

Reviewed

12/21/2018

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WR-35
Rev. 8/23/13

Dolan 12/19/18

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

API 47-017-06795 County Doddridge District Central
Quad West Union 7.5' Pad Name Balli Pad Field/Pool Name ----
Farm name Jeffrey K. Jones Sr. et al Well Number Hawk Unit 2HST
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 4350343m Easting 513482m
Landing Point of Curve Northing 4350577.28m Easting 513757.59m
Bottom Hole Northing 4353596m Easting 512780m

Elevation (ft) 1135.5' 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 2/7/2017 Date drilling commenced 2/10/2017 Date drilling ceased 7/31/2018
Date completion activities began 9/23/2017 Date completion activities ceased 3/21/2018
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 107', 192' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 737' Void(s) encountered (Y/N) depths No
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

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API 47- 017 - 06795 Farm name Jeffrey K. Jones Sr. et al Well number Hawk Unit 2HST

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"	72'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	373'	New	54#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2674'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	18010'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6940'		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details SIDETRACK1: Fish in hole, unable to POOH. Set Cement plug from 5520' to 6160' using 300 sacks of Class H cement.
Inspector Daniel Flack was notified at 1500 on 7/13/2017.

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	102 sx	15.6	1.18	120	0'	8 Hrs.
Surface	Class A	320 sx	15.6	1.19	381	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	810sx (Lead) 1634sx (Tail)	13.5(Lead), 15.2 (Tail)	1.44 (Lead), 1.87 (Tail)	4222	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 18014' MD, 6624' TVD (BHL), 6640' (Deepest Point Drilled) Loggers TD (ft) 18014' MD

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

Plug back procedure N/A

Kick off depth (ft) 6083'

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 _____

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

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API 47-017-06795 Farm Name Jeffrey K. Jones Sr. et al Well Number Hawk Unit 2HST					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	9/23/2017	17847	0	48	Marcellus
2	12/19/2017	17647	17816	48	Marcellus
3	12/20/2017	17447	17616	48	Marcellus
4	12/21/2017	17247	17416	48	Marcellus
5	12/21/2017	17047	17215	48	Marcellus
6	12/22/2017	16847	17015	48	Marcellus
7	12/22/2017	16646	16815	48	Marcellus
8	12/23/2017	16446	16615	48	Marcellus
9	12/23/2017	16246	16415	48	Marcellus
10	12/24/2017	16046	16215	48	Marcellus
11	12/27/2017	15846	16015	48	Marcellus
12	12/27/2017	15646	15814	48	Marcellus
13	12/28/2017	15446	15614	48	Marcellus
14	12/29/2017	15245	15414	48	Marcellus
15	12/29/2017	15045	15214	48	Marcellus
16	12/30/2017	14845	15014	48	Marcellus
17	12/30/2017	14645	14814	48	Marcellus
18	12/31/2017	14445	14614	48	Marcellus
19	1/1/2018	14245	14414	48	Marcellus
20	1/1/2018	14045	14213	48	Marcellus
21	1/2/2018	13844	14013	48	Marcellus
22	1/2/2018	13644	13813	48	Marcellus
23	1/3/2018	13444	13613	48	Marcellus
24	1/4/2018	13244	13413	48	Marcellus
25	1/4/2018	13044	13213	48	Marcellus
26	1/4/2018	12844	13013	48	Marcellus
27	1/4/2018	12644	12812	48	Marcellus
28	1/5/2018	12444	12612	48	Marcellus
29	1/7/2018	12243	12412	48	Marcellus
30	1/8/2018	12043	12212	48	Marcellus
31	1/9/2018	11843	12012	48	Marcellus
32	1/9/2018	11643	11812	48	Marcellus
33	1/9/2018	11443	11612	48	Marcellus
34	1/10/2018	11243	11411	48	Marcellus
35	1/11/2018	11043	11211	48	Marcellus
36	1/12/2018	10842	11011	48	Marcellus
37	1/14/2018	10642	10811	48	Marcellus
38	1/16/2018	10442	10611	48	Marcellus
39	1/19/2018	10242	10411	48	Marcellus
40	1/20/2018	10042	10211	48	Marcellus
41	1/20/2018	9842	10011	48	Marcellus
42	1/20/2018	9642	9810	48	Marcellus
43	1/21/2018	9441	9610	48	Marcellus
44	1/21/2018	9241	9410	48	Marcellus
45	1/22/2018	9041	9210	48	Marcellus
46	1/22/2018	8841	9010	48	Marcellus
47	1/23/2018	8641	8810	48	Marcellus
48	1/24/2018	8441	8610	48	Marcellus
49	1/24/2018	8241	8409	48	Marcellus
50	1/24/2018	8041	8209	48	Marcellus
51	1/25/2018	7840	8009	48	Marcellus
52	1/25/2018	7640	7809	48	Marcellus
53	1/26/2018	7440	7609	48	Marcellus
54	1/26/2018	7240	7409	48	Marcellus
55	1/27/2018	7040	7209	48	Marcellus

