

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

API 47 - 017 - 06846 County Doddridge District West Union
Quad West Union 7.5' Pad Name Middle Pad Field/Pool Name -----
Farm name William Randall Lynch & Dixie Craig Well Number Pickney 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 4352589.878m Easting 516687.887m
Landing Point of Curve Northing 4352541.97m Easting 516816.60m
Bottom Hole Northing 4350221.639m Easting 517807.716m

Elevation (ft) 843' 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 7/17/2017 Date drilling commenced 9/29/2017 Date drilling ceased 3/30/2018
Date completion activities began 6/5/2018 Date completion activities ceased 9/23/2018
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

Reviewed by: _____

Reviewed
Julia [Signature] 2/27/19

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API 47-017 - 06846 Farm name William Randall Lynch & Dixie Craig Well number Pickney 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"	112'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	551'	New	54#, J-55	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2627'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15211'	New	23#, HCP-110	N/A	Y
Tubing		2-3/8"	6581'		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	204 sx	15.6	1.18	241	0'	8 Hrs.
Surface	Class A	445 sx	15.6	1.21	538	0'	8 Hrs.
Coal							
Intermediate 1	Class A	870 sx	15.6	1.22	1061	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	670 sx (Lead) 1388 sx (Tail)	14 (Lead), 15.2 (Tail)	1.45 (Lead), 1.83 (Tail)	3508	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15210' MD, 6547' TVD (BHL), 6547' (Deepest Point Drilled) Loggers TD (ft) 15210' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 5890'

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

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API 47- 017 - 06846 Farm name William Randall Lynch & Dixie Craig Well number Pickney Unit 2H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6537' (TOP)</u> TVD	<u>6627' (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 13243.58 mcfpd Oil 109.76 bpd NGL --- bpd Water 645.97 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 562 Spring Run Road City Pennsboro State WV Zip 26415

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 Haliburton
Address 121 Champion Way City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

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

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API 47-017-06846 Farm Name William Randall Lynch & Dixie Janet Craig Well Number Pickney Unit 2H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	6/5/2018	15007.6	15107.4	60	Marcellus
2	7/16/2018	14809.3	14976.55	60	Marcellus
3	7/17/2018	14611	14778.25	60	Marcellus
4	7/17/2018	14412.7	14579.95	60	Marcellus
5	7/18/2018	14214.4	14381.65	60	Marcellus
6	7/18/2018	14016.1	14183.35	60	Marcellus
7	7/19/2018	13817.8	13985.05	60	Marcellus
8	7/19/2018	13619.5	13786.75	60	Marcellus
9	7/20/2018	13421.2	13588.45	60	Marcellus
10	7/20/2018	13222.9	13390.15	60	Marcellus
11	7/21/2018	13024.6	13191.85	60	Marcellus
12	7/21/2018	12826.3	12993.55	60	Marcellus
13	7/23/2018	12628	12795.25	60	Marcellus
14	7/23/2018	12429.7	12596.95	60	Marcellus
15	7/24/2018	12231.4	12398.65	60	Marcellus
16	7/24/2018	12033.1	12200.35	60	Marcellus
17	7/25/2018	11834.8	12002.05	60	Marcellus
18	7/25/2018	11636.5	11803.75	60	Marcellus
19	7/26/2018	11438.2	11605.45	60	Marcellus
20	7/26/2018	11239.9	11407.15	60	Marcellus
21	7/26/2018	11041.6	11208.85	60	Marcellus
22	7/27/2018	10843.3	11010.55	60	Marcellus
23	7/27/2018	10645	10812.25	60	Marcellus
24	7/28/2018	10446.7	10613.95	60	Marcellus
25	7/28/2018	10248.4	10415.65	60	Marcellus
26	7/28/2018	10050.1	10217.35	60	Marcellus
27	7/29/2018	9851.8	10019.05	60	Marcellus
28	7/29/2018	9653.5	9820.75	60	Marcellus
29	7/30/2018	9455.2	9622.45	60	Marcellus
30	7/30/2018	9256.9	9424.15	60	Marcellus
31	7/31/2018	9058.6	9225.85	60	Marcellus
32	7/31/2018	8860.3	9027.55	60	Marcellus
33	8/1/2018	8662	8829.25	60	Marcellus
34	8/2/2018	8463.7	8630.95	60	Marcellus
35	8/2/2018	8265.4	8432.65	60	Marcellus
36	8/3/2018	8067.1	8234.35	60	Marcellus
37	8/3/2018	7868.8	8036.05	60	Marcellus
38	8/3/2018	7670.5	7837.75	60	Marcellus
39	8/4/2018	7472.2	7639.45	60	Marcellus
40	8/4/2018	7273.9	7441.15	60	Marcellus
41	8/5/2018	7075.6	7242.85	60	Marcellus
42	8/5/2018	6877.3	7044.55	60	Marcellus
43	8/6/2018	6679	6846.25	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	6/5/2018	75.88	7743	5895	4220	258730	6268.095	N/A
2	7/16/2018	72.57	7380	5991	4177	408100	8362.667	N/A
3	7/17/2018	77.72	7634	5757	5850	416080	8539.881	N/A
4	7/17/2018	75.4	7492	5117	4088	414260	8555.31	N/A
5	7/18/2018	76	7790	5704	4741	415880	8263.762	N/A
6	7/18/2018	77.9	7653	5943	5367	408000	8198.095	N/A
7	7/19/2018	75.52	7662	5852	3790	408960	8179.762	N/A
8	7/19/2018	68.6	7062	6107	5302	365000	9965.571	N/A
9	7/20/2018	70.3	7564	5420	3699	413140	8606.238	N/A
10	7/20/2018	66.05	7232	5862	3604	414280	8346.952	N/A
11	7/21/2018	62.5	7648	8390	3859	408620	11263.98	N/A
12	7/21/2018	61	6940	6011	5956	143170	6142.262	N/A
13	7/23/2018	70.7	6997	5628	4023	408040	8336.119	N/A
14	7/23/2018	65.62	7248	5761	4214	342060	7607.381	N/A
15	7/24/2018	69.6	7301	6122	3831	426770	9011.619	N/A
16	7/24/2018	74.1	7045	5707	3987	450400	8801.357	N/A
17	7/25/2018	68.8	6869	4917	4198	447380	8723.857	N/A
18	7/25/2018	73.8	6012	6012	4021	402520	8380.119	N/A
19	7/26/2018	68.9	6653	5897	4246	402920	8255.31	N/A
20	7/26/2018	68.1	7796	5787	3932	407220	9622.143	N/A
21	7/26/2018	65.84	7531	4833	4213	402180	9033.095	N/A
22	7/27/2018	67.48	7443	5770	4448	410120	9610	N/A
23	7/27/2018	70.05	7285	5655	5299	406500	8020.833	N/A
24	7/28/2018	69.27	7294	6179	3879	400340	8227.262	N/A
25	7/28/2018	72.9	6832	5646	3918	408820	8150.952	N/A
26	7/28/2018	60.24	7066	4885	4164	407640	10766.57	N/A
27	7/29/2018	74.6	6703	5637	3799	408280	7970.19	N/A
28	7/29/2018	67.45	6969	5511	4216	406380	8203.452	N/A
29	7/30/2018	78.7	6631	5517	4169	404620	8058.214	N/A
30	7/30/2018	78.65	6734	5857	4782	401220	8248.595	N/A
31	7/31/2018	78.16	6699	5740	3992	400280	8024.81	N/A
32	7/31/2018	76.35	6831	5813	3548	406240	7994.071	N/A
33	8/1/2018	73.9	7015	5424	4138	408470	10814.76	N/A
34	8/2/2018	68.43	7961	5745	6561	407980	10281.31	N/A
35	8/2/2018	70.22	7117	6108	3724	398760	9470.167	N/A
36	8/3/2018	71.9	7225	5737	3658	398380	8176.881	N/A
37	8/3/2018	76.15	7056	6024	3986	399740	7828.095	N/A
38	8/3/2018	76.82	6972	6067	4683	402720	8018.333	N/A
39	8/4/2018	75.32	7318	6276	3817	399100	8818.976	N/A
40	8/4/2018	70.89	6564	5957	3827	402200	7876.476	N/A
41	8/5/2018	75.14	6924	6038	3904	412060	8186.167	N/A
42	8/5/2018	74.86	6835	6174	4118	405580	8362.976	N/A
43	8/6/2018	77.36	6897	6225	3937	406580	8062.429	N/A
	AVG=	72	7,154	5,830	4,276	17,065,720	367,635	TOTAL

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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	177	0	177
Sandstone tr coal	est. 177	217	est. 177	217
Sandy shale	est. 217	232	est. 217	232
Calcareous Shale	est. 232	319	est. 232	319
Sandstone	est. 319	373	est. 319	373
Calcareous Shale	est. 373	1,065	est. 373	1,065
Silty Sandstone	est. 1065	1,137	est. 1065	1,137
Silty shale	est. 1137	1,287	est. 1137	1,287
Sandy Shale	est. 1287	1,357	est. 1287	1,357
Shale	est. 1357	1,550	est. 1357	1,552
Big Lime	1,550	2,197	1,552	2,199
Fifty Foot Sandstone	2,197	2,443	2,199	2,445
Gordon	2,443	2,665	2,445	2,667
Fifth Sandstone	2,665	2,729	2,667	2,731
Bayard	2,729	3,504	2,731	3,512
Speechley	3,504	3,815	3,512	3,828
Balltown	3,815	4,311	3,828	4,330
Bradford	4,311	4,739	4,330	4,764
Benson	4,739	4,989	4,764	5,016
Alexander	4,989	5,984	5,016	6,037
Sycamore	5,984	6,155	6,037	6,242
Middlesex	6,155	6,286	6,242	6,461
Burkett	6,286	6,314	6,461	6,517
Tully	6,314	6,357	6,517	6,627
Marcellus	6,357	NA	6,627	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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ANTERO RESOURCES CORPORATION

Location: Doddridge Co., WV
 Field: Doddridge
 Facility: Middle Pad

Slot: Slot #04
 Well: Pickney Unit 2H
 Wellbore: Pickney Unit 2H PWB



API: 47-017-06846-0000
 BH Job #: 9076705
 Rig: Frontier 32
 Duration: 03/25/18 - 03/28/18

