

APPROVED

WR-35
Rev. 8/23/13
Office of Oil & Gas

NAME: John A. ... Page of
DATE: 6/19/17

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

MAY 5 2017

API 47-017-06476 County Doddridge District Central
Quad West Union 7.5' Pad Name Rock Run Pad Field/Pool Name -----
Farm name George D. Lambert Well Number Wentz 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 4350634m Easting 515973m
Landing Point of Curve Northing 4350453.42m Easting 516083.90m
Bottom Hole Northing 4347740m Easting 517197m

Elevation (ft) 1171' 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 5/29/2014 Date drilling commenced 10/29/2014 Date drilling ceased 2/25/2015
Date completion activities began 7/24/2016 Date completion activities ceased 10/4/2016
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 112', 147', 295' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 750', 987' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 1580' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by: _____

09/15/2017

API 47-017 - 06476 Farm name George D. Lambert Well number Wentz 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#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	418'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2471'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	12892*	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6861'		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details "Please note this well was drilled to 16893' however casing was only ran to 12892'. Cement squeeze was attempted at intermediate 1, and it was unsuccessful. Followed with cement plug.

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	150 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	488 sx	15.6	1.19	290	0'	8 Hrs.
Coal							
Intermediate 1	Class A	925 sx	15.6	1.18	774	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1032 sx (Lead) 990 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.3 (Lead), 1.86 (Tail)	2502	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16893' MD, 6836' TVD (BHL) & 6866' TVD (Deepest Point Drilled) Loggers TD (ft) 16835' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6081'

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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API 47- 017 - 06476 Farm name George D. Lambert Well number Wentz Unit 1H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>		
<u>Marcellus</u>	<u>6707' (TOP)</u>	<u>TVD</u>	<u>6891' (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 3600 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 11748 mcfpd Oil 17 bpd NGL --- bpd Water 340 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					

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Please insert additional pages as applicable.

Drilling Contractor Paterson - UTI Drilling Company, LLC
Address 207 Carlton Dr. 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 Nabors Completion & Production Services, Co.
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

Stimulating Company Cal Frac Well Services
Address 717 17th Street Suite 1448 City Denver State CO Zip 80202

Please insert additional pages as applicable.

Completed by Samantha Klaas Telephone 303-357-6759
Signature *Samantha Klaas* Title Permitting Agent Date 05/05/2017

