

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

API 47-085-10206 County Ritchie District Union
Quad Pullman 7.5' Pad Name Lockhart Heirs West Pad Field/Pool Name -----
Farm name O'Neill Family Trust, et al Well Number Left Fork Unit 4H
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 4337817m Easting 506218m
Landing Point of Curve Northing 4338020.78m Easting 506522.71m
Bottom Hole Northing 4341216m Easting 505655m

Elevation (ft) 1039' 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 04/10/2015 Date drilling commenced 2/25/2016 Date drilling ceased 5/8/2016
Date completion activities began 7/10/2016 Date completion activities ceased 8/29/2016
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 78' Open mine(s) (Y/N) N
Salt water depth(s) ft None Identified Void(s) encountered (Y/N) depths N
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths N
Is coal being mined in area (Y/N) N

APPROVED

NAME: Michael Daff
DATE: 5/10/2017

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Reviewed by: _____

05/26/2017

API 47-085 - 10206 Farm name O'Neill Family Trust, et al Well number Left Fork Unit 4H

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"	105'	New	106.5#/J-55	N/A	Y
Surface	17-1/2"	13-3/8"	414'	New	48#/H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2493'	New	36#/J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	17707'	New	23#/P-110	N/A	Y
Tubing		2-3/8"	6568'		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	201 sx	15.60	1.18	101 Cu. Ft.	0'	8 Hrs.
Surface	Class A	488 sx	15.67	1.20	288 Cu. Ft.	0'	8 Hrs.
Coal							
Intermediate 1	Class A	924 sx	15.60	1.18	781 Cu. Ft.	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	869 sx (Lead) 1715 sx (Tail)	13.5 (Lead), 15.13 (Tail)	1.24 (Lead), 1.83 (Tail)	3600 Cu. Ft.	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17707' MD, 6308' TVD (BHL), 6369' TVD (Deepest Point Drilled) Loggers TD (ft) 17682' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6141'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Left Fork Unit 1H API# 47-085-10204). Please reference the wireline logs submitted with Form WR-35 for Left Fork 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 _____

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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

FEB 01 2017

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED N/A

WV Department of
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05/26/2017

API 47- 085 - 10206 Farm name O'Neill Family Trust, et al Well number Left Fork Unit 4H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)
		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 (bbls)	Amount of Nitrogen/other (units)
			SEE ATTACHED EXHIBIT 2					

Please insert additional pages as applicable.

API 47- 085 - 10206 Farm name O'Neill Family Trust, et al Well number Left Fork Unit 4H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
Marcellus	6337' (TOP) TVD	6661' (TOP) MD
_____	_____	_____
_____	_____	_____

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 11487 mcfpd Oil 83 bpd NGL --- bpd Water 3 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	
	0		0		
			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 Allied Oil & Gas Services, LLC
Address 1036 East Main Street City Bridgeport State WV Zip 26330

Stimulating Company US Well Services
Address 533 Industrial Park Drive City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Kara Quackenbush Telephone 303-357-7233
Signature [Signature] Title Permitting Agent Date 1/28/2017

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Submittal of Hydraulic Fracturing Chemical Disclosure Information