POE Marcellus: 6659°MD / 6389°TVD : 6389.23ft TVD, 81.72ft N, 377.97ft E
 BH AT Curve <8-1/2"> (5716°)(5779°-15186°) : 5737.35ft TVD, 492.91ft N, 125.52ft E
 Directional ONE MWD <8-3/4"> (2536°)(2651°-5699°) : 2666.05ft TVD, 32.33ft N, 19.33ft E
 Directional ONE MWD <12-1/4"> (500°)(560°-2536°) : 577.00ft TVD, 0.43ft N, 1.01ft W
 Gyrodata MS Gyro <17-1/2"> (100°-500°) : 117.00ft TVD, 0.15ft N, 0.05ft W

Well Data			
Slot	Well	Wellbore	Wellpath
Slot #04	Pickney Unit 2H	Pickney Unit 2H AWB	Pickney Unit 2H AWP Proj: 15210'
Slot #04	Pickney Unit 2H	Pickney Unit 2H PWB	Pickney Unit 2H PWP Rev-A.0

Plot reference wellpath is Pickney Unit 2H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 32 (RKB)	North Reference: Grid north
Measured depths are referenced to Frontier 32 (RKB)	Scale: True distance
Frontier 32 (RKB) to Mean Sea Level: 875 feet	Depths are in feet
Mean Sea Level to Ground level (At Slot: Slot #04): -843 feet	Created by: mccrebr on 2018-05-15
Coordinates are in feet referenced to Slot	Database: WA_MPL_EASTERNUS_Defn

Gyrodata MS Gyro <17-1/2"> (100°-500°) : 0.21° Inc, 117.00ft MD, 117.00ft TVD, -0.16ft VS

Directional ONE MWD <12-1/4"> (500°)(560°-2536°) : 0.17° Inc, 577.00ft MD, 577.00ft TVD, -0.78ft VS

Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Middle Pad	1695090.990	14279417.689	39°19'21.010"N	80°48'24.020"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #04	-11.07	28.32	1695119.294	14279406.624
Comment	Pickney Unit 2H			
Frontier 32 (RKB) to Ground level (At Slot: Slot #04)				32ft
Mean Sea Level to Ground level (At Slot: Slot #04)				-843ft
Frontier 32 (RKB) to Mean Sea Level				875ft

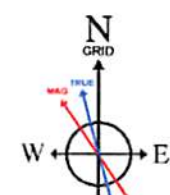
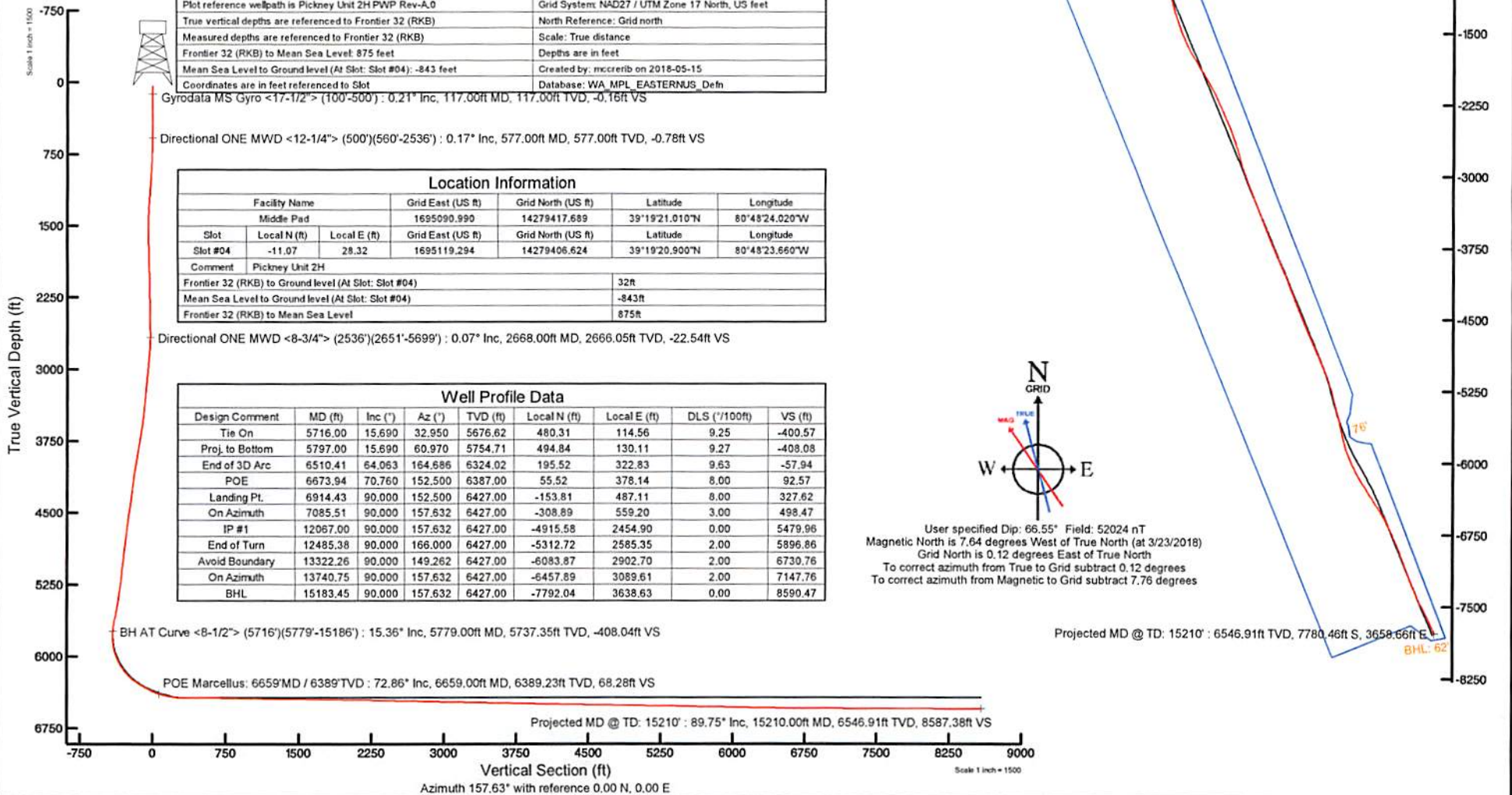
Directional ONE MWD <8-3/4"> (2536°)(2651°-5699°) : 0.07° Inc, 2668.00ft MD, 2666.05ft TVD, -22.54ft VS

Well Profile Data								
Design Comment	MD (ft)	Inc (")	Az (°)	TVD (ft)	Local N (ft)	Local E (ft)	DLS (°/100ft)	VS (ft)
Tie On	5716.00	15.690	32.950	5676.62	-480.31	114.56	9.25	-400.57
Proj. to Bottom	5797.00	15.690	60.970	5754.71	494.84	130.11	9.27	-408.08
End of 3D Arc	6510.41	64.063	164.686	6324.02	195.52	322.83	9.63	-57.94
POE	6673.94	70.760	152.500	6387.00	55.52	378.14	8.00	92.57
Landing Pt.	6914.43	90.000	152.500	6427.00	-153.81	487.11	8.00	327.62
On Azimuth	7085.51	90.000	157.632	6427.00	-308.89	559.20	3.00	498.47
IP #1	12067.00	90.000	157.632	6427.00	-4915.58	2454.90	0.00	5479.96
End of Turn	12485.38	90.000	166.000	6427.00	-5312.72	2585.35	2.00	5896.86
Avoid Boundary	13322.26	90.000	149.262	6427.00	-6083.87	2902.70	2.00	6730.76
On Azimuth	13740.75	90.000	157.632	6427.00	-6457.89	3089.61	2.00	7147.76
BHL	15183.45	90.000	157.632	6427.00	-7792.04	3638.63	0.00	8590.47

BH AT Curve <8-1/2"> (5716°)(5779°-15186°) : 15.36° Inc, 5779.00ft MD, 5737.35ft TVD, -408.04ft VS

POE Marcellus: 6659°MD / 6389°TVD : 72.86° Inc, 6659.00ft MD, 6389.23ft TVD, 68.28ft VS

Projected MD @ TD: 15210' : 89.75° Inc, 15210.00ft MD, 6546.91ft TVD, 8587.38ft VS



User specified Dip: 66.55° Field: 52024 nT
 Magnetic North is 7.64 degrees West of True North (at 3/23/2018)
 Grid North is 0.12 degrees East of True North
 To correct azimuth from True to Grid subtract 0.12 degrees
 To correct azimuth from Magnetic to Grid subtract 7.76 degrees

Projected MD @ TD: 15210' : 6546.91ft TVD, 7780.46ft S, 3658.66ft E
 BHL: 62



Actual Wellpath Report

Pickney Unit 2H AWP Proj: 15210'

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

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.1
North Reference	Grid	User	Mccrerib
Scale	0.999603	Report Generated	5/15/2018 at 12:33:45 PM
Convergence at slot	0.12° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Pickney_Unit_2H_AWP_Proj_15210_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-11.07	28.32	1695119.29	14279406.62	39°19'20.900"N	80°48'23.660"W
Facility Reference Pt			1695090.99	14279417.69	39°19'21.010"N	80°48'24.020"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Frontier 32 (RKB) to Facility Vertical Datum	875.00ft
Horizontal Reference Pt	Slot	Frontier 32 (RKB) to Mean Sea Level	875.00ft
Vertical Reference Pt	Frontier 32 (RKB)	Frontier 32 (RKB) to Ground Level at Slot (Slot #04)	32.00ft
MD Reference Pt	Frontier 32 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	157.63°



Actual Wellpath Report
 Pickney Unit 2H AWP Proj: 15210'
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REFERENCE WELLPATH IDENTIFICATION									
Operator	ANTERO RESOURCES CORPORATION								
Area	Doddridge Co., WV								
Field	Doddridge								
Facility	Middle Pad								