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

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	7/24/2016	12630	12777	60	Marcellus
2	8/8/2016	12427	12598	60	Marcellus
3	8/8/2016	12223	12395	60	Marcellus
4	8/8/2016	12020	12191	60	Marcellus
5	8/9/2016	11816	11988	60	Marcellus
6	8/9/2016	11613	11784	60	Marcellus
7	8/10/2016	11409	11581	60	Marcellus
8	8/10/2016	11206	11377	60	Marcellus
9	8/10/2016	11003	11174	60	Marcellus
10	8/11/2016	10799	10971	60	Marcellus
11	8/11/2016	10596	10767	60	Marcellus
12	8/11/2016	10392	10564	60	Marcellus
13	8/12/2016	10189	10360	60	Marcellus
14	8/12/2016	9985	10157	60	Marcellus
15	8/12/2016	9782	9953	60	Marcellus
16	8/13/2016	9579	9750	60	Marcellus
17	8/13/2016	9375	9547	60	Marcellus
18	8/13/2016	9172	9343	60	Marcellus
19	8/13/2016	8968	9140	60	Marcellus
20	8/14/2016	8765	8936	60	Marcellus
21	8/14/2016	8561	8733	60	Marcellus
22	8/15/2016	8358	8529	60	Marcellus
23	8/15/2016	8155	8326	60	Marcellus
24	8/15/2016	7951	8123	60	Marcellus
25	8/16/2016	7748	7919	60	Marcellus
26	8/16/2016	7544	7716	60	Marcellus
27	8/16/2016	7341	7512	60	Marcellus
28	8/17/2016	7137	7309	60	Marcellus
29	8/17/2016	6934	7105	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	8/7/2016	61.8	6997	0	5015	331050	8852	N/A
2	8/8/2016	62.8	6760	5802	4766	330900	8730	N/A
3	8/8/2016	70.6	6839	5770	5023	332100	8968	N/A
4	8/8/2016	63.0	6632	6158	4974	330900	9273	N/A
5	8/9/2016	66.9	6602	6150	4965	330750	7816	N/A
6	8/9/2016	65.7	6647	5501	4956	329800	7821	N/A
7	8/10/2016	63.3	6671	5341	4173	330500	7743	N/A
8	8/10/2016	64.9	6969	6071	3070	330150	7797	N/A
9	8/10/2016	68.2	6957	5770	4700	330200	7753	N/A
10	8/11/2016	76.5	7446	5319	3985	330600	8971	N/A
11	8/11/2016	78.7	7196	5503	5503	329100	7788	N/A
12	8/11/2016	74.5	6864	5422	5342	330950	7653	N/A
13	8/12/2016	71.5	7051	5498	5165	330350	9281	N/A
14	8/12/2016	79.8	7347	6055	5021	328950	7553	N/A
15	8/12/2016	80.3	7094	5391	5157	329300	7654	N/A
16	8/13/2016	78.9	7100	5464	5387	330400	7662	N/A
17	8/13/2016	79.4	7553	5802	4896	329500	7665	N/A
18	8/13/2016	77.8	6984	5643	5256	329250	8422	N/A
19	8/13/2016	75.5	7026	6009	6517	214200	7596	N/A
20	8/14/2016	84.4	7574	5362	4851	329500	10441	N/A
21	8/14/2016	74.5	7262	5677	5462	253950	7564	N/A
22	8/15/2016	83.2	7628	5669	4908	311500	8207	N/A
23	8/15/2016	84.1	7088	5569	4934	330050	7543	N/A
24	8/15/2016	82.6	6861	5461	4592	331250	7577	N/A
25	8/16/2016	81.6	6894	5567	5036	330700	8462	N/A
26	8/16/2016	84.1	7152	5367	4909	329900	7946	N/A
27	8/16/2016	84.5	6611	5154	4197	329050	7522	N/A
28	8/17/2016	75.3	6509	5694	5083	328800	7485	N/A
29	8/17/2016	79.8	6611	5468	3969	328650	7411	N/A
AVG=		75.0	6,997	5,436	4,890	9,362,300	8,109	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	112'	N/A	112'	N/A
Fresh Water	147'	N/A	147'	N/A
Fresh Water	295'	N/A	295'	N/A
Sandstone	est. 0	97	est. 0	97
Shale	est. 97	577	est. 97	577
Sandstone	est. 577	777	est. 577	777
Shale	est. 777	1017	est. 777	1017
Sandstone	est. 1017	1097	est. 1017	1097
Shale	est. 1097	1177	est. 1097	1177
Sandstone	est. 1177	1217	est. 1177	1217
Shale	est. 1217	1317	est. 1217	1317
Sandstone/siltstone	est. 1317	1357	est. 1317	1357
Shale	est. 1357	1417	est. 1357	1417
Sandstone	est. 1417	1557	est. 1417	1557
Trace Coal/Sandstone	est. 1557	1597	est. 1557	1597
Sandstone	est. 1597	1737	est. 1597	1737
Shale	est. 1737	1837	est. 1737	1837
Sandstone	est. 1837	1877	est. 1837	1877
Shale	est. 1877	1637	est. 1877	1637
Sandstone	est. 1637	1997	est. 1637	1997
Shale	est. 1997	2139	est. 1997	2142
Big Lime	2139	2580	2142	2583
Gantz Sand	2580	2696	2583	2699
Fifty Foot Sandstone	2696	2788	2699	2791
Gordon	2788	3117	2791	3120
Fifth Sandstone	3117	3864	3120	3867
Speechley	3864	4035	3867	4038
Baltown	4035	4531	4038	4634
Bradford	4531	5066	4634	5069
Benson	5066	5326	5069	5330
Alexander	5326	5510	5330	5514
Elk	5510	6012	5514	6015
Rhinestreet	6012	6335	6015	6350
Sycamore	6335	6508	6350	6549
Middlesex	6508	6636	6549	6733
Burkett	6636	6665	6733	6787
Tully	6665	6707	6787	6891
Marcellus	6707	N/A	6891	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:	8/7/2016
Job End Date:	8/17/2016
State:	West Virginia
County:	Doddridge
API Number:	47-017-06476-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Wentz 1H
Latitude:	39.30486940
Longitude:	-80.81491390
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,856
Total Base Water Volume (gal):	10,076,763
Total Base Non Water Volume:	0

