unit 3H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	5/13/2018	15636	15802	60	Marcellus
2	5/14/2018	15439	15605	60	Marcellus
3	5/14/2018	15243	15409	60	Marcellus
4	5/15/2018	15046	15212	60	Marcellus
5	5/15/2018	14850	15016	60	Marcellus
6	5/15/2018	14653	14819	60	Marcellus
7	5/16/2018	14457	14623	60	Marcellus
8	5/16/2018	14260	14426	60	Marcellus
9	5/17/2018	14064	14230	60	Marcellus
10	5/17/2018	13867	14033	60	Marcellus
11	5/17/2018	13671	13837	60	Marcellus
12	5/18/2018	13474	13640	60	Marcellus
13	5/18/2018	13278	13444	60	Marcellus
14	5/19/2018	13081	13247	60	Marcellus
15	5/19/2018	12885	13051	60	Marcellus
16	5/19/2018	12688	12854	60	Marcellus
17	5/20/2018	12492	12658	60	Marcellus
18	5/20/2018	12295	12461	60	Marcellus
19	5/20/2018	12099	12265	60	Marcellus
20	5/21/2018	11902	12068	60	Marcellus
21	5/21/2018	11706	11872	60	Marcellus
22	5/21/2018	11509	11675	60	Marcellus
23	5/22/2018	11313	11479	60	Marcellus
24	5/22/2018	11116	11282	60	Marcellus
25	5/23/2018	10920	11086	60	Marcellus
26	5/23/2018	10723	10889	60	Marcellus
27	5/23/2018	10527	10693	60	Marcellus
28	5/23/2018	10330	10496	60	Marcellus
29	5/24/2018	10134	10300	60	Marcellus
30	5/24/2018	9937	10103	60	Marcellus
31	5/24/2018	9741	9907	60	Marcellus
32	5/25/2018	9544	9710	60	Marcellus
33	5/25/2018	9348	9514	60	Marcellus
34	5/26/2018	9151	9317	60	Marcellus
35	5/26/2018	8955	9121	60	Marcellus
36	5/26/2018	8758	8924	60	Marcellus
37	5/27/2018	8562	8728	60	Marcellus
38	5/27/2018	8365	8531	60	Marcellus
39	5/28/2018	8169	8335	60	Marcellus
40	5/28/2018	7972	8138	60	Marcellus
41	5/28/2018	7776	7942	60	Marcellus
42	5/28/2018	7579	7745	60	Marcellus
43	5/30/2018	7333	7549	60	Marcellus
44	5/30/2018	7186	7302	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 (bbls)	Amount of Nitrogen/ other (units)
1	5/13/2018	76.7	7333	5341	3730	16404	10111	N/A
2	5/14/2018	76.4	7443	5806	3946	17195	10031	N/A
3	5/14/2018	75.4	7415	5973	3901	17289	11807	N/A
4	5/15/2018	69.1	6910	5895	4094	16899	11603	N/A
5	5/15/2018	71.5	8023	5761	3899	17683	11439	N/A
6	5/15/2018	76.1	7629	6266	3999	17894	10814	N/A
7	5/16/2018	71.2	8269	6138	4357	18764	10967	N/A
8	5/16/2018	74.9	7793	6234	4082	18109	10117	N/A
9	5/17/2018	74	7581	5831	4070	17482	10011	N/A
10	5/17/2018	78.1	7503	6121	4165	17789	10341	N/A
11	5/17/2018	75.6	7332	5747	4158	17237	10534	N/A
12	5/18/2018	76	7400	5717	4281	17398	13467	N/A
13	5/18/2018	76.3	7541	5864	4148	17553	10550	N/A
14	5/19/2018	78.8	7655	5653	4200	17508	10290	N/A
15	5/19/2018	74.2	7760	6107	4099	17966	10845	N/A
16	5/19/2018	62.2	7618	5743	4123	17484	12667	N/A
17	5/20/2018	76.2	7349	6005	4205	17559	9948	N/A
18	5/20/2018	76.3	7246	5789	4089	17124	10547	N/A
19	5/20/2018	73.6	7337	5834	4209	17380	9961	N/A
20	5/21/2018	80.3	7609	5803	4271	17683	9655	N/A
21	5/21/2018	73.2	7530	6042	4326	17898	9698	N/A
22	5/21/2018	77.2	7233	5827	4343	17403	9903	N/A
23	5/22/2018	75.7	7053	5988	4137	17178	10052	N/A
24	5/22/2018	78.5	7263	6123	4038	17424	9802	N/A
25	5/23/2018	77.1	7307	5974	4134	17415	9780	N/A
26	5/23/2018	73.9	6860	6012	4246	17118	9748	N/A
27	5/23/2018	76.4	7070	6018	4283	17371	9872	N/A
28	5/23/2018	74.1	6793	6078	4174	17045	9837	N/A
29	5/24/2018	79.6	7019	6026	4118	17163	9766	N/A
30	5/24/2018	77.5	6992	6071	4375	17438	9463	N/A
31	5/24/2018	77.3	7219	5119	4078	16416	9707	N/A
32	5/25/2018	75	6790	6459	4126	17375	9730	N/A
33	5/25/2018	77.8	6852	5962	4219	17033	9437	N/A
34	5/26/2018	75.4	6909	6213	4197	17319	9830	N/A
35	5/26/2018	75.8	6852	5957	4322	17131	10052	N/A
36	5/26/2018	77.4	6583	5724	4298	16605	9654	N/A
37	5/27/2018	73.9	6719	5828	4058	16605	9615	N/A
38	5/27/2018	78.8	6884	5935	4288	17107	9610	N/A
39	5/28/2018	77.7	6801	5838	4285	16924	9687	N/A
40	5/28/2018	74.3	7193	6396	4222	17811	9745	N/A
41	5/28/2018	78.9	6597	5889	4198	16684	9617	N/A
42	5/28/2018	78.2	6547	5555	4301	16403	9710	N/A
43	5/30/2018	61.4	7046	6495	4243	17784	13744	N/A
44	5/30/2018	69.7	6376	5637	4292	16305	10270	N/A
		75.2	7,210	5,927	4,167	761,355	454,034	TOTAL