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API 47-017-06795 Farm Name Jeffrey K. Jones Sr. et al Well Number Hawk Unit 2HST								
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	9/23/2017	56	7992	6847	4492	258250	9084	N/A
2	12/19/2017	78	8499	6137	3884	405800	8836	N/A
3	12/20/2017	70	8099	6378	3848	406200	9086	N/A
4	12/21/2017	72	8099	5732	4268	406950	8664	N/A
5	12/21/2017	73.7	8293	5918	3845	405400	9311	N/A
6	12/22/2017	75	8264	5860	4877	406200	11532	N/A
7	12/22/2017	70.5	8023	6302	5177	405350	8659	N/A
8	12/23/2017	73.5	7976	6095	4500	385950	8820	N/A
9	12/23/2017	71.8	8132	6285	4591	405400	9726	N/A
10	12/24/2017	71.9	7868	5751	5194	396050	8983	N/A
11	12/27/2017	76	7809	5850	5053	418300	8539	N/A
12	12/27/2017	70.2	8138	6109	5482	418200	10427	N/A
13	12/28/2017	73.7	7986	5546	4828	394100	8544	N/A
14	12/29/2017	73.6	8049	5538	5560	417575	8595	N/A
15	12/29/2017	71.4	7860	6647	5204	419250	8752	N/A
16	12/30/2017	74	8055	5997	4392	418450	8674	N/A
17	12/30/2017	76.1	7804	5664	5224	418050	8507	N/A
18	12/31/2017	74.3	7551	5688	4969	419150	10437	N/A
19	1/1/2018	80.4	7955	5458	4899	418250	8531	N/A
20	1/1/2018	76.3	7916	6007	4859	417950	8892	N/A
21	1/2/2018	77.1	7772	5645	4722	417900	8866	N/A
22	1/2/2018	73.1	8204	5453	4568	418100	9854	N/A
23	1/3/2018	76.8	8027	5629	4965	417225	8524	N/A
24	1/4/2018	76.3	8087	5799	4164	417600	8645	N/A
25	1/4/2018	74.1	7694	6017	5627	419300	8448	N/A
26	1/4/2018	77.9	7619	6111	5304	418100	8477	N/A
27	1/4/2018	70.7	8037	6266	5203	418550	10304	N/A
28	1/5/2018	66.8	8029	7816	5637	388150	14918	N/A
29	1/7/2018	51.9	7976	5650	4818	418150	13065	N/A
30	1/8/2018	73.7	7476	6270	5206	417800	9142	N/A
31	1/9/2018	76.9	7509	6273	5195	418200	8364	N/A
32	1/9/2018	73.7	7452	6020	4233	417700	9609	N/A
33	1/9/2018	61.3	8030	6234	4544	417950	10416	N/A
34	1/10/2018	73.1	7486	5996	5027	418250	8793	N/A
35	1/11/2018	73.4	7282	6215	4775	417600	8512	N/A
36	1/12/2018	73.8	7459	6631	3465	418450	8439	N/A
37	1/14/2018	75.4	7215	6997	4306	418250	9057	N/A
38	1/16/2018	11.3	8193	6995	8965	417650	8911	N/A
39	1/19/2018	70.1	8206	6920	5072	418700	11777	N/A
40	1/20/2018	77.1	7289	6927	5102	418700	8387	N/A
41	1/20/2018	77.8	7058	6408	5247	418850	8388	N/A
42	1/20/2018	78	7336	6564	5320	417950	8397	N/A
43	1/21/2018	80.2	7791	5721	5672	417425	8366	N/A
44	1/21/2018	78.3	7597	7088	5380	418450	8089	N/A
45	1/22/2018	79.2	7863	7042	5446	417725	9476	N/A
46	1/22/2018	78.7	7188	6423	5080	417750	8054	N/A
47	1/23/2018	74.8	7091	5708	5319	416700	8449	N/A
48	1/24/2018	78.6	7213	6364	5440	418300	8171	N/A
49	1/24/2018	76.5	7607	6382	5579	417900	9283	N/A
50	1/24/2018	76.8	6760	5948	5200	418600	8264	N/A
51	1/25/2018	80.1	7163	5620	5530	416600	8158	N/A
52	1/25/2018	79.3	6795	6645	5369	418400	8230	N/A
53	1/26/2018	79.9	7212	6227	5579	421200	8366	N/A
54	1/26/2018	79.1	6773	6061	5440	416700	8367	N/A
55	1/27/2018	79.9	6925	6166	3793	418600	8218	N/A
	AVG=	73	7,705	6,183	5,008	22,644,300	501,383	TOTAL