WELLPATH DATA (186 stations) † = Interpolated/Extrapolated station																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
ft	°	°	ft	ft	ft	ft	US ft	US ft			ft	°	F/100ft	F/100ft	F/100ft	
0.00†	0.000	342.150	0.00	0.00	0.00	0.00	1695119.29	14279406.62	39°19'20.900"N	80°48'23.660"W	0.00	0.000	0.00	0.00	0.00	
32.00	0.000	342.150	32.00	0.00	0.00	0.00	1695119.29	14279406.62	39°19'20.900"N	80°48'23.660"W	0.00	0.000	0.00	0.00	0.00	
117.00	0.210	342.150	117.00	-0.16	0.15	-0.05	1695119.25	14279406.77	39°19'20.901"N	80°48'23.661"W	0.16	342.150	0.25	0.25	-21.00	Gyrodata MS Gyro <17.112> (100-500)
217.00	0.200	284.920	217.00	-0.44	0.37	-0.27	1695119.02	14279406.99	39°19'20.904"N	80°48'23.663"W	0.46	323.447	0.20	-0.01	-57.23	
317.00	0.100	219.880	317.00	-0.51	0.35	-0.50	1695118.80	14279406.97	39°19'20.903"N	80°48'23.666"W	0.61	304.806	0.18	-0.10	-65.04	
417.00	0.090	284.550	417.00	-0.49	0.27	-0.63	1695118.66	14279406.90	39°19'20.903"N	80°48'23.668"W	0.69	293.247	0.07	-0.01	-44.67	
517.00	0.230	283.310	517.00	-0.63	0.31	-0.90	1695118.39	14279406.97	39°19'20.904"N	80°48'23.673"W	0.96	288.909	0.15	0.14	18.76	
617.00	0.170	10.970	577.00	-0.78	0.43	-1.01	1695118.29	14279407.05	39°19'20.904"N	80°48'23.673"W	1.09	292.924	0.47	-0.10	146.10	Directional ONE MWD <12-14> (500)(560-2536)
667.00	1.270	29.450	666.99	-1.50	1.42	-0.49	1695118.80	14279408.05	39°19'20.914"N	80°48'23.666"W	1.51	341.046	1.23	1.22	20.53	
758.00	3.320	23.490	757.91	-3.96	4.72	1.06	1695120.35	14279411.34	39°19'20.947"N	80°48'23.646"W	4.84	12.623	2.26	2.26	-6.55	
847.00	4.060	23.090	846.73	-7.97	9.98	3.32	1695122.61	14279416.60	39°19'20.999"N	80°48'23.562"W	10.52	18.397	0.83	0.83	-0.45	
937.00	4.620	24.610	936.47	-12.67	16.21	6.08	1695125.37	14279422.83	39°19'21.060"N	80°48'23.562"W	17.31	20.559	0.64	0.62	-0.43	
1026.00	4.760	24.230	1025.17	-17.66	22.83	9.09	1695128.38	14279429.45	39°19'21.125"N	80°48'23.544"W	24.58	21.700	0.16	0.16	-0.43	
1114.00	4.750	21.200	1112.87	-22.81	29.56	11.90	1695131.19	14279436.17	39°19'21.182"N	80°48'23.508"W	31.87	21.933	0.29	-0.01	-3.44	
1202.00	4.070	11.570	1200.61	-28.04	36.02	13.85	1695133.14	14279442.63	39°19'21.256"N	80°48'23.483"W	38.59	21.030	1.14	-0.77	-10.94	
1290.00	3.550	7.070	1288.41	-33.00	41.78	14.81	1695134.10	14279448.39	39°19'21.313"N	80°48'23.470"W	44.33	19.516	0.68	-0.56	-5.11	
1378.00	2.660	4.890	1376.28	-37.19	46.52	15.32	1695134.61	14279453.12	39°19'21.359"N	80°48'23.464"W	48.98	18.226	1.02	-1.01	-2.48	
1466.00	1.030	345.350	1464.24	-39.79	49.32	15.29	1695134.58	14279455.92	39°19'21.387"N	80°48'23.464"W	51.64	17.227	1.96	-1.85	-22.20	
1554.00	0.800	216.830	1552.23	-40.26	49.59	14.72	1695134.01	14279456.20	39°19'21.390"N	80°48'23.471"W	51.73	16.536	1.88	-0.26	-146.05	
1642.00	1.520	182.570	1640.21	-38.99	47.96	14.10	1695133.39	14279454.57	39°19'21.374"N	80°48'23.479"W	49.99	16.384	0.97	0.82	-27.57	
1730.00	1.080	185.770	1728.19	-37.30	46.00	13.76	1695133.05	14279452.60	39°19'21.354"N	80°48'23.484"W	48.01	16.659	0.53	-0.50	-7.73	
1819.00	1.090	181.190	1817.17	-36.78	44.32	13.71	1695132.99	14279450.92	39°19'21.338"N	80°48'23.484"W	46.37	17.134	0.10	0.01	-5.15	
1907.00	1.100	175.840	1905.18	-34.21	42.64	13.71	1695132.95	14279449.24	39°19'21.321"N	80°48'23.481"W	44.79	17.821	0.12	0.01	-6.08	
1995.00	1.160	166.940	1993.14	-32.53	40.93	13.97	1695133.26	14279447.53	39°19'21.304"N	80°48'23.481"W	43.25	18.845	0.21	0.07	-10.11	
2083.00	1.070	161.470	2081.12	-30.83	39.28	14.43	1695133.52	14279445.89	39°19'21.288"N	80°48'23.475"W	41.85	20.173	0.16	-0.10	-6.22	
2172.00	1.100	153.400	2170.11	-29.15	37.73	15.08	1695134.57	14279444.34	39°19'21.273"N	80°48'23.467"W	40.63	21.784	0.17	0.03	-9.07	
2260.00	1.100	145.420	2258.09	-27.48	36.28	15.94	1695135.22	14279442.89	39°19'21.258"N	80°48'23.456"W	39.62	23.714	0.17	0.00	-9.07	
2348.00	1.140	142.860	2346.07	-25.81	34.88	16.94	1695136.23	14279441.49	39°19'21.244"N	80°48'23.443"W	38.78	25.906	0.07	0.05	-2.91	
2436.00	0.850	130.430	2434.06	-24.38	33.76	17.97	1695137.26	14279440.37	39°19'21.233"N	80°48'23.430"W	38.25	28.022	0.41	-0.33	-14.13	
2524.00	0.640	139.700	2522.05	-23.34	32.96	18.78	1695138.07	14279439.58	39°19'21.225"N	80°48'23.420"W	37.94	29.674	0.27	-0.24	10.53	



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REFERENCE WELLPATH IDENTIFICATION		Slot
Operator	ANTERO RESOURCES CORPORATION	Well
Area	Doddridge Co., WV	Wellbore
Field	Doddridge	Pickney Unit 2H AWB
Facility	Middle Pad	

WELLPATH DATA (186 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
ft	°	°	ft	ft	ft	ft	US ft	US ft			ft	°	F/100ft	F/100ft	F/100ft	
2653.00	0.590	140.880	2551.05	-23.04	32.73	18.98	1695138.27	14279439.34	39°19'21.223"N	80°48'23.418"W	37.83	30.116	0.18	-0.17	4.07	
2668.00	0.073	337.460	2666.05	-22.54	32.33	19.33	1695138.62	14279438.94	39°19'21.219"N	80°48'23.413"W	37.67	30.873	0.57	-0.45	-142.10	Directional ONE MWD <8-3/4"> (2536)/(2651'-5699')
2756.00	4.050	23.020	2753.98	-24.78	35.24	20.52	1695139.81	14279441.85	39°19'21.248"N	80°48'23.398"W	40.78	30.215	4.55	4.52	51.77	
2844.00	7.700	28.150	2841.50	-30.71	43.30	24.52	1695143.81	14279449.91	39°19'21.327"N	80°48'23.347"W	49.76	29.522	4.19	4.15	5.83	
2933.00	7.700	22.860	2929.70	-38.55	53.97	29.84	1695149.12	14279460.57	39°19'21.433"N	80°48'23.279"W	61.67	28.939	0.50	0.00	-3.70	
3021.00	7.240	22.240	3016.95	-46.50	64.45	34.42	1695153.70	14279471.05	39°19'21.536"N	80°48'23.220"W	73.07	28.103	0.65	-0.52	-2.98	
3109.00	7.260	16.010	3104.25	-54.81	74.93	38.05	1695157.33	14279481.52	39°19'21.640"N	80°48'23.174"W	84.04	26.923	0.89	0.02	-7.08	
3198.00	6.650	10.350	3192.59	-63.55	85.40	40.53	1695159.81	14279491.99	39°19'21.743"N	80°48'23.142"W	94.53	25.386	1.03	-0.69	-6.36	
3286.00	5.900	6.990	3280.07	-71.78	94.91	41.99	1695161.27	14279501.49	39°19'21.837"N	80°48'23.123"W	103.78	23.868	0.95	-0.85	-3.82	
3374.00	6.470	19.930	3367.56	-79.39	104.06	44.23	1695163.51	14279510.64	39°19'21.928"N	80°48'23.094"W	113.07	23.030	1.71	0.65	14.70	
3462.00	8.100	20.830	3454.85	-87.58	114.51	48.13	1695167.40	14279521.09	39°19'22.031"N	80°48'22.998"W	124.22	22.797	1.86	1.85	1.02	
3550.00	9.900	10.720	3541.76	-98.44	127.74	51.74	1695171.02	14279534.32	39°19'22.161"N	80°48'22.966"W	137.82	22.050	2.72	2.05	-11.48	
3639.00	9.740	8.070	3629.46	-111.34	142.71	54.22	1695173.49	14279549.28	39°19'22.309"N	80°48'22.944"W	152.67	20.803	0.54	-0.18	-2.98	
3727.00	10.240	5.130	3716.13	-124.69	157.87	55.97	1695175.24	14279564.44	39°19'22.459"N	80°48'22.933"W	167.50	19.519	0.81	0.57	-3.34	
3815.00	9.900	0.710	3802.77	-138.59	173.23	56.76	1695176.03	14279579.79	39°19'22.611"N	80°48'22.933"W	182.29	18.142	0.96	-0.39	-5.02	
3904.00	9.620	356.960	3890.48	-152.65	188.31	56.46	1695175.73	14279594.86	39°19'22.760"N	80°48'22.936"W	196.59	16.690	0.78	-0.31	-4.21	
3993.00	10.250	5.180	3978.15	-166.69	203.62	56.78	1695176.05	14279610.16	39°19'22.911"N	80°48'22.932"W	211.39	15.981	1.74	0.33	9.24	
4081.00	10.400	3.810	4064.73	-180.76	219.34	58.02	1695177.29	14279625.88	39°19'23.067"N	80°48'22.916"W	226.89	14.815	0.17	-1.56	-1.56	
4169.00	9.280	11.150	4151.44	-193.79	234.22	59.91	1695179.18	14279640.75	39°19'23.214"N	80°48'22.891"W	241.76	14.349	1.92	-1.30	8.34	
4258.00	8.600	19.830	4238.36	-204.69	247.50	63.55	1695182.82	14279654.03	39°19'23.345"N	80°48'22.845"W	255.53	14.401	1.68	-0.74	9.75	
4346.00	8.760	15.330	4328.36	-214.86	260.15	67.56	1695186.83	14279666.67	39°19'23.470"N	80°48'22.793"W	268.78	14.557	0.79	0.18	-5.11	
4434.00	9.190	10.740	4413.28	-226.05	273.52	70.64	1695189.91	14279680.04	39°19'23.602"N	80°48'22.754"W	282.50	14.481	0.95	0.48	-5.22	
4523.00	9.410	6.920	4401.11	-238.35	287.73	72.84	1695192.11	14279694.24	39°19'23.742"N	80°48'22.725"W	296.80	14.206	0.74	0.25	-4.28	
4611.00	9.280	15.410	4587.95	-250.23	301.71	75.59	1695194.86	14279708.21	39°19'23.880"N	80°48'22.690"W	311.03	14.066	1.57	-0.15	9.65	
4699.00	10.500	12.950	4674.64	-262.39	316.36	79.28	1695198.54	14279722.86	39°19'24.025"N	80°48'22.643"W	326.15	14.068	2.39	1.38	-2.80	
4788.00	8.460	16.560	4762.42	-274.10	330.54	82.96	1695202.22	14279737.04	39°19'24.165"N	80°48'22.595"W	340.80	14.089	1.47	-2.28	4.06	
4876.00	7.740	12.110	4849.54	-284.02	342.54	86.05	1695205.31	14279748.03	39°19'24.284"N	80°48'22.556"W	353.19	14.101	1.08	-0.82	-5.06	
4964.00	6.410	356.340	4938.87	-293.47	353.25	87.23	1695206.49	14279759.73	39°19'24.393"N	80°48'22.540"W	363.86	13.871	2.33	-1.51	-14.51	
5053.00	7.140	358.920	5025.25	-303.24	363.75	87.07	1695207.33	14279770.23	39°19'24.490"N	80°48'22.542"W	374.02	13.462	0.82	0.82	-0.47	
5141.00	7.680	11.090	5112.52	-313.24	374.99	88.10	1695207.36	14279781.46	39°19'24.604"N	80°48'22.529"W	385.20	13.221	1.88	0.61	13.83	