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LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Fresh Water	227'	N/A	227'	N/A
Sandstone	100	N/A	100	N/A
Sandy Siltstone	120	N/A	120	N/A
Sandy Shale	740	N/A	740	N/A
Calcareous Shale	880	N/A	880	N/A
Shaly Sandstone	920	N/A	920	N/A
Shaly Siltstone	1,020	N/A	1,020	N/A
Silty Shale	1,180	N/A	1,180	N/A
Sandstone	1,360	N/A	1,360	N/A
Sandy Shale	1,400	N/A	1,400	N/A
Shaly Sandstone	1,640	N/A	1,640	N/A
Silty Shale	1,700	N/A	1,700	N/A
Sandy Shale	1,780	N/A	1,780	N/A
Sandy Shale/Coal	1,920	N/A	1,920	N/A
Big Lime	2,055	N/A	2,099	N/A
Big Injun	2,203	N/A	2,256	N/A
Gantz Sand	2,659	N/A	2,738	N/A
Fifty Foot Sandstone	2,803	N/A	2,886	N/A
Gordon	2,904	N/A	2,993	N/A
Fifth Sandstone	3,086	N/A	3,183	N/A
Bayard	3,337	N/A	3,454	N/A
Warren	3,654	N/A	3,794	N/A
Speechley	3,990	N/A	4,152	N/A
Balltown	4,520	N/A	4,720	N/A
Bradford	4,709	N/A	4,925	N/A
Benson	4,947	N/A	5,181	N/A
Alexander	5,325	N/A	5,588	N/A
Rhinstreet	5,925	N/A	6,232	N/A
Sycamore	6,248	N/A	6,602	N/A
Middlesex	6,417	N/A	6,830	N/A
Burkett	6,514	N/A	7,001	N/A
Tully	6,542	N/A	7,078	N/A
Marcellus	6,569	N/A	7,166	N/A

*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:	5/12/2018
Job End Date:	6/1/2018
State:	West Virginia
County:	Tyler
API Number:	47-095-02379-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Emerger Unit 3H
Latitude:	39.42518889
Longitude:	-80.90400833
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,596
Total Base Water Volume (gal):	19,445,027
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	87.88637	Density = 8.330
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.11797	

