

WR-35
Rev. 8/23/13

APPROVED

NAME: [Signature]

DATE: 11/10/17

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

Page ___ of ___

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WV Department of
Environmental Protection

API 47 - 017 - 06640 County Doddridge District Central
Quad West Union 7.5' Pad Name Dotson-Holland Pad Field/Pool Name -----
Farm name Robert L. Holland Jr. Well Number Alder 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 4347120m Easting 510971m
Landing Point of Curve Northing 4347388.242m Easting 511149.633m
Bottom Hole Northing 4349791m Easting 510367m

Elevation (ft) 989' 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 01/15/2015 Date drilling commenced 11/18/2015 Date drilling ceased 02/07/2016
Date completion activities began 01/26/2017 Date completion activities ceased 04/14/2017
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 56' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1527' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 381', 941', 1701' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:

11/10/2017

WR-35
Rev. 8/23/13

API 47-017 - 06640

Farm name Robert L. Holland Jr.

Well number Alder Unit 4H
WV Department of Environmental Protection

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	30"	20"	40'	New	94#, J-55	N/A	Y
Surface	17-1/2"	13-3/8"	455'	New	48#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2539'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15470'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6617'		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	400 sx	15.6	1.19	476	0'	8 Hrs.
Surface	Class A	528 sx	15.6	1.2	634	0'	8 Hrs.
Coal							
Intermediate 1	Class A	930 sx	15.6	1.18	1097	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	889 sx (Lead) 1404 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.83 (Tail)	3821	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15470' MD, 6425' TVD (BHL); 6443' TVD (Deepest Point Drilled)

Loggers TD (ft) 15421' MD

Deepest formation penetrated Marcellus

Plug back to (ft) N/A

Plug back procedure N/A

Kick off depth (ft) 6133'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Amanda Unit 1H API #47-017-06432). Please reference the wireline logs submitted with Form WR-35 for Amanda 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- 017 - 06640 Farm name Robert L. Holland Jr. Well number Alder Unit 1H

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PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6401' (TOP)	TVD	6729' (TOP) MD

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 3799 mcfpd Oil --- bpd NGL --- bpd Water 381 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP		BOTTOM		DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME	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 Precision Drilling Company, LP
Address 2640 Reach Road City Williamsport State PA Zip 17701

Logging Company Allied Horizontal Wireline Services
Address 380 Bedford 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 US Well Services
Address 533 Industrial Park Dr. City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Samantha Klaas Telephone 303-357-6759
Signature  Title Permitting Agent Date 09/20/2017

Submittal 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	1/26/2017	15,169	15,338	60	Marcellus
2	3/5/2017	14,969	15,138	60	Marcellus
3	3/5/2017	14,769	14,938	60	Marcellus
4	3/6/2017	14,569	14,738	60	Marcellus
5	3/6/2017	14,369	14,538	60	Marcellus
6	3/7/2017	14,169	14,338	60	Marcellus
7	3/7/2017	13,969	14,138	60	Marcellus
8	3/7/2017	13,769	13,938	60	Marcellus
9	3/8/2017	13,569	13,738	60	Marcellus
10	3/8/2017	13,369	13,538	60	Marcellus
11	3/9/2017	13,169	13,338	60	Marcellus
12	3/9/2017	12,969	13,138	60	Marcellus
13	3/10/2017	12,769	12,938	60	Marcellus
14	3/10/2017	12,569	12,738	60	Marcellus
15	3/11/2017	12,369	12,538	60	Marcellus
16	3/12/2017	12,169	12,338	60	Marcellus
17	3/12/2017	11,969	12,137	60	Marcellus
18	3/12/2017	11,769	11,937	60	Marcellus
19	3/13/2017	11,569	11,737	60	Marcellus
20	3/13/2017	11,369	11,537	60	Marcellus
21	3/14/2017	11,169	11,337	60	Marcellus
22	3/14/2017	10,969	11,137	60	Marcellus
23	3/15/2017	10,769	10,937	60	Marcellus
24	3/16/2017	10,568	10,737	60	Marcellus
25	3/16/2017	10,368	10,537	60	Marcellus
26	3/17/2017	10,168	10,337	60	Marcellus
27	3/17/2017	9,968	10,137	60	Marcellus
28	3/18/2017	9,768	9,937	60	Marcellus
29	3/18/2017	9,568	9,737	60	Marcellus
30	3/18/2017	9,368	9,537	60	Marcellus
31	3/19/2017	9,168	9,337	60	Marcellus
32	3/19/2017	8,968	9,137	60	Marcellus
33	3/20/2017	8,768	8,937	60	Marcellus
34	3/20/2017	8,568	8,737	60	Marcellus
35	3/21/2017	8,368	8,537	60	Marcellus
36	3/21/2017	8,168	8,337	60	Marcellus
37	3/21/2017	7,968	8,137	60	Marcellus
38	3/22/2017	7,768	7,937	60	Marcellus
39	3/22/2017	7,568	7,737	60	Marcellus
40	3/22/2017	7,368	7,537	60	Marcellus
41	3/23/2017	7,168	7,336	60	Marcellus
42	3/23/2017	6,968	7,136	60	Marcellus
43	3/24/2017	6,768	6,936	60	Marcellus