Attach copy of FRACFOCUS Registry
WV Department of
Environmental Protection

05/26/2017

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	10-Jul-16	17447	17608	40	Marcellus
2	11-Jul-16	17247	17409	40	Marcellus
3	11-Jul-16	17048	17209	40	Marcellus
4	12-Jul-16	16848	17010	40	Marcellus
5	12-Jul-16	16649	16811	40	Marcellus
6	12-Jul-16	16450	16611	40	Marcellus
7	12-Jul-16	16250	16412	40	Marcellus
8	13-Jul-16	16051	16212	40	Marcellus
9	13-Jul-16	15852	16013	40	Marcellus
10	13-Jul-16	15652	15814	40	Marcellus
11	13-Jul-16	15453	15614	40	Marcellus
12	14-Jul-16	15253	15415	40	Marcellus
13	14-Jul-16	15054	15216	40	Marcellus
14	14-Jul-16	14855	15016	40	Marcellus
15	14-Jul-16	14655	14817	40	Marcellus
16	15-Jul-16	14456	14618	40	Marcellus
17	15-Jul-16	14257	14418	40	Marcellus
18	15-Jul-16	14057	14219	40	Marcellus
19	15-Jul-16	13858	14019	40	Marcellus
20	16-Jul-16	13659	13820	40	Marcellus
21	17-Jul-16	13459	13621	40	Marcellus
22	17-Jul-16	13260	13421	40	Marcellus
23	17-Jul-16	13060	13222	40	Marcellus
24	17-Jul-16	12861	13023	40	Marcellus
25	18-Jul-16	12662	12823	40	Marcellus
26	18-Jul-16	12462	12624	40	Marcellus
27	18-Jul-16	12263	12425	40	Marcellus
28	18-Jul-16	12064	12225	40	Marcellus
29	18-Jul-16	11864	12026	48	Marcellus
30	19-Jul-16	11665	11833	48	Marcellus
31	19-Jul-16	11466	11634	48	Marcellus
32	19-Jul-16	11299	11434	48	Marcellus
33	19-Jul-16	11067	11235	48	Marcellus
34	20-Jul-16	10868	11036	48	Marcellus
35	20-Jul-16	10668	10836	48	Marcellus
36	20-Jul-16	10469	10637	48	Marcellus
37	20-Jul-16	10270	10438	48	Marcellus
38	20-Jul-16	10070	10238	48	Marcellus
39	21-Jul-16	9871	10039	48	Marcellus
40	21-Jul-16	9705	9840	48	Marcellus
41	22-Jul-16	9472	9640	48	Marcellus
42	22-Jul-16	9273	9441	48	Marcellus
43	22-Jul-16	9073	9242	48	Marcellus
44	22-Jul-16	8874	9042	48	Marcellus
45	23-Jul-16	8675	8843	48	Marcellus
46	23-Jul-16	8475	8643	48	Marcellus
47	23-Jul-16	8276	8444	48	Marcellus
48	23-Jul-16	8077	8245	48	Marcellus
49	23-Jul-16	7877	8045	48	Marcellus
50	24-Jul-16	7678	7846	48	Marcellus
51	25-Jul-16	7479	7647	48	Marcellus
52	25-Jul-16	7279	7447	48	Marcellus
53	25-Jul-16	7080	7248	48	Marcellus
54	26-Jul-16	7049	7049	48	Marcellus
55	26-Jul-16	6681	6849	48	Marcellus