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Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Supplied by Operator	Base Fluid					
			Water	7732-18-5	100.00000	89.76080	
DWP-111	CWS	Gel Slurry					
				Listed Below			

DWP-901	CWS	Breaker					
				Listed Below			
Acetic Acid	CWS	Acid					
				Listed Below			
DAP-103	CWS	Iron Control					
				Listed Below			
DWP-641	CWS	Friction Reducer					
				Listed Below			
DAP-902	CWS	Scale Inhibitor					
				Listed Below			
Sand (Proppant)	CWS	Propping Agent					
				Listed Below			
DAP-925	CWS	Acid Corrosion Inhibitor					
				Listed Below			
DWP-844	CWS	Microbiocide					
				Listed Below			
DWP-975	CWS	Breaker					

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				Listed Below			
Other Chemical (s)	Listed Above	See Trade Name (s) List					
				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	9.95452	
			Hydrochloric acid	7647-01-0	37.00000	0.06364	
			Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.05000	
			Guar gum	9000-30-0	60.00000	0.05000	
			Polymer	26100-47-0	45.00000	0.03088	
			Paraffinic hydrocarbon solvent	64742-47-8	30.00000	0.02058	
			Calcite	471-34-1	1.00000	0.01881	
			Ammonium chloride	12125-02-9	11.00000	0.00755	
			2-Propenoic acid, homopolymer, sodium salt	9003-04-7	40.00000	0.00626	
			Polyethylene glycol mixture	25322-68-3	54.50000	0.00608	
			Quaternary ammonium compounds, bis (hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00417	
			Goethite	1310-14-1	0.10000	0.00371	
			Illite	12173-60-3	1.00000	0.00277	
			Sorbitan monooleate	1338-43-8	4.00000	0.00274	
			2,2-Dibromo-3-Nitrilopropionamide	10222-01-2	20.00000	0.00223	
			Polyethylene glycol monooleate	9004-96-0	3.00000	0.00206	
			Biolite	1302-27-8	0.10000	0.00192	
			Apatite	64476-38-6	0.10000	0.00192	
			1,2-Propanediol	57-55-6	10.00000	0.00156	

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		Ammonium Persulfate	7727-54-0	100.00000	0.00154
		Sorbitol tetraoleate	61723-83-9	2.00000	0.00137
		Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1.50000	0.00125
		Ilmenite	98072-94-7	0.10000	0.00102
		Amines, tallow alkyl, ethoxylated	61791-26-2	1.00000	0.00069
		Citric acid	77-92-9	60.00000	0.00060
		Sodium bromide	7647-15-6	4.00000	0.00045
		Alcohols, C12-14, ethoxylated	84133-50-6	0.50000	0.00034
		Dibromoacetonitrile	3252-43-5	3.00000	0.00033
		Acrylamide	79-06-1	0.10000	0.00007
		Methanol	67-56-1	60.00000	0.00004
		Modified thiourea polymer	68527-49-1	30.00000	0.00002
		Alcohols, C14-15, ethoxylated	68951-67-7	30.00000	0.00002
		Fatty acids, tall-oil	61790-12-3	30.00000	0.00002
		Sodium chloride	7647-14-5	1.00000	0.00001
		Alkenes, C>10 a-	64743-02-8	5.00000	0.00001
		Hydrated magnesium silicate	14807-96-6	1.00000	0.00001
		Poly(tetrafluoroethylene)	9002-84-0	1.00000	0.00001
		Propargyl Alcohol	107-19-7	10.00000	0.00001
		Formaldehyde	50-00-0	0.10000	0.00001
		Vinylidene chloride-methyl acrylate copolymer	25038-72-6	30.00000	0.00001

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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"

6,579'

