

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

API 47-085-10197 County Ritchie District Clay
Quad Pullman 7.5' Pad Name Mackay Pad Field/Pool Name ---
Farm name Jack D. Mackay et al Well Number McNabb 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 4343238m Easting 508893m
Landing Point of Curve Northing 4342996.86m Easting 509263.01m
Bottom Hole Northing 4339853m Easting 510623m

Elevation (ft) 1100' 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 2/26/2015 Date drilling commenced 6/4/2015 Date drilling ceased 9/25/2015
Date completion activities began 1/31/2016 Date completion activities ceased 9/10/2016
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

RECEIVED
Office of Oil and Gas
MAR 20 2017
WV Department of
Environmental Protection

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

Freshwater depth(s) ft 434' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1966' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 301' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

APPROVED
NAME: Michael Doff 5/18/2017
DATE: 5/10/2017 5/18/17

API 47-085 - 10197 Farm name Jack D. Mackay et al Well number McNabb 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	94#, H-40	N/A	Y
Surface	17- 1/2"	13- 3/8"	559'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2527'	New	36#, K-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	17432' *	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6765'		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details *Please note this well was drilled to 19140' however casing was only ran to 17432'

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	95 sx	15.6	1.18	38	0	8 Hrs.
Surface	Class A	664 sx	15.6	1.18	388	0	8 Hrs.
Coal							
Intermediate 1	Class A	975 sx	15.6	1.18	791	0	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	575 sx (Lead), 1930 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.81 (Tail)	3529	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 19140' MD, 6586' TVD (BHL); 6607' TVD (Deepest point drilled) Loggers TD (ft) 19090' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 4306'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (McNabb Unit 1H API# 47-085-10196). Please reference the wireline logs submitted with Form WR-35 for the McNabb 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 _____

API 47- 085 - 10197

Farm name Jack D. Mackay et al

Well number McNabb Unit 2H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)

*** PLEASE 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)

*** PLEASE SEE ATTACHED EXHIBIT 2**

Please insert additional pages as applicable.

API 47- 085 - 10197 Farm name Jack D. Mackay et al Well number McNabb Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6531' (Top)</u> TVD	<u>6829' (Top)</u> 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 13240 mcfpd Oil 184 bpd NGL --- bpd Water 568 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	
	<u>0</u>		<u>0</u>		
* PLEASE SEE ATTACHED EXHIBIT 3					

Please insert additional pages as applicable.


Drilling Contractor Precision Drilling Company, LP
Address 2640 Reach Road City Williamsport State PA Zip 17701

Logging Company Rush Wellsite Services
Address 600 Alpha Drive City Canonsburg State PA Zip 15317

Cementing Company C&J Energy Services
Address 1650 Hackers Creek City Jane Lew State WV Zip 26378

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 Shelby Johnson Telephone (303) 357-7223
Signature  Title Permitting Agent Date 3/24/2017

