

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

RECEIVED
Office of Oil and Gas

FEB 8 2018

WV Department of
Environmental Protection

API 47-033-05714 County Harrison District Union
Quad Big Isaac 7.5' Pad Name Corder East Pad Field/Pool Name -----
Farm name Gerald & Louella Corder Well Number Truman 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 4341561.889m Easting 538528.552m
Landing Point of Curve Northing 4341668.070m Easting 537590.418m
Bottom Hole Northing 4342362.288m Easting 536725.430m

Elevation (ft) 1405' 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 01/29/2013 Date drilling commenced 04/13/2014 Date drilling ceased 08/01/2014
Date completion activities began 08/13/2014 8/25/17 Date completion activities ceased 10/05/2017
Verbal plugging (Y/N) N/A Date permission granted N/A Granted by N/A

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

Freshwater depth(s) ft 87', 347' Open mine(s) (Y/N) depths No
Salt water depth(s) ft 507', 984' Void(s) encountered (Y/N) depths No
Coal depth(s) ft 327', 887', 1667' Cavern(s) encountered (Y/N) depths No

Is coal being mined in area (Y/N) No

Reviewed

S, D, W
4/11/2018

Reviewed by: _____

API 47-033 - 05714 Farm name Gerald & Louella Corder Well number Truman 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"	40'	New	106.5#, J-55	N/A	Y
Surface	17-1/2"	13-3/8"	367'	New	48#, H-40	N/A	Y
Coal							
Intermediate 1	12-1/4"	9-5/8"	2509'	New	36#, J-55	N/A	Y
Intermediate 2							
Intermediate 3							
Production	8-3/4"/8-1/2"	5-1/2"	13759'	New	20#, P-110	N/A	Y
Tubing		2-3/8"	7813'		4.7#, P-110		
Packer type and depth set		N/A					

Comment Details _____

CEMENT DATA	Class/Type of Cement	Number of Sacks	Slurry wt (ppg)	Yield (ft ³ /sks)	Volume (ft ³)	Cement Top (MD)	WOC (hrs)
Conductor	Class A	196 sx	15.6	1.18	231	0'	8 Hrs.
Surface	Class A	436 sx	15.6	1.18	514	0'	8 Hrs.
Coal							
Intermediate 1	Class A	930 sx	15.6	1.18	1097	0'	8 Hrs.
Intermediate 2							
Intermediate 3							
Production	Class H	1073 sx (Lead), 1022 sx (Tail)	13.5 (Lead), 15.2 (Tail)	1.3 (Lead), 1.86 (Tail)	3296	-500' into Intermediate Casing	8 Hrs.
Tubing							

Drillers TD (ft) 13759' MD, 7513' TVD (BHL) & 7513' TVD (Deepest Point Drilled) Loggers TD (ft) 13713' MD

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

Plug back procedure N/A

Kick off depth (ft) 7204'

** This is a subsequent well. Antero only runs wireline logs on one well on a multi-well pad (Cleta Unit 2H API# 47-033-05651). Please reference the wireline logs submitted with Form WR-35 for the Cleta Unit 2H. A Cement Bond Log has been included with this submittal.

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

API 47- 033 - 05714 Farm name Gerald & Louella Corder Well number Truman Unit 1H

PRODUCING FORMATION(S)	DEPTHS	
Marcellus	7343' (TOP) TVD	7464' (TOP) MD

Please insert additional pages as applicable.

GAS TEST Build up Drawdown Open Flow OIL TEST Flow Pump

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

OPEN FLOW Gas 13733 mcfpd Oil 3 bpd NGL --- bpd Water 350 bpd GAS MEASURED BY Estimated Orifice Pilot

LITHOLOGY/ FORMATION	TOP		BOTTOM		DESCRIBE ROCK TYPE AND RECORD QUANTITY AND TYPE OF FLUID (FRESHWATER, BRINE, OIL, GAS, H ₂ S, ETC)
	DEPTH IN FT NAME TVD	DEPTH IN FT TVD	DEPTH IN FT MD	DEPTH IN FT MD	

***PLEASE SEE ATTACHED EXHIBIT 3**

Please insert additional pages as applicable.

Drilling Contractor Patterson – UTI Drilling Company LLC
Address 207 Carlton Drive City Eighty Four State PA Zip 15330

Logging Company Rush Wellsite Services
Address 600 Alpha Drive City Canonsburg State PA Zip 15317

Cementing Company Allied Oil & Gas Services, LLC
Address 1036 East Main Street City Bridgeport State WV Zip 26330

Stimulating Company US Well Services
Address 533 Industrial Park Drive City Jane Lew State WV Zip 26378

Please insert additional pages as applicable.

Completed by Samantha Klaas Telephone 303-357-6759
Signature  Title Permitting Agent Date 02/07/2018

EXHIBIT 1

Stage No.	Perforation Date	Perforated from MD ft.	Perforated to MD ft.	Number of Perforations	Formations
1	8/13/2014	13502	13671	48	Marcellus
2	8/25/2017	13301	13470	48	Marcellus
3	8/26/2017	13100	13269	48	Marcellus
4	8/27/2017	12899	13068	48	Marcellus
5	8/27/2017	12698	12868	48	Marcellus
6	8/28/2017	12497	12667	48	Marcellus
7	8/28/2017	12297	12466	48	Marcellus
8	8/29/2017	12096	12265	48	Marcellus
9	8/30/2017	11895	12064	48	Marcellus
10	8/30/2017	11694	11863	48	Marcellus
11	8/31/2017	11493	11663	48	Marcellus
12	8/31/2017	11292	11462	48	Marcellus
13	9/1/2017	11091	11261	48	Marcellus
14	9/1/2017	10891	11060	48	Marcellus
15	9/3/2017	10690	10859	48	Marcellus
16	9/3/2017	10489	10658	48	Marcellus
17	9/4/2017	10288	10457	48	Marcellus
18	9/4/2017	10087	10257	48	Marcellus
19	9/5/2017	9886	10056	48	Marcellus
20	9/5/2017	9686	9855	48	Marcellus
21	9/6/2017	9485	9654	48	Marcellus
22	9/6/2017	9284	9453	48	Marcellus
23	9/7/2017	9083	9252	48	Marcellus
24	9/7/2017	8882	9052	48	Marcellus
25	9/8/2017	8681	8851	48	Marcellus
26	9/8/2017	8481	8650	48	Marcellus
27	9/8/2017	8280	8449	48	Marcellus
28	9/9/2017	8079	8248	48	Marcellus
29	9/9/2017	7878	8047	48	Marcellus

