

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

API 47 - 095 - 02295 County Tyler District Meade
Quad Pennsboro 7.5' Pad Name Terry Snider Pad Field/Pool Name -----
Farm name Terry L. Snider Well Number Tinker Unit 3H
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 4357627m Easting 503100m
Landing Point of Curve Northing 4358016.44 Easting 503586.62m
Bottom Hole Northing 4360224m Easting 502716m

Elevation (ft) 1146.5' GL Type of Well New Existing Type of Report Interim Final
Permit Type Deviated Horizontal Horizontal 6A Vertical Depth Type Deep Shallow
Type of Operation Convert Deepen Drill Plug Back Redrilling Rework Stimulate
Well Type Brine Disposal CBM Gas Oil Secondary Recovery Solution Mining Storage Other _____
Type of Completion Single Multiple Fluids Produced Brine Gas NGL Oil Other _____
Drilled with Cable Rotary

Drilling Media Surface hole Air Mud Fresh Water Intermediate hole Air Mud Fresh Water Brine
Production hole Air Mud Fresh Water Brine
Mud Type(s) and Additive(s)
Air - Foam & 4% KCL
Mud - Polymer

Date permit issued 8/28/2015 Date drilling commenced 5/10/2016 Date drilling ceased 10/26/2016
Date completion activities began 10/3/2017 Date completion activities ceased 4/14/2018
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

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

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Freshwater depth(s) ft N/A Open mine(s) (Y/N) depths No
Salt water depth(s) ft N/A 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

Reviewed by:
JEB
7/9/12/2018

API 47-095 - 02295 Farm name Terry L. Snider Well number Tinker Unit 3H

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"	65'	New	94#, H-40	N/A	Y
Surface	17-1/2"	13-3/8"	513'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2612'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	15454'	New	23#, P-110	N/A	Y
Tubing		2-3/8"	6912'		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	60 sx	15.6	1.18	120	0'	8 Hrs.
Surface	Class A	605 sx	15.6	1.18	826	0'	8 Hrs.
Coal							
Intermediate 1	Class A	1017 sx	15.6	1.18	1181	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	804 sx (Lead) 1264 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.44 (Lead), 1.87 (Tail)	3774	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 15454' MD, 6449' TVD (BHL), 6459' (Deepest Point Drilled) Loggers TD (ft) 15454' MD
 Deepest formation penetrated Marcellus Plug back to (ft) N/A
 Plug back procedure N/A

Kick off depth (ft) 6062'

Check all wireline logs run caliper density deviated/directional induction
 neutron resistivity gamma ray temperature sonic

Well cored Yes No Conventional Sidewall Were cuttings collected Yes No

DESCRIBE THE CENTRALIZER PLACEMENT USED FOR EACH CASING STRING _____
 Conductor - 0
 Surface - 1 above guide shoe, 1 above insert float, 1 every 4th joint to surface
 Intermediate - 1 above float joint, 1 above float collar, 1 every 4th joint to surface
 Production - 1 above float joint, 1 below float collar, 1 every 3rd joint to top of cement

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WAS WELL COMPLETED AS SHOT HOLE Yes No DETAILS _____
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WAS WELL COMPLETED OPEN HOLE? Yes No DETAILS _____

WERE TRACERS USED Yes No TYPE OF TRACER(S) USED N/A

API 47- 095 - 02295 Farm name Terry L. Snider Well number Tinker Unit 3H

<u>PRODUCING FORMATION(S)</u>	<u>DEPTHS</u>	
<u>Marcellus</u>	<u>6417' (TOP)</u> TVD	<u>6959' (TOP)</u> MD
_____	_____	_____
_____	_____	_____
_____	_____	_____

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

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

OPEN FLOW Gas 7713 mcfpd Oil 85 bpd NGL --- bpd Water 468 bpd GAS MEASURED BY Estimated Orifice Pilot

<u>LITHOLOGY/ FORMATION</u>	<u>TOP</u>	<u>BOTTOM</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 Patterson - UTI Drilling Company LLC
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

Logging Company Kodiak Services Int'l
Address 2219 Sawdust Road, Unit 1604-1605 City The Woodlands State TX Zip 77380

Cementing Company BJ Services
Address 1036 East Main Street City Bridgeport State WV Zip 26330

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

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Please insert additional pages as applicable.

Completed by Megan Griffith Telephone 303-357-7223
Signature  Title Permitting Agent Date 8/20/2018

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

API 47-095-02295 Farm Name Terry L. Snider Well Number Tinker Unit 3H

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	11/25/2017	15182	15351	60	Marcellus
2	11/26/2017	14982	15151	60	Marcellus
3	11/27/2017	14782	14951	60	Marcellus
4	12/6/2017	14582	14751	60	Marcellus
5	12/7/2017	14382	14551	60	Marcellus
6	12/8/2017	14182	14351	60	Marcellus
7	12/8/2017	13982	14151	60	Marcellus
8	12/9/2017	13782	13951	60	Marcellus
9	12/10/2017	13582	13750	60	Marcellus
10	12/10/2017	13382	13550	60	Marcellus
11	12/11/2017	13182	13350	60	Marcellus
12	12/11/2017	12982	13150	60	Marcellus
13	12/12/2017	12782	12950	60	Marcellus
14	12/12/2017	12581	12750	60	Marcellus
15	12/14/2017	12381	12550	60	Marcellus
16	12/15/2017	12181	12350	60	Marcellus
17	12/15/2017	11981	12150	60	Marcellus
18	12/15/2017	11781	11950	60	Marcellus
19	12/16/2017	11581	11750	60	Marcellus
20	12/16/2017	11381	11550	60	Marcellus
21	12/17/2017	11181	11350	60	Marcellus
22	12/17/2017	10981	11150	60	Marcellus
23	12/18/2017	10781	10950	60	Marcellus
24	12/18/2017	10581	10750	60	Marcellus
25	12/18/2017	10381	10549	60	Marcellus
26	12/19/2017	10181	10349	60	Marcellus
27	12/19/2017	9981	10149	60	Marcellus
28	12/20/2017	9781	9949	60	Marcellus
29	12/21/2017	9580	9749	60	Marcellus
30	12/21/2017	9380	9549	60	Marcellus
31	12/22/2017	9180	9349	60	Marcellus
32	12/22/2017	8980	9149	60	Marcellus
33	12/23/2017	8780	8949	60	Marcellus
34	12/24/2017	8580	8749	60	Marcellus
35	12/24/2017	8380	8549	60	Marcellus
36	12/26/2017	8180	8349	60	Marcellus
37	12/27/2017	7980	8149	60	Marcellus
38	12/28/2017	7780	7949	60	Marcellus
39	12/29/2017	7580	7749	60	Marcellus
40	12/30/2017	7380	7549	60	Marcellus
41	12/31/2017	7180	7348	60	Marcellus
42	12/30/2017	6980	7148	60	Marcellus

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API 47-095-02295 Farm Name Terry L. Snider Well Number Tinker Unit 3H

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	11/25/2017	73.1	6831	3232	2935	12998	10904	N/A
2	11/26/2017	73	7423	5558	4122	17103	10696	N/A
3	11/27/2017	69.3	7374	5881	4224	17479	10605	N/A
4	12/6/2017	75.3	7404	5372	3625	16401	10218	N/A
5	12/7/2017	71.1	7280	5661	3596	16537	10573	N/A
6	12/8/2017	70.2	6952	5373	3770	16095	10358	N/A
7	12/8/2017	69.2	7245	5280	3760	16285	11530	N/A
8	12/9/2017	63.5	7493	5273	4155	16921	12603	N/A
9	12/10/2017	71.4	7304	5280	3812	16396	10392	N/A
10	12/10/2017	66.8	7093	5162	3823	16078	10041	N/A
11	12/11/2017	69.2	7615	5378	4318	17311	12711	N/A
12	12/11/2017	70.3	7554	5295	3771	16620	11302	N/A
13	12/12/2017	67.9	7284	5396	3386	16066	11257	N/A
14	12/12/2017	77.2	7730	5358	3711	16799	12027	N/A
15	12/14/2017	76.8	7178	5423	3798	16399	11370	N/A
16	12/15/2017	74	6841	5287	3993	16121	10755	N/A
17	12/15/2017	78.1	7193	5383	4148	16724	10628	N/A
18	12/15/2017	67.4	7043	5491	3907	16441	11517	N/A
19	12/16/2017	79.9	7145	5460	3958	16563	10701	N/A
20	12/16/2017	78.6	7130	5701	3948	16779	10462	N/A
21	12/17/2017	76.2	6818	5577	3244	15639	10525	N/A
22	12/17/2017	80.1	7086	5405	3817	16308	10763	N/A
23	12/18/2017	79.7	7113	5453	3756	16322	10551	N/A
24	12/18/2017	73.4	7053	5934	3959	16946	12046	N/A
25	12/18/2017	78.3	6959	5662	4044	16665	10585	N/A
26	12/19/2017	79.3	7134	5447	3977	16558	10708	N/A
27	12/19/2017	74.6	6996	5670	3664	16330	10661	N/A
28	12/20/2017	80.2	6758	5389	4035	16182	10963	N/A
29	12/21/2017	80.6	6994	5294	3687	15975	10921	N/A
30	12/21/2017	75.8	6778	5160	3686	15624	10825	N/A
31	12/22/2017	78.4	6735	5315	3860	15910	11165	N/A
32	12/22/2017	79.1	6839	5678	3673	16190	10835	N/A
33	12/23/2017	79.9	6711	5273	3886	15870	11393	N/A
34	12/24/2017	79.5	6742	5158	3874	15774	10315	N/A
35	12/24/2017	80	6690	5503	3720	15913	11840	N/A
36	12/26/2017	79.7	6646	6824	3955	17425	12608	N/A
37	12/27/2017	78.7	6660	5334	4328	16322	11521	N/A
38	12/28/2017	74.5	7246	4857	5256	17359	16322	N/A
39	12/29/2017	79.6	6647	5435	3682	15764	10710	N/A
40	12/30/2017	80	6308	5545	3877	15730	10817	N/A
41	12/31/2017	80.2	6603	5816	3726	16145	11378	N/A
42	12/30/2017	80.1	6400	5550	3786	15736	10541	N/A
AVG=		75.5	7,024	5,417	3,863	684,803	468,644	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	N/A	0	N/A
Silty Sandstone	260	N/A	260	N/A
Shale w/trace Coal	560	N/A	560	N/A
Silty Sandstone	740	N/A	740	N/A
Limey Shale	880	N/A	880	N/A
Silty Shale w/trace Coal	1,080	N/A	1,080	N/A
Silty Sandstone	1,240	N/A	1,240	N/A
Silty Shale w/trace Coal	1,380	N/A	1,380	N/A
Silty Sandstone	1,520	N/A	1,520	N/A
Sandstone w/trace Coal	1,600	N/A	1,600	N/A
Silty Sandstone	1,680	N/A	1,680	N/A
Shale w/trace Coal	1,740	N/A	1,740	N/A
Silty Sandstone	1,840	N/A	1,840	N/A
Big Lime	2,012	N/A	2,053	N/A
Big Injun	2,165	N/A	2,213	N/A
Gantz Sand	2,560	N/A	2,627	N/A
Fifty Foot Sandstone	2,848	N/A	2,931	N/A
Gordon	2,933	N/A	3,025	N/A
Fifth Sandstone	3,200	N/A	3,315	N/A
Bayard	3,277	N/A	3,400	N/A
Warren	3,666	N/A	3,822	N/A
Speechley	4,010	N/A	4,198	N/A
Balltown	4,304	N/A	4,522	N/A
Bradford	4,692	N/A	4,946	N/A
Benson	5,075	N/A	5,367	N/A
Alexander	5,315	N/A	5,629	N/A
Rhinestreet	5,858	N/A	6,220	N/A
Sycamore	6,194	N/A	6,594	N/A
Middlesex	6,288	N/A	6,720	N/A
Burkett	6,381	N/A	6,877	N/A
Tully	6,406	N/A	6,931	N/A
Marcellus	6,417	N/A	6,959	N/A

