

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

API 47 - 095 - 02328 County Tyler District Ellsworth  
Quad Shirley 7.5' Pad Name Pierpoint Pad Field/Pool Name ----  
Farm name Lloyd C. Seckman Well Number Klondike 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 4,366,961m Easting 512,144m  
Landing Point of Curve Northing 4,366,867.080m Easting 511,966.023m  
Bottom Hole Northing 4,370,061m Easting 510,810m

Elevation (ft) 1201' 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 12/23/2015 Date drilling commenced 1/6/2016 Date drilling ceased 3/20/2016  
Date completion activities began 6/4/2016 Date completion activities ceased 7/10/2016  
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by [Signature] N/A

Please note: Operator is required to submit a plugging application within 5 days of verbal permission to plug

Freshwater depth(s) ft 256', 267' Open mine(s) (Y/N) depths No  
Salt water depth(s) ft 889', 2253' Void(s) encountered (Y/N) depths None  
Coal depth(s) ft None Cavern(s) encountered (Y/N) depths None  
Is coal being mined in area (Y/N) No

**APPROVED** Reviewed by:  
NAME: [Signature] JUSTIN SINDEN  
DATE: 12/6/16

API 47-095 02328 Farm name Lloyd C. Seckman Well number Klondike Unit 2H

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	106.50#/J-55	N/A	Y
Surface	17-1/2"	13-3/8"	415'	New	48#/H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2540'	New	36#/J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	18,411'	New	23#/P-110	N/A	Y
Tubing		2-3/8"	6922'		4.7#/N-80	N/A	
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	196 sx	15.6	1.18	38 Cu. Ft.	0'	8 hrs
Surface	Class A	443 sx	15.6	1.18	288 Cu. Ft.	0'	8 hrs
Coal							
Intermediate 1	Class A	987 sx	15.6	1.8	796 Cu. Ft.	0'	8 hrs
Intermediate 2							
Intermediate 3							
Production	Class H	1001 sx (Lead), 1803 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.3 (Lead), 1.85 (Tail)	3751 Cu. Ft.	-500' into Intermediate Casing	8 hrs
Tubing							

Drillers TD (ft) 18,411' MD, 6704' TVD (BHL), 6708' TVD (Deepest Point Drilled) Loggers TD (ft) 18,362' MD

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

Plug back procedure N/A

Kick off depth (ft) 6272'

\*\* This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Weigle Unit 1H API# 47-095-02126). Please reference the wireline logs submitted with Form WR-35 for the Weigle 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 None





## EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	4-Jun-16	18,141	18,309	60	Marcellus
2	5-Jun-16	17,942	18,110	60	Marcellus
3	6-Jun-16	17,744	17,911	60	Marcellus
4	6-Jun-16	17,545	17,713	60	Marcellus
5	6-Jun-16	17,346	17,514	60	Marcellus
6	7-Jun-16	17,148	17,315	60	Marcellus
7	7-Jun-16	16,949	17,117	60	Marcellus
8	7-Jun-16	16,750	16,918	60	Marcellus
9	8-Jun-16	16,552	16,719	60	Marcellus
10	9-Jun-16	16,353	16,521	60	Marcellus
11	9-Jun-16	16,154	16,322	60	Marcellus
12	9-Jun-16	15,956	16,123	60	Marcellus
13	10-Jun-16	15,757	15,925	60	Marcellus
14	10-Jun-16	15,559	15,726	60	Marcellus
15	11-Jun-16	15,360	15,527	60	Marcellus
16	11-Jun-16	15,161	15,329	60	Marcellus
17	12-Jun-16	14,963	15,130	60	Marcellus
18	12-Jun-16	14,764	14,931	60	Marcellus
19	12-Jun-16	14,565	14,733	60	Marcellus
20	13-Jun-16	14,367	14,534	60	Marcellus
21	13-Jun-16	14,168	14,336	60	Marcellus
22	13-Jun-16	13,969	14,137	60	Marcellus
23	14-Jun-16	13,771	13,938	60	Marcellus
24	14-Jun-16	13,572	13,740	60	Marcellus
25	15-Jun-16	13,373	13,541	60	Marcellus
26	15-Jun-16	13,175	13,342	60	Marcellus
27	15-Jun-16	12,976	13,144	60	Marcellus
28	16-Jun-16	12,777	12,945	60	Marcellus
29	16-Jun-16	12,579	12,746	60	Marcellus
30	16-Jun-16	12,380	12,548	60	Marcellus
31	17-Jun-16	12,182	12,349	60	Marcellus
32	17-Jun-16	11,983	12,150	60	Marcellus
33	18-Jun-16	11,784	11,952	60	Marcellus
34	18-Jun-16	11,586	11,753	60	Marcellus
35	18-Jun-16	11,387	11,554	60	Marcellus
36	18-Jun-16	11,188	11,356	60	Marcellus
37	19-Jun-16	10,990	11,157	60	Marcellus
38	19-Jun-16	10,791	10,959	60	Marcellus
39	20-Jun-16	10,592	10,760	60	Marcellus
40	20-Jun-16	10,394	10,561	60	Marcellus
41	21-Jun-16	10,195	10,363	60	Marcellus
42	21-Jun-16	9,996	10,164	60	Marcellus
43	22-Jun-16	9,798	9,965	60	Marcellus
44	23-Jun-16	9,599	9,767	60	Marcellus
45	23-Jun-16	9,400	9,568	60	Marcellus
46	24-Jun-16	9,202	9,369	60	Marcellus
47	24-Jun-16	9,003	9,171	60	Marcellus
48	24-Jun-16	8,805	8,972	60	Marcellus
49	25-Jun-16	8,606	8,773	60	Marcellus
50	25-Jun-16	8,407	8,575	60	Marcellus
51	25-Jun-16	8,209	8,376	60	Marcellus
52	26-Jun-16	8,010	8,177	60	Marcellus
53	26-Jun-16	7,811	7,979	60	Marcellus
54	26-Jun-16	7,613	7,780	60	Marcellus
55	26-Jun-16	7,414	7,582	60	Marcellus
56	27-Jun-16	7,215	7,383	60	Marcellus
57	27-Jun-16	7,017	7,184	60	Marcellus

