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

API 47 - 095 - 02337 County Tyler District Centerville
Quad Middlebourne 7.5' Pad Name Estlack Pad Field/Pool Name ---
Farm name Edna Monroe Well Number Melvin Unit 1H
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 4362770m	Easting 510501m
Landing Point of Curve	Northing 4362604.191m	Easting 509842.351m
Bottom Hole	Northing 4365566m	Easting 508792m

Elevation (ft) 1142' 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 01/29/2016 Date drilling commenced 02/19/2016 Date drilling ceased 04/10/2016
Date completion activities began 09/01/2016 Date completion activities ceased 12/01/2016
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

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Freshwater depth(s) ft 46', 98' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 748', 1222' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 228', 1128', 1628' Cavern(s) encountered (Y/N) depths No
Is coal being mined in area (Y/N) No

Reviewed by:

Reviewed

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API 47- 095 - 02337 Farm name Edna Monroe Well number Melvin Unit 1H

CASING STRINGS	Hole Size	Casing Size	Depth	New or Used	Grade wt/ft	Basket Depth(s)	Did cement circulate (Y/ N) * Provide details below*
Conductor	24"	20"	72'	New	94#, H-40	N/A	Y
Surface	17- 1/2"	13- 3/8"	411'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2623'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"	5-1/2"	17695'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	7082'		4.7#, N-80		
Packer type and depth set		N/A					

Comment Details

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft^3/sks)	Volume (ft^3)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	143 sx	15.6	1.18	169	0	8 Hrs.
Surface	Class A	495 sx	15.6	1.19	589	0	8 Hrs.
Coal							
Intermediate 1	Class A	1029 sx	15.6	1.80	1852	0	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1012 sx (Lead), 1660 sx (Tail)	14.5 (Lead), 15.2 (Tail)	1.33 (Lead), 1.83 (Tail)	4384	~500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 17695' MD, 6592' TVD (BHL); & 6597' TVD (Deepest point drilled) Loggers TD (ft) 17667' MD

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

Plug back procedure N/A

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Lucy Unit 1H API# 47-095-02276). Please reference the wireline logs submitted with Form WR-35 for the Lucy Unit 1H. A Cement Bond Log has been included with this submittal.

Kick off depth (ft) 6423'

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- 095 - 02337 Farm name Edna Monroe Well number Melvin Unit 1H

PERFORATION RECORD

Stage No.	Perforation date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formation(s)

*** PLEASE SEE ATTACHED EXHIBIT 1**

Please insert additional pages as applicable.

STIMULATION INFORMATION PER STAGE

Complete a separate record for each stimulation stage.

Stage No.	Stimulations Date	Ave Pump Rate (BPM)	Ave Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/other (units)

*** PLEASE SEE ATTACHED EXHIBIT 2**

Please insert additional pages as applicable.

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PRODUCING FORMATION(S)	DEPTHS			
Marcellus	6520' (Top)	TVD	7145' (Top)	MD

Please insert additional pages as applicable.

GAS TEST □ Build up □ Drawdown ■ Open Flow OIL TEST ■ Flow □ Pump

SHUT-IN PRESSURE Surface 4100 psi Bottom Hole --- psi DURATION OF TEST --- hrs

OPEN FLOW	Gas		Oil		NGL		Water		GAS MEASURED BY
	11982	mcfpd	245	bpd	---	bpd	853	bpd	□ Estimated ■ Orifice □ Pilot

LITHOLOGY/ FORMATION NAME	TOP DEPTH IN FT TVD	BOTTOM DEPTH IN FT TVD	TOP DEPTH IN FT MD	BOTTOM DEPTH IN FT MD	DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H_2S, ETC)
	0		0		

*** PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

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

Logging Company Allied Horizontal Wireline Services
Address 381 Colonial Manor Rd City North Huntingdon State PA Zip 15642

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

Stimulating Company Halliburton
Address 121 Champion Way Suite 200 City Canonsburg State PA Zip 15317

Please insert additional pages as applicable.

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Completed by Samantha Klaas Telephone 303-357-6759
Signature Title Permitting Agent Date 01/05/2018

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

API 47-095-02337 Farm Name Edna Monroe Well Number Melvin Unit 1H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	9/1/2016	17424	17593	60	Marcellus
2	9/2/2016	17223	17392	60	Marcellus
3	9/3/2016	17022	17192	60	Marcellus
4	9/3/2016	16822	16991	60	Marcellus
5	9/4/2016	16621	16791	60	Marcellus
6	9/5/2016	16421	16590	60	Marcellus
7	9/5/2016	16220	16389	60	Marcellus
8	9/6/2016	16020	16189	60	Marcellus
9	9/7/2016	15819	15988	60	Marcellus
10	9/8/2016	15619	15788	60	Marcellus
11	9/8/2016	15418	15587	60	Marcellus
12	9/9/2016	15218	15387	60	Marcellus
13	9/9/2016	15017	15186	60	Marcellus
14	9/10/2016	14817	14986	60	Marcellus
15	9/10/2016	14616	14785	60	Marcellus
16	9/11/2016	14416	14585	60	Marcellus
17	9/11/2016	14215	14384	60	Marcellus
18	9/12/2016	14015	14184	60	Marcellus
19	9/12/2016	13814	13983	60	Marcellus
20	9/13/2016	13614	13783	60	Marcellus
21	9/13/2016	13413	13582	60	Marcellus
22	9/14/2016	13213	13382	60	Marcellus
23	9/14/2016	13012	13181	60	Marcellus
24	9/14/2016	12812	12981	60	Marcellus
25	9/15/2016	12611	12780	60	Marcellus
26	9/15/2016	12411	12580	60	Marcellus
27	9/16/2016	12210	12379	60	Marcellus
28	9/16/2016	12009	12179	60	Marcellus
29	9/17/2016	11809	11978	60	Marcellus
30	9/17/2016	11608	11778	60	Marcellus
31	9/18/2016	11408	11577	60	Marcellus
32	9/18/2016	11207	11376	60	Marcellus
33	9/19/2016	11007	11176	60	Marcellus
34	9/20/2016	10806	10975	60	Marcellus
35	9/20/2016	10606	10775	60	Marcellus
36	9/21/2016	10405	10574	60	Marcellus
37	9/21/2016	10205	10374	60	Marcellus
38	9/21/2016	10004	10173	60	Marcellus
39	9/22/2016	9804	9973	60	Marcellus
40	9/23/2016	9603	9772	60	Marcellus
41	9/23/2016	9403	9572	60	Marcellus
42	9/23/2016	9202	9371	60	Marcellus
43	9/24/2016	9002	9171	60	Marcellus
44	9/24/2016	8801	8970	60	Marcellus
45	9/25/2016	8601	8770	60	Marcellus
46	9/25/2016	8400	8569	60	Marcellus
47	9/26/2016	8200	8369	60	Marcellus
48	9/26/2016	7999	8168	60	Marcellus
49	9/26/2016	7799	7968	60	Marcellus
50	9/27/2016	7598	7767	60	Marcellus
51	9/27/2016	7398	7567	60	Marcellus
52	9/28/2016	7197	7366	60	Marcellus

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API 47-095-02337 Farm Name Edna Monroe Well Number Melvin Unit 1H

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	9/2/2016	70.0	7344	4945	4962	305855	8731.0	N/A
2	9/2/2016	73.5	7483	5703	4268	305855	7848.0	N/A
3	9/3/2016	71.2	7500	6141	4721	302775	9434.0	N/A
4	9/3/2016	68.6	7625	5689	3991	303676	10130.0	N/A
5	9/4/2016	74.2	8126	5653	4568	304251	9904.0	N/A
6	9/5/2016	72.9	7532	5465	5092	303685	7849.0	N/A
7	9/5/2016	75.0	7185	5570	3596	306057	7844.0	N/A
8	9/6/2016	72.3	8012	5646	7153	258830	10311.0	N/A
9	9/7/2016	73.7	7384	5374	4486	306099	7816.0	N/A
10	9/8/2016	70.5	7151	5681	3486	304794	8923.0	N/A
11	9/8/2016	75.4	7382	5771	3620	303829	9037.0	N/A
12	9/9/2016	75.0	7264	5696	3198	303176	7950.0	N/A
13	9/9/2016	76.5	7345	5695	3183	303797	7729.0	N/A
14	9/10/2016	71.4	7161	6176	0	286670	8114.0	N/A
15	9/10/2016	76.3	7484	5806	4503	284635	7683.0	N/A
16	9/11/2016	78.3	7632	6128	3492	304194	7863.0	N/A
17	9/11/2016	73.1	7235	5706	4728	286942	7819.0	N/A
18	9/12/2016	73.7	7289	5985	4307	304554	7876.0	N/A
19	9/12/2016	75.5	7332	5720	3745	304373	8023.0	N/A
20	9/13/2016	76.0	7260	5749	4251	304240	7778.0	N/A
21	9/13/2016	76.6	7465	5634	4405	304942	7641.0	N/A
22	9/14/2016	76.0	7311	5266	3348	305437	8956.0	N/A
23	9/14/2016	77.5	7576	5624	3441	304561	8927.0	N/A
24	9/14/2016	77.7	7304	5926	4415	303775	7841.0	N/A
25	9/15/2016	77.9	7543	5608	4148	306019	7830.0	N/A
26	9/15/2016	76.3	7461	5656	4192	304477	8716.0	N/A
27	9/16/2016	76.8	7702	5660	3758	306598	7703.0	N/A
28	9/16/2016	77.5	7367	5519	4917	303805	7861.0	N/A
29	9/17/2016	77.6	7433	5431	3996	304619	7731.0	N/A
30	9/17/2016	73.9	7081	5794	3895	305676	7815.0	N/A
31	9/18/2016	75.9	7536	5664	3693	304201	8341.0	N/A
32	9/18/2016	75.6	7023	5504	4680	304970	7934.0	N/A
33	9/19/2016	75.6	7129	5484	3607	305033	7761.0	N/A
34	9/20/2016	73.9	7365	5501	3705	303738	7643.0	N/A
35	9/20/2016	55.7	8028	5602	5284	133555	6858.0	N/A
36	9/21/2016	79.8	7513	4696	4182	303988	7690.0	N/A
37	9/21/2016	77.0	6843	5442	4013	305532	7682.0	N/A
38	9/21/2016	75.2	6909	5488	3297	305377	7764.0	N/A
39	9/22/2016	76.6	6905	5767	4589	306439	7623.0	N/A
40	9/23/2016	80.7	6358	5293	5293	304196	7651.0	N/A
41	9/23/2016	75.9	7293	5789	3669	304518	7700.0	N/A
42	9/23/2016	77.4	6680	5387	3334	304641	7601.0	N/A
43	9/24/2016	76.7	6897	5716	3714	304841	7633.0	N/A
44	9/24/2016	77.3	6973	5504	3151	305438	7685.0	N/A
45	9/25/2016	74.0	6873	5629	3177	305017	7674.0	N/A
46	9/25/2016	74.0	6886	5573	3243	303367	7511.0	N/A
47	9/26/2016	75.9	7195	5676	4124	304166	7618.0	N/A
48	9/26/2016	75.8	7195	5584	3398	307331	7575.0	N/A
49	9/26/2016	77.7	6952	5528	3414	304968	7472.0	N/A
50	9/27/2016	77.2	6946	5996	3524	305191	7547.0	N/A
51	9/27/2016	77.3	6901	6000	3555	303791	7592.0	N/A
52	9/28/2016	77.5	6733	6516	3178	300377	7591.0	N/A
	AVG=	**75.1**	**7,271**	**5,649**	**3,956**	**15,568,871**	**417,829**	TOTAL