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

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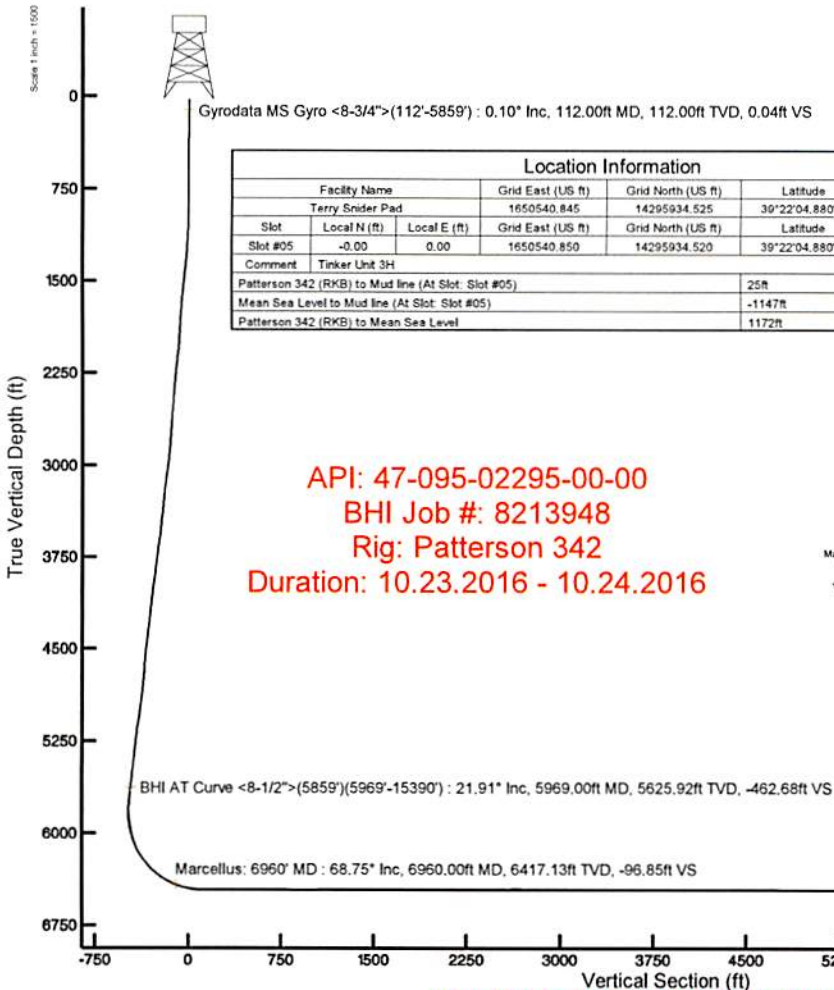
ANTERO RESOURCES CORPORATION

Location: Tyler County, WV Slot: Slot #05
 Field: Tyler Well: Tinker Unit 3H
 Facility: Terry Snider Pad Wellbore: Tinker Unit 3H PWB

Plot reference wellpath is Tinker Unit 3H PWB Rev-A.0	Grid System: NAD27 / UTM Zone 17 North, US feet
True vertical depths are referenced to Patterson 342 (RKB)	* = Wellpath was transformed from a different geodetic datum
Measured depths are referenced to Patterson 342 (RKB)	North Reference: Grid north
Patterson 342 (RKB) to Mean Sea Level: 1172 feet	Scale: True distance
Mean Sea Level to Mud line (At Slot: Slot #05): -1147 feet	Depths are in feet
Coordinates are in feet referenced to Slot	Created by: harekuk on 2016-10-26
	Database: WA_MPL_EASTERNUS_Def

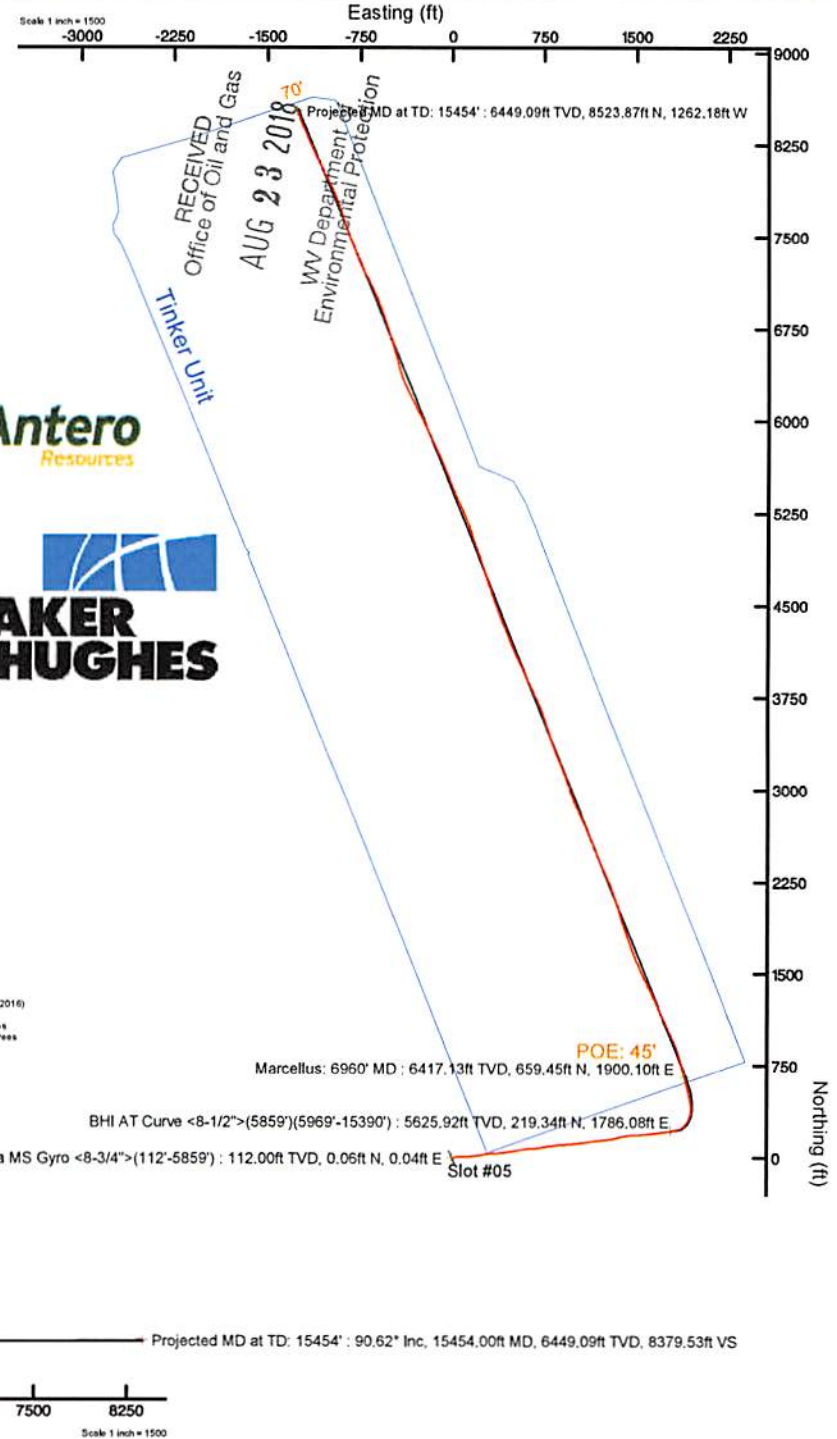
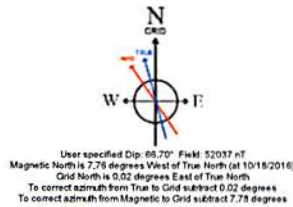
Well Data

