



Antero Resources
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July 26, 2019

West Virginia Department of Environmental Protection
Office of Oil and Gas
601 57th Street
Charleston, WV 25304

To Whom It May Concern:

Please find enclosed the Well Operator's Report of Well Work, Form WR-35 (including As-Drilled Survey Plat, Directional Survey and FracFocus report), Discharge Monitoring Report Form WR-34 and corresponding logs for the following wells:

- Bill Unit 1H (API # 47-085-10240)—Bison Pad
- Bill Unit 2H (API # 47-085-10241)—Bison Pad
- Bill Unit 3H (API # 47-085-10257)—Bison Pad
- Buffalo Unit 1H (API # 47-085-10249)—Bison Pad
- Buffalo Unit 2H (API # 47-085-10243)—Bison Pad

If you have any questions please feel free to contact me at (303) 357-7223.

Sincerely,

A handwritten signature in black ink, appearing to read "Megan Griffith", with a horizontal line extending to the right.

Megan Griffith
Permitting Agent
Antero Resources Corporation

Enclosures

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

API 47- _____ - _____ County _____ District _____
Quad _____ Pad Name _____ Field/Pool Name _____
Farm name _____ Well Number _____
Operator (as registered with the OOG) _____
Address _____ City _____ State _____ Zip _____

As Drilled location NAD 83/UTM Attach an as-drilled plat, profile view, and deviation survey
Top hole Northing _____ Easting _____
Landing Point of Curve Northing _____ Easting _____
Bottom Hole Northing _____ Easting _____

Elevation (ft) _____ 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)

Date permit issued _____ Date drilling commenced _____ Date drilling ceased _____
Date completion activities began _____ Date completion activities ceased _____
Verbal plugging (Y/N) _____ Date permission granted _____ Granted by _____

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

Freshwater depth(s) ft _____ Open mine(s) (Y/N) depths _____
Salt water depth(s) ft _____ Void(s) encountered (Y/N) depths _____
Coal depth(s) ft _____ Cavern(s) encountered (Y/N) depths _____
Is coal being mined in area (Y/N) _____

Reviewed by:

API 47- _____ - _____ Farm name _____ Well number _____

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							
Surface							
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production							
Tubing							
Packer type and depth set							

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							
Surface							
Coal							
Intermediate 1							
Intermediate 2							
Intermediate 3							
Production							
Tubing							

Drillers TD (ft) _____ Loggers TD (ft) _____
 Deepest formation penetrated _____ Plug back to (ft) _____
 Plug back procedure _____

Kick off depth (ft) _____

** This is a subsequent Well. Antero only runs wireline logs on one well on a multi-well pad (Bill Unit 3H API#47-085-10257). 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 _____

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- _____ - _____ Farm name _____ Well number _____

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>
_____	_____ TVD _____ MD
_____	_____
_____	_____
_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump
 SHUT-IN PRESSURE Surface _____ psi Bottom Hole _____ psi DURATION OF TEST _____ hrs
 OPEN FLOW Gas _____ mcfpd Oil _____ bpd NGL _____ bpd Water _____ 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 _____
 Address _____ City _____ State _____ Zip _____
 Logging Company _____
 Address _____ City _____ State _____ Zip _____
 Cementing Company _____
 Address _____ City _____ State _____ Zip _____
 Stimulating Company _____
 Address _____ City _____ State _____ Zip _____

Please insert additional pages as applicable.

