



Antero Resources
1615 Wynkoop Street
Denver, CO 80202
Office 303.357.7310
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August 9, 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:

- Beem Unit 3H (API # 47-095-02474)—Pyle Run Pad
- Heintzman Unit 1H (API # 47-095-02526)—Pyle Run Pad
- Heintzman Unit 2H (API # 47-095-02527)—Pyle Run Pad
- Heintzman Unit 3H (API # 47-095-02528)—Pyle Run Pad
- Spock Unit 1H (API # 47-095-02478)—Pyle Run Pad
- Spock Unit 2H (API # 47-095-02427)—Pyle Run Pad
- Spock Unit 3H (API # 47-095-02428)—Pyle Run 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 "MGriffith", written over a horizontal line.

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) _____

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 47-095-02527 Farm Name Tyrone L. Beem et al Well Number Heintzman Unit 2H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	3/23/2019	17239		60	Marcellus
2	3/24/2019	17109.441	16943.646	60	Marcellus
3	3/24/2019	16908.087	16742.292	60	Marcellus
4	3/25/2019	16706.733	16540.938	60	Marcellus
5	3/25/2019	16505.379	16339.584	60	Marcellus
6	3/25/2019	16304.025	16138.23	60	Marcellus
7	3/26/2019	16102.671	15936.876	60	Marcellus
8	3/26/2019	15901.317	15735.522	60	Marcellus
9	3/27/2019	15699.963	15534.168	60	Marcellus
10	3/27/2019	15498.609	15332.814	60	Marcellus
11	3/28/2019	15297.255	15131.46	60	Marcellus
12	3/28/2019	15095.901	14930.106	60	Marcellus
13	3/29/2019	14894.547	14728.752	60	Marcellus
14	3/29/2019	14693.193	14527.398	60	Marcellus
15	3/30/2019	14491.839	14326.044	60	Marcellus
16	3/30/2019	14290.485	14124.69	60	Marcellus
17	3/30/2019	14089.131	13923.336	60	Marcellus
18	3/31/2019	13887.777	13721.982	60	Marcellus
19	3/31/2019	13686.423	13520.628	60	Marcellus
20	4/1/2019	13485.069	13319.274	60	Marcellus
21	4/1/2019	13283.715	13117.92	60	Marcellus
22	4/1/2019	13082.361	12916.566	60	Marcellus
23	4/2/2019	12881.007	12715.212	60	Marcellus
24	4/3/2019	12679.653	12513.858	60	Marcellus
25	4/3/2019	12478.299	12312.504	60	Marcellus
26	4/3/2019	12276.945	12111.15	60	Marcellus
27	4/4/2019	12075.591	11909.796	60	Marcellus
28	4/4/2019	11874.237	11708.442	60	Marcellus
29	4/5/2019	11672.883	11507.088	60	Marcellus
30	4/5/2019	11471.529	11305.734	60	Marcellus
31	4/6/2019	11270.175	11104.38	60	Marcellus
32	4/6/2019	11068.821	10903.026	60	Marcellus
33	4/6/2019	10867.467	10701.672	60	Marcellus
34	4/7/2019	10666.113	10500.318	60	Marcellus
35	4/7/2019	10464.759	10298.964	60	Marcellus
36	4/7/2019	10263.405	10097.61	60	Marcellus
37	4/8/2019	10062.051	9896.256	60	Marcellus
38	4/8/2019	9860.697	9694.902	60	Marcellus
39	4/9/2019	9659.343	9493.548	60	Marcellus
40	4/9/2019	9457.989	9292.194	60	Marcellus
41	4/9/2019	9256.635	9090.84	60	Marcellus
42	4/10/2019	9055.281	8889.486	60	Marcellus
43	4/10/2019	8853.927	8688.132	60	Marcellus
44	4/11/2019	8652.573	8486.778	60	Marcellus
45	4/11/2019	8451.219	8285.424	60	Marcellus
46	4/11/2019	8249.865	8084.07	60	Marcellus
47	4/12/2019	8048.511	7882.716	60	Marcellus
48	4/12/2019	7847.157	7681.362	60	Marcellus
49	4/12/2019	7645.803	7480.008	60	Marcellus
50	4/13/2019	7444.449	7278.654	60	Marcellus
51	4/13/2019	7243.095	7077.3	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	3/23/2019	77.6668	7812.912	6105	3268	266000	6667	N/A
2	3/24/2019	76.5787	8116.623	5682	3781	401400	8859	N/A
3	3/24/2019	73.0626	8090.277	5909	3467	400600	8779	N/A
4	3/25/2019	75.8457	8421.611	5762	3404	404460	8828	N/A
5	3/25/2019	75.1283	8422.739	5736	3427	407780	8832	N/A
6	3/25/2019	73.822	8447.971	5577	3530	407000	10339	N/A
7	3/26/2019	64.8555	8577.037	5567	3954	407100	11768	N/A
8	3/26/2019	73.1949	8421.318	5554	3472	407890	10546	N/A
9	3/27/2019	72.3513	7867.384	5648	3915	404800	8769	N/A
10	3/27/2019	75.0065	8065.026	5801	3893	410670	8803	N/A
11	3/28/2019	75.4398	8252.94	5802	4155	406540	8788	N/A
12	3/28/2019	77.8395	8310.826	5534	3683	411500	8664	N/A
13	3/29/2019	74.8804	8052.386	5998	4126	407280	8922	N/A
14	3/29/2019	76.0975	8093.724	5615	3983	409980	8781	N/A
15	3/30/2019	71.2335	8076.222	5752	4475	402300	9125	N/A
