



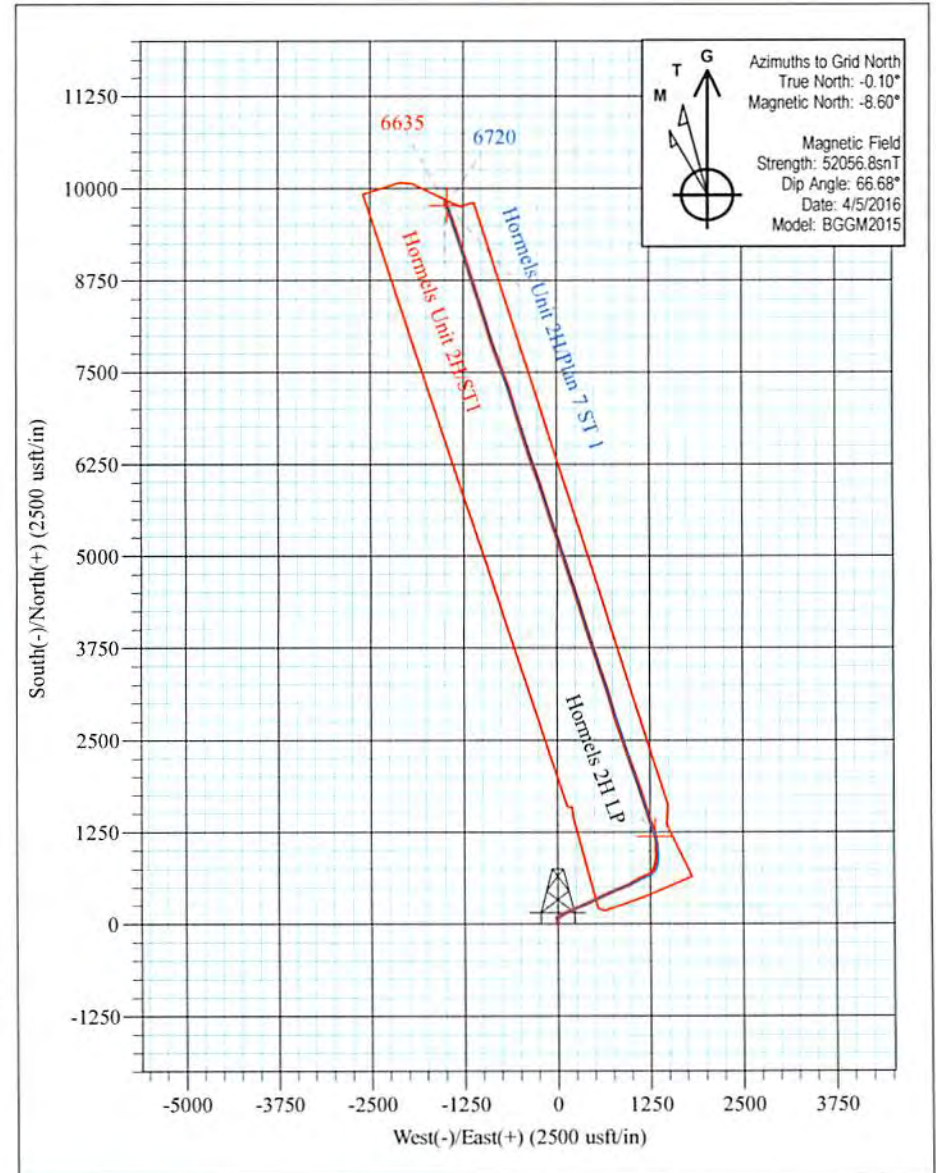
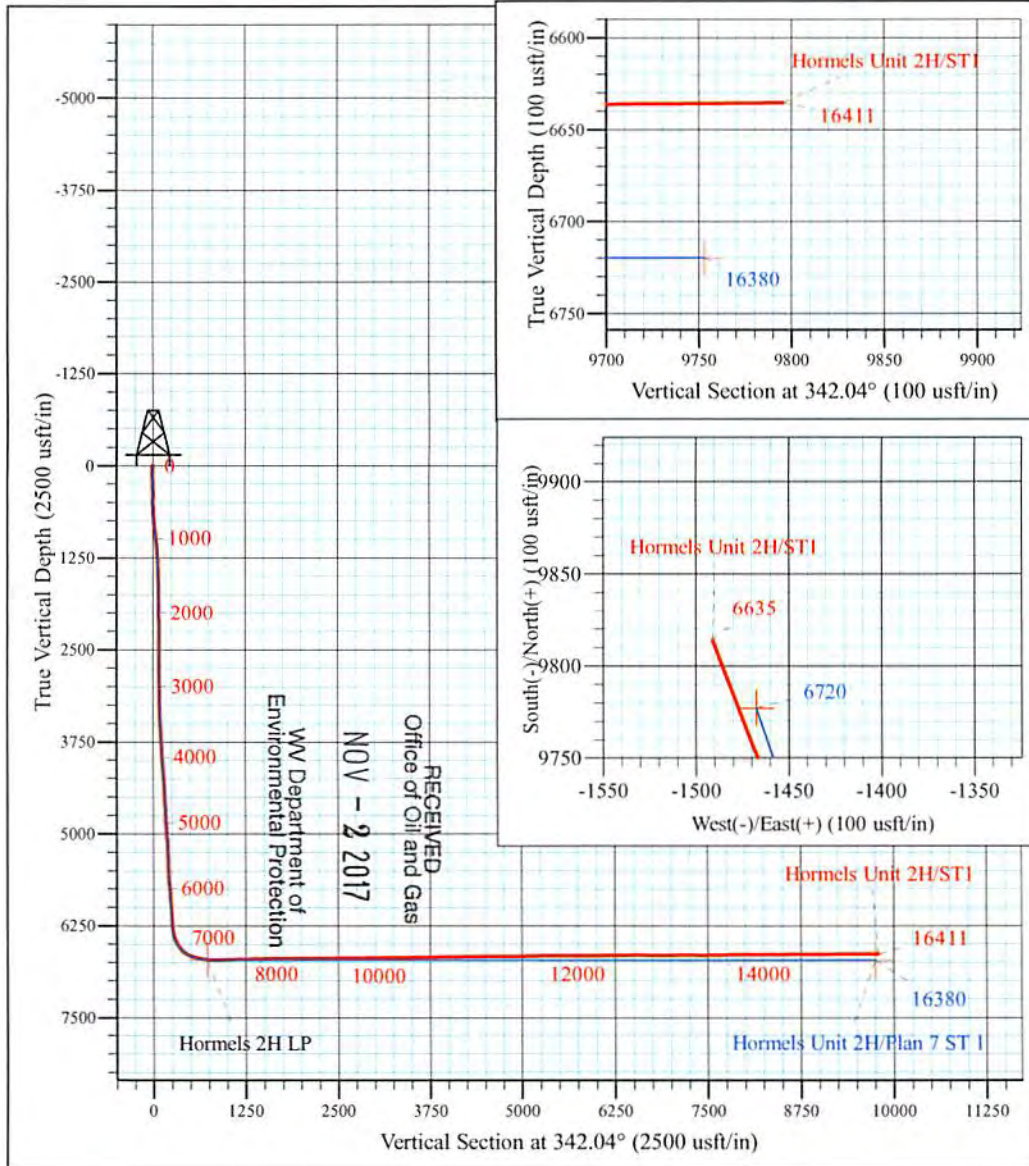
McGill Pad: Hormels/Mash/Nero/Vonda/Wilhelm
 Hormels Unit 2H
 Plan 7 ST 1
 Precision 525: 1164' GL + 19' KB @ 1183.0usft
 Doddridge County WV

PROJECT DETAILS:
 Geodetic System: Universal Transverse Mercator (US Survey Feet)
 Datum: NAD 1927 (NADCON CONUS)
 Ellipsoid: Clarke 1866
 Zone: Zone 17N (84 W to 78 W)
 System Datum: Mean Sea Level



WELL DETAILS: **Hormels Unit 2H SHL**

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14262019.23	1683179.06	39° 16' 29.205 N	80° 50' 56.023 W

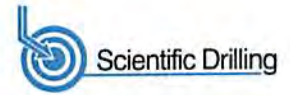


Hormels Unit 2H
Approx. BHL
 39° 18' 6.265 N 80° 51' 14.789 W

Shane Rhodes
 10:39, April 18 2016
 Scientific Drilling International
 124 Vista Drive
 Charleroi, PA 15022



Scientific Drilling International
Survey Report - Geographic



Company:	Antero Resources	Local Co-ordinate Reference:	Well Hormels Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 525: 1164' GL + 19' KB @ 1183.0usft
Site:	McGill Pad: Hormels/Mash/Nero/Vonda/Wilhelm	MD Reference:	Precision 525: 1164' GL + 19' KB @ 1183.0usft
Well:	Hormels Unit 2H	North Reference:	Grid
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Antero NE

Project	Doddridge County WV, McClellan District		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Zone 17N (84 W to 78 W)		

Site	McGill Pad: Hormels/Mash/Nero/Vonda/Wilhelm				
Site Position:	Northing:	14,261,930.17 usft	Latitude:	39° 16' 28.324 N	
From:	Map	Easting:	1,683,174.55 usft	Longitude:	80° 50' 56.082 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.10 °

