

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

API 47 - 017 - 06790 County Doddridge District West Union
Quad West Union 7.5' Pad Name Strickling Pad Field/Pool Name -----
Farm name John Paul Strickling, et al Well Number Jimmy 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 4353670.188m Easting 518639.972m
Landing Point of Curve Northing 4353488.11m Easting 518745.50m
Bottom Hole Northing 4351111.612m Easting 519737.436m

Elevation (ft) 1065' 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 1/13/2017 Date drilling commenced 9/5/2017 Date drilling ceased 4/18/2018
Date completion activities began 8/29/2018 Date completion activities ceased 10/1/2018
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft None Identified Open mine(s) (Y/N) depths No
Salt water depth(s) ft None Identified Void(s) encountered (Y/N) depths No
Coal depth(s) ft None Identified Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

RECEIVED
Office of Oil and Gas
Reviewed by: _____

FEB 26 2019

WV Department of
Environmental Protection

Reviewed
Jul G. Fu 2/27/19

API 47-017 - 06790 Farm name John Paul Strickling, et al Well number Jimmy Unit 2H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade w/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	95'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	361'	New	54.5#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2605'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15993'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6840'		4.7#, P-110		
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	284 sx	15.6	1.18	335	0'	8 Hrs.
Surface	Class A	325 sx	15.6	1.2	390	0'	8 Hrs.
Coal							
Intermediate 1	Class A	905 sx	15.6	1.18	1068	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	743sx (Lead) 1452 sx (Tail)	14(Lead), 15.2 (Tail)	1.45 (Lead), 1.83 (Tail)	3735	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15993' MD, 6757' TVD (BHL), 6787' (Deepest Point Drilled) Loggers TD (ft) 15993' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5947

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 N/A

RECEIVED
Office of Oil and Gas

FEB 26 2019

API 47- 017 - 06790 Farm name John Paul Strickling, et al Well number Jimmy Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6667' (TOP)</u> TVD	<u>6895' (TOP)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

SHUT-IN PRESSURE Surface 3600 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW Gas 10118.32 mcfpd Oil 111.32 bpd NGL --- bpd Water 507.58 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>		<u>BOTTOM</u>		<u>DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H₂S, ETC)</u>
	<u>DEPTH IN FT NAME TVD</u>	<u>DEPTH IN FT TVD</u>	<u>DEPTH IN FT MD</u>	<u>DEPTH IN FT MD</u>	

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Frontier Drilling LLC
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

Logging Company Nine Energy Service
Address 125 Museum Rd City Washington State PA Zip 15301

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

Stimulating Company US Well Services
Address 533 Industrial Park Road City Lane Jew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Karin Cox Telephone 303-357-6820
Signature [Signature] Title Permitting Agent Date 2/25/2019

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

RECEIVED
Office of Oil and Gas
FEB 26 2019
WV Department of
Environmental Protection

API 47-017-06790 Farm Name John Paul Strickling, et al Well Number Jimmy Unit 2H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	8/29/2018	15847.4	15874	16	Marcellus
2	8/30/2018	15644.96	15815.66	48	Marcellus
3	8/30/2018	15442.52	15613.22	48	Marcellus
4	8/31/2018	15240.08	15410.78	48	Marcellus
5	8/31/2018	15037.64	15208.34	48	Marcellus
6	9/1/2018	14835.2	15005.9	48	Marcellus
7	9/1/2018	14632.76	14803.46	48	Marcellus
8	9/1/2018	14430.32	14601.02	48	Marcellus
9	9/2/2018	14227.88	14398.58	48	Marcellus
10	9/2/2018	14025.44	14196.14	48	Marcellus
11	9/3/2018	13823	13993.7	48	Marcellus
12	9/3/2018	13620.56	13791.26	48	Marcellus
13	9/3/2018	13418.12	13588.82	48	Marcellus
14	9/4/2018	13215.68	13386.38	48	Marcellus
15	9/4/2018	13013.24	13183.94	48	Marcellus
16	9/5/2018	12810.8	12981.5	48	Marcellus
17	9/5/2018	12608.36	12779.06	48	Marcellus
18	9/5/2018	12405.92	12576.62	48	Marcellus
19	9/6/2018	12203.48	12374.18	48	Marcellus
20	9/6/2018	12001.04	12171.74	48	Marcellus
21	9/7/2018	11798.6	11969.3	48	Marcellus
22	9/7/2018	11596.16	11766.86	48	Marcellus
23	9/8/2018	11393.72	11564.42	48	Marcellus
24	9/8/2018	11191.28	11361.98	48	Marcellus
25	9/9/2018	10988.84	11159.54	48	Marcellus
26	9/9/2018	10786.4	10957.1	48	Marcellus
27	9/9/2018	10583.96	10754.66	48	Marcellus
28	9/10/2018	10381.52	10552.22	48	Marcellus
29	9/11/2018	10179.08	10349.78	48	Marcellus
30	9/11/2018	9976.64	10147.34	48	Marcellus
31	9/12/2018	9774.2	9944.9	48	Marcellus
32	9/12/2018	9571.76	9742.46	48	Marcellus
33	9/13/2018	9369.32	9540.02	48	Marcellus
34	9/13/2018	9166.88	9337.58	48	Marcellus
35	9/13/2018	8964.44	9135.14	48	Marcellus
36	9/14/2018	8762	8932.7	48	Marcellus
37	9/14/2018	8559.56	8730.26	48	Marcellus
38	9/15/2018	8357.12	8527.82	48	Marcellus
39	9/15/2018	8154.68	8325.38	48	Marcellus
40	9/15/2018	7952.24	8122.94	48	Marcellus
41	9/16/2018	7749.8	7920.5	48	Marcellus
42	9/16/2018	7547.36	7718.06	48	Marcellus
43	9/17/2018	7344.92	7515.62	48	Marcellus
44	9/17/2018	7142.48	7313.18	48	Marcellus
45	9/17/2018	6940.04	7110.74	48	Marcellus

RECEIVED
Office of Oil and Gas

FEB 26 2019

WV Department of
Environmental Protection

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	8/29/2018	74.4734	8246.195	6257	4376	256050	7344	N/A
2	8/30/2018	78.7551	7937.965	6006	4514	404300	8379	N/A
3	8/30/2018	79.4818	8024.937	6064	3908	405100	8100	N/A
4	8/31/2018	78.7503	7946.68	6042	4119	405670	8049	N/A
5	8/31/2018	76.9235	8066.349	5801	3877	405600	7982	N/A
6	9/1/2018	79.4258	8191.068	5682	4038	403840	7937	N/A
7	9/1/2018	78.7074	7906.355	5788	3694	403900	7993	N/A
8	9/1/2018	78.2867	8175.861	5815	3421	402300	8056	N/A
9	9/2/2018	78.629	7892.604	5764	3923	402960	7916	N/A
10	9/2/2018	78.5407	8064.824	5736	3827	404800	7916	N/A
11	9/3/2018	78.3067	8117.498	5524	3745	405160	7860	N/A
12	9/3/2018	78.27	7976.888	5713	3775	404140	7942	N/A
13	9/3/2018	78.1558	7867.965	5762	4022	406270	7862	N/A
14	9/4/2018	78.3447	8033.354	5869	3621	404220	7897	N/A
15	9/4/2018	78.188	7970.398	5843	3679	404100	7870	N/A
16	9/5/2018	79.164	7863.022	5667	4039	404300	7831	N/A
17	9/5/2018	78.8766	7797.397	5776	4282	404520	7861	N/A
18	9/5/2018	79.2878	7908.103	5733	4007	403460	7879	N/A
19	9/6/2018	75.2787	8055.092	6273	3882	403150	9950	N/A
20	9/6/2018	76.7789	7740.462	5561	3826	403170	7840	N/A
21	9/7/2018	79.4859	7255.673	5814	3951	403950	7967	N/A
22	9/7/2018	76.3853	7389.027	5742	4086	403900	8932	N/A
23	9/8/2018	78.0906	7760.327	5544	3689	402700	7781	N/A
24	9/8/2018	78.9459	7772.924	5485	4048	403360	7742	N/A
25	9/9/2018	78.9048	7781.511	5847	3978	404300	7785	N/A
26	9/9/2018	78.7847	7665.919	5907	3846	404120	8056	N/A
27	9/9/2018	78.5445	7669.977	5816	3836	401000	7739	N/A
28	9/10/2018	79.3054	7338.606	6007	3730	402950	7698	N/A
29	9/11/2018	78.9801	7428.279	5942	4779	404400	7708	N/A
30	9/11/2018	72.4902	6670.636	5634	5026	405600	7812	N/A
31	9/12/2018	79.6709	7237.933	5676	4576	404900	7768	N/A
32	9/12/2018	79.794	7356.8	5882	4164	403600	7745	N/A
33	9/13/2018	79.9177	7332.578	5859	4597	402200	7781	N/A
34	9/13/2018	78.4006	7244.619	6220	5273	404850	7830	N/A
35	9/13/2018	79.9487	7253.649	5819	5298	409200	7660	N/A
36	9/14/2018	79.6998	7199.996	5891	3552	405950	7711	N/A
37	9/14/2018	78.2877	7312.673	5896	4006	403850	7753	N/A
38	9/15/2018	79.1192	7307.98	5842	3680	404900	7677	N/A
39	9/15/2018	78.6491	7549.541	5950	4647	404350	7717	N/A
40	9/15/2018	78.5315	7249.427	5295	3790	402500	7691	N/A
41	9/16/2018	79.1965	7176.911	6073	3637	404400	7645	N/A
42	9/16/2018	79.6258	7381.305	5645	4117	403800	7747	N/A
43	9/17/2018	79.4776	7144.153	6226	3998	402800	7588	N/A
44	9/17/2018	77.9845	7445.95	5923	3950	401860	9161	N/A
45	9/17/2018	79.538	7081.8	6586	4099	408210	7628	N/A
	AVG=	78	7,640	5,849	4,065	18,040,660	356,786	N/A

RECEIVED
Office of Oil and Gas

FEB 26 2019

EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD)	BOTTOM DEPTH (TVD)	TOP DEPTH (MD)	BOTTOM DEPTH (MD)
	From Surface	From Surface	From Surface	From Surface
Sandstone	0	187	0	187
Sandstone tr coal	est 187	267	est 187	267
Sandy shale	est 267	807	est 267	807
Calcareous Shale	est 807	1,187	est 807	1,187
Shale tr coal	est 1187	1,207	est 1187	1,207
Sandy Shale	est 1207	1,527	est 1207	1,527
Sandstone	est 1527	1,567	est 1527	1,567
Silty shale	est 1567	1,667	est 1567	1,667
Sandstone	est 1667	1,787	est 1667	1,787
Sandy shale	est 1787	1,909	est 1787	1,929
Big Lime	1,909	2,484	1,929	2,513
Fifty Foot Sandstone	2,484	2,694	2,513	2,727
Gordon	2,694	2,900	2,727	2,935
Fifth Sandstone	2,900	2,957	2,935	2,992
Bayard	2,957	3,778	2,992	3,814
Speechley	3,778	4,057	3,814	4,092
Balltown	4,057	4,539	4,092	4,574
Bradford	4,539	4,988	4,574	5,023
Benson	4,988	5,257	5,023	5,193
Alexander	5,257	6,281	5,193	6,331
Sycamore	6,281	6,461	6,331	6,546
Middlesex	6,461	6,592	6,546	6,743
Burkett	6,592	6,619	6,743	6,791
Tully	6,619	6,667	6,791	6,895
Marcellus	6,667	N/A	6,895	N/A

*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.