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API 47-017-06795 Farm Name Jeffrey K. Jones Sr. et al Well Number Hawk Unit 2HST				
EXHIBIT 3				
LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Freshwater	107'	N/A	107'	N/A
Freshwater	192'	N/A	192'	N/A
Siltstone/Sandstone	0	147	0	147
Sandstone	est. 147	205	est. 147	205
Sandstone/Siltstone/Shale	est. 205	327	est. 205	327
Sandstone/Shale/Trace Coal	est. 327	447	est. 327	447
Sandstone	est. 447	547	est. 447	547
Sandstone/Shale	est. 547	607	est. 547	607
Sandstone	est. 607	687	est. 607	687
Siltstone	est. 687	727	est. 687	727
Shale	est. 727	767	est. 727	767
Limestone	est. 767	787	est. 767	787
Siltstone	est. 787	907	est. 787	907
Shale	est. 907	1,147	est. 907	1,147
Shale/Tr Coal	est. 1147	1,167	est. 1147	1,167
Shale	est. 1167	1,207	est. 1167	1,207
Sandstone	est. 1207	1,227	est. 1207	1,227
Shale	est. 1227	1,245	est. 1227	1,245
Sandstone	est. 1245	1,307	est. 1245	1,307
Shale/Siltstone	est. 1307	1,367	est. 1307	1,367
Limestone	est. 1367	1,387	est. 1367	1,387
Sandstone	est. 1387	1,447	est. 1387	1,447
Siltstone	est. 1447	1,489	est. 1447	1,489
Sandstone/Shale/Siltstone	est. 1489	2,029	est. 1489	2,056
Big Lime	2,029	2,685	2,056	2,729
Fifty Foot Sandstone	2,685	2,739	2,729	2,785
Gordon	2,739	3,107	2,785	3,162
Fifth Sandstone	3,107	3,164	3,162	3,221
Bayard	3,164	3,164	3,221	3,833
Speechley	3,164	4,140	3,833	4,225
Balltown	4,140	4,548	4,225	4,644
Bradford	4,548	5,024	4,644	5,133
Benson	5,024	5,290	5,133	5,407
Alexander	5,290	6,221	5,407	6,383
Sycamore	6,221	6,390	6,383	6,601
Middlesex	6,390	6,510	6,601	6,812
Burkett	6,510	6,541	6,812	6,888
Tully	6,541	6,575	6,888	6,988
Marcellus	6,575	NA	6,988	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.