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SCALECHEK LP-70	Halliburton	Scale Inhibitor					
				Listed Below			
SP BREAKER	Halliburton	Breaker					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
FR-76	Halliburton	Friction Reducer					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			
SAND-PREMIUM WHITE-30/50, BULK	Halliburton	Proppant					
				Listed Below			
TRIS(2-CHLOROETHYL)AMINE	Halliburton	Solvent					

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				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				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	11.95260	
			Inorganic salt	Proprietary	30.00000	0.01667	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01667	
			Acrylamide acrylate copolymer	Proprietary	30.00000	0.01667	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Guar gum	9000-30-0	100.00000	0.01415	
			Hydrochloric acid	7647-01-0	15.00000	0.01023	
			Ethylene glycol	107-21-1	60.00000	0.00594	
			Glutaraldehyde	111-30-8	30.00000	0.00379	
			Telmer	Proprietary	10.00000	0.00099	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00063	
			Sodium persulfate	7775-27-1	100.00000	0.00045	
			Ethanol	64-17-5	1.00000	0.00013	
			Sodium polyacrylate	9003-04-7	1.00000	0.00010	
			Methanol	67-56-1	60.00000	0.00009	
			Fatty acids, tall oil	Proprietary	30.00000	0.00004	
			Modified thiourea polymer	Proprietary	30.00000	0.00004	

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			Ethoxylated alcohols	Proprietary	30.00000	0.00004	
			Olefins	Proprietary	5.00000	0.00001	
			Phosphoric acid	7664-38-2	0.10000	0.00001	
			Propargyl alcohol	107-19-7	10.00000	0.00001	
			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)

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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.

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

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

NOT TO SCALE
SECTION A

JOB #	16-020WA
DRAWING #	EMERGENCY
SCALE	1" = 1000'
MINIMUM DEGREE OF ACCURACY	SUBMETER
PROVEN SOURCE OF ELEVATION	THOMAS SUMMERS P.S. 2109
SUBMETER MAPPING GRADE GPS	
STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY	
DIVISION OF OIL AND GAS	
OPERATOR'S WELL #	EMERGENCY UNIT #3H
DATE	10/12/18

WELL TYPE: OIL
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
LOCATION: ELEVATION 1,148.1 AS BUILT
QUADRANGLE MIDDLEBOURNE 7.5
DISTRICT CENTERVILLE COUNTY TYLER

SURFACE OWNER VERA O. THOMAS
OIL & GAS ROYALTY OWNER NORMAN H. THOMAS ET UX; MICHAEL D. THOMAS ET UX; BRC APPALACHIA MINERALS LLC; CARL W. ASH
REGGY E. WINCE; MELVIN WILLEY ET UX; PATRICIA A. RACER; CATHY J. ASH

PROPOSED WORK: DRILL CONVERT PERFORATE NEW FORMATION DRILL DEEPER REDRILL OTHER PHYSICAL CHANGE IN WELL PLUG OFF OLD FORMATION (SPECIFY) AS DRILLED
TARGET FORMATION MARCELLUS
WELL OPERATOR ANTERO RESOURCES CORP.
DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM

ADDRESS 1616 WYNKOOP ST. DENVER, CO 80202
FORM W-6

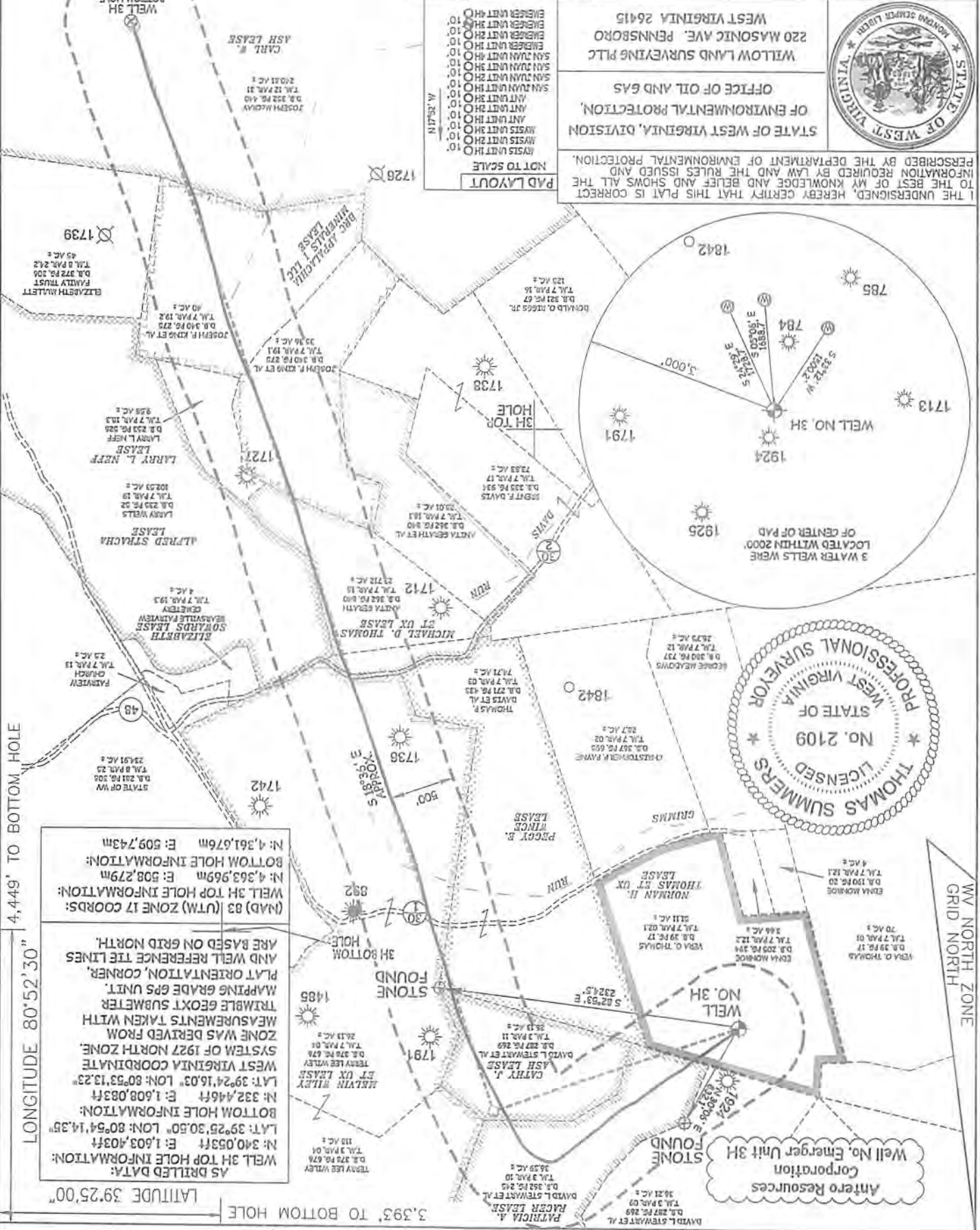
WASTE DISPOSAL
COUNTY NAME 47
STATE 095
PERMIT 02379

WATERSHED OUTLET MIDDLE ISLAND CREEK
COUNTY CENTERVILLE COUNTY TYLER

LEASE ACREAGE 51.11 ACRES +/-
LEASE ACREAGE 125 AC. +/-; 36.59 AC. +/-; 30 AC. +/-;
74.71 AC. +/-; 55.16 AC. +/-; 48.13 AC. +/-; 79.74 AC. +/-; 382.8 AC. +/-

PLUG & ABANDON ESTIMATED DEPTH 6,597' TVD 15,857' MD
CLEAN OUT & REPLUG

ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313



AS DRILLED DATA
WELL 3H TOP HOLE INFORMATION:
LAT: 39°25'30.50" N; LON: 80°54'14.35" W
N: 340.053ft E: 1,603.403ft

BOTTOM HOLE INFORMATION:
LAT: 39°24'16.03" N; LON: 80°53'13.23" W
N: 332.446ft E: 1,608.083ft

WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(MAD) 83 (UTM) ZONE 17 COORDS:
WELL 3H TOP HOLE INFORMATION:
N: 4,363,969m E: 508,279m

BOTTOM HOLE INFORMATION:
N: 4,361,676m E: 509,743m

LONGITUDE 80°52'30" (vertical text on the left margin)

LATITUDE 39°27'30" (horizontal text at the bottom)

LATITUDE 39°27'30"