EXHIBIT 2

Stage No.	Stimulations Date	Avg Pump Rate	Avg Treatment Pressure (PSI)	Max Breakdown Pressure (PSI)	ISIP (PSI)	Amount of Proppant (lbs)	Amount of Water (bbls)	Amount of Nitrogen/ other (units)
1	8/24/2017	71.2	7567	6806	5387	213800	8490	N/A
2	8/25/2017	71.9	7535	6865	5097	212400	8468	N/A
3	8/26/2017	71.9	7630	5935	5013	212350	8246	N/A
4	8/27/2017	69.9	7322	6006	5199	214000	8331	N/A
5	8/27/2017	80.0	7725	5849	5794	212200	8489	N/A
6	8/28/2017	72.4	7477	5764	5245	212750	8431	N/A
7	8/28/2017	74.0	7753	6474	5102	214130	9500	N/A
8	8/29/2017	77.1	7486	5563	5007	213600	8667	N/A
9	8/30/2017	76.8	7630	5796	5339	213700	8432	N/A
10	8/30/2017	75.1	7475	5569	5328	214130	8668	N/A
11	8/31/2017	76.5	7411	5455	4830	212750	9115	N/A
12	8/31/2017	75.1	7545	5663	5362	212840	9159	N/A
13	9/1/2017	76.1	7735	5840	5390	212750	10242	N/A
14	9/1/2017	75.6	7570	5930	5550	214540	8720	N/A
15	9/3/2017	75.5	7648	5805	5670	211840	8201	N/A
16	9/3/2017	76.1	7780	5574	5164	212620	8352	N/A
17	9/4/2017	74.9	8069	5783	5238	212850	8512	N/A
18	9/4/2017	70.4	7880	6037	4917	213250	9793	N/A
19	9/5/2017	72.5	7605	6096	5444	213420	8678	N/A
20	9/5/2017	76.2	7798	5702	5468	213450	9772	N/A
21	9/6/2017	73.7	7600	5863	5629	214780	8326	N/A
22	9/6/2017	73.6	7070	5461	5075	213000	8819	N/A
23	9/7/2017	74.6	7375	5842	5353	212560	8142	N/A
24	9/7/2017	74.9	7348	5968	5557	214200	8377	N/A
25	9/8/2017	75.7	7471	5707	5285	211980	8457	N/A
26	9/8/2017	72.9	7003	6320	5936	213870	8414	N/A
27	9/8/2017	75.4	7404	6518	5579	213900	8093	N/A
28	9/9/2017	73.7	6988	6192	4954	212900	8463	N/A
29	9/9/2017	74.3	6995	6510	5518	213250	8351	N/A
AVG=		74.4	7,514	5,962	5,325	6,183,810	251,708	TOTAL

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	87'	N/A	87'	N/A
Fresh Water	347'	N/A	347'	N/A
Siltstone	est. 0	327	est. 0	327
Shale and Coal	est. 327	367	est. 327	367
Shale and Siltstone	est. 367	407	est. 367	407
Sandstone w/trace coal	est. 407	427	est. 407	427
Sandstone	est. 427	587	est. 427	587
Siltstone	est. 587	887	est. 587	887
Sandstone w/ trace coal	est. 887	927	est. 887	927
Siltstone	est. 927	1107	est. 927	1107
Sandstone	est. 1107	1227	est. 1107	1227
Siltstone and Coal	est. 1227	1247	est. 1227	1247
Siltstone and Sandstone	est. 1247	1307	est. 1247	1307
Siltstone and Coal	est. 1307	1347	est. 1307	1347
Siltstone and Sandstone	est. 1347	1667	est. 1347	1667
Siltstone w/ trace coal	est. 1667	1747	est. 1667	1747
Siltstone and Sandstone	est. 1747	1847	est. 1747	1847
Siltstone w/ trace coal	est. 1847	1887	est. 1847	1887
Sandstone and Siltstone	est. 1887	2271	est. 1887	2279
Big Lime	2284	2687	2292	2695
Gantz Sand	2687	2818	2695	2826
Fifty Foot Sandstone	2818	2903	2826	2911
Gordon	2903	3065	2911	3073
Fifth Sandstone	3065	3121	3073	3129
Bayard	3121	3892	3129	3904
Spechley	3892	4159	3904	4183
Baltown	4159	4690	4183	4756
Bradford	4690	5195	4756	5304
Benson	5195	5368	5304	5492
Alexander	5368	5368	5492	5657
Elk	5368	6810	5657	6819
Sycamore	6785	7008	6794	7035
Middlesex	7008	7155	7035	7197
Burkett	7155	7182	7197	7229
Tully	7182	7343	7229	7464
Marcellus	7343	NA	7464	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.

Company:	Antero Resources	Local Co-ordinate Reference:	Well Truman Unit 1H
Project:	Harrison County West Virginia	TVD Reference:	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
Site:	Cleta / Opie / Maude Pad	MD Reference:	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
Well:	Truman Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Project	Harrison County West Virginia, Harrison County, USA		
Map System:	Universal Transverse Mercator (US Survey Fee	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	Cleta / Opie / Maude Pad, SHL Cleta Unit 1H				
Site Position:		Northing:	14,243,194.63 usft	Latitude:	39° 13' 20.344 N
From:	Map	Easting:	1,766,859.11 usft	Longitude:	80° 33' 12.736 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.28 °

Well	Truman Unit 1H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,243,222.59 usft	Latitude:	39° 13' 20.625 N
	+E/-W	0.0 usft	Easting:	1,766,773.61 usft	Longitude:	80° 33' 13.822 W
Position Uncertainty		2.0 usft	Wellhead Elevation:	1,430.0 usft	Ground Level:	1,405.0 usft

Wellbore	Original Wellpath
-----------------	-------------------

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/27/2014	-8.61	66.76	52,268

Design	As Drilled
---------------	------------

Audit Notes:	
Version:	1.0
Phase:	ACTUAL
Tie On Depth:	0.0

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	308.60

Survey Program	Date	7/31/2014		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
112.0	5,926.0	Survey #3 Gyro to KOP (Original Wellpath)	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper
6,043.0	13,759.0	Survey #4 MWD (Original Wellpath)	MWD SDI	MWD - Standard ver 1.0.1

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	14,243,222.59	1,766,773.61	39° 13' 20.625 N	80° 33' 13.822 W
112.0	0.36	328.93	112.0	0.3	-0.2	14,243,222.89	1,766,773.42	39° 13' 20.628 N	80° 33' 13.824 W
212.0	0.09	17.36	212.0	0.6	-0.3	14,243,223.24	1,766,773.29	39° 13' 20.631 N	80° 33' 13.826 W
312.0	0.18	57.03	312.0	0.8	-0.2	14,243,223.40	1,766,773.44	39° 13' 20.633 N	80° 33' 13.824 W
412.0	0.13	71.71	412.0	0.9	0.1	14,243,223.52	1,766,773.68	39° 13' 20.634 N	80° 33' 13.821 W
512.0	0.15	45.51	512.0	1.1	0.3	14,243,223.65	1,766,773.88	39° 13' 20.635 N	80° 33' 13.818 W
612.0	0.14	25.28	612.0	1.3	0.4	14,243,223.85	1,766,774.03	39° 13' 20.637 N	80° 33' 13.816 W
712.0	0.20	35.09	712.0	1.5	0.6	14,243,224.10	1,766,774.18	39° 13' 20.640 N	80° 33' 13.814 W
812.0	0.26	44.75	812.0	1.8	0.8	14,243,224.41	1,766,774.44	39° 13' 20.643 N	80° 33' 13.811 W

