

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

API 47-095-02575 County Tyler District Ellsworth
Quad Middlebourne 7.5' Pad Name Ferrell Pad Field/Pool Name -----
Farm name Antero Resources Midstream LLC Well Number Hennessy 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 4369206.395m Easting 507026.073m
Landing Point of Curve Northing 4369317.22m Easting 507000.03m
Bottom Hole Northing 4371521.867m Easting 506526.038m

Elevation (ft) 731.4' ^{757.5'} GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine

Mud Type(s) and Additive(s)
Air - Foam & 4% KCL
Mud - Polymer

Date permit issued 1/25/2019 Date drilling commenced 6/4/2019 Date drilling ceased 9/30/2019
Date completion activities began 1/5/2020 Date completion activities ceased 2/3/2020
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 194', 243' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 1224', 1347' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 770' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

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Reviewed by:
[Signature]
10/15/2020

API 47- 095 - 02575 Farm name Antero Resources Midstream LLC Well number Hennessy 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"	125'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	409'	New	54#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2635'	New	36#, H-40	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	13950'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6294'		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	204 sx	15.6	1.18	244	0'	8 Hrs.
Surface	Class A	350 sx	15.6	1.19	402	0'	8 Hrs.
Coal							
Intermediate 1	Class A	905 sx	15.6	1.18	1047	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	798 sx (Lead) 2822 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.53 (Lead), 1.83 (Tail)	2819	~500' Into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 13970' MD, 6075' TVD (BHL), 6077' (Deepest Point Drilled) Loggers TD (ft) 13970' MD

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

Plug back procedure N/A

Kick off depth (ft) 5393'

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

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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 N/A

API 47-095 - 02575 Farm name Antero Resources Midstream LLC Well number Hennessy 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								

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Please insert additional pages as applicable.

API 47- 095 - 02575 Farm name Antero Resources Midstream LLC Well number Hennessy Unit 2H

PRODUCING FORMATION(S)	DEPTHS		
Marcellus	6037' (TOP)	TVD	6370' (TOP) MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 2800 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 9654 mcfpd Oil 262 bpd NGL --- bpd Water 977 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	

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

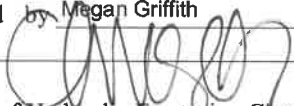
Drilling Contractor Frontier Drilling LLC
Address 562 Spring Run Road City Pennsboro State WV Zip 26415

Logging Company Nine Energy Services
Address 125 Museum Road City Washington State PA Zip 15301

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

Stimulating Company Baker Hughes
Address 837 Philippi Pike City Clarksburg State WV Zip 26301

Please insert additional pages as applicable.

Completed by Megan Griffith Telephone 303-357-7223
Signature  Title Permitting Agent Date 6/19/20

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

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API 47-095-02575 Farm Name Antero Midstream LLC Well Number Hennessy Unit 2H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	12/28/2019	13584	13810	60	Marcellus
2	12/29/2019	13771.73423	13607.4054	60	Marcellus
3	12/29/2019	13572.13964	13407.8108	60	Marcellus
4	12/30/2019	13372.54505	13208.2162	60	Marcellus
5	12/30/2019	13172.95045	13008.6216	60	Marcellus
6	12/31/2019	12973.35586	12809.027	60	Marcellus
7	12/31/2019	12773.76126	12609.4324	60	Marcellus
8	12/31/2019	12574.16667	12409.8378	60	Marcellus
9	1/1/2020	12374.57207	12210.2432	60	Marcellus
10	1/1/2020	12174.97748	12010.6486	60	Marcellus
11	1/1/2020	11975.38288	11811.0541	60	Marcellus
12	1/1/2020	11775.78829	11611.4595	60	Marcellus
13	1/2/2020	11576.19369	11411.8649	60	Marcellus
14	1/2/2020	11376.5991	11212.2703	60	Marcellus
15	1/2/2020	11177.0045	11012.6757	60	Marcellus
16	1/2/2020	10977.40991	10813.0811	60	Marcellus
17	1/3/2020	10777.81532	10613.4865	60	Marcellus
18	1/3/2020	10578.22072	10413.8919	60	Marcellus
19	1/3/2020	10378.62613	10214.2973	60	Marcellus
20	1/3/2020	10179.03153	10014.7027	60	Marcellus
21	1/4/2020	9979.436937	9815.10811	60	Marcellus
22	1/4/2020	9779.842342	9615.51351	60	Marcellus
23	1/4/2020	9580.247748	9415.91892	60	Marcellus
24	1/4/2020	9380.653153	9216.32432	60	Marcellus
25	1/5/2020	9181.058559	9016.72973	60	Marcellus
26	1/5/2020	8981.463964	8817.13514	60	Marcellus
27	1/6/2020	8781.869369	8617.54054	60	Marcellus
28	1/6/2020	8582.274775	8417.94595	60	Marcellus
29	1/6/2020	8382.68018	8218.35135	60	Marcellus
30	1/7/2020	8183.085586	8018.75676	60	Marcellus
31	1/7/2020	7983.490991	7819.16216	60	Marcellus
32	1/7/2020	7783.896396	7619.56757	60	Marcellus
33	1/8/2020	7584.301802	7419.97297	60	Marcellus
34	1/8/2020	7384.707207	7220.37838	60	Marcellus
35	1/8/2020	7185.112613	7020.78378	60	Marcellus
36	1/8/2020	6985.518018	6821.18919	60	Marcellus
37	1/9/2020	6785.923423	6621.59459	60	Marcellus
38	1/9/2020	6586.328829	6422	60	Marcellus