8,188'

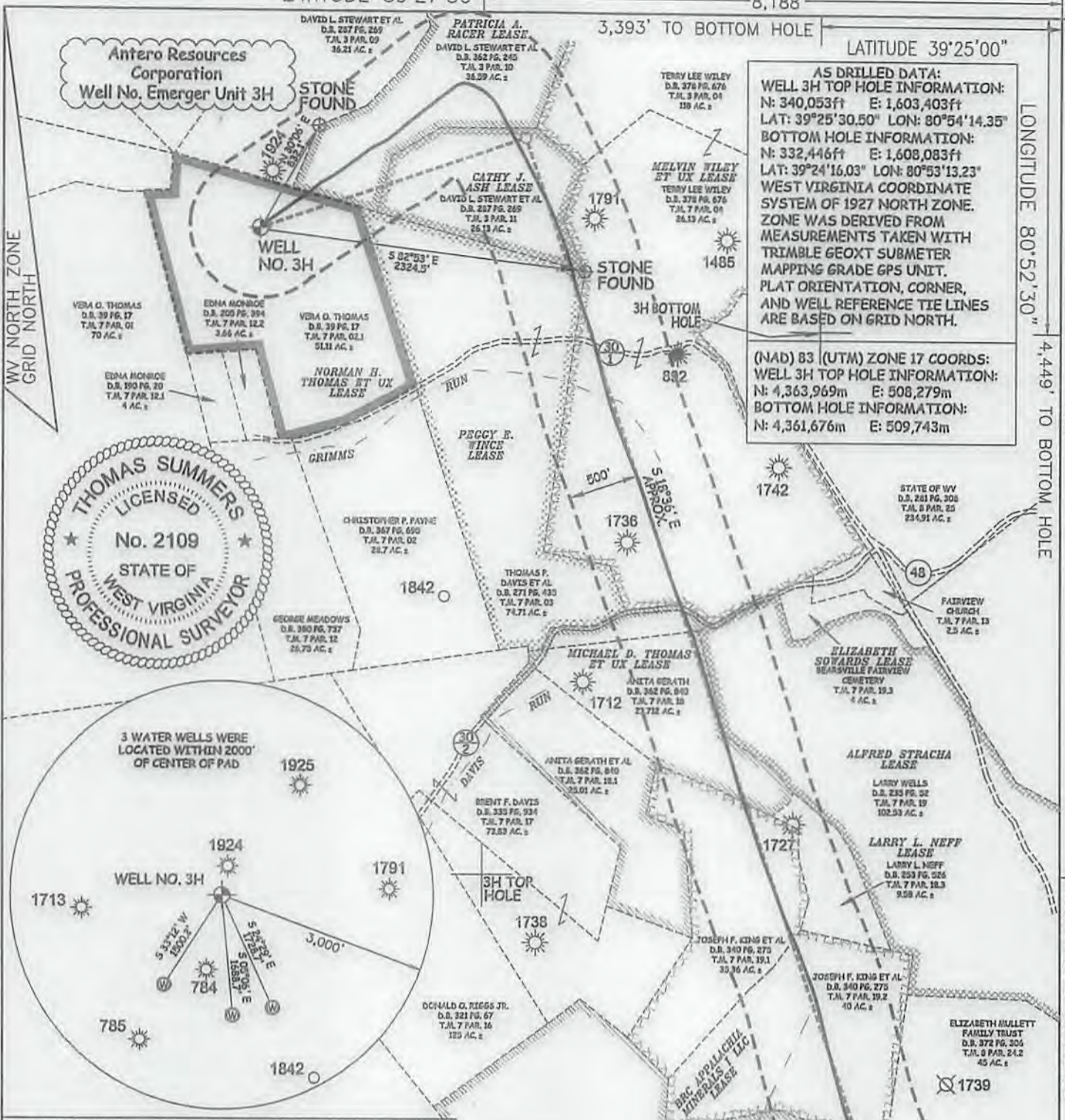
3,393' TO BOTTOM HOLE

LATITUDE 39°25'00"

LONGITUDE 80°52'30"