Completed by _____ Telephone _____
 Signature _____ Title _____ Date _____

API 47-085-10241 Farm Name Donald L. Costilow Well Number Bill Unit 2H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	1/19/2019	13186.3	13141.8	60	Marcellus
2	1/20/2019	13103.26	12938.56	60	Marcellus
3	1/21/2019	12903.22	12738.52	60	Marcellus
4	1/22/2019	12703.18	12538.48	60	Marcellus
5	1/22/2019	12503.14	12338.44	60	Marcellus
6	1/22/2019	12303.1	12138.4	60	Marcellus
7	1/23/2019	12103.06	11938.36	60	Marcellus
8	1/23/2019	11903.02	11738.32	60	Marcellus
9	1/24/2019	11702.98	11538.28	60	Marcellus
10	1/24/2019	11502.94	11338.24	60	Marcellus
11	1/25/2019	11302.9	11138.2	60	Marcellus
12	1/25/2019	11102.86	10938.16	60	Marcellus
13	1/26/2019	10902.82	10738.12	60	Marcellus
14	1/26/2019	10702.78	10538.08	60	Marcellus
15	1/27/2019	10502.74	10338.04	60	Marcellus
16	1/27/2019	10302.7	10138	60	Marcellus
17	1/28/2019	10102.66	9937.96	60	Marcellus
18	1/28/2019	9902.62	9737.92	60	Marcellus
19	1/28/2019	9702.58	9537.88	60	Marcellus
20	1/28/2019	9502.54	9337.84	60	Marcellus
21	1/29/2019	9302.5	9137.8	60	Marcellus
22	1/29/2019	9102.46	8937.76	60	Marcellus
23	1/30/2019	8902.42	8737.72	60	Marcellus
24	1/30/2019	8702.38	8537.68	60	Marcellus
25	1/30/2019	8502.34	8337.64	60	Marcellus
26	2/1/2019	8302.3	8137.6	60	Marcellus
27	2/1/2019	8102.26	7937.56	60	Marcellus
28	2/1/2019	7902.22	7737.52	60	Marcellus
29	2/1/2019	7702.18	7537.48	60	Marcellus
30	2/2/2019	7502.14	7337.44	60	Marcellus
31	2/3/2019	7302.1	7137.4	60	Marcellus
32	2/3/2019	7102.06	6937.36	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 (bbls)	Amount of Nitrogen/ other (units)
1	1/19/2019	84.4	7828	9491	2443	178425	5157	N/A
2	1/20/2019	72.2	8047	7315	3093	399250	8388	N/A
3	1/21/2019	77.5	7899	5610	3289	394655	8682	N/A
4	1/22/2019	74.1	7853	4836	2812	394275	8536	N/A
5	1/22/2019	78	7773	6590	2994	395140	8411	N/A
6	1/22/2019	76.1	7776	6448	2857	396550	8165	N/A
7	1/23/2019	79.5	7988	5866	3011	401560	8257	N/A
8	1/23/2019	76.4	7713	5738	2831	398970	8063	N/A
9	1/24/2019	78.4	7938	5653	2750	398150	8110	N/A
10	1/24/2019	73.2	7863	5691	3335	399250	8621	N/A
11	1/25/2019	80.9	8190	5578	3043	396400	7931	N/A
12	1/25/2019	75.6	7960	4909	2849	397900	8542	N/A
13	1/26/2019	78.4	7860	5954	2897	412730	10741	N/A
14	1/26/2019	78.2	8195	5763	2748	398200	8048	N/A
15	1/27/2019	79.7	7630	5310	2834	394670	8024	N/A
16	1/27/2019	81.7	7580	5925	2904	396200	8641	N/A
17	1/28/2019	86	7968	5972	2785	398800	8068	N/A
18	1/28/2019	87.7	7970	5759	2838	405200	8264	N/A
19	1/28/2019	79.8	7920	5925	3042	396890	8237	N/A
20	1/28/2019	91.7	7986	4541	2782	396250	7996	N/A
21	1/29/2019	86	7817	6065	2775	398000	7953	N/A
22	1/29/2019	83	7662	6187	3067	404270	8198	N/A
23	1/30/2019	81.2	7520	5288	2955	398450	8110	N/A
24	1/30/2019	81.7	7479	5744	2818	399100	8112	N/A
25	1/30/2019	76.3	7465	5333	2926	409580	8521	N/A
26	2/1/2019	71.6	7244	5181	3135	393750	8122	N/A
27	2/1/2019	76.5	7389	5185	2900	399030	7857	N/A
28	2/1/2019	78.6	7012	5514	2884	397900	7934	N/A
29	2/1/2019	76	7074	5916	2734	398700	7982	N/A
30	2/2/2019	77.4	7166	5995	2682	397890	8002	N/A
31	2/3/2019	63.8	8168	6006	4466	398980	9236	N/A
32	2/3/2019	82.1	7059	5968	3697	396980	8336	N/A
	AVG=	79	7,719	5,852	2,974	12,542,095	263,245	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
Silty Sandstone	0	190	0	190
Sandy siltstone	est 190	290	est 190	290
Sandstone	est 290	600	est 290	600
Silty Sandstone	est 600	870	est 600	870
limey siltstone	est 870	945	est 870	945
silty sandstone, tr. coal	est 945	1,095	est 945	1,095
silty sandstone	est 1095	1,490	est 1095	1,490
silty shale	est 1490	1,620	est 1490	1,620
sandstone, tr coal	est 1620	1,630	est 1620	1,630
silty sandstone	est 1630	1,670	est 1630	1,670
sandstone	est 1670	1,745	est 1670	1,745
sandy shale	est 1745	1,770	est 1745	1,770
shaly sand	est 1770	2,013	est 1770	2,015
Big Lime	2,013	2,906	2,015	2,907
Fifty Foot Sandstone	2,906	3,024	2,907	3,025
Gordon	3,024	3,174	3,025	3,177
Fifth Sandstone	3,174	3,438	3,177	3,443
Bayard	3,438	3,930	3,443	3,949
Speechley	3,930	4,176	3,949	4,203
Balltown	4,176	4,689	4,203	4,736
Bradford	4,689	5,067	4,736	5,127
Benson	5,067	5,305	5,127	5,374
Alexander	5,305	6,250	5,374	6,370
Sycamore	6,250	6,359	6,370	6,515
Middlesex	6,359	6,467	6,515	6,708
Burkett	6,467	6,501	6,708	6,793
Tully	6,501	6,527	6,793	6,883
Marcellus	6,527	NA	6,883	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:	1/19/2019
Job End Date:	2/3/2019
State:	West Virginia
County:	Ritchie
API Number:	47-085-10241-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Bill Unit 2H
Latitude:	39.29520300
Longitude:	-80.90153600
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,585
Total Base Water Volume (gal):	11,407,567
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	100.00000	88.38737	
DWP-641	CWS	Friction Reducer					
				Listed Below			