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API 47-095-02575 Farm Name Antero Midstream LLC Well Number Hennessy Unit 2H

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	12/28/2019	77.77299	7288.445	7114	3821	184060	4982.826	N/A
2	12/29/2019	76.27995	7998.308	5320	3596	399320	7273.846	N/A
3	12/29/2019	73.33815	7449.666	5441	4318	408100	15655.53	N/A
4	12/30/2019	83.4281	7780.063	5181	3652	411960	7268.42	N/A
5	12/30/2019	82.5286	7648.297	5277	3429	406460	7032.98	N/A
6	12/31/2019	83.16577	7780.55	5196	3831	404320	7144.9	N/A
7	12/31/2019	84.26682	7943.914	5480	4009	405260	7201.99	N/A
8	12/31/2019	84.65414	8086.396	5838	3532	405720	7177.98	N/A
9	1/1/2020	82.97982	7833.023	5665	3285	401620	7105.51	N/A
10	1/1/2020	84.87435	7767.335	5167	3304	402120	6970.18	N/A
11	1/1/2020	82.9522	7752.001	5228	3285	402140	6970.48	N/A
12	1/1/2020	84.27032	7673.141	5505	3156	408720	6999.78	N/A
13	1/2/2020	81.17085	7578.685	5428	3310	400980	8123.83	N/A
14	1/2/2020	85.06005	7939.364	5499	3314	403980	6950.97	N/A
15	1/2/2020	85.6601	7798.935	4525	3403	406960	6983.93	N/A
16	1/2/2020	87.41192	7783.958	5017	3459	401540	6853.16	N/A
17	1/3/2020	86.75243	8007.2	5066	3294	406280	6913.33	N/A
18	1/3/2020	84.2788	7515.585	5580	3298	413539.6792	7333.79	N/A
19	1/3/2020	86.01996	7669.746	5500	3363	410540	7349.31	N/A
20	1/3/2020	82.5401	7478.676	4899	3367	410340	6810.96	N/A
21	1/4/2020	85.82701	7693.847	5185	3291	405860	6831.73	N/A
22	1/4/2020	84.94781	7630.003	5710	3278	404160	6805.75	N/A
23	1/4/2020	85.30087	7464.721	5746	3335	406820	6809.18	N/A
24	1/4/2020	55.59854	8135.37	5022	4522	8200	5077.58	N/A
25	1/5/2020	82.68809	7332.049	5036	3188	409180	6863.39	N/A
26	1/5/2020	82.6011	7312.382	5521	3128	405860	6802.23	N/A
27	1/6/2020	74.75879	6836.475	5087	3393	406300	10017	N/A
28	1/6/2020	80.37227	6963.17	5313	3351	402720	6816.22	N/A
29	1/6/2020	83.05818	7125.852	5100	3245	414140	6877.24	N/A
30	1/7/2020	83.52452	6976.588	5530	3280	409340	6801.13	N/A
31	1/7/2020	81.95904	6760.954	5483	3252	409160	6829.7	N/A
32	1/7/2020	81.05603	6729.195	5193	3388	411640	6884.57	N/A
33	1/8/2020	81.44557	6581.731	5528	3335	408240	6854.35	N/A
34	1/8/2020	82.74456	6977.655	5814	3248	411460	6795.31	N/A
35	1/8/2020	84.10167	6600.147	4682	3213	408360	6800.19	N/A
36	1/8/2020	84.64255	6875.442	5618	3203	412280	6746.46	N/A
37	1/9/2020	82.33482	6722.72	6082	3121	410400	6707.68	N/A
38	1/9/2020	82.91999	6704.973	5891	3154	408040	6816.2	N/A
	AVG=	82.1	7,466	5,375	3,435	14,027,680	259,716	TOTAL