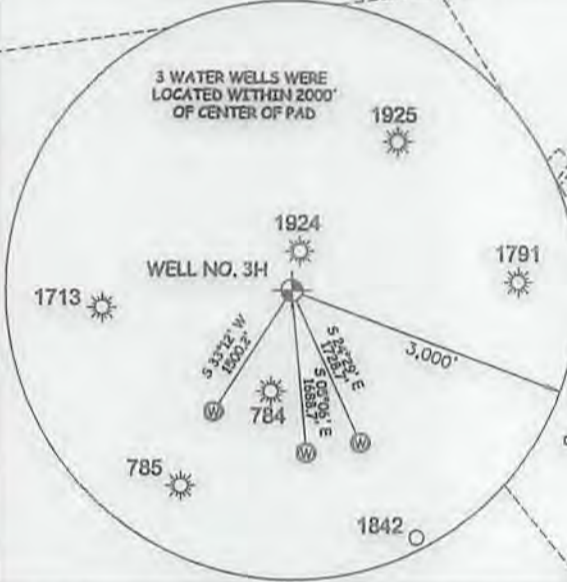
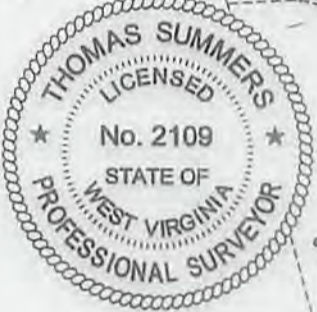
12,091'

LONGITUDE 80°52'30"



AS DRILLED DATA:
WELL 3H TOP HOLE INFORMATION:
 N: 340,053ft E: 1,603,403ft
 LAT: 39°25'30.50" LON: 80°54'14.35"
BOTTOM HOLE INFORMATION:
 N: 332,446ft E: 1,608,083ft
 LAT: 39°24'16.03" LON: 80°53'13.23"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE 660XT 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 3H TOP HOLE INFORMATION:
 N: 4,363,969m E: 508,279m
BOTTOM HOLE INFORMATION:
 N: 4,361,676m E: 509,743m



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

PAD LAYOUT
 NOT TO SCALE

MYSTIS UNIT 1H	10'
MYSTIS UNIT 2H	10'
MYSTIS UNIT 3H	10'
ANT UNIT 1H	10'
ANT UNIT 2H	10'
ANT UNIT 3H	10'
SAN JUAN UNIT 1H	10'
SAN JUAN UNIT 2H	10'
SAN JUAN UNIT 3H	10'
SAN JUAN UNIT 4H	10'
EMERGER UNIT 1H	10'
EMERGER UNIT 2H	10'
EMERGER UNIT 3H	10'
EMERGER UNIT 4H	10'

JOB # 16-020WA
 DRAWING # EMERGER3HAD
 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

LEGEND

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

Thomas Summers
 THOMAS SUMMERS P.S. 2109
 DATE 10/12/18
 OPERATOR'S WELL# EMERGER UNIT #3H

NOTE

- NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR FOLKLY HUSBANDRY ARE LOCATED WITHIN 500 HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
- TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
- AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
- 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 THIS LEASE BOUNDARIES.
- WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

WELL TYPE: OIL ___ GAS LIQUID INJECTION ___ WASTE DISPOSAL ___ 47 - 095 - 02379
 (IF "GAS") PRODUCTION STORAGE ___ DEEP ___ SHALLOW STATE COUNTY PERMIT
 LOCATION: ELEVATION 1,148.1 AS BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK
 QUADRANGLE MIDDLEBOURNE 7.5' DISTRICT CENTERVILLE COUNTY TYLER
 SURFACE OWNER VERA O. THOMAS ACREAGE 51.11 ACRES +/-
 OIL & GAS ROYALTY OWNER NORMAN H. THOMAS ET UX; PATRICIA A. RACER; CATHY J. ASH; PEGGY E. WINCE; MELVIN WILEY ET UX; MICHAEL D. THOMAS ET UX; BRC APPALACHIA MINERALS I LLC; CARL W. ASH LEASE ACREAGE 125 AC.±; 36.59 AC.±; 30 AC.±; 74.71 AC.±; 553.16 AC.±; 48.13 AC.±; 79.74 AC.±; 362.8 AC.±
 PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___
 PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,597' TVD 15,857' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD
 DENVER, CO 80202 CHARLESTON, WV 25313