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

API 47-085-10197 Farm Name Jack D. Mackay et al Well Number McNabb Unit 2H					
EXHIBIT 1					
Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	1/31/2016	17168	17335	60	Marcellus
2	3/6/2016	16969	17137	60	Marcellus
3	3/7/2016	16771	16938	60	Marcellus
4	3/7/2016	16572	16740	60	Marcellus
5	3/7/2016	16374	16541	60	Marcellus
6	3/8/2016	16175	16343	60	Marcellus
7	3/8/2016	15977	16144	60	Marcellus
8	3/8/2016	15779	15946	60	Marcellus
9	3/8/2016	15580	15747	60	Marcellus
10	3/9/2016	15382	15549	60	Marcellus
11	3/9/2016	15183	15351	60	Marcellus
12	3/9/2016	14985	15152	60	Marcellus
13	3/9/2016	14786	14954	60	Marcellus
14	3/10/2016	14588	14755	60	Marcellus
15	3/10/2016	14390	14557	60	Marcellus
16	3/10/2016	14191	14358	60	Marcellus
17	3/10/2016	13993	14160	60	Marcellus
18	3/11/2016	13794	13962	60	Marcellus
19	3/11/2016	13596	13763	60	Marcellus
20	3/13/2016	13397	13565	60	Marcellus
21	3/13/2016	13199	13366	60	Marcellus
22	3/13/2016	13000	13168	60	Marcellus
23	3/14/2016	12802	12969	60	Marcellus
24	3/14/2016	12604	12771	60	Marcellus
25	3/14/2016	12405	12572	60	Marcellus
26	3/14/2016	12207	12374	60	Marcellus
27	3/15/2016	12008	12176	60	Marcellus
28	3/15/2016	11810	11977	60	Marcellus
29	3/15/2016	11611	11779	60	Marcellus
30	3/16/2016	11413	11580	60	Marcellus
31	3/17/2016	11214	11382	60	Marcellus
32	3/17/2016	11016	11183	60	Marcellus
33	3/17/2016	10818	10985	60	Marcellus
34	3/17/2016	10619	10787	60	Marcellus
35	3/18/2016	10421	10588	60	Marcellus
36	3/18/2016	10222	10390	60	Marcellus
37	3/18/2016	10024	10191	60	Marcellus
38	3/18/2016	9825	9993	60	Marcellus
39	3/18/2016	9627	9794	60	Marcellus
40	3/19/2016	9429	9596	60	Marcellus
41	3/19/2016	9230	9397	60	Marcellus
42	3/19/2016	9032	9199	60	Marcellus
43	3/19/2016	8833	9001	60	Marcellus
44	3/19/2016	8635	8802	60	Marcellus
45	3/20/2016	8436	8604	60	Marcellus
46	3/20/2016	8238	8405	60	Marcellus
47	3/20/2016	8039	8207	60	Marcellus
48	3/20/2016	7841	8008	60	Marcellus
49	3/21/2016	7643	7810	60	Marcellus
50	3/21/2016	7444	7612	60	Marcellus
51	3/21/2016	7246	7413	60	Marcellus
52	3/21/2016	7047	7215	60	Marcellus
53	3/21/2016	6849	7016	60	Marcellus