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LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Silty Sandstone	75	175	75	175
Siltstone	175	275	175	275
Shaly Siltstone	275	335	275	335
Silty Shale	335	555	335	555
Silty Sandstone	555	575	555	575
Shale	575	955	575	955
Shaly Sandstone	955	1,035	955	1,035
Sandstone	1,035	1,215	1,035	1,215
Sandy Shale	1,215	1,255	1,215	1,255
Shaly Siltstone	1,255	1,315	1,255	1,315
Sandstone	1,315	1,435	1,315	1,435
Shaly Sandstone	1,435	1,515	1,435	1,515
Sandy Shale	1,515	1,543	1,515	N/A
Big Lime	1,558	2,115	1,545	2,118
Fifty Foot Sandstone	2,115	2,367	2,103	2,370
Gordon	2,367	2,653	2,355	2,655
Fifth Sandstone	2,653	2,749	2,640	2,752
Bayard	2,749	3,587	2,737	3,606
Speechley	3,587	3,730	3,591	3,754
Balltown	3,730	4,223	3,739	4,266
Bradford	4,223	4,519	4,251	4,574
Benson	4,519	4,893	4,559	4,964
Alexander	4,893	5,935	4,949	6,120
Sycamore	5,805	5,905	5,961	6,090
Middlesex	5,905	5,992	6,105	6,250
Burkett	5,992	6,014	6,265	6,307
Tully	6,014	6,037	6,322	6,370
Marcellus	6,037	NA	6,370	NA

*Please note Antero determines formation tops based on mud logs that are only run on one well on a multi-well pad. The measured depth (MD) data on subsequent wells may be slightly different due to the well's unique departure.

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	12/28/2019
Job End Date:	1/9/2020
State:	West Virginia
County:	Tyler
API Number:	47-095-02575-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Hennessy 2H
Latitude:	39.47233610
Longitude:	-80.91848330
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,104
Total Base Water Volume (gal):	23,770,157
Total Base Non Water Volume:	0

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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	86.67317	
CalGel 4000	CWS	Gel Slurry					
			Listed Below	Listed Below			

Sand (Proppant)	CWS	Propping Agent							
					Listed Below				
Hydrochloric Acid	CWS	Clean Perforations							
					Listed Below				
CI-9100G	CWS	Corrosion Inhibitor							
					Listed Below				
Calbreak 5501	CWS	Breaker							
					Listed Below				
SaniFrac 8123	CWS	Microbiocide							
					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				12.97531	
		Hydrochloric acid	7647-01-0	37.00000				0.13049	
		Illite	12173-60-3	1.00000				0.12974	
		Disillates (petroleum), hydrotreated middle	64742-46-7	60.00000				0.01735	
		Guar gum	9000-30-0	60.00000				0.01735	
		Apatite	64476-38-6	0.10000				0.01297	
		Biotite	1302-27-8	0.10000				0.01297	
		Ilmenite	98072-94-7	0.10000				0.01297	

