

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

APPROVED

NAME: [Signature]
DATE: 9/15/16

API 47-017-06417 County Doddridge District Grant
Quad Smithburg 7.5' Pad Name Hamilton Field/Pool Name ---
Farm name Kenneth E. Hamilton, et al Well Number Knight 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 4357614m Easting 522086m
Landing Point of Curve Northing 4357507.26m Easting 521897.25m
Bottom Hole Northing 4360443m Easting 520825m

Elevation (ft) 1157' 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 12/30/2013 Date drilling commenced 9/5/2014 Date drilling ceased 2/18/2016
Date completion activities began 4/26/2016 Date completion activities ceased 6/13/2016
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 225' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 630' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 840' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

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SEP 12 2016
Reviewed by: _____

10/28/2016

API 47-017 - 06417 Farm name Kenneth E. Hamilton, et al Well number Knight 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	30"	20"	40'	New	94# J-55	N/A	Y
Surface	17-1/2"	13-3/8"	402'	New	48# H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2543'	New	36# J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	16957'	New	23# P-110	N/A	Y
Tubing		2-3/8"	7080'		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	200 sx	15.6	1.18	38	0'	8 Hrs.
Surface	Class A	480 sx	15.6	1.18	279	0'	8 Hrs.
Coal							
Intermediate 1	Class A	940 sx	15.6	1.18	796	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1019 sx (Lead) 1575 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.33 (Lead), 1.83 (Tail)	3417	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 16957' MD, 6959' TVD (BHL); 6979' TVD (Deepest Point Drilled) Loggers TD (ft) 16910'
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6303'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Costlow Unit 1H API #47-017-06194). Please reference the wireline logs submitted with Form WR-35 for Costlow 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 _____

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 ENVIRONMENTAL PROTECTION

API 47- 017 - 06417 Farm name Kenneth E. Hamilton, et al Well number Knight Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>			
<u>Marcellus</u>	<u>6925' (TOP)</u>	<u>TVD</u>	<u>7150' (TOP)</u>	<u>MD</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2950 psi Bottom Hole -- psi DURATION OF TEST -- hrs

OPEN FLOW Gas 5315 mcfpd Oil 49 bpd NGL -- bpd Water 366 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP DEPTH IN FT NAME TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
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***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Precision Drilling Company, LP
Address 2640 Reach Rd. 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 Kara Quackenbush Telephone 303-357-7233
Signature [Signature] Title Permitting Agent Date 9/7/2016

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

10/28/2016

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	26-Apr-16	16,687	16,854	60	Marcellus
2	27-Apr-16	16,489	16,656	60	Marcellus
3	27-Apr-16	16,291	16,458	60	Marcellus
4	27-Apr-16	16,093	16,260	60	Marcellus
5	28-Apr-16	15,895	16,062	60	Marcellus
6	28-Apr-16	15,698	15,864	60	Marcellus
7	28-Apr-16	15,500	15,667	60	Marcellus
8	28-Apr-16	15,302	15,469	60	Marcellus
9	29-Apr-16	15,104	15,271	60	Marcellus
10	29-Apr-16	14,906	15,073	60	Marcellus
11	30-Apr-16	14,708	14,875	60	Marcellus
12	30-Apr-16	14,510	14,677	60	Marcellus
13	30-Apr-16	14,312	14,479	60	Marcellus
14	30-Apr-16	14,114	14,281	60	Marcellus
15	1-May-16	13,917	14,083	60	Marcellus
16	1-May-16	13,719	13,886	60	Marcellus
17	1-May-16	13,521	13,688	60	Marcellus
18	1-May-16	13,323	13,490	60	Marcellus
19	1-May-16	13,125	13,292	60	Marcellus
20	2-May-16	12,927	13,094	60	Marcellus
21	2-May-16	12,729	12,896	60	Marcellus
22	2-May-16	12,531	12,698	60	Marcellus
23	2-May-16	12,334	12,500	60	Marcellus
24	3-May-16	12,136	12,303	60	Marcellus
25	3-May-16	11,938	12,105	60	Marcellus
26	3-May-16	11,740	11,907	60	Marcellus
27	3-May-16	11,542	11,709	60	Marcellus
28	4-May-16	11,344	11,511	60	Marcellus
29	4-May-16	11,146	11,313	60	Marcellus
30	4-May-16	10,948	11,115	60	Marcellus
31	4-May-16	10,751	10,917	60	Marcellus
32	5-May-16	10,553	10,720	60	Marcellus
33	5-May-16	10,355	10,522	60	Marcellus
34	5-May-16	10,157	10,324	60	Marcellus
35	5-May-16	9,959	10,126	60	Marcellus
36	5-May-16	9,761	9,928	60	Marcellus
37	6-May-16	9,563	9,730	60	Marcellus
38	6-May-16	9,365	9,532	60	Marcellus
39	7-May-16	9,167	9,334	60	Marcellus
40	7-May-16	8,970	9,136	60	Marcellus
41	7-May-16	8,772	8,939	60	Marcellus
42	7-May-16	8,574	8,741	60	Marcellus
43	7-May-16	8,376	8,543	60	Marcellus
44	8-May-16	8,178	8,345	60	Marcellus
45	8-May-16	7,980	8,147	60	Marcellus
46	8-May-16	7,782	7,949	60	Marcellus
47	8-May-16	7,584	7,751	60	Marcellus
48	8-May-16	7,387	7,553	60	Marcellus
49	9-May-16	7,189	7,356	60	Marcellus