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Hydraulic Fracturing Fluid Product Component Information Disclosure

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Job Start Date:	12/19/2017
Job End Date:	1/27/2018
State:	West Virginia
County:	Doddridge
API Number:	47-017-06795-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Hawk 2HST
Latitude:	39.30236500
Longitude:	-80.84369300
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,627
Total Base Water Volume (gal):	21,813,215
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	Supplied by Operator	Base Fluid					
			Water	7732-18-5	70.00000	88.74473	
DWP-641	CWS	Friction Reducer					
				Listed Below			

DAP-103	CWS	Iron Control					
				Listed Below			
SANIFRAC 8844	CWS	Biocide					
				Listed Below			
Sand (Proppant)	CWS	Propping Agent					
				Listed Below			
Hydrochloric Acid	CWS	Clean Perforations					
				Listed Below			
DWP-111	CWS	Gel Slurry					
				Listed Below			
DAP-902	CWS	Scale Inhibitor					
				Listed Below			
Calbreak 5501	CWS	Breaker					
				Listed Below			
CI-9100G	CWS	Corrosion Inhibitor					
				Listed Below			
Other Chemical (s)	Listed Above	See Trade Name (s) List					

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				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	10.84877	
			Calcite	471-34-1	1.00000	0.07819	
			Hydrochloric acid	7647-01-0	37.00000	0.06066	
			Guar gum	9000-30-0	60.00000	0.04903	
			Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.04903	
			Polymer	26100-47-0	45.00000	0.03211	
			Illite	12173-60-3	1.00000	0.03025	
			Distillates (petroleum), hydrotreated light	64742-47-8	30.00000	0.02141	
			Biotite	1302-27-8	0.10000	0.01084	
			Goethite	1310-14-1	0.10000	0.01084	
			Apatite	64476-38-6	0.10000	0.01084	
			Ammonium Persulfate	64742-47-8	100.00000	0.01030	
			Ammonium chloride	12125-02-9	11.00000	0.00785	
			Polyethylene glycol mixture	25322-68-3	54.50000	0.00610	
			2-Propenoic acid, homopolymer, sodium salt	9003-04-7	40.00000	0.00593	
			Quaternary ammonium compounds, bis (hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00409	
			Ilmenite	98072-94-7	0.10000	0.00303	
			Sorbitan monooleate	1338-43-8	4.00000	0.00285	
			2,2-Dibromo-3- Nitrilopropionamide	10222-01-2	20.00000	0.00224	
	RECEIVED Office of Oil and Gas		Polyethylene glycol monooleate	9004-96-0	3.00000	0.00214	
	SEP 10 2018		Vinylidene chloride- methyl acrylate copolymer	69418-26-4	20.00000	0.00206	

			1,2-Propanediol	57-55-6	10.00000	0.00148	
			Sorbitol tetraoleate	61723-83-9	2.00000	0.00143	
			Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1.50000	0.00123	
			Amines, tallow alkyl, ethoxylated	61791-26-2	1.00000	0.00071	
			Citric acid	77-92-9	60.00000	0.00055	
			Sodium bromide	7647-15-6	4.00000	0.00045	
			Alkyloxypolyethyleneoxy ethanol	84133-50-6	0.50000	0.00036	
			Dibromoacetonitrile	3252-43-5	3.00000	0.00034	
			Acrylamide	79-06-1	0.10000	0.00007	
			Ethylene glycol	107-21-1	40.00000	0.00003	
			Diethylene glycol (mono) methyl ether	34590-94-8	20.00000	0.00002	
			Diethylene glycol	111-46-6	1.00000	0.00001	
			Tar bases, quinolone derivs, benzyl chloride- quaterized	72480-70-7	10.00000	0.00001	
			Ethoxylated alcohols	Proprietary	10.00000	0.00001	Proprietary CAS
			Tar bases, quinolone derivs	68513-87-1	1.00000	0.00001	
			Formic Acid	64-18-6	10.00000	0.00001	
			Isopropanol	67-63-0	5.00000	0.00001	
			Cinnamaldehyde	104-55-2	10.00000	0.00001	

* Total Water Volume sources may include various types of water including fresh water, produced water, and recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

*** If you are calculating a percentage of total ingredients do not add the water volume below the green line to the water volume above the green line