API 47-095-02337 Farm Name Edna Monroe Well Number Melvin Unit 1H

EXHIBIT 3

LITHOLOGY/ FORMATION	TOP DEPTH (TVD) From Surface	BOTTOM DEPTH (TVD) From Surface	TOP DEPTH (MD) From Surface	BOTTOM DEPTH (MD) From Surface
Fresh Water	46'	N/A	46'	N/A
Fresh Water	98'	N/A	98'	N/A
Siltstone	0	228	0	228
Coal	est. 228	248	est. 228	248
Sandstone/Siltstone	est. 248	908	est. 248	908
Shale/Siltstone	est. 908	1128	est. 908	1128
Coal	est. 1128	1148	est. 1128	1148
Shale	est. 1148	1348	est. 1148	1348
Coal	est. 1348	1368	est. 1348	1368
Shale	est. 1368	1448	est. 1368	1448
Sandstone/Siltstone	est. 1448	1628	est. 1448	1628
Coal	est. 1628	1648	est. 1628	1648
Sandstone/Siltstone	est. 1648	2045	est. 1648	2123
Big Lime	2045	2158	2123	2246
Big Injun	2158	2662	2246	2787
Gantz Sand	2662	2767	2787	2899
Fifty Foot Sandstone	2767	2873	2899	3013
Gordon	2873	3129	3013	3292
Fifth Sandstone	3129	3199	3292	3368
Bayard	3199	3600	3368	3802
Warren	3600	3946	3802	4175
Speechley	3946	4718	4175	5005
Bradford	4718	5103	5005	5427
Benson	5103	5339	5427	5686
Alexander	5339	5542	5686	5906
Elk	5542	5917	5906	6312
Rhinestreet	5917	6198	6312	6623
Sycamore	6198	6366	6623	6841
Middlesex	6366	6463	6841	7005
Burkett	6463	6491	7005	7067
Tully	6491	6520	7067	7145
Marcellus	6520	NA	7145	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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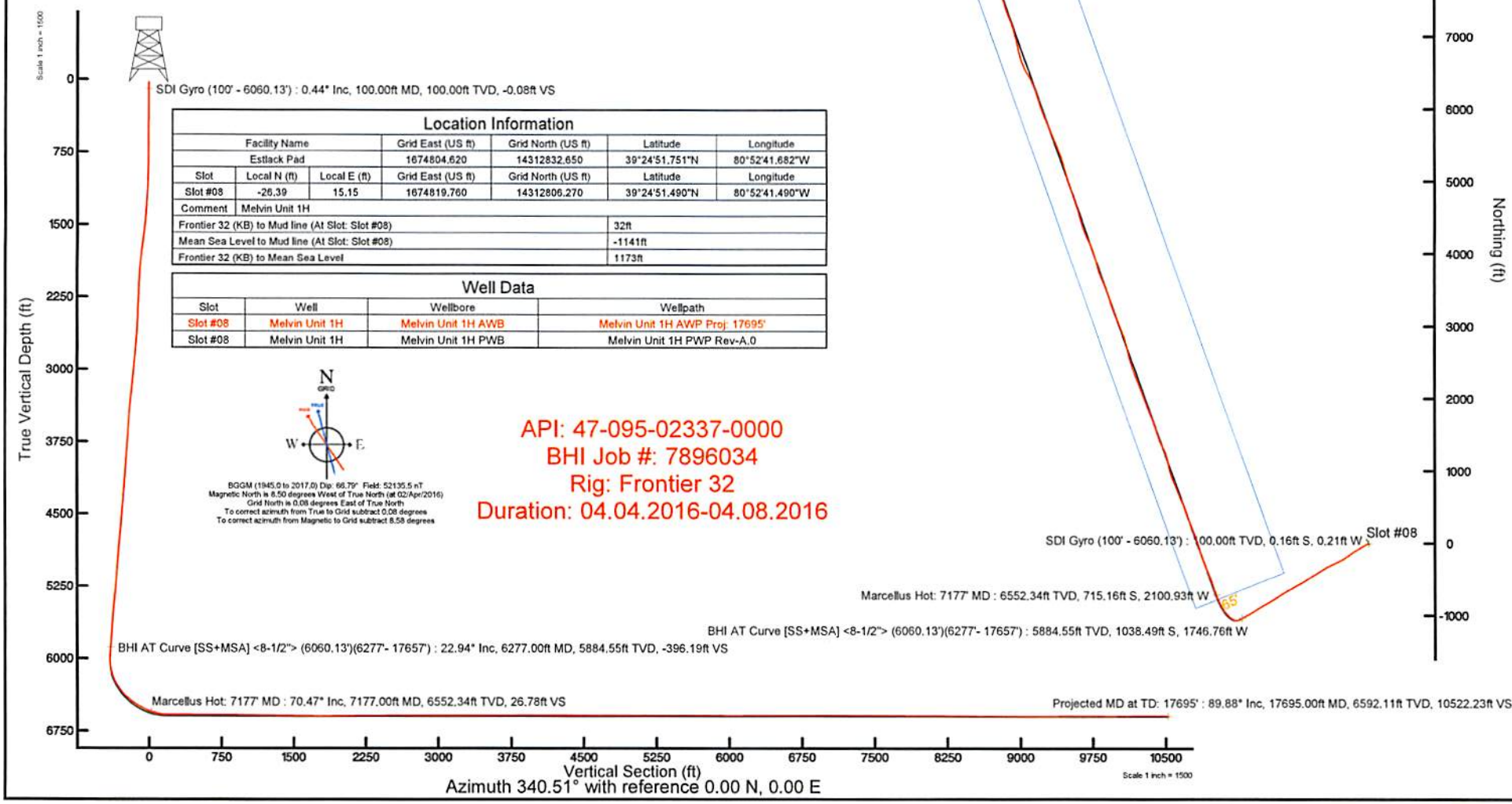
ANTERO RESOURCES CORPORATION

Location: Tyler County, WV
Field: Tyler
Facility: Estlack Pad

Slot: Slot #08
Well: Melvin Unit 1H
Wellbore: Melvin Unit 1H PWB

Plot reference wellpath is Melvin Unit 1H PWP Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Frontier 32 (KB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to Frontier 32 (KB)	North Reference: Grid north
Frontier 32 (KB) to Mean Sea Level: 1173 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot #08): -1141 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: hareluk on 2016-04-19
	Database: WA_MPL_EASTERNUS_Defn



Location Information

Facility Name			Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Estlack Pad			1674804.620	14312832.650	39°24'51.751"N	80°52'41.682"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Slot #08	-26.39	15.15	1674819.760	14312806.270	39°24'51.490"N	80°52'41.490"W
Comment	Melvin Unit 1H					

Frontier 32 (KB) to Mud line (At Slot: Slot #08)	32ft
Mean Sea Level to Mud line (At Slot: Slot #08)	-1141ft
Frontier 32 (KB) to Mean Sea Level	1173ft

Well Data

Slot	Well	Wellbore	Wellpath
Slot #08	Melvin Unit 1H	Melvin Unit 1H AWB	Melvin Unit 1H AWP Proj: 17695'
Slot #08	Melvin Unit 1H	Melvin Unit 1H PWB	Melvin Unit 1H PWP Rev-A.0

N GRID
W E

BGGM (1945.0 to 2017.0) Dip: 66.79° Field: 52135.5 nT
Magnetic North is 8.50 degrees West of True North (at 02/Apr/2016)
Grid North is 0.08 degrees East of True North
To correct azimuth from True to Grid subtract 0.08 degrees
To correct azimuth from Magnetic to Grid subtract 8.58 degrees

API: 47-095-02337-0000
BHI Job #: 7896034
Rig: Frontier 32
Duration: 04.04.2016-04.08.2016

Actual Wellpath Report

Melvin Unit 1H AWP Proj: 17695'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Melvin Unit 1H
Field	Tyler	Wellbore	Melvin Unit 1H AWB
Facility	Estlack Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Hareluk
Scale	0.999601	Report Generated	19/Apr/2016 at 10:55
Convergence at slot	0.08° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Melvin_Unit_1H_AWP_Proj__17695_.xml

WELLPATH LOCATION	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-26.39	15.15	1674819.76	14312806.27	39°24'51.490"N	80°52'41.490"W
Facility Reference Pt			1674804.62	14312832.65	39°24'51.751"N	80°52'41.682"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 (KB) to Facility Vertical Datum	32.00ft
Horizontal Reference Pt	Slot	Frontier 32 (KB) to Mean Sea Level	1173.00ft
Vertical Reference Pt	Frontier 32 (KB)	Frontier 32 (KB) to Mud Line at Slot (Slot #08)	32.00ft
MD Reference Pt	Frontier 32 (KB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	340.51°

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Actual Wellpath Report

Melvin Unit 1H AWP Proj: 17695'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Melvin Unit 1H
Field	Tyler	Wellbore	Melvin Unit 1H AWB
Facility	Estlack Pad		

WELLPATH DATA (381 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]	Comments
0.00†	0.000	233.180	0.00	0.00	0.00	0.00	1674819.76	14312806.27	39°24'51.490"N	80°52'41.490"W	0.00	0.000	0.00	
32.00	0.000	233.180	32.00	0.00	0.00	0.00	1674819.76	14312806.27	39°24'51.490"N	80°52'41.490"W	0.00	0.000	0.00	
100.00	0.440	233.180	100.00	-0.08	-0.16	-0.21	1674819.55	14312806.11	39°24'51.488"N	80°52'41.493"W	0.26	233.180	0.65	SDI Gyro (100' - 6060.13')
125.00	0.310	232.220	125.00	-0.13	-0.26	-0.34	1674819.42	14312806.01	39°24'51.488"N	80°52'41.494"W	0.42	233.027	0.52	
150.00	0.120	197.760	150.00	-0.17	-0.32	-0.40	1674819.36	14312805.95	39°24'51.487"N	80°52'41.495"W	0.51	231.236	0.89	
175.00	0.130	218.190	175.00	-0.21	-0.37	-0.43	1674819.33	14312805.90	39°24'51.486"N	80°52'41.495"W	0.56	229.117	0.18	
200.00	0.070	232.140	200.00	-0.23	-0.40	-0.46	1674819.30	14312805.87	39°24'51.486"N	80°52'41.496"W	0.61	228.686	0.26	
225.00	0.170	231.290	225.00	-0.24	-0.43	-0.50	1674819.26	14312805.84	39°24'51.486"N	80°52'41.496"W	0.66	228.912	0.40	
250.00	0.060	224.320	250.00	-0.26	-0.47	-0.53	1674819.23	14312805.80	39°24'51.485"N	80°52'41.497"W	0.71	228.952	0.44	
275.00	0.080	212.160	275.00	-0.28	-0.49	-0.55	1674819.21	14312805.78	39°24'51.485"N	80°52'41.497"W	0.74	228.479	0.10	
300.00	0.140	182.070	300.00	-0.32	-0.54	-0.56	1674819.20	14312805.73	39°24'51.485"N	80°52'41.497"W	0.78	226.487	0.33	
325.00	0.070	189.720	325.00	-0.36	-0.58	-0.57	1674819.19	14312805.69	39°24'51.484"N	80°52'41.497"W	0.81	224.333	0.28	
350.00	0.100	202.090	350.00	-0.39	-0.62	-0.58	1674819.18	14312805.65	39°24'51.484"N	80°52'41.497"W	0.84	223.185	0.14	
375.00	0.110	255.820	375.00	-0.40	-0.64	-0.61	1674819.15	14312805.63	39°24'51.484"N	80°52'41.498"W	0.89	223.514	0.38	
400.00	0.080	139.070	400.00	-0.42	-0.66	-0.62	1674819.14	14312805.61	39°24'51.484"N	80°52'41.498"W	0.91	223.227	0.65	
425.00	0.230	225.130	425.00	-0.45	-0.71	-0.65	1674819.11	14312805.56	39°24'51.483"N	80°52'41.498"W	0.96	222.290	0.95	
450.00	0.470	235.160	450.00	-0.50	-0.80	-0.77	1674818.99	14312805.47	39°24'51.482"N	80°52'41.500"W	1.11	223.597	0.99	
475.00	0.710	238.450	475.00	-0.56	-0.94	-0.98	1674818.78	14312805.33	39°24'51.481"N	80°52'41.502"W	1.36	226.134	0.97	
500.00	0.990	239.690	499.99	-0.63	-1.13	-1.30	1674818.46	14312805.14	39°24'51.479"N	80°52'41.507"W	1.72	228.914	1.12	
525.00	1.350	239.970	524.99	-0.73	-1.39	-1.74	1674818.02	14312804.88	39°24'51.476"N	80°52'41.512"W	2.23	231.406	1.44	
550.00	1.720	240.840	549.98	-0.85	-1.72	-2.32	1674817.44	14312804.55	39°24'51.473"N	80°52'41.520"W	2.89	233.494	1.48	
575.00	2.160	242.100	574.96	-0.98	-2.12	-3.07	1674816.69	14312804.15	39°24'51.469"N	80°52'41.529"W	3.73	235.313	1.77	
600.00	2.560	243.160	599.94	-1.12	-2.60	-3.98	1674815.78	14312803.68	39°24'51.464"N	80°52'41.541"W	4.75	236.903	1.61	
625.00	2.890	243.980	624.92	-1.26	-3.12	-5.05	1674814.71	14312803.15	39°24'51.459"N	80°52'41.554"W	5.94	238.240	1.33	
650.00	3.390	244.420	649.88	-1.41	-3.72	-6.28	1674813.48	14312802.55	39°24'51.453"N	80°52'41.570"W	7.30	239.360	2.00	
675.00	4.060	245.520	674.82	-1.57	-4.41	-7.75	1674812.01	14312801.87	39°24'51.447"N	80°52'41.589"W	8.92	240.389	2.70	
700.00	4.600	246.900	699.75	-1.71	-5.17	-9.48	1674810.28	14312801.11	39°24'51.439"N	80°52'41.611"W	10.80	241.412	2.20	
725.00	5.230	248.240	724.66	-1.82	-5.98	-11.46	1674808.30	14312800.29	39°24'51.431"N	80°52'41.636"W	12.93	242.438	2.56	
750.00	5.780	248.770	749.55	-1.90	-6.86	-13.69	1674806.07	14312799.41	39°24'51.422"N	80°52'41.665"W	15.31	243.388	2.21	
775.00	6.390	248.310	774.40	-1.99	-7.83	-16.16	1674803.61	14312798.44	39°24'51.413"N	80°52'41.696"W	17.96	244.146	2.45	

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Melvin Unit 1H AWP Proj: 17695'

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Area	Tyler County, WV	Well	Melvin Unit 1H
Field	Tyler	Wellbore	Melvin Unit 1H AWB
Facility	Estlack Pad		