RECEIVED
Office of Oil and Gas

FEB 26 2019

WV Department of
Environmental Protection

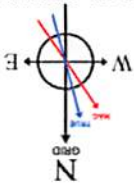


ANTERO RESOURCES CORPORATION
 Location: Doddridge Co., WV
 Field: Doddridge
 Facility: Strickling Pad
 Wellbore: Jimmy Unit 2H PWB
 Well: Jimmy Unit 2H
 Slot: Slot #04



Plot reference wellpath is Jimmy Unit 2H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 22 (RKB)	North Reference: Grid north
Measured depths are referenced to Frontier 22 (RKB)	Scale: True distance
Frontier 22 (RKB) to Mean Sea Level: 1089.5 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot #04): -1065 feet	Created by: mcrenb on 2018-05-21
Coordinates are in feet referenced to Slot	Database: WA_MPL_EASTERNUS_Deln

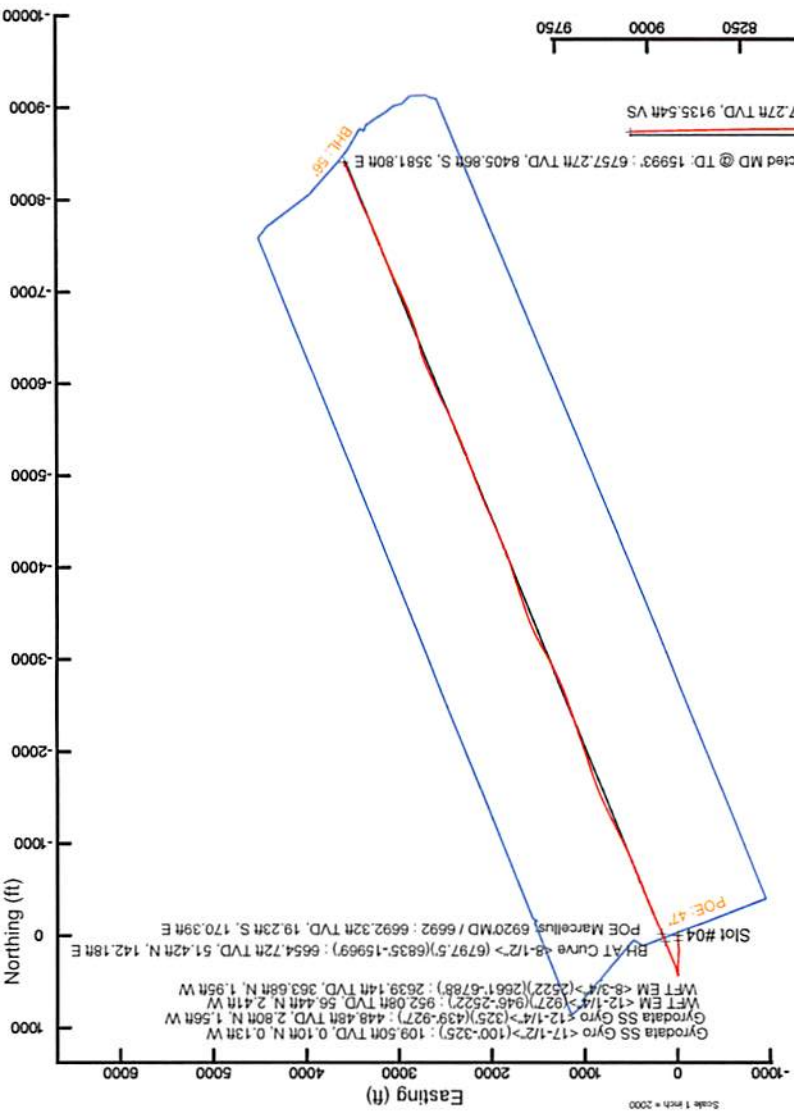
API: 47-017-06790-0000
Rig: Frontier 22
Duration: 04/12/18 - 04/15/18



User specified Dip: 66.56° Field: 52054 N1
 Magnetic North is 7.65 degrees West of True North (at 4/11/2018)
 Grid North is 0.14 degrees East of True North
 To correct azimuth from True to Grid subtract 0.14 degrees
 To correct azimuth from Magnetic to Grid subtract 7.79 degrees

Well Profile Data							
Design Comment	MD (ft)	Inc (?)	Az (?)	Local N (ft)	Local E (ft)	DLS (%100ft)	VS (ft)
On	6797.50	55.030	158.700	6634.21	80.71	130.93	2.71
Proj. To Bottom	6871.50	60.080	157.680	6673.89	22.76	154.13	6.92
POE	6915.53	65.560	157.000	6694.00	-13.37	169.22	12.52
Landing Pt.	7110.71	90.000	157.000	6735.00	-187.63	243.19	12.52
End of 3d Arc	7150.39	90.000	156.207	6735.00	-224.05	258.95	2.00
On Azimuth	7240.01	90.000	158.002	6735.00	-306.61	293.82	2.00
BHL	15982.56	90.000	158.002	6735.00	-8412.67	3568.59	0.00

Location Information	
Facility Name	Strickling Pad
Grid East (US ft)	Grid North (US ft)
1701583.170	14282960.060
Longitude	Latitude
80°47'01.270"W	39°19'55.890"N
Local E (ft)	Local N (ft)
-58.91	-82.3
Slot #04	Jimmy Unit 2H
Comment	Frontier 22 (RKB) to Ground level (At Slot: Slot #04)
	24.5ft
Mean Sea Level to Ground level (At Slot: Slot #04)	-1065ft
Frontier 22 (RKB) to Mean Sea Level	1089.5ft



Slot	Well	Wellbore	Wellpath
Slot #04	Jimmy Unit 2H	Jimmy Unit 2H PWB	Jimmy Unit 2H PWP Rev-A.0



Actual Wellpath Report

Jimmy Unit 2H AWP Proj: 15993'

Page 1 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Doddridge Co., WV	Well	Jimmy Unit 2H
Field	Doddridge	Wellbore	Jimmy Unit 2H AWB
Facility	Strickling Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Mccrrib
Scale	0.999604	Report Generated	5/21/2018 at 3:18:24 PM
Convergence at slot	0.14° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Jimmy_Unit_2H_AWP_Proj_15993_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-8.23	-58.91	1701524.28	14282951.83	39°19'55.810"N	80°47'02.020"W
Facility Reference Pt			1701583.17	14282960.06	39°19'55.890"N	80°47'01.270"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Frontier 22 (RKB) to Facility Vertical Datum	24.50ft
Horizontal Reference Pt	Slot	Frontier 22 (RKB) to Mean Sea Level	1089.50ft
Vertical Reference Pt	Frontier 22 (RKB)	Frontier 22 (RKB) to Ground Level at Slot (Slot #04)	24.50ft
MD Reference Pt	Frontier 22 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	158.00°

RECEIVED
 Office of Oil and Gas
 FEB 26 2019
 WV Department of
 Environmental Protection



Actual Wellpath Report

Jimmy Unit 2H AWP Proj: 15993'

Page 2 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION		Slot #04
Area	Doddridge Co., WV		Well
Field	Doddridge		Wellbore
Facility	Strickling Pad		Jimmy Unit 2H AWB

WELLPATH DATA (198 stations) † = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
0.00	0.00	307.900	0.00	0.00	0.00	0.00	1701524.28	14282951.83	39°19'55.810"N	80°47'02.020"W	0.00	0.000	0.00	0.00	0.00	
24.50	0.000	307.900	24.50	0.00	0.00	0.00	1701524.28	14282951.83	39°19'55.810"N	80°47'02.020"W	0.00	0.000	0.00	0.00	0.00	
109.50	0.220	307.900	109.50	-0.14	0.10	-0.13	1701524.15	14282951.93	39°19'55.811"N	80°47'02.022"W	0.16	307.900	0.26	0.26	-61.29	Gyrodata SS Gyro <17-1/2">(100'-325')
209.50	0.330	336.210	209.50	-0.60	0.48	-0.40	1701523.88	14282952.31	39°19'55.815"N	80°47'02.025"W	0.62	320.546	0.17	0.11	28.31	
309.50	0.580	316.670	309.50	-1.35	1.11	-0.86	1701523.42	14282952.94	39°19'55.821"N	80°47'02.031"W	1.41	322.319	0.29	0.25	-19.54	
334.50	0.480	316.790	334.49	-1.57	1.28	-1.02	1701523.26	14282953.11	39°19'55.823"N	80°47'02.033"W	1.64	321.530	0.40	-0.40	0.48	
448.50	1.200	349.770	448.48	-3.18	2.80	-1.56	1701522.72	14282954.63	39°19'55.838"N	80°47'02.040"W	3.21	330.956	0.74	0.63	28.93	Gyrodata SS Gyro <12-1/4">(325')(439'-927')
539.50	2.980	358.940	539.42	-6.33	6.11	-1.77	1701522.51	14282957.94	39°19'55.870"N	80°47'02.042"W	6.36	343.835	1.98	1.96	10.08	
629.50	5.100	1.370	629.19	-12.18	12.45	-1.72	1701522.56	14282964.27	39°19'55.933"N	80°47'02.042"W	12.56	352.141	2.36	2.36	2.70	
719.50	6.550	1.250	718.72	-20.57	21.58	-1.51	1701522.77	14282973.40	39°19'56.023"N	80°47'02.039"W	21.63	355.996	1.61	1.61	-0.13	
809.50	8.040	0.630	807.99	-31.10	33.00	-1.33	1701522.95	14282984.82	39°19'56.136"N	80°47'02.036"W	33.03	357.694	1.66	1.66	-0.69	
936.50	10.180	355.470	933.38	-50.00	53.08	-2.12	1701522.16	14283004.88	39°19'56.335"N	80°47'02.045"W	53.12	357.715	1.80	1.69	-4.06	
955.50	10.290	354.580	952.08	-53.23	56.44	-2.41	1701521.87	14283008.25	39°19'56.368"N	80°47'02.049"W	56.49	357.554	1.01	0.58	-4.68	WFT EM <12-1/4">(927')(946'-2522')
1050.50	9.930	353.410	1045.61	-69.26	73.02	-4.15	1701520.13	14283024.82	39°19'56.532"N	80°47'02.071"W	73.14	356.745	0.44	-0.38	-1.23	
1144.50	9.830	355.620	1138.21	-84.72	89.07	-5.70	1701518.59	14283040.87	39°19'56.691"N	80°47'02.090"W	89.26	356.341	0.42	-0.11	2.35	
1239.50	9.980	358.200	1231.80	-100.18	105.39	-6.57	1701517.71	14283057.18	39°19'56.852"N	80°47'02.100"W	105.59	356.431	0.49	0.16	2.72	
1333.50	10.710	357.410	1324.27	-116.06	122.26	-7.22	1701517.06	14283074.04	39°19'57.019"N	80°47'02.108"W	122.47	356.618	0.79	0.78	-0.84	
1428.50	10.150	353.030	1417.70	-132.47	139.38	-8.64	1701515.64	14283091.16	39°19'57.188"N	80°47'02.126"W	139.65	356.453	1.02	-0.59	-4.61	
1523.50	9.800	352.970	1511.26	-148.36	155.72	-10.64	1701513.64	14283107.48	39°19'57.349"N	80°47'02.151"W	156.08	356.090	0.37	-0.37	-0.06	
1617.50	10.500	1.730	1603.80	-163.94	172.22	-11.36	1701512.92	14283123.98	39°19'57.512"N	80°47'02.159"W	172.59	356.225	1.80	0.74	9.32	
1711.50	10.360	6.470	1696.25	-179.21	189.18	-10.15	1701514.13	14283140.93	39°19'57.680"N	80°47'02.143"W	189.45	356.928	0.92	-0.15	5.04	
1806.50	11.330	6.700	1789.55	-194.90	206.93	-8.10	1701516.18	14283158.68	39°19'57.855"N	80°47'02.117"W	207.09	357.758	1.02	1.02	0.24	
1900.50	10.570	1.500	1881.84	-210.91	224.72	-6.80	1701517.48	14283176.46	39°19'58.031"N	80°47'02.100"W	224.83	358.267	1.33	-0.81	-5.53	
1995.50	10.960	357.550	1975.17	-227.41	242.46	-6.96	1701517.33	14283194.19	39°19'58.207"N	80°47'02.101"W	242.56	358.356	0.88	0.41	-4.16	
2090.50	10.850	1.790	2068.45	-244.10	260.42	-7.06	1701517.22	14283212.14	39°19'58.384"N	80°47'02.102"W	260.51	358.446	0.85	-0.12	4.46	
2185.50	10.180	6.680	2161.86	-259.65	277.69	-5.81	1701518.47	14283229.41	39°19'58.555"N	80°47'02.085"W	277.75	358.802	1.17	-0.71	5.15	
2279.50	9.830	5.080	2254.43	-274.08	293.94	-4.13	1701520.15	14283245.65	39°19'58.715"N	80°47'02.064"W	293.97	359.195	0.48	-0.37	-1.70	
2373.50	9.850	3.870	2347.05	-288.46	309.95	-2.88	1701521.40	14283261.66	39°19'58.874"N	80°47'02.047"W	309.96	359.468	0.22	0.02	-1.29	
2468.50	10.450	2.260	2440.56	-303.63	326.67	-1.99	1701522.29	14283278.37	39°19'59.039"N	80°47'02.035"W	326.67	359.651	0.70	0.63	-1.69	
2531.50	10.520	0.790	2502.51	-314.14	338.13	-1.69	1701522.60	14283289.82	39°19'59.152"N	80°47'02.031"W	338.13	359.714	0.44	0.11	-2.33	