**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 (bbbls)	Amount of Nitrogen/ other (units)
1	5-Jun-16	69.2	7,924	N/A	4324	345,350	9,727	N/A
2	5-Jun-16	74.7	7,385	5161	4295	350,060	9,181	N/A
3	6-Jun-16	74.3	7,510	5386	4259	350,500	8,346	N/A
4	6-Jun-16	72.5	7,707	5375	4077	352,050	8,221	N/A
5	6-Jun-16	70	7,433	5347	4749	351,200	9,172	N/A
6	7-Jun-16	68	7,368	5382	4613	350,700	9,126	N/A
7	7-Jun-16	72.9	7,614	5397	4510	352,150	8,230	N/A
8	7-Jun-16	71	7,231	4989	5203	347,590	8,175	N/A
9	8-Jun-16	73.7	7,213	5078	5121	348,100	8,166	N/A
10	9-Jun-16	72	7,828	5271	4066	351,600	8,292	N/A
11	9-Jun-16	71.3	7,303	5200	4016	348,700	8,149	N/A
12	9-Jun-16	75.4	7,916	5293	4030	352,900	9,412	N/A
13	10-Jun-16	73	7,890	5289	5046	350,900	9,402	N/A
14	10-Jun-16	72.9	7,658	5479	4481	346,590	9,183	N/A
15	11-Jun-16	67	7,871	5386	4503	347,750	8,936	N/A
16	11-Jun-16	76.4	7,730	5529	3988	348,900	8,144	N/A
17	12-Jun-16	75	7,750	5457	4466	319,530	9,715	N/A
18	12-Jun-16	79	7,719	5500	5096	353,100	8,173	N/A
19	12-Jun-16	79.1	7,655	5200	5211	347,050	8,140	N/A
20	13-Jun-16	76	7,557	5486	4377	350,100	8,293	N/A
21	13-Jun-16	77.1	8,198	5726	4367	350,850	9,754	N/A
22	13-Jun-16	76	7,697	5443	4667	350,900	9,450	N/A
23	14-Jun-16	77	7,933	5270	4506	351,350	9,378	N/A
24	14-Jun-16	79.3	7,633	5239	3855	353,560	8,113	N/A
25	15-Jun-16	73	7,544	5286	3966	350,250	8,070	N/A
26	15-Jun-16	80.2	7,771	5331	4059	350,820	8,211	N/A
27	15-Jun-16	80.1	7,476	5421	4374	355,190	8,103	N/A
28	16-Jun-16	74	7,517	5761	4059	352,850	8,019	N/A
29	16-Jun-16	78.9	7,505	6030	4710	350,450	8,033	N/A
30	16-Jun-16	78	7,691	5071	4005	351,000	8,006	N/A
31	17-Jun-16	76	7,837	5400	4023	349,950	9,043	N/A
32	17-Jun-16	80.2	7,573	5286	3991	350,750	8,051	N/A
33	18-Jun-16	74	8,051	5254	4295	345,150	9,735	N/A
34	18-Jun-16	79.3	7,708	5150	3633	350,050	8,000	N/A
35	18-Jun-16	80.6	7,600	5447	3905	350,450	9,303	N/A
36	18-Jun-16	79	7,646	5168	4821	350,600	8,053	N/A
37	19-Jun-16	79.3	7,512	5425	3651	351,450	7,943	N/A
38	19-Jun-16	79.4	7,653	5583	4270	350,750	8,095	N/A
39	20-Jun-16	77	7,635	5461	3955	348,850	8,588	N/A
40	20-Jun-16	78.1	7,606	5836	3716	349,400	7,917	N/A
41	21-Jun-16	80.2	7,514	6030	4503	348,600	7,897	N/A
42	21-Jun-16	78.7	7,217	5779	4077	350,650	7,914	N/A
43	22-Jun-16	74.3	6,937	5908	3998	349,000	7,910	N/A
44	23-Jun-16	69.8	7,210	5246	4774	349,100	8,997	N/A
45	23-Jun-16	78.6	6,978	5697	4892	350,950	8,152	N/A
46	24-Jun-16	79.5	7,260	6577	3948	349,200	7,880	N/A
47	24-Jun-16	79.2	7,221	5815	4456	350,700	8,509	N/A
48	24-Jun-16	80.2	7,306	6226	4646	349,800	7,854	N/A
49	25-Jun-16	76.3	7,291	6155	4431	353,605	7,830	N/A
50	25-Jun-16	79.7	7,409	6477	4363	350,950	7,857	N/A
51	25-Jun-16	77.8	7,492	6627	4638	356,600	8,545	N/A
52	26-Jun-16	77.5	7,140	5744	4449	354,500	7,830	N/A
53	26-Jun-16	82.1	7,175	5865	4606	350,000	8,007	N/A
54	26-Jun-16	77.5	7,258	5887	4631	300,400	8,825	N/A
55	26-Jun-16	78.4	6,904	5021	4088	347,750	7,819	N/A
56	27-Jun-16	78.6	7,065	5643	4817	347,100	8,269	N/A
57	27-Jun-16	84	7,031	5143	3580	331,300	9,081	N/A
	AVG=	76.4	7,517	5,529	4,354	19,869,645	483,224	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	256'	N/A	256'	N/A
Fresh Water	267'	N/A	267'	N/A
Siltstone	0	296	0	296
Siltstone w/trace coal	est 296	316	est 296	316
Siltstone	est 316	336	est 316	336
Sandstone	est 336	376	est 336	376
Siltstone w/trace coal	est 376	466	est 376	466
Sandstone	est 466	716	est 466	716
Sandstone/Siltstone	est 716	956	est 716	956
Limestone/Siltstone	est 956	1,176	est 956	1,176
Siltstone/Sandstone w/trace coal	est 1176	1,216	est 1176	1,216
Siltstone	est 1216	1,356	est 1216	1,356
Sandstone	est 1356	1,496	est 1356	1,496
Siltstone w/trace coal	est 1496	1,516	est 1496	1,516
Sandstone/Siltstone	est 1516	1,916	est 1516	1,916
Sandstone w/trace coal	est 1916	1,956	est 1916	1,956
Sandstone/Siltstone	est 1956	2,111	est 1956	2,111
Big Lime	2,111	2,214	2,111	2,216
Big Injun	2,214	2,699	2,216	2,701
Gantz Sand	2,699	2,835	2,701	2,837
Fifty Foot Sandstone	2,835	2,926	2,837	2,928
Gordon	2,926	3,285	2,928	3,287
Fifth Sandstone	3,285	3,330	3,287	3,332
Bayard	3,330	3,682	3,332	3,684
Warren	3,682	4,088	3,684	4,090
Speechley	4,088	4,781	4,090	4,796
Bradford	4,781	5,189	4,796	5,235
Benson	5,189	5,428	5,235	5,497
Alexander	5,428	5,581	5,497	5,665
Elk	5,581	6,006	5,665	6,125
Rhinestreet	6,006	6,310	6,125	6,458
Sycamore	6,310	6,481	6,458	6,667
Middlesex	6,481	6,581	6,667	6,820
Burkett	6,581	6,604	6,820	6,867
Tully	6,604	6,642	6,867	6,978
Marcellus	6,642	NA	6,978	NA