Company:	Antero Resources	Local Co-ordinate Reference:	Well Truman Unit 1H
Project:	Harrison County West Virginia	TVD Reference:	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
Site:	Cleta / Opie / Maude Pad	MD Reference:	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
Well:	Truman Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
912.0	0.24	66.19	912.0	2.1	1.2	14,243,224.65	1,766,774.79	39° 13' 20.645 N	80° 33' 13.806 W
1,012.0	0.25	66.98	1,012.0	2.2	1.6	14,243,224.82	1,766,775.18	39° 13' 20.647 N	80° 33' 13.801 W
1,112.0	0.35	97.54	1,112.0	2.3	2.1	14,243,224.87	1,766,775.69	39° 13' 20.647 N	80° 33' 13.795 W
1,212.0	0.28	90.25	1,212.0	2.2	2.6	14,243,224.83	1,766,776.23	39° 13' 20.647 N	80° 33' 13.788 W
1,312.0	0.38	106.16	1,312.0	2.1	3.2	14,243,224.73	1,766,776.80	39° 13' 20.646 N	80° 33' 13.781 W
1,412.0	2.31	195.30	1,412.0	0.1	3.0	14,243,222.70	1,766,776.58	39° 13' 20.626 N	80° 33' 13.784 W
1,512.0	6.49	193.68	1,511.6	-7.3	1.1	14,243,215.26	1,766,774.71	39° 13' 20.552 N	80° 33' 13.808 W
1,612.0	9.52	214.06	1,610.7	-19.7	-4.9	14,243,202.91	1,766,768.74	39° 13' 20.430 N	80° 33' 13.885 W
1,712.0	11.65	224.61	1,709.0	-33.7	-16.6	14,243,188.87	1,766,757.02	39° 13' 20.292 N	80° 33' 14.035 W
1,812.0	12.13	224.90	1,806.8	-48.4	-31.1	14,243,174.24	1,766,742.51	39° 13' 20.148 N	80° 33' 14.220 W
1,912.0	8.01	218.34	1,905.3	-61.3	-42.8	14,243,161.33	1,766,730.77	39° 13' 20.021 N	80° 33' 14.370 W
2,012.0	4.55	244.23	2,004.7	-68.5	-50.7	14,243,154.13	1,766,722.87	39° 13' 19.950 N	80° 33' 14.471 W
2,112.0	3.77	247.45	2,104.4	-71.4	-57.3	14,243,151.15	1,766,716.26	39° 13' 19.921 N	80° 33' 14.555 W
2,212.0	3.28	248.97	2,204.2	-73.7	-63.0	14,243,148.86	1,766,710.56	39° 13' 19.899 N	80° 33' 14.628 W
2,312.0	2.56	250.35	2,304.1	-75.5	-67.8	14,243,147.08	1,766,705.78	39° 13' 19.881 N	80° 33' 14.688 W
2,412.0	2.24	252.48	2,404.0	-76.8	-71.8	14,243,145.74	1,766,701.82	39° 13' 19.868 N	80° 33' 14.739 W
2,512.0	1.83	248.01	2,503.9	-78.0	-75.1	14,243,144.56	1,766,698.47	39° 13' 19.857 N	80° 33' 14.782 W
2,612.0	1.43	244.30	2,603.9	-79.2	-77.7	14,243,143.42	1,766,695.87	39° 13' 19.846 N	80° 33' 14.815 W
2,712.0	1.09	253.88	2,703.9	-80.0	-79.8	14,243,142.61	1,766,693.83	39° 13' 19.838 N	80° 33' 14.841 W
2,812.0	0.84	255.80	2,803.9	-80.4	-81.4	14,243,142.17	1,766,692.20	39° 13' 19.834 N	80° 33' 14.861 W
2,912.0	0.55	231.15	2,903.9	-80.9	-82.5	14,243,141.69	1,766,691.12	39° 13' 19.829 N	80° 33' 14.875 W
3,012.0	0.43	206.39	3,003.9	-81.5	-83.0	14,243,141.05	1,766,690.58	39° 13' 19.823 N	80° 33' 14.882 W
3,112.0	0.43	217.17	3,103.9	-82.2	-83.4	14,243,140.42	1,766,690.19	39° 13' 19.816 N	80° 33' 14.887 W
3,212.0	0.50	206.68	3,203.8	-82.9	-83.8	14,243,139.73	1,766,689.76	39° 13' 19.809 N	80° 33' 14.893 W
3,312.0	0.31	156.85	3,303.8	-83.5	-83.9	14,243,139.09	1,766,689.67	39° 13' 19.803 N	80° 33' 14.894 W
3,412.0	0.30	137.17	3,403.8	-83.9	-83.6	14,243,138.65	1,766,689.96	39° 13' 19.799 N	80° 33' 14.890 W
3,512.0	0.46	165.93	3,503.8	-84.5	-83.4	14,243,138.07	1,766,690.23	39° 13' 19.793 N	80° 33' 14.887 W
3,612.0	4.40	191.40	3,603.7	-88.7	-84.0	14,243,133.92	1,766,689.57	39° 13' 19.752 N	80° 33' 14.895 W
3,712.0	6.90	194.73	3,703.2	-98.2	-86.3	14,243,124.34	1,766,687.29	39° 13' 19.658 N	80° 33' 14.925 W
3,812.0	9.85	196.22	3,802.2	-112.3	-90.2	14,243,110.32	1,766,683.37	39° 13' 19.519 N	80° 33' 14.976 W
3,912.0	12.86	203.49	3,900.2	-130.7	-97.1	14,243,091.89	1,766,676.54	39° 13' 19.337 N	80° 33' 15.064 W
4,012.0	15.85	208.24	3,997.1	-152.9	-108.0	14,243,069.65	1,766,665.64	39° 13' 19.118 N	80° 33' 15.203 W
4,112.0	18.46	216.97	4,092.6	-177.6	-124.0	14,243,044.96	1,766,649.65	39° 13' 18.874 N	80° 33' 15.408 W
4,212.0	19.77	217.44	4,187.1	-203.7	-143.8	14,243,018.89	1,766,629.85	39° 13' 18.618 N	80° 33' 15.662 W
4,312.0	21.91	218.32	4,280.6	-231.8	-165.6	14,242,990.82	1,766,608.00	39° 13' 18.341 N	80° 33' 15.941 W
4,412.0	22.43	220.01	4,373.2	-261.0	-189.4	14,242,961.57	1,766,584.16	39° 13' 18.053 N	80° 33' 16.246 W
4,512.0	22.35	218.59	4,465.6	-290.5	-213.6	14,242,932.09	1,766,560.04	39° 13' 17.763 N	80° 33' 16.554 W
4,612.0	22.72	215.96	4,558.0	-321.0	-236.8	14,242,901.60	1,766,536.84	39° 13' 17.462 N	80° 33' 16.851 W
4,712.0	23.28	214.26	4,650.1	-353.0	-259.2	14,242,869.63	1,766,514.37	39° 13' 17.147 N	80° 33' 17.139 W
4,812.0	23.59	214.27	4,741.8	-385.8	-281.6	14,242,836.77	1,766,491.98	39° 13' 16.824 N	80° 33' 17.425 W
4,912.0	23.80	216.07	4,833.4	-418.7	-304.8	14,242,803.92	1,766,468.83	39° 13' 16.500 N	80° 33' 17.722 W
5,012.0	22.89	214.07	4,925.2	-451.1	-327.5	14,242,771.50	1,766,446.06	39° 13' 16.180 N	80° 33' 18.013 W
5,112.0	23.06	212.63	5,017.3	-483.7	-349.0	14,242,738.90	1,766,424.60	39° 13' 15.859 N	80° 33' 18.288 W
5,212.0	22.88	212.38	5,109.3	-516.6	-370.0	14,242,705.98	1,766,403.63	39° 13' 15.535 N	80° 33' 18.557 W
5,312.0	21.96	207.35	5,201.8	-549.6	-389.0	14,242,672.96	1,766,384.63	39° 13' 15.209 N	80° 33' 18.800 W
5,412.0	22.51	212.27	5,294.3	-582.4	-407.8	14,242,640.16	1,766,365.82	39° 13' 14.886 N	80° 33' 19.041 W
5,512.0	23.75	218.87	5,386.3	-614.3	-430.7	14,242,608.29	1,766,342.95	39° 13' 14.572 N	80° 33' 19.334 W
5,612.0	21.50	218.44	5,478.6	-644.3	-454.7	14,242,578.25	1,766,318.92	39° 13' 14.276 N	80° 33' 19.641 W
5,712.0	18.39	219.27	5,572.6	-670.9	-476.1	14,242,551.68	1,766,297.54	39° 13' 14.014 N	80° 33' 19.915 W
5,812.0	19.87	223.47	5,667.1	-695.5	-497.7	14,242,527.13	1,766,275.86	39° 13' 13.773 N	80° 33' 20.192 W
5,912.0	22.47	226.06	5,760.3	-721.1	-523.2	14,242,501.53	1,766,250.40	39° 13' 13.521 N	80° 33' 20.517 W
5,926.0	22.37	225.26	5,773.3	-724.8	-527.0	14,242,497.80	1,766,246.58	39° 13' 13.484 N	80° 33' 20.566 W
6,043.0	20.33	217.68	5,882.3	-756.6	-555.3	14,242,466.04	1,766,218.34	39° 13' 13.171 N	80° 33' 20.927 W