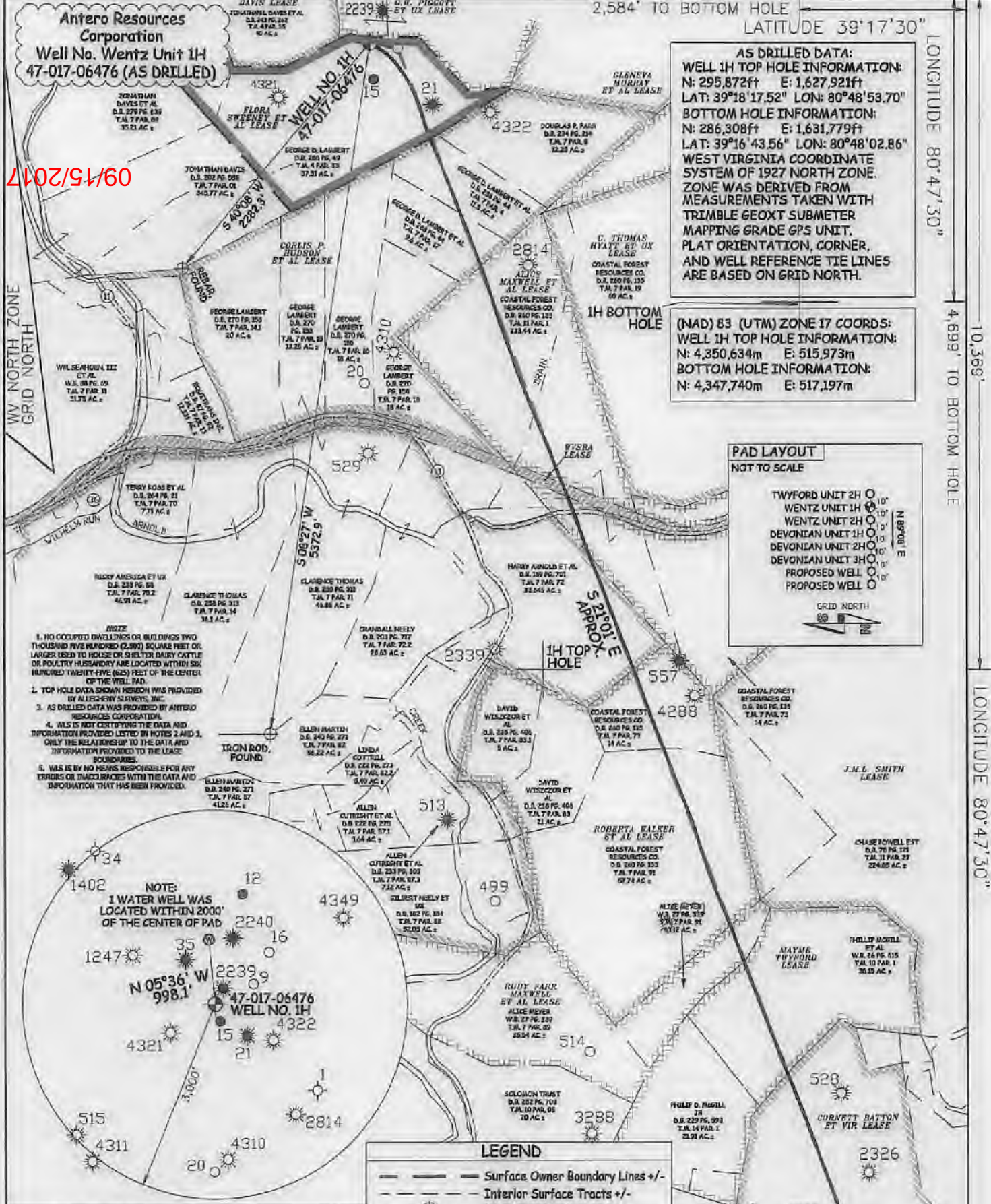
LATITUDE 39°17'30"

LONGITUDE 80°47'30"

10,369'

LONGITUDE 80°47'30"

COUNTY NAME PERMIT



AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
 N: 295,872ft E: 1,627,921ft
 LAT: 39°18'17.52" LON: 80°48'53.70"
BOTTOM HOLE INFORMATION:
 N: 286,308ft E: 1,631,779ft
 LAT: 39°16'43.56" LON: 80°48'02.86"
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: 4,350,634m E: 515,973m
BOTTOM HOLE INFORMATION:
 N: 4,347,740m E: 517,197m



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- 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 HEREIN 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 SOURCES.
 5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR DISCREPANCIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.