WELLPATH DATA (381 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]	Comments
800.00	6.990	247.690	799.23	-2.12	-8.92	-18.86	1674800.91	14312797.35	39°24'51.402"N	80°52'41.730"W	20.86	244.682	2.42	
825.00	7.540	247.380	824.03	-2.28	-10.13	-21.78	1674797.99	14312796.14	39°24'51.390"N	80°52'41.768"W	24.02	245.056	2.21	
850.00	8.170	246.880	848.80	-2.48	-11.46	-24.93	1674794.84	14312794.82	39°24'51.377"N	80°52'41.808"W	27.43	245.313	2.53	
875.00	9.130	246.290	873.51	-2.74	-12.95	-28.38	1674791.39	14312793.32	39°24'51.362"N	80°52'41.852"W	31.19	245.464	3.86	
900.00	10.140	245.100	898.16	-3.10	-14.68	-32.19	1674787.58	14312791.60	39°24'51.345"N	80°52'41.900"W	35.38	245.488	4.12	
925.00	10.790	244.360	922.75	-3.56	-16.62	-36.30	1674783.48	14312789.66	39°24'51.326"N	80°52'41.953"W	39.92	245.401	2.65	
950.00	11.500	243.720	947.27	-4.10	-18.73	-40.64	1674779.14	14312787.54	39°24'51.305"N	80°52'42.008"W	44.75	245.253	2.88	
975.00	12.440	242.780	971.73	-4.76	-21.07	-45.27	1674774.51	14312785.21	39°24'51.282"N	80°52'42.067"W	49.93	245.043	3.84	
1000.00	13.400	241.850	996.10	-5.56	-23.67	-50.22	1674769.56	14312782.61	39°24'51.257"N	80°52'42.130"W	55.51	244.767	3.93	
1025.00	14.170	241.310	1020.38	-6.48	-26.50	-55.46	1674764.33	14312779.78	39°24'51.229"N	80°52'42.197"W	61.46	244.457	3.12	
1050.00	14.880	240.890	1044.58	-7.51	-29.53	-60.94	1674758.84	14312776.75	39°24'51.199"N	80°52'42.267"W	67.72	244.146	2.87	
1075.00	15.400	240.540	1068.71	-8.62	-32.73	-66.64	1674753.15	14312773.56	39°24'51.167"N	80°52'42.340"W	74.24	243.844	2.11	
1100.00	15.560	240.340	1092.80	-9.78	-36.02	-72.44	1674747.35	14312770.27	39°24'51.135"N	80°52'42.414"W	80.90	243.564	0.67	
1125.00	15.950	240.040	1116.86	-11.00	-39.39	-78.33	1674741.46	14312766.89	39°24'51.102"N	80°52'42.489"W	87.68	243.302	1.59	
1150.00	16.510	239.690	1140.87	-12.29	-42.90	-84.38	1674735.42	14312763.39	39°24'51.067"N	80°52'42.566"W	94.66	243.049	2.27	
1175.00	16.930	239.440	1164.81	-13.66	-46.55	-90.58	1674729.22	14312759.74	39°24'51.031"N	80°52'42.645"W	101.84	242.803	1.70	
1200.00	17.240	239.180	1188.71	-15.08	-50.29	-96.89	1674722.91	14312756.00	39°24'50.994"N	80°52'42.725"W	109.17	242.568	1.28	
1225.00	17.640	238.550	1212.56	-16.60	-54.17	-103.31	1674716.49	14312752.12	39°24'50.956"N	80°52'42.807"W	116.65	242.330	1.77	
1250.00	18.290	237.910	1236.34	-18.24	-58.23	-109.86	1674709.94	14312748.06	39°24'50.916"N	80°52'42.891"W	124.34	242.075	2.72	
1275.00	18.770	237.680	1260.04	-19.99	-62.46	-116.58	1674703.22	14312743.83	39°24'50.874"N	80°52'42.976"W	132.26	241.818	1.94	
1300.00	19.100	237.690	1283.69	-21.79	-66.80	-123.44	1674696.37	14312739.50	39°24'50.831"N	80°52'43.064"W	140.36	241.580	1.32	
1325.00	19.530	237.820	1307.28	-23.61	-71.21	-130.43	1674689.38	14312735.09	39°24'50.788"N	80°52'43.153"W	148.61	241.367	1.73	
1350.00	20.030	238.270	1330.81	-25.44	-75.69	-137.61	1674682.20	14312730.61	39°24'50.744"N	80°52'43.245"W	157.05	241.188	2.09	
1375.00	20.370	238.440	1354.27	-27.26	-80.22	-144.96	1674674.86	14312726.08	39°24'50.699"N	80°52'43.338"W	165.68	241.041	1.38	
1400.00	20.950	238.460	1377.66	-29.10	-84.83	-152.48	1674667.34	14312721.47	39°24'50.654"N	80°52'43.434"W	174.49	240.910	2.32	
1425.00	21.780	238.750	1400.94	-30.98	-89.58	-160.25	1674659.57	14312716.73	39°24'50.607"N	80°52'43.533"W	183.59	240.796	3.35	
1450.00	22.420	238.890	1424.11	-32.88	-94.45	-168.30	1674651.53	14312711.86	39°24'50.559"N	80°52'43.636"W	192.99	240.700	2.57	
1475.00	22.670	238.690	1447.20	-34.83	-99.41	-176.50	1674643.33	14312706.90	39°24'50.510"N	80°52'43.740"W	202.57	240.609	1.05	
1500.00	22.930	238.210	1470.24	-36.85	-104.48	-184.75	1674635.08	14312701.83	39°24'50.460"N	80°52'43.846"W	212.25	240.511	1.28	
1525.00	23.230	237.860	1493.24	-38.97	-109.67	-193.07	1674626.77	14312696.64	39°24'50.409"N	80°52'43.952"W	222.04	240.401	1.32	

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Actual Wellpath Report

Melvin Unit 1H AWP Proj: 17695'

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Area	Tyler County, WV	Well	Melvin Unit 1H
Field	Tyler	Wellbore	Melvin Unit 1H AWB
Facility	Estlack Pad		

WELLPATH DATA (381 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]	Comments
1550.00	23.410	237.460	1516.20	-41.17	-114.97	-201.43	1674618.41	14312691.35	39°24'50.356"N	80°52'44.058"W	231.93	240.284	0.96	
1575.00	23.540	236.700	1539.13	-43.49	-120.38	-209.79	1674610.06	14312685.94	39°24'50.303"N	80°52'44.165"W	241.87	240.152	1.32	
1600.00	23.620	235.790	1562.04	-45.95	-125.93	-218.10	1674601.75	14312680.39	39°24'50.248"N	80°52'44.271"W	251.85	239.997	1.49	
1625.00	23.640	235.420	1584.95	-48.53	-131.60	-226.37	1674593.48	14312674.73	39°24'50.192"N	80°52'44.376"W	261.84	239.829	0.60	
1650.00	23.620	235.220	1607.85	-51.15	-137.30	-234.61	1674585.24	14312669.03	39°24'50.136"N	80°52'44.482"W	271.83	239.663	0.33	
1675.00	23.600	234.890	1630.76	-53.82	-143.03	-242.82	1674577.04	14312663.30	39°24'50.080"N	80°52'44.586"W	281.81	239.500	0.53	
1700.00	23.370	234.390	1653.69	-56.55	-148.80	-250.94	1674568.92	14312657.53	39°24'50.023"N	80°52'44.690"W	291.74	239.334	1.22	
1725.00	23.090	233.980	1676.66	-59.32	-154.57	-258.94	1674560.92	14312651.76	39°24'49.966"N	80°52'44.792"W	301.56	239.166	1.29	
1750.00	23.030	233.950	1699.66	-62.11	-160.33	-266.86	1674553.01	14312646.01	39°24'49.909"N	80°52'44.893"W	311.32	239.003	0.24	
1775.00	23.110	234.190	1722.66	-64.88	-166.08	-274.79	1674545.08	14312640.26	39°24'49.852"N	80°52'44.994"W	321.08	238.852	0.49	
1800.00	22.980	234.480	1745.67	-67.60	-171.78	-282.74	1674537.13	14312634.56	39°24'49.796"N	80°52'45.095"W	330.84	238.719	0.69	
1825.00	22.370	234.570	1768.74	-70.26	-177.38	-290.59	1674529.29	14312628.97	39°24'49.741"N	80°52'45.195"W	340.45	238.600	2.44	
1850.00	21.800	234.420	1791.90	-72.85	-182.83	-298.24	1674521.64	14312623.51	39°24'49.687"N	80°52'45.293"W	349.82	238.490	2.29	
1875.00	21.660	234.760	1815.12	-75.39	-188.20	-305.79	1674514.10	14312618.15	39°24'49.634"N	80°52'45.389"W	359.06	238.390	0.75	
1900.00	21.620	235.240	1838.36	-77.86	-193.49	-313.34	1674506.55	14312612.86	39°24'49.582"N	80°52'45.486"W	368.26	238.305	0.73	
1925.00	21.620	235.720	1861.60	-80.24	-198.71	-320.93	1674498.96	14312607.64	39°24'49.530"N	80°52'45.582"W	377.46	238.236	0.71	
1950.00	21.540	236.250	1884.85	-82.55	-203.85	-328.55	1674491.34	14312602.50	39°24'49.480"N	80°52'45.680"W	386.65	238.182	0.84	
1975.00	21.380	237.220	1908.12	-84.73	-208.87	-336.20	1674483.70	14312597.49	39°24'49.430"N	80°52'45.777"W	395.79	238.149	1.56	
2000.00	21.430	238.310	1931.39	-86.74	-213.73	-343.91	1674475.98	14312592.62	39°24'49.382"N	80°52'45.875"W	404.92	238.140	1.60	
2025.00	21.520	238.940	1954.66	-88.63	-218.50	-351.73	1674468.17	14312587.86	39°24'49.335"N	80°52'45.975"W	414.07	238.151	0.99	
2050.00	21.680	239.720	1977.90	-90.41	-223.19	-359.64	1674460.26	14312583.17	39°24'49.289"N	80°52'46.076"W	423.27	238.177	1.31	
2075.00	22.130	241.200	2001.10	-92.04	-227.79	-367.76	1674452.15	14312578.57	39°24'49.244"N	80°52'46.179"W	432.59	238.226	2.85	
2100.00	22.620	242.120	2024.22	-93.50	-232.31	-376.13	1674443.78	14312574.06	39°24'49.199"N	80°52'46.286"W	442.09	238.300	2.41	
2125.00	22.890	242.780	2047.27	-94.86	-236.78	-384.71	1674435.21	14312569.59	39°24'49.155"N	80°52'46.396"W	451.73	238.389	1.49	
2150.00	23.140	243.470	2070.28	-96.11	-241.20	-393.43	1674426.49	14312565.17	39°24'49.111"N	80°52'46.507"W	461.47	238.489	1.47	
2175.00	23.460	244.100	2093.24	-97.27	-245.56	-402.30	1674417.62	14312560.81	39°24'49.068"N	80°52'46.620"W	471.32	238.600	1.62	
2200.00	23.730	244.720	2116.15	-98.33	-249.89	-411.32	1674408.60	14312556.48	39°24'49.026"N	80°52'46.735"W	481.28	238.721	1.47	
2225.00	23.840	244.790	2139.03	-99.34	-254.19	-420.44	1674399.49	14312552.19	39°24'48.983"N	80°52'46.851"W	491.31	238.844	0.45	
2250.00	23.790	244.740	2161.90	-100.35	-258.49	-429.57	1674390.36	14312547.88	39°24'48.941"N	80°52'46.968"W	501.35	238.963	0.22	
2275.00	23.770	244.830	2184.78	-101.36	-262.78	-438.69	1674381.24	14312543.59	39°24'48.899"N	80°52'47.084"W	511.38	239.078	0.17	

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2300.00	23.620	244.890	2207.67	-102.35	-267.05	-447.79	1674372.15	14312539.33	39°24'48.857"N	80°52'47.200"W	521.37	239.189	0.61	
2325.00	23.230	244.580	2230.61	-103.35	-271.29	-456.78	1674363.17	14312535.09	39°24'48.815"N	80°52'47.314"W	531.27	239.293	1.64	
2350.00	22.710	243.980	2253.63	-104.41	-275.53	-465.57	1674354.38	14312530.85	39°24'48.773"N	80°52'47.426"W	540.99	239.383	2.28	
2375.00	22.010	243.600	2276.75	-105.52	-279.73	-474.10	1674345.85	14312526.66	39°24'48.732"N	80°52'47.535"W	550.47	239.459	2.86	
2400.00	21.180	243.300	2299.99	-106.65	-283.84	-482.33	1674337.62	14312522.54	39°24'48.691"N	80°52'47.640"W	559.65	239.524	3.35	
2425.00	20.590	243.450	2323.35	-107.76	-287.83	-490.30	1674329.66	14312518.55	39°24'48.652"N	80°52'47.742"W	568.54	239.585	2.37	
2450.00	20.500	243.840	2346.76	-108.81	-291.73	-498.16	1674321.80	14312514.66	39°24'48.613"N	80°52'47.842"W	577.29	239.646	0.66	
2475.00	20.670	244.070	2370.16	-109.81	-295.59	-506.06	1674313.91	14312510.80	39°24'48.575"N	80°52'47.943"W	586.06	239.711	0.75	
2500.00	20.510	244.500	2393.57	-110.76	-299.40	-513.98	1674305.99	14312506.99	39°24'48.538"N	80°52'48.044"W	594.82	239.778	0.88	
2525.00	20.230	244.840	2417.00	-111.65	-303.13	-521.84	1674298.13	14312503.27	39°24'48.501"N	80°52'48.144"W	603.49	239.849	1.22	
2550.00	20.410	244.690	2440.45	-112.52	-306.83	-529.70	1674290.28	14312499.57	39°24'48.465"N	80°52'48.244"W	612.14	239.918	0.75	
2575.00	20.700	244.600	2463.86	-113.41	-310.59	-537.63	1674282.35	14312495.81	39°24'48.427"N	80°52'48.345"W	620.89	239.985	1.17	
2600.00	20.840	244.340	2487.23	-114.35	-314.41	-545.63	1674274.35	14312491.99	39°24'48.390"N	80°52'48.447"W	629.73	240.048	0.67	
2625.00	20.940	244.110	2510.59	-115.32	-318.28	-553.65	1674266.33	14312488.11	39°24'48.352"N	80°52'48.550"W	638.62	240.106	0.52	
2650.00	20.740	244.000	2533.95	-116.32	-322.17	-561.65	1674258.33	14312484.23	39°24'48.313"N	80°52'48.651"W	647.49	240.161	0.82	
2675.00	20.300	243.290	2557.37	-117.37	-326.06	-569.50	1674250.48	14312480.34	39°24'48.275"N	80°52'48.752"W	656.24	240.207	2.02	
2700.00	20.270	242.090	2580.81	-118.55	-330.04	-577.21	1674242.79	14312476.36	39°24'48.236"N	80°52'48.850"W	664.90	240.240	1.67	
2725.00	20.510	240.310	2604.25	-119.96	-334.24	-584.84	1674235.16	14312472.17	39°24'48.194"N	80°52'48.947"W	673.61	240.252	2.66	
2750.00	20.810	238.580	2627.64	-121.65	-338.72	-592.43	1674227.57	14312467.68	39°24'48.150"N	80°52'49.044"W	682.43	240.241	2.72	
2775.00	21.020	237.850	2650.99	-123.55	-343.42	-600.02	1674219.98	14312462.99	39°24'48.104"N	80°52'49.141"W	691.35	240.215	1.34	
2800.00	21.100	237.820	2674.32	-125.52	-348.20	-607.62	1674212.38	14312458.21	39°24'48.057"N	80°52'49.238"W	700.32	240.185	0.32	
2825.00	21.170	237.650	2697.64	-127.52	-353.02	-615.24	1674204.76	14312453.39	39°24'48.009"N	80°52'49.335"W	709.33	240.154	0.37	
2850.00	20.940	237.240	2720.97	-129.55	-357.85	-622.81	1674197.19	14312448.56	39°24'47.961"N	80°52'49.431"W	718.30	240.120	1.09	
2875.00	20.610	236.880	2744.35	-131.61	-362.67	-630.26	1674189.76	14312443.74	39°24'47.914"N	80°52'49.526"W	727.15	240.082	1.42	
2900.00	20.730	236.850	2767.74	-133.69	-367.49	-637.65	1674182.37	14312438.92	39°24'47.866"N	80°52'49.620"W	735.97	240.044	0.48	
2925.00	21.040	236.750	2791.10	-135.80	-372.37	-645.10	1674174.91	14312434.04	39°24'47.818"N	80°52'49.716"W	744.86	240.005	1.25	
2950.00	21.350	236.690	2814.40	-137.96	-377.33	-652.66	1674167.36	14312429.09	39°24'47.769"N	80°52'49.812"W	753.89	239.966	1.24	
2975.00	21.580	236.780	2837.67	-140.14	-382.35	-660.31	1674159.72	14312424.07	39°24'47.720"N	80°52'49.909"W	763.02	239.927	0.93	
3000.00	21.850	237.140	2860.90	-142.30	-387.40	-668.06	1674151.96	14312419.03	39°24'47.670"N	80°52'50.008"W	772.26	239.891	1.20	
3025.00	22.250	237.660	2884.07	-144.43	-392.45	-675.97	1674144.06	14312413.98	39°24'47.620"N	80°52'50.109"W	781.64	239.862	1.78	