Company:	Antero Resources	Local Co-ordinate Reference:	Well Truman Unit 1H
Project:	Harrison County West Virginia	TVD Reference:	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
Site:	Cleta / Opie / Maude Pad	MD Reference:	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
Well:	Truman Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,137.0	21.28	216.69	5,970.1	-783.2	-575.4	14,242,439.43	1,766,198.16	39° 13' 12.909 N	80° 33' 21.185 W
6,231.0	20.20	220.03	6,058.0	-809.3	-596.1	14,242,413.33	1,766,177.53	39° 13' 12.652 N	80° 33' 21.449 W
6,325.0	21.95	220.73	6,145.8	-835.0	-618.0	14,242,387.59	1,766,155.63	39° 13' 12.399 N	80° 33' 21.729 W
6,420.0	23.49	218.11	6,233.4	-863.4	-641.2	14,242,359.23	1,766,132.36	39° 13' 12.119 N	80° 33' 22.026 W
6,514.0	24.16	220.08	6,319.4	-892.8	-665.2	14,242,329.77	1,766,108.41	39° 13' 11.829 N	80° 33' 22.333 W
6,608.0	25.07	220.89	6,404.8	-922.6	-690.6	14,242,300.00	1,766,082.99	39° 13' 11.536 N	80° 33' 22.658 W
6,702.0	25.52	223.85	6,489.8	-952.3	-717.7	14,242,270.34	1,766,055.92	39° 13' 11.244 N	80° 33' 23.003 W
6,796.0	25.46	222.16	6,574.7	-981.8	-745.3	14,242,240.76	1,766,028.33	39° 13' 10.953 N	80° 33' 23.356 W
6,890.0	25.58	221.16	6,659.5	-1,012.1	-772.2	14,242,210.50	1,766,001.41	39° 13' 10.655 N	80° 33' 23.700 W
6,984.0	26.78	222.00	6,743.9	-1,043.1	-799.7	14,242,179.49	1,765,973.89	39° 13' 10.350 N	80° 33' 24.052 W
7,070.0	29.05	222.58	6,819.8	-1,072.9	-826.8	14,242,149.71	1,765,946.79	39° 13' 10.057 N	80° 33' 24.398 W
Sycamore									
7,078.0	29.26	222.63	6,826.8	-1,075.8	-829.5	14,242,146.84	1,765,944.15	39° 13' 10.028 N	80° 33' 24.432 W
7,110.0	28.70	222.61	6,854.8	-1,087.2	-840.0	14,242,135.43	1,765,933.66	39° 13' 9.916 N	80° 33' 24.566 W
7,141.0	29.34	225.26	6,881.9	-1,098.0	-850.4	14,242,124.61	1,765,923.22	39° 13' 9.810 N	80° 33' 24.699 W
7,173.0	29.81	231.26	6,909.8	-1,108.5	-862.2	14,242,114.11	1,765,911.45	39° 13' 9.706 N	80° 33' 24.849 W
7,204.0	30.57	237.65	6,936.6	-1,117.5	-874.8	14,242,105.07	1,765,898.77	39° 13' 9.618 N	80° 33' 25.011 W
7,235.0	30.78	243.92	6,963.2	-1,125.2	-888.6	14,242,097.36	1,765,884.98	39° 13' 9.542 N	80° 33' 25.187 W
7,267.0	30.76	248.58	6,990.7	-1,131.8	-903.6	14,242,090.77	1,765,870.01	39° 13' 9.478 N	80° 33' 25.378 W
7,298.0	30.96	251.70	7,017.4	-1,137.2	-918.5	14,242,085.37	1,765,855.06	39° 13' 9.425 N	80° 33' 25.568 W
7,326.0	31.11	255.47	7,041.3	-1,141.3	-932.4	14,242,081.29	1,765,841.22	39° 13' 9.385 N	80° 33' 25.744 W
Middlesex									
7,330.0	31.14	256.00	7,044.8	-1,141.8	-934.4	14,242,080.78	1,765,839.21	39° 13' 9.380 N	80° 33' 25.770 W
7,361.0	31.46	258.83	7,071.3	-1,145.3	-950.1	14,242,077.28	1,765,823.50	39° 13' 9.347 N	80° 33' 25.970 W
7,393.0	32.87	263.98	7,098.4	-1,147.8	-966.9	14,242,074.75	1,765,806.67	39° 13' 9.322 N	80° 33' 26.184 W
7,424.0	34.90	269.46	7,124.1	-1,148.8	-984.2	14,242,073.78	1,765,789.43	39° 13' 9.314 N	80° 33' 26.403 W
7,455.0	37.30	274.13	7,149.1	-1,148.2	-1,002.4	14,242,074.38	1,765,771.18	39° 13' 9.320 N	80° 33' 26.635 W
7,487.0	40.00	276.28	7,174.1	-1,146.4	-1,022.3	14,242,076.20	1,765,751.29	39° 13' 9.339 N	80° 33' 26.888 W
7,500.0	41.12	277.33	7,184.0	-1,145.4	-1,030.7	14,242,077.20	1,765,742.89	39° 13' 9.350 N	80° 33' 26.994 W
Burkett									
7,518.0	42.69	278.70	7,197.4	-1,143.7	-1,042.6	14,242,078.88	1,765,730.99	39° 13' 9.367 N	80° 33' 27.145 W
7,545.0	45.62	281.10	7,216.8	-1,140.5	-1,061.1	14,242,082.12	1,765,712.47	39° 13' 9.400 N	80° 33' 27.381 W
Tully									
7,549.0	46.06	281.44	7,219.6	-1,139.9	-1,064.0	14,242,082.68	1,765,709.65	39° 13' 9.405 N	80° 33' 27.416 W
7,581.0	50.20	283.60	7,240.9	-1,134.7	-1,087.2	14,242,087.86	1,765,686.40	39° 13' 9.458 N	80° 33' 27.712 W
7,612.0	53.07	285.17	7,260.2	-1,128.7	-1,110.7	14,242,093.91	1,765,662.86	39° 13' 9.519 N	80° 33' 28.010 W
7,644.0	54.53	287.28	7,279.1	-1,121.5	-1,135.5	14,242,101.13	1,765,638.07	39° 13' 9.591 N	80° 33' 28.325 W
7,675.0	56.18	289.47	7,296.7	-1,113.4	-1,159.7	14,242,109.17	1,765,613.87	39° 13' 9.672 N	80° 33' 28.632 W
7,707.0	58.44	292.71	7,314.0	-1,103.7	-1,184.8	14,242,118.87	1,765,588.76	39° 13' 9.769 N	80° 33' 28.951 W
7,726.0	59.71	294.30	7,323.7	-1,097.2	-1,199.8	14,242,125.37	1,765,573.81	39° 13' 9.834 N	80° 33' 29.140 W
Hamilton									
7,738.0	60.52	295.28	7,329.7	-1,092.9	-1,209.2	14,242,129.73	1,765,564.37	39° 13' 9.878 N	80° 33' 29.260 W
7,769.0	62.60	296.12	7,344.5	-1,081.0	-1,233.8	14,242,141.55	1,765,539.81	39° 13' 9.996 N	80° 33' 29.571 W
7,801.0	65.13	297.44	7,358.6	-1,068.1	-1,259.4	14,242,154.50	1,765,514.17	39° 13' 10.125 N	80° 33' 29.897 W
7,832.0	67.19	299.02	7,371.1	-1,054.7	-1,284.4	14,242,167.91	1,765,489.19	39° 13' 10.259 N	80° 33' 30.213 W
7,858.0	69.14	300.57	7,380.8	-1,042.7	-1,305.4	14,242,179.90	1,765,468.25	39° 13' 10.378 N	80° 33' 30.479 W
Marcellus									
7,864.0	69.59	300.92	7,382.9	-1,039.8	-1,310.2	14,242,182.77	1,765,463.42	39° 13' 10.407 N	80° 33' 30.540 W
7,895.0	72.26	302.09	7,393.0	-1,024.5	-1,335.2	14,242,198.09	1,765,438.44	39° 13' 10.560 N	80° 33' 30.856 W
7,926.0	75.85	304.04	7,401.5	-1,008.2	-1,360.1	14,242,214.35	1,765,413.47	39° 13' 10.722 N	80° 33' 31.173 W
7,958.0	80.52	306.76	7,408.1	-990.1	-1,385.7	14,242,232.49	1,765,387.95	39° 13' 10.902 N	80° 33' 31.496 W
7,989.0	83.34	307.44	7,412.4	-971.6	-1,410.1	14,242,251.00	1,765,363.48	39° 13' 11.086 N	80° 33' 31.806 W