Slot	Well	Wellbore	Wellpath
Slot #05	Tinker Unit 3H	Tinker Unit 3H AWB	Tinker Unit 3H AWP Proj: 15454'
Slot #05	Tinker Unit 3H	Tinker Unit 3H PWB	Tinker Unit 3H PWB Rev-A.0



Location Information				
Facility Name	Grid East (US ft)	Grid North (US ft)	Latitude	Longitude
Terry Snider Pad	1650540.845	14295934.525	39°22'04.880"N	80°57'51.040"W
Slot	Local N (ft)	Local E (ft)	Grid East (US ft)	Grid North (US ft)
Slot #05	-0.00	0.00	1650540.850	14295934.520
Comment	Tinker Unit 3H		Latitude	Longitude
			39°22'04.880"N	80°57'51.040"W
Patterson 342 (RKB) to Mud line (At Slot: Slot #05)			25ft	
Mean Sea Level to Mud line (At Slot: Slot #05)			-1147ft	
Patterson 342 (RKB) to Mean Sea Level			1172ft	

API: 47-095-02295-00-00
 BHI Job #: 8213948
 Rig: Patterson 342
 Duration: 10.23.2016 - 10.24.2016



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Azimuth 338.10° with reference 0.00 N, 0.00 E



Actual Wellpath Report

Tinker Unit 3H AWP Proj: 15454'

Page n of nn



REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Tyler County, WV	Well	Tinker Unit 3H
Field	Tyler	Wellbore	Tinker Unit 3H AWB
Facility	Terry Snider Pad		

REPORT SETUP INFORMATION			
Projection System	NAD27 / UTM Zone 17 North, US feet	Software System	WellArchitect® 5.0
North Reference	Grid	User	Hareluk
Scale	0.999600	Report Generated	10/26/2016 at 12:45:35 PM
Convergence at slot	0.03° East	Database/Source file	WA_MPL_EASTERNUS_Defn/Tinker_Unit_3H_AWP_Proj_15454_.xml

WELLPATH LOCATION						
	Local coordinates		Grid coordinates		Geographic coordinates	
	North[ft]	East[ft]	Easting[US ft]	Northing[US ft]	Latitude	Longitude
Slot Location	-0.00	0.00	1650540.85	14295934.52	39°22'04.880"N	80°57'51.040"W
Facility Reference Pt			1650540.85	14295934.53	39°22'04.880"N	80°57'51.040"W
Field Reference Pt			0.00	0.00	0°00'00.000"	85°29'19.301"W

WELLPATH DATUM			
Calculation method	Minimum curvature	Patterson 342 (RKB) to Facility Vertical Datum	25.00ft
Horizontal Reference Pt	Slot	Patterson 342 (RKB) to Mean Sea Level	1172.00ft
Vertical Reference Pt	Patterson 342 (RKB)	Patterson 342 (RKB) to Mud Line at Slot (Slot #05)	25.00ft
MD Reference Pt	Patterson 342 (RKB)	Section Origin	N 0.00, E 0.00 ft
Field Vertical Reference	Mean Sea Level	Section Azimuth	338.10°



Actual Wellpath Report
Tinker Unit 3H AWP Proj: 15454'
Page n of nn

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REFERENCE WELLPATH IDENTIFICATION									
Operator	ANTERO RESOURCES CORPORATION								
Area	Tyler County, WV								
Field	Tyler								
Facility	Terry Snider Pad								
	Slot	Slot #05							
	Well	Tinker Unit 3H							
	Wellbore	Tinker Unit 3H AWP							

WELLPATH DATA (179 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 (ft/100ft)	Build Rate (ft/100ft)	Turn Rate (ft/100ft)	Comments
0.00†	0.000	36.020	0.00	0.00	0.00	0.00	1650540.85	14295934.52	39°22'04.880"N	80°57'51.040"W	0.00	0.000	0.00	0.00	0.00	
25.00	0.000	36.020	25.00	0.00	0.00	0.00	1650540.85	14295934.52	39°22'04.880"N	80°57'51.040"W	0.00	0.000	0.00	0.00	0.00	
112.00	0.100	36.020	112.00	0.04	0.06	0.04	1650540.89	14295934.58	39°22'04.881"N	80°57'51.039"W	0.08	36.020	0.11	0.11	41.40	Gyrodata MS Gyro <8-3/4">-(112--5859)
212.00	0.340	122.540	212.00	-0.15	-0.03	0.35	1650541.20	14295934.49	39°22'04.880"N	80°57'51.036"W	0.35	94.560	0.35	0.24	86.52	
312.00	0.450	120.180	312.00	-0.71	-0.38	0.94	1650541.79	14295934.14	39°22'04.876"N	80°57'51.028"W	1.01	112.345	0.11	0.11	-2.36	
412.00	0.550	126.160	411.99	-1.42	-0.87	1.66	1650542.51	14295933.66	39°22'04.871"N	80°57'51.019"W	1.87	117.492	0.11	0.10	5.98	
512.00	0.590	126.620	511.99	-2.27	-1.46	2.46	1650543.31	14295933.07	39°22'04.866"N	80°57'51.009"W	2.86	120.577	0.04	0.04	0.46	
612.00	1.130	84.970	611.98	-2.99	-1.68	3.66	1650544.71	14295932.84	39°22'04.863"N	80°57'50.991"W	4.21	113.479	0.79	0.54	-41.65	
712.00	2.510	76.080	711.92	-3.58	-1.06	6.97	1650547.81	14295933.46	39°22'04.869"N	80°57'50.951"W	7.05	98.675	1.40	1.38	-8.89	
812.00	3.330	63.080	811.80	-3.63	0.78	11.68	1650552.53	14295935.30	39°22'04.888"N	80°57'50.891"W	11.71	86.186	1.05	0.82	-13.00	
912.00	4.460	65.900	911.56	-3.23	3.68	17.82	1650558.66	14295938.20	39°22'04.916"N	80°57'50.813"W	18.20	78.328	1.15	1.13	2.82	
1012.00	5.850	74.350	1011.16	-3.64	6.64	26.28	1650567.12	14295941.16	39°22'04.946"N	80°57'50.705"W	27.10	75.811	1.58	1.35	8.45	
1112.00	9.380	82.960	1110.26	-6.28	9.02	39.28	1650580.11	14295943.53	39°22'04.969"N	80°57'50.540"W	40.30	77.069	3.70	3.53	8.61	
1212.00	11.370	85.570	1208.62	-11.33	10.78	57.19	1650598.02	14295945.29	39°22'04.986"N	80°57'50.312"W	58.20	79.327	2.04	1.98	2.61	
1312.00	13.580	89.550	1306.26	-18.59	11.63	78.77	1650619.58	14295946.15	39°22'04.995"N	80°57'50.037"W	79.62	81.599	2.37	2.21	3.98	
1412.00	15.920	90.520	1402.96	-28.11	11.60	104.22	1650645.03	14295946.12	39°22'04.984"N	80°57'48.713"W	104.87	83.649	2.35	2.34	0.97	
1512.00	18.090	86.900	1498.58	-38.35	12.32	133.44	1650674.24	14295946.83	39°22'05.001"N	80°57'48.341"W	134.01	84.727	2.41	2.17	-3.62	
1612.00	19.050	84.570	1593.37	-47.98	14.70	165.19	1650705.98	14295948.21	39°22'05.025"N	80°57'48.936"W	165.85	84.915	1.21	0.96	-2.33	
1712.00	20.120	83.530	1687.59	-57.18	18.18	198.53	1650739.30	14295952.69	39°22'05.059"N	80°57'48.512"W	199.36	84.767	1.13	1.07	-1.04	
1812.00	18.720	80.820	1781.90	-65.29	22.66	231.47	1650772.22	14295957.19	39°22'05.103"N	80°57'48.093"W	232.57	84.404	1.66	-1.40	-2.71	
1912.00	17.530	78.960	1876.94	-71.66	28.12	262.09	1650802.83	14295962.63	39°22'05.157"N	80°57'47.703"W	263.59	83.875	1.32	-1.19	-1.86	
2012.00	17.220	80.720	1972.37	-77.73	33.40	291.48	1650832.21	14295967.90	39°22'05.209"N	80°57'47.328"W	293.39	83.464	0.61	-0.31	1.76	
2112.00	16.600	87.380	2068.06	-85.68	36.44	320.56	1650861.08	14295970.94	39°22'05.239"N	80°57'46.961"W	322.43	83.511	2.03	-0.62	6.66	
2212.00	17.210	88.030	2163.74	-95.14	39.60	349.42	1650890.14	14295973.60	39°22'05.250"N	80°57'46.591"W	351.43	83.959	0.64	0.61	0.65	
2312.00	17.430	86.220	2259.20	-105.44	39.09	379.15	1650918.83	14295973.60	39°22'05.262"N	80°57'46.212"W	381.16	84.113	0.58	0.22	-1.81	
2412.00	16.110	84.600	2354.95	-113.74	41.39	407.90	1650948.59	14295975.89	39°22'05.287"N	80°57'45.846"W	410.00	84.207	1.40	-1.32	-1.62	
2512.00	16.890	82.970	2450.83	-121.41	44.47	436.13	1650978.97	14295978.97	39°22'05.318"N	80°57'45.487"W	438.40	84.178	0.91	1.63	-1.63	
2612.00	17.910	82.330	2546.25	-128.92	48.30	465.79	1651006.45	14295982.80	39°22'05.355"N	80°57'45.109"W	468.29	84.080	1.04	1.02	-0.64	
2712.00	18.600	79.980	2641.18	-136.01	53.15	496.65	1651037.50	14295987.65	39°22'05.403"N	80°57'44.713"W	499.68	83.894	1.11	0.83	-2.35	
2812.00	19.950	79.100	2735.53	-142.57	59.17	529.42	1651070.06	14295993.67	39°22'05.463"N	80°57'44.299"W	532.72	83.623	1.24	1.21	-0.88	