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API 47-017-06640 Farm Name Robert L. Holland Jr. Well Number Alder Unit 1H

WV Department of Environmental Protection

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	3/4/2017	76.3	7570	5436	4556	355200	7715	N/A
2	3/5/2017	77.5	7624	5515	4925	353100	7587	N/A
3	3/5/2017	79.0	7728	5393	4699	353600	7591	N/A
4	3/6/2017	79.1	7640	5479	4613	354100	7560	N/A
5	3/6/2017	79.3	7475	5347	4874	356100	7569	N/A
6	3/7/2017	79.0	7434	5794	4610	353900	7411	N/A
7	3/7/2017	75.5	7544	5200	4495	352900	8014	N/A
8	3/7/2017	73.4	7744	5912	3952	352900	9108	N/A
9	3/8/2017	80.7	7674	5157	4299	353500	7458	N/A
10	3/8/2017	79.7	7472	5429	4331	352300	7359	N/A
11	3/9/2017	79.8	7479	5186	4753	353700	7357	N/A
12	3/9/2017	80.0	7296	6269	4896	352800	7354	N/A
13	3/10/2017	80.1	7378	5808	4660	354400	7337	N/A
14	3/10/2017	79.9	7402	5833	3963	351800	8323	N/A
15	3/11/2017	80.2	7671	5697	5050	352800	8331	N/A
16	3/12/2017	78.2	7300	5533	5389	354700	7443	N/A
17	3/12/2017	79.5	7711	6083	4528	354500	9277	N/A
18	3/12/2017	79.6	7089	5836	4474	354300	7295	N/A
19	3/13/2017	79.9	7371	6187	4807	354000	7285	N/A
20	3/13/2017	79.5	7381	5536	4989	354400	8557	N/A
21	3/14/2017	80.5	7336	5890	5082	354000	7271	N/A
22	3/14/2017	78.9	7297	6022	5286	354000	7381	N/A
23	3/15/2017	78.5	7266	5622	5021	354200	8642	N/A
24	3/16/2017	80.2	7309	5580	4517	354200	7368	N/A
25	3/16/2017	80.6	7075	5093	4145	354100	7385	N/A
26	3/17/2017	80.3	6943	4950	5304	352300	7329	N/A
27	3/17/2017	80.9	6821	5018	4370	352300	7319	N/A
28	3/18/2017	80.4	7082	5454	4263	353200	7577	N/A
29	3/18/2017	80.2	6746	5270	5289	352600	7305	N/A
30	3/18/2017	80.6	6796	5182	5096	354900	7235	N/A
31	3/19/2017	79.8	6707	5407	5190	352600	7305	N/A
32	3/19/2017	80.1	6862	5482	5207	354700	7223	N/A
33	3/20/2017	80.7	7106	5497	5164	355700	8296	N/A
34	3/20/2017	79.6	6586	5339	5111	354900	7281	N/A
35	3/21/2017	80.0	6619	5704	5150	355000	7192	N/A
36	3/21/2017	79.8	6490	5475	5057	354800	7243	N/A
37	3/21/2017	80.4	6670	5776	5182	355500	7183	N/A
38	3/22/2017	80.2	6558	5150	5239	352900	7343	N/A
39	3/22/2017	79.9	6505	5318	5125	354600	7092	N/A
40	3/22/2017	80.3	6807	5186	4960	353800	7356	N/A
41	3/23/2017	80.2	6452	5411	5336	354400	7005	N/A
42	3/23/2017	81.0	6452	5518	4985	353900	6939	N/A
43	3/24/2017	80.1	6479	5504	4714	353800	7039	N/A
AVG=		79.5	7,138	5,523	4,829	15,217,400	325,240	TOTAL