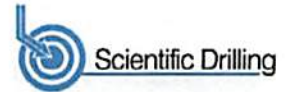
Company:	Antero Resources	Local Co-ordinate Reference:	Well Truman Unit 1H
Project:	Harrison County West Virginia	TVD Reference:	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
Site:	Cleta / Opie / Maude Pad	MD Reference:	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
Well:	Truman Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,029.0	86.41	308.21	7,416.0	-947.2	-1,441.6	14,242,275.43	1,765,332.01	39° 13' 11.329 N	80° 33' 32.204 W
8,141.0	89.10	307.72	7,420.4	-878.3	-1,529.8	14,242,344.27	1,765,243.79	39° 13' 12.014 N	80° 33' 33.322 W
8,235.0	88.63	306.95	7,422.3	-821.3	-1,604.5	14,242,401.27	1,765,169.06	39° 13' 12.582 N	80° 33' 34.268 W
8,329.0	89.70	310.56	7,423.6	-762.5	-1,677.8	14,242,460.10	1,765,095.78	39° 13' 13.167 N	80° 33' 35.196 W
8,423.0	88.42	310.01	7,425.2	-701.7	-1,749.5	14,242,520.87	1,765,024.09	39° 13' 13.771 N	80° 33' 36.103 W
8,518.0	88.89	309.84	7,427.4	-640.8	-1,822.4	14,242,581.82	1,764,951.25	39° 13' 14.377 N	80° 33' 37.025 W
8,612.0	89.60	309.31	7,428.6	-580.9	-1,894.8	14,242,641.70	1,764,878.81	39° 13' 14.973 N	80° 33' 37.942 W
8,706.0	88.99	307.52	7,429.8	-522.5	-1,968.4	14,242,700.10	1,764,805.16	39° 13' 15.554 N	80° 33' 38.875 W
8,800.0	87.48	306.40	7,432.7	-466.0	-2,043.5	14,242,756.59	1,764,730.09	39° 13' 16.116 N	80° 33' 39.826 W
8,894.0	88.06	306.32	7,436.3	-410.3	-2,119.2	14,242,812.27	1,764,654.45	39° 13' 16.670 N	80° 33' 40.784 W
8,988.0	88.59	306.85	7,439.1	-354.3	-2,194.6	14,242,868.28	1,764,579.00	39° 13' 17.227 N	80° 33' 41.739 W
9,082.0	89.33	308.09	7,440.8	-297.1	-2,269.2	14,242,925.45	1,764,504.41	39° 13' 17.796 N	80° 33' 42.684 W
9,176.0	88.46	308.84	7,442.6	-238.7	-2,342.8	14,242,983.91	1,764,430.83	39° 13' 18.378 N	80° 33' 43.616 W
9,270.0	89.20	309.80	7,444.5	-179.1	-2,415.5	14,243,043.46	1,764,358.12	39° 13' 18.970 N	80° 33' 44.536 W
9,365.0	88.26	310.30	7,446.6	-118.0	-2,488.2	14,243,104.57	1,764,285.42	39° 13' 19.578 N	80° 33' 45.456 W
9,459.0	88.59	310.92	7,449.2	-56.9	-2,559.5	14,243,165.73	1,764,214.09	39° 13' 20.186 N	80° 33' 46.359 W
9,553.0	87.72	309.42	7,452.2	3.7	-2,631.3	14,243,226.33	1,764,142.30	39° 13' 20.789 N	80° 33' 47.268 W
9,647.0	87.51	309.33	7,456.2	63.3	-2,703.9	14,243,285.92	1,764,069.70	39° 13' 21.381 N	80° 33' 48.187 W
9,741.0	86.98	308.74	7,460.7	122.5	-2,776.8	14,243,345.05	1,763,996.77	39° 13' 21.969 N	80° 33' 49.111 W
9,835.0	89.34	308.31	7,463.7	181.0	-2,850.3	14,243,403.56	1,763,923.27	39° 13' 22.551 N	80° 33' 50.041 W
9,930.0	89.97	307.67	7,464.3	239.4	-2,925.2	14,243,462.03	1,763,848.40	39° 13' 23.133 N	80° 33' 50.989 W
10,024.0	89.87	305.45	7,464.4	295.4	-3,000.7	14,243,518.02	1,763,772.90	39° 13' 23.690 N	80° 33' 51.946 W
10,118.0	92.05	306.09	7,462.8	350.4	-3,077.0	14,243,572.96	1,763,696.65	39° 13' 24.237 N	80° 33' 52.912 W
10,212.0	91.64	305.24	7,459.8	405.1	-3,153.3	14,243,627.74	1,763,620.32	39° 13' 24.782 N	80° 33' 53.879 W
10,306.0	92.28	305.84	7,456.6	459.7	-3,229.7	14,243,682.34	1,763,543.88	39° 13' 25.326 N	80° 33' 54.847 W
10,400.0	91.27	308.44	7,453.7	516.5	-3,304.6	14,243,739.06	1,763,468.99	39° 13' 25.890 N	80° 33' 55.795 W
10,494.0	90.20	307.39	7,452.5	574.2	-3,378.8	14,243,796.82	1,763,394.84	39° 13' 26.465 N	80° 33' 56.734 W
10,588.0	88.73	309.46	7,453.3	632.6	-3,452.4	14,243,855.23	1,763,321.20	39° 13' 27.046 N	80° 33' 57.667 W
10,682.0	90.27	310.88	7,454.2	693.3	-3,524.2	14,243,915.86	1,763,249.38	39° 13' 27.649 N	80° 33' 58.576 W
10,776.0	89.20	309.36	7,454.6	753.8	-3,596.1	14,243,976.43	1,763,177.51	39° 13' 28.251 N	80° 33' 59.486 W
10,871.0	88.02	307.55	7,456.9	812.9	-3,670.5	14,244,035.49	1,763,103.14	39° 13' 28.838 N	80° 34' 0.428 W
10,965.0	88.69	308.98	7,459.6	871.1	-3,744.2	14,244,093.68	1,763,029.37	39° 13' 29.417 N	80° 34' 1.362 W
11,058.0	88.22	307.93	7,462.1	928.9	-3,817.0	14,244,151.49	1,762,956.57	39° 13' 29.992 N	80° 34' 2.284 W
11,152.0	88.79	310.37	7,464.6	988.2	-3,889.9	14,244,210.82	1,762,883.70	39° 13' 30.582 N	80° 34' 3.207 W
11,246.0	90.37	312.19	7,465.3	1,050.2	-3,960.5	14,244,272.83	1,762,813.07	39° 13' 31.199 N	80° 34' 4.101 W
11,340.0	88.76	310.05	7,466.0	1,112.0	-4,031.3	14,244,334.64	1,762,742.26	39° 13' 31.813 N	80° 34' 4.997 W
11,435.0	88.83	310.21	7,468.0	1,173.3	-4,104.0	14,244,395.85	1,762,669.64	39° 13' 32.422 N	80° 34' 5.916 W
11,529.0	89.06	310.69	7,469.7	1,234.2	-4,175.5	14,244,456.83	1,762,598.12	39° 13' 33.028 N	80° 34' 6.822 W
11,623.0	89.73	309.58	7,470.7	1,294.8	-4,247.3	14,244,517.42	1,762,526.26	39° 13' 33.631 N	80° 34' 7.732 W
11,717.0	89.16	308.51	7,471.6	1,354.0	-4,320.3	14,244,576.63	1,762,453.26	39° 13' 34.220 N	80° 34' 8.656 W
11,811.0	88.46	307.76	7,473.5	1,412.1	-4,394.3	14,244,634.66	1,762,379.34	39° 13' 34.797 N	80° 34' 9.592 W
11,905.0	88.36	308.31	7,476.2	1,470.0	-4,468.3	14,244,692.55	1,762,305.33	39° 13' 35.373 N	80° 34' 10.529 W
12,000.0	88.42	309.97	7,478.8	1,529.9	-4,541.9	14,244,752.49	1,762,231.68	39° 13' 35.969 N	80° 34' 11.462 W
12,094.0	88.62	311.04	7,481.3	1,590.9	-4,613.4	14,244,813.53	1,762,160.24	39° 13' 36.576 N	80° 34' 12.367 W
12,188.0	88.32	308.90	7,483.8	1,651.3	-4,685.4	14,244,873.89	1,762,088.23	39° 13' 37.176 N	80° 34' 13.278 W
12,282.0	88.59	308.43	7,486.3	1,710.0	-4,758.7	14,244,932.59	1,762,014.86	39° 13' 37.760 N	80° 34' 14.208 W
12,376.0	88.12	307.49	7,489.0	1,767.8	-4,832.8	14,244,990.39	1,761,940.77	39° 13' 38.335 N	80° 34' 15.146 W
12,471.0	87.85	307.41	7,492.3	1,825.5	-4,908.2	14,245,048.12	1,761,865.40	39° 13' 38.909 N	80° 34' 16.100 W
12,565.0	87.55	307.69	7,496.1	1,882.8	-4,982.7	14,245,105.36	1,761,790.94	39° 13' 39.478 N	80° 34' 17.044 W
12,659.0	88.69	308.35	7,499.2	1,940.6	-5,056.7	14,245,163.23	1,761,716.93	39° 13' 40.054 N	80° 34' 17.981 W
12,753.0	89.06	307.75	7,501.0	1,998.6	-5,130.7	14,245,221.15	1,761,642.92	39° 13' 40.630 N	80° 34' 18.918 W
12,847.0	87.96	306.92	7,503.5	2,055.5	-5,205.4	14,245,278.14	1,761,568.21	39° 13' 41.197 N	80° 34' 19.865 W
12,941.0	88.42	306.18	7,506.5	2,111.5	-5,280.9	14,245,334.09	1,761,492.73	39° 13' 41.754 N	80° 34' 20.821 W