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05/26/2017

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	10-Jul-16	67.5	7747	0	5379	300350	8780	N/A
2	11-Jul-16	69.6	8182	5575	5125	241300	9699	N/A
3	11-Jul-16	70.0	8000	5625	5322	260150	9154	N/A
4	12-Jul-16	68.5	8023	5533	4463	301750	9463	N/A
5	12-Jul-16	70.3	8145	5368	4742	297400	9397	N/A
6	12-Jul-16	69.0	8153	5815	5300	300100	9767	N/A
7	12-Jul-16	74.0	8287	5651	5032	265950	7993	N/A
8	13-Jul-16	72.3	8041	5468	3426	302050	8015	N/A
9	13-Jul-16	72.9	7802	5776	3358	301800	8034	N/A
10	13-Jul-16	73.9	8285	5561	5132	210450	8130	N/A
11	13-Jul-16	79.1	8299	5518	4606	292170	9112	N/A
12	14-Jul-16	73.9	8351	5490	4320	245950	8414	N/A
13	14-Jul-16	71.8	8177	6402	2993	307760	8516	N/A
14	14-Jul-16	77.1	8370	5540	3648	303700	8417	N/A
15	14-Jul-16	71.2	8267	5296	4753	255200	9501	N/A
16	15-Jul-16	76.9	8149	5529	4331	302460	9243	N/A
17	15-Jul-16	65.7	8208	5425	4402	227740	9516	N/A
18	15-Jul-16	69.6	7372	5554	3744	302220	7914	N/A
19	15-Jul-16	66.4	7911	6098	0	206280	5928	N/A
20	16-Jul-16	68.0	7665	6284	3512	285400	6457	N/A
21	17-Jul-16	69.4	7081	5575	3229	303100	7946	N/A
22	17-Jul-16	70.0	7464	6262	3287	302640	7823	N/A
23	17-Jul-16	65.6	7681	5987	5232	103850	7769	N/A
24	17-Jul-16	68.2	7290	5511	3244	302600	7891	N/A
25	18-Jul-16	69.3	7348	5250	3651	302700	8790	N/A
26	18-Jul-16	70.1	7610	5404	4345	229100	8721	N/A
27	18-Jul-16	72.4	7801	5511	4828	289150	9045	N/A
28	18-Jul-16	70.0	7558	5454	4531	208700	8561	N/A
29	18-Jul-16	69.4	7368	5293	4603	275600	9392	N/A
30	19-Jul-16	69.3	7583	5393	5182	294600	7803	N/A
31	19-Jul-16	65.7	7195	5658	5314	299700	9933	N/A
32	19-Jul-16	69.3	7193	5465	4045	301340	7823	N/A
33	19-Jul-16	71.5	6983	5443	5357	301840	7882	N/A
34	20-Jul-16	69.5	7183	6026	4134	301860	7816	N/A
35	20-Jul-16	72.8	7251	5608	4299	300600	7826	N/A
36	20-Jul-16	73.3	7308	5322	4903	195000	8009	N/A
37	20-Jul-16	73.8	7187	5350	5271	304240	7779	N/A
38	20-Jul-16	74.1	7174	5944	3980	302880	7954	N/A
39	21-Jul-16	72.6	6954	5518	5053	303240	8707	N/A
40	21-Jul-16	73.0	7060	5597	4474	303150	8353	N/A
41	22-Jul-16	72.0	7047	5697	4767	300100	7712	N/A
42	22-Jul-16	74.7	7072	5389	4435	303980	7763	N/A
43	22-Jul-16	73.4	7051	5436	4749	305100	7769	N/A
44	22-Jul-16	73.2	6957	5257	5003	304350	7848	N/A
45	23-Jul-16	73.0	7391	5554	3462	303250	7711	N/A
46	23-Jul-16	72.0	7277	5121	3355	301650	8114	N/A
47	23-Jul-16	73.3	6915	5339	4292	301690	7693	N/A
48	23-Jul-16	71.4	7035	5912	4596	302960	8043	N/A
49	23-Jul-16	72.0	7095	6040	3676	302550	8474	N/A
50	24-Jul-16	74.0	7376	5990	6373	298250	8460	N/A
51	25-Jul-16	71.8	6977	6115	3780	302190	7661	N/A
52	25-Jul-16	70.5	7222	6276	4807	265980	8671	N/A
53	25-Jul-16	75.0	6930	5862	3755	302550	7642	N/A
54	26-Jul-16	76.0	6883	6874	3912	304350	7687	N/A
55	26-Jul-16	74.3	6837	6605	3483	303340	7628	N/A
AVG=		71.5	7,523	5,574	4,309	15,538,360	456,149	TOTAL

EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Fresh Water	78'	N/A	78'	N/A
Siltstone/Sandstone	0	95	0	95
Shale	95	255	95	255
Siltstone	255	295	255	295
Shale	295	335	295	335
Siltstone	335	475	335	475
Sandstone	475	675	475	675
Siltstone	675	725	675	725
Siltstone/ sandstone	725	745	725	745
Sandstone	745	915	745	915
Shale/ Siltstone	915	1015	915	1015
Shale	1015	1055	1015	1055
Sandstone	1055	1215	1055	1215
Shale	1215	1255	1215	1255
Sandstone	1255	1395	1255	1395
Siltstone	1395	1715	1395	1715
Shale/ Silstone	1715	1915	1715	1915
Limestone	1915	1933	1915	1963
Big Lime	1933	2403	1963	2444
Fifty Foot Sandstone	2403	2587	2444	2631
Gordon	2587	2875	2631	2928
Fifth Sandstone	2875	2980	2928	3034
Bayard	2980	3764	3034	3835
Speechley	3764	3895	3835	3969
Baltown	3895	4458	3969	4546
Bradford	4458	4827	4546	4928
Benson	4827	5066	4928	5172
Alexander	5066	6021	5172	6164
Sycamore	6021	6181	6164	6353
Middlesex	6181	6285	6353	6520
Burkett	6285	6317	6520	6596
Tully	6317	6337	6596	6661
Marcellus	6337	NA	6661	NA