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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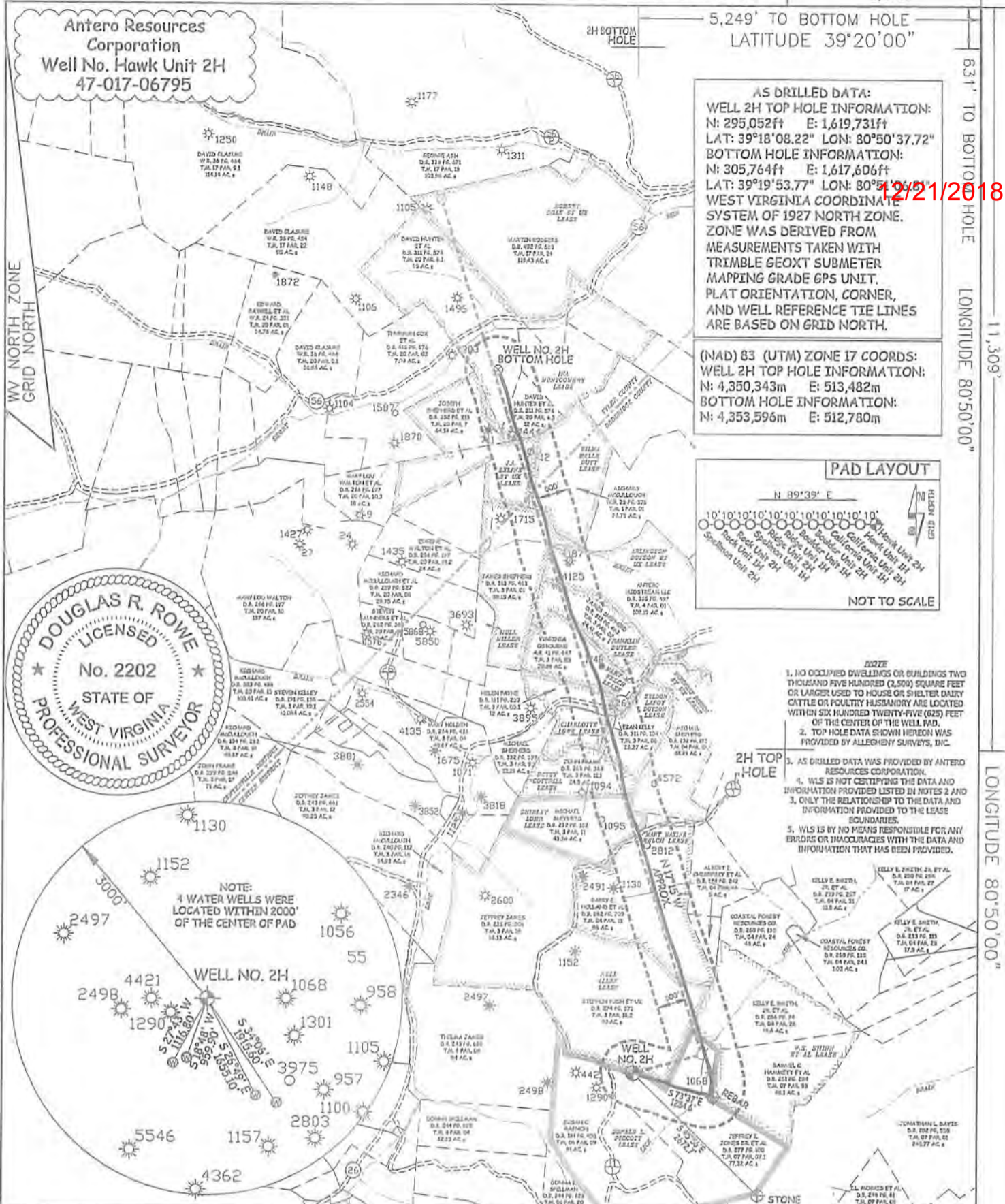
LATITUDE 39°20'00" 2,965'

5,249' TO BOTTOM HOLE
LATITUDE 39°20'00"

631' TO BOTTOM HOLE
LONGITUDE 80°50'00"

11,309'

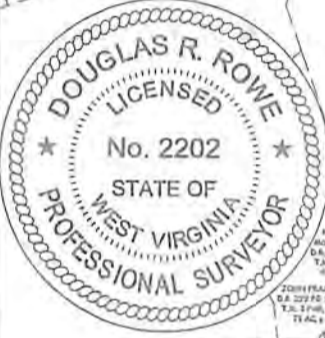
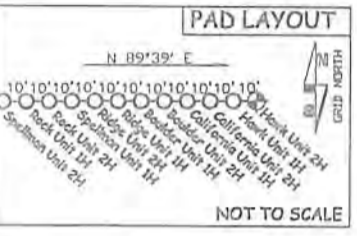
LONGITUDE 80°50'00"