Survey Report - Geographic



Company:	Antero Resources	Local Co-ordinate Reference:	Well Truman Unit 1H
Project:	Harrison County West Virginia	TVD Reference:	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
Site:	Cleta / Opie / Maude Pad	MD Reference:	Patterson : Truman 1H 1405 GL + 25 KB @ 1430.0usft
Well:	Truman Unit 1H	North Reference:	Grid
Wellbore:	Original Wellpath	Survey Calculation Method:	Minimum Curvature
Design:	As Drilled	Database:	Oklahoma District

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude	
13,036.0	88.89	307.22	7,508.7	2,168.3	-5,357.0	14,245,390.85	1,761,416.58	39° 13' 42.319 N	80° 34' 21.785 W	
13,130.0	89.23	310.05	7,510.2	2,226.9	-5,430.4	14,245,449.52	1,761,343.17	39° 13' 42.902 N	80° 34' 22.715 W	
13,224.0	89.46	310.86	7,511.3	2,287.9	-5,502.0	14,245,510.51	1,761,271.65	39° 13' 43.509 N	80° 34' 23.620 W	
13,317.0	89.36	310.33	7,512.3	2,348.4	-5,572.6	14,245,571.02	1,761,201.04	39° 13' 44.110 N	80° 34' 24.515 W	
13,412.0	89.87	310.54	7,512.9	2,410.0	-5,644.9	14,245,632.64	1,761,128.73	39° 13' 44.723 N	80° 34' 25.430 W	
13,506.0	90.44	309.43	7,512.6	2,470.4	-5,716.9	14,245,693.04	1,761,056.71	39° 13' 45.323 N	80° 34' 26.342 W	
13,600.0	89.19	307.58	7,512.9	2,529.0	-5,790.4	14,245,751.56	1,760,983.16	39° 13' 45.905 N	80° 34' 27.274 W	
13,701.0	90.48	309.01	7,513.2	2,591.6	-5,869.7	14,245,814.15	1,760,903.89	39° 13' 46.528 N	80° 34' 28.277 W	
13,759.0	90.48	309.01	7,512.8	2,628.1	-5,914.8	14,245,850.65	1,760,858.83	39° 13' 46.891 N	80° 34' 28.848 W	

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
7,070.0	6,819.8	-1,072.9	-826.8	Sycamore	
7,326.0	7,041.3	-1,141.3	-932.4	Middlesex	
7,500.0	7,184.0	-1,145.4	-1,030.7	Burkett	
7,545.0	7,216.8	-1,140.5	-1,061.1	Tully	
7,726.0	7,323.7	-1,097.2	-1,199.8	Hamilton	
7,858.0	7,380.8	-1,042.7	-1,305.4	Marcellus	

Checked By: _____ Approved By: _____ Date: _____

Hydraulic Fracturing Fluid Product Component Information Disclosure

Job Start Date:	8/24/2017
Job End Date:	9/9/2017
State:	West Virginia
County:	Harrison
API Number:	47-033-05714-00-00
Operator Name:	Antero Resources Corporation
Well Name and Number:	Truman 1H
Latitude:	39.22239444
Longitude:	-80.55383889
Datum:	NAD83
Federal Well:	NO
Indian Well:	NO
True Vertical Depth:	7,513
Total Base Water Volume (gal):	10,788,444
Total Base Non Water Volume:	0



Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Antero Resources	Carrier/Base Fluid	Water	7732-18-5	100.00000	87.93094	
Sand	U.S. Well Services, LLC	Proppant	Crystalline Silica, quartz	14808-60-7	100.00000	11.85462	
HCL Acid (12.6%-17.5%)	U.S. Well Services, LLC	Bulk Acid	Water	7732-18-5	87.40000	0.10675	
			Hydrogen Chloride	7647-01-0	17.50000	0.02482	
LGC-15	U.S. Well Services, LLC	Gelling Agents	Guar Gum	9000-30-0	50.00000	0.01804	
			Petroleum Distillates	64742-47-8	60.00000	0.01708	
			Suspending agent (solid)	14808-60-7	3.00000	0.00276	
			Surfactant	68439-51-0	3.00000	0.00108	
WFRA-405	U.S. Well Services, LLC	Friction Reducer	2-Propenoic acid, polymer with 2 propenamide	9003-06-9	30.00000	0.02006	
			Hydrated light distillate (petroleum)	64742-47-8	30.00000	0.01614	

Bioclear 2000	U.S. Well Services, LLC	Anti-Bacterial Agent					
			2,2-dibromo-3-nitrilopropionamide	10222-01-2	20.00000	0.00416	
			Deionized Water	7732-18-5	28.00000	0.00238	
SI-1200s	U.S. Well Services, LLC	Scale Inhibitor					
			Alkyl Phosphonic Acid	Proprietary	5.00000	0.00064	
			Ammonia	7664-41-7	0.50000	0.00010	
AP One	U.S. Well Services, LLC	Gel Breakers					
			Ammonium Persulfate	7727-54-0	100.00000	0.00036	
AI-303	U.S. Well Services, LLC	Acid Corrosion Inhibitors					
			Ethylene glycol	107-21-1	40.00000	0.00004	
			Formic acid	64-18-6	20.00000	0.00002	
			Cinnamaldehyde	104-55-2	20.00000	0.00002	
			Butyl cellosolve	111-76-2	20.00000	0.00001	
			Polyether	60828-78-6	10.00000	0.00001	
			Acetophenone, thiourea, formaldehyde polymer	68527-49-1	5.00000	0.00000	

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

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

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

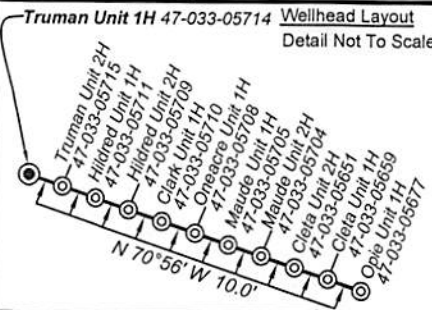
Note: For Field Development Products (products that begin with FDP), MSDS level only information has been provided.

Ingredient information for chemicals subject to 29 CFR 1910.1200(i) and Appendix D are obtained from suppliers Material Safety Data Sheets (MSDS)

Antero Resources Well No. Truman Unit 1H As-Drilled Plat Antero Resources Corporation

Legend

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



3,564' to Top Hole

LATITUDE 39 - 15 - 00

Notes:

West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements. Well No. Truman Unit 1H Top Hole coordinates are N: 264,864.29 Latitude: 39°13'20.64" E: 1,701,441.95 Longitude: 80°33'13.81" Bottom Hole coordinates are N: 267,589.53 Latitude: 39°13'46.89" E: 1,695,568.82 Longitude: 80°34'28.85" UTM Zone 17, NAD 1983 Top Hole Coordinates: Bottom Hole Coordinates: N: 4,341,561.889m N: 4,342,362.288m E: 538,528.552m E: 536,725.430m Plat orientation and corner and well references are based upon the grid north meridian. Well location references are based upon the magnetic meridian.

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

Kenneth J. Plum, P.S. 2216

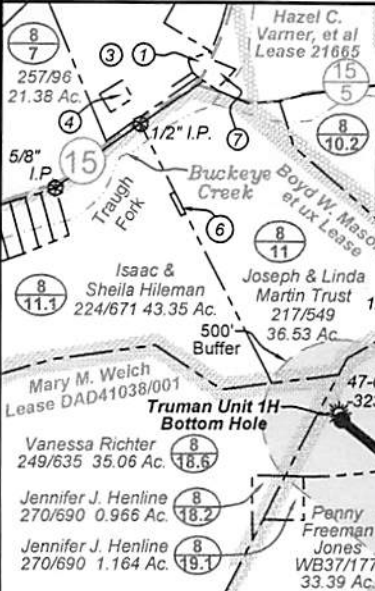
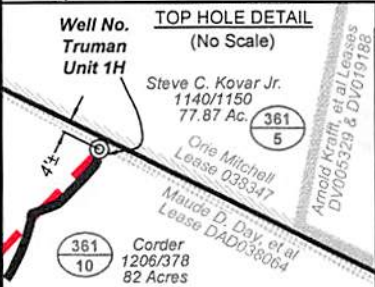
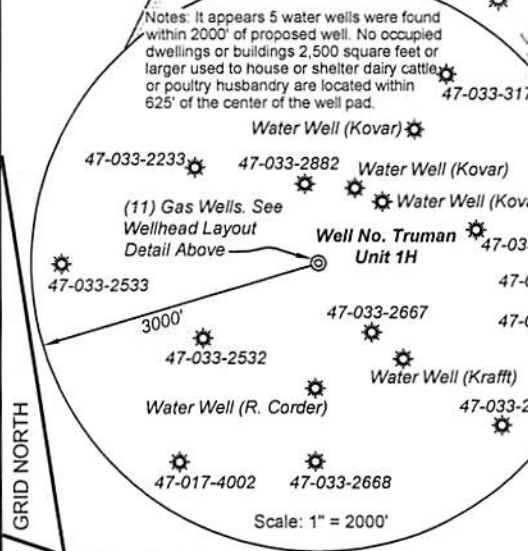


Table with 4 columns: Par, Owner, DB/Pg, Acres. Lists parcels 11, 12, 13.

Table with 4 columns: Par, Owner, DB/Pg, Acres. Lists parcels 1 through 7.



Top Hole coordinates verified by survey grade GPS. As-drilled data and information was provided by Antero Resources Corporation. Allegheny Surveys, Inc. (ASI) is not certifying the data and information provided.



(+) Denotes Location of Well on United States Topographic Maps

Table with 3 columns: Line, Bearing, Distance. Lists lines L1 through L4.

FILE NO: 233-30-G-12
DRAWING NO: 233-12 Truman Drilled 1H
SCALE: 1" = 1200'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

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

DATE: October 19 2017
OPERATOR'S WELL NO. Truman Unit 1H
API WELL NO: 47 - 033 - 05714
STATE COUNTY PERMIT

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL
(If GAS) PRODUCTION: STORAGE DEEP SHALLOW
LOCATION: ELEVATION: As-Built Grade - 1405' WATERSHED: Tenmile Creek QUADRANGLE: Big Isaac
DISTRICT: Union COUNTY: Harrison
SURFACE OWNER: Gerald & Louella Corder James Ross, et ux DAD40725/001 ACREAGE: 82
ROYALTY OWNER: Maude D. Day, et al; Denzil O. Freeman, et ux, et al WENDALL CALHOUN, et ux, et al CWM #268 LEASE NO: DAD038064 ACREAGE: 147; 76; 50; 125
PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled TVD 7,513'
PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale DEPTH: MD 13,759'

9,437' to Bottom Hole

3,564' to Top Hole

LATITUDE 39 - 15 - 00

LONGITUDE 80 - 32 - 30

10,011' to Top Hole

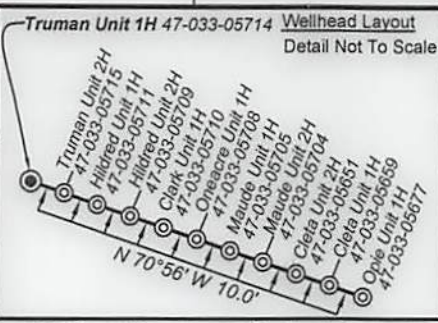
7,286' to Bottom Hole

Antero Resources Well No. Truman Unit 1H As-Drilled Plat

Antero Resources Corporation

Legend

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



Notes:

West Virginia Coordinate System of 1927, North Zone based upon Differential GPS Measurements.