\*Please note Antero determines shallow 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:	6/5/2016
Job End Date:	6/27/2016
State:	West Virginia
County:	Tyler
API Number:	47-095-02328-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Klondike 2H
Latitude:	39.45212920
Longitude:	-80.85885880
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,706
Total Base Water Volume (gal):	21,233,310
Total Base Non Water Volume:	0



## Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass) <sup>1,2*</sup>	Maximum Ingredient Concentration in HF Fluid (% by mass) <sup>1,2*</sup>	Comments
Water	Antero Resources	Base Fluid					
			Water	7732-18-5	100.00000	89.56850	
Sand	J.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	10.04990	
HCL Acid (12.6%-18.0%)	J.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.14749	
			Hydrogen Chloride	7647-01-0	18.00000	0.03523	
WFRA-405	J.S. Well Services	Friction Reducer					
			Water	7732-18-5	60.00000	0.05009	
			2-Propanoic acid, polymer with propanamide	29003-06-9	30.00000	0.02503	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.02016	
			Ethoxylated alcohol blend	68002-97-1	4.00000	0.00334	
LGC-15	J.S. Well Services	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.03474	
			Petroleum Distillates	64742-47-8	60.00000	0.03290	
			Suspending agent (solid)	14808-60-7	3.00000	0.00531	



SI-1100s	J.S. Well Services	Scale Inhibitor	Surfactant	68439-51-0	3.00000	0.00208
			Water	7732-18-5	80.00000	0.01023
			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	7.50000	0.00129
			Hexamethylene triamine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00083
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00083
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00033
BIOCLEAR 2000	J.S. Well Services	Anti-Bacterial Agent				
			2,2-dibromo-3-nitropropionamide	10222-01-2	30.00000	0.00627
			Deionized Water	7732-18-5	28.00000	0.00239
AP One	J.S. Well Services	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00114
AI-302	J.S. Well Services	Acid Corrosion Inhibitors				
			Water	7732-18-5	95.00000	0.00032
			2-Propyn-1-ol compound with methoxyfrane	38172-91-7	15.00000	0.00005

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°27'30"

7,256'

11,613' TO BOTTOM HOLE

LATITUDE 39°30'00"

LONGITUDE 80°50'00"

LONGITUDE 80°50'00"

Antero Resources Corporation  
Well No. Klondike Unit 2H  
API #47-095-02328

WELL 2H  
BOTTOM HOLE

WVDNR  
LEASE

NOTE  
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.