Well	Hormels Unit 2H, Marcellus					
Well Position	+N/-S	0.0 usft	Northing:	14,262,019.22 usft	Latitude:	39° 16' 29.205 N
	+E/-W	0.0 usft	Easting:	1,683,179.06 usft	Longitude:	80° 50' 56.023 W
Position Uncertainty	2.0 usft	Wellhead Elevation:	1,183.0 usft	Ground Level:	1,164.0 usft	

Wellbore	ST1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	4/5/2016	-8.50	66.68	52,057

Design	ST1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	5,832.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	342.04	

Survey Program	Date	4/18/2016			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
32.0	5,832.0	Survey #6 Gyro Survey to KOP (Original W	Standard Keeper 104	Standard Wireline Keeper ver 1.0.4	
5,857.0	16,411.0	Survey #1 - ST SDI MWD (ST1)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1	

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Survey										
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	14,262,019.22	1,683,179.06	39° 16' 29.205 N	80° 50' 56.023 W	
32.0	0.17	103.90	32.0	0.0	0.0	14,262,019.21	1,683,179.11	39° 16' 29.204 N	80° 50' 56.022 W	
57.0	0.34	103.90	57.0	0.0	0.2	14,262,019.19	1,683,179.21	39° 16' 29.204 N	80° 50' 56.021 W	
82.0	0.50	103.90	82.0	-0.1	0.3	14,262,019.14	1,683,179.39	39° 16' 29.204 N	80° 50' 56.019 W	
107.0	0.67	103.90	107.0	-0.1	0.6	14,262,019.08	1,683,179.64	39° 16' 29.203 N	80° 50' 56.016 W	
132.0	0.53	51.58	132.0	-0.1	0.8	14,262,019.12	1,683,179.87	39° 16' 29.203 N	80° 50' 56.013 W	
157.0	0.45	40.35	157.0	0.0	1.0	14,262,019.26	1,683,180.03	39° 16' 29.205 N	80° 50' 56.011 W	
182.0	0.49	35.42	182.0	0.2	1.1	14,262,019.43	1,683,180.15	39° 16' 29.207 N	80° 50' 56.009 W	
207.0	0.37	36.88	207.0	0.4	1.2	14,262,019.58	1,683,180.26	39° 16' 29.208 N	80° 50' 56.008 W	
232.0	0.35	40.02	232.0	0.5	1.3	14,262,019.70	1,683,180.36	39° 16' 29.209 N	80° 50' 56.006 W	
257.0	0.22	36.06	257.0	0.6	1.4	14,262,019.80	1,683,180.44	39° 16' 29.210 N	80° 50' 56.005 W	

WV Department of
Environmental Protection



Scientific Drilling International
Survey Report - Geographic



Company: Antero Resources
Project: Doddridge County WV
Site: McGill Pad: Hormels/Mash/Nero/Vonda/Wilhelm
Well: Hormels Unit 2H
Wellbore: ST1
Design: ST1

Local Co-ordinate Reference: Well Hormels Unit 2H
TVD Reference: Precision 525: 1164' GL + 19' KB @ 1183.0usft
MD Reference: Precision 525: 1164' GL + 19' KB @ 1183.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

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Survey

WV Department of
Environmental Protection

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
282.0	0.11	33.94	282.0	0.6	1.4	14,262,019.66	1,683,180.48	39° 16' 29.211 N	80° 50' 56.005 W
307.0	0.12	15.08	307.0	0.7	1.4	14,262,019.90	1,683,180.50	39° 16' 29.211 N	80° 50' 56.005 W
332.0	0.14	12.13	332.0	0.7	1.5	14,262,019.96	1,683,180.51	39° 16' 29.212 N	80° 50' 56.004 W
357.0	0.18	12.47	357.0	0.8	1.5	14,262,020.03	1,683,180.53	39° 16' 29.212 N	80° 50' 56.004 W
382.0	0.20	4.78	382.0	0.9	1.5	14,262,020.11	1,683,180.54	39° 16' 29.213 N	80° 50' 56.004 W
407.0	0.16	31.94	407.0	1.0	1.5	14,262,020.18	1,683,180.56	39° 16' 29.214 N	80° 50' 56.004 W
432.0	0.18	21.57	432.0	1.0	1.5	14,262,020.25	1,683,180.59	39° 16' 29.215 N	80° 50' 56.003 W
457.0	0.25	8.62	457.0	1.1	1.6	14,262,020.34	1,683,180.62	39° 16' 29.216 N	80° 50' 56.003 W
482.0	0.33	6.48	482.0	1.2	1.6	14,262,020.46	1,683,180.63	39° 16' 29.217 N	80° 50' 56.003 W
507.0	1.00	358.32	507.0	1.5	1.6	14,262,020.75	1,683,180.63	39° 16' 29.220 N	80° 50' 56.003 W
532.0	1.90	355.08	532.0	2.2	1.5	14,262,021.38	1,683,180.59	39° 16' 29.226 N	80° 50' 56.003 W
557.0	2.27	355.69	557.0	3.1	1.5	14,262,022.29	1,683,180.52	39° 16' 29.235 N	80° 50' 56.004 W
582.0	2.45	355.30	581.9	4.1	1.4	14,262,023.32	1,683,180.44	39° 16' 29.245 N	80° 50' 56.005 W
607.0	2.48	354.69	606.9	5.2	1.3	14,262,024.39	1,683,180.35	39° 16' 29.256 N	80° 50' 56.006 W
632.0	3.08	354.73	631.9	6.4	1.2	14,262,025.59	1,683,180.23	39° 16' 29.267 N	80° 50' 56.008 W
657.0	3.94	352.69	656.8	7.9	1.0	14,262,027.12	1,683,180.06	39° 16' 29.283 N	80° 50' 56.010 W
682.0	4.53	352.98	681.8	9.7	0.8	14,262,028.95	1,683,179.83	39° 16' 29.301 N	80° 50' 56.013 W
707.0	4.70	352.34	706.7	11.7	0.5	14,262,030.94	1,683,179.58	39° 16' 29.320 N	80° 50' 56.016 W
732.0	4.77	352.72	731.6	13.8	0.2	14,262,032.99	1,683,179.31	39° 16' 29.341 N	80° 50' 56.020 W
757.0	5.36	352.48	756.5	16.0	0.0	14,262,035.16	1,683,179.02	39° 16' 29.362 N	80° 50' 56.023 W
782.0	6.23	352.80	781.4	18.5	-0.4	14,262,037.66	1,683,178.70	39° 16' 29.387 N	80° 50' 56.027 W
807.0	6.45	353.79	806.2	21.2	-0.7	14,262,040.42	1,683,178.38	39° 16' 29.414 N	80° 50' 56.031 W
832.0	6.58	353.51	831.1	24.0	-1.0	14,262,043.24	1,683,178.06	39° 16' 29.442 N	80° 50' 56.035 W
857.0	6.64	354.98	855.9	26.9	-1.3	14,262,046.10	1,683,177.78	39° 16' 29.470 N	80° 50' 56.039 W
882.0	6.72	355.69	880.7	29.8	-1.5	14,262,049.00	1,683,177.54	39° 16' 29.499 N	80° 50' 56.042 W
907.0	6.77	355.56	905.6	32.7	-1.7	14,262,051.93	1,683,177.32	39° 16' 29.528 N	80° 50' 56.044 W
932.0	6.78	355.47	930.4	35.6	-2.0	14,262,054.87	1,683,177.08	39° 16' 29.557 N	80° 50' 56.047 W
957.0	6.89	355.24	955.2	38.6	-2.2	14,262,057.84	1,683,176.84	39° 16' 29.586 N	80° 50' 56.050 W
982.0	6.85	355.74	980.0	41.6	-2.5	14,262,060.82	1,683,176.61	39° 16' 29.616 N	80° 50' 56.053 W
1,007.0	6.34	354.48	1,004.9	44.5	-2.7	14,262,063.68	1,683,176.36	39° 16' 29.644 N	80° 50' 56.056 W
1,032.0	5.64	353.81	1,029.7	47.0	-3.0	14,262,066.27	1,683,176.10	39° 16' 29.670 N	80° 50' 56.060 W
1,057.0	5.55	353.80	1,054.6	49.5	-3.2	14,262,068.70	1,683,175.84	39° 16' 29.694 N	80° 50' 56.063 W
1,082.0	5.10	354.30	1,079.5	51.8	-3.5	14,262,071.00	1,683,175.60	39° 16' 29.717 N	80° 50' 56.066 W
1,107.0	4.95	353.85	1,104.4	54.0	-3.7	14,262,073.18	1,683,175.37	39° 16' 29.738 N	80° 50' 56.069 W
1,132.0	4.76	353.30	1,129.3	56.1	-3.9	14,262,075.28	1,683,175.13	39° 16' 29.759 N	80° 50' 56.072 W
1,157.0	4.63	355.52	1,154.2	58.1	-4.1	14,262,077.32	1,683,174.93	39° 16' 29.779 N	80° 50' 56.074 W
1,182.0	4.14	355.42	1,179.2	60.0	-4.3	14,262,079.23	1,683,174.78	39° 16' 29.798 N	80° 50' 56.076 W
1,207.0	3.83	356.36	1,204.1	61.7	-4.4	14,262,080.96	1,683,174.66	39° 16' 29.815 N	80° 50' 56.078 W
1,232.0	3.63	355.53	1,229.0	63.4	-4.5	14,262,082.58	1,683,174.54	39° 16' 29.831 N	80° 50' 56.079 W
1,257.0	3.50	358.04	1,254.0	64.9	-4.6	14,262,084.13	1,683,174.45	39° 16' 29.846 N	80° 50' 56.080 W
1,282.0	3.29	357.16	1,279.0	66.4	-4.7	14,262,085.61	1,683,174.39	39° 16' 29.861 N	80° 50' 56.081 W
1,307.0	2.98	357.34	1,303.9	67.8	-4.7	14,262,086.98	1,683,174.33	39° 16' 29.875 N	80° 50' 56.082 W
1,332.0	2.91	356.39	1,328.9	69.0	-4.8	14,262,088.26	1,683,174.26	39° 16' 29.887 N	80° 50' 56.083 W
1,357.0	2.75	357.05	1,353.9	70.3	-4.9	14,262,089.49	1,683,174.19	39° 16' 29.899 N	80° 50' 56.083 W
1,382.0	2.51	356.48	1,378.8	71.4	-4.9	14,262,090.64	1,683,174.12	39° 16' 29.911 N	80° 50' 56.084 W
1,407.0	2.24	355.91	1,403.8	72.4	-5.0	14,262,091.67	1,683,174.05	39° 16' 29.921 N	80° 50' 56.085 W
1,432.0	2.37	355.63	1,428.8	73.4	-5.1	14,262,092.67	1,683,173.98	39° 16' 29.931 N	80° 50' 56.086 W
1,457.0	2.15	356.72	1,453.8	74.4	-5.1	14,262,093.66	1,683,173.91	39° 16' 29.941 N	80° 50' 56.087 W
1,482.0	1.97	356.68	1,478.7	75.3	-5.2	14,262,094.56	1,683,173.86	39° 16' 29.949 N	80° 50' 56.087 W
1,507.0	1.41	333.92	1,503.7	76.0	-5.4	14,262,095.26	1,683,173.70	39° 16' 29.956 N	80° 50' 56.090 W
1,532.0	1.75	1.35	1,528.7	76.7	-5.5	14,262,095.92	1,683,173.58	39° 16' 29.963 N	80° 50' 56.091 W
1,557.0	1.58	357.21	1,553.7	77.4	-5.5	14,262,096.64	1,683,173.57	39° 16' 29.970 N	80° 50' 56.091 W
1,582.0	1.47	3.08	1,578.7	78.1	-5.5	14,262,097.31	1,683,173.57	39° 16' 29.977 N	80° 50' 56.091 W
1,607.0	1.32	5.95	1,603.7	78.7	-5.4	14,262,097.92	1,683,173.61	39° 16' 29.983 N	80° 50' 56.091 W
1,632.0	1.34	8.07	1,628.7	79.3	-5.4	14,262,098.49	1,683,173.69	39° 16' 29.988 N	80° 50' 56.090 W