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Melvin Unit 1H AWP Proj: 17695'

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Area	Tyler County, WV	Well	Melvin Unit 1H
Field	Tyler	Wellbore	Melvin Unit 1H AWB
Facility	Estlack Pad		

WELLPATH DATA (381 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]	Comments
3050.00	22.280	237.480	2907.20	-146.55	-397.53	-683.97	1674136.07	14312408.90	39°24'47.570"N	80°52'50.211"W	791.10	239.834	0.30	
3075.00	22.540	237.310	2930.32	-148.72	-402.67	-691.99	1674128.04	14312403.76	39°24'47.519"N	80°52'50.314"W	800.62	239.805	1.07	
3100.00	22.840	237.480	2953.38	-150.90	-407.86	-700.12	1674119.92	14312398.57	39°24'47.468"N	80°52'50.417"W	810.26	239.776	1.23	
3125.00	23.110	237.560	2976.40	-153.10	-413.10	-708.35	1674111.69	14312393.33	39°24'47.416"N	80°52'50.522"W	820.01	239.750	1.09	
3150.00	23.240	237.550	2999.38	-155.30	-418.38	-716.65	1674103.39	14312388.06	39°24'47.364"N	80°52'50.628"W	829.84	239.724	0.52	
3175.00	23.440	237.680	3022.33	-157.51	-423.69	-725.02	1674095.03	14312382.75	39°24'47.312"N	80°52'50.735"W	839.74	239.699	0.83	
3200.00	23.840	238.060	3045.24	-159.71	-429.02	-733.51	1674086.55	14312377.42	39°24'47.260"N	80°52'50.843"W	849.76	239.677	1.71	
3225.00	24.030	238.310	3068.09	-161.87	-434.36	-742.12	1674077.93	14312372.08	39°24'47.207"N	80°52'50.953"W	859.90	239.660	0.86	
3250.00	23.850	238.190	3090.94	-164.03	-439.70	-750.75	1674069.31	14312366.74	39°24'47.154"N	80°52'51.063"W	870.04	239.643	0.75	
3275.00	23.860	238.170	3113.80	-166.18	-445.03	-759.34	1674060.72	14312361.41	39°24'47.102"N	80°52'51.172"W	880.15	239.626	0.05	
3300.00	23.950	238.080	3136.66	-168.36	-450.38	-767.95	1674052.12	14312356.07	39°24'47.049"N	80°52'51.282"W	890.27	239.609	0.39	
3325.00	23.790	237.500	3159.52	-170.58	-455.78	-776.50	1674043.57	14312350.68	39°24'46.996"N	80°52'51.391"W	900.38	239.589	1.14	
3350.00	23.610	237.110	3182.41	-172.88	-461.20	-784.96	1674035.11	14312345.25	39°24'46.942"N	80°52'51.499"W	910.42	239.564	0.95	
3375.00	23.640	237.120	3205.31	-175.20	-466.64	-793.37	1674026.70	14312339.81	39°24'46.888"N	80°52'51.606"W	920.43	239.537	0.12	
3400.00	23.530	236.960	3228.23	-177.53	-472.09	-801.77	1674018.31	14312334.37	39°24'46.835"N	80°52'51.713"W	930.43	239.510	0.51	
3425.00	23.180	236.770	3251.18	-179.87	-477.50	-810.07	1674010.02	14312328.96	39°24'46.781"N	80°52'51.819"W	940.33	239.482	1.43	
3450.00	23.130	236.870	3274.16	-182.20	-482.88	-818.29	1674001.79	14312323.58	39°24'46.728"N	80°52'51.924"W	950.15	239.455	0.25	
3475.00	23.200	236.970	3297.15	-184.51	-488.25	-826.53	1673993.56	14312318.22	39°24'46.675"N	80°52'52.029"W	959.97	239.429	0.32	
3500.00	22.850	236.720	3320.16	-186.82	-493.60	-834.72	1673985.37	14312312.87	39°24'46.623"N	80°52'52.134"W	969.74	239.403	1.45	
3525.00	22.260	236.090	3343.24	-189.15	-498.90	-842.71	1673977.39	14312307.57	39°24'46.570"N	80°52'52.235"W	979.32	239.373	2.55	
3550.00	22.210	235.790	3366.38	-191.53	-504.20	-850.55	1673969.55	14312302.27	39°24'46.518"N	80°52'52.335"W	988.76	239.341	0.50	
3575.00	22.260	236.190	3389.53	-193.90	-509.49	-858.39	1673961.72	14312296.98	39°24'46.466"N	80°52'52.435"W	998.20	239.309	0.64	
3600.00	22.020	236.510	3412.68	-196.21	-514.71	-866.23	1673953.88	14312291.76	39°24'46.414"N	80°52'52.535"W	1007.61	239.281	1.07	
3625.00	21.500	236.670	3435.90	-198.44	-519.82	-873.97	1673946.14	14312286.66	39°24'46.364"N	80°52'52.634"W	1016.87	239.257	2.09	
3650.00	21.310	237.990	3459.18	-200.52	-524.74	-881.65	1673938.47	14312281.74	39°24'46.315"N	80°52'52.732"W	1025.99	239.240	2.07	
3675.00	21.530	239.550	3482.45	-202.38	-529.47	-889.45	1673930.66	14312277.01	39°24'46.269"N	80°52'52.831"W	1035.12	239.235	2.44	
3700.00	21.690	240.420	3505.69	-204.06	-534.08	-897.43	1673922.69	14312272.40	39°24'46.223"N	80°52'52.933"W	1044.33	239.242	1.43	
3725.00	21.640	240.630	3528.93	-205.66	-538.62	-905.46	1673914.66	14312267.86	39°24'46.178"N	80°52'53.036"W	1053.55	239.253	0.37	
3750.00	21.830	240.730	3552.15	-207.24	-543.15	-913.53	1673906.59	14312263.33	39°24'46.134"N	80°52'53.138"W	1062.81	239.266	0.77	
3775.00	22.250	241.000	3575.32	-208.81	-547.72	-921.73	1673898.40	14312258.77	39°24'46.089"N	80°52'53.243"W	1072.19	239.280	1.73	

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Melvin Unit 1H AWP Proj: 17695'

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Area	Tyler County, WV	Well	Melvin Unit 1H
Field	Tyler	Wellbore	Melvin Unit 1H AWB
Facility	Estlack Pad		

WELLPATH DATA (381 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]	Comments
3800.00	22.540	241.120	3598.44	-210.37	-552.33	-930.06	1673890.07	14312254.16	39°24'46.043"N	80°52'53.349"W	1081.71	239.295	1.17	
3825.00	22.570	241.160	3621.52	-211.94	-556.96	-938.46	1673881.67	14312249.53	39°24'45.998"N	80°52'53.456"W	1091.29	239.312	0.13	
3850.00	22.740	241.080	3644.60	-213.51	-561.61	-946.89	1673873.25	14312244.88	39°24'45.952"N	80°52'53.564"W	1100.91	239.327	0.69	
3875.00	22.650	240.720	3667.66	-215.12	-566.30	-955.32	1673864.82	14312240.20	39°24'45.906"N	80°52'53.671"W	1110.56	239.341	0.66	
3900.00	22.180	240.060	3690.77	-216.79	-571.01	-963.61	1673856.54	14312235.49	39°24'45.859"N	80°52'53.777"W	1120.09	239.350	2.13	
3925.00	22.080	239.850	3713.93	-218.52	-575.73	-971.76	1673848.39	14312230.77	39°24'45.813"N	80°52'53.881"W	1129.50	239.355	0.51	
3950.00	22.140	239.800	3737.09	-220.26	-580.46	-979.90	1673840.26	14312226.05	39°24'45.766"N	80°52'53.985"W	1138.91	239.359	0.25	
3975.00	22.010	239.740	3760.26	-222.01	-585.19	-988.01	1673832.14	14312221.32	39°24'45.719"N	80°52'54.088"W	1148.31	239.362	0.53	
4000.00	21.470	239.360	3783.48	-223.77	-589.88	-996.00	1673824.16	14312216.63	39°24'45.673"N	80°52'54.190"W	1157.57	239.364	2.23	
4025.00	21.410	239.020	3806.75	-225.57	-594.56	-1003.85	1673816.32	14312211.95	39°24'45.627"N	80°52'54.290"W	1166.71	239.363	0.55	
4050.00	21.730	239.410	3830.00	-227.37	-599.26	-1011.74	1673808.42	14312207.25	39°24'45.581"N	80°52'54.391"W	1175.90	239.361	1.40	
4075.00	21.700	239.860	3853.23	-229.11	-603.94	-1019.72	1673800.45	14312202.57	39°24'45.534"N	80°52'54.492"W	1185.15	239.364	0.68	
4100.00	21.480	239.710	3876.47	-230.82	-608.57	-1027.67	1673792.50	14312197.95	39°24'45.489"N	80°52'54.594"W	1194.35	239.367	0.91	
4125.00	21.770	239.800	3899.71	-232.54	-613.21	-1035.63	1673784.54	14312193.31	39°24'45.443"N	80°52'54.695"W	1203.56	239.370	1.17	
4150.00	22.280	240.480	3922.89	-234.23	-617.88	-1043.76	1673776.42	14312188.64	39°24'45.397"N	80°52'54.799"W	1212.93	239.376	2.28	
4175.00	22.570	240.960	3946.00	-235.85	-622.54	-1052.08	1673768.10	14312183.98	39°24'45.351"N	80°52'54.905"W	1222.47	239.386	1.37	
4200.00	22.590	241.150	3969.08	-237.43	-627.19	-1060.48	1673759.70	14312179.34	39°24'45.305"N	80°52'55.012"W	1232.06	239.399	0.30	
4225.00	22.850	241.590	3992.14	-238.96	-631.81	-1068.96	1673751.23	14312174.71	39°24'45.260"N	80°52'55.120"W	1241.71	239.415	1.24	
4250.00	23.410	241.880	4015.13	-240.46	-636.46	-1077.60	1673742.59	14312170.06	39°24'45.214"N	80°52'55.230"W	1251.53	239.433	2.29	
4275.00	23.620	241.780	4038.05	-241.96	-641.17	-1086.40	1673733.80	14312165.36	39°24'45.167"N	80°52'55.343"W	1261.49	239.452	0.86	
4300.00	23.800	241.540	4060.94	-243.51	-645.94	-1095.25	1673724.95	14312160.59	39°24'45.120"N	80°52'55.455"W	1271.54	239.469	0.82	
4325.00	24.050	241.610	4083.80	-245.08	-650.77	-1104.16	1673716.04	14312155.76	39°24'45.073"N	80°52'55.569"W	1281.67	239.486	1.01	
4350.00	24.170	241.340	4106.62	-246.69	-655.65	-1113.13	1673707.07	14312150.89	39°24'45.025"N	80°52'55.683"W	1291.87	239.502	0.65	
4375.00	24.040	240.650	4129.44	-248.38	-660.60	-1122.06	1673698.15	14312145.94	39°24'44.976"N	80°52'55.797"W	1302.08	239.513	1.24	
4400.00	23.870	240.380	4152.28	-250.14	-665.59	-1130.90	1673689.31	14312140.94	39°24'44.926"N	80°52'55.910"W	1312.23	239.521	0.81	
4425.00	23.640	240.510	4175.16	-251.90	-670.56	-1139.66	1673680.56	14312135.98	39°24'44.878"N	80°52'56.022"W	1322.30	239.528	0.94	
4450.00	22.980	240.600	4198.12	-253.61	-675.42	-1148.27	1673671.95	14312131.12	39°24'44.830"N	80°52'56.131"W	1332.19	239.536	2.64	
4475.00	22.090	239.800	4221.21	-255.32	-680.18	-1156.59	1673663.63	14312126.36	39°24'44.783"N	80°52'56.237"W	1341.77	239.540	3.77	
4500.00	21.840	239.390	4244.40	-257.09	-684.92	-1164.65	1673655.57	14312121.63	39°24'44.736"N	80°52'56.340"W	1351.12	239.541	1.17	
4525.00	21.850	239.170	4267.60	-258.90	-689.67	-1172.65	1673647.58	14312116.88	39°24'44.689"N	80°52'56.442"W	1360.42	239.539	0.33	