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EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	27-Apr-16	71.0	7,827	0	5,025	309,200	8,089	N/A
2	27-Apr-16	73.0	7,947	6,208	4,792	272,500	8,485	N/A
3	27-Apr-16	72.8	7,727	5,636	4,835	308,950	9,321	N/A
4	27-Apr-16	72.0	7,703	5,879	5,436	308,150	7,945	N/A
5	28-Apr-16	74.0	7,773	5,654	4,753	308,050	7,952	N/A
6	28-Apr-16	72.4	7,786	5,640	5,128	308,900	7,930	N/A
7	28-Apr-16	71.6	7,602	5,468	5,558	308,400	7,902	N/A
8	28-Apr-16	74.0	7,667	5,751	5,897	307,550	7,819	N/A
9	29-Apr-16	72.3	7,199	5,865	5,547	308,500	9,181	N/A
10	29-Apr-16	74.0	7,313	6,458	5,347	307,400	7,794	N/A
11	30-Apr-16	74.0	7,393	5,693	5,815	308,350	7,782	N/A
12	30-Apr-16	71.8	7,328	5,701	5,060	306,950	7,799	N/A
13	30-Apr-16	71.2	7,360	5,704	4,760	311,100	7,803	N/A
14	30-Apr-16	74.0	7,499	5,797	6,337	308,100	7,796	N/A
15	1-May-16	74.0	7,417	5,693	5,940	308,050	7,733	N/A
16	1-May-16	71.9	7,471	6,005	5,211	308,100	7,724	N/A
17	1-May-16	72.2	7,406	5,357	5,189	308,900	7,708	N/A
18	1-May-16	73.0	7,246	5,490	5,357	310,000	7,717	N/A
19	1-May-16	74.0	7,245	5,869	5,407	307,750	7,681	N/A
20	2-May-16	75.0	7,233	5,697	5,522	308,850	7,689	N/A
21	2-May-16	73.1	7,131	5,558	5,482	309,600	7,726	N/A
22	2-May-16	73.2	7,132	5,661	4,799	309,800	7,686	N/A
23	2-May-16	75.0	7,143	5,393	5,847	307,300	7,629	N/A
24	3-May-16	74.0	7,072	5,504	6,033	306,650	7,644	N/A
25	3-May-16	75.7	7,193	5,504	5,661	307,500	7,625	N/A
26	3-May-16	71.7	7,337	5,618	5,833	302,400	9,151	N/A
27	3-May-16	75.0	7,110	5,479	5,000	307,400	8,556	N/A
28	4-May-16	74.0	7,075	5,507	5,715	307,250	7,571	N/A
29	4-May-16	73.2	7,064	5,593	5,615	307,000	7,574	N/A
30	4-May-16	73.3	7,159	5,633	5,937	308,200	7,562	N/A
31	4-May-16	73.0	6,692	5,286	5,726	286,450	9,034	N/A
32	5-May-16	74.0	6,850	5,844	5,372	308,050	7,520	N/A
33	5-May-16	75.0	6,944	5,862	5,801	307,650	7,507	N/A
34	5-May-16	71.1	6,735	5,561	5,475	307,900	7,492	N/A
35	5-May-16	71.2	6,735	6,344	5,236	309,200	7,483	N/A
36	5-May-16	74.0	6,778	5,794	5,414	307,750	7,469	N/A