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Wellbore: ST1
Design: ST1

Local Co-ordinate Reference: Well Hormels Unit 2H
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Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,657.0	1.17	6.84	1,653.7	79.8	-5.3	14,262,099.03	1,683,173.76	39° 16' 29.994 N	80° 50' 56.089 W
1,682.0	1.10	16.24	1,678.7	80.3	-5.2	14,262,099.52	1,683,173.85	39° 16' 29.999 N	80° 50' 56.087 W
1,707.0	1.12	8.90	1,703.7	80.8	-5.1	14,262,099.99	1,683,173.96	39° 16' 30.003 N	80° 50' 56.086 W
1,732.0	0.97	11.72	1,728.7	81.2	-5.0	14,262,100.44	1,683,174.04	39° 16' 30.008 N	80° 50' 56.085 W
1,757.0	0.95	17.37	1,753.7	81.6	-4.9	14,262,100.84	1,683,174.15	39° 16' 30.012 N	80° 50' 56.084 W
1,782.0	0.77	9.86	1,778.7	82.0	-4.8	14,262,101.21	1,683,174.24	39° 16' 30.015 N	80° 50' 56.083 W
1,807.0	0.87	16.78	1,803.7	82.3	-4.7	14,262,101.55	1,683,174.32	39° 16' 30.019 N	80° 50' 56.082 W
1,832.0	0.78	16.01	1,828.7	82.7	-4.6	14,262,101.90	1,683,174.42	39° 16' 30.022 N	80° 50' 56.080 W
1,857.0	0.61	16.11	1,853.7	83.0	-4.6	14,262,102.19	1,683,174.51	39° 16' 30.025 N	80° 50' 56.079 W
1,882.0	0.54	15.34	1,878.7	83.2	-4.5	14,262,102.43	1,683,174.57	39° 16' 30.027 N	80° 50' 56.078 W
1,907.0	0.68	26.30	1,903.7	83.5	-4.4	14,262,102.68	1,683,174.67	39° 16' 30.030 N	80° 50' 56.077 W
1,932.0	0.51	24.38	1,928.7	83.7	-4.3	14,262,102.91	1,683,174.78	39° 16' 30.032 N	80° 50' 56.076 W
1,957.0	0.43	22.30	1,953.7	83.9	-4.2	14,262,103.10	1,683,174.86	39° 16' 30.034 N	80° 50' 56.075 W
1,982.0	0.44	29.22	1,978.7	84.0	-4.1	14,262,103.27	1,683,174.95	39° 16' 30.036 N	80° 50' 56.074 W
2,007.0	0.35	32.58	2,003.7	84.2	-4.0	14,262,103.42	1,683,175.03	39° 16' 30.037 N	80° 50' 56.072 W
2,032.0	0.33	14.57	2,028.7	84.3	-4.0	14,262,103.55	1,683,175.09	39° 16' 30.038 N	80° 50' 56.072 W
2,057.0	0.34	17.46	2,053.7	84.5	-3.9	14,262,103.69	1,683,175.13	39° 16' 30.040 N	80° 50' 56.071 W
2,082.0	0.12	356.07	2,078.7	84.6	-3.9	14,262,103.79	1,683,175.15	39° 16' 30.041 N	80° 50' 56.071 W
2,107.0	0.12	345.10	2,103.7	84.6	-3.9	14,262,103.84	1,683,175.15	39° 16' 30.041 N	80° 50' 56.071 W
2,132.0	0.16	322.35	2,128.7	84.7	-3.9	14,262,103.90	1,683,175.12	39° 16' 30.042 N	80° 50' 56.071 W
2,157.0	0.19	330.64	2,153.7	84.7	-4.0	14,262,103.96	1,683,175.08	39° 16' 30.042 N	80° 50' 56.072 W
2,182.0	0.20	310.47	2,178.7	84.8	-4.0	14,262,104.02	1,683,175.02	39° 16' 30.043 N	80° 50' 56.073 W
2,207.0	0.22	348.64	2,203.7	84.9	-4.1	14,262,104.10	1,683,174.98	39° 16' 30.044 N	80° 50' 56.073 W
2,232.0	0.31	330.17	2,228.7	85.0	-4.1	14,262,104.20	1,683,174.94	39° 16' 30.045 N	80° 50' 56.074 W
2,257.0	0.19	338.35	2,253.7	85.1	-4.2	14,262,104.30	1,683,174.89	39° 16' 30.046 N	80° 50' 56.074 W
2,282.0	0.25	316.01	2,278.7	85.2	-4.2	14,262,104.38	1,683,174.83	39° 16' 30.047 N	80° 50' 56.075 W
2,307.0	0.24	327.90	2,303.7	85.2	-4.3	14,262,104.46	1,683,174.77	39° 16' 30.047 N	80° 50' 56.076 W
2,332.0	0.21	353.82	2,328.7	85.3	-4.3	14,262,104.55	1,683,174.74	39° 16' 30.048 N	80° 50' 56.076 W
2,357.0	0.23	335.79	2,353.7	85.4	-4.3	14,262,104.64	1,683,174.71	39° 16' 30.049 N	80° 50' 56.076 W
2,382.0	0.28	326.32	2,378.7	85.5	-4.4	14,262,104.74	1,683,174.66	39° 16' 30.050 N	80° 50' 56.077 W
2,407.0	0.33	312.64	2,403.7	85.6	-4.5	14,262,104.84	1,683,174.57	39° 16' 30.051 N	80° 50' 56.078 W
2,432.0	0.33	343.37	2,428.6	85.7	-4.6	14,262,104.96	1,683,174.50	39° 16' 30.052 N	80° 50' 56.079 W
2,457.0	0.33	326.60	2,453.6	85.9	-4.6	14,262,105.09	1,683,174.44	39° 16' 30.054 N	80° 50' 56.080 W
2,482.0	0.35	328.89	2,478.6	86.0	-4.7	14,262,105.21	1,683,174.36	39° 16' 30.055 N	80° 50' 56.081 W
2,507.0	0.24	336.99	2,503.6	86.1	-4.8	14,262,105.33	1,683,174.30	39° 16' 30.056 N	80° 50' 56.082 W
2,532.0	0.25	319.49	2,528.6	86.2	-4.8	14,262,105.42	1,683,174.24	39° 16' 30.057 N	80° 50' 56.082 W
2,557.0	0.29	320.89	2,553.6	86.3	-4.9	14,262,105.51	1,683,174.16	39° 16' 30.058 N	80° 50' 56.083 W
2,582.0	0.34	322.87	2,578.6	86.4	-5.0	14,262,105.62	1,683,174.08	39° 16' 30.059 N	80° 50' 56.084 W
2,607.0	0.37	320.12	2,603.6	86.5	-5.1	14,262,105.74	1,683,173.98	39° 16' 30.060 N	80° 50' 56.086 W
2,632.0	0.36	332.21	2,628.6	86.6	-5.2	14,262,105.87	1,683,173.90	39° 16' 30.061 N	80° 50' 56.087 W
2,657.0	0.42	326.31	2,653.6	86.8	-5.3	14,262,106.01	1,683,173.81	39° 16' 30.063 N	80° 50' 56.088 W
2,682.0	0.41	324.58	2,678.6	86.9	-5.4	14,262,106.16	1,683,173.71	39° 16' 30.064 N	80° 50' 56.089 W
2,707.0	0.43	324.77	2,703.6	87.1	-5.5	14,262,106.31	1,683,173.60	39° 16' 30.066 N	80° 50' 56.091 W
2,732.0	0.38	330.87	2,728.6	87.2	-5.6	14,262,106.46	1,683,173.50	39° 16' 30.067 N	80° 50' 56.092 W
2,757.0	0.39	327.77	2,753.6	87.4	-5.6	14,262,106.61	1,683,173.42	39° 16' 30.069 N	80° 50' 56.093 W
2,782.0	0.40	328.99	2,778.6	87.5	-5.7	14,262,106.75	1,683,173.33	39° 16' 30.070 N	80° 50' 56.094 W
2,807.0	0.45	326.92	2,803.6	87.7	-5.8	14,262,106.91	1,683,173.23	39° 16' 30.072 N	80° 50' 56.095 W
2,832.0	0.47	326.05	2,828.6	87.9	-5.9	14,262,107.08	1,683,173.12	39° 16' 30.073 N	80° 50' 56.097 W
2,857.0	0.43	329.44	2,853.6	88.0	-6.0	14,262,107.24	1,683,173.01	39° 16' 30.075 N	80° 50' 56.098 W
2,882.0	0.46	327.98	2,878.6	88.2	-6.1	14,262,107.41	1,683,172.91	39° 16' 30.077 N	80° 50' 56.099 W
2,907.0	0.47	336.16	2,903.6	88.4	-6.2	14,262,107.59	1,683,172.82	39° 16' 30.078 N	80° 50' 56.100 W
2,932.0	0.61	10.33	2,928.6	88.6	-6.3	14,262,107.81	1,683,172.80	39° 16' 30.081 N	80° 50' 56.101 W
2,957.0	1.16	27.38	2,953.6	88.9	-6.1	14,262,108.17	1,683,172.94	39° 16' 30.084 N	80° 50' 56.099 W
2,982.0	1.62	37.69	2,978.6	89.4	-5.8	14,262,108.67	1,683,173.27	39° 16' 30.089 N	80° 50' 56.095 W
3,007.0	1.88	42.57	3,003.6	90.0	-5.3	14,262,109.25	1,683,173.77	39° 16' 30.095 N	80° 50' 56.088 W