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4550.00	21.480	238.250	4290.84	-260.79	-694.46	-1180.54	1673639.69	14312112.09	39°24'44.642"N	80°52'56.543"W	1369.65	239.534	2.01	
4575.00	20.820	236.840	4314.15	-262.81	-699.30	-1188.15	1673632.09	14312107.25	39°24'44.594"N	80°52'56.640"W	1378.67	239.521	3.33	
4600.00	20.570	236.120	4337.54	-264.95	-704.18	-1195.52	1673624.72	14312102.37	39°24'44.546"N	80°52'56.734"W	1387.49	239.501	1.43	
4625.00	20.500	235.620	4360.95	-267.17	-709.10	-1202.77	1673617.47	14312097.46	39°24'44.497"N	80°52'56.826"W	1396.24	239.478	0.76	
4650.00	20.100	234.930	4384.40	-269.45	-714.04	-1209.90	1673610.34	14312092.52	39°24'44.449"N	80°52'56.917"W	1404.89	239.453	1.86	
4675.00	19.330	234.430	4407.93	-271.75	-718.91	-1216.79	1673603.46	14312087.64	39°24'44.401"N	80°52'57.005"W	1413.30	239.424	3.15	
4700.00	19.190	235.170	4431.54	-273.98	-723.67	-1223.52	1673596.73	14312082.89	39°24'44.354"N	80°52'57.091"W	1421.51	239.397	1.13	
4725.00	19.330	236.380	4455.14	-276.08	-728.30	-1230.34	1673589.91	14312078.26	39°24'44.308"N	80°52'57.178"W	1429.74	239.376	1.69	
4750.00	19.510	237.130	4478.71	-278.05	-732.86	-1237.29	1673582.96	14312073.70	39°24'44.263"N	80°52'57.267"W	1438.05	239.361	1.23	
4775.00	19.540	237.370	4502.28	-279.97	-737.38	-1244.32	1673575.94	14312069.18	39°24'44.218"N	80°52'57.356"W	1446.40	239.349	0.34	
4800.00	19.570	237.560	4525.83	-281.86	-741.88	-1251.38	1673568.89	14312064.69	39°24'44.174"N	80°52'57.446"W	1454.76	239.338	0.28	
4825.00	19.750	237.610	4549.38	-283.74	-746.39	-1258.48	1673561.79	14312060.18	39°24'44.130"N	80°52'57.537"W	1463.17	239.328	0.72	
4850.00	19.700	237.310	4572.91	-285.65	-750.93	-1265.59	1673554.68	14312055.64	39°24'44.085"N	80°52'57.627"W	1471.60	239.317	0.45	
4875.00	19.650	237.030	4596.45	-287.59	-755.49	-1272.66	1673547.61	14312051.08	39°24'44.040"N	80°52'57.718"W	1480.01	239.305	0.43	
4900.00	19.750	236.870	4619.99	-289.56	-760.09	-1279.73	1673540.55	14312046.49	39°24'43.994"N	80°52'57.808"W	1488.43	239.292	0.45	
4925.00	19.960	236.800	4643.50	-291.57	-764.73	-1286.83	1673533.44	14312041.84	39°24'43.949"N	80°52'57.898"W	1496.92	239.278	0.85	
4950.00	20.320	236.780	4666.97	-293.61	-769.45	-1294.04	1673526.24	14312037.13	39°24'43.902"N	80°52'57.990"W	1505.52	239.264	1.44	
4975.00	20.660	236.620	4690.39	-295.70	-774.25	-1301.35	1673518.93	14312032.33	39°24'43.855"N	80°52'58.083"W	1514.26	239.249	1.38	
5000.00	21.380	236.860	4713.73	-297.84	-779.17	-1308.85	1673511.44	14312027.41	39°24'43.806"N	80°52'58.179"W	1523.22	239.234	2.90	
5025.00	22.200	237.320	4736.94	-299.99	-784.21	-1316.64	1673503.65	14312022.37	39°24'43.757"N	80°52'58.278"W	1532.49	239.221	3.35	
5050.00	22.720	237.830	4760.04	-302.13	-789.33	-1324.70	1673495.59	14312017.25	39°24'43.706"N	80°52'58.381"W	1542.04	239.211	2.22	
5075.00	23.060	238.320	4783.08	-304.22	-794.47	-1332.95	1673487.34	14312012.11	39°24'43.655"N	80°52'58.486"W	1551.76	239.204	1.56	
5100.00	23.670	238.980	4806.03	-306.26	-799.63	-1341.42	1673478.88	14312006.96	39°24'43.604"N	80°52'58.594"W	1561.67	239.200	2.66	
5125.00	24.090	239.490	4828.89	-308.24	-804.81	-1350.12	1673470.18	14312001.78	39°24'43.553"N	80°52'58.705"W	1571.79	239.201	1.87	
5150.00	24.240	239.680	4851.69	-310.18	-809.99	-1358.94	1673461.36	14311996.60	39°24'43.502"N	80°52'58.818"W	1582.03	239.203	0.68	
5175.00	24.570	239.810	4874.46	-312.11	-815.19	-1367.87	1673452.44	14311991.40	39°24'43.451"N	80°52'58.932"W	1592.36	239.207	1.34	
5200.00	24.940	239.950	4897.16	-314.04	-820.45	-1376.92	1673443.39	14311986.15	39°24'43.399"N	80°52'59.047"W	1602.82	239.211	1.50	
5225.00	24.810	239.930	4919.84	-315.97	-825.71	-1386.02	1673434.29	14311980.89	39°24'43.347"N	80°52'59.163"W	1613.34	239.216	0.52	
5250.00	24.460	239.860	4942.57	-317.88	-830.94	-1395.04	1673425.28	14311975.66	39°24'43.296"N	80°52'59.278"W	1623.76	239.220	1.40	
5275.00	24.510	239.950	4965.32	-319.79	-836.14	-1404.00	1673416.32	14311970.47	39°24'43.244"N	80°52'59.392"W	1634.12	239.225	0.25	

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Melvin Unit 1H AWP Proj: 17695'

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Area	Tyler County, WV	Well	Melvin Unit 1H
Field	Tyler	Wellbore	Melvin Unit 1H AWB
Facility	Estlack Pad		

WELLPATH DATA (381 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]	Comments
5300.00	24.850	240.160	4988.04	-321.69	-841.35	-1413.05	1673407.28	14311965.26	39°24'43.193"N	80°52'59.508"W	1644.56	239.230	1.40	
5325.00	24.720	240.030	5010.73	-323.58	-846.57	-1422.13	1673398.20	14311960.04	39°24'43.142"N	80°52'59.623"W	1655.04	239.235	0.56	
5350.00	24.550	240.040	5033.46	-325.47	-851.78	-1431.16	1673389.17	14311954.83	39°24'43.090"N	80°52'59.739"W	1665.46	239.240	0.68	
5375.00	24.950	240.130	5056.16	-327.37	-857.00	-1440.23	1673380.10	14311949.62	39°24'43.039"N	80°52'59.854"W	1675.92	239.246	1.61	
5400.00	25.470	240.260	5078.78	-329.28	-862.29	-1449.47	1673370.87	14311944.33	39°24'42.987"N	80°52'59.972"W	1686.57	239.252	2.09	
5425.00	25.650	240.330	5101.33	-331.19	-867.64	-1458.84	1673361.50	14311938.98	39°24'42.934"N	80°53'00.092"W	1697.35	239.258	0.73	
5450.00	25.760	240.500	5123.86	-333.09	-872.99	-1468.27	1673352.08	14311933.63	39°24'42.881"N	80°53'00.212"W	1708.20	239.266	0.53	
5475.00	26.270	240.710	5146.33	-334.97	-878.37	-1477.83	1673342.53	14311928.25	39°24'42.828"N	80°53'00.334"W	1719.16	239.274	2.07	
5500.00	26.310	240.770	5168.74	-336.85	-883.78	-1487.49	1673332.87	14311922.84	39°24'42.775"N	80°53'00.457"W	1730.23	239.284	0.19	
5525.00	25.670	240.410	5191.21	-338.74	-889.16	-1497.03	1673323.33	14311917.46	39°24'42.722"N	80°53'00.578"W	1741.18	239.292	2.64	
5550.00	24.660	239.690	5213.84	-340.67	-894.47	-1506.24	1673314.12	14311912.16	39°24'42.669"N	80°53'00.696"W	1751.81	239.296	4.22	
5575.00	23.580	238.480	5236.66	-342.69	-899.71	-1515.01	1673305.36	14311906.92	39°24'42.617"N	80°53'00.808"W	1762.02	239.295	4.75	
5600.00	22.540	237.260	5259.66	-344.83	-904.92	-1523.30	1673297.07	14311901.71	39°24'42.566"N	80°53'00.913"W	1771.81	239.287	4.58	
5625.00	21.930	236.270	5282.80	-347.08	-910.10	-1531.21	1673289.16	14311896.53	39°24'42.515"N	80°53'01.014"W	1781.26	239.274	2.86	
5650.00	22.040	236.040	5305.98	-349.40	-915.32	-1538.99	1673281.39	14311891.32	39°24'42.464"N	80°53'01.113"W	1790.61	239.258	0.56	
5675.00	22.570	236.260	5329.11	-351.75	-920.60	-1546.87	1673273.51	14311886.04	39°24'42.411"N	80°53'01.214"W	1800.08	239.241	2.15	
5700.00	22.890	236.240	5352.17	-354.13	-925.97	-1554.90	1673265.49	14311880.67	39°24'42.359"N	80°53'01.316"W	1809.73	239.225	1.28	
5725.00	22.910	236.520	5375.20	-356.51	-931.35	-1563.00	1673257.39	14311875.29	39°24'42.305"N	80°53'01.420"W	1819.45	239.210	0.44	
5750.00	22.990	237.990	5398.22	-358.74	-936.63	-1571.20	1673249.19	14311870.02	39°24'42.253"N	80°53'01.524"W	1829.19	239.200	2.31	
5775.00	23.170	238.870	5421.22	-360.79	-941.76	-1579.55	1673240.85	14311864.89	39°24'42.203"N	80°53'01.631"W	1838.99	239.196	1.56	
5800.00	22.930	238.970	5444.22	-362.76	-946.81	-1587.93	1673232.47	14311859.84	39°24'42.153"N	80°53'01.737"W	1848.78	239.194	0.97	
5825.00	22.620	239.010	5467.27	-364.69	-951.80	-1596.22	1673224.18	14311854.85	39°24'42.104"N	80°53'01.843"W	1858.45	239.193	1.24	
5850.00	23.040	239.260	5490.32	-366.60	-956.77	-1604.55	1673215.85	14311849.88	39°24'42.055"N	80°53'01.949"W	1868.15	239.193	1.72	
5875.00	23.110	239.510	5513.32	-368.49	-961.76	-1612.98	1673207.42	14311844.89	39°24'42.005"N	80°53'02.057"W	1877.95	239.194	0.48	
5900.00	22.680	239.380	5536.35	-370.36	-966.71	-1621.36	1673199.05	14311839.95	39°24'41.957"N	80°53'02.164"W	1887.68	239.195	1.73	
5925.00	22.440	239.530	5559.43	-372.20	-971.58	-1629.62	1673190.79	14311835.08	39°24'41.909"N	80°53'02.269"W	1897.27	239.197	0.99	
5950.00	22.580	240.100	5582.53	-373.98	-976.39	-1637.89	1673182.52	14311830.27	39°24'41.861"N	80°53'02.375"W	1906.84	239.200	1.04	
5975.00	22.540	240.370	5605.62	-375.69	-981.15	-1646.22	1673174.20	14311825.51	39°24'41.814"N	80°53'02.481"W	1916.43	239.205	0.44	
6000.00	21.990	240.140	5628.75	-377.37	-985.85	-1654.44	1673165.98	14311820.81	39°24'41.768"N	80°53'02.586"W	1925.90	239.210	2.23	
6025.00	21.740	240.530	5651.95	-379.02	-990.46	-1662.53	1673157.89	14311816.20	39°24'41.722"N	80°53'02.689"W	1935.21	239.215	1.16	

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Actual Wellpath Report

Melvin Unit 1H AWP Proj: 17695'

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Area	Tyler County, WV	Well	Melvin Unit 1H
Field	Tyler	Wellbore	Melvin Unit 1H AWB
Facility	Estlack Pad		