LEGEND

- Surface Owner Boundary Lines +/-
- - - Interior Surface Tracts +/-
- ⊕ Found monument, as noted
- ⊙ Proposed Well Path
- ⊙ As Drilled Well Path

JOB # 13-089WA
 DRAWING # WENTZ1HAD
 SCALE 1" = 1000'
 MINIMUM DEGREE OF ACCURACY SUBMETER
 PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS



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

WILLOW LAND SURVEYING PLLC
 P.O. BOX 17
 PENNSBORO, WV 26415

DATE 01/06/16
 OPERATOR'S WELL # WENTZUNIT#1H
 API WELL # 47 - 017 - 06476
 STATE COUNTY PERMIT

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 1,181' ORIGINAL - 1,171' AS-DRILLED WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 QUADRANGLE WEST UNION 7.5' DISTRICT CENTRAL COUNTY DODDRIDGE

SURFACE OWNER GEORGE D. LAMBERT ACREAGE 37.51 ACRES +/-
 OIL & GAS ROYALTY OWNER FLORA SWEENEY ET AL; CORLIS HUDSON ET AL; ALICE MAXWELL ET AL LEASE ACREAGE 103 ACRES +/-; 488.7 ACRES +/-; 420 ACRES +/-
 WVSRA; ROBERTA WALKER ET AL; RUBY FARR MAXWELL ET AL; MAYME TWYFORD; CORNETT BATTON ET VIR 301.19 ACRES +/-; 109 ACRES +/-; 45 ACRES +/-; 71 ACRES +/-; 53 ACRES +/-

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

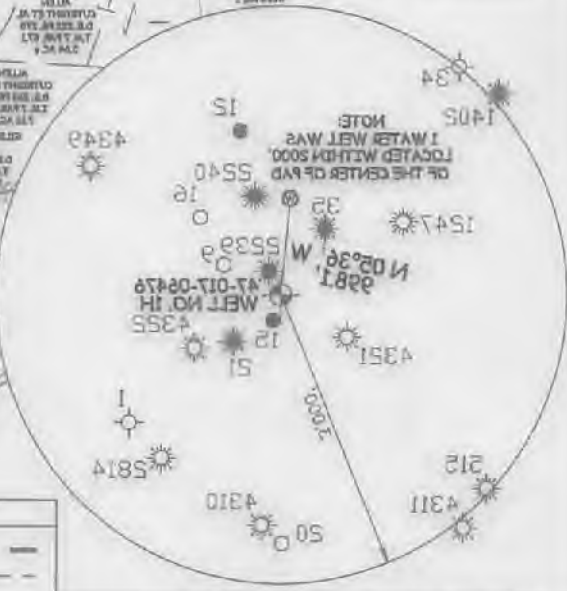
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,836' TVD 16,893' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 DENVER, CO 80202 CHARLESTON, WV 25313

ADDRESS 1611 WYMKOP STREET
 DENVER, CO 80202
 WELL OPERATOR ANTERO RESOURCES CORP.
 TARGET FORMATION MARCELLUS
 (SPECIFIC) (X) AS DRILLED
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 OIL & GAS ROYALTY OWNER RORA SWEENEY ET AL; CORLIS HUDSON ET AL; ALICE MAXWELL ET AL; LEASE ACRES: 103 ACRES; 488.1 ACRES; 450 ACRES;
 SURFACE OWNER GEORGE D LAMBERT
 QUADRANGLE WEST UNION T.5
 DISTRICT CENTRAL COUNTY DODDRIDGE
 COUNTY PERMIT # 017
 STATE COUNTY PERMIT # 06476
 AP# WELL # 017
 OPERATOR'S WELL # WENT UNIT 1H
 DATE DIVIDING

DIVISION OF OIL AND GAS
 DEPARTMENT OF ENERGY
 STATE OF WEST VIRGINIA
 SUBMETER MAPPING GRADE GPS
 PROVEN SOURCE OF ELEV.
 ACCURACY SUBMETER
 MINIMUM DEGREE OF SCALE 1" = 100'
 DRAWING # WENTSHAD
 JOB # 13-030/WA