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					Goethite	1310-14-1	0.10000	0.01297	
					Quaternary ammonium compounds, bis (hydrogenated tallow alkyl)dimethyl, salts with bentonite	68953-58-2	5.00000	0.00145	
					Glutaraldehyde	111-30-8	14.00000	0.00122	
					Ammonium Persulfate	7727-54-0	100.00000	0.00052	
					Oxirane, 2-methyl-, polymer with oxirane, monodecyl ether	37251-67-5	1.50000	0.00043	
					Alkyl dimethyl benzyl ammonium chloride	68424-85-1	3.00000	0.00026	
					Didecyl dimethyl ammonium chloride	7173-51-5	3.00000	0.00026	
					Ethanol	64-17-5	3.00000	0.00026	
					Vinylidene chloride-methyl acrylate copolymer	25038-72-6	20.00000	0.00010	
					Ethylene Glycol	107-21-1	40.00000	0.00007	
					Diethylene glycol, monomethyl ether	34590-94-8	20.00000	0.00004	
					Ethoxylated Alcohols	68131-39-5	10.00000	0.00002	
					Tar bases, quinolone derivs, benzyl chloride-quatzenized	72480-70-7	10.00000	0.00002	
					Formic acid	64-18-6	10.00000	0.00002	
					Cinnamaldehyde	104-55-2	10.00000	0.00002	
					Isopropyl alcohol	67-63-0	5.00000	0.00001	

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

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

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

Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided. Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

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ANTERO RESOURCES CORPORATION

Location: Tyler County, WV
 Slot: Slot #03
 Well: Hennessy Unit 2H
 Field: Tyler
 Facility: Ferrill North Pad
 Wellbore: Hennessy Unit 2H PWB

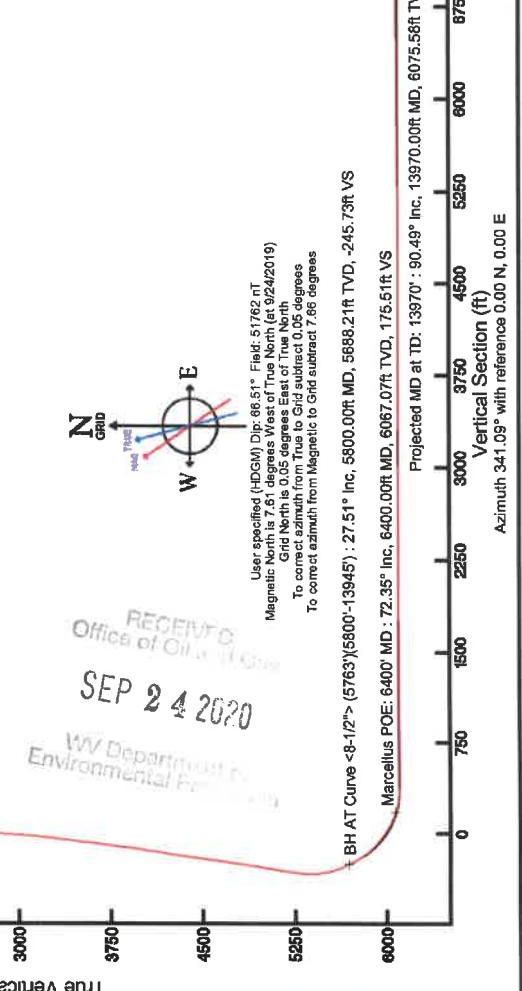
Plot reference wellpath is Hennessy Unit 2H PWP Rev-B.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to H&P 519 (RKB)	North Reference: Grid north
Measured depths are referenced to H&P 519 (RKB)	Scale: True distance
H&P 519 (RKB) to Mean Sea Level: 787 feet	Decl/ths are in feet
Mean Sea Level to Ground level / At Slot: Slot #03: -757 feet	Created by: dslabst on 2019-10-04
Coordinates are in feet referenced to Slot	Database: WVA_MPL_Estimate_US_Declin

Location Information			
Facility Name	Grid East (US ft)	Grid North (US ft)	Longitude
Ferrill North Pad	1663420.830	14333923.300	80°55'06.540"W
Slot	Local N (ft)	Local E (ft)	Latitude
Slot #03	0.00	1663420.830	38°28'20.410"N
H&P 519 (RKB) to Ground level / At Slot: Slot #03			80°55'06.540"W
Mean Sea Level to Ground level / At Slot: Slot #03			30ft
H&P 519 (RKB) to Mean Sea Level			-757ft

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #03	Hennessy Unit 2H	Hennessy Unit 2H-AWB	Hennessy Unit 2H-AWB Proj. 13870'
Slot #03	Hennessy Unit 2H	Hennessy Unit 2H-PWB	Hennessy Unit 2H-PWP Rev-B.0