DAP-103	CWS	Iron Control					
				Listed Below			
SaniFrac 8844	CWS	Biocide					
				Listed Below			
15% HCl Acid	CWS	Clean Perforations					
				Listed Below			
CI-9100G	CWS	Corrosion Inhibitor					
				Listed Below			
Calbreak 5501	CWS	Breaker					
				Listed Below			
CalGel 4000	CWS	Gel Slurry					
				Listed Below			
Sand (Proppant)	CWS	Propping Agent					
				Listed Below			
DAP-902	CWS	Scale Inhibitor					
				Listed Below			
Other Chemical (s)	Listed Above	See Trade Name (s) List					

				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	11.26701	
			Calcite	471-34-1	1.00000	0.07861	
			Hydrochloric acid	7647-01-0	37.00000	0.06316	
			Illite	12173-60-3	1.00000	0.03404	
			Guar gum	9000-30-0	60.00000	0.02867	
			Distillates (petroleum), hydrotreated middle	64742-46-7	60.00000	0.02867	
			Polymer	26100-47-0	45.00000	0.02820	
			Distillates (petroleum), hydrotreated light	64742-47-8	30.00000	0.01880	
			Goethite	1310-14-1	0.10000	0.01126	
			Biotite	1302-27-8	0.10000	0.01126	
			Apatite	64476-38-6	0.10000	0.01126	
			Ammonium chloride	12125-02-9	11.00000	0.00689	
			Polyethylene glycol mixture	25322-68-3	54.50000	0.00671	
			Ilmenite	98072-94-7	0.10000	0.00340	
			Sorbitan monooleate	1338-43-8	4.00000	0.00251	
			2,2-Dibromo-3-Nitrilopropionamide	10222-01-2	20.00000	0.00246	
			Quaternary ammonium compounds, bis (hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00239	
			Polyethylene glycol monooleate	9004-96-0	3.00000	0.00188	
			Sorbitol tetraoleate	61723-83-9	2.00000	0.00125	
			Ammonium Persulfate	7727-54-0	100.00000	0.00077	
			Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1.50000	0.00072	
			Amines, tallow alkyl, ethoxylated	61791-26-2	1.00000	0.00063	