Scientific Drilling International
Survey Report - Geographic



Company:	Antero Resources	Local Co-ordinate Reference:	Well Hormels Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 525: 1164' GL + 19' KB @ 1183.0usft
Site:	McGill Pad; Hormels/Mash/Nero/Vonda/Wilhelm	MD Reference:	Precision 525: 1164' GL + 19' KB @ 1183.0usft
Well:	Hormels Unit 2H	North Reference:	Grid
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Antero NE

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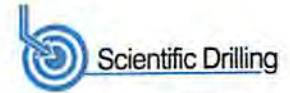
Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
3,032.0	2.32	52.96	3,028.6	90.6	-4.6	14,262,109.86	1,683,174.45	39° 16' 30.101 N	80° 50' 56.080 W
3,057.0	2.52	65.52	3,053.6	91.2	-3.7	14,262,110.39	1,683,175.35	39° 16' 30.106 N	80° 50' 56.068 W
3,082.0	3.02	71.12	3,078.5	91.6	-2.6	14,262,110.83	1,683,176.48	39° 16' 30.110 N	80° 50' 56.054 W
3,107.0	3.38	69.07	3,103.5	92.1	-1.3	14,262,111.31	1,683,177.79	39° 16' 30.115 N	80° 50' 56.037 W
3,132.0	3.87	67.23	3,128.5	92.7	0.2	14,262,111.90	1,683,179.25	39° 16' 30.121 N	80° 50' 56.019 W
3,157.0	4.43	64.05	3,153.4	93.4	1.8	14,262,112.65	1,683,180.90	39° 16' 30.128 N	80° 50' 55.998 W
3,182.0	5.12	61.55	3,178.3	94.4	3.7	14,262,113.60	1,683,182.75	39° 16' 30.138 N	80° 50' 55.974 W
3,207.0	5.76	63.11	3,203.2	95.5	5.8	14,262,114.70	1,683,184.85	39° 16' 30.148 N	80° 50' 55.947 W
3,232.0	6.30	63.70	3,228.1	96.7	8.1	14,262,115.88	1,683,187.20	39° 16' 30.160 N	80° 50' 55.917 W
3,257.0	6.92	64.31	3,252.9	97.9	10.7	14,262,117.14	1,683,189.78	39° 16' 30.172 N	80° 50' 55.884 W
3,282.0	7.58	65.17	3,277.7	99.3	13.6	14,262,118.48	1,683,192.64	39° 16' 30.186 N	80° 50' 55.848 W
3,307.0	8.29	65.18	3,302.4	100.7	16.7	14,262,119.93	1,683,195.77	39° 16' 30.200 N	80° 50' 55.808 W
3,332.0	8.85	63.97	3,327.2	102.3	20.1	14,262,121.53	1,683,199.13	39° 16' 30.216 N	80° 50' 55.765 W
3,357.0	9.38	62.82	3,351.9	104.1	23.6	14,262,123.31	1,683,202.67	39° 16' 30.233 N	80° 50' 55.720 W
3,382.0	9.98	62.18	3,376.5	106.0	27.3	14,262,125.25	1,683,206.40	39° 16' 30.252 N	80° 50' 55.673 W
3,407.0	10.52	61.46	3,401.1	108.1	31.3	14,262,127.35	1,683,210.32	39° 16' 30.273 N	80° 50' 55.623 W
3,432.0	11.19	60.39	3,425.7	110.4	35.4	14,262,129.64	1,683,214.44	39° 16' 30.296 N	80° 50' 55.571 W
3,457.0	11.74	60.31	3,450.2	112.9	39.7	14,262,132.10	1,683,218.76	39° 16' 30.320 N	80° 50' 55.516 W
3,482.0	12.34	59.93	3,474.6	115.5	44.2	14,262,134.70	1,683,223.28	39° 16' 30.346 N	80° 50' 55.458 W
3,507.0	13.00	59.19	3,499.0	118.2	48.9	14,262,137.47	1,683,228.00	39° 16' 30.373 N	80° 50' 55.398 W
3,532.0	13.61	59.26	3,523.3	121.2	53.9	14,262,140.42	1,683,232.95	39° 16' 30.402 N	80° 50' 55.335 W
3,557.0	14.31	59.31	3,547.6	124.3	59.1	14,262,143.50	1,683,238.13	39° 16' 30.432 N	80° 50' 55.269 W
3,582.0	15.08	59.77	3,571.8	127.5	64.5	14,262,146.71	1,683,243.60	39° 16' 30.464 N	80° 50' 55.199 W
3,607.0	15.80	60.98	3,595.9	130.8	70.3	14,262,150.00	1,683,249.39	39° 16' 30.496 N	80° 50' 55.126 W
3,632.0	16.54	61.66	3,619.9	134.1	76.4	14,262,153.34	1,683,255.49	39° 16' 30.529 N	80° 50' 55.048 W
3,657.0	17.21	61.57	3,643.8	137.6	82.8	14,262,156.79	1,683,261.88	39° 16' 30.563 N	80° 50' 54.967 W
3,682.0	17.95	62.04	3,667.6	141.1	89.5	14,262,160.36	1,683,268.53	39° 16' 30.599 N	80° 50' 54.882 W
3,707.0	18.48	62.70	3,691.4	144.8	96.4	14,262,163.98	1,683,275.46	39° 16' 30.634 N	80° 50' 54.794 W
3,732.0	18.88	63.47	3,715.1	148.4	103.5	14,262,167.61	1,683,282.60	39° 16' 30.670 N	80° 50' 54.703 W
3,757.0	19.46	63.67	3,738.7	152.0	110.9	14,262,171.26	1,683,289.95	39° 16' 30.706 N	80° 50' 54.609 W
3,782.0	20.05	64.14	3,762.2	155.8	118.5	14,262,174.98	1,683,297.54	39° 16' 30.743 N	80° 50' 54.513 W
3,807.0	20.75	64.08	3,785.6	159.6	126.3	14,262,178.78	1,683,305.38	39° 16' 30.780 N	80° 50' 54.413 W
3,832.0	21.31	63.90	3,809.0	163.5	134.4	14,262,182.72	1,683,313.44	39° 16' 30.819 N	80° 50' 54.310 W
3,857.0	21.91	63.80	3,832.2	167.5	142.6	14,262,186.77	1,683,321.70	39° 16' 30.859 N	80° 50' 54.205 W
3,882.0	22.46	63.75	3,855.4	171.7	151.1	14,262,190.95	1,683,330.17	39° 16' 30.900 N	80° 50' 54.097 W
3,907.0	23.33	64.66	3,878.4	176.0	159.9	14,262,195.18	1,683,338.93	39° 16' 30.942 N	80° 50' 53.986 W
3,932.0	23.70	65.11	3,901.3	180.2	168.9	14,262,199.41	1,683,347.96	39° 16' 30.983 N	80° 50' 53.871 W
3,957.0	23.96	65.14	3,924.2	184.4	178.1	14,262,203.66	1,683,357.12	39° 16' 31.025 N	80° 50' 53.754 W
3,982.0	24.36	65.08	3,947.0	188.7	187.3	14,262,207.96	1,683,366.41	39° 16' 31.068 N	80° 50' 53.636 W
4,007.0	24.98	64.96	3,969.7	193.1	196.8	14,262,212.37	1,683,375.86	39° 16' 31.111 N	80° 50' 53.515 W
4,032.0	25.48	64.55	3,992.3	197.7	206.4	14,262,216.92	1,683,385.50	39° 16' 31.156 N	80° 50' 53.393 W
4,057.0	25.95	64.56	4,014.9	202.4	216.2	14,262,221.58	1,683,395.30	39° 16' 31.202 N	80° 50' 53.268 W
4,082.0	26.30	64.54	4,037.3	207.1	226.2	14,262,226.31	1,683,405.24	39° 16' 31.248 N	80° 50' 53.141 W
4,107.0	26.58	64.56	4,059.7	211.9	236.2	14,262,231.09	1,683,415.29	39° 16' 31.295 N	80° 50' 53.013 W
4,132.0	26.84	64.57	4,082.0	216.7	246.4	14,262,235.92	1,683,425.44	39° 16' 31.343 N	80° 50' 52.884 W
4,157.0	26.78	64.70	4,104.3	221.5	256.6	14,262,240.75	1,683,435.63	39° 16' 31.391 N	80° 50' 52.754 W
4,182.0	27.07	64.95	4,126.6	226.3	266.8	14,262,245.66	1,683,445.87	39° 16' 31.438 N	80° 50' 52.624 W
4,207.0	27.20	65.26	4,148.9	231.1	277.2	14,262,250.36	1,683,456.21	39° 16' 31.485 N	80° 50' 52.492 W
4,232.0	27.32	65.59	4,171.1	235.9	287.6	14,262,255.12	1,683,466.63	39° 16' 31.532 N	80° 50' 52.360 W
4,257.0	27.31	65.40	4,193.3	240.7	298.0	14,262,259.88	1,683,477.07	39° 16' 31.579 N	80° 50' 52.227 W
4,282.0	27.39	65.43	4,215.5	245.4	308.5	14,262,264.66	1,683,487.51	39° 16' 31.626 N	80° 50' 52.094 W
4,307.0	27.44	65.06	4,237.7	250.3	318.9	14,262,269.48	1,683,497.96	39° 16' 31.674 N	80° 50' 51.961 W
4,332.0	27.48	64.81	4,259.9	255.1	329.3	14,262,274.37	1,683,508.41	39° 16' 31.722 N	80° 50' 51.828 W
4,357.0	27.20	64.55	4,282.1	260.1	339.7	14,262,279.28	1,683,518.79	39° 16' 31.770 N	80° 50' 51.696 W
4,382.0	27.02	65.12	4,304.3	264.9	350.0	14,262,284.12	1,683,529.10	39° 16' 31.818 N	80° 50' 51.565 W