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API 47-017-06640 Farm Name Robert L. Holland Jr. Well Number Alder Unit 1H

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	56'	N/A	56'	N/A
Shale/ Siltstone	0	221	0	221
Sandstone	est. 221	241	est. 221	241
Shale/ Siltstone	est. 241	381	est. 241	381
Coal	est. 381	401	est. 381	401
Siltstone	est. 401	441	est. 401	441
Shale/ Limestone	est. 441	561	est. 441	561
Sandstone/ Siltstone	est. 561	621	est. 561	621
Shale/ Siltstone	est. 621	761	est. 621	761
Limestone	est. 761	941	est. 761	941
Siltstone / Trace Coal/ Shale	est. 941	1381	est. 941	1381
Sandstone	est. 1381	1401	est. 1381	1401
Shale/ Siltstone/ Trace Coal	est. 1401	1621	est. 1401	1621
Sandstone/ Siltstone	est. 1621	1701	est. 1621	1701
Shale/ Siltstone/ Trace Coal	est. 1701	1741	est. 1701	1741
Shale/ Siltstone	est. 1741	1926	est. 1741	1928
Big Lime	1926	2390	1928	2392
Gantz	2390	2534	2392	2536
Fifty Foot Sandstone	2534	2661	2536	2663
Gordon	2661	2838	2663	2840
Fifth Sandstone	2838	2988	2840	2990
Bayard	2988	3312	2990	3314
Speechley	3312	4029	3314	4031
Baltown	4029	4472	4031	4474
Bradford	4472	4722	4474	4727
Benson	4722	5153	4727	5177
Alexander	5153	5310	5177	5349
Elk	5310	5840	5349	5948
Rhinestreet	5840	6072	5948	6197
Sycamore	6072	6232	6197	6394
Middlesex	6232	6343	6394	6566
Burkett	6343	6373	6566	6633
Tully	6373	6401	6633	6729
Marcellus	6401	NA	6729	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.

11/10/2017

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/4/2017
Job End Date:	3/24/2017
State:	West Virginia
County:	Doddridge
API Number:	47-017-06640-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Alder 1H
Latitude:	39.27327500
Longitude:	-80.87297778
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,443
Total Base Water Volume (gal):	13,903,618
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
Water	Antero Resources	Carrier/Base Fluid	Water	7732-18-5	100.00000	86.80460	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	11.39172	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	1.41731	
			Hydrogen Chloride	7647-01-0	17.50000	0.32952	
WFRA-500	U.S. Well Services, LLC	Friction Reducer	2-Propenoic acid, polymer with 2-propenamide	9003-06-9	30.00000	0.01593	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01282	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.00847	
			Petroleum Distillates	64742-47-8	60.00000	0.00802	
			Suspending agent (solid)	14808-60-7	3.00000	0.00130	
			Surfactant	68439-51-0	3.00000	0.00051	

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Bioclear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent					
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00409	
			Deionized Water	7732-18-5	28.00000	0.00233	
SI-1100s	U.S. Well Services, LLC	Scale Inhibitor					
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00151	
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	3.00000	0.00052	
			Phosphino carboxylic acid polymer	71050-62-9	3.00000	0.00050	
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	3.00000	0.00050	
AP One	U.S. Well Services, LLC	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00025	
AI-303	U.S. Well Services, LLC	Acid Corrosion Inhibitors					
			Ethylene glycol	107-21-1	40.00000	0.00004	
			Cinnamaldehyde	104-55-2	20.00000	0.00002	
			Formic acid	64-18-6	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°17'30"

11,223'

1,398' TO BOTTOM HOLE
LATITUDE 39°20'00"

LONGITUDE 80°52'30"

6,699'

13,103' TO BOTTOM HOLE

LONGITUDE 80°50'00"

Antero Resources Corporation
Well No. Alder Unit 1H
47-017-06640 (AS DRILLED)