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REFERENCE WELLPATH IDENTIFICATION									
Operator	ANTERO RESOURCES CORPORATION								
Area	Doddridge Co., WV								
Field	Doddridge								
Facility	Middle Pad								

WELLPATH DATA (186 stations) t = Interpolated/extrapolated station																
MD	Inclination	Azimuth	TVD	Vert Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir	DLS	Build Rate	Turn Rate	Comments
ft	°	°	ft	ft	ft	ft	ft	ft	°	°	ft	°	ft/100ft	ft/100ft	°/100ft	
5229.00	8.460	8.610	5199.65	-323.69	387.16	90.20	1695209.46	14279/93.63	39°19'24.725"N	80°48'22.502"W	397.53	13.115	0.97	0.86	-2.82	
5318.00	9.790	15.940	5287.53	-335.24	400.91	93.26	1695212.52	14279807.37	39°19'24.860"N	80°48'22.462"W	411.61	13.095	1.98	1.49	8.24	
5406.00	10.230	19.930	5374.19	-346.90	415.45	97.98	1695217.23	14279821.91	39°19'25.004"N	80°48'22.402"W	426.85	13.270	0.93	0.50	4.53	
5495.00	10.910	12.700	5461.68	-359.63	431.10	102.52	1695221.78	14279837.55	39°19'25.159"N	80°48'22.344"W	443.12	13.378	1.67	0.76	-8.12	
5583.00	12.700	4.930	5547.82	-375.05	448.86	105.19	1695224.44	14279855.31	39°19'25.334"N	80°48'22.309"W	461.02	13.189	2.72	2.03	-8.83	
5671.00	15.250	17.380	5633.23	-392.55	469.55	109.48	1695228.73	14279875.99	39°19'25.539"N	80°48'22.254"W	482.14	13.124	4.46	2.90	14.15	
5716.00	15.660	32.950	5676.62	-400.57	480.31	114.56	1695233.80	14279886.74	39°19'25.645"N	80°48'22.189"W	493.78	13.415	9.25	0.98	34.60	
5779.00	15.360	49.290	5737.35	-408.04	492.91	125.52	1695238.90	14279898.33	39°19'25.769"N	80°48'22.049"W	508.64	14.287	6.94	-0.52	25.94	BH AT Curve <-8.12"> (5716)/5779-15186)
5795.00	15.000	54.040	5752.79	-409.19	495.50	128.80	1695248.04	14279901.93	39°19'25.795"N	80°48'22.008"W	511.97	14.571	8.09	-2.25	29.69	
5843.00	13.270	73.590	5799.36	-410.08	500.71	139.12	1695255.36	14279907.14	39°19'25.846"N	80°48'21.876"W	519.68	15.528	10.52	-3.66	40.73	
5890.00	12.960	93.510	5845.16	-407.22	501.91	149.56	1695268.80	14279908.34	39°19'25.858"N	80°48'21.743"W	523.72	16.593	9.59	-0.66	42.38	
5938.00	14.280	112.320	5891.83	-400.70	499.33	160.42	1695279.65	14279905.76	39°19'25.832"N	80°48'21.605"W	524.47	17.810	9.58	2.75	39.19	
5986.00	17.320	125.820	5937.07	-390.68	493.03	171.46	1695290.68	14279899.46	39°19'25.769"N	80°48'21.465"W	522.00	19.176	10.11	6.47	28.72	
6033.00	20.270	136.180	5982.51	-376.86	482.85	183.01	1695302.23	14279889.28	39°19'25.668"N	80°48'21.318"W	516.37	20.758	9.26	6.15	21.58	
6080.00	24.370	143.700	6026.99	-359.86	469.15	194.40	1695313.61	14279875.59	39°19'25.533"N	80°48'21.174"W	507.83	22.507	10.62	8.72	16.00	
6128.00	28.810	145.090	6068.90	-338.95	451.68	206.89	1695326.10	14279868.12	39°19'25.360"N	80°48'21.015"W	496.80	24.610	9.34	9.25	2.90	
6175.00	33.240	145.030	6109.17	-315.31	431.82	220.76	1695339.96	14279838.28	39°19'25.163"N	80°48'20.839"W	484.98	27.077	9.43	9.43	-0.13	
6223.00	37.660	146.990	6148.24	-288.01	408.71	236.31	1695355.51	14279815.17	39°19'24.934"N	80°48'20.642"W	472.11	30.036	9.71	9.42	4.08	
6270.00	42.610	151.440	6184.14	-258.03	382.64	251.77	1695370.96	14279789.12	39°19'24.677"N	80°48'20.446"W	458.04	33.344	11.99	10.32	9.47	
6318.00	47.570	155.610	6218.03	-224.14	352.21	266.87	1695386.05	14279758.70	39°19'24.375"N	80°48'20.255"W	441.90	37.151	12.02	10.33	8.69	
6365.00	52.680	158.420	6248.15	-188.09	319.01	280.91	1695400.10	14279725.51	39°19'24.047"N	80°48'20.077"W	425.07	41.366	11.80	10.87	5.98	
6412.00	56.270	159.420	6275.46	-149.86	283.32	294.66	1695413.84	14279688.84	39°19'23.694"N	80°48'19.903"W	408.78	46.124	7.83	7.64	2.13	
6459.00	58.390	159.540	6300.83	-110.32	246.27	308.53	1695427.70	14279652.80	39°19'23.328"N	80°48'19.727"W	394.77	51.403	4.52	4.52	0.26	
6493.00T	59.205	159.597	6318.44	-81.25	219.02	318.68	1695437.85	14279625.66	39°19'23.058"N	80°48'19.546"W	386.69	55.500	2.40	2.40	0.17	Burket 6493MD / 6318TVD
6507.00	59.540	159.620	6325.58	-59.21	207.73	322.18	1695442.04	14279614.22	39°19'22.946"N	80°48'19.546"W	383.93	57.244	2.40	2.40	0.17	
6549.00T	61.353	157.829	6346.29	-32.69	173.69	336.14	1695455.96	14279602.24	39°19'22.610"N	80°48'19.378"W	378.36	62.674	5.69	4.32	-4.26	Tully: 6549TMD / 6346TVD
6554.00	61.570	157.620	6348.68	-28.29	169.62	337.80	1695466.96	14279576.18	39°19'22.569"N	80°48'19.357"W	378.00	63.337	5.69	4.35	-4.18	
6602.00	66.560	155.300	6369.67	14.84	130.07	355.05	1695485.21	14279536.65	39°19'22.178"N	80°48'18.939"W	378.13	63.880	11.27	10.40	-4.83	
6630.00T	69.907	154.629	6380.05	40.82	106.52	366.06	1695485.21	14279493.10	39°19'21.945"N	80°48'18.999"W	381.24	73.776	12.16	11.95	-2.40	Hamilton: 6630TMD / 6380TVD
6649.00	72.180	154.199	6386.22	58.76	90.31	373.82	1695492.96	14279466.90	39°19'21.785"N	80°48'18.901"W	384.57	76.418	12.16	11.96	-2.31	



Actual Wellpath Report
 Pickney Unit 2H AWP Proj: 15210

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 MW Department of
 Environmental Protection



Operator	ANTERO RESOURCES CORPORATION
Area	Doddridge Co., WV
Field	Doddridge
Facility	Middle Pad
Slot	Slot #04
	Pickney Unit 2H
	Pickney Unit 2H
	Pickney Unit 2H AWP