16	3/30/2019	74.0782	7890.987	5452	3922	411100	8751	N/A
17	3/30/2019	71.99	8158.727	5779	3805	412540	8756	N/A
18	3/31/2019	79.3811	8036.965	5769	4112	404120	8624	N/A
19	3/31/2019	76.3124	7979.898	6026	4102	411370	8637	N/A
20	4/1/2019	75.7405	8030.045	5579	3811	391520	8695	N/A
21	4/1/2019	76.6144	7888.369	5375	3769	406220	8667	N/A
22	4/1/2019	79.8652	8092.734	5670	3867	407400	9362	N/A
23	4/2/2019	79.6528	7937.583	5805	3827	409060	8576	N/A
24	4/3/2019	81.0363	8065.321	6575	3972	409460	8777	N/A
25	4/3/2019	80.9319	7727.966	5873	3543	407780	8571	N/A
26	4/3/2019	81.059	7953.462	6371	4158	405560	8621	N/A
27	4/4/2019	80.3005	7627.46	6198	3957	407180	8691	N/A
28	4/4/2019	82.0435	7728.485	5690	4070	403440	8607	N/A
29	4/5/2019	78.4363	7814.263	5952	3607	405540	8713	N/A
30	4/5/2019	80.5706	7677.07	6268	3652	405540	8763	N/A
31	4/6/2019	81.8153	7792.542	6052	4559	397260	9268	N/A
32	4/6/2019	80.6624	7949.28	5415	3965	405240	8743	N/A
33	4/6/2019	80.6683	7769.235	5766	4007	400420	8577	N/A
34	4/7/2019	81.5884	7901.841	6513	3514	402800	8589	N/A
35	4/7/2019	82.3598	7374.827	6384	3727	403800	8663	N/A
36	4/7/2019	83.1553	7520.565	6330	3588	402920	8518	N/A
37	4/8/2019	82.036	7365.112	5950	3856	403060	8560	N/A
38	4/8/2019	81.4801	7603.014	6167	4262	406300	8685	N/A
39	4/9/2019	83.0227	7484.808	5749	3832	407180	8565	N/A
40	4/9/2019	81.1876	7423.143	5776	3816	406820	8579	N/A
41	4/9/2019	84.0201	7363.792	5709	4152	407460	8560	N/A
42	4/10/2019	81.8112	7546.333	5144	4494	412040	8597	N/A
43	4/10/2019	80.7402	7336.517	5889	4466	406740	9846	N/A
44	4/11/2019	80.8385	7404.778	6405	4539	412100	9959	N/A
45	4/11/2019	82.4138	7210.512	5953	3866	408020	8421	N/A
46	4/11/2019	82.3001	7034.938	5896	4494	410660	8466	N/A
47	4/12/2019	82.4443	6846.196	5977	4447	409520	8362	N/A
48	4/12/2019	82.0468	6624.287	4580	4255	404820	8532	N/A
49	4/12/2019	83.433	6985.857	5793	4706	406100	8338	N/A
50	4/13/2019	81.9642	7009.992	6080	4321	405300	8370	N/A
51	4/13/2019	81.6068	6718.914	5239	4109	407850	8444	N/A
		78.2	7,882	5,858	3,897	18,135,290	399,411	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	75	175	75	175
Silty Shale	175	335	175	335
shaly sand	335	425	335	425
Shale	425	855	425	855
Dolomitic Shale	855	1,005	855	1,005
Shaly Siltstone	1,005	1,105	1,005	1,105
Silty Sandstone	1,105	1,325	1,105	1,325
Shaly Sand	1,325	1,475	1,325	1,475
Sandstone	1,475	1,725	1,475	1,725
Silty, Shaly, Sandstone	1,725	1,765	1,725	1,765
Sandstone, Tr Shale, Tr Coal	1,765	1,805	1,765	1,805
Silty Sandstone	1,805	1,885	1,805	1,885
Shaly Siltstone	1,885	1,932	1,885	1,970
Big Lime	1,957	2,897	1,995	2,999
Fifty Foot Sandstone	2,897	3,013	2,999	3,121
Gordon	3,013	3,167	3,121	3,286
Fifth Sandstone	3,167	3,451	3,286	3,589
Bayard	3,451	3,916	3,589	4,082
Speechley	3,916	4,168	4,082	4,350
Balltown	4,168	4,660	4,350	4,873
Bradford	4,660	5,056	4,873	5,296
Benson	5,056	5,303	5,296	5,557
Alexander	5,303	6,331	5,557	6,707
Sycamore	6,192	6,306	6,526	6,682
Middlesex	6,306	6,398	6,682	6,853
Burkett	6,398	6,430	6,853	6,936
Tully	6,430	6,458	6,936	7,030
Marcellus	6,458	NA	7,030	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:	3/23/2019
Job End Date:	4/13/2019
State:	West Virginia
County:	Tyler
API Number:	47-095-02527-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Heintzman 2H
Latitude:	39.40008600
Longitude:	-80.90425800
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,530
Total Base Water Volume (gal):	19,441,822
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	Carrier/Base Fluid	Water	7732-18-5	100.00000	88.53461	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	11.24234	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	0.11531	
			Hydrogen Chloride	7647-01-0	17.50000	0.02681	
WFRA-405	U.S. Well Services, LLC	Friction Reducer	2-Propenoic acid, polymer with 2-propenamide	9003-06-9	30.00000	0.01728	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01391	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.01303	
			Petroleum Distillates	64742-47-8	60.00000	0.01234	
			Suspending agent (solid)	14808-60-7	3.00000	0.00199	
			Surfactant	68439-51-0	3.00000	0.00078	