AS DRILLED DATA:
WELL 1H TOP HOLE INFORMATION:
N: 284,613ft E: 1,611,317ft
LAT: 39°16'23.79" LON: 80°52'22.72"
BOTTOM HOLE INFORMATION:
N: 293,413ft E: 1,609,480ft
LAT: 39°17'50.49" LON: 80°52'47.79"
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEMOX SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

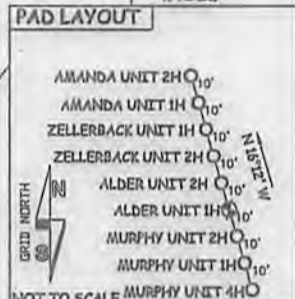
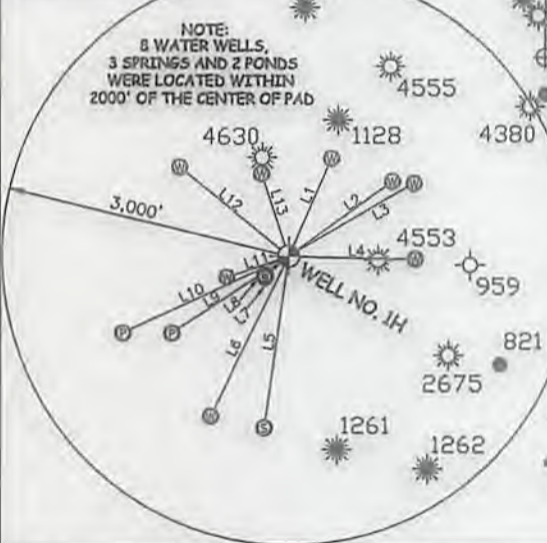
(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 1H TOP HOLE INFORMATION:
N: 4,347,120m E: 510,971m
BOTTOM HOLE INFORMATION:
N: 4,349,791m E: 510,367m

- 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.

- A - EZRA B. WALTON ET AL. D.S. 227 PG. 162 TAL. 9 PAR. 102 2 AC. 4
- B - FOUR LEAF LAND CO. D.S. 228 PG. 317 TAL. 9 PAR. 11 0.29 AC. 4
- C - JOHN C. HODGKINS ET AL. D.S. 277 PG. 154 TAL. 9 PAR. 121 0.69 AC. 4
- D - FOUR LEAF LAND CO. D.S. 228 PG. 317 TAL. 9 PAR. 11 1.46 AC. 4
- E - FOUR LEAF LAND CO. D.S. 228 PG. 317 TAL. 9 PAR. 12 1.22 AC. 4



LINE	DESCRIPTION	ELEVATION
L1	N 27° 41' E	1152.9
L2	N 89° 12' E	1248.2
L3	N 89° 12' E	1622.2
L4	N 89° 12' E	1317.1
L5	S 69° 20' W	1771.1
L6	S 29° 20' W	1631.2
L7	S 89° 12' E	316.4
L8	S 89° 12' W	264.1
L9	S 29° 20' W	1455.2
L10	S 89° 12' W	1908.4
L11	S 29° 20' W	858.2
L12	N 89° 12' W	1455.2
L13	N 89° 12' W	550.2



JOB # 13-020WA
DRAWING # ALDER1HADR
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 Existing Fence
 - Found monument, as noted
 - Proposed Well Path
 - As Drilled Well Path

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 PRESCRIBED 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

THOMAS SUMMERS P.S. 2109
DATE 08/24/17
OPERATOR'S WELL# ALDER UNIT 1H
API WELL # 47-017-06640
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 989' AS DRILLED WATERSHED NORTH FORK HUGHES RIVER
QUADRANGLE WEST UNION 7.5 DISTRICT CENTRAL COUNTY DODDRIDGE
SURFACE OWNER ROBERT L. HOLLAND JR. ACREAGE 6.80 ACRES +/-
OIL & GAS ROYALTY OWNER ANNA BARKER ET AL; WVSRA; KATE MASON ET AL; LEASE ACREAGE 127 ACRES +/-; 301.19 ACRES +/-; 96 ACRES +/-
JAMES C. RIDDLE ET AL; FREDDIE JAMES ET UX; HARRY WILLIAMSON
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 6,425' TVD 15,470' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
ADDRESS 1615 WYNKOOP STREET ADDRESS CT CORPORATION SYSTEM
DENVER, CO 80202 CHARLESTON, WV 25313