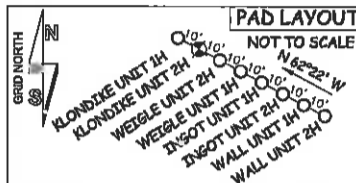
2H TOP  
HOLE

JOHN H. CRUMRINE  
ET AL LEASE

JOHN CRUMRINE (LIFE)  
W.B. 17 PG. 655  
T.M. 21 PAR. 43  
231.04 AC. ±

AS DRILLED DATA:  
WELL 2H TOP HOLE INFORMATION:  
N: 349,658ft E: 1,616,250ft  
LAT: 39°27'07.38" LON: 80°51'32.51"  
BOTTOM HOLE INFORMATION:  
N: 359,906ft E: 1,612,045ft  
LAT: 39°28'48.02" LON: 80°52'28.11"  
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: 4,366,961m E: 512,144m  
BOTTOM HOLE INFORMATION:  
N: 4,370,061m E: 510,810m



- 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.

2H BOTTOM  
HOLE

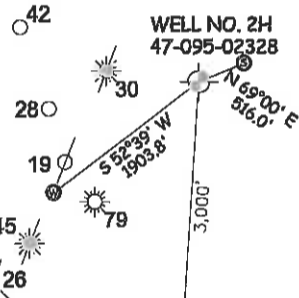
STATE OF WV DNR  
D.B. 204 PG. 686  
T.M. 21 PAR. 4  
131.74 AC. ±

WVDNR  
LEASE

PATSY FLETCHER  
ET AL  
W.B. 35 PG. 614  
T.M. 21 PAR. 42  
15 AC. ±

WVDNR  
LEASE

NOTE:  
1 WATER WELL AND  
1 DEVELOPED SPRING WERE  
LOCATED WITHIN 2000'  
OF PROPOSED WELL



STATE OF WV DNR  
D.B. 215 PG. 520  
T.M. 27 PAR. 2  
405.81 AC. ±

JAMES C. RYMER  
LEASE

STATE OF WV DNR  
D.B. 303 PG. 51  
T.M. 27 PAR. 4  
143.89 AC. ±

LYDIA GREGG EST  
W.B. 36 PG. 469  
T.M. 27 PAR. 6  
35 AC. ±

JAMES E. GREGG  
ET UX LEASE  
JOHN A. BONTRAGER ET AL  
D.B. 368 PG. 472  
T.M. 27 PAR. 7  
121.752 AC. ±

EDWIN C. WEIGLE ET AL  
A.P. 40 PG. 793  
T.M. 27 PAR. 21  
85.45 AC. ±

EDWIN C. WEIGLE HEIRS  
LEASE

EDWIN C. WEIGLE  
D.B. 348 PG. 74  
T.M. 27 PAR. 23  
61.62 AC. ±

REBAR, FOUND

JOSEPH  
SAYRE  
LEASE

STATE OF WV DNR  
D.B. 307 PG. 217  
T.M. 27 PAR. 25  
100 AC. ±

REBAR, FOUND

THOMAS L. BURKHART  
LEASE

THOMAS L. BURKHART  
D.B. 284 PG. 348  
T.M. 27 PAR. 24  
90 AC. ±

THOMAS L. BURKHART  
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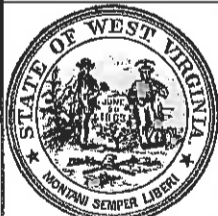
THOMAS L. BURKHART  
LEASE

THOMAS L. BURKHART  
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THOMAS L. BURKHART  
LEASE