Actual Wellpath Report

Tinker Unit 3H AWP Proj: 15454'
Page n of nn

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #05
Area	Tyler County, WV		Well	Tinker Unit 3H
Field	Tyler		Wellbore	Tinker Unit 3H AWB
Facility	Terry Snider Pad			

WELLPATH DATA (179 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 [ft/100ft]	Build Rate [ft/100ft]	Turn Rate [ft/100ft]	Comments	
2912.00	22.200	79.450	2828.84	-149.54	65.85	564.75	1651105.37	14296000.35	39°22'05.529"N	80°57'43.849"W	568.58	83.349	2.25	2.25	0.35		
3012.00	23.520	80.100	2920.98	-157.41	72.74	602.98	1651143.59	14296007.24	39°22'05.596"N	80°57'43.362"W	607.35	83.121	1.34	1.32	0.65		
3112.00	23.320	86.460	3012.76	-167.79	77.40	642.40	1651182.99	14296011.89	39°22'05.642"N	80°57'42.860"W	647.05	83.130	2.53	-0.20	6.36		
3212.00	22.920	88.220	3104.73	-180.73	79.23	681.62	1651222.20	14296013.71	39°22'05.660"N	80°57'42.361"W	686.21	83.370	0.80	-0.40	1.76		
3312.00	23.660	81.040	3196.60	-191.92	82.96	720.91	1651261.47	14296017.44	39°22'05.697"N	80°57'41.860"W	725.67	83.436	2.93	0.74	-7.18		
3412.00	23.330	79.080	3288.31	-200.19	89.83	760.18	1651300.72	14296024.32	39°22'05.765"N	80°57'41.360"W	765.47	83.260	0.85	-0.33	-1.96		
3512.00	22.040	83.110	3380.58	-208.82	95.83	798.25	1651338.78	14296030.32	39°22'05.824"N	80°57'40.876"W	803.98	83.154	2.02	-1.29	4.03		
3612.00	21.250	82.060	3473.53	-218.05	100.59	834.83	1651375.34	14296035.07	39°22'05.871"N	80°57'40.410"W	840.86	83.129	0.88	-0.79	-1.05		
3712.00	23.050	84.860	3566.14	-228.07	104.85	872.28	1651412.78	14296039.32	39°22'05.913"N	80°57'39.933"W	878.55	83.146	2.09	1.80	2.80		
3812.00	25.030	86.950	3657.47	-240.55	107.73	912.90	1651453.39	14296042.20	39°22'05.941"N	80°57'39.416"W	919.24	83.270	2.16	1.98	2.09		
3912.00	23.770	85.140	3748.54	-253.29	110.56	954.11	1651494.58	14296045.04	39°22'05.969"N	80°57'38.891"W	960.50	83.390	1.47	-1.26	-1.81		
4012.00	22.570	83.110	3840.47	-264.17	114.57	993.25	1651533.70	14296049.04	39°22'06.008"N	80°57'38.393"W	999.83	83.420	1.44	-1.20	-2.03		
4112.00	24.340	85.150	3932.20	-275.18	118.61	1032.84	1651573.27	14296053.09	39°22'06.048"N	80°57'37.888"W	1039.62	83.449	1.95	1.77	2.04		
4212.00	25.360	82.950	4022.95	-286.71	122.99	1074.62	1651615.04	14296057.46	39°22'06.091"N	80°57'37.356"W	1081.64	83.471	1.38	1.02	-2.20		
4312.00	26.070	79.690	4113.05	-296.62	129.55	1117.50	1651657.90	14296064.01	39°22'06.156"N	80°57'36.810"W	1124.98	83.387	1.58	0.71	-3.26		
4412.00	24.510	80.980	4203.46	-305.65	136.73	1159.61	1651699.99	14296071.20	39°22'06.227"N	80°57'36.274"W	1167.64	83.275	1.65	-1.56	1.29		
4512.00	22.890	84.380	4295.03	-315.73	141.89	1199.45	1651739.82	14296076.35	39°22'06.277"N	80°57'35.767"W	1207.82	83.254	2.12	-1.62	3.40		
4612.00	23.310	84.110	4387.01	-326.64	145.82	1238.49	1651778.84	14296080.29	39°22'06.316"N	80°57'35.270"W	1247.04	83.285	0.43	0.42	-0.27		
4712.00	24.160	84.350	4478.55	-337.82	149.87	1278.53	1651818.87	14296084.33	39°22'06.356"N	80°57'34.760"W	1287.29	83.314	0.86	0.85	0.24		
4812.00	24.150	77.710	4569.81	-346.97	156.24	1318.89	1651859.21	14296090.70	39°22'06.419"N	80°57'34.246"W	1328.12	83.244	2.72	-0.01	-6.64		
4912.00	24.590	74.410	4660.91	-352.67	166.19	1358.92	1651899.23	14296100.64	39°22'06.517"N	80°57'33.736"W	1369.05	83.028	1.43	0.44	-3.30		
5012.00	25.290	80.940	4751.60	-359.70	175.14	1400.07	1651940.35	14296109.59	39°22'06.605"N	80°57'33.212"W	1410.98	82.870	2.84	0.70	6.53		
5112.00	24.290	78.790	4842.38	-368.27	182.51	1441.34	1651981.61	14296116.95	39°22'06.678"N	80°57'32.687"W	1452.85	82.783	1.35	-1.00	-2.15		
5212.00	24.760	88.310	4933.40	-379.32	187.12	1482.46	1652022.72	14296121.57	39°22'06.723"N	80°57'32.163"W	1494.23	82.806	3.98	0.47	9.52		
5312.00	22.790	87.150	5024.91	-392.88	188.70	1522.74	1652062.98	14296123.15	39°22'06.739"N	80°57'31.650"W	1534.39	82.936	2.02	-1.97	-1.16		
5412.00	25.260	86.990	5116.24	-406.11	190.79	1563.40	1652103.62	14296125.23	39°22'06.759"N	80°57'31.133"W	1575.00	83.042	2.47	2.47	-0.16		
5512.00	23.700	80.480	5207.26	-417.33	195.23	1604.54	1652144.74	14296129.67	39°22'06.803"N	80°57'30.609"W	1616.37	83.063	3.11	-1.56	-6.51		
5612.00	23.250	83.310	5298.99	-426.82	200.86	1643.96	1652184.15	14296135.30	39°22'06.858"N	80°57'30.107"W	1656.19	83.034	1.21	-0.45	2.83		
5712.00	24.800	83.430	5390.32	-437.54	205.56	1684.40	1652224.57	14296139.99	39°22'06.904"N	80°57'29.592"W	1696.90	83.042	1.55	1.55	0.12		
5812.00	23.660	80.270	5481.51	-447.31	211.35	1725.02	1652265.17	14296145.78	39°22'06.961"N	80°57'29.075"W	1737.91	83.015	1.73	-1.14	-3.16		



Actual Wellpath Report

Tinker Unit 3H AWP Proj: 15454'
Page n of nn

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REFERENCE WELLPATH IDENTIFICATION				
Operator	ANTERO RESOURCES CORPORATION		Slot	Slot #05
Area	Tyler County, WV		Well	Tinker Unit 3H
Field	Tyler		Wellbore	Tinker Unit 3H AWP
Facility	Terry Snider Pad			