11/10/2017

LATITUDE 39.1730"

11.223

1.398' TO BOTTOM HOLE
LATITUDE 39.2000"

LONGITUDE 80.25.30"

9.899

13.103, TO BOTTOM HOLE

LONGITUDE 80.20.00"

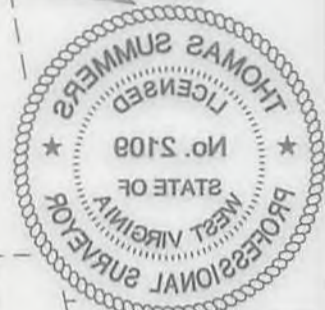
AS DRILLED DATA:
WELL IN TOP HOLE INFORMATION:
N: 284.613ft E: 1.611.317ft
LAT: 39°16.23'29" LON: 80°25.25'25"
BOTTOM HOLE INFORMATION:
N: 293.413ft E: 1.609.480ft
LAT: 39°17.50'49" LON: 80°25.17'29"
WEST VIRGINIA COORDINATE
SYSTEM OF 1927 NORTH ZONE
ZONE WAS DERIVED FROM
MEASUREMENTS TAKEN WITH
TRIMBLE 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 IN TOP HOLE INFORMATION:
N: 4347.120m E: 2109.271m
BOTTOM HOLE INFORMATION:
N: 4349.291m E: 2109.271m

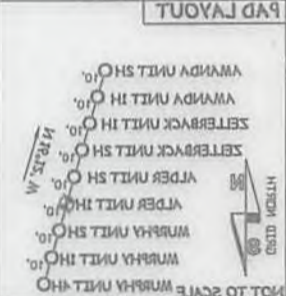
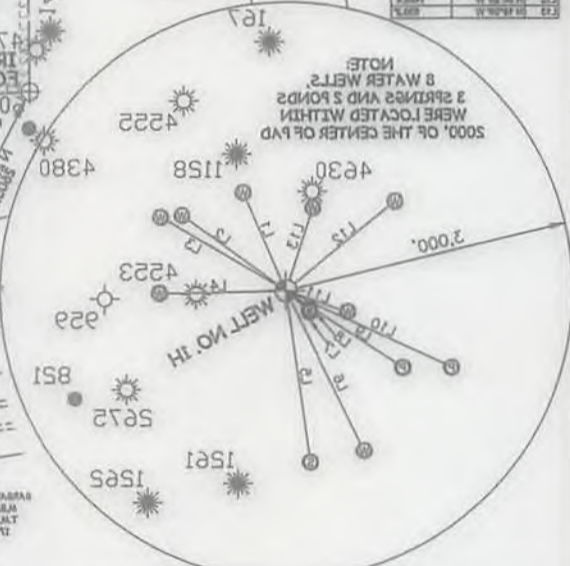
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO
THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR
LARGER LEAD TO HOUSE OR OTHER CATTLE
OR HORSE HUSBANDRY WAS LOCATED WITHIN THE
HUNDRED TWENTY-FIVE (25) FEET OF THE CENTER
OF THE WELL PAD.
2. AS DRILLED DATA WAS PROVIDED BY WILLIAM
RESOURCES CORPORATION.
3. THIS DATA WAS PROVIDED BY WILLIAM
RESOURCES CORPORATION.
4. THIS DATA WAS PROVIDED BY WILLIAM
RESOURCES CORPORATION.
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9. THIS DATA WAS PROVIDED BY WILLIAM
RESOURCES CORPORATION.
10. THIS DATA WAS PROVIDED BY WILLIAM
RESOURCES CORPORATION.