Design Comment	MD (ft)	Inc (ft)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tile On	5763.00	25.860	5655.15	-19.64	748.31	4.93		-281.09
PTB	5635.00	28.330	4.600	5719.24	13.03	751.16	3.47	-231.11
Bulk/Turn	5564.72	37.723	13.591	5819.66	77.12	762.07	8.83	-174.01
POE	6369.75	70.294	352.000	6092.00	405.26	764.81	8.83	135.53
Landing PL	6592.91	90.000	352.000	6100.00	621.92	734.36	8.83	350.36
On Admuth	6956.68	90.000	341.087	6100.00	975.17	646.84	3.00	711.93
BHL	13934.68	90.000	341.087	6100.00	7576.44	-1611.98	0.00	7689.94

Gyrodeta MS Gyro <17-1/2°>(115°-305') : 0.27° Inc, 115.00ft MD, 115.00ft TVD, 0.04ft VS
 Gyrodeta MS Gyro <12-1/4°>(305°)(490-675') : 1.10° Inc, 490.00ft MD, 489.99ft TVD, -0.41ft VS
 WFT EM <12-1/4°>(675)(795-2540') : 4.70° Inc, 795.00ft MD, 794.27ft TVD, -2.57ft VS
 WFT EM <8-3/4°>(2540)(2667-5763') : 2.28° Inc, 2667.00ft MD, 2664.60ft TVD, 2.92ft VS



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Design Comment	MD (ft)	Inc (ft)	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Gyrodeta MS Gyro <17-1/2°>(115°-305')	115.00	0.27	115	115.00	115.00	0.04		115.00
Gyrodeta MS Gyro <12-1/4°>(305°)(490-675')	490.00	1.10	305	489.99	489.99	-0.41		489.58
WFT EM <12-1/4°>(675)(795-2540')	795.00	4.70	795	794.27	794.27	-2.57		791.70
WFT EM <8-3/4°>(2540)(2667-5763')	2667.00	2.28	2667	2664.60	2664.60	2.92		2667.52
BH AT Curve <8-1/2°>(5763)(5800-13945')	5800.00	27.51	5800	5800.00	5888.21	-245.79		5800.00
Marcellus POE: 6400' MD : 72.35° Inc, 6400.00ft MD, 6067.07ft TVD, 175.51ft VS	6400.00	72.35	6400	6067.07	6067.07	175.51		6067.07
Projected MD at TD: 13970' : 90.49° Inc, 13970.00ft MD, 6075.58ft TVD, 7720.20ft VS	13970.00	90.49	13970	6075.58	6075.58	7720.20		6075.58

Vertical Section (ft)
 Azimuth 341.09° with reference 0.00 N, 0.00 E



Projected MD at TD: 13970' : 6075.58ft TVD, 7600.80ft N, 1634.22ft W
 BHL: 60'

Marcellus POE: 6400' MD : 6067.07ft TVD, 441.00ft N, 745.92ft E
 Slot #03
 Gyrodeta MS Gyro <17-1/2°>(115°-305') : 115.00ft TVD, 0.10ft N, 0.17ft E
 Gyrodeta MS Gyro <12-1/4°>(305°)(490-675') : 489.99ft TVD, 0.20ft N, 2.20ft E
 WFT EM <12-1/4°>(675)(795-2540') : 794.27ft TVD, 4.70ft N, 21.74ft E
 WFT EM <8-3/4°>(2540)(2667-5763') : 2664.60ft TVD, 18.91ft N, 46.18ft E
 BH AT Curve <8-1/2°>(5763)(5800-13945') : 5888.21ft TVD, 3.06ft S, 749.29ft E

API: 47-095-02575-0000
 BHI Job #: 110037520A
 Rig: H&P 519
 Duration: 09/27/2019-09/29/2019

2,186' to Bottom Hole

672' to Top Hole
LATITUDE 39 - 30 - 00

LONGITUDE 80 - 55 - 00

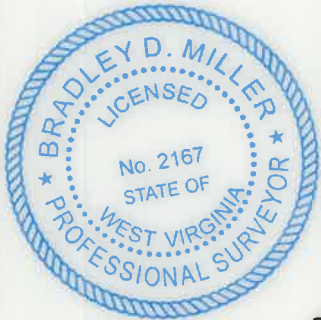
2,440' to Bottom Hole

10,065' to Top Hole

Antero Resources
Well No. Hennessy Unit 2H
As-Drilled
Antero Resources Corporation

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 prescribed by the Department of Environmental Protection.