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	7/10/2016
Job End Date:	7/26/2016
State:	West Virginia
County:	Ritchie
API Number:	47-085-10206-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Left Fork 4H
Latitude:	39.18957800
Longitude:	-80.92800000
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,369
Total Base Water Volume (gal):	20,116,538
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Service Abstract Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Antero Resources	Base Fluid	Water	7732-18-5	100.00000	91.14825	
Sand	J.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	8.44178	
HCL Acid (12.6%-18.0%)	J.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.50000	0.17031	
			Hydrogen Chloride	7647-01-0	18.00000	0.04068	
LGC-15	J.S. Well Services	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.04548	
			Petroleum Distillates	84742-47-8	60.00000	0.04307	
			Suspending agent (solid)	14808-60-7	3.00000	0.00696	
			Surfactant	38439-51-0	3.00000	0.00273	
WFRA-405	J.S. Well Services	Friction Reducer	Water	7732-18-5	60.00000	0.03921	
			2-Propanoic acid, polymer with 2-propenamide	9003-06-9	30.00000	0.01960	
			Hydrated light distillate (petroleum)	84742-47-8	30.00000	0.01578	

SI-1100s	J.S. Well Services	Scale Inhibitor	Ethoxylated alcohol blend	68002-97-1	4.00000	0.00261
		Water		7732-18-5	80.00000	0.01029
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00152
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	7.50000	0.00130
			Hexamethylene tramine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00084
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00084
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00033
X-BAC 1020	J.S. Well Services	Anti-Bacterial Agent				
			2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00409
			Deionized Water	7732-18-5	28.00000	0.00234
AP One	J.S. Well Services	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00155
AI-302	J.S. Well Services	Acid Corrosion Inhibitors				
			Water	7732-18-5	95.00000	0.00037
			2-Propyn-1-ol compound with methylxirane	38172-91-7	15.00000	0.00006

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)

LATITUDE 39°12'30"

3,262'

LATITUDE 39°15'00"

5,097' TO BOTTOM HOLE

LONGITUDE 80°55'00"

6,862'

10,880' TO BOTTOM HOLE

COUNTY NAME

PERMIT

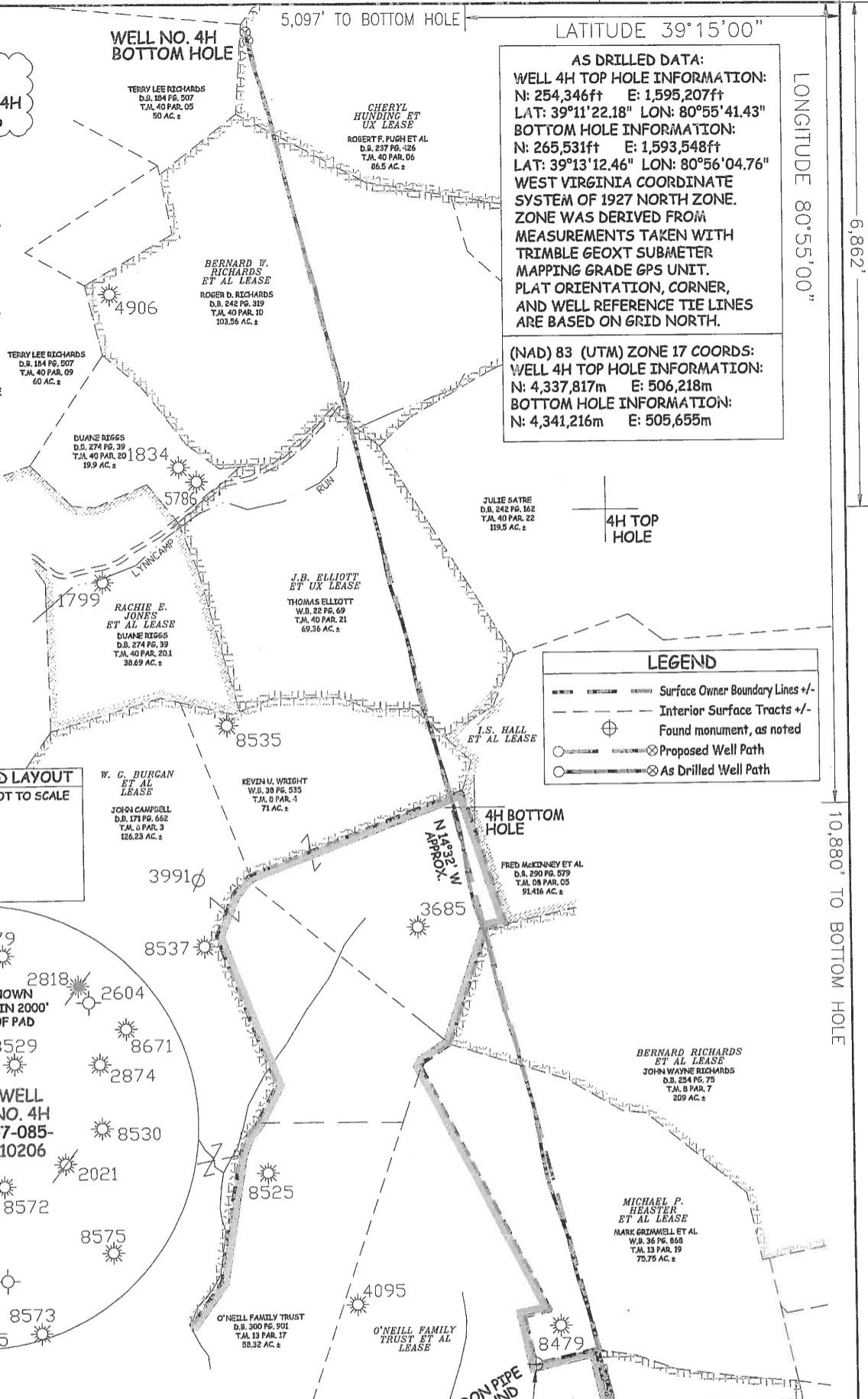
Antero Resources Corporation
Well No. Left Fork Unit 4H
A.P.I. #47-085-10206