RECEIVED
 Office of Oil and Gas
 FEB 26 2019
 WV Department of
 Environmental Protection



Actual Wellpath Report

Jimmy Unit 2H AWP Proj: 15993'

Page 3 of 11



REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #04
Area	Doddridge Co., WV		Well	Jimmy Unit 2H
Field	Doddridge		Wellbore	Jimmy Unit 2H AWP
Facility	Strickling Pad			

WELLPATH DATA (198 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
2670.50	10.670	358.060	2639.14	-337.92	363.68	-1.95	1701522.33	14283315.36	39°19'59.405"N	80°47'02.034"W	363.68	359.693	0.38	0.11	-1.96	WFT EM <8-3/4">(2522')(2661'-6788')
2733.50	10.340	356.030	2701.08	-348.78	375.14	-2.53	1701521.75	14283326.83	39°19'59.518"N	80°47'02.041"W	375.15	359.613	0.79	-0.52	-3.22	
2828.50	8.120	354.480	2794.85	-363.32	390.33	-3.77	1701520.51	14283342.00	39°19'59.668"N	80°47'02.056"W	390.35	359.447	2.35	-2.34	-1.63	
2922.50	6.800	357.850	2888.05	-374.92	402.50	-4.62	1701519.66	14283354.17	39°19'59.788"N	80°47'02.067"W	402.53	359.343	1.48	-1.40	3.59	
3017.50	5.210	3380	2982.53	-384.11	412.43	-4.57	1701519.71	14283364.09	39°19'59.886"N	80°47'02.066"W	412.45	359.365	1.78	-1.67	5.82	
3111.50	3.980	6.710	3076.22	-390.83	419.93	-3.94	1701520.34	14283371.59	39°19'59.961"N	80°47'02.057"W	419.95	359.462	1.34	-1.31	3.54	
3206.50	2.000	358.400	3171.09	-395.27	424.86	-3.60	1701520.68	14283376.52	39°20'00.009"N	80°47'02.053"W	424.87	359.514	2.13	-2.08	-8.75	
3300.50	0.210	330.400	3265.07	-396.98	426.65	-3.73	1701520.55	14283378.31	39°20'00.027"N	80°47'02.055"W	426.66	359.499	1.93	-1.90	-29.79	
3394.50	0.170	260.080	3359.07	-397.18	426.77	-3.96	1701520.33	14283378.43	39°20'00.028"N	80°47'02.057"W	426.79	359.469	0.24	-0.04	-74.81	
3494.50	0.130	279.580	3459.07	-397.27	426.77	-4.21	1701520.07	14283378.43	39°20'00.028"N	80°47'02.061"W	426.79	359.434	0.06	-0.04	19.50	
3588.50	0.320	331.880	3553.07	-397.59	427.02	-4.44	1701519.84	14283378.68	39°20'00.031"N	80°47'02.064"W	427.04	359.404	0.28	0.20	55.64	
3682.50	0.420	336.730	3647.07	-398.19	427.56	-4.70	1701519.58	14283379.22	39°20'00.036"N	80°47'02.067"W	427.59	359.370	0.11	0.11	5.16	
3776.50	0.350	295.230	3741.06	-398.75	428.00	-5.10	1701519.18	14283379.66	39°20'00.040"N	80°47'02.072"W	428.03	359.317	0.30	-0.07	-44.15	
3870.50	0.610	319.720	3835.06	-399.43	428.51	-5.68	1701518.60	14283380.17	39°20'00.045"N	80°47'02.079"W	428.55	359.240	0.35	0.28	26.05	
3963.50	0.560	324.120	3928.06	-400.35	429.25	-6.27	1701518.01	14283380.91	39°20'00.053"N	80°47'02.087"W	429.30	359.163	0.07	-0.05	4.73	
4058.50	0.660	323.370	4023.05	-401.33	430.07	-6.87	1701517.42	14283381.73	39°20'00.061"N	80°47'02.094"W	430.12	359.085	0.11	0.11	-0.79	
4152.50	0.690	335.240	4117.04	-402.41	431.02	-7.43	1701516.86	14283382.68	39°20'00.070"N	80°47'02.101"W	431.08	359.013	0.15	0.03	12.63	
4246.50	0.770	340.230	4211.04	-403.61	432.13	-7.88	1701516.41	14283383.78	39°20'00.081"N	80°47'02.107"W	432.20	358.956	0.11	0.09	5.31	
4341.50	0.620	343.790	4306.03	-404.76	433.22	-8.24	1701516.05	14283384.88	39°20'00.092"N	80°47'02.112"W	433.30	358.911	0.16	-0.16	3.75	
4435.50	0.650	12.160	4400.02	-405.71	434.23	-8.27	1701516.02	14283385.89	39°20'00.102"N	80°47'02.112"W	434.31	358.909	0.33	0.03	30.18	
4529.50	0.630	10.150	4494.02	-406.59	435.26	-8.06	1701516.22	14283386.92	39°20'00.112"N	80°47'02.109"W	435.33	358.939	0.03	-0.02	-2.14	
4623.50	0.640	36.200	4588.01	-407.30	436.19	-7.66	1701516.62	14283387.85	39°20'00.121"N	80°47'02.104"W	436.26	358.994	0.30	0.01	27.71	
4717.50	0.600	31.380	4682.01	-407.87	437.04	-7.10	1701517.19	14283388.69	39°20'00.130"N	80°47'02.097"W	437.09	359.070	0.07	-0.04	-5.13	
4812.50	0.640	43.650	4777.00	-408.39	437.84	-6.47	1701517.81	14283389.50	39°20'00.138"N	80°47'02.089"W	437.89	359.153	0.15	0.04	12.92	
4907.50	0.700	45.280	4871.99	-408.83	438.64	-5.69	1701518.59	14283390.29	39°20'00.145"N	80°47'02.079"W	438.67	359.257	0.07	0.06	1.72	
5001.50	0.800	53.780	4965.99	-409.21	439.43	-4.75	1701519.53	14283391.08	39°20'00.153"N	80°47'02.067"W	439.45	359.380	0.16	0.11	9.04	
5096.50	0.560	147.220	5060.98	-408.92	439.43	-3.97	1701520.31	14283391.08	39°20'00.153"N	80°47'02.057"W	439.45	359.483	1.06	-0.25	98.36	
5190.50	0.950	161.760	5154.97	-407.69	438.30	-3.48	1701520.81	14283389.96	39°20'00.142"N	80°47'02.051"W	438.32	359.546	0.46	0.41	15.47	
5285.50	0.950	154.810	5249.96	-406.12	436.84	-2.89	1701521.39	14283388.50	39°20'00.128"N	80°47'02.044"W	436.85	359.620	0.12	0.00	-7.32	
5379.50	1.060	143.890	5343.95	-404.50	435.44	-2.05	1701522.23	14283387.09	39°20'00.114"N	80°47'02.033"W	435.44	359.730	0.23	0.12	-11.62	

RECEIVED
 Office of Oil and Gas
 FEB 26 2019
 WV Department of
 Environmental Protection



Actual Wellpath Report

Jimmy Unit 2H AWP Proj: 15993'
Page 4 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Doddridge Co., WV	Well	Jimmy Unit 2H
Field	Doddridge	Wellbore	Jimmy Unit 2H AWB
Facility	Strickling Pad		