THOMAS L. BURKHART  
LEASE

47 - 095 - 02328  
STATE COUNTY PERMIT



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

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

JOB # 15-055WA  
DRAWING # KLONDIKEZHAD  
SCALE 1" = 1000'  
MINIMUM DEGREE OF  
ACCURACY SUBMETER  
PROVEN SOURCE OF ELEV.  
SUBMETER MAPPING GRADE GPS

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

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENERGY  
DIVISION OF OIL AND GAS

DATE 10/05/16  
OPERATOR'S WELL# KLONDIKE UNIT #2H

WELL TYPE: OIL  GAS  LIQUID INJECTION  WASTE DISPOSAL   
(IF "GAS") PRODUCTION  STORAGE  DEEP  SHALLOW   
LOCATION: ELEVATION 1,216' ORIGINAL - 1,201' AS DRILLED WATERSHED OUTLET MIDDLE ISLAND CREEK

QUADRANGLE SHIRLEY 7.5' DISTRICT ELLSWORTH COUNTY TYLER  
SURFACE OWNER LLOYD C. SECKMAN ACREAGE 128.5 ACRES +/-  
OIL & GAS ROYALTY OWNER LLOYD C. SECKMAN; THOMAS L. BURKHART; EDWIN C. WEIGLE HEIRS; JOSEPH SAYRE LEASE ACREAGE 128.5 AC.; 90 AC.; 129.2 AC.; 100 AC.;  
JAMES C. RYMER; RICHARD L. SEAGO ET UX; JAMES E. GREGG ET UX; JOHN H. CRUMRINE ET AL; WVDNR; WVDNR; WVDNR; PATSY FLETCHER 143.89 AC.; 74.2 AC.; 141 AC.; 256 AC.; 20 AC.; 71.74 AC.; 60 AC.; 19.5 AC.;  
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 6,704' TVD 18,411' 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

LATITUDE 39°27'30"

7,256'

11,613' TO BOTTOM HOLE

LATITUDE 39°30'00"

LONGITUDE 80°50'00"

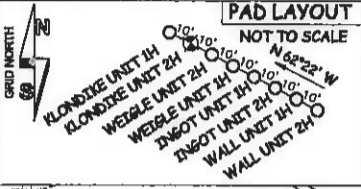
2,290' LONGITUDE 80°50'00"

Antero Resources Corporation  
Well No. Klondike Unit 2H  
API #47-095-02328

- 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.

**AS DRILLED DATA:**  
**WELL 2H TOP HOLE INFORMATION:**  
 N: 349,658ft E: 1,616,250ft  
 LAT: 39°27'07.38" LON: 80°51'32.51"  
**BOTTOM HOLE INFORMATION:**  
 N: 359,906ft E: 1,612,045ft  
 LAT: 39°28'48.02" LON: 80°52'28.11"  
 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: 4,366,961m E: 512,144m  
**BOTTOM HOLE INFORMATION:**  
 N: 4,370,061m E: 510,810m