			Citric acid	77-92-9	60.00000	0.00057	
			Sodium bromide	7647-15-6	4.00000	0.00049	
			Dibromoacetonitrile	3252-43-5	3.00000	0.00037	
			Alkyloxypolyethyleneoxy ethanol	84133-50-6	0.50000	0.00031	
			Vinylidene chloride-methyl acrylate copolymer	25038-72-6	20.00000	0.00015	
			Acrylamide	79-06-1	0.10000	0.00006	
			Ethylene Glycol	107-21-1	40.00000	0.00004	
			Diethylene glycol, monomethyl ether	34590-94-8	20.00000	0.00002	
			Isopropyl alcohol	67-63-0	5.00000	0.00001	
			Cinnamaldehyde	104-55-2	10.00000	0.00001	
			Ethoxylated Alcohols	68131-39-5	10.00000	0.00001	
			Formic acid	64-18-6	10.00000	0.00001	
			Tar bases, quinolone derivs, benzyl chloride- quatenized	72480-70-7	10.00000	0.00001	
			Glycol	57-55-6			Proprietary Additive Concentration
			Organic Acid Salts	9003-04-7			Proprietary Additive Concentration

* 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)

State of West Virginia
Department of Environmental Protection - Office of Oil and Gas
Discharge Monitoring Report
Oil and Gas General Permit

Company Name: Antero Resources Corporation
API No: 47-085-10241 County: Ritchie
District: Clay Well No: Bill Unit 2H
Farm Name: Antero Resources Corporation
Discharge Date/s From:(MMDDYY) 05/06/19 To: (MMDDYY) 06/05/19
Discharge Times. From: 0:00 To: 24:00
Total Volume to be Disposed from this facility (gallons): 593,873

Disposal Option(s) Utilized (write volumes in gallons):

- (1) Land Application: _____ (Include a topographical map of the Area.)
(2) UIC: 104,515 Permit No. 3416729731, 3400923821
(3) Offsite Disposal: _____ Site Location: _____
(4) Reuse: 489,359 Alternate Permit Number: _____
(5) Centralized Facility: _____ Permit No. _____
(6) Other method: _____ (Include an explanation)

Follow Instructions below to determine your treatment category:

Optional Pretreatment test: n/a Cl- mg/l n/a DO mg/l

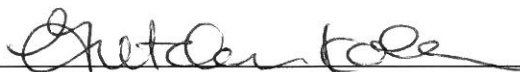
1. Do you have permission to use expedited treatment from the Director or his representative?
(Y/N) n/a If yes, who? _____ and place a four (4) on line 7.
If not go to line 2
2. Was Frac Fluid or flowback put into the pit? (Y/N) n/a If yes, go to line 5. If not, go to line 3.
3. Do you have a chloride value pretreatment (see above)? (Y/N) n/a If yes, go to line 4
If not, go to line 5.
4. Is the Chloride level less than 5000 mg/l? (Y/N) n/a If yes, then enter a one (1) on line 7.
5. Do you have a pretreatment value for DO? (See above) (Y/N) n/a If yes, go to line 6
If not, enter a three (3) in line 7.
6. Is the DO level greater than 2.5 mg/l?(Y/N) n/a If yes, enter a two (2) on line 7. If not, enter a three (3) on line 7.
7. n/a is the category of your pit. Use the Appropriate section.
8. Comments on Pit condition: _____
n/a No pit on site.

Name of Principal Exec. Officer: Gretchen Kohler

Title of Officer: Senior Environmental and Regulatory Manager

Date Completed: 7/12/19

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this document and all the attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.



Signature of a Principal Exec. Officer or Authorized agent.

Category 1
Sampling Results
API No : _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	5	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl	5,000	_____	5,000	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**			Monitor	_____	mg/l
Oil and Grease			Monitor	_____	mg/l
Total Al***			Monitor	_____	mg/l
TSS			Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume			Monitor	_____	Gal
Flow			Monitor	_____	Gal/min
Disposal Area			Monitor	_____	Acres

*** Al is only reported if the pH is above 9.0

Category 2
Sampling Results
API No : _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	10	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**			Monitor	_____	mg/l
Oil and Grease			Monitor	_____	mg/l
Total Al***			Monitor	_____	mg/l
TSS			Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume			Monitor	_____	Gal
Flow			Monitor	_____	Gal/min
Disposal Area			Monitor	_____	Acres