Bradley D. Miller
Bradley D. Miller, P.S. 2167



SEAL

Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Hennessy Unit 2H
Top Hole coordinates are
N: 357,306.80' Latitude: 39°28'20.42"
E: 1,599,579.80' Longitude: 80°55'06.54"
Bottom Hole coordinates are
N: 364,932.45' Latitude: 39°29'35.54"
E: 1,598,065.79' Longitude: 80°55'27.39"
UTM Zone 17, NAD 1983
Top Hole Coordinates Bottom Hole Coordinates
N: 4,369,206.395m N: 4,371,521.867m
E: 507,026.073m E: 506,526.038m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

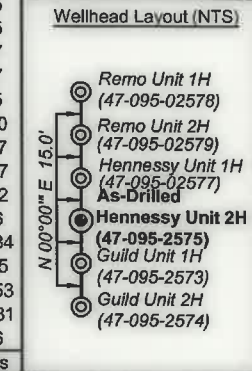
ID	TM/Par	Owner	Bk/Pg	Acres
23	20/2	Anderson	282/506	68.05
22	14/40	Nuss	347/832	12.00
21	20/12.3	Nuss	366/467	0.19
20	20/16	Rymer	219/287	25.813
19	20/12.2	Shaffer	354/76	0.37
18	20/12	Steen	264/127	39.76
17	20/11	Shaffer	399/15	0.45
16	20/14	Morris	205/425	0.15
15	20/13	Ty.Co. Comm.	333/63	0.15
14	20/12.1	Nuss	411/206	0.75
13	20/15	Mason	388/834	0.37
12	20/36.1	Wagner	329/366	0.37
11	20/36	Tucker	8/210	0.45
10	20/39	Rymer	219/287	36.40
9	20/37.6	Vancamp	443/643	19.67
8	20/37.4	Thacker, et al	395/843	4.437
7	20/37	Thacker, et al	443/643	8.892
6	20/37.2	Wolf	362/386	4.56
5	20/83.6	Hall	WB40/335	30.034
4	20/37.3	Wolf	384/321	4.095
3	20/83.7	Helmick	400/592	30.353
2	20/98	Hennessy	247/7	74.231
1	20/83.1	Helmick	230/446	2.76

Lease	Owner	Acres
A	WV Division of Natural Resources	
B	Thomas & Cynthia H. Hall	
C	Larry Steven & Diane Helmick	
D	Martha Jean Tucker	
E	Jack J. Mason	
F	Tyler County Commission	
G	Joseph J. Morris	
H	J.C. & Barbara Nuss	
J	Larry Allen Anderson	
K	Thomas J. Wagner	
L	Robert L. & Pamela L. Shaffer	
M	Robert L. & Pamela L. Shaffer	

Legend

- Proposed gas well
- Monument, as noted
- Existing Well, as noted
- Creek or Drain
- Surface boundary (approx.)
- Interior surface tracts (approx.)

Top Hole Coordinates, As-drilled data, and information was provided by Antero Resources Corporation. Allegheny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.



FILE NO: 16-54-E-17
DRAWING NO: Hennessy 2H As-Drilled
SCALE: 1" = 1000'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Harrisville, WV

STATE OF WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OIL AND GAS DIVISION