2H BOTTOM HOLE

**JOHN H. CRUMRINE ET AL LEASE**  
 JOHN CRUMRINE (LIFE)  
 W.B. 17 PG. 655  
 T.M. 21 PAR. 43  
 231.04 AC. ±

**PATSY FLETCHER ET AL**  
 W.B. 35 PG. 614  
 T.M. 21 PAR. 42  
 15 AC. ±

**STATE OF WV DNR**  
 D.B. 204 PG. 686  
 T.M. 27 PAR. 4  
 131.74 AC. ±

**STATE OF WV DNR**  
 D.B. 215 PG. 520  
 T.M. 27 PAR. 2  
 405.81 AC. ±

**LYDIA GREGG EST**  
 W.B. 36 PG. 469  
 T.M. 27 PAR. 6  
 35 AC. ±

**JAMES E. GREGG ET UX LEASE**  
 JOHN A. BONTRAGER ET AL  
 D.B. 368 PG. 472  
 T.M. 27 PAR. 7  
 121.752 AC. ±

**JAMES C. RYMER LEASE**  
 STATE OF WV DNR  
 D.B. 303 PG. 51  
 T.M. 27 PAR. 4  
 143.89 AC. ±

**EDWIN C. WEIGLE ET AL**  
 A.P. 40 PG. 793  
 T.M. 27 PAR. 21  
 85.45 AC. ±

**EDWIN C. WEIGLE HEIRS LEASE**

**EDWIN C. WEIGLE**  
 D.B. 348 PG. 74  
 T.M. 27 PAR. 23  
 61.62 AC. ±

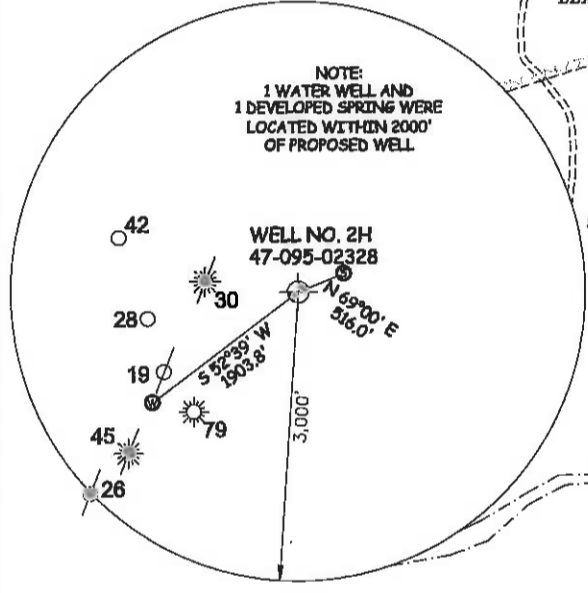
**JOSEPH SAYRE LEASE**  
 STATE OF WV DNR  
 D.B. 307 PG. 217  
 T.M. 27 PAR. 25  
 100 AC. ±

**THOMAS L. BURKHART**  
 D.B. 294 PG. 348  
 T.M. 27 PAR. 24  
 90 AC. ±

**LLOYD C. SECKMAN LEASE**

**WELL NO. 1H**  
 47-095-02328

**LLOYD C. SECKMAN**  
 D.B. 332 PG. 914  
 T.M. 4 PAR. 3  
 128.5 AC. ±



47 - 095 - 02328  
 STATE COUNTY PERMIT



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

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

JOB # 15-055WA  
 DRAWING # KLONDIKE2HAD  
 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 +/-  
 X Existing Fence  
 ⊕ Found monument, as noted  
 ○ Proposed Well Path  
 ⊙ As Drilled Well Path

DATE 10/05/16  
 OPERATOR'S WELL# KLONDIKE UNIT #2H

WELL TYPE: OIL \_\_\_ GAS  LIQUID INJECTION \_\_\_ WASTE DISPOSAL \_\_\_  
 (IF "GAS") PRODUCTION  STORAGE \_\_\_ DEEP \_\_\_ SHALLOW   
 LOCATION: ELEVATION 1,216' ORIGINAL - 1,201' AS DRILLED WATERSHED OUTLET MIDDLE ISLAND CREEK  
 QUADRANGLE SHIRLEY 7.5' DISTRICT ELLSWORTH COUNTY TYLER  
 SURFACE OWNER LLOYD C. SECKMAN ACREAGE 128.5 ACRES +/-  
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JAMES C. RYMER; RICHARD L. SEAGO ET UX; JAMES E. GREGG ET UX; JOHN H. CRUMRINE ET AL; WVDNR; WVDNR; WVDNR; PATSY FLETCHER 143.89 AC. ±; 74.2 AC. ±; 141 AC. ±; 258 AC. ±; 20 AC. ±; 71.74 AC. ±; 80 AC. ±; 19.8 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 6,704' TVD 18,411' 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