SI-1200	U.S. Well Services, LLC	Scale Inhibitor				
			Water	7732-18-5	80.00000	0.00523
			Ethylene Glycol	107-21-1	40.00000	0.00374
			Sodium Salt of Diethylenetriaminepenta (methylenephosphonic acid)	68155-78-2	10.00000	0.00065
			Sodium Chloride	7647-14-5	10.00000	0.00065
Bioclear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent				
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00386
			Deionized Water	7732-18-5	28.00000	0.00220
SI-1300	U.S. Well Services, LLC	Scale Inhibitor				
			Ethylene glycol	107-21-1	40.00000	0.00329
			Proprietary Scale Inhibitor	Proprietary	20.00000	0.00122
K-BAC 1020	U.S. Well Services, LLC	Anti-Bacterial Agent				
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	21.00000	0.00027
			Polyethylene glycol	25322-68-3	50.00000	0.00026
			Deionized Water	7732-18-5	30.00000	0.00015
AI-303	U.S. Well Services, LLC	Acid Corrosion Inhibitors				
			Ethylene glycol	107-21-1	40.00000	0.00004
			Cinnamaldehyde	104-55-2	20.00000	0.00001
			Formic acid	64-18-6	20.00000	0.00001
			Butyl cellosolve	111-76-2	20.00000	0.00001
			Polyether	60828-78-6	10.00000	0.00001
			Acetophenone,thiourea,formaldehyde polymer	68527-49-1	5.00000	0.00000

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)

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: 47-095-02527 County: Tyler
District: Centerville Well No: Heintzman Unit 2H
Farm Name: Tyrone L. Beem et al
Discharge Date/s From:(MMDDYY) 05/31/19 To: (MMDDYY) 05/31/19
Discharge Times. From: 0:00 To: 24:00
Total Volume to be Disposed from this facility (gallons): 996,304

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

- (1) Land Application: _____ (Include a topographical map of the Area.)
(2) UIC: 130,517 Permit No. 3400923821, 3400923823, 3400923824, 3416729731, 3416729543, 3416729464, 3416729445
(3) Offsite Disposal: _____ Site Location: _____
(4) Reuse: 865,787 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: 8/9/19

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°25'00"