05/19/2017

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 (bbbls)	Amount of Nitrogen/ other (units)
1	3/5/2016	68	7314	0	3476	311060	8303	N/A
2	3/6/2016	66.8	7500	5983	5000	281100	9156	N/A
3	3/7/2016	64.5	7122	5618	4324	255600	7159	N/A
4	3/7/2016	65	7393	5773	4570	296820	9435	N/A
5	3/7/2016	66.6	7242	5656	3688	309565	8015	N/A
6	3/8/2016	67.9	7308	5788	5179	309810	7920	N/A
7	3/8/2016	67	7424	5824	4111	310300	7903	N/A
8	3/8/2016	68	7369	5721	4054	311090	7977	N/A
9	3/8/2016	67.9	7308	6001	4185	312220	7870	N/A
10	3/9/2016	66.9	7280	5998	4910	311220	9117	N/A
11	3/9/2016	68	7253	5623	4761	311480	7980	N/A
12	3/9/2016	69	7167	5542	4616	310020	7832	N/A
13	3/9/2016	69.4	6958	5627	4534	312470	7839	N/A
14	3/10/2016	69.3	7089	5588	4766	311720	7825	N/A
15	3/10/2016	67	7263	5664	4031	309280	8551	N/A
16	3/10/2016	69	7142	5484	4574	311120	7883	N/A
17	3/10/2016	71.3	6921	5251	4955	310640	9056	N/A
18	3/11/2016	71.1	7063	5558	5212	310540	7775	N/A
19	3/11/2016	66.6	6899	5513	4832	121920	4321	N/A
20	3/13/2016	70	6903	5293	4202	310760	7799	N/A
21	3/13/2016	71.3	7048	5692	4320	311600	7767	N/A
22	3/13/2016	70.8	7182	5733	4838	314760	7753	N/A
23	3/14/2016	68	6956	5294	5434	309760	7723	N/A
24	3/14/2016	68	7148	5800	4885	310330	7763	N/A
25	3/14/2016	71	7205	5884	4173	297610	7541	N/A
26	3/14/2016	70	7253	5645	5308	306500	7758	N/A
27	3/15/2016	70	7078	5472	4950	311030	7718	N/A
28	3/15/2016	70	6947	5765	4535	309920	7652	N/A
29	3/15/2016	70	6915	5390	5359	296560	8859	N/A
30	3/16/2016	71	6720	5347	5195	306110	7601	N/A
31	3/17/2016	69	6586	5850	4394	309110	7724	N/A
32	3/17/2016	69	6516	5841	4425	310510	7600	N/A
33	3/17/2016	69	6623	5485	4660	305080	7545	N/A
34	3/17/2016	72	6820	5502	5290	305060	7620	N/A
35	3/18/2016	73	7060	5552	3999	304940	7510	N/A
36	3/18/2016	70	6728	5326	4273	310460	7597	N/A
37	3/18/2016	68	6370	5130	3717	310590	7551	N/A
38	3/18/2016	76	6123	5207	4979	277370	8732	N/A
39	3/18/2016	72	6959	5485	4994	306210	7471	N/A
40	3/19/2016	72	6343	190	4994	309820	7519	N/A
41	3/19/2016	68	6206	5008	5031	309800	7577	N/A
42	3/19/2016	64	6304	5442	4986	311500	7459	N/A
43	3/19/2016	68	6292	5328	4702	310040	7422	N/A
44	3/19/2016	68	6226	5136	5290	308130	7402	N/A
45	3/20/2016	68	6436	5730	5200	310780	7422	N/A
46	3/20/2016	69	6241	5656	5083	310040	7438	N/A
47	3/20/2016	67.8	6095	5458	3994	310990	7375	N/A
48	3/20/2016	69.7	6059	5593	3737	309480	7351	N/A
49	3/21/2016	69.5	6389	5816	4569	299670	8230	N/A
50	3/21/2016	68.4	6255	6827	3923	311120	7410	N/A
51	3/21/2016	68.6	6256	6237	4781	308370	7344	N/A
52	3/21/2016	69	6240	5566	5266	306140	7315	N/A
53	3/21/2016	68	5997	6285	3650	310100	7420	N/A
	AVG=	69.0	6,821	5,418	4,621	16,068,225	411,885	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	434'	N/A	434'	N/A
Shale	0	201	0	201
Sandstone	est. 201	281	est. 201	281
Siltstone	est. 281	301	est. 281	301
Coal "Washington Coal"	est. 301	361	est. 301	361
Sandstone	est. 361	581	est. 361	581
Shale	est. 581	1,241	est. 581	1,241
Sandstone	est. 1241	1,321	est. 1241	1,321
Siltstone/ sandstone	est. 1321	1,401	est. 1321	1,401
Sandstone	est. 1401	1,721	est. 1401	1,721
Shale	est. 1721	1,821	est. 1721	1,821
Siltstone	est. 1821	1,981	est. 1821	1,981
Limestone	est. 1981	2,095	est. 1981	2,097
Big Lime	2,095	2,764	2,097	2,766
Fifty Foot Sandstone	2,764	2,850	2,766	2,853
Gordon	2,850	2,985	2,853	2,987
Fifth Sandstone	2,985	3,106	2,987	3,108
Bayard	3,106	3,933	3,108	3,935
Speechley	3,933	4,211	3,935	4,214
Baltown	4,211	4,645	4,214	4,651
Bradford	4,645	5,035	4,651	5,058
Benson	5,035	5,284	5,058	5,326
Alexander	5,284	6,200	5,326	6,327
Sycamore	6,200	6,360	6,327	6,518
Middlesex	6,360	6,469	6,518	6,686
Burkett	6,469	6,505	6,686	6,759
Tully	6,505	6,531	6,759	6,829
Marcellus	6,531	N/A	6,829	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.

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	3/5/2016
Job End Date:	3/21/2016
State:	West Virginia
County:	Ritchie
API Number:	47-085-10197-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	McNabb 2H
Latitude:	39.23840300
Longitude:	-80.89695300
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,607
Total Base Water Volume (gal):	18,068,098
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	89.99029	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	9.59403	
HCL Acid (12.6%-18.0%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.50000	0.13279	
			Hydrogen Chloride	7647-01-0	18.00000	0.03172	
LGC-15	U.S. Well Services	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.07104	
			Petroleum Distillates	64742-47-8	60.00000	0.06728	
			Suspending agent (solid)	14808-60-7	3.00000	0.01087	
			Surfactant	68439-51-0	3.00000	0.00426	
WFRA-405	U.S. Well Services	Friction Reducer	Water	7732-18-5	60.00000	0.03603	
			2-Propenoic acid, polymer with 2 propenamide	9003-06-9	30.00000	0.01801	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01450	