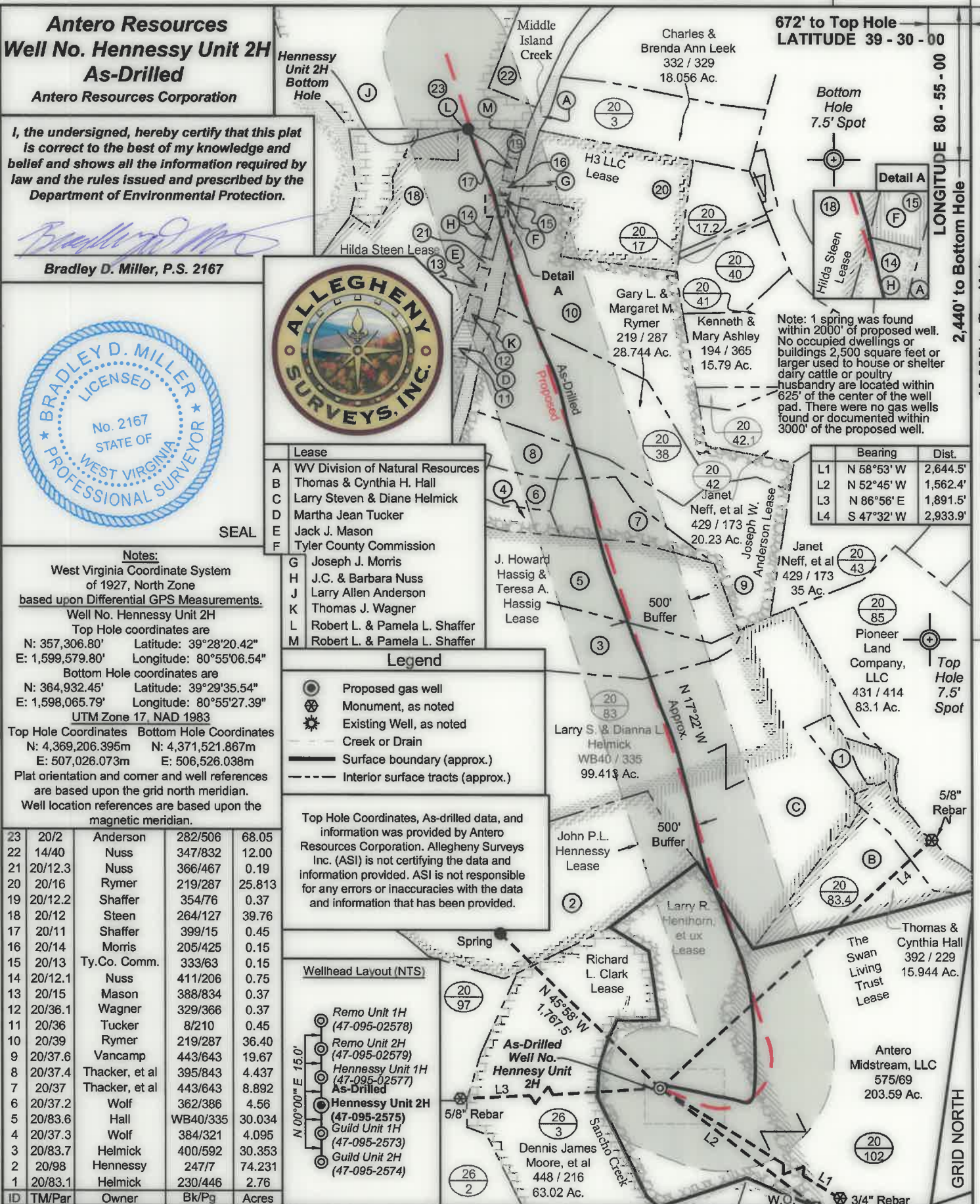
DATE: May 8 2020
OPERATOR'S WELL NO: Hennessy Unit 2H
API WELL NO: 47 - 095 - 02575
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(IF GAS) PRODUCTION: STORAGE DEEP SHALLOW

LOCATION: ELEVATION: As-Built - 757.5' WATERSHED: Outlet Middle Island Creek QUADRANGLE: Middlebourne
DISTRICT: Ellsworth COUNTY: Tyler 166.09063; 0.29244; 0.15;
SURFACE OWNER: Antero Midstream, LLC ACREAGE: 203.59 109.14; 39.757; 57.14; 61.71875;
ROYALTY OWNER: West Virginia Division of Natural Resources; Hilda Steen; LEASE NO: ACREAGE: 15.9; 99.413;

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,075' TVD 13,970' MD

WELL OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Dianna Stamper - CT Corporation System
ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313



2,186' to Bottom Hole

672' to Top Hole
LATITUDE 39 - 30 - 00

LONGITUDE 80 - 55 - 00

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10,065' to Top Hole

Antero Resources Well No. Hennessy Unit 2H As-Drilled

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Bradley D. Miller, P.S. 2167



SEAL



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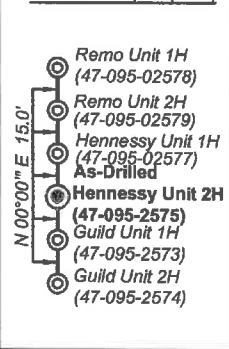
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Wellhead Layout (NTS)