WELLPATH DATA (198 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
5474.50	1.040	137.770	5438.93	-402.84	434.09	-0.95	1701523.33	14283385.74	39°20'00.100"N	80°47'02.019"W	434.09	359.874	0.12	-0.02	-6.44	
5568.50	0.250	333.130	5532.93	-402.24	433.64	-0.47	1701523.81	14283385.30	39°20'00.096"N	80°47'02.013"W	433.64	359.938	1.36	-0.84	-175.15	
5663.50	0.550	327.210	5627.92	-402.89	434.21	-0.81	1701523.47	14283385.86	39°20'00.102"N	80°47'02.017"W	434.21	359.893	0.32	0.32	-6.23	
5758.50	0.390	340.980	5722.92	-403.66	434.90	-1.16	1701523.12	14283386.55	39°20'00.108"N	80°47'02.022"W	434.90	359.847	0.21	-0.17	14.49	
5852.50	0.440	322.090	5816.92	-404.33	435.48	-1.49	1701522.79	14283387.14	39°20'00.114"N	80°47'02.026"W	435.49	359.804	0.15	0.05	-20.10	
5946.50	0.730	153.900	5910.92	-404.08	435.23	-1.45	1701522.83	14283386.89	39°20'00.112"N	80°47'02.025"W	435.23	359.809	1.24	0.31	-178.93	
6041.50	4.020	158.290	6005.82	-400.15	431.59	0.05	1701524.33	14283383.25	39°20'00.076"N	80°47'02.006"W	431.59	0.007	3.47	3.46	4.62	
6072.50	6.990	160.470	6036.68	-397.17	428.80	1.08	1701525.36	14283380.46	39°20'00.048"N	80°47'01.993"W	428.80	0.145	9.60	9.58	7.03	
6103.50	9.880	163.950	6067.34	-392.64	424.47	2.45	1701526.73	14283376.13	39°20'00.005"N	80°47'01.976"W	424.48	0.330	9.46	9.32	11.23	
6135.50	12.820	162.550	6098.71	-386.37	418.44	4.27	1701528.55	14283370.11	39°19'59.946"N	80°47'01.953"W	418.46	0.585	9.23	9.19	-4.37	
6166.50	15.230	164.170	6128.78	-378.89	411.24	6.41	1701530.69	14283362.91	39°19'59.874"N	80°47'01.926"W	411.29	0.894	7.88	7.77	5.23	
6198.50	17.390	164.510	6159.49	-369.96	402.59	8.84	1701533.12	14283354.26	39°19'59.789"N	80°47'01.895"W	402.69	1.258	6.76	6.75	1.06	
6229.50	19.630	165.410	6188.89	-360.20	393.08	11.39	1701535.66	14283344.76	39°19'59.695"N	80°47'01.863"W	393.25	1.659	7.28	7.23	2.90	
6261.50	21.510	165.630	6218.84	-349.05	382.20	14.20	1701538.47	14283333.88	39°19'59.587"N	80°47'01.828"W	382.46	2.127	5.88	5.87	0.69	
6292.50	23.010	164.880	6247.53	-337.40	370.84	17.19	1701541.46	14283322.53	39°19'59.475"N	80°47'01.790"W	371.24	2.654	4.92	4.84	-2.42	
6324.50	23.820	163.900	6276.90	-324.76	358.60	20.61	1701544.88	14283310.28	39°19'59.354"N	80°47'01.747"W	359.19	3.290	2.81	2.53	-3.06	
6355.50	25.020	162.580	6305.12	-312.00	346.33	24.31	1701548.58	14283298.02	39°19'59.232"N	80°47'01.700"W	347.18	4.015	4.25	3.87	-4.26	
6387.50	27.020	161.180	6333.88	-298.00	332.99	28.68	1701552.95	14283284.69	39°19'59.100"N	80°47'01.645"W	334.22	4.923	6.54	6.25	-4.37	
6418.50	30.230	159.280	6361.09	-283.16	319.02	33.72	1701557.98	14283270.72	39°19'58.962"N	80°47'01.581"W	320.80	6.033	10.76	10.35	-6.13	
6450.50	32.700	157.450	6388.38	-266.46	303.50	39.88	1701564.15	14283255.21	39°19'58.809"N	80°47'01.503"W	306.11	7.486	8.28	7.72	-5.72	
6481.50	34.370	156.250	6414.22	-249.34	287.76	46.62	1701570.88	14283239.47	39°19'58.653"N	80°47'01.418"W	291.51	9.202	5.80	5.39	-3.87	
6513.50	35.820	155.960	6440.40	-230.95	270.94	54.07	1701578.33	14283222.66	39°19'58.487"N	80°47'01.324"W	276.28	11.286	4.56	4.53	-0.91	
6545.50	38.150	156.810	6465.96	-211.71	253.30	61.78	1701586.03	14283205.03	39°19'58.312"N	80°47'01.226"W	260.72	13.707	7.45	7.28	2.66	
6576.50	40.280	157.810	6489.98	-192.11	235.22	69.34	1701593.59	14283186.95	39°19'58.133"N	80°47'01.130"W	245.22	16.424	7.17	6.87	3.23	
6608.50	42.170	158.160	6514.05	-171.03	215.66	77.24	1701601.49	14283167.41	39°19'57.940"N	80°47'01.031"W	229.08	19.705	5.95	5.91	1.09	
6639.50	45.100	158.180	6536.48	-149.64	195.81	85.19	1701609.44	14283147.56	39°19'57.743"N	80°47'00.930"W	213.54	23.513	9.45	9.45	0.06	
6670.50	48.150	158.960	6557.77	-127.11	174.84	93.42	1701617.66	14283126.60	39°19'57.536"N	80°47'00.826"W	198.23	28.117	10.01	9.84	2.52	
6702.50	51.650	158.570	6578.38	-102.64	152.02	102.29	1701626.53	14283103.79	39°19'57.310"N	80°47'00.714"W	183.23	33.934	10.98	10.94	-1.22	
6733.50	54.070	157.920	6597.09	-77.93	129.07	111.45	1701635.68	14283080.85	39°19'57.083"N	80°47'00.598"W	170.53	40.808	7.98	7.81	-2.10	
6765.50	54.560	157.810	6615.76	-51.94	105.00	121.24	1701645.47	14283056.79	39°19'56.845"N	80°47'00.474"W	160.39	49.106	1.56	1.53	-0.34	



Actual Wellpath Report

Jimmy Unit 2H AWP Proj: 15993'

Page 5 of 11



REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #04
Area	Doddridge Co., WV		Well	Jimmy Unit 2H
Field	Doddridge		Wellbore	Jimmy Unit 2H AWB
Facility	Strickling Pad			

WELLPATH DATA (198 stations) † = interpolated/extrapolated station																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
6768.00†	54.596	157.880	6617.21	-49.90	103.11	122.01	1701646.24	14283054.90	39°19'56.826"N	80°47'00.464"W	159.74	49.798	2.71	1.46	2.80	Burket: 6768'MD / 6617'TVD
6797.50	55.030	158.700	6634.21	-25.79	80.71	130.93	1701655.15	14283032.51	39°19'56.605"N	80°47'00.351"W	153.81	58.347	2.71	1.47	2.78	
6816.00†	56.806	158.982	6644.57	-10.47	66.42	136.46	1701660.68	14283018.23	39°19'56.463"N	80°47'00.281"W	151.76	64.044	9.68	9.60	1.52	Tully: 6816'MD / 6645'TVD
6835.00	58.630	159.260	6654.72	5.59	51.42	142.18	1701666.40	14283003.23	39°19'56.315"N	80°47'00.209"W	151.19	70.119	9.68	9.60	1.46	BH AT Curve <8-1/2"> (6797.5')(6835'-15969')
6853.00	60.190	159.090	6663.88	21.08	36.93	147.69	1701671.91	14282988.75	39°19'56.172"N	80°47'00.139"W	152.24	75.960	8.70	8.67	-0.94	
6894.00†	65.861	157.721	6682.47	57.60	2.98	161.14	1701685.36	14282954.81	39°19'55.836"N	80°46'59.969"W	161.17	88.941	14.15	13.83	-3.34	Hamilton: 6894'MD / 6682'TVD
6901.00	66.830	157.500	6685.28	64.02	-2.95	163.58	1701687.80	14282948.88	39°19'55.777"N	80°46'59.938"W	163.61	91.033	14.15	13.85	-3.16	
6920.00†	69.663	157.157	6692.32	81.66	-19.23	170.39	1701694.60	14282932.61	39°19'55.616"N	80°46'59.852"W	171.47	96.440	15.00	14.91	-1.81	POE Marcellus: 6920'MD / 6692
6947.00	73.690	156.690	6700.81	107.28	-42.81	180.43	1701704.64	14282909.04	39°19'55.383"N	80°46'59.725"W	185.44	103.346	15.00	14.91	-1.73	
6994.00	75.130	156.350	6713.44	152.53	-84.33	198.47	1701722.67	14282867.54	39°19'54.972"N	80°46'59.497"W	215.64	113.020	3.14	3.06	-0.72	
7042.00	78.000	156.790	6724.59	199.20	-127.16	217.03	1701741.22	14282824.72	39°19'54.548"N	80°46'59.262"W	251.54	120.367	6.05	5.98	0.92	
7089.00	83.500	157.360	6732.14	245.57	-169.87	235.09	1701759.28	14282782.03	39°19'54.126"N	80°46'59.033"W	290.04	125.851	11.76	11.70	1.21	
7137.00	89.110	158.070	6735.23	293.45	-214.17	253.25	1701777.43	14282737.74	39°19'53.687"N	80°46'58.804"W	331.67	130.222	11.78	11.69	1.48	
7231.00	89.320	157.480	6736.52	387.44	-301.18	288.80	1701812.96	14282650.77	39°19'52.826"N	80°46'58.354"W	417.27	136.202	0.67	0.22	-0.63	
7326.00	89.320	157.850	6737.65	482.43	-389.05	324.90	1701849.05	14282562.94	39°19'51.957"N	80°46'57.897"W	506.87	140.134	0.39	0.00	0.39	
7421.00	89.540	158.670	6738.59	577.42	-477.29	360.08	1701884.22	14282474.73	39°19'51.084"N	80°46'57.452"W	597.88	142.968	0.89	0.23	0.86	
7515.00	90.310	158.960	6738.72	671.41	-564.93	394.05	1701918.18	14282387.12	39°19'50.217"N	80°46'57.023"W	688.79	145.103	0.88	0.82	0.31	
7609.00	89.570	157.040	6738.82	765.41	-652.08	429.26	1701953.37	14282300.01	39°19'49.355"N	80°46'56.577"W	780.69	146.643	2.19	-0.79	-2.04	
7704.00	89.570	157.120	6739.53	860.39	-739.58	466.26	1701990.35	14282212.54	39°19'48.489"N	80°46'56.109"W	874.29	147.771	0.08	0.00	0.08	
7798.00	89.570	156.570	6740.23	954.37	-826.01	503.22	1702027.30	14282126.15	39°19'47.634"N	80°46'55.641"W	967.22	148.649	0.59	0.00	-0.59	
7893.00	89.540	155.630	6740.97	1049.31	-912.86	541.71	1702065.77	14282039.34	39°19'46.775"N	80°46'55.154"W	1061.49	149.314	0.99	-0.03	-0.99	
7988.00	89.720	154.660	6741.59	1144.19	-999.05	581.64	1702105.69	14281953.17	39°19'45.922"N	80°46'54.649"W	1156.03	149.793	1.04	0.19	-1.02	
8082.00	89.260	152.920	6742.42	1237.93	-1083.38	623.15	1702147.18	14281868.88	39°19'45.087"N	80°46'54.123"W	1249.81	150.093	1.91	-0.49	-1.85	
8177.00	89.380	152.550	6743.55	1332.52	-1167.82	666.67	1702190.68	14281784.47	39°19'44.252"N	80°46'53.572"W	1344.71	150.280	0.41	0.13	-0.39	
8271.00	89.350	153.210	6744.59	1426.14	-1251.48	709.51	1702233.51	14281700.85	39°19'43.424"N	80°46'53.029"W	1438.62	150.449	0.70	-0.03	0.70	
8366.00	89.380	154.600	6745.64	1520.89	-1336.79	751.30	1702275.28	14281615.57	39°19'42.580"N	80°46'52.500"W	1533.45	150.663	1.46	0.03	1.46	
8461.00	89.350	155.260	6746.70	1615.75	-1422.83	791.55	1702315.51	14281529.56	39°19'41.728"N	80°46'51.990"W	1628.19	150.912	0.70	-0.03	0.69	
8554.00	89.380	156.510	6747.73	1708.68	-1507.71	829.54	1702353.49	14281444.72	39°19'40.889"N	80°46'51.510"W	1720.85	151.180	1.34	0.03	1.34	
8649.00	89.230	159.470	6748.88	1803.66	-1595.77	865.14	1702389.08	14281356.69	39°19'40.017"N	80°46'51.059"W	1815.20	151.536	3.12	-0.16	3.12	
8743.00	89.600	160.430	6749.84	1897.60	-1684.07	897.36	1702421.29	14281268.43	39°19'39.144"N	80°46'50.652"W	1908.23	151.949	1.09	0.39	1.02	

RECEIVED
 Office of Oil and Gas
 FEB 26 2019
 WV Department of
 Environmental Protection



Actual Wellpath Report

Jimmy Unit 2H AWP Proj.: 15993

Page 6 of 11



Operator	ANTERO RESOURCES CORPORATION
Area	Doddridge Co., WV
Field	Doddridge
Facility	Striking Pad
Slot	Slot #04
Well	Jimmy Unit 2H
Wellbore	Jimmy Unit 2H AWB

WELLPATH DATA (198 stations)

MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
8839.00	161.810	6750.64	1993.45	-1774.90	928.43	1702452.34	14281177.64	39°19'38.246"N	80°46'50.260"W	2003.06	152.386	1.45	-0.16	1.44	0.87	
8934.00	162.640	6751.52	2088.19	-1865.36	957.43	1702481.33	14281087.21	39°19'37.351"N	80°46'49.893"W	2096.72	152.830	0.87	-0.03	1.44	0.87	
8929.00	161.700	6752.57	2182.93	-1955.79	966.51	1702510.40	14280996.82	39°19'36.456"N	80°46'49.526"W	2190.51	153.233	1.02	-0.23	0.99	-0.99	
9123.00	161.350	6753.55	2276.75	-2044.94	1016.30	1702540.18	14280907.70	39°19'35.574"N	80°46'49.150"W	2283.56	153.573	0.48	0.30	-0.37	-0.37	
9218.00	160.620	6754.50	2371.61	-2134.75	1047.25	1702571.11	14280817.93	39°19'34.686"N	80°46'48.759"W	2377.79	153.869	0.80	-0.23	-0.77	1.18	
9313.00	161.740	6755.54	2466.46	-2224.66	1077.89	1702601.75	14280728.05	39°19'33.797"N	80°46'48.371"W	2472.04	154.149	1.18	0.11	1.18	0.18	
9408.00	161.910	6756.61	2561.24	-2314.92	1107.52	1702631.36	14280637.83	39°19'32.904"N	80°46'47.997"W	2566.21	154.432	0.23	-0.14	0.18	-0.46	
9503.00	161.470	6757.68	2656.04	-2405.10	1137.37	1702661.20	14280547.68	39°19'32.012"N	80°46'47.620"W	2660.47	154.691	0.48	0.14	-0.46	-0.79	
9598.00	160.720	6758.68	2750.89	-2494.97	1168.15	1702691.96	14280457.85	39°19'31.123"N	80°46'47.231"W	2754.90	154.911	0.79	-0.04	-0.79	-0.86	
9693.00	159.900	6759.67	2845.81	-2584.41	1200.15	1702723.95	14280368.45	39°19'30.238"N	80°46'46.827"W	2849.48	155.091	0.86	0.04	-0.86	-1.17	
9788.00	158.790	6760.25	2940.78	-2673.30	1233.66	1702757.45	14280279.59	39°19'29.359"N	80°46'46.403"W	2944.23	155.228	1.26	0.48	-1.17	-4.01	
9883.00	154.980	6761.06	3035.74	-2760.66	1270.95	1702794.72	14280192.27	39°19'28.494"N	80°46'45.931"W	3039.17	155.280	4.09	-0.78	-4.01	0.16	
9979.00	155.130	6762.35	3131.61	-2847.69	1311.43	1702835.19	14280105.27	39°19'27.633"N	80°46'45.419"W	3135.16	155.273	0.24	0.19	0.16	-1.89	
10074.00	153.330	6763.46	3226.39	-2933.23	1352.73	1702876.47	14280019.76	39°19'26.787"N	80°46'44.896"W	3230.13	155.242	1.89	0.03	-1.89	-2.37	
10168.00	151.100	6764.69	3319.90	-3016.38	1396.54	1702920.27	14279936.65	39°19'25.964"N	80°46'44.341"W	3323.99	155.157	2.38	-0.22	-2.37	-1.54	
10263.00	149.640	6766.40	3414.04	-3098.95	1443.50	1702967.21	14279854.12	39°19'25.147"N	80°46'43.746"W	3418.65	155.024	1.58	-0.36	-1.54	1.66	
10358.00	151.220	6767.99	3508.19	-3181.56	1490.37	1703014.06	14279771.54	39°19'24.329"N	80°46'43.152"W	3513.34	154.900	1.74	0.52	1.66	3.26	
10453.00	154.320	6769.14	3602.78	-3266.01	1533.83	1703057.50	14279687.12	39°19'23.493"N	80°46'42.602"W	3608.25	154.844	3.26	-0.03	3.26	10543.00	
10548.00	157.380	6770.29	3697.69	-3352.68	1572.69	1703096.35	14279600.48	39°19'22.636"N	80°46'42.110"W	3703.22	154.869	3.22	-0.03	3.22	10642.00	
10642.00	159.340	6771.48	3791.68	-3440.05	1607.35	1703130.99	14279513.15	39°19'21.771"N	80°46'41.672"W	3797.04	154.956	2.09	-0.03	2.09	10737.00	
10737.00	161.640	6772.66	3886.58	-3529.58	1639.08	1703162.70	14279423.66	39°19'20.886"N	80°46'41.271"W	3891.59	155.091	2.42	0.06	2.42	10830.00	
10830.00	161.090	6774.04	3979.41	-3617.69	1668.79	1703192.41	14279335.58	39°19'20.014"N	80°46'40.896"W	3984.04	155.237	0.70	-0.37	-0.59	10925.00	
10925.00	161.490	6775.26	4074.24	-3707.66	1699.26	1703222.86	14279245.64	39°19'19.124"N	80°46'40.511"W	4078.51	155.378	0.72	0.59	0.42	11020.00	
11020.00	161.330	6776.16	4169.07	-3797.70	1729.54	1703253.14	14279155.64	39°19'18.234"N	80°46'40.128"W	4172.99	155.515	0.24	-0.17	-0.17	11115.00	
11115.00	162.910	6777.03	4263.82	-3888.11	1758.71	1703282.29	14279065.27	39°19'17.339"N	80°46'39.760"W	4267.37	155.661	1.68	0.20	1.66	11210.00	
11210.00	163.490	6777.62	4358.42	-3979.05	1786.17	1703309.74	14278974.36	39°19'16.440"N	80°46'39.414"W	4361.56	155.825	0.63	0.16	0.61	11306.00	
11306.00	162.410	6777.85	4454.06	-4070.83	1814.31	1703337.87	14278882.62	39°19'15.532"N	80°46'39.058"W	4456.84	155.978	1.16	0.28	-1.12	11400.00	
11400.00	157.660	6778.58	4547.97	-4159.15	1846.40	1703369.95	14278794.33	39°19'14.658"N	80°46'38.653"W	4550.58	156.062	5.14	-0.95	-5.05	11495.00	
11495.00	157.290	6779.80	4642.96	-4249.90	1882.79	1703403.30	14278706.62	39°19'13.790"N	80°46'38.192"W	4645.54	156.091	0.51	0.33	-0.38	11590.00	

RECEIVED
Office of Oil and Gas
FEB 26 2019
WV Department of
Environmental Protection



Actual Wellpath Report

Jimmy Unit 2H AWP Proj: 15993
Page 7 of 11



REFERENCE WELLPATH IDENTIFICATION		Slot	Slot #04
Operator	ANTERO RESOURCES CORPORATION		
Area	Doddridge Co., WV		
Field	Doddridge		
Facility	Strickling Pad		
	Well	Jimmy Unit 2H	
	Wellbore	Jimmy Unit 2H AWB	

WELLPATH DATA (198 stations)																
MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert.Sect (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (F/100ft)	Build Rate (F/100ft)	Turn Rate (F/100ft)	Comments
11685.00	89.350	156.560	6782.00	4832.91	-4421.65	1957.34	1703480.84	14278531.94	39°19'12.061"N	80°46'37.249"W	4835.51	156.122	0.33	0.06	-0.33	
11780.00	89.450	156.890	6782.99	4927.88	-4508.91	1994.87	1703518.36	14278444.71	39°19'11.198"N	80°46'36.775"W	4930.50	156.134	0.36	0.11	0.35	
11875.00	89.570	156.670	6783.81	5022.86	-4596.21	2032.33	1703555.80	14278357.44	39°19'10.334"N	80°46'36.301"W	5025.49	156.146	0.26	0.13	-0.23	
11969.00	89.480	156.820	6784.59	5116.83	-4682.57	2069.44	1703592.90	14278271.12	39°19'09.479"N	80°46'35.831"W	5119.48	156.157	0.19	-0.10	0.16	
12064.00	89.690	156.140	6785.27	5211.82	-4770.32	2105.82	1703629.26	14278183.40	39°19'08.611"N	80°46'35.371"W	5214.45	156.181	1.41	0.22	1.39	
12156.00	90.180	159.630	6785.38	5303.81	-4856.15	2138.96	1703662.39	14278097.62	39°19'07.762"N	80°46'34.952"W	5306.35	156.228	1.70	0.53	1.62	
12250.00	89.450	156.680	6785.68	5397.79	-4943.99	2172.41	1703695.83	14278009.81	39°19'06.893"N	80°46'34.529"W	5400.22	156.279	1.27	-0.78	-1.01	
12345.00	89.450	159.650	6785.59	5492.76	-5032.77	2206.20	1703729.60	14277921.06	39°19'06.015"N	80°46'34.102"W	5495.10	156.329	1.02	0.00	1.02	
12441.00	90.250	160.720	6785.85	5588.69	-5123.09	2238.74	1703762.13	14277830.78	39°19'05.121"N	80°46'33.691"W	5590.88	156.395	1.39	0.83	1.11	
12536.00	89.910	159.690	6785.71	5683.62	-5212.47	2270.91	1703794.29	14277741.43	39°19'04.237"N	80°46'33.284"W	5685.68	156.459	1.14	-0.36	-1.08	
12628.00	90.030	157.890	6785.76	5775.61	-5298.24	2304.20	1703827.56	14277655.70	39°19'03.389"N	80°46'32.864"W	5777.60	156.496	1.96	0.13	-1.96	
12723.00	90.430	157.380	6785.98	5870.60	-5386.09	2340.34	1703863.69	14277567.88	39°19'02.520"N	80°46'32.407"W	5872.58	156.514	0.68	0.42	-0.54	
12818.00	90.060	157.350	6785.97	5965.60	-5473.77	2376.90	1703900.24	14277480.24	39°19'01.652"N	80°46'31.944"W	5967.57	156.528	0.39	-0.39	-0.03	
12913.00	90.030	156.640	6785.90	6060.58	-5561.21	2414.03	1703937.35	14277392.83	39°19'00.787"N	80°46'31.475"W	6062.56	156.535	0.75	-0.03	-0.75	
13008.00	90.060	155.090	6785.82	6155.51	-5647.91	2452.87	1703976.18	14277306.17	39°18'59.929"N	80°46'30.983"W	6157.55	156.525	1.63	0.03	-1.63	
13103.00	90.120	154.080	6785.68	6250.34	-5733.71	2493.64	1704016.93	14277220.40	39°18'59.080"N	80°46'30.467"W	6252.50	156.495	1.07	0.06	-1.06	
13197.00	90.060	153.880	6785.53	6344.11	-5818.18	2534.88	1704058.15	14277135.96	39°18'58.244"N	80°46'29.945"W	6346.41	156.458	0.22	-0.06	-0.21	
13292.00	90.180	155.470	6785.33	6438.95	-5904.05	2575.52	1704098.77	14277050.13	39°18'57.394"N	80°46'29.431"W	6441.36	156.432	1.68	0.13	1.67	
13387.00	89.970	155.330	6785.20	6533.85	-5990.43	2615.06	1704138.30	14276963.78	39°18'56.540"N	80°46'28.930"W	6536.34	156.417	0.27	-0.22	-0.15	
13482.00	89.940	156.020	6785.28	6628.77	-6077.00	2654.19	1704177.42	14276877.25	39°18'55.683"N	80°46'28.435"W	6631.34	156.406	0.73	-0.03	0.73	
13577.00	90.000	156.860	6785.33	6723.73	-6164.08	2692.17	1704215.38	14276790.21	39°18'54.822"N	80°46'27.955"W	6726.33	156.407	0.89	0.06	0.88	
13672.00	90.120	159.350	6785.23	6818.73	-6252.22	2727.59	1704250.78	14276702.10	39°18'53.950"N	80°46'27.507"W	6821.29	156.430	2.62	0.13	2.62	
13767.00	90.090	164.170	6785.05	6913.49	-6342.42	2757.32	1704280.50	14276611.94	39°18'53.057"N	80°46'27.132"W	6915.85	156.503	5.07	-0.03	5.07	
13861.00	90.250	169.430	6784.78	7006.35	-6433.90	2778.77	1704301.95	14276520.49	39°18'52.153"N	80°46'26.861"W	7008.33	156.641	5.60	0.17	5.60	
13955.00	90.150	165.020	6784.45	7099.12	-6525.55	2799.55	1704322.72	14276428.88	39°18'51.246"N	80°46'26.600"W	7100.72	156.780	4.69	-0.11	-4.69	
14051.00	90.060	161.910	6784.27	7194.67	-6617.57	2826.87	1704350.03	14276336.89	39°18'50.336"N	80°46'26.255"W	7196.07	156.869	3.24	-0.05	-3.24	
14146.00	90.120	159.420	6783.12	7289.56	-6707.20	2858.32	1704381.47	14276247.29	39°18'49.449"N	80°46'25.858"W	7290.86	156.918	2.62	0.06	-2.62	
14240.00	90.120	157.710	6783.93	7383.55	-6794.70	2892.67	1704415.80	14276159.83	39°18'48.564"N	80°46'25.424"W	7384.81	156.939	1.82	0.00	-1.82	
14335.00	90.650	156.860	6783.29	7478.54	-6882.33	2929.36	1704452.47	14276072.24	39°18'47.717"N	80°46'24.960"W	7479.81	156.944	1.05	0.56	-0.89	
14430.00	90.580	155.400	6782.27	7573.48	-6969.19	2967.80	1704490.90	14275985.41	39°18'46.857"N	80°46'24.474"W	7574.79	156.934	1.54	-0.07	-1.54	