37	6-May-16	75.0	6,830	5,761	5,554	306,850	7,456	N/A
38	6-May-16	75.0	6,755	5,757	6,061	307,150	7,445	N/A
39	7-May-16	75.0	6,846	5,904	4,917	307,800	7,430	N/A
40	7-May-16	76.0	6,823	5,665	5,651	307,200	7,418	N/A
41	7-May-16	73.3	6,765	6,083	5,958	305,300	7,414	N/A
42	7-May-16	74.1	6,790	6,462	5,000	307,400	8,426	N/A
43	7-May-16	75.0	6,882	6,180	5,972	308,000	8,232	N/A
44	8-May-16	74.0	6,695	5,493	5,611	308,900	7,402	N/A
45	8-May-16	76.0	6,655	5,668	5,189	308,150	7,355	N/A
46	8-May-16	73.6	6,630	5,869	5,161	307,400	7,342	N/A
47	8-May-16	73.9	6,657	5,540	6,090	306,995	7,493	N/A
48	8-May-16	73.6	6,600	5,665	5,908	302,200	8,480	N/A
49	9-May-16	75.0	6,442	6,062	4,907	307,500	7,324	N/A
AVG=		73.6	7,136	5,629	5,466	15,024,695	7,843	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	225'	N/A	225'	N/A
Shale	0	390	0	390
Sandstone/Siltstone/Shale	est. 390	750	est. 390	750
Sandstone	est. 750	840	est. 750	840
Coal	est. 840	870	est. 840	870
Sandstone	est. 870	1080	est. 870	1080
Siltstone	est. 1080	1140	est. 1080	1140
Sandstone	est. 1140	1470	est. 1140	1470
Shale	est. 1470	1650	est. 1470	1650
Sandstone	est. 1650	1800	est. 1650	1800
Shale	est. 1800	1890	est. 1800	1890
Sandstone	est. 1890	1950	est. 1890	1950
Shale	est. 1950	2010	est. 1950	2010
Sandstone	est. 2010	2123	est. 2010	2125
Big Lime	2123	2238	2125	2240
Big Injun	2238	2662	2240	2664
Gantz Sand	2662	2810	2664	2812
Fifty Foot Sandstone	2810	2881	2812	2883
Gordon	2881	3224	2883	3226
Fifth Sandstone	3224	3240	3226	3242
Bayard	3240	3603	3242	3605
Warren	3603	3994	3605	3996
Speechley	3994	4236	3996	4238
Baltown	4236	4713	4238	4715
Bradford	4713	5187	4715	5189
Benson	5187	5441	5189	5443
Alexander	5441	5641	5443	5643
Elk	5641	6165	5643	6167
Rhinestreet	6165	6532	6167	6554
Sycamore	6532	6708	6554	6768
Middlesex	6708	6843	6768	6963
Burkett	6843	6871	6963	7014
Tully	6871	6925	7014	7150
Marcellus	6925	NA	7150	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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The Department of
Environmental Protection
10/28/2016