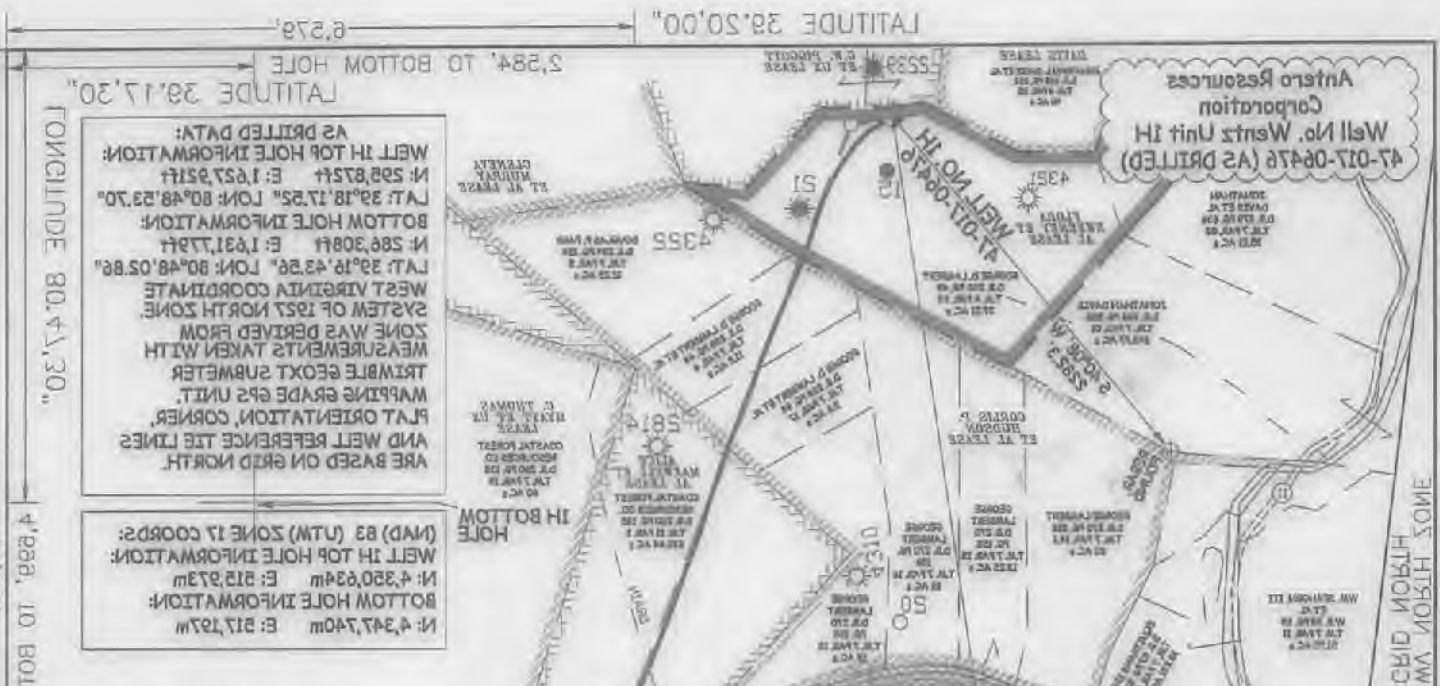


PENNSBORO, WV 26415
 P.O. BOX 12
 WITLOW LAND SURVEYING P.L.L.C.
 OFFICE OF OIL AND GAS
 OF ENVIRONMENTAL PROTECTION,
 STATE OF WEST VIRGINIA, DIVISION
 OF ENVIRONMENTAL PROTECTION
 FOUND MONUMENT, AS NOTED
 Proposed Well Path
 As Drilled Well Path
 Interior Surface Tracts
 Surface Owner Boundary Lines



(MAD 83 (UTM) ZONE 17 COORDS.)
 WELL 1H TOP HOLE INFORMATION:
 N: 4347,740m E: 817,727m
 BOTTOM HOLE INFORMATION:
 N: 4350,634m E: 813,973m
 (MAD 83 (UTM) ZONE 17 COORDS.)

AS DRILLED DATA:
 WELL 1H TOP HOLE INFORMATION:
 N: 298,872ft E: 1,627,951ft
 LAT: 39°18'17.52" LON: 80°48'23.70"
 BOTTOM HOLE INFORMATION:
 N: 298,308ft E: 1,631,779ft
 LAT: 39°18'43.56" LON: 80°48'02.86"
 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.



LONGITUDE 80.41130, LATITUDE 39.1730, LONGITUDE 80.41130, LATITUDE 39.2000, LONGITUDE 80.41130, LATITUDE 39.1730