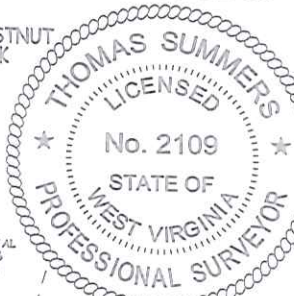
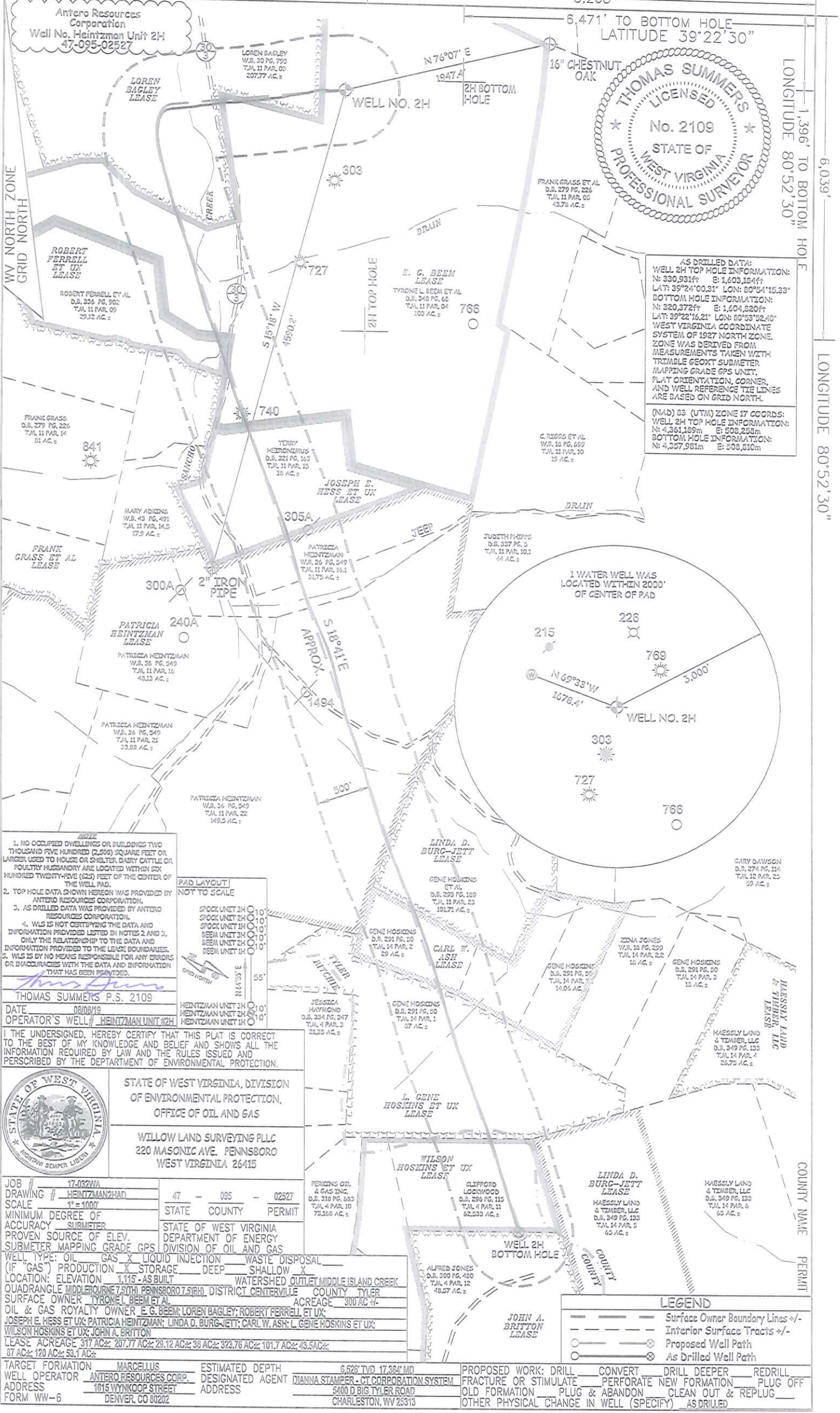
8,268'

6,471' TO BOTTOM HOLE
LATITUDE 39°22'30"

LONGITUDE 80°52'30"

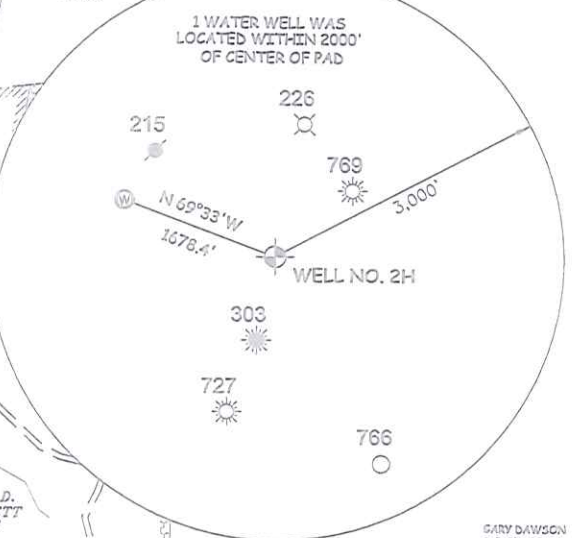
6,039'