WV Department of Environmental Protection



Scientific Drilling International

Survey Report - Geographic



Company: Antero Resources
Project: Doddridge County WV
Site: McGill Pad: Hormels/Mash/Nero/Vonda/Wilhelm
Well: Hormels Unit 2H
Wellbore: ST1
Design: ST1

Local Co-ordinate Reference: Well Hormels Unit 2H
TVD Reference: Precision 525: 1164' GL + 19' KB @ 1183.0usft
MD Reference: Precision 525: 1164' GL + 19' KB @ 1183.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

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WV Department of
Environmental Protection

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
4,407.0	26.75	65.59	4,326.6	269.6	360.3	14,262,288.83	1,683,539.37	39° 16' 31.864 N	80° 50' 51.434 W
4,432.0	26.74	65.54	4,349.0	274.3	370.6	14,262,293.49	1,683,549.61	39° 16' 31.910 N	80° 50' 51.303 W
4,457.0	26.63	65.27	4,371.3	278.9	380.8	14,262,298.16	1,683,559.82	39° 16' 31.956 N	80° 50' 51.173 W
4,482.0	26.74	65.40	4,393.6	283.6	391.0	14,262,302.85	1,683,570.03	39° 16' 32.002 N	80° 50' 51.043 W
4,507.0	26.67	65.78	4,416.0	288.3	401.2	14,262,307.49	1,683,580.26	39° 16' 32.048 N	80° 50' 50.913 W
4,532.0	26.26	65.87	4,438.4	292.8	411.4	14,262,312.05	1,683,590.42	39° 16' 32.093 N	80° 50' 50.784 W
4,557.0	26.22	65.76	4,460.8	297.4	421.4	14,262,316.58	1,683,600.50	39° 16' 32.138 N	80° 50' 50.655 W
4,582.0	26.31	65.90	4,483.2	301.9	431.5	14,262,321.11	1,683,610.60	39° 16' 32.182 N	80° 50' 50.527 W
4,607.0	25.90	65.83	4,505.6	306.4	441.6	14,262,325.61	1,683,620.64	39° 16' 32.227 N	80° 50' 50.399 W
4,632.0	25.74	65.94	4,528.2	310.8	451.5	14,262,330.06	1,683,630.57	39° 16' 32.270 N	80° 50' 50.273 W
4,657.0	25.66	65.72	4,550.7	315.3	461.4	14,262,334.50	1,683,640.46	39° 16' 32.314 N	80° 50' 50.147 W
4,682.0	25.60	65.30	4,573.2	319.8	471.2	14,262,338.98	1,683,650.31	39° 16' 32.358 N	80° 50' 50.021 W
4,707.0	25.86	65.31	4,595.7	324.3	481.1	14,262,343.51	1,683,660.17	39° 16' 32.403 N	80° 50' 49.896 W
4,732.0	26.06	65.22	4,618.2	328.9	491.0	14,262,348.09	1,683,670.11	39° 16' 32.448 N	80° 50' 49.769 W
4,757.0	26.31	65.20	4,640.7	333.5	501.1	14,262,352.72	1,683,680.12	39° 16' 32.494 N	80° 50' 49.642 W
4,782.0	26.65	65.20	4,663.0	338.2	511.2	14,262,357.39	1,683,690.24	39° 16' 32.540 N	80° 50' 49.513 W
4,807.0	27.11	65.30	4,685.3	342.9	521.4	14,262,362.12	1,683,700.50	39° 16' 32.586 N	80° 50' 49.382 W
4,832.0	27.37	65.34	4,707.6	347.7	531.8	14,262,366.90	1,683,710.90	39° 16' 32.633 N	80° 50' 49.250 W
4,857.0	27.52	65.43	4,729.7	352.5	542.3	14,262,371.70	1,683,721.38	39° 16' 32.681 N	80° 50' 49.117 W
4,882.0	27.24	65.90	4,751.9	357.2	552.8	14,262,376.44	1,683,731.85	39° 16' 32.727 N	80° 50' 48.983 W
4,907.0	27.04	66.16	4,774.2	361.8	563.2	14,262,381.07	1,683,742.27	39° 16' 32.773 N	80° 50' 48.851 W
4,932.0	26.76	65.80	4,796.5	366.5	573.5	14,262,385.68	1,683,752.61	39° 16' 32.818 N	80° 50' 48.719 W
4,957.0	27.03	65.90	4,818.8	371.1	583.9	14,262,390.30	1,683,762.92	39° 16' 32.864 N	80° 50' 48.588 W
4,982.0	27.09	65.89	4,841.0	375.7	594.2	14,262,394.95	1,683,773.31	39° 16' 32.910 N	80° 50' 48.456 W
5,007.0	27.24	65.86	4,863.3	380.4	604.7	14,262,399.61	1,683,783.72	39° 16' 32.956 N	80° 50' 48.323 W
5,032.0	27.22	65.66	4,885.5	385.1	615.1	14,262,404.31	1,683,794.15	39° 16' 33.002 N	80° 50' 48.190 W
5,057.0	26.86	65.25	4,907.8	389.8	625.4	14,262,409.03	1,683,804.49	39° 16' 33.048 N	80° 50' 48.059 W
5,082.0	26.84	65.00	4,930.1	394.6	635.7	14,262,413.78	1,683,814.74	39° 16' 33.095 N	80° 50' 47.928 W
5,107.0	26.33	64.61	4,952.4	399.3	645.8	14,262,418.54	1,683,824.86	39° 16' 33.142 N	80° 50' 47.799 W
5,132.0	26.10	64.13	4,974.9	404.1	655.8	14,262,423.32	1,683,834.82	39° 16' 33.189 N	80° 50' 47.672 W
5,157.0	26.29	63.60	4,997.3	409.0	665.7	14,262,428.18	1,683,844.72	39° 16' 33.237 N	80° 50' 47.546 W
5,182.0	26.37	63.80	5,019.7	413.9	675.6	14,262,433.09	1,683,854.66	39° 16' 33.285 N	80° 50' 47.420 W
5,207.0	26.02	63.36	5,042.1	418.8	685.5	14,262,438.00	1,683,864.55	39° 16' 33.334 N	80° 50' 47.294 W
5,232.0	25.79	64.07	5,064.6	423.6	695.3	14,262,442.84	1,683,874.34	39° 16' 33.382 N	80° 50' 47.169 W
5,257.0	26.05	64.33	5,087.1	428.4	705.1	14,262,447.60	1,683,884.18	39° 16' 33.428 N	80° 50' 47.044 W
5,282.0	26.31	64.43	5,109.6	433.1	715.1	14,262,452.37	1,683,894.12	39° 16' 33.475 N	80° 50' 46.917 W
5,307.0	26.14	64.84	5,132.0	437.9	725.0	14,262,457.10	1,683,904.11	39° 16' 33.522 N	80° 50' 46.790 W
5,332.0	26.23	65.13	5,154.4	442.5	735.0	14,262,461.76	1,683,914.10	39° 16' 33.568 N	80° 50' 46.663 W
5,357.0	26.40	65.91	5,176.8	447.1	745.1	14,262,466.36	1,683,924.19	39° 16' 33.613 N	80° 50' 46.535 W
5,382.0	26.64	66.59	5,199.2	451.6	755.3	14,262,470.85	1,683,934.41	39° 16' 33.657 N	80° 50' 46.405 W
5,407.0	26.75	66.99	5,221.5	456.1	765.7	14,262,475.28	1,683,944.73	39° 16' 33.701 N	80° 50' 46.273 W
5,432.0	26.43	67.34	5,243.9	460.4	776.0	14,262,479.62	1,683,955.04	39° 16' 33.744 N	80° 50' 46.142 W
5,457.0	26.31	67.56	5,266.3	464.7	786.2	14,262,483.88	1,683,965.30	39° 16' 33.786 N	80° 50' 46.011 W
5,482.0	26.25	67.81	5,288.7	468.9	796.5	14,262,488.08	1,683,975.54	39° 16' 33.827 N	80° 50' 45.881 W
5,507.0	26.39	68.07	5,311.1	473.0	806.8	14,262,492.24	1,683,985.81	39° 16' 33.868 N	80° 50' 45.750 W
5,532.0	26.70	68.18	5,333.5	477.2	817.1	14,262,496.41	1,683,996.18	39° 16' 33.909 N	80° 50' 45.618 W
5,557.0	27.07	68.30	5,355.8	481.4	827.6	14,262,500.60	1,684,006.68	39° 16' 33.950 N	80° 50' 45.485 W
5,582.0	27.07	68.64	5,378.0	485.5	838.2	14,262,504.77	1,684,017.26	39° 16' 33.992 N	80° 50' 45.350 W
5,607.0	27.19	68.98	5,400.3	489.7	848.8	14,262,508.89	1,684,027.89	39° 16' 34.032 N	80° 50' 45.214 W
5,632.0	27.37	69.01	5,422.5	493.8	859.5	14,262,513.00	1,684,038.59	39° 16' 34.073 N	80° 50' 45.078 W
5,657.0	27.39	69.02	5,444.7	497.9	870.3	14,262,517.12	1,684,049.32	39° 16' 34.113 N	80° 50' 44.942 W
5,682.0	27.35	68.90	5,466.9	502.0	881.0	14,262,521.24	1,684,060.05	39° 16' 34.154 N	80° 50' 44.805 W
5,707.0	26.84	68.86	5,489.2	506.1	891.6	14,262,525.35	1,684,070.67	39° 16' 34.194 N	80° 50' 44.670 W
5,732.0	26.92	68.77	5,511.5	510.2	902.2	14,262,529.43	1,684,081.21	39° 16' 34.234 N	80° 50' 44.536 W
5,757.0	27.34	68.49	5,533.7	514.4	912.8	14,262,533.59	1,684,091.83	39° 16' 34.275 N	80° 50' 44.401 W