REFERENCE WELLPATH IDENTIFICATION

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vert Sect (ft)	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude (ft)	Longitude (ft)	Closure Dist (ft)	Closure Dir (ft)	DLS (ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	Comments
6659.00†	72.860	154.260	6389.23	68.28	81.72	377.97	1695497.11	14279488.31	39°19'21.70"N	80°48'18.84"W	386.70	77.800	6.83	6.80	0.70	POE Marcellus: 6659 MD / 6389 TVD
6698.00	75.510	154.530	6399.85	105.74	47.89	394.18	1695513.32	14279454.49	39°19'21.365"N	80°48'18.643"W	397.08	83.073	6.83	6.80	0.69	
6745.00	77.940	154.880	6410.65	151.42	6.53	413.72	1695532.85	14279413.15	39°19'20.956"N	80°48'18.395"W	413.78	89.096	5.22	5.17	0.74	
6793.00	82.040	155.650	6418.99	198.64	-36.39	433.50	1695552.62	14279370.25	39°19'20.531"N	80°48'18.145"W	435.02	94.799	8.69	8.54	1.60	
6840.00	86.860	157.690	6423.53	245.39	-79.33	452.01	1695571.13	14279327.32	39°19'20.106"N	80°48'17.911"W	458.92	99.955	11.13	10.26	4.34	
6888.00	90.180	157.000	6424.77	293.37	-123.61	470.49	1695589.60	14279283.06	39°19'19.666"N	80°48'17.677"W	486.46	104.720	7.06	6.92	-1.44	
6984.00	89.600	154.590	6424.96	389.31	-211.16	509.85	1695628.94	14279195.55	39°19'18.802"N	80°48'17.178"W	551.85	112.498	2.58	-0.60	-2.51	
7079.00	89.690	155.910	6425.54	484.23	-297.43	549.62	1695668.70	14279109.31	39°19'17.949"N	80°48'16.675"W	624.94	118.420	1.39	-0.09	1.39	
7173.00	88.740	155.970	6426.83	578.18	-383.26	587.94	1695707.00	14279203.52	39°19'17.100"N	80°48'16.189"W	701.83	123.099	1.01	-1.01	0.06	
7269.00	88.490	156.140	6429.15	674.12	-471.18	626.42	1695745.46	14278935.64	39°19'16.230"N	80°48'15.702"W	783.84	126.950	0.86	-0.26	0.82	
7364.00	88.460	156.140	6431.68	769.07	-558.23	664.36	1695783.39	14278848.61	39°19'15.368"N	80°48'15.222"W	867.76	130.039	0.65	-0.03	-0.65	
7459.00	88.430	156.970	6436.30	958.94	-731.89	741.32	1695860.32	14278675.03	39°19'13.651"N	80°48'14.247"W	1041.74	134.633	0.74	-0.72	-0.18	
7554.00	89.110	155.970	6436.30	958.94	-731.89	741.32	1695860.32	14278675.03	39°19'13.651"N	80°48'14.247"W	1041.74	134.633	0.74	-0.72	-0.18	
7650.00	88.890	155.460	6437.97	1054.88	-819.38	780.80	1695899.78	14278587.57	39°19'12.785"N	80°48'13.747"W	1131.82	136.381	0.58	-0.23	-0.53	
7745.00	89.080	157.280	6439.66	1149.83	-908.39	818.87	1695937.84	14278500.59	39°19'11.924"N	80°48'12.835"W	1221.51	137.904	1.93	0.20	1.92	
7840.00	89.170	150.710	6441.11	1244.78	-995.06	852.91	1695971.87	14278411.96	39°19'11.047"N	80°48'12.835"W	1310.57	139.399	3.61	0.09	3.61	
7935.00	90.000	166.370	6441.80	1339.24	-1086.12	879.82	1695998.76	14278320.93	39°19'10.146"N	80°48'12.495"W	1397.76	140.991	6.02	0.87	5.96	
8030.00	89.600	166.230	6442.13	1433.15	-1178.42	902.32	1696021.25	14278228.67	39°19'09.234"N	80°48'12.211"W	1484.20	142.559	0.45	-0.42	-0.15	
8125.00	88.980	163.510	6443.31	1527.37	-1270.11	927.11	1696046.03	14278137.02	39°19'08.327"N	80°48'11.898"W	1572.49	143.873	2.94	-0.65	-2.86	
8220.00	89.380	162.010	6444.67	1621.98	-1360.83	955.26	1696074.17	14278046.34	39°19'07.430"N	80°48'11.543"W	1662.64	144.932	1.63	0.42	-1.58	
8315.00	89.170	159.400	6445.87	1716.83	-1450.48	986.65	1696105.55	14277956.72	39°19'06.543"N	80°48'11.146"W	1754.24	145.776	2.76	-0.22	-2.75	
8410.00	89.170	157.090	6447.24	1811.81	-1538.70	1021.85	1696140.74	14277868.54	39°19'05.670"N	80°48'10.700"W	1847.10	146.412	2.43	0.00	-2.43	
8505.00	89.260	155.100	6448.55	1906.76	-1625.54	1060.34	1696179.21	14277781.74	39°19'04.811"N	80°48'10.213"W	1940.80	146.883	2.10	0.09	-2.09	
8600.00	89.110	151.780	6449.90	2001.48	-1710.49	1102.81	1696221.66	14277696.82	39°19'03.971"N	80°48'09.675"W	2035.18	147.189	3.50	-0.16	-3.49	
8695.00	89.110	150.030	6451.37	2095.81	-1793.49	1149.00	1696267.83	14277613.85	39°19'03.149"N	80°48'09.090"W	2129.98	147.354	1.84	0.00	-1.84	
8790.00	88.950	147.850	6452.98	2189.70	-1874.85	1198.00	1696316.82	14277532.52	39°19'02.344"N	80°48'08.468"W	2224.92	147.422	2.30	-0.17	-2.29	
8886.00	88.800	147.900	6454.87	2284.30	-1958.14	1249.04	1696367.84	14277451.27	39°19'01.544"N	80°48'07.821"W	2320.90	147.441	0.16	-0.16	0.05	
8981.00	88.830	150.380	6456.83	2378.23	-2037.67	1297.76	1696416.53	14277369.77	39°19'00.733"N	80°48'07.204"W	2415.83	147.508	2.61	0.03	2.61	
9076.00	88.740	152.630	6458.85	2472.66	-2121.13	1343.07	1696461.82	14277286.34	39°18'59.907"N	80°48'06.629"W	2510.58	147.659	2.37	-0.09	2.37	
9171.00	88.800	157.290	6460.89	2567.51	-2207.16	1383.25	1696502.00	14277200.34	39°18'59.056"N	80°48'06.121"W	2604.79	147.924	4.90	0.06	4.91	

† = Interpolated/extrapolated station



REFERENCE WELLPATH IDENTIFICATION

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

Actual Wellpath Report

Pickney Unit 2H AWP Proj: 15210

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WV Department of Environmental Protection



MD (ft)	Inclination (°)	Azimuth (ft)	TVD (ft)	Vert Sect	North (ft)	East (ft)	Grid East (ft)	Grid North (ft)	Latitude	Longitude	Closure Dist (ft)	Closure Dir (ft)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
9266.00	88.800	156.160	6462.88	2662.47	-2294.41	1420.78	1696539.51	14271713.13	39°18'58.192"N	80°48'05.645"W	2698.69	148.233	1.19	0.00	-1.19	
9361.00	88.800	155.630	6464.87	2757.41	-2381.11	1459.57	1696578.29	14277026.47	39°18'57.335"N	80°48'05.154"W	2792.85	148.492	0.56	0.00	-0.56	
9456.00	88.800	156.340	6466.85	2852.35	-2467.86	1498.23	1696616.92	14276939.75	39°18'56.476"N	80°48'04.665"W	2887.05	148.738	0.75	0.00	-0.75	
9551.00	88.770	159.750	6468.87	2947.31	-2555.94	1533.73	1696652.42	14276851.70	39°18'55.605"N	80°48'04.216"W	2980.80	149.033	3.59	-0.03	3.59	
9646.00	88.800	161.740	6470.88	3042.14	-2645.60	1565.05	1696683.72	14276762.08	39°18'54.718"N	80°48'03.820"W	3073.86	149.393	2.09	0.03	2.09	
9740.00	88.860	164.950	6472.80	3135.65	-2735.63	1591.98	1696710.64	14276672.09	39°18'53.828"N	80°48'03.172"W	3165.13	149.803	3.41	0.06	3.41	
9834.00	88.830	161.720	6474.70	3228.86	-2826.39	1616.37	1696735.02	14276581.36	39°18'52.930"N	80°48'03.172"W	3255.94	150.235	0.04	-0.03	0.02	
9928.00	88.890	164.970	6476.57	3322.36	-2916.41	1643.30	1696761.94	14276491.37	39°18'52.040"N	80°48'02.832"W	3347.53	150.600	3.46	0.06	-3.46	
10022.00	88.860	159.590	6478.42	3416.21	-3005.09	1674.43	1696793.06	14276402.74	39°18'51.163"N	80°48'02.438"W	3440.10	150.873	2.27	-0.03	-2.27	
10120.00	88.890	157.330	6480.34	3514.17	-3096.22	1710.41	1696829.02	14276311.64	39°18'50.261"N	80°48'01.983"W	3537.24	151.083	2.31	0.03	-2.31	
10214.00	88.650	164.820	6482.36	3608.15	-3183.10	1746.23	1696864.82	14276224.79	39°18'49.402"N	80°48'01.530"W	3630.63	151.251	0.62	-0.26	0.56	
10308.00	88.830	158.840	6484.42	3702.12	-3270.45	1780.90	1696899.48	14276137.48	39°18'48.801"N	80°48'01.091"W	3723.90	151.430	1.06	0.19	1.04	
10402.00	88.860	159.020	6486.32	3796.07	-3358.15	1814.68	1696933.25	14276049.82	39°18'47.670"N	80°48'00.664"W	3817.10	151.614	0.19	0.03	0.19	
10496.00	88.950	159.420	6488.12	3890.02	-3446.01	1848.03	1696966.58	14275961.98	39°18'46.801"N	80°48'00.242"W	3910.27	151.796	0.44	0.10	0.43	
10589.00	88.860	159.000	6489.89	3982.97	-3532.94	1881.03	1696999.58	14275875.09	39°18'45.941"N	80°47'59.824"W	4002.49	151.968	0.46	-0.10	-0.45	
10683.00	88.830	158.040	6491.79	4076.94	-3620.40	1915.44	1697033.97	14275787.67	39°18'45.076"N	80°47'59.389"W	4095.87	152.118	1.02	-0.03	-1.02	
10777.00	88.890	157.640	6493.66	4170.92	-3704.13	1949.89	1697069.41	14275700.67	39°18'44.215"N	80°47'58.941"W	4189.40	152.246	0.43	0.06	-0.43	
10871.00	88.930	157.160	6495.53	4264.90	-3794.13	1987.18	1697105.68	14275614.01	39°18'43.357"N	80°47'58.481"W	4283.02	152.357	0.75	-0.06	-0.74	
10965.00	88.920	157.160	6497.37	4358.87	-3880.67	2023.82	1697142.31	14275527.50	39°18'42.501"N	80°47'58.018"W	4376.70	152.457	0.25	0.10	0.23	
11058.00	88.950	157.140	6499.10	4451.85	-3966.36	2059.93	1697178.40	14275441.85	39°18'41.654"N	80°47'57.561"W	4469.38	152.555	0.04	0.03	-0.02	
11152.00	88.860	157.190	6500.90	4545.83	-4052.98	2096.40	1697214.86	14275355.26	39°18'40.797"N	80°47'57.099"W	4563.06	152.650	0.11	-0.10	0.05	
11246.00	89.050	158.880	6502.49	4639.81	-4140.15	2131.53	1697249.97	14275268.13	39°18'39.934"N	80°47'56.655"W	4656.63	152.759	1.88	0.36	1.84	
11340.00	89.200	158.920	6504.49	4733.78	-4227.84	2165.36	1697283.79	14275180.47	39°18'39.067"N	80°47'56.227"W	4750.09	152.880	0.99	-0.04	-0.04	
11434.00	89.320	159.770	6505.26	4827.73	-4315.77	2198.55	1697316.96	14275092.57	39°18'38.197"N	80°47'55.807"W	4843.50	153.005	0.99	0.22	-0.95	
11528.00	89.110	157.860	6506.55	4921.69	-4403.41	2232.51	1697350.91	14275004.97	39°18'37.330"N	80°47'55.377"W	4937.01	153.115	2.04	-2.03	-2.03	
11623.00	89.140	157.110	6508.00	4991.16	-4491.16	2268.88	1697387.27	14274917.26	39°18'36.462"N	80°47'54.917"W	5031.73	153.198	0.79	0.03	-0.79	
11717.00	89.140	156.630	6509.41	5110.66	-4577.59	2305.80	1697424.18	14274830.86	39°18'35.607"N	80°47'54.450"W	5125.53	153.265	0.51	0.00	-0.51	
11810.00	89.080	156.720	6510.86	5203.64	-4662.98	2342.62	1697460.98	14274745.50	39°18'34.762"N	80°47'53.984"W	5218.36	153.326	0.12	-0.06	0.10	
11904.00	89.140	157.140	6512.32	5297.62	-4749.45	2379.45	1697497.80	14274659.07	39°18'33.907"N	80°47'53.518"W	5312.16	153.389	0.45	0.06	0.45	
11998.00	89.020	156.420	6513.83	5391.60	-4835.83	2416.51	1697534.84	14274572.73	39°18'33.052"N	80°47'53.049"W	5405.99	153.448	0.78	-0.13	-0.77	