Well No. Truman Unit 1H Top Hole coordinates are
N: 264,864.29 Latitude: 39°13'20.64"
E: 1,701,441.95 Longitude: 80°33'13.81"

Bottom Hole coordinates are
N: 267,589.53 Latitude: 39°13'46.89"
E: 1,695,568.82 Longitude: 80°34'28.85"

UTM Zone 17, NAD 1983

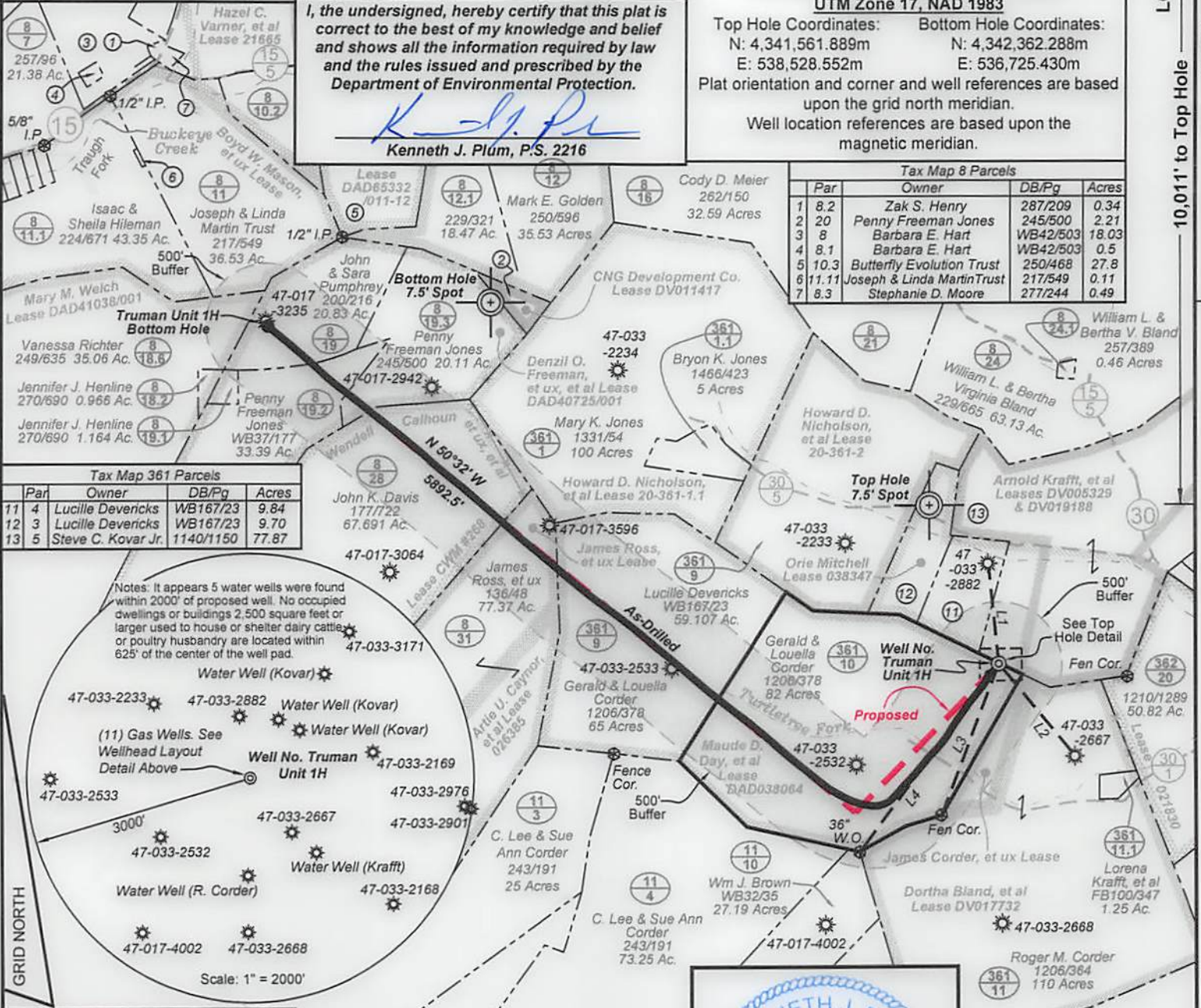
Top Hole Coordinates: Bottom Hole Coordinates:
N: 4,341,561.889m N: 4,342,362.288m
E: 538,528.552m E: 536,725.430m

Plat orientation and corner and well references are based upon the grid north meridian.
Well location references are based upon the magnetic meridian.

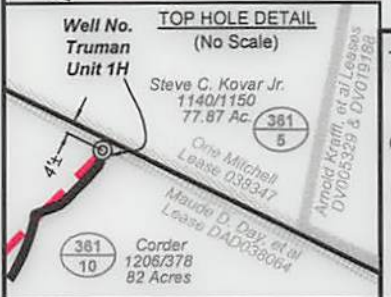
I, the undersigned, hereby certify that this plat is correct to the best of my knowledge and belief and shows all the information required by law and the rules issued and prescribed by the Department of Environmental Protection.

Kenneth J. Plum
Kenneth J. Plum, P.S. 2216

Tax Map 8 Parcels			
Par	Owner	DB/Pg	Acres
1	Zak S. Henry	287/209	0.34
2	Penny Freeman Jones	245/500	2.21
3	Barbara E. Hart	WB42/503	18.03
4	Barbara E. Hart	WB42/503	0.5
5	Butterfly Evolution Trust	250/468	27.8
6	Joseph & Linda Martin Trust	217/549	0.11
7	Stephanie D. Moore	277/244	0.49



Tax Map 361 Parcels			
Par	Owner	DB/Pg	Acres
11	Lucille Devericks	WB167/23	9.84
12	Lucille Devericks	WB167/23	9.70
13	Steve C. Kovar Jr.	1140/1150	77.87



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



(⊙) Denotes Location of Well on United States Topographic Maps

Line	Bearing	Distance
L1	S 06°03' E	810.2'
L2	N 39°18' W	960.7'
L3	N 21°03' E	1296.7'
L4	N 36°46' E	1875.0'

FILE NO: 233-30-G-12
DRAWING NO: 233-12 Truman Drilled 1H
SCALE: 1" = 1200'
MINIMUM DEGREE OF ACCURACY: Submeter
PROVEN SOURCE OF ELEVATION: WVDOT, Bridgeport, WV

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

DATE: October 19 2017
OPERATOR'S WELL NO. Truman Unit 1H
API WELL NO: 47 - 033 - 05714
STATE COUNTY PERMIT

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

LOCATION: ELEVATION: As-Built Grade - 1405' WATERSHED: Tenmile Creek QUADRANGLE: Big Isaac
DISTRICT: Union COUNTY: Harrison

SURFACE OWNER: Gerald & Louella Corder James Ross, et ux Wendell Calhoun, et ux, et al DAD40725/001 CWM #268 ACREAGE: 82
ROYALTY OWNER: Maude D. Day, et al; Denzil O. Freeman, et ux, et al LEASE NO: DAD038064 ACREAGE: 147; 76; 50; 125

PROPOSED WORK: DRILL CONVERT DRILL DEEPER FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION OTHER PHYSICAL CHANGE IN WELL (SPECIFY) As-Drilled TVD 7,513'
 PLUG AND ABANDON CLEAN OUT AND REPLUG TARGET FORMATION: Marcellus Shale DEPTH: MD 13,759'

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