Scientific Drilling International
Survey Report - Geographic



Company: Antero Resources
Project: Doddridge County WV
Site: McGill Pad: Hormels/Mash/Nero/Vonda/Wilhelm
Well: Hormels Unit 2H
Wellbore: ST1
Design: ST1

Local Co-ordinate Reference: Well Hormels Unit 2H
TVD Reference: Precision 525: 1164' GL + 19' KB @ 1183.0usft
MD Reference: Precision 525: 1164' GL + 19' KB @ 1183.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Antero NE

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Environmental Protection

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,782.0	27.62	68.41	5,555.9	518.6	923.5	14,262,537.82	1,684,102.56	39° 16' 34.317 N	80° 50' 44.264 W
5,807.0	27.10	68.33	5,578.1	522.8	934.2	14,262,542.06	1,684,113.24	39° 16' 34.359 N	80° 50' 44.128 W
5,832.0	26.28	67.86	5,600.4	527.0	944.6	14,262,546.25	1,684,123.65	39° 16' 34.400 N	80° 50' 43.995 W
5,857.0	25.87	67.41	5,622.9	531.2	954.8	14,262,550.43	1,684,133.82	39° 16' 34.441 N	80° 50' 43.866 W
5,902.0	22.58	61.22	5,663.9	539.1	971.4	14,262,558.36	1,684,150.46	39° 16' 34.519 N	80° 50' 43.654 W
5,947.0	23.04	52.78	5,705.4	548.6	986.0	14,262,567.85	1,684,165.05	39° 16' 34.613 N	80° 50' 43.468 W
5,992.0	22.96	57.03	5,746.8	558.7	1,000.4	14,262,577.96	1,684,179.43	39° 16' 34.712 N	80° 50' 43.285 W
6,036.0	23.26	62.14	5,787.3	567.5	1,015.2	14,262,586.69	1,684,194.31	39° 16' 34.798 N	80° 50' 43.096 W
6,081.0	24.31	63.73	5,828.5	575.7	1,031.4	14,262,594.94	1,684,210.47	39° 16' 34.880 N	80° 50' 42.890 W
6,126.0	25.70	62.73	5,869.3	584.3	1,048.4	14,262,603.51	1,684,227.45	39° 16' 34.964 N	80° 50' 42.674 W
6,171.0	26.71	63.25	5,909.6	593.3	1,066.1	14,262,612.53	1,684,245.15	39° 16' 35.053 N	80° 50' 42.448 W
6,215.0	26.66	61.84	5,949.0	602.4	1,083.6	14,262,621.64	1,684,262.69	39° 16' 35.143 N	80° 50' 42.225 W
6,260.0	26.58	65.02	5,989.2	611.4	1,101.7	14,262,630.66	1,684,280.71	39° 16' 35.232 N	80° 50' 41.996 W
6,350.0	27.12	63.92	6,069.5	629.0	1,138.3	14,262,648.18	1,684,317.39	39° 16' 35.404 N	80° 50' 41.529 W
6,440.0	27.15	65.41	6,149.6	646.5	1,175.4	14,262,665.74	1,684,354.49	39° 16' 35.577 N	80° 50' 41.056 W
6,530.0	26.98	65.89	6,229.7	663.4	1,212.7	14,262,682.63	1,684,391.80	39° 16' 35.744 N	80° 50' 40.581 W
6,619.0	26.19	62.01	6,309.3	680.9	1,248.5	14,262,700.09	1,684,427.57	39° 16' 35.916 N	80° 50' 40.126 W
6,664.0	24.60	49.11	6,350.0	691.7	1,264.4	14,262,710.89	1,684,443.43	39° 16' 36.022 N	80° 50' 39.924 W
6,709.0	25.85	38.49	6,390.7	705.5	1,277.6	14,262,724.71	1,684,456.63	39° 16' 36.159 N	80° 50' 39.756 W
6,754.0	28.55	28.96	6,430.8	722.6	1,288.9	14,262,741.81	1,684,467.95	39° 16' 36.328 N	80° 50' 39.611 W
6,799.0	31.36	22.59	6,469.8	742.8	1,298.6	14,262,762.04	1,684,477.66	39° 16' 36.527 N	80° 50' 39.487 W
6,843.0	35.93	20.01	6,506.4	765.5	1,307.4	14,262,784.75	1,684,486.48	39° 16' 36.752 N	80° 50' 39.375 W
6,847.0	36.30	19.74	6,509.6	767.7	1,308.2	14,262,786.97	1,684,487.28	39° 16' 36.774 N	80° 50' 39.364 W
Middlesex @ 6847									
6,888.0	40.13	17.23	6,541.8	791.8	1,316.2	14,262,811.02	1,684,495.29	39° 16' 37.012 N	80° 50' 39.262 W
6,933.0	44.46	14.39	6,575.1	820.9	1,324.5	14,262,840.16	1,684,503.51	39° 16' 37.299 N	80° 50' 39.157 W
6,977.0	51.25	10.07	6,604.6	852.8	1,331.3	14,262,872.02	1,684,510.35	39° 16' 37.614 N	80° 50' 39.069 W
7,021.0	60.15	6.90	6,629.4	888.7	1,336.6	14,262,907.94	1,684,515.65	39° 16' 37.969 N	80° 50' 39.001 W
Burket @ 7021									
7,022.0	60.35	6.83	6,629.9	889.6	1,336.7	14,262,908.80	1,684,515.76	39° 16' 37.978 N	80° 50' 39.000 W
7,067.0	66.37	3.12	6,650.1	929.6	1,340.1	14,262,948.84	1,684,519.21	39° 16' 38.374 N	80° 50' 38.955 W
7,089.0	68.28	2.55	6,658.5	949.9	1,341.2	14,262,969.12	1,684,520.21	39° 16' 38.574 N	80° 50' 38.942 W
Tully @ 7089									
7,112.0	70.27	1.98	6,666.7	971.4	1,342.0	14,262,990.61	1,684,521.06	39° 16' 38.787 N	80° 50' 38.930 W
7,157.0	74.07	359.23	6,680.5	1,014.2	1,342.4	14,263,033.43	1,684,521.50	39° 16' 39.210 N	80° 50' 38.924 W
7,202.0	76.94	355.91	6,691.7	1,057.7	1,340.6	14,263,076.95	1,684,519.65	39° 16' 39.641 N	80° 50' 38.946 W
Marcellus @ 7202									
7,247.0	79.06	353.35	6,701.1	1,101.5	1,336.5	14,263,120.77	1,684,515.53	39° 16' 40.074 N	80° 50' 38.998 W
7,291.0	81.88	349.16	6,708.5	1,144.4	1,329.9	14,263,163.63	1,684,508.93	39° 16' 40.498 N	80° 50' 39.081 W
7,317.0	83.18	346.88	6,711.9	1,169.6	1,324.5	14,263,188.84	1,684,503.58	39° 16' 40.747 N	80° 50' 39.148 W
7,362.0	86.55	341.77	6,715.9	1,212.7	1,312.4	14,263,231.97	1,684,491.47	39° 16' 41.174 N	80° 50' 39.301 W
7,452.0	90.72	341.58	6,718.1	1,298.1	1,284.1	14,263,317.36	1,684,463.18	39° 16' 42.019 N	80° 50' 39.659 W
7,542.0	91.96	342.52	6,715.9	1,383.7	1,256.4	14,263,402.95	1,684,435.46	39° 16' 42.865 N	80° 50' 40.010 W
7,631.0	91.61	341.84	6,713.2	1,468.4	1,229.2	14,263,487.64	1,684,408.23	39° 16' 43.703 N	80° 50' 40.355 W
7,721.0	91.07	341.87	6,711.1	1,553.9	1,201.2	14,263,573.14	1,684,380.21	39° 16' 44.549 N	80° 50' 40.709 W
7,811.0	91.03	342.44	6,709.4	1,639.6	1,173.6	14,263,658.80	1,684,352.64	39° 16' 45.396 N	80° 50' 41.058 W
7,900.0	89.96	342.32	6,708.7	1,724.4	1,146.6	14,263,743.62	1,684,325.70	39° 16' 46.236 N	80° 50' 41.399 W
7,990.0	90.93	342.62	6,708.0	1,810.2	1,119.5	14,263,829.43	1,684,298.59	39° 16' 47.085 N	80° 50' 41.742 W
8,080.0	90.47	341.61	6,706.9	1,895.9	1,091.9	14,263,915.08	1,684,270.95	39° 16' 47.932 N	80° 50' 42.092 W
8,169.0	91.21	342.08	6,705.5	1,980.4	1,064.2	14,263,999.64	1,684,243.23	39° 16' 48.768 N	80° 50' 42.443 W
8,259.0	90.20	339.95	6,704.4	2,065.5	1,034.9	14,264,084.73	1,684,213.95	39° 16' 49.610 N	80° 50' 42.813 W
8,349.0	89.97	341.22	6,704.3	2,150.4	1,005.0	14,264,169.61	1,684,184.04	39° 16' 50.450 N	80° 50' 43.192 W
8,438.0	90.50	340.38	6,703.9	2,234.4	975.7	14,264,253.66	1,684,154.77	39° 16' 51.282 N	80° 50' 43.563 W
8,528.0	90.84	339.54	6,702.9	2,319.0	944.9	14,264,338.20	1,684,123.93	39° 16' 52.118 N	80° 50' 43.953 W



Scientific Drilling International
Survey Report - Geographic



Company: Antero Resources
Project: Doddridge County WV
Site: McGill Pad: Hormels/Mash/Nero/Vonda/Wilhelm
Well: Hormels Unit 2H
Wellbore: ST1
Design: ST1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well Hormels Unit 2H
Precision 525: 1164' GL + 19' KB @ 1183.0usft
Precision 525: 1164' GL + 19' KB @ 1183.0usft
Grid
Minimum Curvature
Antero NE