* Can be 25,000 with inspector's approval,

(Inspector's signature): _____

Date: _____

** Include a description of your aeration technique.

Aeration Code: _____

*** Al is only reported if the pH is above 9.0

Category 3
Sampling Results
API No : _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	20	_____	N/A	N/A	Days
Fe	6	_____	6	_____	mg/l
D.O.	2.5	_____	2.5	_____	mg/l
Settleable Sol.	0.5	_____	0.5	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**		_____	Monitor	_____	mg/l
Oil and Grease		_____	Monitor	_____	mg/l
Total Al***		_____	Monitor	_____	mg/l
TSS		_____	Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume		_____	Monitor	_____	Gal
Flow		_____	Monitor	_____	Gal/min
Disposal Area		_____	Monitor	_____	Acres

* Can be 25,000 with inspector's approval,

(Inspector's signature): _____

Date: _____

** Include a description of your aeration technique.

Aeration Code: _____

*** Al is only reported if the pH is above 9.0.

Category 4
Sampling Results
API No: _____

Parameter	Predischarge		Discharge		Units
	Limits	Reported	Limits	Reported	
pH	6-10	_____	6-10	_____	S.U
Settling Time	1	_____	N/A	N/A	Days
Fe	Monitor	_____	Monitor	_____	mg/l
D.O.	Monitor	_____	Monitor	_____	mg/l
Settleable Sol.	Monitor	_____	Monitor	_____	mg/l
Cl*	12,500	_____	12,500	_____	mg/l
Oil	Trace	_____	Trace	_____	Obs.
TOC**		_____	Monitor	_____	mg/l
Oil and Grease		_____	Monitor	_____	mg/l
TSS		_____	Monitor	_____	mg/l
Total Mn	Monitor	_____	Monitor	_____	mg/l
Volume		_____	Monitor	_____	Gal
Flow		_____	Monitor	_____	Gal/min
Activated Carbon (0.175)		_____	N/A	N/A	lb/B1
Date Site Reclaimed	N/A	N/A		_____	10 days from dis.
Disposal Area		_____	Monitor	_____	Acres

* Can be 25,000 with inspector's approval,

(Inspector's signature): _____

Date: _____

LATITUDE 39°20'00"

7,510'

10,324' TO BOTTOM HOLE

LATITUDE 39°20'00"

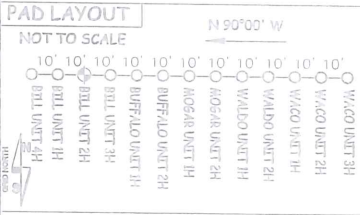
LONGITUDE 80°52'30"

8,022' TO BOTTOM HOLE

LONGITUDE 80°52'30"

Antero Resources Corporation
Well No. Bill Unit 2H
API 47-085-10241

WV NORTH ZONE
GRID NORTH



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.