RECEIVED
Office of Oil and Gas
FEB 26 2019
WV Department of
Environmental Protection



Actual Wellpath Report

Jimmy Unit 2H AWP Proj: 15993



Operator	Area	Field	Facility
ANTERO RESOURCES CORPORATION	Doddridge Co., WV	Doddridge	Strickling Pad
Slot #04	Jimmy Unit 2H	Well	Wellbore

WELLPATH DATA (198 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
14523.00	90.890	154.830	6781.07	7666.35	-7053.55	3006.93	1704530.01	14275901.08	39°18'46.023"N	80°46'23.978"W	7667.74	156.911	0.70	0.33	-0.61	
14619.00	90.550	155.400	679.87	7762.22	-7140.63	3047.32	1704570.39	14275814.04	39°18'45.161"N	80°46'23.467"W	7763.68	156.889	0.69	-0.35	0.59	
14713.00	90.580	156.810	678.94	7656.16	-7226.57	3085.39	1704608.45	14275728.14	39°18'44.311"N	80°46'22.986"W	7857.67	156.880	1.50	0.03	1.50	
14807.00	90.310	157.450	678.21	7950.15	-7313.17	3121.92	1704644.96	14275641.56	39°18'43.454"N	80°46'22.524"W	7951.66	156.883	0.74	-0.29	0.66	
14903.00	90.460	157.170	677.57	8046.14	-7401.74	3158.95	1704681.98	14275553.03	39°18'42.577"N	80°46'22.055"W	8047.66	156.888	0.33	0.16	-0.29	
14998.00	90.490	159.730	677.78	8141.13	-7490.09	3193.84	1704716.85	14275464.72	39°18'41.703"N	80°46'21.614"W	8142.61	156.906	2.69	0.03	2.69	
15092.00	90.920	158.820	675.62	8235.10	-7578.00	3227.11	1704750.10	14275376.84	39°18'40.834"N	80°46'21.194"W	8236.52	156.933	1.07	0.46	-0.97	
15187.00	91.050	157.030	673.99	8330.08	-7666.02	3262.80	1704785.79	14275288.86	39°18'39.963"N	80°46'20.743"W	8331.49	156.944	1.89	0.14	-1.88	
15281.00	90.980	154.940	672.32	8424.00	-7751.87	3301.05	1704824.02	14275203.05	39°18'39.113"N	80°46'20.259"W	8425.46	156.934	2.22	-0.07	-2.22	
15376.00	90.980	155.160	670.70	8518.86	-7837.99	3341.12	1704864.07	14275116.96	39°18'38.261"N	80°46'19.762"W	8520.39	156.913	0.23	0.00	0.23	
15467.00	91.110	155.720	676.04	8609.75	-7920.74	3378.94	1704901.87	14275034.24	39°18'37.442"N	80°46'19.273"W	8611.35	156.897	0.63	0.14	0.62	
15562.00	91.020	157.330	676.27	8704.70	-8007.86	3416.77	1704939.69	14274947.16	39°18'36.580"N	80°46'18.795"W	8706.33	156.893	1.70	-0.09	1.69	
15657.00	91.320	158.630	6765.33	8799.68	-8095.91	3452.38	1704975.29	14274859.14	39°18'35.709"N	80°46'18.345"W	8801.29	156.905	1.40	0.32	1.37	
15752.00	91.320	157.630	6763.14	8894.65	-8184.05	3487.76	1705010.65	14274771.04	39°18'34.837"N	80°46'17.897"W	8896.24	156.918	1.05	0.00	-1.05	
15846.00	91.350	156.950	6760.95	8988.62	-8270.74	3524.04	1705046.92	14274684.38	39°18'33.979"N	80°46'17.439"W	8990.21	156.922	0.72	0.03	-0.72	
15941.00	91.540	156.660	6758.56	9083.57	-8358.03	3561.44	1705084.31	14274597.13	39°18'33.116"N	80°46'16.965"W	9085.18	156.921	0.36	-0.20	-0.31	
15993.00	91.380	157.060	6757.85	9111.55	-8383.77	3572.44	1705095.30	14274571.40	39°18'32.861"N	80°46'16.826"W	9113.17	156.920	1.54	-0.57	1.43	Projected MD @ TD: 15993

RECEIVED
Office of Oil and Gas
FEB 26 2019
WV Department of
Environmental Protection



Actual Wellpath Report

Jimmy Unit 2H AWP Proj: 15993'

Page 9 of 11



REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Doddridge Co., WV	Well	Jimmy Unit 2H
Field	Doddridge	Wellbore	Jimmy Unit 2H AWB
Facility	Strickling Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Jimmy Unit 2H AWB Ref Wellpath: Jimmy Unit 2H AWP Proj: 15993'

String/Diameter	Start MD [ft]	End MD [ft]	Interval [ft]	Start TVD [ft]	End TVD [ft]	Start N/S [ft]	Start E/W [ft]	End N/S [ft]	End E/W [ft]
20in Conductor	24.50	104.50	80.00	24.50	104.50	0.00	0.00	0.09	-0.11
17.5in Open Hole	104.50	370.30	265.80	104.50	370.29	0.09	-0.11	1.58	-1.21
13.375in Casing Surface	24.50	370.30	345.80	24.50	370.29	0.00	0.00	1.58	-1.21
12.25in Open Hole	370.30	2614.90	2244.60	370.29	2584.50	1.58	-1.21	353.41	-1.70
9.625in Casing Intermediate	24.50	2614.90	2590.40	24.50	2584.50	0.00	0.00	353.41	-1.70
8.75in Open Hole	2614.90	6871.50	4256.60	2584.50	6672.72	353.41	-1.70	21.79	153.57
8.5in Open Hole	6871.50	15993.00	9121.50	6672.72	6757.27	21.79	153.57	-8405.86	3581.80
5.5in Casing Production	24.50	15993.00	15968.50	24.50	6757.27	0.00	0.00	-8405.86	3581.80

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Jimmy Unit 2H POE - Rev-1	6694.00	-13.37	169.22	1701693.44	14282938.47	39°19'55.674"N	80°46'59.867"W	point
Jimmy Unit 2H BHL - Rev-2	6735.00	-8412.67	3568.59	1705091.45	14274542.51	39°18'32.576"N	80°46'16.876"W	point
Jimmy Unit 2H LP - Rev-1	6735.00	-187.63	243.19	1701767.38	14282764.27	39°19'53.950"N	80°46'58.931"W	point

RECEIVED
 Office of Oil and Gas
 WV Department of
 Environmental Protection
 FEB 26 2019



Actual Wellpath Report

Jimmy Unit 2H AWP Proj: 15993'

Page 10 of 11



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Doddridge Co., WV	Well	Jimmy Unit 2H
Field	Doddridge	Wellbore	Jimmy Unit 2H AWB
Facility	Strickling Pad		

WELLPATH COMPOSITION - Ref Wellbore: Jimmy Unit 2H AWB Ref Wellpath: Jimmy Unit 2H AWP Proj: 15993'				
Start MD (ft)	End MD (ft)	Positional Uncertainty Model	Log Name/Comment	Wellbore
24.50	334.50	Gyrodata standard - Single-shot	01 Gyrodata SS Gyro <17-1/2">(100'-325')	Jimmy Unit 2H AWB
334.50	936.50	Gyrodata standard - Single-shot	02 Gyrodata SS Gyro <12-1/4">(325')(439'-927')	Jimmy Unit 2H AWB
936.50	2531.50	ISCWSA MWD, Rev. 4 (Standard)	03 WFT EM <12-1/4">(927')(946'-2522')	Jimmy Unit 2H AWB
2531.50	6797.50	ISCWSA MWD, Rev. 4 (Standard)	04 WFT EM <8-3/4">(2522')(2661'-6788')	Jimmy Unit 2H AWB
6797.50	15969.00	BHI AutoTrak Curve (Short)	05 BH AT Curve <8-1/2"> (6797.5')(6835'-15969')	Jimmy Unit 2H AWB
15969.00	15993.00	Blind Drilling (std)	Projection to bit	Jimmy Unit 2H AWB

RECEIVED
 Office of Oil and Gas
 FEB 26 2019
 WV Department of
 Environmental Protection

Hydraulic Fracturing Fluid Product Component Information Disclosure



Job Start Date:	8/29/2018
Job End Date:	9/17/2018
State:	West Virginia
County:	Doddridge
API Number:	47-017-06790-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Jimmy 2H
Latitude:	39.33216900
Longitude:	-80.78389400
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,787
Total Base Water Volume (gal):	15,438,358
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	87.52693	
Sand	U.S. Well Services, LLC	Proppant					
			Crystalline Silica, quartz	14808-60-7	100.00000	12.26392	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid					
			Water	7732-18-5	87.40000	0.12870	
			Hydrogen Chloride	7647-01-0	17.50000	0.02992	
WFRA-405	U.S. Well Services, LLC	Friction Reducer					
			2-Propenoic acid, polymer with 2 propenamide	9003-06-9	30.00000	0.01616	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01301	
LC-15	U.S. Well Services, LLC	Gelling Agents					
			Guar Gum	9000-30-0	50.00000	0.00631	
			Petroleum Distillates	64742-47-8	60.00000	0.00598	
			Suspending agent (solid)	14808-60-7	3.00000	0.00097	
			Surfactant	68439-51-0	3.00000	0.00038	

RECEIVED
 Office of Oil and Gas
 West Virginia Department of Environmental Protection
 FEB 26 2019

Bioclear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent					
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00393	
			Deionized Water	7732-18-5	28.00000	0.00225	
SI-1200s	U.S. Well Services, LLC	Scale Inhibitor					
			Proprietary Scale Inhibitor	Proprietary	10.00000	0.00128	
AP One	U.S. Well Services, LLC	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00018	
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	0.00002	
			Formic acid	64-18-6	20.00000	0.00002	
			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	