WELLPATH DATA (179 stations) † = interpolated/extrapolated station																
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]	Vert Sect [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Closure Dist [ft]	Closure Dir [°]	DLS ["/100ft]	Build Rate ["/100ft]	Turn Rate ["/100ft]	Comments
5859.00	23.800	85.060	5524.55	-452.07	213.76	1743.76	1652283.91	14296148.19	39°22'06.985"N	80°57'28.836"W	1756.81	83.011	4.11	0.30	10.19	
5969.00	21.910	79.710	5625.92	-462.68	219.34	1786.08	1652326.21	14296153.77	39°22'07.040"N	80°57'28.297"W	1799.49	82.999	2.55	-1.72	-4.86	BHI AT Curve <8-1/2">(5859')(5969'-15390')
6063.00	22.480	79.170	5712.95	-469.66	225.85	1820.98	1652361.10	14296160.28	39°22'07.104"N	80°57'27.853"W	1834.93	82.930	0.64	0.61	-0.57	
6110.00	22.590	79.800	5756.36	-473.21	229.13	1838.69	1652378.80	14296163.56	39°22'07.137"N	80°57'27.627"W	1852.91	82.897	0.56	0.23	1.34	
6157.00	22.410	72.480	5799.79	-475.73	233.43	1856.12	1652396.23	14296167.86	39°22'07.179"N	80°57'27.405"W	1870.74	82.832	5.97	-0.38	-15.57	
6204.00	23.030	59.860	5843.17	-475.09	240.75	1872.63	1652412.73	14296175.17	39°22'07.251"N	80°57'27.195"W	1888.04	82.674	10.44	1.32	-26.85	
6251.00	23.350	48.150	5886.40	-470.60	251.58	1887.52	1652427.62	14296186.00	39°22'07.358"N	80°57'27.005"W	1904.22	82.408	9.82	0.68	-24.91	
6298.00	21.990	42.050	5929.77	-463.55	264.33	1900.36	1652440.44	14296198.75	39°22'07.484"N	80°57'26.842"W	1918.65	82.081	5.78	-2.89	-12.98	
6346.00	20.360	38.920	5974.53	-455.53	277.50	1911.62	1652451.71	14296211.91	39°22'07.614"N	80°57'26.698"W	1931.66	81.740	4.13	-3.40	-6.52	
6393.00	20.280	34.400	6018.61	-447.03	290.59	1921.36	1652461.44	14296224.99	39°22'07.744"N	80°57'26.574"W	1943.21	81.400	3.34	-0.17	-9.62	
6440.00	24.220	27.460	6062.11	-436.22	305.87	1930.42	1652470.49	14296240.27	39°22'07.895"N	80°57'26.459"W	1954.50	80.996	10.06	8.38	-14.77	
6487.00	28.430	21.850	6104.23	-421.85	324.82	1939.03	1652479.10	14296259.21	39°22'08.082"N	80°57'26.349"W	1966.05	80.490	10.40	8.96	-11.94	
6534.00	32.140	16.980	6144.82	-404.03	347.17	1946.85	1652486.92	14296281.55	39°22'08.303"N	80°57'26.249"W	1977.56	79.889	9.46	7.89	-10.36	
6581.00	36.120	4.670	6183.76	-381.87	372.98	1951.64	1652491.70	14296307.35	39°22'08.556"N	80°57'26.188"W	1986.96	79.181	16.92	8.47	-26.19	
6629.00	38.990	35.030	6221.83	-354.92	402.18	1952.01	1652492.07	14296336.54	39°22'08.847"N	80°57'26.183"W	1993.01	78.358	11.39	5.98	-15.92	
6675.00	43.170	35.800	6256.50	-325.99	432.26	1949.28	1652489.35	14296366.61	39°22'09.144"N	80°57'26.218"W	1996.64	77.497	10.91	9.09	-9.20	
6720.00†	46.591	350.824	6288.39	-295.14	463.68	1944.74	1652484.81	14296398.02	39°22'09.454"N	80°57'26.275"W	1999.26	76.589	8.21	7.60	-4.39	Middlesex: 6720' MD
6723.00	46.820	350.700	6290.44	-293.01	465.84	1944.39	1652484.46	14296400.17	39°22'09.476"N	80°57'26.280"W	1999.42	76.527	8.21	7.64	-4.12	
6770.00	51.510	348.890	6321.17	-258.20	500.82	1938.08	1652478.15	14296435.14	39°22'09.822"N	80°57'26.360"W	2001.74	75.511	10.39	9.98	-3.85	
6817.00	54.840	347.610	6349.34	-221.17	537.65	1930.41	1652470.48	14296471.95	39°22'10.186"N	80°57'26.457"W	2003.88	74.437	7.41	7.09	-2.72	
6862.00	59.220	346.370	6373.82	-183.88	574.42	1921.90	1652461.98	14296508.71	39°22'10.549"N	80°57'26.566"W	2005.91	73.360	10.00	9.73	-2.76	
6877.00†	60.531	346.148	6381.35	-171.04	587.02	1918.82	1652458.90	14296521.30	39°22'10.674"N	80°57'26.605"W	2006.60	72.990	8.83	8.74	-1.48	Burkett: 6877' MD
6912.00	63.590	345.650	6397.74	-140.41	617.00	1911.28	1652451.37	14296551.28	39°22'10.970"N	80°57'26.700"W	2008.41	72.109	8.83	8.74	-1.42	
6931.00†	65.632	345.315	6405.89	-123.38	633.62	1906.98	1652447.07	14296567.89	39°22'11.134"N	80°57'26.755"W	2009.49	71.620	10.87	10.75	-1.76	Tully: 6931' MD
6956.00	68.320	344.890	6415.67	-100.55	655.85	1901.07	1652441.15	14296590.11	39°22'11.354"N	80°57'26.830"W	2011.02	70.966	10.87	10.75	-1.70	
6960.00†	68.750	344.868	6417.13	-96.85	659.45	1900.10	1652440.18	14296593.70	39°22'11.390"N	80°57'26.843"W	2011.28	70.860	10.75	10.74	-0.56	Marcellus: 6960' MD
7006.00	73.690	344.620	6431.94	-53.61	701.45	1888.64	1652428.73	14296635.69	39°22'11.805"N	80°57'26.988"W	2014.69	69.625	10.75	10.74	-0.54	
7053.00	80.040	344.370	6442.61	-8.15	745.53	1876.41	1652416.50	14296679.75	39°22'12.240"N	80°57'27.144"W	2019.09	68.331	13.52	13.51	-0.53	
7100.00	84.200	344.130	6449.05	38.13	790.33	1863.77	1652403.87	14296724.53	39°22'12.683"N	80°57'27.304"W	2024.42	67.021	8.87	8.85	-0.51	
7155.00	89.970	342.490	6451.85	92.81	842.92	1848.00	1652388.11	14296777.10	39°22'13.203"N	80°57'27.505"W	2031.16	65.481	10.91	10.49	-2.98	



Actual Wellpath Report
 Tinker Unit 3H AWP Proj: 15454
 Page n of nn

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REFERENCE WELLPATH IDENTIFICATION

Operator	ANTERO RESOURCES CORPORATION
Area	Tyler County, WY
Field	Tyler
Facility	Terry Snider Pad
Slot	Tinker Unit 3H
Slot #05	Tinker Unit 3H

WELLPATH DATA (179 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
7195.00	89.910	6451.89	132.75	880.77	1835.08	1652375.19	14296814.94	39°22'13.57"N	80°57'27.66"W	2035.50	2035.50	64.361	6.70	-0.15	-6.70	
7989.00	89.940	6452.01	226.74	967.98	1800.03	1652340.16	14296902.11	39°22'14.43"N	80°57'28.115"W	2043.79	2043.79	61.731	3.63	0.03	-3.63	
7789.00	89.660	6452.34	320.67	1053.87	1761.84	1652301.99	14296987.97	39°22'15.288"N	80°57'28.601"W	2052.98	2052.98	59.114	0.84	-0.30	-0.79	
7477.00	89.630	6452.92	414.55	1139.22	1722.45	1652262.61	14297073.28	39°22'16.132"N	80°57'29.102"W	2065.11	2065.11	56.520	0.93	-0.03	-0.93	
7572.00	89.660	6453.30	509.42	1225.35	1682.40	1652222.57	14297159.38	39°22'16.984"N	80°57'29.611"W	2081.33	2081.33	53.933	0.57	0.03	0.57	
7665.00	90.090	6453.72	602.26	1309.53	1642.85	1652183.04	14297243.52	39°22'17.816"N	80°57'30.114"W	2100.91	2100.91	51.441	1.16	0.46	-1.06	
7759.00	89.630	6453.95	696.04	1394.12	1601.87	1652142.07	14297328.08	39°22'18.652"N	80°57'30.636"W	2123.57	2123.57	48.967	0.63	-0.49	-0.40	
7853.00	89.660	6454.53	789.84	1478.92	1561.31	1652101.53	14297412.84	39°22'19.490"N	80°57'31.152"W	2150.56	2150.56	46.552	1.02	0.03	1.02	
7948.00	89.690	6455.07	884.74	1565.35	1521.89	1652062.12	14297499.24	39°22'20.345"N	80°57'31.653"W	2183.22	2183.22	44.193	1.18	0.03	1.18	
8042.00	90.060	6455.27	978.72	1651.95	1485.35	1652025.60	14297585.81	39°22'21.201"N	80°57'32.118"W	2221.53	2221.53	41.960	2.34	0.39	2.31	
8137.00	90.950	6454.44	1073.69	1740.87	1451.94	1651992.21	14297674.69	39°22'22.080"N	80°57'32.543"W	2266.88	2266.88	39.829	2.69	-1.07	2.53	
8231.00	89.940	6453.70	1167.61	1829.37	1420.26	1651960.54	14297763.15	39°22'22.955"N	80°57'32.946"W	2315.97	2315.97	37.825	1.26	-1.07	-0.65	
8326.00	89.970	6453.78	1262.45	1919.38	1389.93	1651930.22	14297853.13	39°22'23.845"N	80°57'33.331"W	2369.80	2369.80	35.910	2.89	0.03	2.89	
8420.00	90.180	6453.66	1356.09	2009.33	1362.61	1651902.91	14297943.04	39°22'24.734"N	80°57'33.679"W	2427.78	2427.78	34.143	0.79	0.22	0.76	
8514.00	90.800	6453.48	1449.79	2099.06	1334.61	1651874.92	14298032.73	39°22'25.621"N	80°57'34.035"W	2487.41	2487.41	32.449	1.69	-0.16	-1.68	
8608.00	90.890	6452.73	1543.68	2187.78	1303.59	1651843.92	14298121.42	39°22'26.498"N	80°57'34.429"W	2546.71	2546.71	30.789	2.61	0.91	-2.45	
8703.00	89.940	6452.04	1638.66	2275.74	1267.75	1651808.09	14298209.34	39°22'27.367"N	80°57'34.885"W	2605.03	2605.03	29.121	3.82	-1.00	-3.68	
8797.00	90.030	6452.07	1732.54	2361.10	1228.40	1651768.75	14298294.67	39°22'28.211"N	80°57'35.386"W	2661.53	2661.53	27.486	1.77	0.10	-1.77	
8892.00	90.000	6452.04	1827.49	2448.61	1191.52	1651731.89	14298382.15	39°22'29.076"N	80°57'35.855"W	2723.13	2723.13	25.948	5.75	-0.03	5.75	
8986.00	90.000	6452.04	1921.47	2536.40	1157.91	1651698.30	14298469.90	39°22'29.944"N	80°57'36.282"W	2788.20	2788.20	24.538	1.77	0.00	-1.77	
9080.00	90.800	6451.38	2015.46	2623.20	1121.87	1651662.26	14298556.67	39°22'30.802"N	80°57'36.741"W	2853.03	2853.03	23.155	1.85	0.85	-1.64	
9174.00	90.220	6450.55	2109.38	2708.97	1083.41	1651623.83	14298642.40	39°22'31.650"N	80°57'37.230"W	2917.58	2917.58	21.798	1.87	-0.62	-1.77	
9269.00	90.060	6450.32	2204.21	2794.85	1042.79	1651583.22	14298728.24	39°22'32.499"N	80°57'37.747"W	2983.05	2983.05	20.461	0.73	-0.17	-0.71	
9362.00	89.230	6450.89	2297.05	2878.96	1003.13	1651543.58	14298812.33	39°22'33.330"N	80°57'38.251"W	3048.72	3048.72	19.210	1.25	-0.89	0.88	
9456.00	89.420	6452.00	2391.00	2966.15	968.13	1651508.59	14298899.48	39°22'34.192"N	80°57'38.697"W	3120.15	3120.15	18.076	6.29	0.20	6.29	
9550.00	90.060	6452.43	2484.82	3055.38	938.57	1651479.04	14298988.67	39°22'35.042"N	80°57'39.073"W	3196.29	3196.29	17.076	1.43	0.68	1.26	
9643.00	92.030	6450.73	2577.68	3143.20	908.06	1651448.54	14299076.46	39°22'35.942"N	80°57'39.461"W	3271.74	3271.74	16.114	3.72	2.12	-3.05	
9738.00	89.450	6449.50	2672.66	3231.48	873.01	1651413.51	14299164.70	39°22'36.815"N	80°57'39.906"W	3347.33	3347.33	15.118	3.53	-2.72	-2.25	
9832.00	89.110	6450.68	2766.65	3318.64	837.86	1651378.37	14299251.83	39°22'37.677"N	80°57'40.354"W	3422.78	3422.78	14.169	1.65	-0.36	1.61	
9926.00	89.480	6451.84	2860.58	3407.01	805.84	1651346.36	14299340.16	39°22'38.550"N	80°57'40.761"W	3501.01	3501.01	13.307	2.77	0.39	2.74	