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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
8,618.0	90.03	341.35	6,702.2	2,403.8	914.7	14,264,423.00	1,684,093.81	39° 16' 52.957 N	80° 50' 44.334 W
8,707.0	90.34	340.28	6,701.9	2,487.8	885.5	14,264,507.06	1,684,064.56	39° 16' 53.789 N	80° 50' 44.705 W
8,797.0	90.67	341.54	6,701.1	2,572.9	856.1	14,264,592.10	1,684,035.13	39° 16' 54.630 N	80° 50' 45.077 W
8,867.0	90.91	343.25	6,699.9	2,658.7	828.9	14,264,677.86	1,684,007.91	39° 16' 55.479 N	80° 50' 45.422 W
8,976.0	90.84	342.48	6,698.5	2,743.7	802.6	14,264,762.92	1,683,981.69	39° 16' 56.320 N	80° 50' 45.753 W
9,066.0	90.37	344.09	6,697.6	2,829.9	776.7	14,264,849.11	1,683,955.81	39° 16' 57.173 N	80° 50' 46.081 W
9,156.0	91.04	343.68	6,696.5	2,916.3	751.8	14,264,935.56	1,683,930.83	39° 16' 58.028 N	80° 50' 46.397 W
9,245.0	90.67	343.30	6,695.1	3,001.7	726.5	14,265,020.88	1,683,905.54	39° 16' 58.872 N	80° 50' 46.717 W
9,335.0	90.40	342.14	6,694.3	3,087.6	699.7	14,265,106.82	1,683,878.81	39° 16' 59.722 N	80° 50' 47.055 W
9,425.0	91.34	341.91	6,692.9	3,173.2	672.0	14,265,192.41	1,683,851.04	39° 17' 0.569 N	80° 50' 47.406 W
9,515.0	91.24	342.29	6,690.9	3,258.8	644.3	14,265,278.03	1,683,823.38	39° 17' 1.416 N	80° 50' 47.756 W
9,604.0	90.43	342.19	6,689.6	3,343.6	617.2	14,265,362.78	1,683,796.24	39° 17' 2.254 N	80° 50' 48.100 W
9,694.0	90.90	341.21	6,688.6	3,429.0	588.9	14,265,448.22	1,683,767.98	39° 17' 3.100 N	80° 50' 48.458 W
9,784.0	91.47	340.28	6,686.7	3,513.9	559.2	14,265,533.17	1,683,738.31	39° 17' 3.940 N	80° 50' 48.833 W
9,874.0	90.80	342.28	6,684.9	3,599.2	530.4	14,265,618.39	1,683,709.43	39° 17' 4.783 N	80° 50' 49.199 W
9,963.0	90.22	340.96	6,684.1	3,683.6	502.3	14,265,702.84	1,683,681.37	39° 17' 5.619 N	80° 50' 49.554 W
10,053.0	90.70	343.46	6,683.4	3,769.3	474.8	14,265,788.53	1,683,653.88	39° 17' 6.466 N	80° 50' 49.902 W
10,143.0	91.77	344.38	6,681.5	3,855.8	449.9	14,265,874.98	1,683,628.95	39° 17' 7.322 N	80° 50' 50.217 W
10,233.0	90.86	342.37	6,679.4	3,942.0	424.2	14,265,961.19	1,683,603.21	39° 17' 8.174 N	80° 50' 50.543 W
10,322.0	89.79	341.62	6,678.9	4,026.6	396.6	14,266,045.83	1,683,575.70	39° 17' 9.012 N	80° 50' 50.891 W
10,412.0	90.42	340.61	6,678.7	4,111.8	367.5	14,266,130.99	1,683,546.57	39° 17' 9.854 N	80° 50' 51.260 W
10,502.0	89.79	342.66	6,678.6	4,197.2	339.2	14,266,216.40	1,683,518.22	39° 17' 10.699 N	80° 50' 51.619 W
10,592.0	90.86	342.02	6,678.1	4,282.9	311.9	14,266,302.15	1,683,490.92	39° 17' 11.548 N	80° 50' 51.964 W
10,681.0	92.21	342.06	6,675.7	4,367.6	284.4	14,266,386.78	1,683,463.48	39° 17' 12.385 N	80° 50' 52.311 W
10,771.0	91.81	342.43	6,672.5	4,453.2	257.0	14,266,472.44	1,683,436.06	39° 17' 13.232 N	80° 50' 52.659 W
10,861.0	90.19	341.98	6,670.9	4,538.9	229.5	14,266,558.12	1,683,408.56	39° 17' 14.080 N	80° 50' 53.007 W
10,951.0	90.66	342.06	6,670.3	4,624.5	201.7	14,266,643.72	1,683,380.77	39° 17' 14.927 N	80° 50' 53.358 W
11,040.0	90.09	341.87	6,669.7	4,709.1	174.2	14,266,728.35	1,683,353.22	39° 17' 15.764 N	80° 50' 53.707 W
11,130.0	91.10	342.91	6,668.8	4,794.9	146.9	14,266,814.12	1,683,326.00	39° 17' 16.613 N	80° 50' 54.052 W
11,220.0	90.53	341.70	6,667.5	4,880.6	119.6	14,266,899.86	1,683,298.64	39° 17' 17.461 N	80° 50' 54.398 W
11,310.0	90.22	340.99	6,666.9	4,965.9	90.8	14,266,985.12	1,683,269.86	39° 17' 18.304 N	80° 50' 54.762 W
11,399.0	90.66	343.49	6,666.2	5,050.6	63.7	14,267,069.87	1,683,242.71	39° 17' 19.143 N	80° 50' 55.106 W
11,489.0	90.42	343.31	6,665.4	5,136.9	37.9	14,267,156.12	1,683,217.00	39° 17' 19.996 N	80° 50' 55.431 W
11,579.0	89.35	342.21	6,665.5	5,222.8	11.3	14,267,242.07	1,683,190.33	39° 17' 20.846 N	80° 50' 55.769 W
11,669.0	90.46	341.52	6,665.7	5,308.4	-16.7	14,267,327.60	1,683,162.31	39° 17' 21.692 N	80° 50' 56.123 W
11,758.0	91.90	341.69	6,663.9	5,392.8	-44.8	14,267,412.03	1,683,134.24	39° 17' 22.528 N	80° 50' 56.479 W
11,848.0	90.36	341.18	6,662.1	5,478.1	-73.5	14,267,497.33	1,683,105.59	39° 17' 23.371 N	80° 50' 56.841 W
11,938.0	89.95	342.41	6,661.8	5,563.6	-101.6	14,267,582.82	1,683,077.47	39° 17' 24.217 N	80° 50' 57.197 W
12,027.0	91.13	344.13	6,661.0	5,648.8	-127.2	14,267,668.05	1,683,051.85	39° 17' 25.060 N	80° 50' 57.521 W