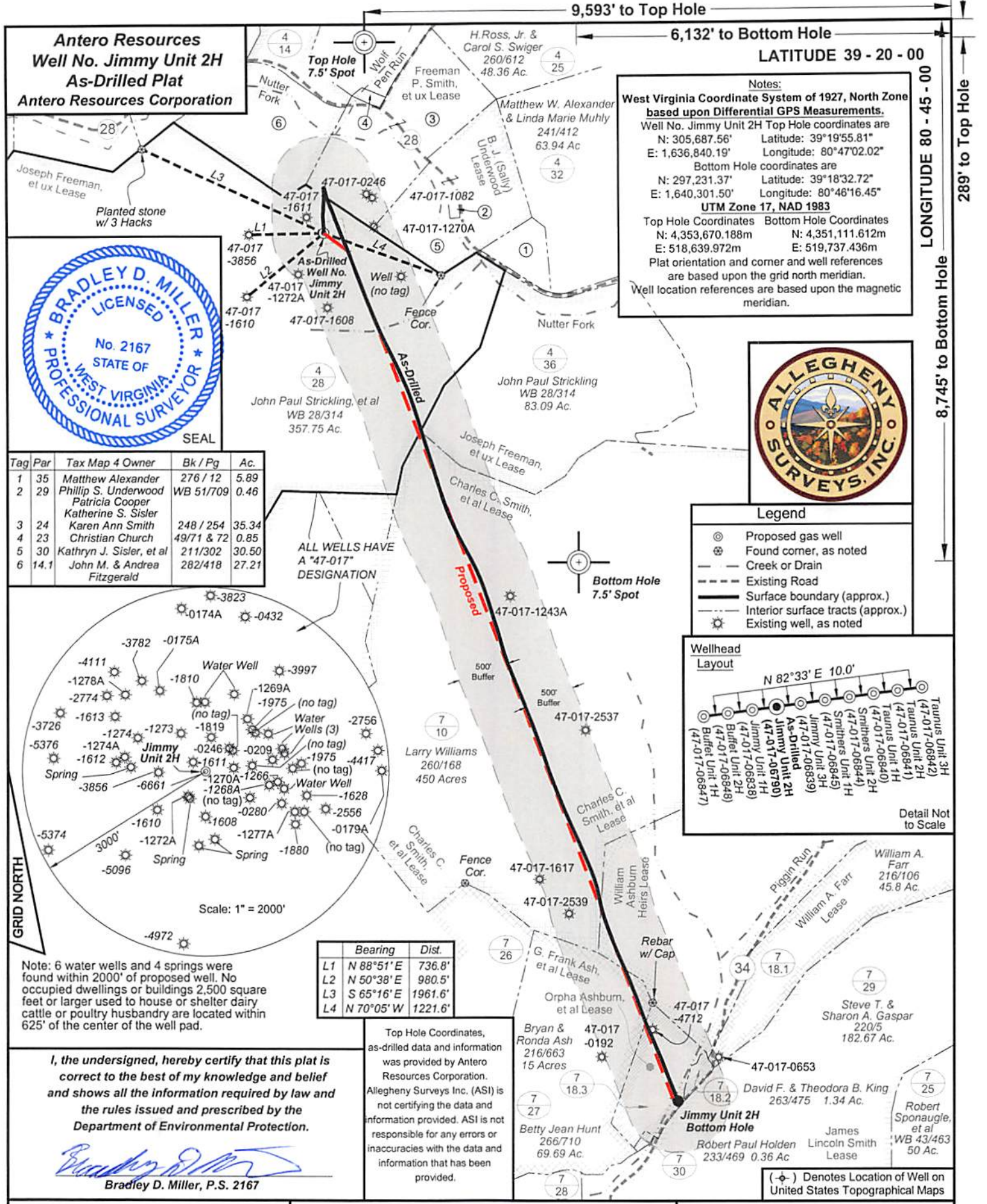
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.

* 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)



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

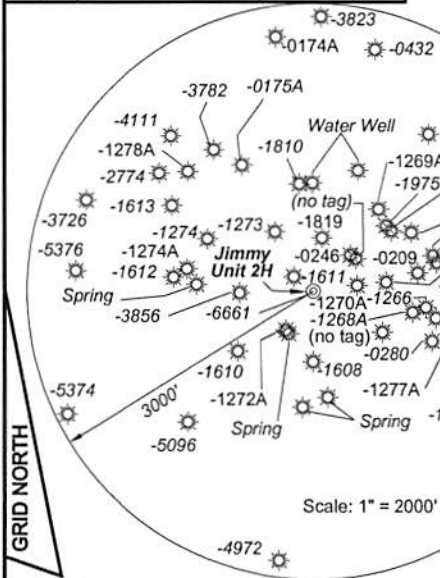
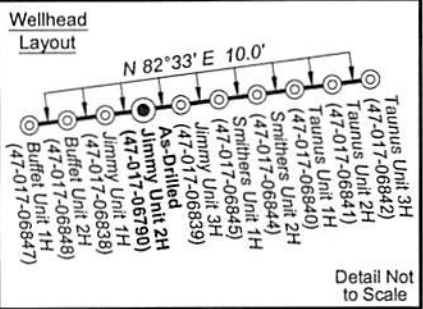
Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Jimmy Unit 2H Top Hole coordinates are
 N: 305,687.56' Latitude: 39°19'55.81"
 E: 1,636,840.19' Longitude: 80°47'02.02"
 Bottom Hole coordinates are
 N: 297,231.37' Latitude: 39°18'32.72"
 E: 1,640,301.50' Longitude: 80°46'16.45"
UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,353,670.188m N: 4,351,111.612m
 E: 518,639.972m E: 519,737.436m
 Plat orientation and corner and well references are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.



Tag	Par	Tax Map 4 Owner	Bk / Pg	Ac.
1	35	Matthew Alexander	276 / 12	5.89
2	29	Phillip S. Underwood Patricia Cooper Katherine S. Sisler	WB 51/709	0.46
3	24	Karen Ann Smith	248 / 254	35.34
4	23	Christian Church	49/71 & 72	0.85
5	30	Kathryn J. Sisler, et al	211/302	30.50
6	14.1	John M. & Andrea Fitzgerald	282/418	27.21

Legend

- ⊙ Proposed gas well
- ⊗ Found corner, as noted
- - - Creek or Drain
- - - Existing Road
- Surface boundary (approx.)
- - - Interior surface tracts (approx.)
- ⊙ Existing well, as noted



Note: 6 water wells and 4 springs were 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.

	Bearing	Dist.
L1	N 88°51' E	736.8'
L2	N 50°38' E	980.5'
L3	S 65°16' E	1961.6'
L4	N 70°05' W	1221.6'

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.

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

FILE NO: 50-30-WU-14
 DRAWING NO: Jimmy 2H As-Drilled Plat
 SCALE: 1" = 1200'
 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: December 27, 2018
 OPERATOR'S WELL NO. Jimmy Unit 2H
 API WELL NO. 47-017-06790
 STATE - COUNTY - PERMIT

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

LOCATION: ELEVATION: As-Built - 1065' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union
 DISTRICT: West Union COUNTY: Doddridge

SURFACE OWNER: John Paul Strickling, et al Freeman P. Smith, et ux; ACREAGE: 357.75 36; 450; 600
 ROYALTY OWNER: Charles C. Smith, et al; William Ashburn Heirs; G. Frank Ash, et al LEASE NO: ACREAGE: 120; 140; 22

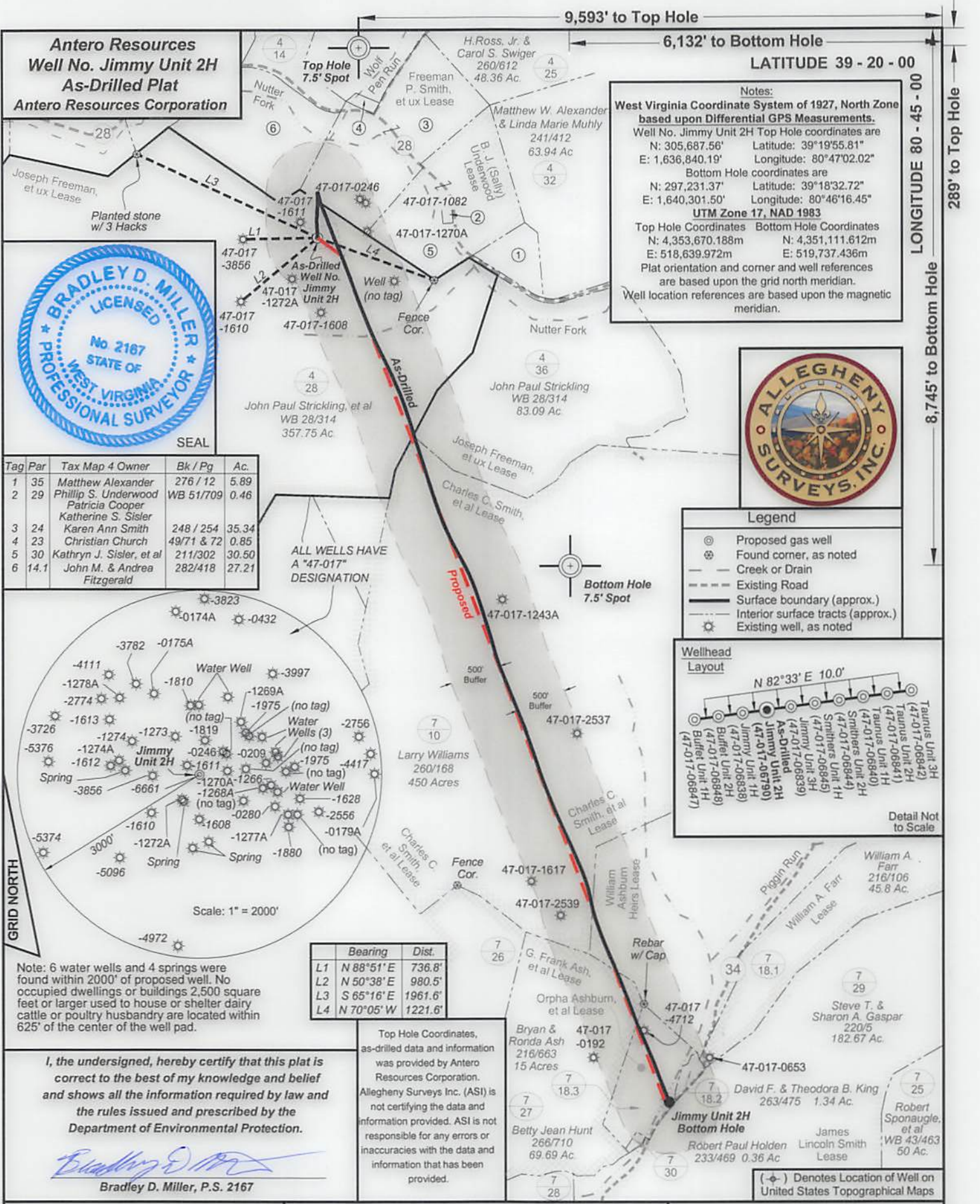
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 6,757' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 15,993' MD

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

FEB 26 2019

WV Department of Environmental Protection

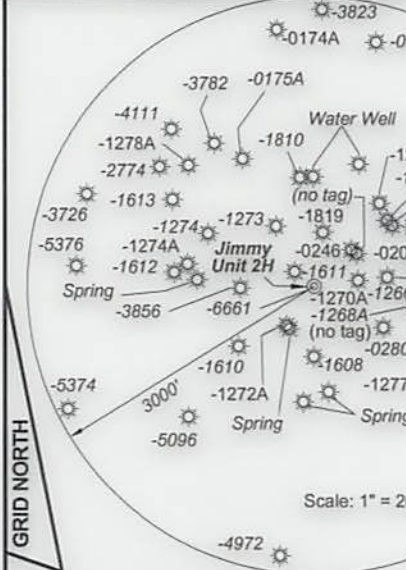




Antero Resources
Well No. Jimmy Unit 2H
As-Drilled Plat
Antero Resources Corporation



Tag	Par	Tax Map 4 Owner	Bk / Pg	Ac.
1	35	Matthew Alexander	276 / 12	5.89
2	29	Phillip S. Underwood Patricia Cooper Katherine S. Sisler	WB 51/709	0.46
3	24	Karen Ann Smith	248 / 254	35.34
4	23	Christian Church	49/71 & 72	0.85
5	30	Kathryn J. Sisler, et al	211/302	30.50
6	14.1	John M. & Andrea Fitzgerald	282/418	27.21



Note: 6 water wells and 4 springs were 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.