AS DRILLED DATA:
WELL 4H TOP HOLE INFORMATION:
N: 254,346ft E: 1,595,207ft
LAT: 39°11'22.18" LON: 80°55'41.43"
BOTTOM HOLE INFORMATION:
N: 265,531ft E: 1,593,548ft
LAT: 39°13'12.46" LON: 80°56'04.76"
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.

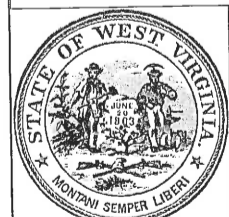
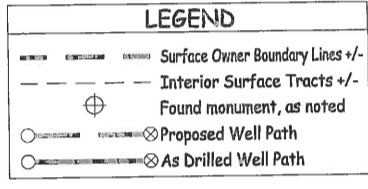
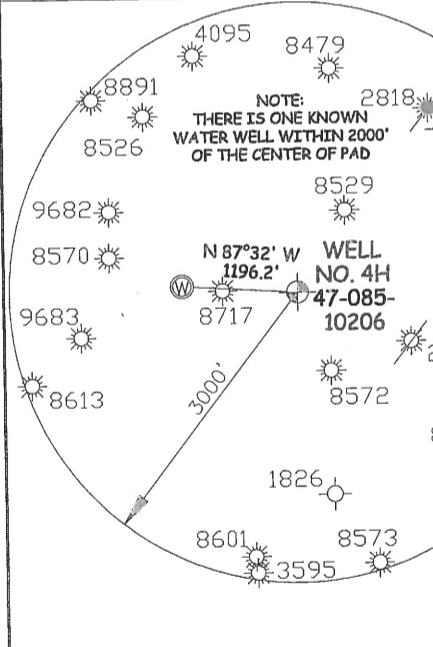
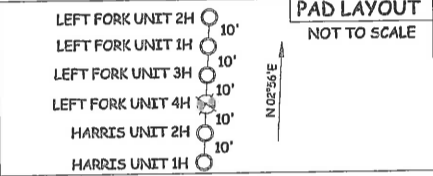
(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 4H TOP HOLE INFORMATION:
N: 4,337,817m E: 506,218m
BOTTOM HOLE INFORMATION:
N: 4,341,216m E: 505,655m

- 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.