LONGITUDE 80°52'30"

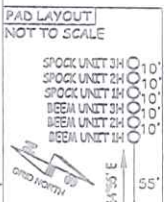


AS DRILLED DATA:
 WELL 2H TOP HOLE INFORMATION:
 N: 330,931ft E: 1,603,184ft
 LAT: 39°24'00.31" LON: 80°54'15.33"
 BOTTOM HOLE INFORMATION:
 N: 320,372ft E: 1,604,820ft
 LAT: 39°22'16.21" LON: 80°53'52.40"
 WEST VIRGINIA COORDINATE SYSTEM OF 1927 NORTH ZONE. ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. PLAT ORIENTATION, CORNER, AND WELL REFERENCE THE LINES ARE BASED ON GRID NORTH.

(NAD) 83 (UTM) ZONE 17 COORDS:
 WELL 2H TOP HOLE INFORMATION:
 N: 4,361,189m E: 508,258m
 BOTTOM HOLE INFORMATION:
 N: 4,357,961m E: 508,010m



- 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 ANTERO RESOURCES CORPORATION.
 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.



THOMAS SUMMERS P.S. 2109
 DATE 08/08/19
 OPERATOR'S WELL # HEINTZMAN UNIT 2H

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 #	17-032WA
DRAWING #	HEINTZMAN2HAD
SCALE	1" = 1000'
MINIMUM DEGREE OF ACCURACY	SUBMETER
PROVEN SOURCE OF ELEV.	SUBMETER MAPPING GRADE GPS
WELL TYPE:	OIL GAS X LIQUID INJECTION WASTE DISPOSAL
(IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X	
LOCATION:	ELEVATION 1,115' - AS BUILT WATERSHED OUTLET MIDDLE ISLAND AND CREEK
QUADRANGLE	MIDDLEBORNE 7.5TH PENNSBORO 7.5TH DISTRICT CENTERVILLE COUNTY TYLER
SURFACE OWNER	TYRONE L. BEEM ET AL ACRES 300 AC +/-
OIL & GAS ROYALTY OWNER	E. G. BEEM; LOREN BAGLEY; ROBERT FERRELL ET UX;
	JOSEPH E. HESS ET UX; PATRICIA HEINTZMAN; LINDA D. BURG-JETT; CARL W. ASH; L. GENE HOSKINS ET UX;
LEASE ACRES	317 AC±; 207.77 AC±; 29.12 AC±; 38 AC±; 323.76 AC±; 101.7 AC±; 43.5 AC±; 87 AC±; 120 AC±; 53.1 AC±

STATE	COUNTY	PERMIT
WEST VIRGINIA	TYLER	
ESTIMATED DEPTH	DESIGNATED AGENT	
6,528' TVD 17,384' MD	DIANNA STAMPER - CT CORPORATION SYSTEM	
TARGET FORMATION	MARCELLUS	
WELL OPERATOR	ANTERO RESOURCES CORP.	
ADDRESS	1815 WYNNCOOP STREET DENVER, CO 80202	
FORM	WW-6	

PERKINS OIL & GAS INC.	D.B. 318 PG. 603	T.J. 4 PAR. 10	70.36 AC±
WILSON HOSKINS ET UX LEASE	CLIFFORD LOGWOOD	D.B. 296 PG. 115	T.J. 4 PAR. 11 62.533 AC±
ALFRED JONES	D.B. 200 PG. 420	T.J. 4 PAR. 12	48.57 AC±
LINDA D. BURG-JETT LEASE	HAESSLY LAND & TYMBER, LLC	D.B. 349 PG. 133	T.J. 14 PAR. 5 65 AC±
HAESSLY LAND & TYMBER, LLC	D.B. 349 PG. 133	T.J. 14 PAR. 6	65 AC±
JOHN A. BRITTON LEASE			

PROPOSED WORK:	DRILL	CONVERT	DRILL DEEPER	REDRILL
	FRACTURE OR STIMULATE	PERFORATE	NEW FORMATION	PLUG OFF
	OLD FORMATION	PLUG & ABANDON	CLEAN OUT & REPLUG	
OTHER PHYSICAL CHANGE IN WELL (SPECIFY)	AS DRILLED			

LEGEND

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

COUNTY NAME PERMIT