Antero Resources
Corporation
Well No. Alder Unit 1H
47-017-06640 (AS DRILLED)



WELL NO.	DATE	DEPTH	STATUS
110	11/10/2017	158	AS DRILLED
111	11/10/2017	158	AS DRILLED
112	11/10/2017	158	AS DRILLED
113	11/10/2017	158	AS DRILLED
114	11/10/2017	158	AS DRILLED
115	11/10/2017	158	AS DRILLED
116	11/10/2017	158	AS DRILLED
117	11/10/2017	158	AS DRILLED
118	11/10/2017	158	AS DRILLED
119	11/10/2017	158	AS DRILLED
120	11/10/2017	158	AS DRILLED
121	11/10/2017	158	AS DRILLED
122	11/10/2017	158	AS DRILLED
123	11/10/2017	158	AS DRILLED
124	11/10/2017	158	AS DRILLED
125	11/10/2017	158	AS DRILLED
126	11/10/2017	158	AS DRILLED
127	11/10/2017	158	AS DRILLED
128	11/10/2017	158	AS DRILLED
129	11/10/2017	158	AS DRILLED
130	11/10/2017	158	AS DRILLED
131	11/10/2017	158	AS DRILLED
132	11/10/2017	158	AS DRILLED
133	11/10/2017	158	AS DRILLED
134	11/10/2017	158	AS DRILLED
135	11/10/2017	158	AS DRILLED
136	11/10/2017	158	AS DRILLED
137	11/10/2017	158	AS DRILLED
138	11/10/2017	158	AS DRILLED
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141	11/10/2017	158	AS DRILLED
142	11/10/2017	158	AS DRILLED
143	11/10/2017	158	AS DRILLED
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146	11/10/2017	158	AS DRILLED
147	11/10/2017	158	AS DRILLED
148	11/10/2017	158	AS DRILLED
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151	11/10/2017	158	AS DRILLED
152	11/10/2017	158	AS DRILLED
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165	11/10/2017	158	AS DRILLED
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167	11/10/2017	158	AS DRILLED
168	11/10/2017	158	AS DRILLED
169	11/10/2017	158	AS DRILLED
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194	11/10/2017	158	AS DRILLED
195	11/10/2017	158	AS DRILLED
196	11/10/2017	158	AS DRILLED
197	11/10/2017	158	AS DRILLED
198	11/10/2017	158	AS DRILLED
199	11/10/2017	158	AS DRILLED
200	11/10/2017	158	AS DRILLED



PROVEN SOURCE OF ELEV.
SUBMETER MAPPING GRADE GPS
ACCUACY SUBMETER
MINIMUM DEGREE OF
SCALE 1" = 100'
DRAWING # ALDERHADR
JOB # 13-050WA

LEGEND
Surface Owner Boundary Lines +
Interior Surface Tracts +
Existing Fence X
Found monument, as noted
Proposed Well Path
As Drilled Well Path

THOMAS SUMMERS P.S. 2108
DATE 08/24/17
OPERATOR'S WELL # ALDER UNIT 1H
API WELL # 017 - 08840
STATE COUNTY PERMIT
COUNTY NAME
PERMIT

WELL OPERATOR ANTERO RESOURCES CORP.
ADDRESS 1615 WYKHOOP STREET DENVER, CO 80202
DESIGNATED AGENT
WELL OPERATOR ANTERO RESOURCES CORP.
ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313
DIANNA STAMPER
CT CORPORATION SYSTEM
ESTIMATED DEPTH 8452.7VD 15470 MD
CLEAN OUT & REPLUG
PLUG & ABANDON
OTHER PHYSICAL CHANGE IN WELL
FRACURE OR STIMULATE
JAMES C RIDDLE ET AL; FREDIE JAMES ET UX; HARRY WILLIAMSON
15 ACRES+; 34 ACRES+; 168 ACRES+
LEASE ACRES+; 301.18 ACRES+; 88 ACRES+
STATE COUNTY PERMIT
COUNTY NAME
PERMIT

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS
WELL TYPE: OIL GAS X LIQUID INJECTION
WASTE DISPOSAL
PRODUCTION X STORAGE DEEP SHALLOW X
LOCATION: ELEVATION 888 AS DRILLED WATERSHED NORTH FORK HUGHES RIVER
QUADRANGLE WEST UNION 75 DISTRICT CENTRAL COUNTY DODDRIDGE
OWNER ROBERT L HOLLAND JR. ACREAGE 8.80 ACRES +
WITLOW LAND SURVEYING PLLC
WEST VIRGINIA 26115
520 WASCONE AVE. PENNSBORO
OFFICE OF OIL AND GAS
STATE OF WEST VIRGINIA, DIVISION
OF ENVIRONMENTAL PROTECTION



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 PRESCRIBED BY THE
DEPARTMENT OF ENVIRONMENTAL PROTECTION.
STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS

11/10/2017