WV NORTH ZONE
GRID NORTH



JOB # 12-045
DRAWING # LEFTFORKUNIT#4HAD
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



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

WILLOW LAND SURVEYING PLLC
220 MASONIC AVE PENNSBORO WEST VIRGINIA 26415

DATE 11/08/16
OPERATOR'S WELL# LEFT FORK UNIT #4H

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
LOCATION: ORIGINAL GROUND ELEV. 1,039' AS DRILLED ELEV. 1019'
WATERSHED SOUTH FORK HUGHES RIVER
QUADRANGLE PULLMAN 7.5' DISTRICT UNION COUNTY RITCHIE
SURFACE OWNER O'NEILL FAMILY TRUST ET AL ACREAGE 300.45 ACRES +/-
OIL & GAS ROYALTY OWNER O'NEILL FAMILY TRUST ET AL; DENNIS HADDOX ET AL; MICHAEL P. HEASTER ET AL; BERNARD RICHARDS ET AL; W.G. BURGAN ET AL; J.B. ELLIOTT ET UX; BERNARD W. RICHARDS ET AL; CHERYL HUNDING ET UX
LEASE ACREAGE 517.83 ACRES; 41.75 ACRES; 234.5 ACRES; 214 ACRES; 154 ACRES; 70 ACRES; 114 ACRES; 141.29 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 UP & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,200 TMD, 117-307 MD
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

Office of Oil and Gas
WELL NO. 4H 47-085-10206
STATE OF WEST VIRGINIA
COUNTY RITCHIE
PERMIT NAME
PERMIT NUMBER
DATE RECEIVED 05/26/2017
DIANNA STAMPER
CT CORPORATION SYSTEM

LATITUDE 39°12'30"

3,262'

LATITUDE 39°15'00"

5,097' TO BOTTOM HOLE

LONGITUDE 80°55'00"

6,862'

10,380' TO BOTTOM HOLE

Antero Resources Corporation
Well No. Left Fork Unit 4H
A.P.I. #47-085-10206

- 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.
- TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
- AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
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AS DRILLED DATA:

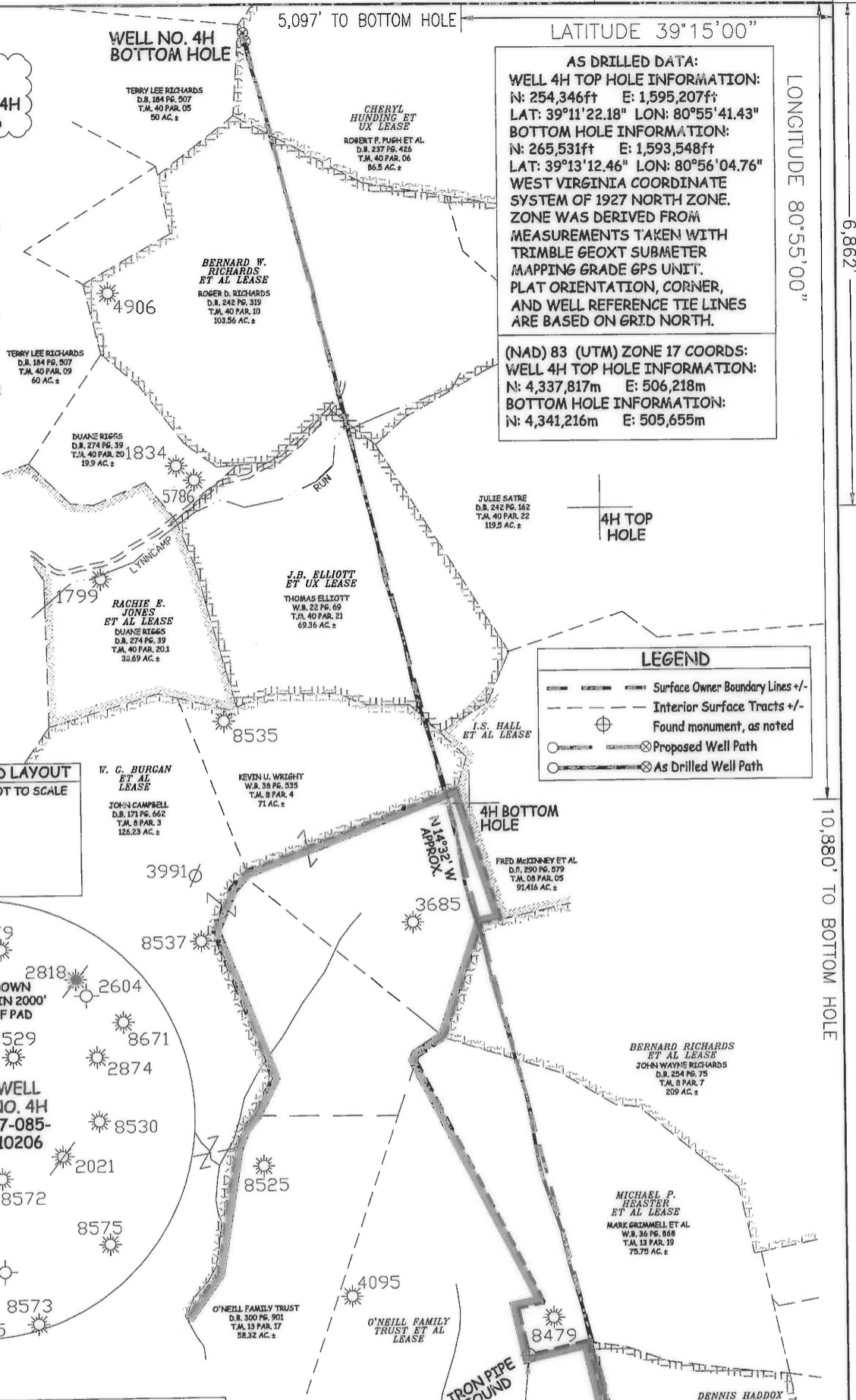
WELL 4H TOP HOLE INFORMATION:
N: 254,346ft E: 1,595,207ft
LAT: 39°11'22.18" LON: 80°55'41.43"