Antero Resources Corporation
Well No. Hawk Unit 2H
47-017-06795

AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
N: 295,052ft E: 1,619,731ft
LAT: 39°18'08.22" LON: 80°50'37.72"
BOTTOM HOLE INFORMATION:
N: 305,764ft E: 1,617,606ft
LAT: 39°19'53.77" LON: 80°51'29.90"
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: 4,350,343m E: 513,482m
BOTTOM HOLE INFORMATION:
N: 4,353,596m E: 512,780m



- 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 THIS 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.



JOB # 16-059WA
DRAWING # HAWK2HAD
SCALE 1" = 2000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

LEGEND
--- Surface Owner Boundary Lines +/-
--- Interior Surface Tracts +/-
--- Proposed Well Path
--- As Drilled Well Path
DOUGLAS R. ROWE P.S. 2202

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 1,135.5' AS BUILT WATERSHED HEADWATERS MIDDLE ISLAND CREEK
QUADRANGLE WEST UNION 7.5 DISTRICT CENTRAL COUNTY DODDRIDGE
SURFACE OWNER JEFFREY K. JONES SR. ET AL ACREAGE 77.32 ACRES +/-
OIL & GAS ROYALTY OWNER DONALD L. PIGGOTT; NELL ALLEN; W.S. SHINN ET AL; LEASE ACREAGE 81 AC±; 176 AC±; 84.59 AC±;
MARY MAINE WELCH; S.W. LAY; BETTY COTTRILL; SERDON LAY; DOTSON; CHARLOTTE LONE; MARY M. WELCH; FRANKLIN BULLER; ARINGTON DOTSON ET AL; 96 AC±; 36.38 AC±; 24.5 AC±; 27 AC±; 24.5 AC±; 29.08 AC±; 24.5 AC±; 68 AC±;
HULL MILLER; WILMA BELLE DUTY; J.A. EXLINE ET UX; INA MONTGOMERY 53.8 AC±; 50 AC±; 80 AC±; 142.25 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 6,624' TVD 18,014' 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

COUNTY NAME PERMIT

12/21/2018

RECEIVED
Office of Oil and Gas
SEP 10 2018
WV Department of
Environmental Protection

FORM W-6
 ADDRESS 1615 WYNKOOP STREET DENVER, CO 80202
 WELL OPERATOR ANTERO RESOURCES CORP.
 TARGET FORMATION MARCELLUS
 (SPECIES) AS DRILLED
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
 FRACURE OR STIMULATE
 PLUG & ABANDON CLEAN OUT & REPLUG
 ESTIMATED DEPTH 6,824 TVD 18,014 MD
 DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 5400 D BIG TYLER ROAD CHARLESTON, WV 25313

COUNTY NAME PERMIT
 LEASE ACREAGE 81 AC. 176 AC. 84.59 AC.
 SURFACE ACREAGE 77.32 ACRES +/-
 DISTRICT CENTRAL COUNTY DODDRIDGE
 LOCATION: ELEVATION 1,135.5 AS BUILT
 WASTE DISPOSAL SHALLOW X DEEP
 WELL TYPE: OIL GAS X LIQUID INJECTION
 DIVISION OF OIL AND GAS
 DEPARTMENT OF ENERGY
 STATE OF WEST VIRGINIA
 SUBMETER MAPPING GRADE GPS
 PROVEN SOURCE OF ELEV. SUBMETER
 ACCURACY SUBMETER
 MINIMUM DEGREE OF SCALE 1" = 2000'
 DRAWING # HAWK24D
 JOB # 16-059WA
 12/21/2018

THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL 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 WASHINGTON AVE. PENNSBORO
 WEST VIRGINIA 26415
 DATE 07/17/18
 OPERATOR'S WELL # HAWK UNIT #21
 API WELL # 47 - 017 - 06795
 STATE COUNTY PERMIT
 WATERSHED HEADWATERS MIDDLE ISLAND CREEK
 COUNTY DODDRIDGE

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