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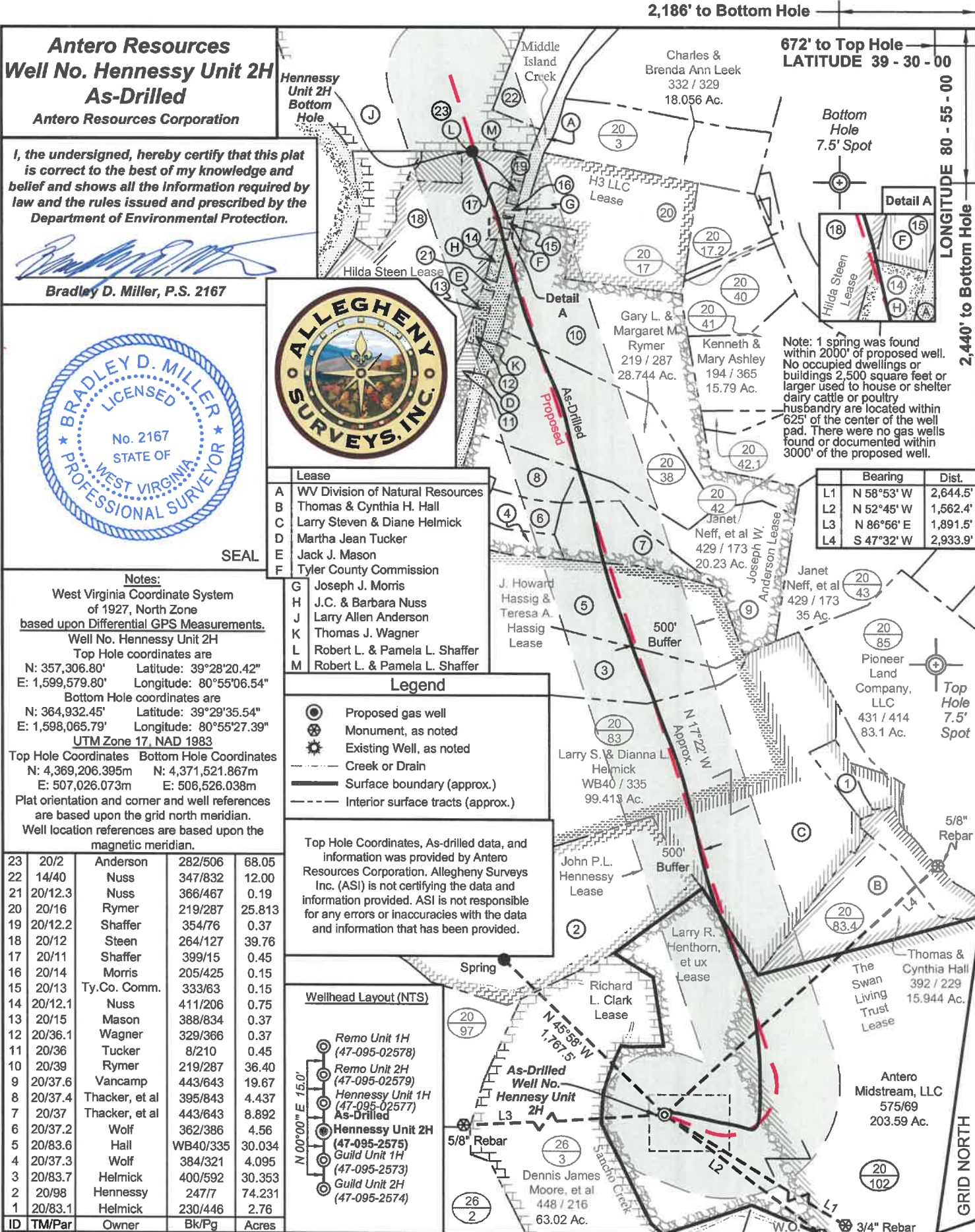
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OIL AND GAS DIVISION

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ADDRESS: 1615 Wynkoop Street ADDRESS: 5400 D Big Tyler Road
Denver, CO 80202 Charleston, WV 25313



Note: 1 spring was found within 2000' of proposed well. No occupied dwellings or buildings 2,500 square feet or larger used to house or shelter dairy cattle or poultry husbandry are located within 625' of the center of the well pad. There were no gas wells found or documented within 3000' of the proposed well.

Bearing	Dist.
L1 N 58°53' W	2,644.5'
L2 N 52°45' W	1,562.4'
L3 N 86°56' E	1,891.5'
L4 S 47°32' W	2,933.9'