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

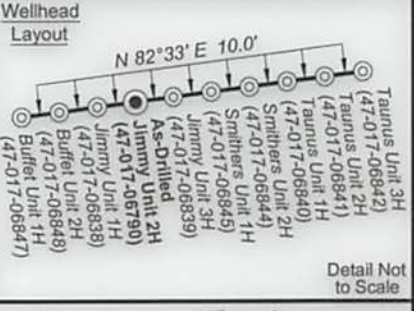
Top Hole Coordinates, as-drilled data and information was provided by Antero Resources Corporation. Allegheny Surveys Inc. (ASI) is not certifying the data and information provided. ASI is not responsible for any errors or inaccuracies with the data and information that has been provided.

Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
 Well No. Jimmy Unit 2H Top Hole coordinates are
 N: 305,687.56' Latitude: 39°19'55.81"
 E: 1,636,840.19' Longitude: 80°47'02.02"
 Bottom Hole coordinates are
 N: 297,231.37' Latitude: 39°18'32.72"
 E: 1,640,301.50' Longitude: 80°46'16.45"
UTM Zone 17, NAD 1983
 Top Hole Coordinates Bottom Hole Coordinates
 N: 4,353,670.188m N: 4,351,111.612m
 E: 518,639.972m E: 519,737.436m
 Plat orientation and corner and well references are based upon the grid north meridian.
 Well location references are based upon the magnetic meridian.



Legend

- ⊙ Proposed gas well
- ⊗ Found corner, as noted
- - - Creek or Drain
- - - Existing Road
- Surface boundary (approx.)
- - - Interior surface tracts (approx.)
- ⊙ Existing well, as noted



Bearing	Dist.
L1 N 88°51' E	736.8'
L2 N 50°38' E	980.5'
L3 S 65°16' E	1961.6'
L4 N 70°05' W	1221.6'

FILE NO: 50-30-WU-14
 DRAWING NO: Jimmy 2H As-Drilled Plat
 SCALE: 1" = 1200'
 MINIMUM DEGREE OF ACCURACY:
 Submeter
 PROVEN SOURCE OF ELEVATION:
 WV DOT, Harrisville, WV

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

DATE: December 27 2018
 OPERATOR'S WELL NO. Jimmy Unit 2H
 API WELL NO
 47 - 017 - 06790
 STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built - 1065' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union
 DISTRICT: West Union COUNTY: Doddridge

SURFACE OWNER: John Paul Strickling, et al Freeman P. Smith, et ux; ACREAGE: 357.75 36; 450; 600
 Orpha Ashburn, et al; Joseph Freeman, et ux;
 ROYALTY OWNER: Charles C. Smith, et al; William Ashburn Heirs; G. Frank Ash, et al LEASE NO: ACREAGE: 120; 140; 22

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 6,757' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 15,993' 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

Denver, CO 80505 ADDRESS: 1812 Wylkoop Street
 ADDRESS: 2400 D Big Tyler Road
 MEGG OPERATOR: Antero Resources Corporation DESIGNATED AGENT: Diana Swager - CT Corporation System

BURE AND AVOIDANCE CREAN OUT AND BUREG TARGET FORMATION: Marsville shale ESTIMATED DEPTH: 12,883. MD
 BUREFORATE IEM FORMATION OTHER PHYSICAL CHANGE IN MEGG (SPECIFY) As-Drilled
 PROPOSED WORK: DRIFT CONVECT DRIFT DEEPEK FRACTURE OF STIMULATE BURE OFF OLD FORMATION
 PROPERTY OWNER: Charles C. Smith, et al; William Ashburn Hertz; C. Frank Ash; et al LEASE NO: ACBEAGE: 130-140-33
 SURFACE OWNER: John Paul Strickling, et al; Freeman P. Smith, et al; ACBEAGE: 321-172 38-420-000
 DISTRICT: West Union COUNTY: Doddridge
 LOCATION: ELEVATION: As-Built - 1082. WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union
 (IF GAS) PRODUCTION: STORAGE DEEP SHALLOW
 MEGG TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL

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

STATE COUNTY PERMIT
 WV - T10 - 00780
API MEGG NO
 OPERATOR'S MEGG NO. Jimmy Unit 2H
 DATE: December 12 05

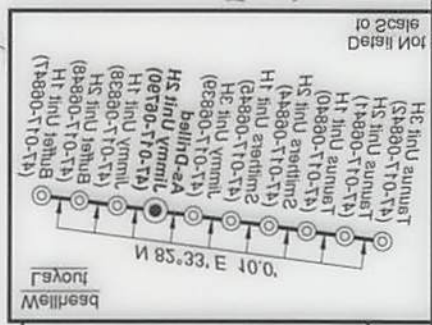
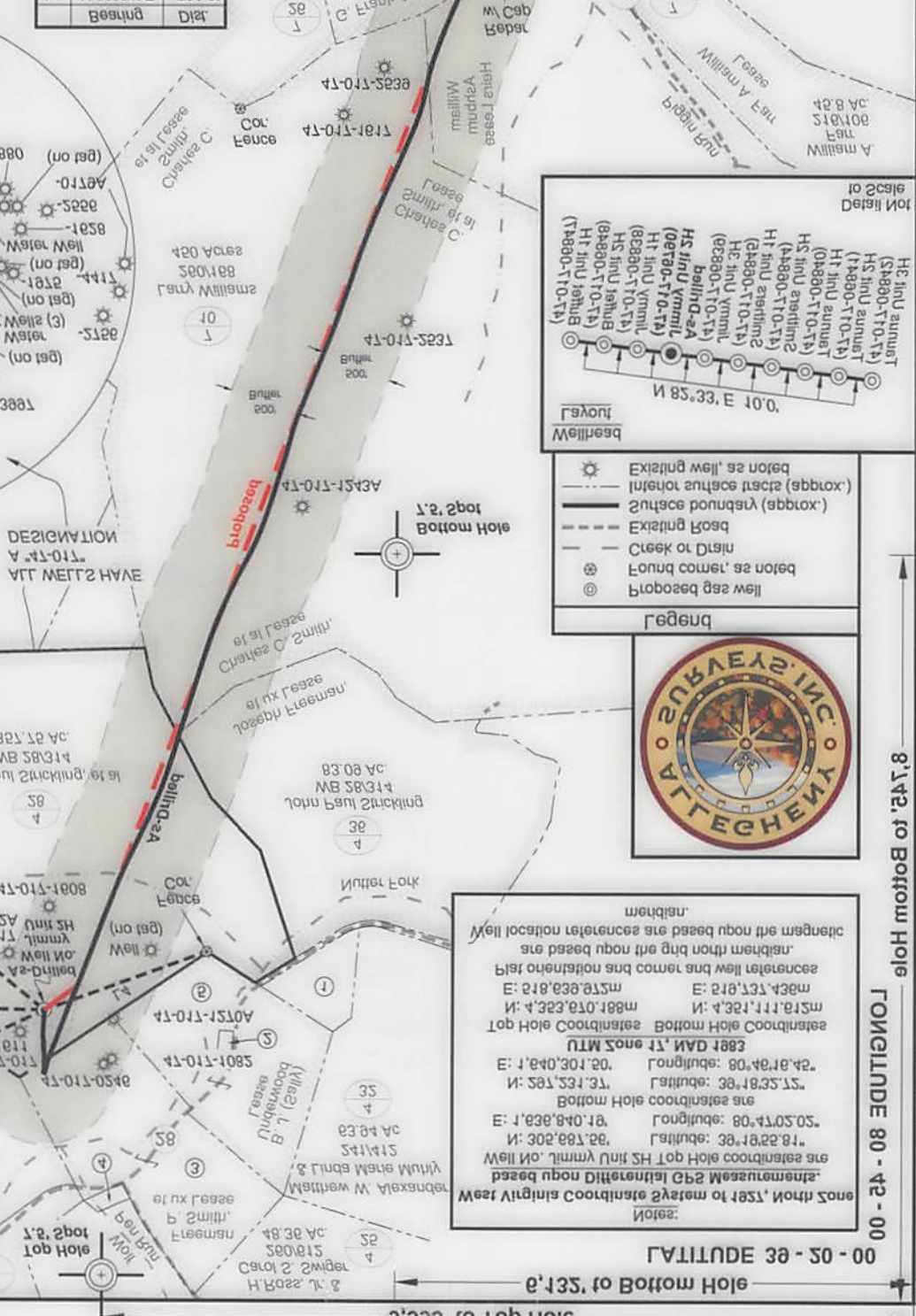
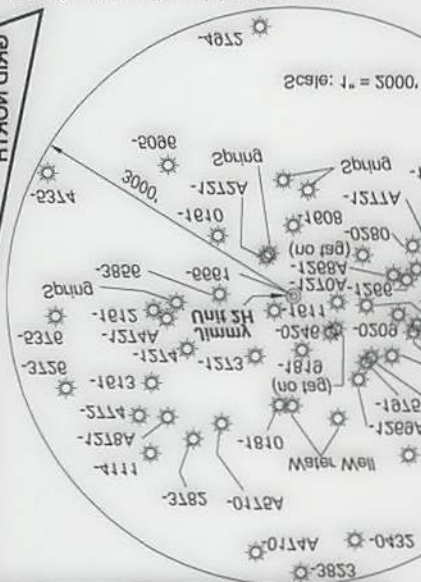
MADON, Hartsfville, WV
 BROKEN SOURCE OF ELEVATION:
 Surmeter
 MINIMUM DEGREE OF ACCURACY:
 SCALE: 1" = 1500.
 DRAWING NO: Jimmy 2H As-Drilled Plat
 FILE NO: 80-30-WV-14

Bradley D. Miller, P.S. 2181
 Department of Environmental Protection
 the rules issued and prescribed by the
 and shows all the information required by law and
 correct to the best of my knowledge and belief
 I, the undersigned, hereby certify that this plat is

Information that has been
 inaccuracies with the data and
 responsible for any errors or
 information provided. As it is not
 not certifying the data and
 (A2) is
 Resources Corporation
 was provided by Antero
 as-dilled data and information
 related to the
 Bottom Hole Coordinates

Point	N	E	Dist
1	88,821.8	738.8	
2	80,038.8	880.2	
3	82,218.8	1801.8	
4	10,002.8	1551.8	

85% of the center of the well pad
 center or boundary respectively are located within
 feet or larger used to house or shelter daily
 occupied dwellings or buildings 5,000 square
 feet or larger within 5000' of proposed well. No
 other water wells and 4 springs were



Legend
 Existing well as shown on surface maps (approx)
 Surface boundary (approx)
 Existing road
 Creek or Drain
 Found corner as noted
 Proposed gas well



Point	N	E	Dist
1	88,821.8	738.8	
2	80,038.8	880.2	
3	82,218.8	1801.8	
4	10,002.8	1551.8	



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

Well location references are based upon the magnetic
 are based upon the grid north meridian.
 Plat orientation and corner and well references
 E: 218,838.133m E: 218,731.438m
 N: 4,323,810.188m N: 4,324,111.172m
 Top Hole Coordinates Bottom Hole Coordinates
 UTM Zone 18Q UTM Zone 18Q
 E: 1,140,301.20m Longitude: 80,48,14.42
 N: 381,531.71m Latitude: 38,18,32.75
 Bottom Hole coordinates are
 E: 1,143,840.18m Longitude: 80,48,22.81
 N: 302,887.26m Latitude: 38,18,22.81
 Well No. Jimmy Unit 2H Top Hole coordinates are
 based upon Differentiated GPS Measurements
 West Virginia Coordinate System
 1283 of magnetic North
 1283 of true North

8,142, to Bottom Hole
 LONGITUDE 80 - 42 - 00
 589, to Top Hole
 LATITUDE 38 - 50 - 00
 6,135, to Bottom Hole
 8,283, to Top Hole