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date	4/27/2016
Job End Date	5/9/2016
State	West Virginia
County	Doddridge
API Number	47-017-06417-00-00
Operator Name	Antero Resources Corporation
Well Name and Number	Knight 2H
Latitude	39.36770600
Longitude	-80.74360800
Datum	NAD83
Federal Well	NO
Indian Well	NO
True Vertical Depth	6,985
Total Base Water Volume (gal)	15,635,804
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	Base Fluid					
			Water	7732-18-5	100.00000	89.31427	
Sand	J.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	10.29059	
HCL Acid (12.6%-18.0%)	J.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.50000	0.14480	
			Hydrogen Chloride	7647-01-0	18.00000	0.03459	
LGC-15	J.S. Well Services	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.05361	
			Petroleum Distillates	64742-47-8	60.00000	0.06077	
			Suspending agent (solid)	14808-60-7	3.00000	0.00820	
			Surfactant	68439-51-0	3.00000	0.00322	
WFRA-405	J.S. Well Services	Friction Reducer					
			Water	7732-18-5	60.00000	0.03695	
			2-Propanoic acid, polymer with 20003-06-9 propanamide	20003-06-9	30.00000	0.01847	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01487	

SI-1100	J.S. Well Services	Scale Inhibitor	Ethoxylated alcohol blend	58002-97-1	4.00000	0.00246
			Water	7732-18-5	80.00000	0.00501
			Ethylene Glycol	107-21-1	25.00000	0.00177
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00074
			Potassium salt of diethylene triamine penta phosphonic acid	15827-60-8	7.50000	0.00063
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00041
			Hexamethylene triamine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00041
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00016
SI-1100s	J.S. Well Services	Scale Inhibitor	Water	7732-18-5	80.00000	0.00591
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00087
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	7.50000	0.00075
			Hexamethylene triamine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00048
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00048
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00019
X-BAC 1020	J.S. Well Services	Anti-Bacterial Agent	2,2-dibromo-3-nitropropionamide	10222-01-2	20.00000	0.00441
			Deionized Water	7732-18-5	28.00000	0.00252
AP One	J.S. Well Services	Gel Breakers	Ammonium Persulfate	7727-54-0	100.00000	0.00209
AI-302	J.S. Well Services	Acid Corrosion Inhibitors	Water	7732-18-5	95.00000	0.00031
			2-Propyn-1-ol compound with methylcyclohexane	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 Not-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°22'30"

10,023'

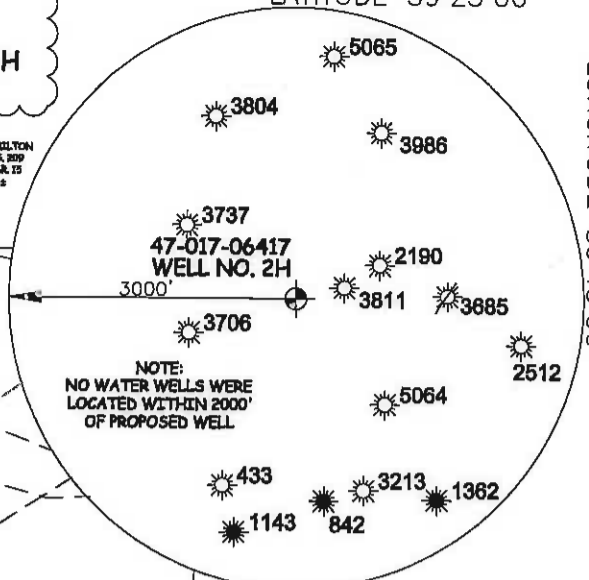
2,356' TO BOTTOM HOLE

LATITUDE 39°25'00"

LONGITUDE 80°45'00"

LONGITUDE 80°42'30"