Actual Wellpath Report

Pickney Unit 2H AWP Proj: 15210

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REFERENCE WELLPATH IDENTIFICATION

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

WELLPATH DATA (186 stations)

MD (ft)	Inclination (°)	Azimuth (°)	TVD (ft)	Vent Sect	North	East	Grid East (ft)	Grid North (ft)	Longitude	Closure Dist (ft)	Closure Dir (°)	DLS (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments	
12092.00	88.770	156.780	6515.64	5485.56	-422.08	2453.83	1697572.15	14274486.51	39°18'32.199"N	80°47'52.576"W	5499.83	153.502	0.47	-0.27	0.38	
12185.00	88.400	157.260	6517.94	5578.53	-500.77	2490.13	1697608.43	14274400.95	39°18'31.352"N	80°47'52.117"W	5592.63	153.561	0.65	-0.40	0.52	
12278.00	88.740	158.630	6520.26	5671.50	-5093.84	2525.04	1697643.33	14274314.82	39°18'30.500"N	80°47'51.675"W	5685.33	153.632	1.52	0.37	1.47	
12372.00	89.290	162.520	6521.87	5765.34	-5182.46	2556.29	1697674.57	14274226.23	39°18'29.623"N	80°47'51.280"W	5778.62	153.745	4.18	0.59	4.14	
12466.00	88.920	164.400	6525.06	5858.82	-5272.61	2582.86	1697701.12	14274136.12	39°18'28.732"N	80°47'50.945"W	5871.25	153.901	2.29	-0.39	2.26	
12560.00	88.980	164.400	6525.06	5952.12	-5363.18	2607.94	1697726.20	14274045.58	39°18'27.836"N	80°47'50.628"W	5963.65	154.068	0.26	0.06	-0.26	
12654.00	88.920	166.320	6526.79	6045.25	-5454.11	2631.70	1697749.94	14273954.69	39°18'26.937"N	80°47'50.329"W	6055.83	154.242	2.04	-0.06	2.04	
12747.00	89.020	167.600	6528.46	6137.00	-5544.69	2652.67	1697770.91	14273864.14	39°18'26.041"N	80°47'50.064"W	6146.57	154.433	1.38	0.11	1.38	
12841.00	88.370	166.630	6530.60	6229.69	-5636.30	2673.63	1697791.86	14273772.57	39°18'25.135"N	80°47'49.800"W	6238.28	154.622	1.24	-0.69	-1.03	
12934.00	89.170	166.890	6532.60	6321.49	-5726.81	2694.93	1697813.15	14273682.10	39°18'24.240"N	80°47'49.532"W	6329.21	154.799	0.90	0.86	0.28	
13028.00	89.200	163.430	6533.93	6414.66	-5817.65	2718.99	1697837.20	14273591.29	39°18'23.341"N	80°47'49.229"W	6421.68	154.950	3.68	0.03	-3.68	
13122.00	89.200	159.040	6535.25	6508.44	-5906.62	2749.22	1697867.42	14273502.36	39°18'22.461"N	80°47'48.847"W	6515.09	155.040	4.67	0.00	-4.67	
13216.00	89.380	156.150	6536.41	6602.42	-5993.51	2785.04	1697903.23	14273415.50	39°18'21.602"N	80°47'48.393"W	6608.98	155.077	3.08	0.19	-3.07	
13309.00	89.970	152.940	6537.94	6695.27	-6077.47	2825.01	1697943.18	14273331.58	39°18'20.771"N	80°47'47.887"W	6701.96	155.069	3.51	0.63	-3.46	
13403.00	89.750	148.550	6539.17	6788.57	-6159.46	2870.94	1697989.09	14273249.62	39°18'19.176"N	80°47'47.305"W	6795.68	155.010	4.68	-0.23	-4.67	
13496.00	89.690	148.230	6537.62	6880.36	-6238.66	2919.68	1698037.81	14273170.45	39°18'18.176"N	80°47'46.688"W	6888.06	154.921	0.35	-0.06	-0.34	
13590.00	89.570	147.520	6538.23	6973.00	-6318.27	2969.66	1698087.78	14273090.88	39°18'18.388"N	80°47'46.054"W	6981.36	154.826	0.77	-0.13	-0.76	
13683.00	89.690	146.540	6538.83	7064.41	-6396.29	3020.27	1698138.36	14273012.89	39°18'17.616"N	80°47'45.412"W	7073.51	154.724	1.06	0.13	-1.05	
13777.00	89.690	149.220	6539.34	7157.04	-6475.89	3070.25	1698188.32	14272933.31	39°18'18.828"N	80°47'44.779"W	7166.84	154.634	2.85	0.00	2.85	
13871.00	90.090	150.190	6539.52	7250.15	-6557.05	3117.67	1698235.72	14272852.18	39°18'18.162"N	80°47'44.178"W	7260.49	154.570	1.12	0.43	1.03	
13964.00	89.820	152.770	6539.59	7342.60	-6638.76	3162.07	1698280.10	14272770.51	39°18'18.216"N	80°47'43.616"W	7353.35	154.531	2.79	-0.29	2.77	
14058.00	89.350	156.020	6540.88	7436.38	-6723.03	3203.71	1698321.73	14272686.28	39°18'18.1382"N	80°47'43.088"W	7447.34	154.521	1.99	-0.20	1.98	
14152.00	89.660	158.050	6541.68	7523.28	-6808.44	3242.95	1698360.95	14272600.90	39°18'18.1337"N	80°47'42.592"W	7541.32	154.531	1.51	-0.30	1.48	
14245.00	89.660	158.050	6541.68	7623.28	-6894.06	3279.23	1698397.22	14272515.31	39°18'18.12690"N	80°47'42.133"W	7634.23	154.561	2.21	0.33	2.18	
14339.00	89.630	159.490	6542.27	7717.26	-6981.67	3313.27	1698431.24	14272427.73	39°18'18.1823"N	80°47'41.702"W	7727.97	154.613	1.53	-0.03	1.53	
14433.00	89.820	159.390	6542.72	7811.21	-7069.69	3346.28	1698464.24	14272339.76	39°18'18.10963"N	80°47'41.285"W	7821.64	154.670	0.23	0.20	-0.11	
14527.00	89.630	159.390	6543.17	7905.16	-7157.67	3379.37	1698497.32	14272251.81	39°18'18.10082"N	80°47'40.866"W	7915.33	154.726	0.20	-0.20	0.00	
14621.00	89.630	158.370	6543.78	7999.14	-7245.35	3413.24	1698531.17	14272164.16	39°18'09.215"N	80°47'40.438"W	8009.08	154.775	1.09	0.00	-1.09	
14714.00	89.750	157.410	6544.28	8092.13	-7331.51	3448.24	1698566.16	14272078.04	39°18'08.363"N	80°47'39.995"W	8101.94	154.811	1.04	0.13	-1.03	
14808.00	89.720	154.630	6544.71	8186.09	-7417.39	3486.44	1698604.35	14271992.19	39°18'07.513"N	80°47'39.512"W	8195.91	154.825	2.96	-0.03	-2.96	



Actual Wellpath Report

Pickney Unit 2H AWP Proj: 15210'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Doddridge Co., WV	Well	Pickney Unit 2H
Field	Doddridge	Wellbore	Pickney Unit 2H AWB
Facility	Middle Pad		

WELLPATH DATA (186 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
14901.00	89.570	152.700	6545.29	8278.86	-7500.73	3527.70	1698645.58	14271908.88	39°18'06.688"N	80°47'38.989"W	8288.88	154.812	2.08	-0.16	-2.08	
14995.00	89.780	153.550	6545.82	8372.57	-7584.58	3570.19	1698688.06	14271825.07	39°18'05.859"N	80°47'38.451"W	8382.84	154.793	0.93	0.22	0.90	
15089.00	89.630	155.240	6546.31	8466.41	-7669.34	3610.81	1698728.66	14271740.34	39°18'05.020"N	80°47'37.937"W	8476.83	154.788	1.80	-0.16	1.80	
15182.00	89.780	157.570	6546.79	8559.38	-7754.56	3648.03	1698765.87	14271655.16	39°18'04.177"N	80°47'37.466"W	8569.79	154.806	2.51	0.16	2.51	
15186.00	89.750	157.700	6546.80	8563.38	-7758.26	3649.55	1698767.39	14271651.46	39°18'04.140"N	80°47'37.447"W	8573.79	154.807	3.34	-0.75	3.25	
15210.00	89.750	157.700	6546.91	8587.38	-7780.46	3658.66	1698776.50	14271629.26	39°18'03.921"N	80°47'37.332"W	8597.75	154.815	0.00	0.00	0.00	Projected MD @ TD: 15210'