Actual Wellpath Report

Tinker Unit 3H AWP Proj: 15454'
Page n of nn

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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Tyler County, WV	Well	Tinker Unit 3H
Field	Tyler	Wellbore	Tinker Unit 3H AWB
Facility	Terry Snider Pad		

WELLPATH DATA (179 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
10021.00	90.370	342.630	6451.97	2955.35	3497.35	776.48	1651317.02	14299430.47	39°22'39.443"N	80°57'41.134"W	3582.51	12.518	1.62	0.94	1.33	
10115.00	90.090	341.990	6451.59	3049.10	3586.91	747.92	1651288.47	14299519.99	39°22'40.328"N	80°57'41.497"W	3664.05	11.778	0.74	-0.30	-0.68	
10209.00	90.310	337.140	6451.26	3143.04	3674.97	715.11	1651255.67	14299608.01	39°22'41.199"N	80°57'41.915"W	3743.90	11.012	5.16	0.23	-5.16	
10304.00	89.910	333.390	6451.08	3237.91	3761.23	675.37	1651215.94	14299694.24	39°22'42.052"N	80°57'42.420"W	3821.39	10.180	3.97	-0.42	-3.95	
10398.00	89.880	334.920	6451.25	3331.68	3845.83	634.39	1651174.98	14299778.80	39°22'42.888"N	80°57'42.942"W	3897.80	9.367	1.63	-0.03	1.63	
10492.00	89.880	334.560	6451.45	3425.52	3930.84	594.28	1651134.89	14299863.78	39°22'43.728"N	80°57'43.452"W	3975.51	8.597	0.38	0.00	-0.38	
10587.00	90.060	334.180	6451.50	3520.32	4016.49	553.18	1651093.81	14299949.40	39°22'44.575"N	80°57'43.975"W	4054.41	7.842	0.44	0.19	-0.40	
10681.00	89.570	335.960	6451.80	3614.18	4101.73	513.56	1651054.21	14300034.60	39°22'45.418"N	80°57'44.479"W	4133.76	7.137	1.96	-0.52	1.89	
10776.00	89.970	337.710	6452.18	3709.15	4189.07	476.19	1651016.85	14300121.90	39°22'46.281"N	80°57'44.955"W	4216.05	6.485	1.89	0.42	1.84	
10870.00	89.940	338.120	6452.26	3803.15	4276.17	440.85	1650981.53	14300208.97	39°22'47.142"N	80°57'45.404"W	4298.83	5.886	0.44	-0.03	0.44	
10964.00	89.940	338.050	6452.35	3897.15	4363.38	405.77	1650946.46	14300296.14	39°22'48.004"N	80°57'45.850"W	4382.20	5.313	0.07	0.00	-0.07	
11058.00	89.910	339.010	6452.48	3991.15	4450.85	371.36	1650912.07	14300383.58	39°22'48.869"N	80°57'46.288"W	4466.32	4.770	1.02	-0.03	1.02	
11152.00	90.030	340.770	6452.53	4085.10	4539.12	339.05	1650879.76	14300471.81	39°22'49.741"N	80°57'46.699"W	4551.76	4.272	1.88	0.13	1.87	
11247.00	89.880	341.430	6452.60	4179.97	4629.00	308.27	1650849.00	14300561.66	39°22'50.630"N	80°57'47.091"W	4639.25	3.810	0.71	-0.16	0.69	
11341.00	89.910	341.930	6452.77	4273.78	4718.23	278.73	1650819.47	14300650.86	39°22'51.512"N	80°57'47.466"W	4726.46	3.381	0.53	0.03	0.53	
11435.00	89.910	340.820	6452.92	4367.63	4807.31	248.71	1650789.46	14300739.90	39°22'52.392"N	80°57'47.848"W	4813.74	2.962	1.18	0.00	-1.18	
11529.00	90.090	340.370	6452.92	4461.54	4895.97	217.48	1650758.24	14300828.52	39°22'53.269"N	80°57'48.246"W	4900.79	2.543	0.52	0.19	-0.48	
11623.00	89.630	341.360	6453.15	4555.43	4984.77	186.66	1650727.44	14300917.29	39°22'54.147"N	80°57'48.638"W	4988.27	2.145	1.16	-0.49	1.05	
11717.00	89.600	341.630	6453.78	4649.26	5073.91	156.83	1650697.62	14301006.39	39°22'55.028"N	80°57'49.017"W	5076.33	1.770	0.29	-0.03	0.29	
11811.00	89.570	340.400	6454.46	4743.14	5162.79	126.25	1650667.05	14301095.24	39°22'55.906"N	80°57'49.406"W	5164.34	1.401	1.31	-0.03	-1.31	
11906.00	89.480	335.780	6455.25	4838.11	5250.90	90.81	1650631.63	14301183.31	39°22'56.777"N	80°57'49.857"W	5251.69	0.991	4.86	-0.09	-4.86	
12000.00	89.540	335.360	6456.05	4932.01	5336.48	51.94	1650592.77	14301268.86	39°22'57.623"N	80°57'50.352"W	5336.74	0.558	0.45	0.06	-0.45	
12094.00	89.540	336.040	6456.81	5025.93	5422.15	13.26	1650554.10	14301354.49	39°22'58.470"N	80°57'50.844"W	5422.17	0.140	0.72	0.00	0.72	
12188.00	89.850	338.220	6457.31	5119.90	5508.76	-23.27	1650517.59	14301441.06	39°22'59.326"N	80°57'51.308"W	5508.81	359.758	2.34	0.33	2.32	
12283.00	89.940	338.280	6457.48	5214.90	5596.99	-58.47	1650482.40	14301529.26	39°23'00.198"N	80°57'51.756"W	5597.30	359.401	0.11	0.09	0.06	
12377.00	90.250	336.070	6457.33	5308.89	5683.63	-94.94	1650445.95	14301615.86	39°23'01.055"N	80°57'52.220"W	5684.42	359.043	2.37	0.33	-2.35	
12471.00	90.000	334.490	6457.12	5402.77	5769.01	-134.24	1650406.66	14301701.21	39°23'01.899"N	80°57'52.720"W	5770.57	358.667	1.70	-0.27	-1.68	
12565.00	89.880	335.870	6457.22	5496.64	5854.33	-173.70	1650367.22	14301786.49	39°23'02.742"N	80°57'53.223"W	5856.90	358.300	1.47	-0.13	1.47	
12659.00	89.720	334.650	6457.55	5590.53	5939.70	-213.04	1650327.90	14301871.83	39°23'03.586"N	80°57'53.723"W	5943.51	357.946	1.31	-0.17	-1.30	
12754.00	89.820	332.640	6457.93	5685.23	6024.82	-255.21	1650285.74	14301956.92	39°23'04.428"N	80°57'54.260"W	6030.22	357.574	2.12	0.11	-2.12	



Actual Wellpath Report
Tinker Unit 3H AWP Proj: 15454
Page n of nn



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Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Tyler County, WV	Well	Tinker Unit 3H
Field	Tyler	Wellbore	Tinker Unit 3H AWB
Facility	Terry Snider Pad		