Antero Resources Corporation
Well No. Knight Unit 2H
A.P.I. 47-017-06417



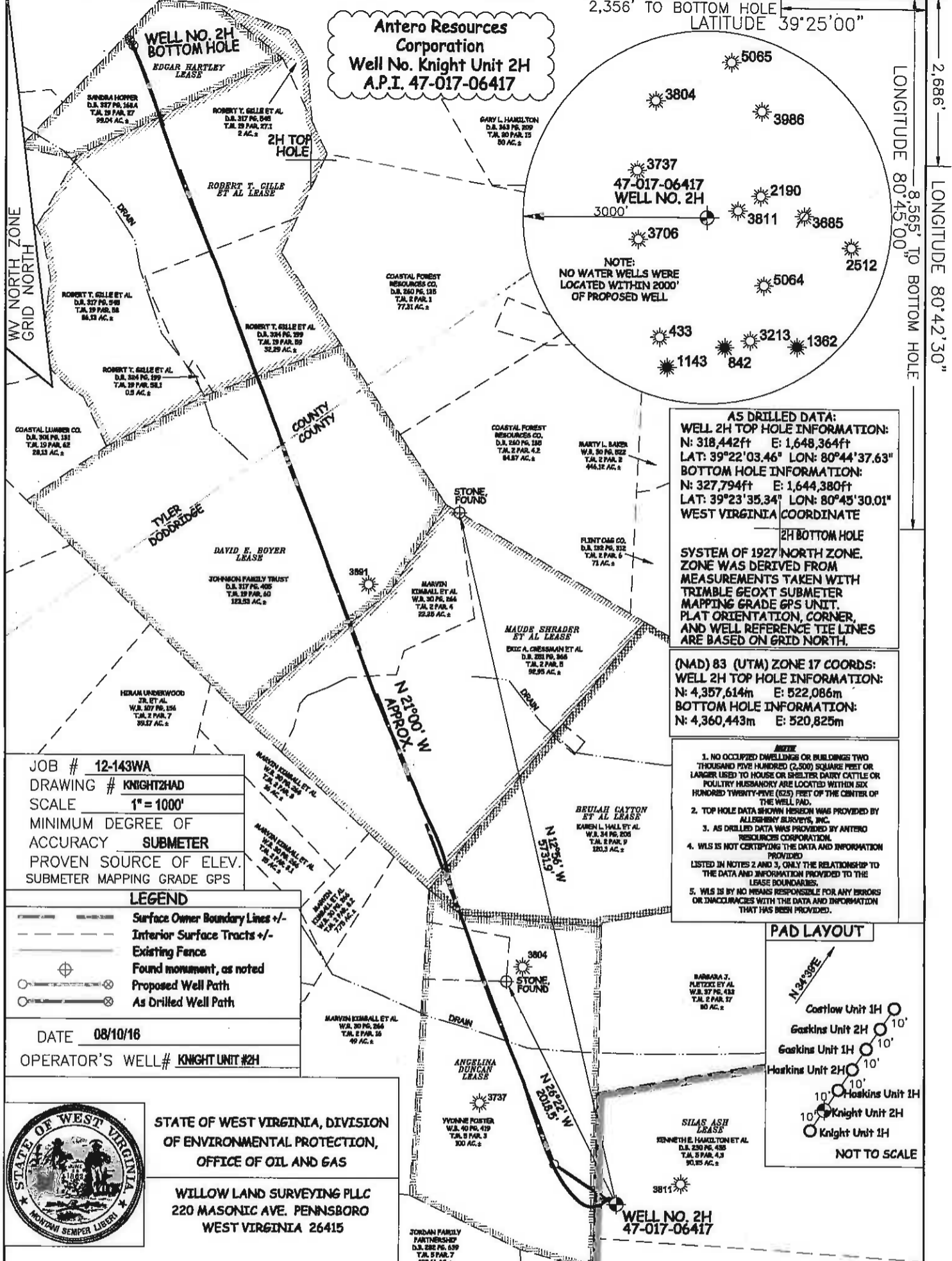
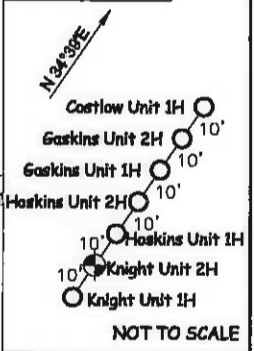
AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
 N: 318,442ft E: 1,648,364ft
 LAT: 39°22'03.46" LON: 80°44'37.63"
BOTTOM HOLE INFORMATION:
 N: 327,794ft E: 1,644,380ft
 LAT: 39°23'35.34" LON: 80°45'30.01"
WEST VIRGINIA COORDINATE

2H BOTTOM HOLE
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: 4,357,614m E: 522,086m
BOTTOM HOLE INFORMATION:
 N: 4,360,443m E: 520,825m

- NOTE**
1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHEPHERD 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.