WELLPATH DATA (381 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]	Comments
6050.00	22.190	240.630	5675.14	-380.63	-995.06	-1670.68	1673149.75	14311811.61	39°24'41.677"N	80°53'02.793"W	1944.56	239.222	1.81	
6060.13	22.500	240.560	5684.51	-381.29	-996.95	-1674.03	1673146.40	14311809.72	39°24'41.659"N	80°53'02.835"W	1948.41	239.225	3.07	
6277.00	22.940	239.970	5884.55	-396.19	-1038.49	-1746.76	1673073.70	14311768.19	39°24'41.249"N	80°53'03.763"W	2032.15	239.267	0.23	BHI AT Curve [SS+MSA] <8-1/2"> (6060.13')(6277'- 17657')
6328.00	21.770	239.130	5931.71	-399.88	-1048.32	-1763.49	1673056.98	14311758.37	39°24'41.152"N	80°53'03.976"W	2051.55	239.270	2.38	
6374.00	22.230	242.740	5974.37	-402.74	-1056.68	-1778.54	1673041.93	14311750.01	39°24'41.069"N	80°53'04.168"W	2068.77	239.284	3.10	
6423.00	22.300	254.300	6019.74	-403.38	-1063.45	-1795.74	1673024.74	14311743.25	39°24'41.003"N	80°53'04.387"W	2087.01	239.366	8.93	
6468.00	22.300	263.850	6061.38	-400.84	-1066.67	-1812.45	1673008.03	14311740.02	39°24'40.971"N	80°53'04.600"W	2103.04	239.522	8.04	
6517.00	22.760	276.570	6106.67	-394.53	-1066.59	-1831.12	1672989.37	14311740.11	39°24'40.972"N	80°53'04.838"W	2119.11	239.780	9.97	
6563.00	24.600	288.670	6148.82	-384.70	-1062.50	-1849.05	1672971.45	14311744.20	39°24'41.013"N	80°53'05.066"W	2132.58	240.117	11.27	
6614.00	27.710	298.160	6194.61	-369.37	-1053.50	-1869.57	1672950.94	14311753.19	39°24'41.102"N	80°53'05.328"W	2145.96	240.599	10.20	
6655.00†	30.593	304.164	6230.43	-353.91	-1043.14	-1886.62	1672933.90	14311763.55	39°24'41.205"N	80°53'05.544"W	2155.80	241.061	10.01	Sycamore: 6655' MD
6657.00	30.740	304.430	6232.15	-353.09	-1042.56	-1887.46	1672933.06	14311764.12	39°24'41.210"N	80°53'05.555"W	2156.26	241.085	10.01	
6706.00	35.060	310.510	6273.29	-330.76	-1026.33	-1908.50	1672912.02	14311780.35	39°24'41.371"N	80°53'05.823"W	2166.96	241.730	11.09	
6752.00	38.590	314.340	6310.11	-306.43	-1007.71	-1928.82	1672891.71	14311798.96	39°24'41.555"N	80°53'06.082"W	2176.19	242.415	9.15	
6802.00	42.340	317.420	6348.15	-276.94	-984.40	-1951.37	1672869.17	14311822.26	39°24'41.786"N	80°53'06.369"W	2185.61	243.231	8.50	
6848.00	45.830	320.410	6381.19	-247.18	-960.27	-1972.38	1672848.17	14311846.38	39°24'42.025"N	80°53'06.636"W	2193.72	244.040	8.83	
6873.00†	47.700	322.685	6398.31	-229.96	-946.01	-1983.70	1672836.86	14311860.64	39°24'42.166"N	80°53'06.780"W	2197.72	244.504	9.99	Middlesex: 6873' MD
6899.00	49.690	324.910	6415.47	-211.25	-930.25	-1995.23	1672825.33	14311876.40	39°24'42.322"N	80°53'06.926"W	2201.43	245.003	9.99	
6942.00	52.850	328.770	6442.38	-178.67	-902.16	-2013.55	1672807.02	14311904.47	39°24'42.600"N	80°53'07.159"W	2206.42	245.865	10.15	
6990.00	56.520	332.210	6470.13	-140.11	-868.08	-2032.81	1672787.77	14311938.54	39°24'42.937"N	80°53'07.404"W	2210.40	246.876	9.62	
7037.00†	61.053	334.827	6494.48	-100.22	-832.11	-2050.71	1672769.88	14311974.50	39°24'43.292"N	80°53'07.632"W	2213.10	247.914	10.76	Burkett: 7037' MD
7038.00	61.150	334.880	6494.96	-99.35	-831.31	-2051.08	1672769.50	14311975.29	39°24'43.300"N	80°53'07.636"W	2213.14	247.937	10.76	
7086.00	63.690	336.180	6517.19	-56.97	-792.59	-2068.69	1672751.90	14312014.00	39°24'43.683"N	80°53'07.860"W	2215.33	249.036	5.81	
7099.00†	64.757	336.539	6522.84	-45.30	-781.87	-2073.39	1672747.20	14312024.72	39°24'43.789"N	80°53'07.920"W	2215.91	249.339	8.57	Tully: 7099' MD
7133.00	67.550	337.450	6536.59	-14.26	-753.25	-2085.54	1672735.06	14312053.33	39°24'44.072"N	80°53'08.074"W	2217.40	250.142	8.57	
7177.00†	70.474	338.523	6552.34	26.78	-715.16	-2100.93	1672719.67	14312091.39	39°24'44.449"N	80°53'08.270"W	2219.32	251.201	7.02	Marcellus Hot: 7177' MD
7184.00	70.940	338.690	6554.66	33.38	-709.01	-2103.34	1672717.26	14312097.54	39°24'44.510"N	80°53'08.300"W	2219.62	251.372	7.02	
7227.00	76.430	340.620	6566.73	74.62	-670.33	-2117.67	1672702.94	14312136.21	39°24'44.892"N	80°53'08.482"W	2221.23	252.435	13.47	
7276.00	82.260	341.720	6575.79	122.75	-624.77	-2133.20	1672687.41	14312181.75	39°24'45.343"N	80°53'08.679"W	2222.81	253.676	12.10	
7323.00	87.300	341.740	6580.06	169.53	-580.34	-2147.87	1672672.75	14312226.16	39°24'45.782"N	80°53'08.866"W	2224.89	254.880	10.72	

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7362.00	90.090	341.150	6580.95	208.51	-543.38	-2160.28	1672660.35	14312263.11	39°24'46.147"N	80°53'09.023"W	2227.57	255.881	7.31	
7417.00	89.970	338.700	6580.92	263.51	-491.73	-2179.15	1672641.48	14312314.74	39°24'46.658"N	80°53'09.263"W	2233.95	257.284	4.46	
7511.00	89.570	338.510	6581.30	357.45	-404.21	-2213.45	1672607.20	14312402.23	39°24'47.524"N	80°53'09.698"W	2250.05	259.651	0.47	
7606.00	89.330	339.040	6582.21	452.41	-315.65	-2247.84	1672572.82	14312490.74	39°24'48.399"N	80°53'10.135"W	2269.89	262.006	0.61	
7701.00	89.360	338.550	6583.30	547.36	-227.09	-2282.20	1672538.48	14312579.27	39°24'49.275"N	80°53'10.571"W	2293.47	264.317	0.52	
7796.00	89.640	343.250	6584.13	642.32	-137.35	-2313.27	1672507.41	14312668.97	39°24'50.162"N	80°53'10.966"W	2317.35	266.602	4.96	
7891.00	90.260	344.340	6584.21	737.17	-46.13	-2339.78	1672480.91	14312760.16	39°24'51.064"N	80°53'11.302"W	2340.24	268.871	1.32	
7986.00	90.010	341.020	6583.99	832.09	44.55	-2368.06	1672452.65	14312850.80	39°24'51.961"N	80°53'11.661"W	2368.48	271.078	3.50	
8081.00	89.180	338.690	6584.66	927.07	133.73	-2400.78	1672419.95	14312939.95	39°24'52.843"N	80°53'12.076"W	2404.50	273.188	2.60	
8175.00	89.300	337.340	6585.90	1020.97	220.89	-2435.96	1672384.77	14313027.07	39°24'53.705"N	80°53'12.523"W	2445.96	275.181	1.44	
8269.00	89.400	339.630	6586.97	1114.90	308.33	-2470.43	1672350.32	14313114.47	39°24'54.569"N	80°53'12.961"W	2489.60	277.114	2.44	
8363.00	89.150	341.730	6588.16	1208.89	397.02	-2501.53	1672319.24	14313203.13	39°24'55.446"N	80°53'13.356"W	2532.84	279.018	2.25	
8459.00	89.180	340.100	6589.56	1304.87	487.73	-2532.91	1672287.86	14313293.80	39°24'56.343"N	80°53'13.754"W	2579.44	280.899	1.70	
8554.00	89.300	337.520	6590.82	1399.81	576.29	-2567.24	1672253.54	14313382.33	39°24'57.219"N	80°53'14.190"W	2631.13	282.652	2.72	
8650.00	89.210	336.390	6592.07	1495.62	664.62	-2604.82	1672215.98	14313470.63	39°24'58.092"N	80°53'14.668"W	2688.27	284.314	1.18	
8745.00	89.430	339.330	6593.20	1590.50	752.60	-2640.62	1672180.20	14313558.57	39°24'58.962"N	80°53'15.122"W	2745.77	285.908	3.10	
8840.00	89.270	338.140	6594.27	1685.44	841.13	-2675.07	1672145.76	14313647.06	39°24'59.838"N	80°53'15.560"W	2804.19	287.455	1.26	
8935.00	89.490	338.890	6595.30	1780.38	929.52	-2709.86	1672110.98	14313735.42	39°25'00.712"N	80°53'16.002"W	2864.85	288.933	0.82	
9030.00	90.900	347.720	6594.98	1875.17	1020.42	-2737.12	1672083.73	14313826.28	39°25'01.610"N	80°53'16.348"W	2921.15	290.446	9.41	
9126.00	90.620	348.640	6593.70	1970.30	1114.38	-2756.79	1672064.08	14313920.20	39°25'02.539"N	80°53'16.597"W	2973.50	292.010	1.00	
9220.00	90.560	345.340	6592.74	2063.68	1205.95	-2777.94	1672042.93	14314011.73	39°25'03.445"N	80°53'16.865"W	3028.41	293.466	3.51	
9315.00	90.440	334.560	6591.90	2158.54	1295.05	-2810.47	1672010.42	14314100.80	39°25'04.326"N	80°53'17.278"W	3094.49	294.740	11.35	
9410.00	90.220	333.980	6591.36	2252.97	1380.63	-2851.71	1671969.20	14314186.35	39°25'05.172"N	80°53'17.802"W	3168.34	295.834	0.65	
9506.00	90.280	341.720	6590.94	2348.79	1469.48	-2887.87	1671933.04	14314275.16	39°25'06.051"N	80°53'18.262"W	3240.24	296.969	8.06	
9601.00	90.840	343.240	6590.01	2443.73	1560.06	-2916.47	1671904.46	14314365.71	39°25'06.946"N	80°53'18.624"W	3307.51	298.143	1.71	
9695.00	90.560	340.920	6588.86	2537.68	1649.49	-2945.39	1671875.55	14314455.10	39°25'07.830"N	80°53'18.992"W	3375.82	299.250	2.49	
9791.00	89.910	336.880	6588.47	2633.62	1739.03	-2979.94	1671841.01	14314544.61	39°25'08.716"N	80°53'19.430"W	3450.26	300.267	4.26	
9885.00	90.440	337.900	6588.18	2727.48	1825.81	-3016.08	1671804.89	14314631.35	39°25'09.574"N	80°53'19.889"W	3525.66	301.189	1.22	
9980.00	89.950	340.220	6587.86	2822.44	1914.53	-3050.03	1671770.95	14314720.03	39°25'10.451"N	80°53'20.321"W	3601.12	302.117	2.50	
10074.00	89.910	340.350	6587.97	2916.44	2003.02	-3081.74	1671739.26	14314808.48	39°25'11.326"N	80°53'20.723"W	3675.49	303.022	0.14	

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Actual Wellpath Report

Melvin Unit 1H AWP Proj: 17695'

REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Melvin Unit 1H
Field	Tyler	Wellbore	Melvin Unit 1H AWB
Facility	Estlack Pad		

WELLPATH DATA (381 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]	Comments
10169.00	90.100	339.050	6587.96	3011.43	2092.11	-3114.70	1671706.31	14314897.55	39°25'12.207"N	80°53'21.142"W	3752.10	303.889	1.38	
10265.00	89.700	337.270	6588.13	3107.35	2181.22	-3150.41	1671670.61	14314986.62	39°25'13.088"N	80°53'21.596"W	3831.81	304.697	1.90	
10360.00	89.980	338.830	6588.40	3202.25	2269.33	-3185.92	1671635.12	14315074.69	39°25'13.960"N	80°53'22.047"W	3911.51	305.462	1.67	
10455.00	89.910	340.280	6588.49	3297.24	2358.34	-3219.10	1671601.95	14315163.67	39°25'14.840"N	80°53'22.468"W	3990.54	306.227	1.53	
10550.00	89.790	342.270	6588.74	3392.23	2448.31	-3249.60	1671571.46	14315253.60	39°25'15.729"N	80°53'22.855"W	4068.67	306.995	2.10	
10645.00	89.760	344.740	6589.11	3487.09	2539.39	-3276.57	1671544.50	14315344.65	39°25'16.630"N	80°53'23.198"W	4145.41	307.776	2.60	
10739.00	90.100	346.810	6589.22	3580.69	2630.51	-3299.67	1671521.42	14315435.72	39°25'17.531"N	80°53'23.490"W	4219.88	308.562	2.23	
10834.00	90.680	345.460	6588.58	3675.22	2722.73	-3322.43	1671498.66	14315527.91	39°25'18.442"N	80°53'23.779"W	4295.56	309.335	1.55	
10930.00	90.870	341.710	6587.28	3771.06	2814.80	-3349.55	1671471.55	14315619.94	39°25'19.353"N	80°53'24.123"W	4375.22	310.042	3.91	
11024.00	90.380	339.480	6586.25	3865.05	2903.44	-3380.78	1671440.34	14315708.55	39°25'20.229"N	80°53'24.520"W	4456.42	310.656	2.43	
11118.00	90.380	338.710	6585.63	3959.02	2991.25	-3414.32	1671406.81	14315796.33	39°25'21.097"N	80°53'24.946"W	4539.29	311.221	0.82	
11213.00	89.820	337.120	6585.46	4053.91	3079.28	-3450.04	1671371.11	14315884.32	39°25'21.968"N	80°53'25.400"W	4624.36	311.750	1.77	
11306.00	89.760	337.560	6585.80	4146.77	3165.10	-3485.86	1671335.29	14315970.10	39°25'22.816"N	80°53'25.855"W	4708.41	312.239	0.48	
11402.00	89.510	341.550	6586.42	4242.74	3255.03	-3519.39	1671301.78	14316060.00	39°25'23.706"N	80°53'26.281"W	4793.89	312.765	4.16	
11496.00	89.820	344.380	6586.97	4336.64	3344.90	-3546.93	1671274.26	14316149.83	39°25'24.594"N	80°53'26.630"W	4875.35	313.321	3.03	
11592.00	89.880	342.040	6587.22	4432.53	3436.80	-3574.65	1671246.54	14316241.69	39°25'25.503"N	80°53'26.982"W	4958.80	313.874	2.44	
11687.00	89.700	336.920	6587.57	4527.48	3525.74	-3607.94	1671213.26	14316330.60	39°25'26.382"N	80°53'27.405"W	5044.61	314.340	5.39	
11782.00	89.670	335.770	6588.09	4622.22	3612.76	-3646.06	1671175.16	14316417.58	39°25'27.243"N	80°53'27.889"W	5132.81	314.737	1.21	
11877.00	89.820	339.250	6588.51	4717.08	3700.52	-3682.39	1671138.84	14316505.30	39°25'28.111"N	80°53'28.351"W	5220.52	315.141	3.67	
11971.00	90.000	344.750	6588.66	4811.01	3789.88	-3711.43	1671109.82	14316594.63	39°25'28.994"N	80°53'28.720"W	5304.52	315.599	5.85	
12066.00	90.130	343.720	6588.55	4905.81	3881.31	-3737.24	1671084.02	14316686.02	39°25'29.898"N	80°53'29.047"W	5388.09	316.083	1.09	
12161.00	89.790	342.540	6588.62	5000.71	3972.22	-3764.81	1671056.46	14316776.90	39°25'30.797"N	80°53'29.397"W	5472.87	316.536	1.29	
12256.00	90.100	340.020	6588.71	5095.69	4062.18	-3795.30	1671025.99	14316866.83	39°25'31.686"N	80°53'29.784"W	5559.28	316.945	2.67	
12351.00	89.790	334.450	6588.80	5190.50	4149.75	-3832.04	1670989.25	14316954.36	39°25'32.552"N	80°53'30.251"W	5648.45	317.279	5.87	
12447.00	90.030	334.390	6588.95	5285.96	4236.34	-3873.49	1670947.82	14317040.91	39°25'33.409"N	80°53'30.778"W	5740.25	317.562	0.26	
12541.00	89.880	338.080	6589.02	5379.68	4322.35	-3911.37	1670909.96	14317126.89	39°25'34.259"N	80°53'31.259"W	5829.37	317.858	3.93	
12636.00	90.130	343.750	6589.02	5474.64	4412.10	-3942.41	1670878.92	14317216.60	39°25'35.147"N	80°53'31.653"W	5916.86	318.218	5.97	
12730.00	90.000	345.180	6588.91	5568.41	4502.66	-3967.59	1670853.76	14317307.12	39°25'36.042"N	80°53'31.973"W	6001.31	318.615	1.53	
12825.00	89.880	343.140	6589.01	5663.21	4594.05	-3993.52	1670827.84	14317398.48	39°25'36.945"N	80°53'32.302"W	6087.16	319.000	2.15	
12920.00	90.000	341.740	6589.11	5758.16	4684.62	-4022.18	1670799.19	14317489.01	39°25'37.841"N	80°53'32.666"W	6174.43	319.351	1.48	