			Ethoxylated alcohol blend	68002-97-1	4.00000	0.00240
SI-1100	U.S. Well Services	Scale Inhibitor				
			Water	7732-18-5	80.00000	0.01003
			Ethylene Glycol	107-21-1	25.00000	0.00354
			Copolymer of Maleic and Acrylic acid	52255-49-9	10.00000	0.00148
			Potassium salt of diethylene triamine penta (methylene phosphonic acid)	15827-60-8	7.50000	0.00127
			Phosphino carboxylic acid polymer	71050-62-9	5.00000	0.00082
			Hexamethylene triamine penta (methylene phosphonic acid)	34690-00-1	5.00000	0.00082
			Hexamethylene diamine penta (methylene phosphonic acid)	23605-74-5	2.00000	0.00033
K-BAC 1020	U.S. Well Services	Anti-Bacterial Agent				
			2,2-dibromo-3-nitriopropionamide	10222-01-2	20.00000	0.00418
			Deionized Water	7732-18-5	28.00000	0.00239
AP One	U.S. Well Services	Gel Breakers				
			Ammonium Persulfate	7727-54-0	100.00000	0.00159
AI-302	U.S. Well Services	Acid Corrosion Inhibitors				
			Water	7732-18-5	95.00000	0.00029
			2-Propyn-1-olcompound with methyloxirane	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°15'00"

6,267'

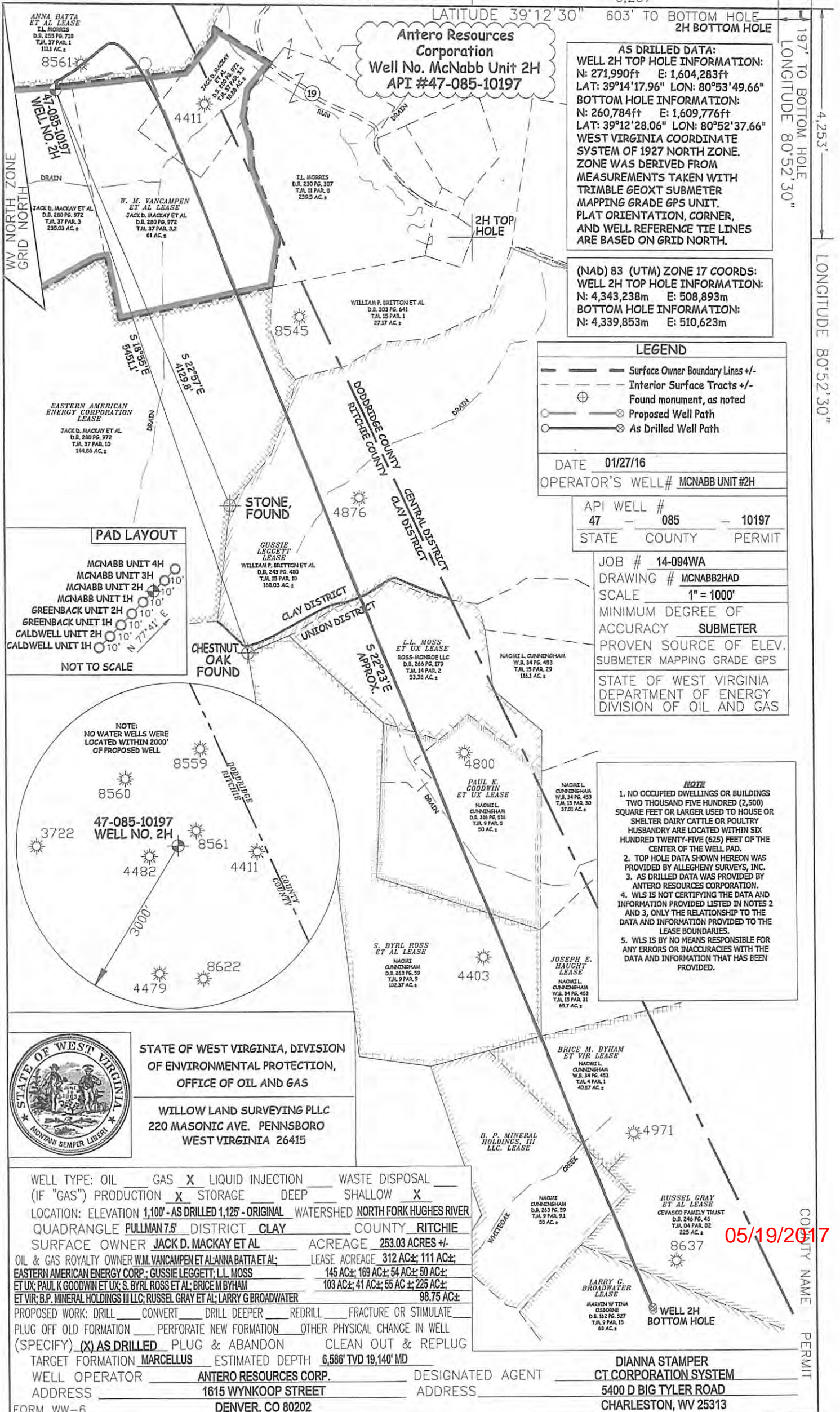
LATITUDE 39°12'30"