HOLE & CASING SECTIONS - Ref Wellbore: Pickney Unit 2H AWB Ref Wellpath: Pickney Unit 2H AWP Proj: 15210'									
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	32.00	112.00	80.00	32.00	112.00	0.00	0.00	0.13	-0.04
17.5in Open Hole	112.00	551.20	439.20	112.00	551.20	0.13	-0.04	0.36	-0.99
13.375in Casing Surface	32.00	551.20	519.20	32.00	551.20	0.00	0.00	0.36	-0.99
12.25in Open Hole	551.20	2627.10	2075.90	551.20	2625.15	0.36	-0.99	32.35	19.30
9.625in Casing Intermediate	32.00	2627.10	2595.10	32.00	2625.15	0.00	0.00	32.35	19.30
8.75in Open Hole	2627.10	5797.00	3169.90	2625.15	5754.72	32.35	19.30	495.80	129.22
8.5in Open Hole	5797.00	15210.00	9413.00	5754.72	6546.91	495.80	129.22	-7780.46	3658.66
5.5in Casing Production	32.00	15210.00	15178.00	32.00	6546.91	0.00	0.00	-7780.46	3658.66



Actual Wellpath Report
 Pickney Unit 2H AWP Proj: 15210'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Doddridge Co., WV	Well	Pickney Unit 2H
Field	Doddridge	Wellbore	Pickney Unit 2H AWB
Facility	Middle Pad		

TARGETS	TVD (ft)	North (ft)	East (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude	Shape
Pickney Unit 2H POE Rev-2	6387.00	55.52	378.14	1695497.28	14279462.12	39°19'21.441"N	80°48'18.847"W	point
Pickney Unit 2H Azi Rev-2	6427.00	-308.89	559.20	1695678.28	14279097.86	39°19'17.835"N	80°48'16.553"W	point
Pickney Unit 2H BHL Rev-2	6427.00	-7792.04	3638.63	1698756.47	14271617.59	39°18'03.807"N	80°47'37.587"W	point
Pickney Unit 2H IP #1 Rev-1	6427.00	-4915.58	2454.90	1697573.22	14274493.00	39°18'32.263"N	80°47'52.563"W	point
Pickney Unit 2H LP Rev-2	6427.00	-153.81	487.11	1695606.21	14279252.87	39°19'19.369"N	80°48'17.466"W	point

WELLPATH COMPOSITION - Ref Wellbore: Pickney Unit 2H AWB Ref Wellpath: Pickney Unit 2H AWP Proj: 15210'			
Start MD (ft)	End MD (ft)	Positional Uncertainty Model	Log Name/Comment
32.00	517.00	Gyrodatta standard - Drop gyro or Multi-shot	01 Gyrodatta MS Gyro <17-1/2"> (100'-500')
517.00	2553.00	ISCWSA MWD, Rev. 4 (Standard)	02 Directional ONE MWD <12-1/4"> (500') (560'-2536')
2553.00	5716.00	ISCWSA MWD, Rev. 4 (Standard)	03 Directional ONE MWD <8-3/4"> (2536') (5651'-5699')
5716.00	15186.00	BH AutoTrak Curve (Short)	04 BH AT Curve <8-1/2"> (5716') (5779'-15186')
15186.00	15210.00	Blind Drilling (Std)	Projection to bit



Actual Wellpath Report

Pickney Unit 2H AWP Proj: 15210'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #04
Area	Doddridge Co., WV	Well	Pickney Unit 2H
Field	Doddridge	Wellbore	Pickney Unit 2H AWB
Facility	Middle Pad		

COMMENTS
<p>Wellpath general comments API: 47-017-06846-0000 BH Job #: 9076705 Rig: Frontier 32 Duration: 03/25/18 - 03/28/18 Gyrodata MS Gyro <17-1/2"> (100'-500') Directional ONE MWD <12-1/4"> (500')(560'-2536') Directional ONE MWD <8-3/4"> (2536')(2651'-5699') BH AT Curve <8-1/2"> (5716')(5779'-15186') Burket: 6493'MD / 6318'TVD Tully: 6549'MD / 6346'TVD Hamilton: 6630'MD / 6380'TVD POE Marcellus: 6659'MD / 6389'TVD Projected MD @ TD: 15210'</p>

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/6/2018
Job End Date:	8/6/2018
State:	West Virginia
County:	Doddridge
API Number:	47-017-06846-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Pickney 2H
Latitude:	39.32165800
Longitude:	-80.80487000
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,679
Total Base Water Volume (gal):	15,782,574
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
Fresh Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	88.36109	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.12263	

SAND-COMMON WHITE - 100 MESH, 3307 LB BAG	Halliburton	Proppant					
				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				Listed Below			
EXCELERATE PS-2	Halliburton	Friction Reducer					
				Listed Below			
HYDROCHLORI C ACID	Halliburton	Solvent					
				Listed Below			
SP BREAKER	Halliburton	Breaker					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
SAND- PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
SCALECHEK LP-70	Halliburton	Scale Inhibitor					
				Listed Below			

MC B-8614	Halliburton	Biocide					
				Listed Below			
Items above are Trade Names with the exception of Base Water . Items below are the individual ingredients.							
			Crystalline silica, quartz	14808-60-7	100.00000	11.46619	
			Guar gum	9000-30-0	100.00000	0.02095	
			Acrylamide acrylate polymer	Proprietary	30.00000	0.01660	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.01660	
			Inorganic salt	Proprietary	30.00000	0.01660	
			Hydrochloric acid	7647-01-0	15.00000	0.01091	
			Ethylene glycol	107-21-1	60.00000	0.00619	
			Glutaraldehyde	111-30-8	30.00000	0.00380	
			Telmer	Proprietary	10.00000	0.00103	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00063	
			Sodium persulfate	7775-27-1	100.00000	0.00060	
			Ethanol	64-17-5	1.00000	0.00013	
			Sodium polyacrylate	9003-04-7	1.00000	0.00010	
			Methanol	67-56-1	60.00000	0.00010	
			Fatty acids, tall oil	Proprietary	30.00000	0.00004	
			Modified thiourea polymer	Proprietary	30.00000	0.00004	
			Ethoxylated alcohols	Proprietary	30.00000	0.00004	
			Olefins	Proprietary	5.00000	0.00002	
			Propargyl alcohol	107-19-7	10.00000	0.00001	
			Phosphoric acid	7664-38-2	0.10000	0.00001	
			Acrylic acid	79-10-7	0.01000	0.00000	

		Sodium sulfate	7757-82-6	0.10000	0.00000	
--	--	----------------	-----------	---------	---------	--

* 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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728' to Bottom Hole

4,273' to Top Hole

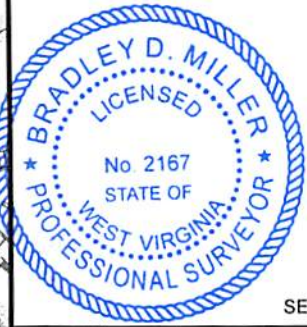
LATITUDE 39 - 20 - 00

LONGITUDE 80 - 47 - 30

3,894' to Top Hole

11,727' to Bottom Hole

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



Legend

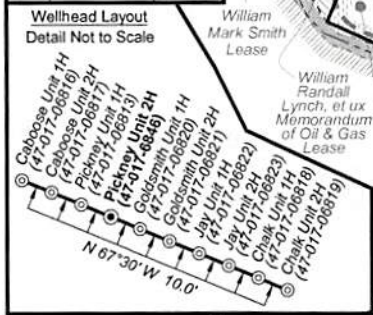
- ⊙ Proposed gas well
- ⊙ Found corner, as noted
- ⊙ Existing Well, as noted
- - - Creek or Drain
- - - Existing Road
- - - Surface boundary (approx.)
- - - Interior surface tracts (approx.)

Thomas K Porter Jr., et ux 179/53 97.89 Ac. 47-017-0066

James M Ellifrit Cox Lease Middle Island Creek

Nelda Lou King Lease 199/700

Bearing	Dist.
L1 S 34°20' W	627.6'
L2 N 10°02' E	493.0'
L3 N 26°11' E	831.3'
L4 S 08°21' E	809.5'



Notes:
West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.
Well No. Pickney Unit 2H Top Hole coordinates are
N: 302,249.55' Latitude: 39°19'20.91"
E: 1,630,375.20' Longitude: 80°48'23.66"
Bottom Hole coordinates are
N: 294,416.71' Latitude: 39°18'04.00"
E: 1,633,920.32' Longitude: 80°47'37.11"
UTM Zone 17, NAD 1983
Top Hole Coordinates Bottom Hole Coordinates
N: 4,352,589.878m N: 4,350,221.639m
E: 516,687.887m E: 517,807.716m
Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

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.

TM/Par	Bk / Pg	Acres	Owner(s)
1 6/2	214 / 279	32.19	William Randall Lynch & Dixie Janet Craig
2 6/2.5	253 / 222	8.66	
3 6/2.8	305 / 419	2.68	Dominion Field Services, Inc.
4 6/2.6	266 / 36	3.52	
5 6/2.4	163 / 44	14.98	Equitrans, Inc.
6 6/2.3	197/659	1.82	Carol & Alfreda Painter

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: 238-30-WU-14
DRAWING NO: Pickney 2H As-Drilled Well Plat
SCALE: 1" = 1200'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: CORS, Marietta, OH

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

DATE: January 16 2019
Operator's Well No. Pickney Unit 2H
API WELL NO
47 - 017 - 06846
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built Grade - 843' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union
DISTRICT: West Union Black Gold Group, LTD; Russell Coleman, et al; WV Division of Natural Resources; COUNTY: Doddridge
SURFACE OWNER: William Randall Lynch & Dixie Janet Craig Martha Ann Ford McConnell, Memorandum of Oil & Gas; William Mark Smith; William Randall Lynch & Dixie Craig; ACREAGE: 32.19 82.21; 56.07; 20.49
ROYALTY OWNER: Clarence Mutschelknaus; Laura A. Ford & S. L. Ford; Ida F. Ford; Alice H. Maxwell; LEASE NO: _____ ACREAGE: 180; 124; 420; 32.15
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled 6,547' TVD
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 15,210' 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





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



728' to Bottom Hole
 4,273' to Top Hole
 LATITUDE 39 - 20 - 00
 LONGITUDE 80 - 47 - 30

Legend

- ⊙ Proposed gas well
- ⊙ Found corner, as noted
- ⊙ Existing Well, as noted
- - - Creek or Drain
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Thomas K Porter Jr., et ux 179/53 97.89 Ac.
 James M Ellifritt Cox Lease
 Middle Island Creek
 Nelda Lou King Lease