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Actual Wellpath Report

Melvin Unit 1H AWP Proj: 17695'

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Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Melvin Unit 1H
Field	Tyler	Wellbore	Melvin Unit 1H AWB
Facility	Estlack Pad		

WELLPATH DATA (381 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]	Comments
13013.00	89.820	341.330	6589.25	5851.14	4772.83	-4051.64	1670769.75	14317577.19	39°25'38.713"N	80°53'33.040"W	6260.64	319.672	0.48	
13108.00	89.790	340.590	6589.58	5946.14	4862.63	-4082.63	1670738.77	14317666.95	39°25'39.601"N	80°53'33.433"W	6349.25	319.983	0.78	
13203.00	89.910	341.440	6589.83	6041.13	4952.46	-4113.53	1670707.88	14317756.75	39°25'40.489"N	80°53'33.826"W	6438.01	320.287	0.90	
13297.00	90.340	343.250	6589.62	6135.08	5042.03	-4142.04	1670679.38	14317846.28	39°25'41.375"N	80°53'34.188"W	6525.22	320.597	1.98	
13392.00	90.310	345.490	6589.08	6229.86	5133.51	-4167.63	1670653.80	14317937.72	39°25'42.279"N	80°53'34.513"W	6612.27	320.929	2.36	
13487.00	90.160	343.120	6588.69	6324.64	5224.96	-4193.33	1670628.11	14318029.14	39°25'43.183"N	80°53'34.839"W	6699.57	321.251	2.50	
13582.00	90.000	341.810	6588.56	6419.58	5315.54	-4221.95	1670599.50	14318119.68	39°25'44.079"N	80°53'35.202"W	6788.22	321.541	1.39	
13677.00	90.860	339.540	6587.85	6514.57	5405.18	-4253.39	1670568.08	14318209.29	39°25'44.965"N	80°53'35.601"W	6878.03	321.800	2.56	
13772.00	89.910	337.320	6587.21	6609.50	5493.52	-4288.31	1670533.17	14318297.59	39°25'45.839"N	80°53'36.045"W	6969.10	322.024	2.54	
13867.00	89.880	338.170	6587.38	6704.39	5581.44	-4324.29	1670497.21	14318385.48	39°25'46.708"N	80°53'36.502"W	7060.59	322.233	0.90	
13962.00	89.690	337.230	6587.74	6799.27	5669.34	-4360.33	1670461.17	14318473.33	39°25'47.577"N	80°53'36.960"W	7152.20	322.436	1.01	
14057.00	90.160	337.020	6587.86	6894.11	5756.86	-4397.26	1670424.26	14318560.83	39°25'48.443"N	80°53'37.430"W	7244.13	322.626	0.54	
14152.00	89.970	337.520	6587.76	6988.96	5844.49	-4433.97	1670387.57	14318648.41	39°25'49.309"N	80°53'37.896"W	7336.08	322.814	0.56	
14246.00	89.790	338.660	6587.95	7082.87	5931.70	-4469.05	1670352.51	14318735.59	39°25'50.172"N	80°53'38.342"W	7426.80	323.005	1.23	
14341.00	89.760	340.500	6588.33	7177.85	6020.72	-4502.19	1670319.37	14318824.58	39°25'51.052"N	80°53'38.763"W	7517.90	323.212	1.94	
14435.00	90.060	342.810	6588.47	7271.83	6109.94	-4531.77	1670289.80	14318913.76	39°25'51.934"N	80°53'39.138"W	7607.12	323.435	2.48	
14529.00	89.820	342.660	6588.57	7365.76	6199.70	-4559.67	1670261.92	14319003.49	39°25'52.822"N	80°53'39.493"W	7695.90	323.667	0.30	
14625.00	89.970	339.570	6588.75	7461.74	6290.52	-4590.74	1670230.86	14319094.27	39°25'53.720"N	80°53'39.887"W	7787.53	323.879	3.22	
14719.00	90.060	332.950	6588.72	7555.43	6376.52	-4628.56	1670193.05	14319180.24	39°25'54.570"N	80°53'40.368"W	7879.31	324.025	7.04	
14813.00	89.790	329.200	6588.85	7648.14	6458.78	-4674.02	1670147.61	14319262.46	39°25'55.383"N	80°53'40.946"W	7972.60	324.108	4.00	
14908.00	89.760	333.530	6589.22	7741.91	6542.14	-4719.53	1670102.12	14319345.79	39°25'56.208"N	80°53'41.525"W	8066.82	324.193	4.56	
15004.00	89.630	338.690	6589.73	7837.59	6629.88	-4758.40	1670063.27	14319433.50	39°25'57.076"N	80°53'42.019"W	8160.74	324.332	5.38	
15099.00	89.730	344.280	6590.26	7932.54	6719.93	-4788.55	1670033.13	14319523.51	39°25'57.966"N	80°53'42.402"W	8251.53	324.527	5.89	
15194.00	89.850	347.400	6590.61	8027.12	6812.03	-4811.79	1670009.90	14319615.57	39°25'58.876"N	80°53'42.697"W	8340.09	324.764	3.29	
15289.00	89.510	347.310	6591.14	8121.44	6904.73	-4832.59	1669989.11	14319708.23	39°25'59.793"N	80°53'42.960"W	8427.88	325.012	0.37	
15384.00	89.390	345.830	6592.05	8215.90	6997.12	-4854.65	1669967.06	14319800.59	39°26'00.706"N	80°53'43.240"W	8516.30	325.247	1.56	
15479.00	89.660	345.330	6592.84	8310.53	7089.12	-4878.31	1669943.41	14319892.55	39°26'01.616"N	80°53'43.540"W	8605.44	325.467	0.60	
15573.00	89.570	339.260	6593.47	8404.43	7178.63	-4906.88	1669914.85	14319982.02	39°26'02.501"N	80°53'43.903"W	8695.41	325.646	6.46	
15669.00	89.540	337.420	6594.22	8500.36	7267.84	-4942.31	1669879.43	14320071.20	39°26'03.383"N	80°53'44.353"W	8789.08	325.783	1.92	
15763.00	89.690	340.610	6594.85	8594.31	7355.60	-4975.97	1669845.79	14320158.92	39°26'04.251"N	80°53'44.781"W	8880.60	325.922	3.40	

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15858.00	89.730	342.650	6595.33	8689.29	7445.75	-5005.90	1669815.86	14320249.04	39°26'05.142"N	80°53'45.161"W	8972.08	326.086	2.15	
15953.00	89.880	343.020	6595.65	8784.21	7536.52	-5033.94	1669787.84	14320339.77	39°26'06.039"N	80°53'45.517"W	9063.09	326.259	0.42	
16048.00	89.540	342.380	6596.14	8879.14	7627.22	-5062.19	1669759.60	14320430.43	39°26'06.936"N	80°53'45.876"W	9154.25	326.428	0.76	
16143.00	89.660	340.380	6596.80	8974.12	7717.24	-5092.52	1669729.28	14320520.42	39°26'07.826"N	80°53'46.261"W	9246.05	326.580	2.11	
16238.00	90.370	341.510	6596.77	9069.11	7807.03	-5123.54	1669698.28	14320610.17	39°26'08.714"N	80°53'46.655"W	9338.11	326.724	1.40	
16333.00	90.740	344.790	6595.85	9164.00	7897.93	-5151.07	1669670.75	14320701.04	39°26'09.613"N	80°53'47.005"W	9429.26	326.887	3.47	
16429.00	90.090	343.730	6595.16	9259.79	7990.33	-5177.11	1669644.72	14320793.40	39°26'10.526"N	80°53'47.335"W	9520.92	327.060	1.30	
16523.00	90.340	337.940	6594.80	9353.74	8079.08	-5207.96	1669613.89	14320882.12	39°26'11.404"N	80°53'47.727"W	9612.20	327.193	6.17	
16616.00	90.250	335.190	6594.33	9446.51	8164.40	-5244.94	1669576.92	14320967.40	39°26'12.247"N	80°53'48.197"W	9703.96	327.283	2.96	
16710.00	90.430	335.920	6593.77	9540.16	8249.97	-5283.84	1669538.04	14321052.94	39°26'13.094"N	80°53'48.692"W	9796.99	327.362	0.80	
16805.00	90.340	334.620	6593.13	9634.76	8336.26	-5323.58	1669498.32	14321139.19	39°26'13.947"N	80°53'49.197"W	9891.09	327.437	1.37	
16899.00	89.730	333.840	6593.07	9728.19	8420.91	-5364.44	1669457.47	14321223.80	39°26'14.784"N	80°53'49.717"W	9984.43	327.501	1.05	
16993.00	89.170	336.370	6593.97	9821.76	8506.16	-5404.01	1669417.92	14321309.02	39°26'15.627"N	80°53'50.220"W	10077.60	327.572	2.76	
17088.00	89.820	338.950	6594.81	9916.63	8594.02	-5440.11	1669381.83	14321396.85	39°26'16.496"N	80°53'50.679"W	10171.14	327.666	2.80	
17183.00	90.900	346.050	6594.21	10011.51	8684.56	-5468.66	1669353.29	14321487.35	39°26'17.391"N	80°53'51.041"W	10262.94	327.801	7.56	
17278.00	91.020	346.520	6592.62	10106.02	8776.84	-5491.18	1669330.78	14321579.59	39°26'18.303"N	80°53'51.327"W	10353.07	327.968	0.51	
17372.00	90.000	344.880	6591.79	10199.62	8867.92	-5514.40	1669307.57	14321670.64	39°26'19.204"N	80°53'51.621"W	10442.63	328.125	2.05	
17468.00	90.030	342.130	6591.76	10295.48	8959.96	-5541.65	1669280.33	14321762.64	39°26'20.114"N	80°53'51.967"W	10535.22	328.264	2.86	
17562.00	89.880	342.860	6591.83	10389.42	9049.61	-5569.93	1669252.06	14321852.25	39°26'21.000"N	80°53'52.326"W	10626.36	328.388	0.79	
17657.00	89.880	344.040	6592.03	10484.30	9140.67	-5596.99	1669225.01	14321943.28	39°26'21.900"N	80°53'52.670"W	10718.12	328.520	1.24	
17695.00	89.880	344.040	6592.11	10522.23	9177.20	-5607.44	1669214.57	14321979.80	39°26'22.262"N	80°53'52.803"W	10754.74	328.574	0.00	Projected MD at TD: 17695'

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Actual Wellpath Report

Melvin Unit 1H AWP Proj: 17695'

REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #08
Area	Tyler County, WV	Well	Melvin Unit 1H
Field	Tyler	Wellbore	Melvin Unit 1H AWB
Facility	Estlack Pad		

HOLE & CASING SECTIONS - Ref Wellbore: Melvin Unit 1H AWB Ref Wellpath: Melvin Unit 1H AWP Proj: 17695'

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	72.00	40.00	32.00	72.00	0.00	0.00	-0.05	-0.07
13.375in Casing Surface	32.00	411.00	379.00	32.00	411.00	0.00	0.00	-0.68	-0.62
9.625in Casing Intermediate	32.00	2623.00	2591.00	32.00	2508.72	0.00	0.00	-317.97	-553.01

TARGETS

Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Melvin Unit 1H POE - Plat	6573.00	-721.13	-2104.87	1672715.73	14312085.43	39°24'44.390"N	80°53'08.320"W	point
Melvin Unit 1H BHL - Plat	6599.00	9176.04	-5607.22	1669214.79	14321978.63	39°26'22.250"N	80°53'52.800"W	point
Melvin Unit 1H LP Rev-1	6599.00	-560.27	-2161.80	1672658.83	14312246.23	39°24'45.981"N	80°53'09.043"W	point
Melvin Unit 1H DC	6650.00	0.00	0.00	1674819.76	14312806.27	39°24'51.490"N	80°52'41.490"W	polygon

WELLPATH COMPOSITION - Ref Wellbore: Melvin Unit 1H AWB Ref Wellpath: Melvin Unit 1H AWP Proj: 17695'

Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
32.00	6060.13	BHI Generic gyro - northseeking (Standard)	01_SDI Gyro (100' - 6060.13')	Melvin Unit 1H AWB
6060.13	17657.00	Navitrak w/ Surcon: (MagCAD, Short spacing)	02_BHI AT Curve [SS+MSA] <8-1/2"> (6060.13')(6277'- 17657')	Melvin Unit 1H AWB
17657.00	17695.00	Blind Drilling (std)	Projection to bit	Melvin Unit 1H AWB

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Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	9/30/2016
Job End Date:	9/30/2016
State:	West Virginia
County:	Tyler
API Number:	47-095-02337-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Melvin 1H
Latitude:	39.41430278
Longitude:	-80.87819167
Datum:	NAD27
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,592
Total Base Water Volume (gal):	18,475,237
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
Fresh Water	Operator	Base Fluid					
			Water	7732-18-5	100.00000	90.65049	Density = 8.330
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.15552	

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HCL >10%	Halliburton	Solvent					
				Listed Below			
FR-76	Halliburton	Friction Reducer					
				Listed Below			
SAND-COMMON WHITE - 100 MESH, 3307 LB BAG	Halliburton	Proppant					
				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			
SP Breaker	Halliburton	Breaker					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			
FDP-M1075-12	Halliburton	Scale Inhibitor					
				Listed Below			
HAL-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				Listed Below			

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WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				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	9.16900	
			Hydrochloric acid	7647-01-0	30.00000	0.04666	
			Guar gum	9000-30-0	100.00000	0.02455	
			Telomer	Proprietary	10.00000		
			Ethylene Glycol	107-21-1	60.00000		
			Olefins	Proprietary	5.00000		
			Hydrotreated light petroleum distillate	64742-47-8	30.00000		
			Acrylic acid	79-10-7	0.01000		
			Ethoxylated alcohols	Proprietary	30.00000		
			Propargyl alcohol	107-19-7	10.00000		
			Sodium polyacrylate	9003-04-7	1.00000		
			Reaction product of acetophenone, formaldehyde, thiourea and oleic acid in dimethyl formamide	68527-49-1	30.00000		
			Methanol	67-56-1	60.00000		
			Fatty acids, tall oil	Proprietary	30.00000		
			Acrylamide acrylate copolymer	Proprietary	30.00000		Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Inorganic salt	Proprietary	30.00000		

* 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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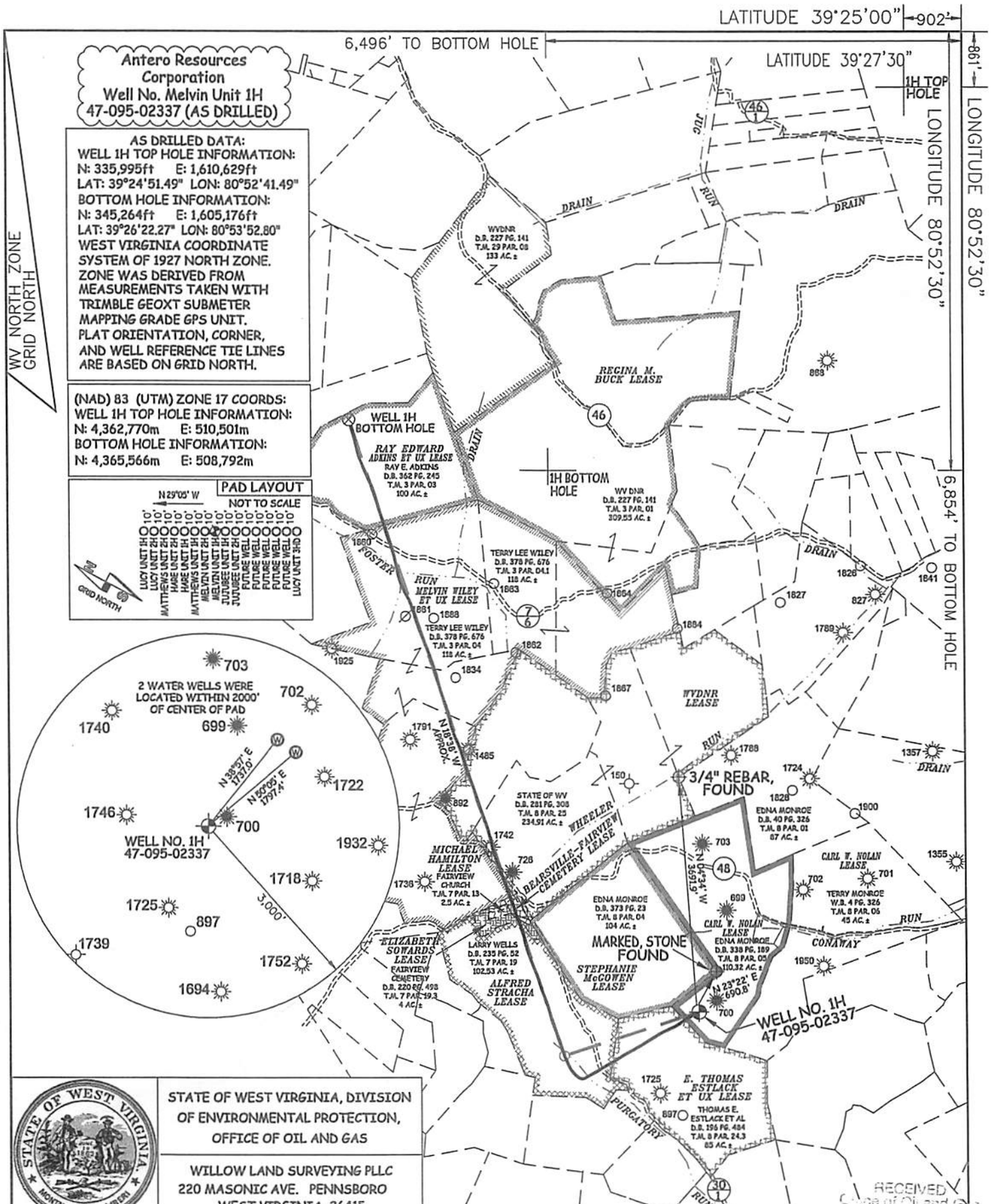

STATE OF WEST VIRGINIA, DIVISION OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS

WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO
WEST VIRGINIA 26415

JOB # 14-063WA
DRAWING # MELVIN1HAD
SCALE 1" = 2000'
MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS

LEGEND

- Surface Owner Boundary Lines +/-
- Interior Surface Tracts +/-
- Found monument, as noted
- Proposed Well Path
- As Drilled Well Path

DATE 03/08/17

OPERATOR'S WELL# MELVIN UNIT #1H

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Office of Oil and Gas
JAN 8 2018
WV Department of Environmental Protection

NOTE

1. NO OCCUPIED DWELLINGS OR BUILDINGS TWO THOUSAND FIVE HUNDRED (2,500) SQUARE FEET OR LARGER USED TO HOUSE OR SHELTER DAIRY CATTLE OR POULTRY HUSBANDRY ARE LOCATED WITHIN SIX HUNDRED TWENTY-FIVE (625) FEET OF THE CENTER OF THE WELL PAD.
2. TOP HOLE DATA SHOWN HEREON WAS PROVIDED BY ALLEGHENY SURVEYS, INC.
3. AS DRILLED DATA WAS PROVIDED BY ANTERO RESOURCES CORPORATION.
4. WLS IS NOT CERTIFYING THE DATA AND INFORMATION PROVIDED LISTED IN NOTES 2 AND 3, ONLY THE RELATIONSHIP TO THE DATA AND INFORMATION PROVIDED TO THE LEASE BOUNDARIES.
5. WLS IS BY NO MEANS RESPONSIBLE FOR ANY ERRORS OR INACCURACIES WITH THE DATA AND INFORMATION THAT HAS BEEN PROVIDED.

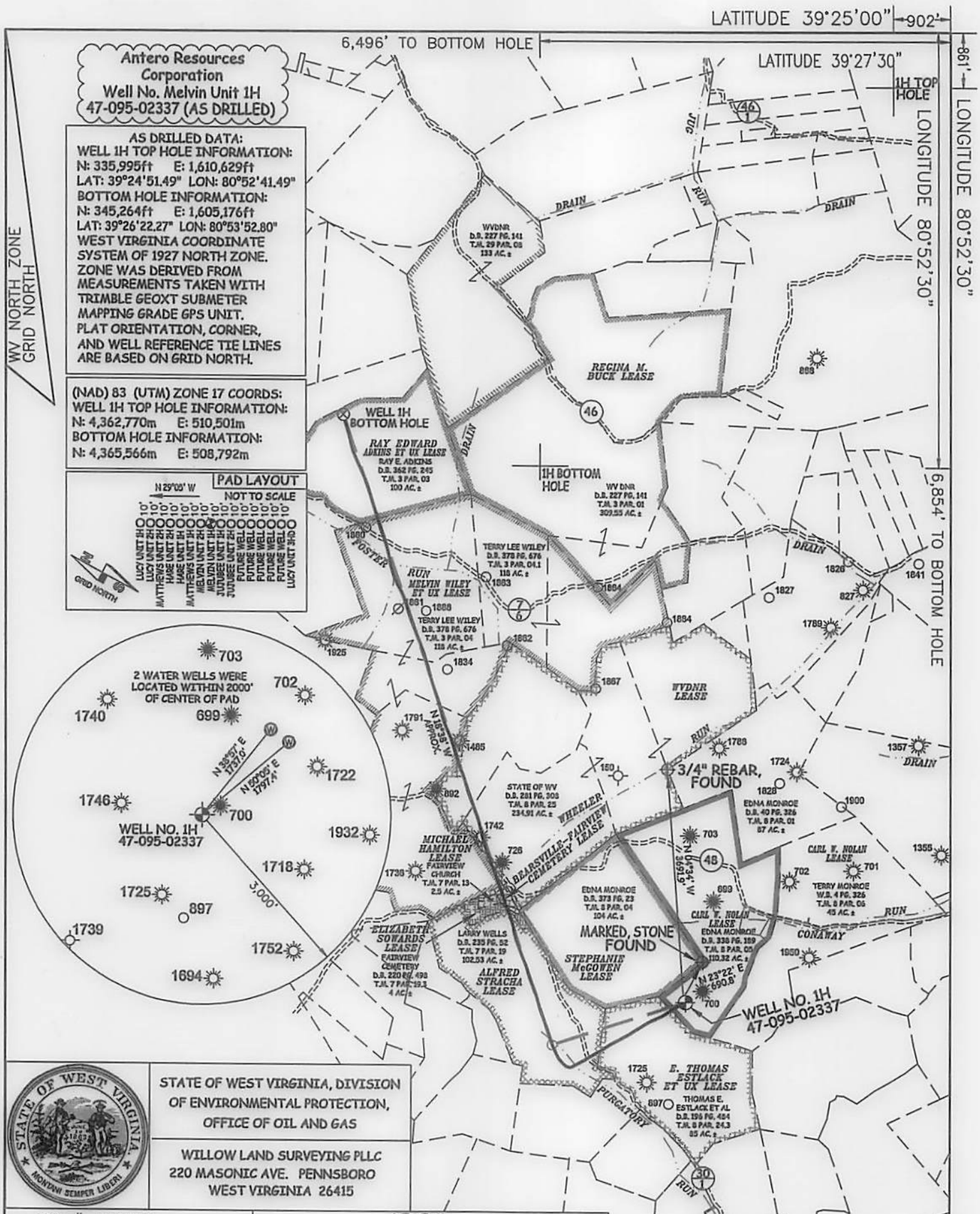
WELL TYPE: OIL ___ GAS X LIQUID INJECTION ___ WASTE DISPOSAL ___
(IF "GAS") PRODUCTION X STORAGE ___ DEEP ___ SHALLOW X

47 – 095 – 02337
STATE COUNTY PERMIT

LOCATION: ELEVATION 1,160' - ORIGINAL 1,142' - EXISTING WATERSHED HEADWATERS MIDDLE ISLAND CREEK
QUADRANGLE MIDDLEBOURNE 7.5' DISTRICT CENTERVILLE COUNTY TYLER
SURFACE OWNER EDNA MONROE ACREAGE 110.32 ACRES +/-
OIL & GAS ROYALTY OWNER CARL W. NOLAN; E. THOMAS ESTLACK ET UX; ALFRED STRACHA; ELIZABETH SOWARDS; MICHAEL HAMILTON; BEARSVILLE-FAIRVIEW CEMETERY; MELVIN WILEY ET UX; WVDNR; RAY EDWARD ADKINS ET UX
LEASE ACREAGE 116 AC.±; 85.5 AC.±; 101.2 AC.±; 4 AC.±; 1.8 AC.±; 2 AC.±; 378 AC.±; 553.16 AC.±; 100 AC.±
PROPOSED WORK: DRILL ___ CONVERT ___ DRILL DEEPER ___ REDRILL ___ FRACTURE OR STIMULATE ___
PLUG OFF OLD FORMATION ___ PERFORATE NEW FORMATION ___ OTHER PHYSICAL CHANGE IN WELL (SPECIFY) (x) AS DRILLED PLUG & ABANDON CLEAN OUT & REPLUG
TARGET FORMATION MARCELLUS ESTIMATED DEPTH 6,592' TVD 17,695' MD
WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
ADDRESS 1615 WYNKOOP ST. ADDRESS 5400 D BIG TYLER ROAD
DENVER, CO 80202 CHARLESTON, WV 25313

COUNTY NAME PERMIT

FORM WW-6



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WILLOW LAND SURVEYING PLLC
220 MASONIC AVE. PENNSBORO
WEST VIRGINIA 26415

JOB # 14-063WA
DRAWING # MELVIN1HAD
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MINIMUM DEGREE OF ACCURACY SUBMETER
PROVEN SOURCE OF ELEV. SUBMETER MAPPING GRADE GPS

STATE OF WEST VIRGINIA
DEPARTMENT OF ENERGY
DIVISION OF OIL AND GAS

LEGEND

- Surface Owner Boundary Lines +/-
- Interior Surface Tracts +/-
- Found monument, as noted
- Proposed Well Path
- As Drilled Well Path

DATE 03/08/17

OPERATOR'S WELL# MELVIN UNIT #1H

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