603' TO BOTTOM HOLE
2H BOTTOM HOLE

197' TO BOTTOM HOLE
LONGITUDE 80°52'30"

4,253'

LONGITUDE 80°52'30"



Antero Resources Corporation
Well No. McNabb Unit 2H
API #47-085-10197

AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
 N: 271,990ft E: 1,604,283ft
 LAT: 39°14'17.96" LON: 80°53'49.66"
BOTTOM HOLE INFORMATION:
 N: 260,784ft E: 1,609,776ft
 LAT: 39°12'28.06" LON: 80°52'37.66"
 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: 4,343,238m E: 508,893m
BOTTOM HOLE INFORMATION:
 N: 4,339,853m E: 510,623m

LEGEND

- Surface Owner Boundary Lines +/-
- - - Interior Surface Tracts +/-
- ⊕ Found monument, as noted
- Proposed Well Path
- ⊗ As Drilled Well Path

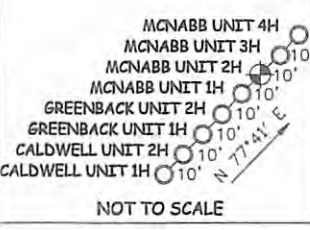
DATE 01/27/16
 OPERATOR'S WELL # MCNABB UNIT #2H

API WELL #	47	085	10197
STATE	COUNTY	PERMIT	

JOB # 14-094WA
 DRAWING # MCNABB2HAD
 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

PAD LAYOUT



NOT TO SCALE

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

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.



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

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

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION STORAGE DEEP SHALLOW
 LOCATION: ELEVATION 1,100' - AS DRILLED 1,125' - ORIGINAL _____ WATERSHED NORTH FORK HUGHES RIVER
 QUADRANGLE PULLMAN 7.5' DISTRICT CLAY COUNTY RITCHIE
 SURFACE OWNER JACK D. MACKAY ET AL ACREAGE 253.03 ACRES +/-
 OIL & GAS ROYALTY OWNER W.M. VANCAMPEN ET AL-ANNA BATTA ET AL; LEASE ACREAGE 312 AC±; 111 AC±;
 EASTERN AMERICAN ENERGY CORP.; GUSSIE LEGGETT; L.L. MOSS 145 AC±; 169 AC±; 54 AC±; 50 AC±;
 ET UX; PAUL K. GOODWIN ET UX; S. BYRL ROSS ET AL; BRICE M BYHAM 103 AC±; 41 AC±; 55 AC±; 225 AC±;
 ET VIR; B.P. MINERAL HOLDINGS III LLC; RUSSEL GRAY ET AL; LARRY G BROADWATER 98.75 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 6,586' TVD 19,140' MD
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER
 ADDRESS 1615 WYNKOOP STREET ADDRESS 5400 D BIG TYLER ROAD
 FORM WW-6 DENVER, CO 80202 CHARLESTON, WV 25313

05/19/2017

COUNTY NAME PERMIT

LATITUDE 39°15'00"

6,267'