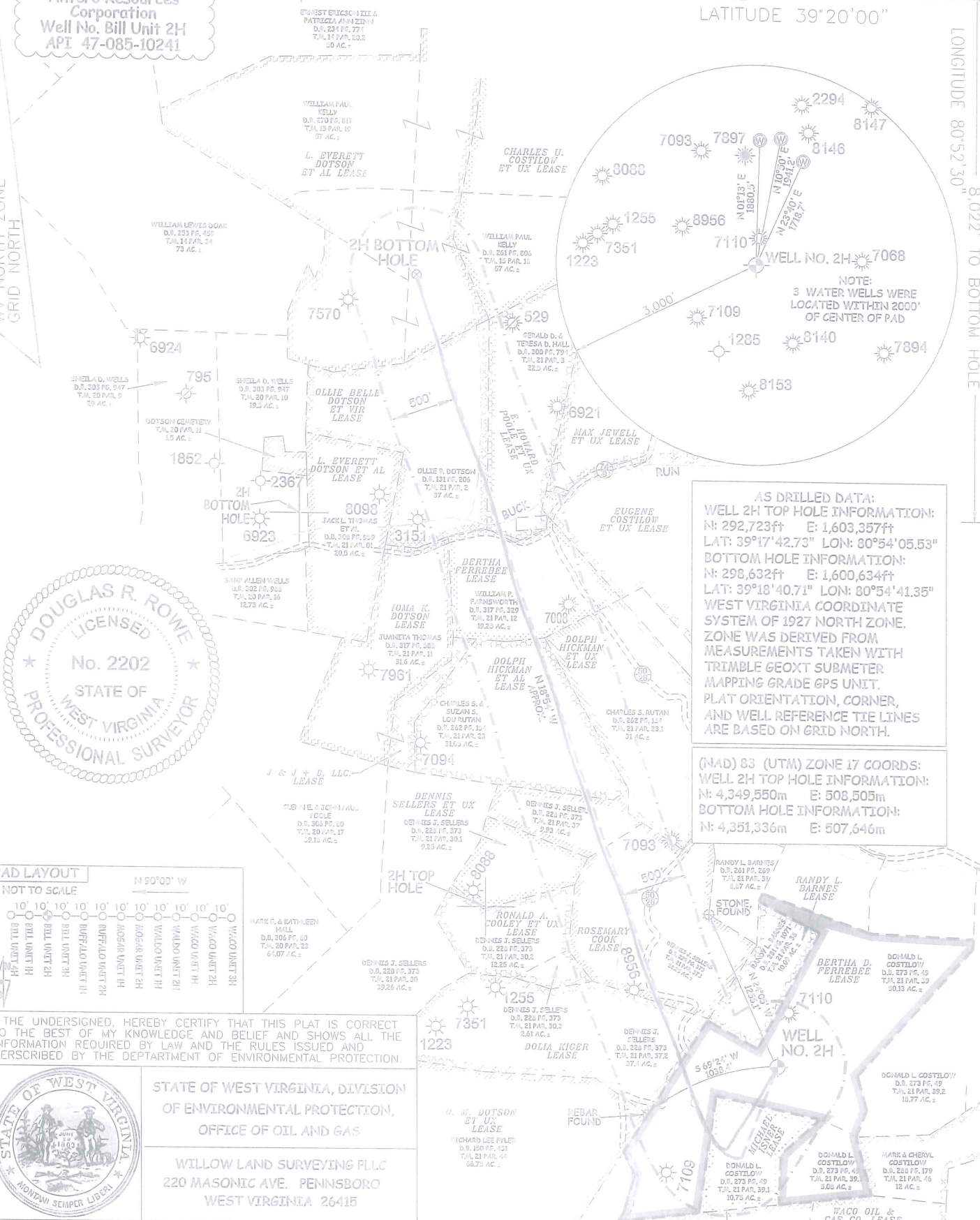
STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS
WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415

JOB # 15-029WA
DRAWING # BILL2HAD
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 +/-
--- Proposed Well Path
--- As Drilled Well Path
DOUGLAS R. ROWE P.S. 2202
DATE 06/26/19
OPERATOR'S WELL # BILL UNIT 2H

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
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.

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL 47 - 085 - 10241
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X STATE COUNTY PERMIT
LOCATION: ELEVATION 1,221' - AS BUILT WATERSHED NORTH FORK HUGHES RIVER
QUADRANGLE PENNSBORO 7.5 DISTRICT CLAY COUNTY RITCHIE
SURFACE OWNER DONALD L. COSTILOW ACREAGE 50.13 ACRES +/-
OIL & GAS ROYALTY OWNER BERTHA D. FERREBEE; MICHAEL ISNER; DOLIA KIGER; LEASE ACREAGE 67 AC.±; 10.75 AC.±; 40 AC.±;
ROSEMARY COOK; DOLPH HICKMAN ET AL; BERTHA FERREBEE; 39 AC.±; 26.52 AC.±; 20 AC.±;
E. HOWARD POOLE ET UX; OLLIE BELLE DOTSON ET VIR; L. EVERETT DOTSON ET AL 23 AC.±; 37 AC.±; 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) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,585' TVD 13,306' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313



AS DRILLED DATA:
WELL 2H TOP HOLE INFORMATION:
N: 292,723ft E: 1,603,357ft
LAT: 39°17'42.73" LON: 80°54'05.53"
BOTTOM HOLE INFORMATION:
N: 298,632ft E: 1,600,634ft
LAT: 39°18'40.71" LON: 80°54'41.35"
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: 4,349,550m E: 508,505m
BOTTOM HOLE INFORMATION:
N: 4,351,336m E: 507,646m