Bearing	Dist.
S 34°20' W	627.6'
N 10°02' E	493.0'
N 26°11' E	831.3'
S 08°21' E	809.5'

Wellhead Layout
 Detail Not to Scale

As-Drilled Well No. Pickney Unit 2H

1-3/4" Pipe

5/8" I. Pin

47-017-4137

Notes:

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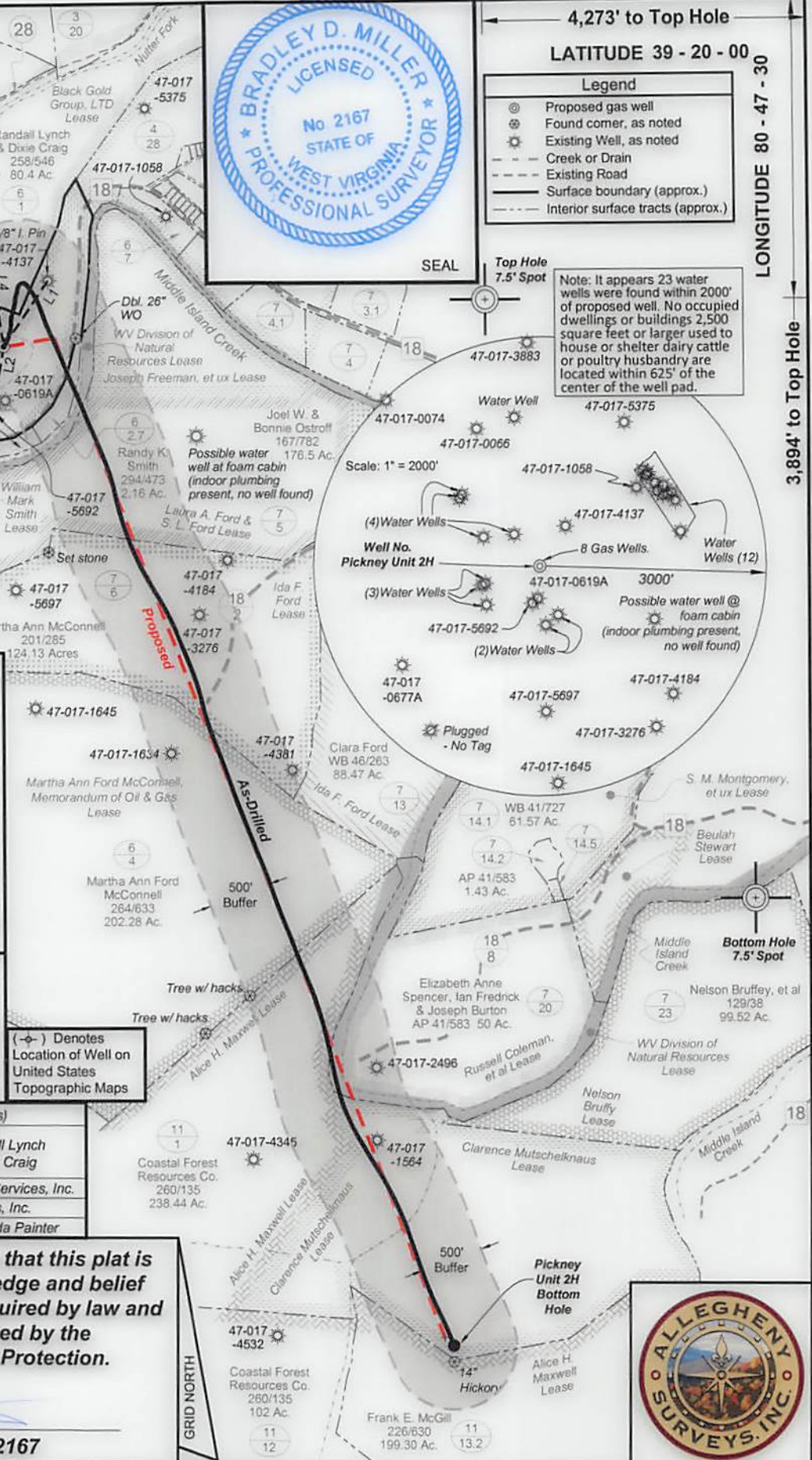
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6/2.8	305 / 419	2.68	Dominion Field Services, Inc.
6/2.6	266 / 36	3.52	
6/2.4	163 / 44	14.98	Equitrans, Inc.
6/2.3	197/659	1.82	Carol & Alfrieda Painter

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



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OIL AND GAS DIVISION

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 API WELL NO
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 STATE COUNTY PERMIT

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 DISTRICT: West Union COUNTY: Doddridge

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 ROYALTY OWNER: Clarence Mutschelknaus; Laura A. Ford & S. L. Ford; Ida F. Ford; Alice H. Maxwell; ACREAGE: 32.19 82.21; 56.07; 20.49 50; 202.28; 102.85

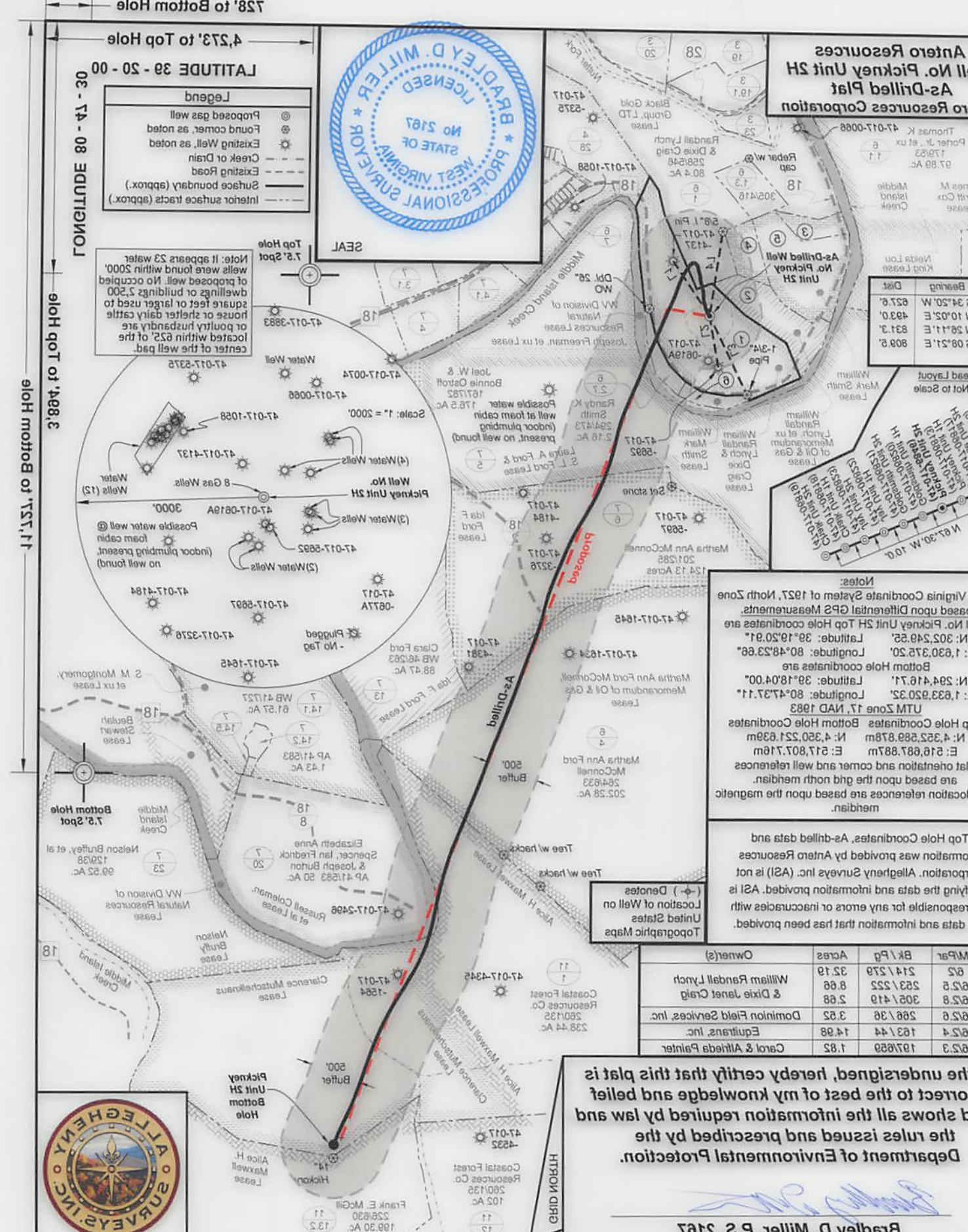
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled

PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 6,547' TVD 15,210' MD

WELL OPERATOR: Antero Resources Corporation
 ADDRESS: 1615 Wynkoop Street Denver, CO 80202

DESIGNATED AGENT: Dianna Stamper - CT Corporation System
 ADDRESS: 5400 D Big Tyler Road Charleston, WV 25313





Owner(s)	Acres	Bk Pg	TMPr
Carol & Althea Painter	1.82	197659	62.3
Eutanas, Inc.	1.48	183144	62.4
Dominion Field Services, Inc.	3.82	268136	62.6
& Dixie Janet Craig	2.68	308149	62.8
William Randall Lynch	8.66	253222	62.5
32.19	2141279	62	

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, P.S. 2187

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

DESIGNATED AGENT: Diana Stampler - CT Corporation System
ADDRESS: 1815 Wynkoop Street, Denver, CO 80202
5400 D Big Tyler Road, Charleston, WV 25313

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

COALITION: ELAVATION: As-Built Grade - 843' WATERSHED: Headwaters Middle Island Creek QUADRANGLE: West Union
DISTRICT: West Union

SURFACE OWNER: William Randall Lynch & Dixie Janet Craig
ROYALTY OWNER: Clarence Mutschelknaus; Laura A. Ford & S. L. Ford; Ida F. Ford; Alice H. Maxwell;
ACREAGE: 180; 124; 420; 32.15

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Dilled

PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale ESTIMATED DEPTH: 15,210, MD

DATE: January 16 2019
Operator's Well No. Pickney Unit 2H
API WELL NO 47017-08846
STATE COUNTY PERMIT

LEAVE NO: ACREAGE: 180; 124; 420; 32.15
ACREAGE: 50; 202.28; 102.85
85.21; 58.07; 20.49

WV License No. 238-30-WU-14
DRAWING NO: Pickney 2H As-Dilled Well Plat
SCALE: 1" = 1200'