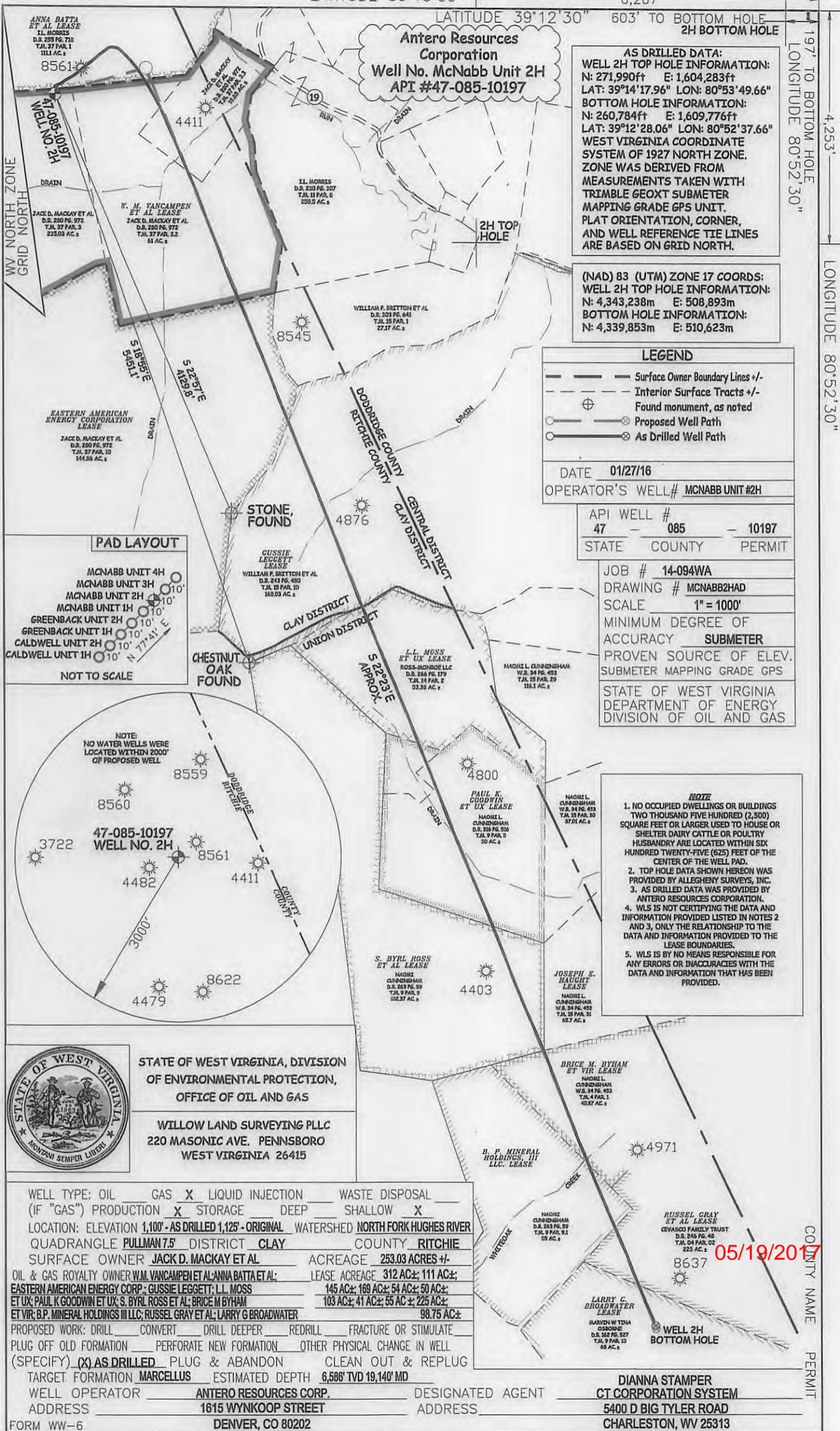
LATITUDE 39°12'30"

603' TO BOTTOM HOLE
2H BOTTOM HOLE

197' TO BOTTOM HOLE
LONGITUDE 80°52'30"

4,253'

LONGITUDE 80°52'30"



Antero Resources Corporation
Well No. McNabb Unit 2H
API #47-085-10197

AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
 N: 271,990ft E: 1,604,283ft
 LAT: 39°14'17.96" LON: 80°53'49.66"
BOTTOM HOLE INFORMATION:
 N: 260,784ft E: 1,609,776ft
 LAT: 39°12'28.06" LON: 80°52'37.66"
 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: 4,343,238m E: 508,893m
BOTTOM HOLE INFORMATION:
 N: 4,339,853m E: 510,623m

LEGEND

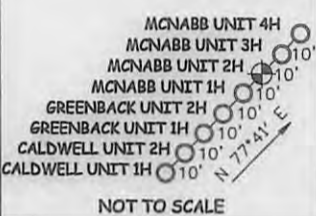
- Surface Owner Boundary Lines +/-
- - - Interior Surface Tracts +/-
- ⊕ Found monument, as noted
- Proposed Well Path
- ⊗ As Drilled Well Path

DATE 01/27/16
 OPERATOR'S WELL# MCNABB UNIT #2H

API WELL #	47	085	10197
STATE	CLAY	CENTRAL	PERMIT

JOB # 14-094WA
 DRAWING # MCNABB2HAD
 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

PAD LAYOUT



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



- 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.



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