WELLPATH DATA (179 stations)												
MD	Inclination	Azimuth	TVD	Vent Sect	North	East	Grid East	Grid North	Latitude	Longitude	Closure Dist	Closure Dir
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
12848.00	89.720	332.360	6458.31	5778.78	6108.19	-298.62	1650242.35	14302040.26	39°23'05.252"N	80°57'54.812"W	6115.49	357.201
12942.00	89.780	333.970	6458.72	5872.43	6192.07	-341.05	1650199.94	14302124.10	39°23'06.081"N	80°57'55.352"W	6201.45	356.847
13036.00	89.940	335.750	6458.95	5966.28	6277.16	-380.98	1650160.02	14302209.16	39°23'06.922"N	80°57'55.860"W	6288.71	356.527
13130.00	90.030	340.190	6458.97	6060.25	6364.28	-416.23	1650124.79	14302296.24	39°23'07.783"N	80°57'56.309"W	6377.87	356.258
13224.00	90.090	346.260	6458.87	6153.83	6454.23	-443.35	1650097.68	14302386.16	39°23'08.673"N	80°57'56.654"W	6469.44	356.070
13318.00	90.180	345.250	6458.65	6246.99	6545.34	-466.48	1650074.66	14302477.23	39°23'09.573"N	80°57'56.948"W	6561.94	355.924
13413.00	90.000	343.470	6458.50	6341.42	6636.82	-492.09	1650048.96	14302568.67	39°23'10.477"N	80°57'57.274"W	6655.04	355.760
13507.00	89.910	340.940	6458.58	6435.18	6726.32	-520.81	1650020.25	14302658.13	39°23'11.362"N	80°57'57.639"W	6746.45	355.572
13601.00	90.030	341.740	6458.63	6529.02	6815.37	-550.89	1649990.18	14302747.15	39°23'12.242"N	80°57'58.022"W	6837.60	355.379
13695.00	89.970	340.400	6458.68	6622.90	6904.29	-581.38	1649959.70	14302836.03	39°23'13.121"N	80°57'58.410"W	6928.72	355.187
13790.00	89.910	337.610	6458.73	6717.87	6992.97	-615.41	1649925.68	14302924.68	39°23'13.998"N	80°57'58.843"W	7020.00	354.971
13884.00	89.820	334.230	6458.95	6811.79	7078.78	-653.76	1649887.35	14303010.45	39°23'14.846"N	80°57'59.331"W	7108.90	354.723
13978.00	89.910	331.940	6459.17	6905.43	7162.59	-696.31	1649844.82	14303094.23	39°23'15.675"N	80°57'59.872"W	7196.36	354.447
14072.00	90.120	335.240	6459.14	6999.12	7246.77	-738.11	1649803.03	14303178.38	39°23'16.507"N	80°58'00.404"W	7284.26	354.184
14166.00	90.030	339.170	6459.02	7093.09	7333.29	-774.81	1649766.35	14303264.87	39°23'17.362"N	80°58'00.871"W	7374.11	353.969
14261.00	89.970	338.800	6459.02	7188.08	7421.98	-808.88	1649732.30	14303353.51	39°23'18.239"N	80°58'01.305"W	7465.92	353.780
14355.00	89.820	339.160	6459.19	7282.06	7509.83	-842.31	1649698.88	14303441.33	39°23'19.107"N	80°58'01.730"W	7556.92	353.600
14449.00	89.910	340.530	6459.42	7376.02	7598.07	-874.70	1649666.50	14303529.54	39°23'20.862"N	80°58'02.142"W	7648.25	353.433
14543.00	90.680	342.960	6458.93	7469.82	7687.33	-904.14	1649637.07	14303618.76	39°23'22.612"N	80°58'02.617"W	7740.32	353.292
14637.00	90.680	341.250	6457.82	7563.58	7776.77	-933.02	1649608.20	14303708.17	39°23'21.746"N	80°58'02.884"W	7832.54	353.159
14731.00	90.710	336.420	6456.67	7657.54	7864.40	-966.95	1649574.29	14303795.76	39°23'22.612"N	80°58'03.316"W	7923.62	352.991
14825.00	90.550	334.250	6455.64	7751.41	7949.81	-1006.17	1649535.09	14303881.14	39°23'23.456"N	80°58'03.815"W	8013.23	352.787
14920.00	90.580	333.550	6454.70	7846.15	8035.12	-1047.96	1649493.31	14303966.41	39°23'24.300"N	80°58'04.347"W	8103.17	352.569
15014.00	90.580	333.300	6453.75	7939.84	8119.19	-1090.01	1649451.28	14304050.44	39°23'25.131"N	80°58'04.882"W	8192.03	352.354
15108.00	90.620	336.000	6452.76	8034.65	8205.03	-1130.68	1649410.62	14304136.25	39°23'25.979"N	80°58'05.400"W	8282.57	352.154
15202.00	90.620	336.740	6451.75	8127.60	8290.22	-1167.95	1649373.37	14304221.41	39°23'26.821"N	80°58'05.874"W	8372.09	351.981
15296.00	90.580	336.780	6450.77	8221.57	8376.59	-1205.04	1649336.74	14304307.74	39°23'27.675"N	80°58'06.346"W	8462.82	351.814
15390.00	90.620	339.650	6449.78	8315.56	8463.86	-1239.92	1649301.42	14304394.98	39°23'28.538"N	80°58'06.790"W	8554.20	351.666
15484.00	90.620	339.650	6449.09	8379.53	8523.87	-1262.18	1649279.18	14304454.96	39°23'29.131"N	80°58'07.073"W	8616.81	351.577

TARGETS												
Name	TVD	North	East	Grid East	Grid North	Latitude	Longitude	Shape				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)					
Tinker Unit 3H POE Rev-2	6426.00	677.51	1903.94	1652444.02	14296611.76	39°22'11.568"N	80°57'26.794"W	point				
Tinker Unit 3H POE Rev-1	6457.00	677.51	1903.94	1652444.02	14296611.76	39°22'11.568"N	80°57'26.794"W	point				

TARGETS								
Name	TVD [ft]	North [ft]	East [ft]	Grid East [US ft]	Grid North [US ft]	Latitude	Longitude	Shape
Tinker Unit 3H BHL Rev-2	6464.00	8537.12	-1255.22	1649286.14	14304468.21	39°23'29.262"N	80°58'06.984"W	point
Tinker Unit 3H LP Rev-2	6464.00	867.86	1827.43	1652367.54	14296802.03	39°22'13.450"N	80°57'27.767"W	point
Tinker Unit 3H BHL - Plat	6489.00	8774.68	-1350.73	1649190.66	14304705.67	39°23'31.610"N	80°58'08.200"W	point

WELLPATH COMPOSITION - Ref Wellbore: Tinker Unit 3H AWB Ref Wellpath: Tinker Unit 3H AWP Proj: 15454'				
Start MD [ft]	End MD [ft]	Positional Uncertainty Model	Log Name/Comment	Wellbore
25.00	5859.00	Gyrodata standard - Drop gyro or Multi-shot	01 Gyrodata MS Gyro <8-3/4">(100' - 5847')	Tinker Unit 3H AWB
5859.00	15390.00	BHI AutoTrak Curve (Short)	02 BHI AT Curve <8-1/2">(5859')(5969'-15390')	Tinker Unit 3H AWB
15390.00	15454.00	Blind Drilling (std)	Projection to bit	Tinker Unit 3H AWB

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Actual Wellpath Report

Tinker Unit 3H AWP Proj: 15454'
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REFERENCE WELLPATH IDENTIFICATION			
Operator	ANTERO RESOURCES CORPORATION	Slot	Slot #05
Area	Tyler County, WV	Well	Tinker Unit 3H
Field	Tyler	Wellbore	Tinker Unit 3H AWB
Facility	Terry Snider Pad		

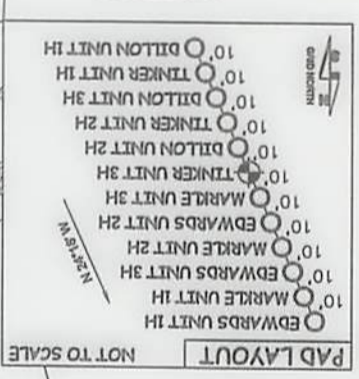
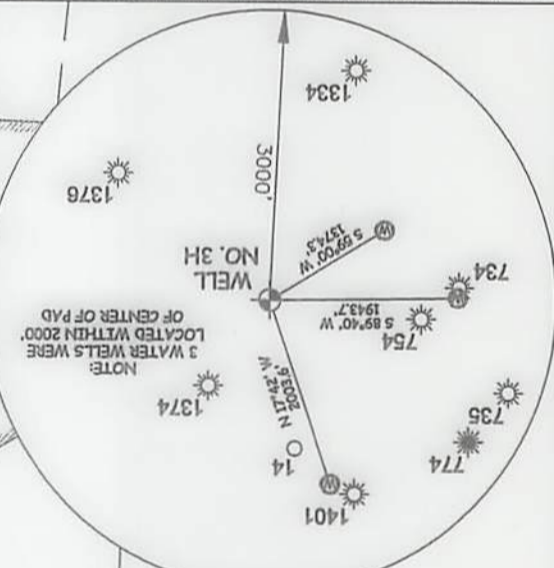
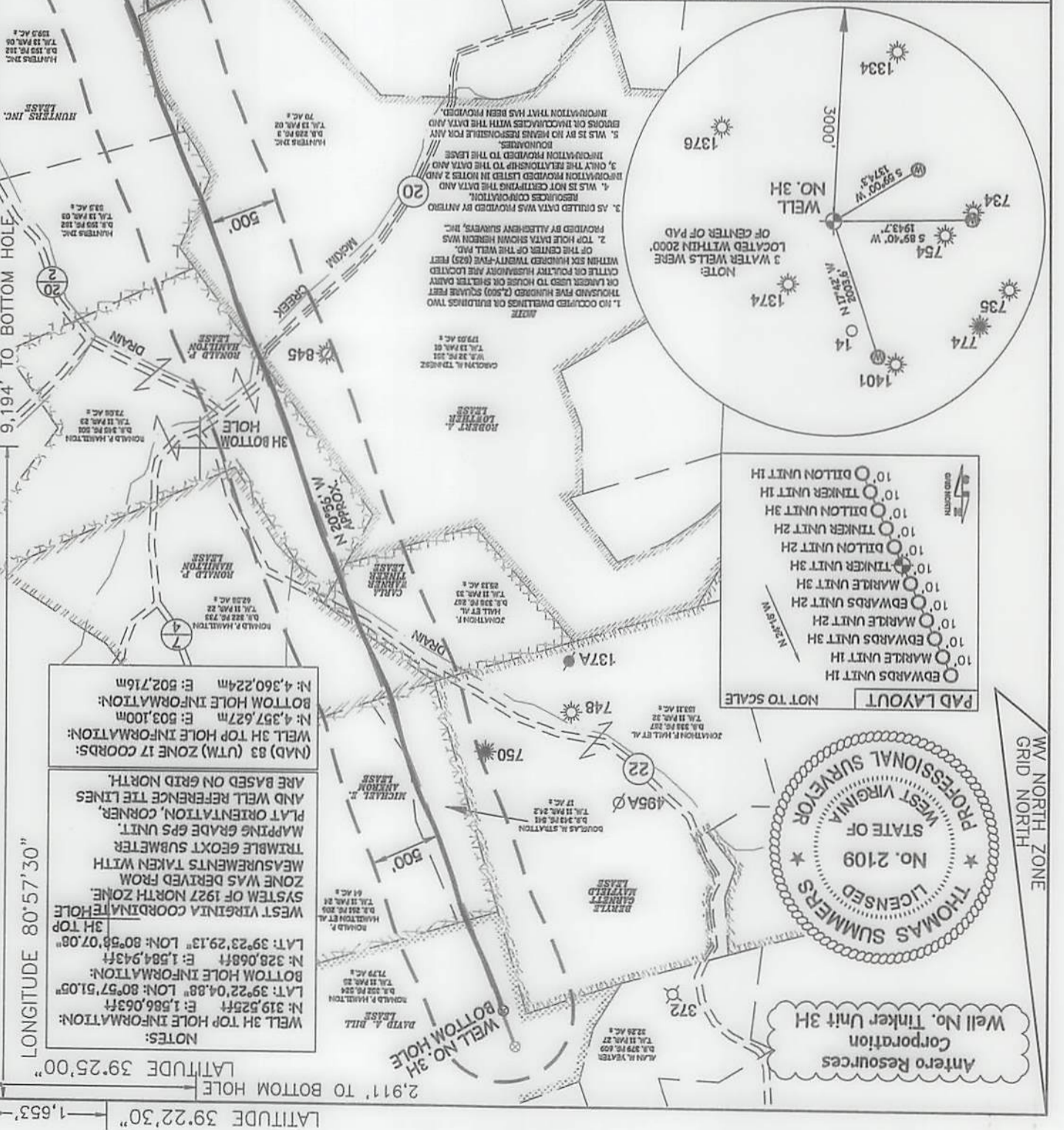
WELLPATH COMMENTS					
MD [ft]	Inclination [°]	Azimuth [°]	TVD [ft]		Comment
112.00	0.100	36.020	112.00		Gyrodata MS Gyro <8-3/4">(112'-5859')
5969.00	21.910	79.710	5625.92		BHI AT Curve <8-1/2">(5859')(5969'-15390')
6720.00	46.591	350.824	6288.39		Middlesex: 6720' MD
6877.00	60.531	346.148	6381.35		Burkett: 6877' MD
6931.00	65.632	345.315	6405.89		Tully: 6931' MD
6960.00	68.750	344.868	6417.13		Marcellus: 6960' MD
15454.00	90.620	339.650	6449.09		Projected MD at TD: 15454'