PAD LAYOUT



JOB # 12-143WA
 DRAWING # KNIGHT2HAD
 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

DATE 08/10/16
 OPERATOR'S WELL # KNIGHT UNIT #2H



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

STATE OF WEST VIRGINIA DEPARTMENT OF ENERGY DIVISION OF OIL AND GAS	API WELL # 47 - 017 - 06417
WELL TYPE: OIL <input type="checkbox"/> GAS <input checked="" type="checkbox"/> LIQUID INJECTION <input type="checkbox"/> WASTE DISPOSAL <input type="checkbox"/> (IF "GAS") PRODUCTION <input checked="" type="checkbox"/> STORAGE <input type="checkbox"/> DEEP <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/>	STATE COUNTY PERMIT
LOCATION: ELEVATION ORIG 1,171' - AS BUILT 1,157' WATERSHED McELROY CREEK	
QUADRANGLE SMITHBURG 7.5 (TH SHIRLEY 7.5 (NH)) DISTRICT GRANT COUNTY DODDRIDGE	
SURFACE OWNER KENNETH E. HAMILTON ET AL ACREAGE 90.35 ACRES +/-	
OIL & GAS ROYALTY OWNER SILAS ASH; ANGELINA DUNCAN; BEULAH CAYTON ET AL; MAUDE SHRADER ET AL; DAVID E. BOYER; ROBERT T. GILLE ET AL; EDGAR HARTLEY	
LEASE ACREAGE 120 ACRES±; 100 ACRES±; 123.5 ACRES±; 114.5 ACRES±; 102.48 ACRES±; 120.92 ACRES±; 30 ACRES±	
PROPOSED WORK: DRILL <input type="checkbox"/> CONVERT <input type="checkbox"/> DRILL DEEPER <input type="checkbox"/> REDRILL <input type="checkbox"/> FRACTURE OR STIMULATE <input type="checkbox"/> PLUG OFF OLD FORMATION <input type="checkbox"/> PERFORATE NEW FORMATION <input type="checkbox"/> OTHER PHYSICAL CHANGE IN WELL (SPECIFY) AS DRILLED <input checked="" type="checkbox"/> PLUG & ABANDON <input type="checkbox"/> CLEAN OUT & REPLUG <input type="checkbox"/>	
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,958' TVD 16,957' MD	
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER	
ADDRESS 1815 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD	
DENVER, CO 80202 CHARLESTON, WV 25313	

10/28/2016

COUNTY NAME PERMIT

LATITUDE 39°22'30"

10,023'

2,356' TO BOTTOM HOLE
LATITUDE 39°25'00"

LONGITUDE 80°45'00"
2,686'
LONGITUDE 80°42'30"

Antero Resources Corporation
Well No. Knight Unit 2H
A.P.I. 47-017-06417

WELL NO. 2H
BOTTOM HOLE

EDGAR HARTLEY
LEASE

2H TOP HOLE

NOTE:
NO WATER WELLS WERE
LOCATED WITHIN 2000'
OF PROPOSED WELL

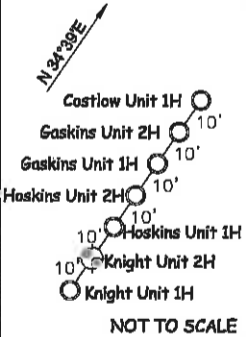
AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
N: 318,442ft E: 1,648,364ft
LAT: 39°22'03.46" LON: 80°44'37.63"
BOTTOM HOLE INFORMATION:
N: 327,794ft E: 1,644,380ft
LAT: 39°23'35.34" LON: 80°45'30.01"
WEST VIRGINIA COORDINATE

2H BOTTOM HOLE
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: 4,357,614m E: 522,086m
BOTTOM HOLE INFORMATION:
N: 4,360,443m E: 520,825m

- NOTES**
- 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.
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STATE OF WEST VIRGINIA, DIVISION
OF ENVIRONMENTAL PROTECTION,
OFFICE OF OIL AND GAS

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

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

API WELL # 47 - 017 - 06417

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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 6,959' TVD 16,957' MD

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