BOTTOM HOLE INFORMATION:
N: 265,531ft E: 1,593,548ft
LAT: 39°13'12.46" LON: 80°56'04.76"

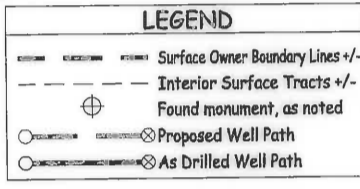
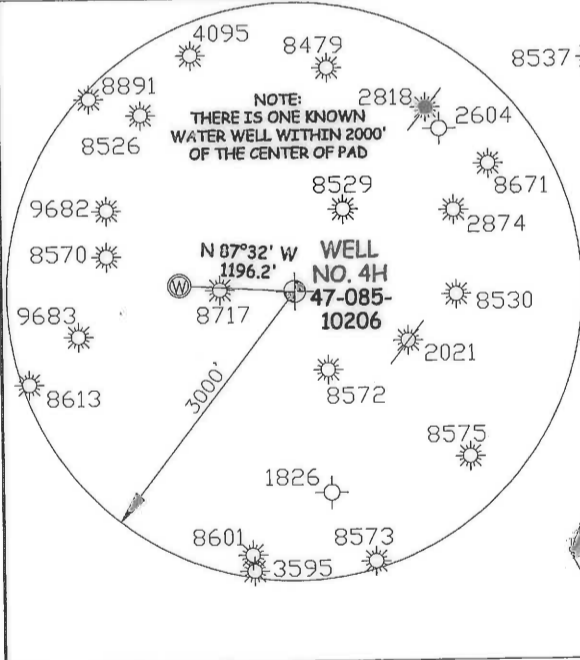
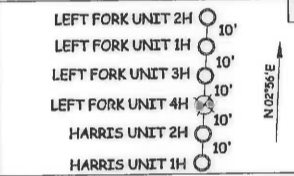
WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE TIE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
WELL 4H TOP HOLE INFORMATION:
N: 4,337,817m E: 506,218m
BOTTOM HOLE INFORMATION:
N: 4,341,216m E: 505,655m

WV NORTH ZONE
GRID NORTH



JOB # 12-045
DRAWING # LEFTFORKUNIT4HAD
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



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(SPECIFY) (X) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,308' TWD 17,707' MD
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

WELL NO. 4H 47-085-10206

STATE 47 COUNTY 085 PERMIT 10206

DATE 05/26/2017