COMMENTS
<p>Wellpath general comments API: 47-095-02295-00-00 BHI Job #: 8213948 Rig: Patterson 342 Duration: 10.23.2016 - 10.24.2016 Gyrodata MS Gyro <8-3/4">(112'-5859') BHI AT Curve <8-1/2">(5859')(5969'-15390') Middlesex: 6720' MD Burkett: 6877' MD Tully: 6931' MD Marcellus: 6960' MD Projected MD at TD: 15454'</p>

WELL TYPE: OIL GAS X LIQUID INJECTION WASTE DISPOSAL
 (IF "GAS") PRODUCTION X STORAGE DEEP SHALLOW X
 LOCATION: ELEVATION 1,147 AS-BUILT WATERSHED OUTLET MIDDLE ISLAND CREEK
 QUADRANGLE PENNSBORO 7.5 - SH1 MIDDLEBOURNE 7.5 - BHL DISTRICT MEADE COUNTY TYLER
 SURFACE OWNER RITCHIE PETROLEUM INC. ACREAGE 30.92 ACRES +/-
 OIL & GAS ROYALTY OWNER WASHBRO BROADWATER, TERRY L. SNIDER, HUNTERS INC.; LEASE ACREAGE 603.71 ACRES +/- 67 ACRES +/- 471.20 ACRES +/-
 ROBERT A. LOWMYER, RONALD P. HAMILTON, CARLA WARNER, TINKER, RONALD P. HAMILTON, MICHAEL E. ANGRIM, DAVID A. BILL 250 ACRES +/- 73.09 ACRES +/- 26.125 ACRES +/- 62.58 ACRES +/- 81 ACRES +/- 66.29 ACRES +/-
 PROPOSED WORK: DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE
 PLUG OFF OLD FORMATION PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL
 (SPECIFY) AS DRILLED
 PLUG & ABANDON CLEAN OUT & REPLUG
 TARGET FORMATION MARCELLUS
 WELL OPERATOR ANTERO RESOURCES CORP. DESIGNATED AGENT DIANNA STAMPER - CT CORPORATION SYSTEM
 ADDRESS 1615 WYNKOOP STREET DENVER, CO 80202
 FORM W-6

JOB # 15-031WA DRAWING # TINKERHAD
 SCALE 1" = 1000'
 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
 DATE 08/01/18 OPERATOR'S WELL # TINKER UNIT 3H

STATE OF WEST VIRGINIA
 OFFICE OF ENVIRONMENTAL PROTECTION, DIVISION OF ENVIRONMENTAL PROTECTION
 220 MASONIC AVE. PENNSBORO WEST VIRGINIA 26415
 WILLOW LAND SURVEYING PLLC
 THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAN IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE RULES ISSUED AND PERSCRIBED BY THE DEPARTMENT OF ENVIRONMENTAL PROTECTION.



ANTERO RESOURCES CORPORATION
 Well No. Tinker Unit 3H

THOMAS SUMMERS
 LICENSED SURVEYOR
 STATE OF WEST VIRGINIA
 No. 2109
 PROFESSIONAL SURVEYOR

NOTES:
 WELL 3H TOP HOLE INFORMATION:
 N: 319.255ft E: 1,586.063ft
 LAT: 39°22'04.88" LON: 80°57'51.05"
 BOTTOM HOLE INFORMATION:
 N: 328.068ft E: 1,584.943ft
 LAT: 39°23'29.13" LON: 80°58'07.08"
 WEST VIRGINIA COORDINATE HOLE 3H TOP
 SYSTEM OF 1927 NORTH ZONE
 ZONE WAS DERIVED FROM MEASUREMENTS TAKEN WITH TRIMBLE GEOXT SUBMETER MAPPING GRADE GPS UNIT. AND WELL REFERENCE THE LINES ARE BASED ON GRID NORTH.
 (NAD) 83 (UTM) ZONE 17 COORDS:
 WELL 3H TOP HOLE INFORMATION:
 N: 4,357.627m E: 503.100m
 BOTTOM HOLE INFORMATION:
 N: 4,360.224m E: 502.716m

2,542' LONGITUDE 80°57'30"
 2,911' TO BOTTOM HOLE
 1,653' LONGITUDE 80°57'30"
 39°22'30" LATITUDE 39°25'00"

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	11/25/2017
Job End Date:	12/31/2017
State:	West Virginia
County:	Tyler
API Number:	47-095-02295-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Tinker Unit 3H
Latitude:	39.36802222
Longitude:	-80.96707700
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	6,459
Total Base Water Volume (gal):	20,185,056
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	88.39722	Density = 8.340
Ingredients	Listed Above	Listed Above					
			Water	7732-18-5	100.00000	0.27900	

SCALECHEK LP-50	Halliburton	Scale Inhibitor					
				Listed Below			
HYDROCHLORIC ACID	Halliburton	Solvent					
				Listed Below			
SP BREAKER	Halliburton	Breaker					
				Listed Below			
SAND-COMMON WHITE-100 MESH, SSA-2, BULK (100003676)	Halliburton	Proppant					
				Listed Below			
HAI-OS ACID INHIBITOR	Halliburton	Corrosion Inhibitor					
				Listed Below			
MC B-8614	Halliburton	Biocide					
				Listed Below			
WG-36 GELLING AGENT	Halliburton	Gelling Agent					
				Listed Below			
SAND-PREMIUM WHITE-40/70, BULK	Halliburton	Proppant					
				Listed Below			

FR-76	Halliburton	Friction Reducer					
				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	11.26476	
			Hydrochloric acid	7647-01-0	15.00000	0.03326	
			Guar gum	9000-30-0	100.00000	0.02331	
			Hydrotreated light petroleum distillate	64742-47-8	30.00000	0.02106	
			Acrylamide acrylate copolymer	Proprietary	30.00000	0.02106	Denise Tuck, Halliburton, 3000 N. Sam Houston Pkwy E., Houston, TX 77032, 281-871-6226
			Inorganic salt	Proprietary	30.00000	0.02106	
			Methanol	67-56-1	60.00000	0.00407	
			Phosphate of a Diamine, Sodium Salt	Proprietary	30.00000	0.00395	
			Glutaraldehyde	111-30-8	30.00000	0.00262	
			Sodium persulfate	7775-27-1	100.00000	0.00070	
			Quaternary ammonium compounds, benzyl-C12-16-alkyldimethyl chlorides	68424-85-1	5.00000	0.00044	
			Ethanol	64-17-5	1.00000	0.00009	
			Modified thiourea polymer	Proprietary	30.00000	0.00006	
			Ethoxylated alcohols	Proprietary	30.00000	0.00006	
			Fatty acids, tall oil	Proprietary	30.00000	0.00006	
			Olefins	Proprietary	5.00000	0.00002	
			Propargyl alcohol	107-19-7	10.00000	0.00002	
			Phosphoric acid	7664-38-2	0.10000	0.00001	
			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)