12,117.0	90.39	342.65	6,659.8	5,735.1	-152.9	14,267,754.28	1,683,026.13	39° 17' 25.913 N	80° 50' 57.847 W
12,206.0	89.92	341.44	6,659.6	5,819.7	-180.4	14,267,838.94	1,682,998.69	39° 17' 26.751 N	80° 50' 58.194 W
12,296.0	91.13	343.23	6,658.7	5,905.5	-207.7	14,267,924.69	1,682,971.39	39° 17' 27.599 N	80° 50' 58.540 W
12,386.0	90.62	341.68	6,657.4	5,991.3	-234.8	14,268,010.49	1,682,944.26	39° 17' 28.448 N	80° 50' 58.883 W
12,476.0	90.02	340.41	6,656.9	6,076.4	-264.0	14,268,095.61	1,682,915.03	39° 17' 29.290 N	80° 50' 59.253 W
12,565.0	90.12	339.83	6,656.8	6,160.1	-294.3	14,268,179.30	1,682,884.76	39° 17' 30.118 N	80° 50' 59.637 W
12,655.0	90.15	340.31	6,656.5	6,244.7	-325.0	14,268,263.91	1,682,854.08	39° 17' 30.955 N	80° 51' 0.025 W
12,745.0	91.29	340.76	6,655.4	6,329.5	-355.0	14,268,348.76	1,682,824.10	39° 17' 31.795 N	80° 51' 0.405 W
12,835.0	90.92	341.52	6,653.7	6,414.7	-384.1	14,268,433.91	1,682,795.01	39° 17' 32.637 N	80° 51' 0.773 W
12,925.0	90.25	341.97	6,652.8	6,500.2	-412.2	14,268,519.38	1,682,766.82	39° 17' 33.483 N	80° 51' 1.130 W
13,014.0	89.75	342.80	6,652.8	6,585.0	-439.2	14,268,604.20	1,682,739.89	39° 17' 34.322 N	80° 51' 1.471 W
13,104.0	90.72	344.62	6,652.4	6,671.4	-464.4	14,268,690.58	1,682,714.64	39° 17' 35.176 N	80° 51' 1.791 W
13,194.0	91.32	344.36	6,650.8	6,758.1	-488.5	14,268,777.29	1,682,690.58	39° 17' 36.034 N	80° 51' 2.095 W
13,283.0	89.74	342.47	6,650.0	6,843.4	-513.9	14,268,862.58	1,682,665.18	39° 17' 36.878 N	80° 51' 2.416 W
13,373.0	89.74	343.89	6,650.4	6,929.5	-539.9	14,268,948.73	1,682,639.14	39° 17' 37.730 N	80° 51' 2.746 W
13,463.0	89.34	343.80	6,651.1	7,015.9	-565.0	14,269,035.17	1,682,614.10	39° 17' 38.585 N	80° 51' 3.063 W



Company:	Antero Resources	Local Co-ordinate Reference:	Well Hormels Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 525: 1164' GL + 19' KB @ 1183.0usft
Site:	McGill Pad: Hormels/Mash/Nero/Vonda/Wilhelm	MD Reference:	Precision 525: 1164' GL + 19' KB @ 1183.0usft
Well:	Hormels Unit 2H	North Reference:	Grid
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Antero NE

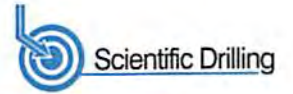
Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
13,552.0	89.88	342.72	6,651.7	7,101.2	-590.6	14,269,120.39	1,682,588.46	39° 17' 39.428 N	80° 51' 3.387 W
13,642.0	91.36	342.27	6,650.7	7,187.0	-617.7	14,269,206.22	1,682,561.39	39° 17' 40.277 N	80° 51' 3.730 W
13,732.0	90.48	341.59	6,649.3	7,272.5	-645.6	14,269,291.77	1,682,533.48	39° 17' 41.124 N	80° 51' 4.083 W
13,822.0	89.64	342.48	6,649.2	7,358.2	-673.3	14,269,377.38	1,682,505.72	39° 17' 41.971 N	80° 51' 4.435 W
13,911.0	89.71	341.18	6,649.7	7,442.7	-701.1	14,269,461.94	1,682,477.97	39° 17' 42.807 N	80° 51' 4.786 W
14,001.0	89.48	339.80	6,650.3	7,527.5	-731.1	14,269,546.77	1,682,447.91	39° 17' 43.646 N	80° 51' 5.167 W
14,091.0	90.18	338.83	6,650.6	7,611.7	-762.9	14,269,630.96	1,682,416.12	39° 17' 44.479 N	80° 51' 5.569 W
14,180.0	91.19	340.78	6,649.5	7,695.3	-793.7	14,269,714.48	1,682,385.40	39° 17' 45.306 N	80° 51' 5.958 W
14,270.0	90.99	340.07	6,647.8	7,780.0	-823.8	14,269,799.26	1,682,355.26	39° 17' 46.144 N	80° 51' 6.340 W
14,360.0	91.52	341.63	6,645.8	7,865.0	-853.3	14,269,884.26	1,682,325.74	39° 17' 46.985 N	80° 51' 6.714 W
14,450.0	90.41	342.98	6,644.3	7,950.8	-880.7	14,269,969.98	1,682,298.39	39° 17' 47.833 N	80° 51' 7.060 W
14,539.0	89.00	341.92	6,644.8	8,035.6	-907.5	14,270,054.84	1,682,271.55	39° 17' 48.673 N	80° 51' 7.400 W
14,629.0	89.00	342.17	6,646.4	8,121.2	-935.2	14,270,140.44	1,682,243.81	39° 17' 49.520 N	80° 51' 7.751 W
14,719.0	90.41	343.68	6,646.8	8,207.2	-961.7	14,270,226.47	1,682,217.39	39° 17' 50.371 N	80° 51' 8.086 W
14,809.0	91.32	344.13	6,645.5	8,293.7	-986.6	14,270,312.93	1,682,192.44	39° 17' 51.226 N	80° 51' 8.401 W
14,898.0	89.50	341.98	6,644.8	8,378.8	-1,012.6	14,270,398.06	1,682,166.51	39° 17' 52.068 N	80° 51' 8.730 W
14,988.0	90.04	342.03	6,645.2	8,464.4	-1,040.4	14,270,483.65	1,682,138.70	39° 17' 52.915 N	80° 51' 9.082 W
15,078.0	91.02	342.12	6,644.4	8,550.1	-1,068.1	14,270,569.28	1,682,111.00	39° 17' 53.762 N	80° 51' 9.432 W
15,167.0	90.88	341.57	6,642.9	8,634.6	-1,095.8	14,270,653.84	1,682,083.28	39° 17' 54.599 N	80° 51' 9.783 W
15,257.0	90.08	341.09	6,642.1	8,719.9	-1,124.6	14,270,739.10	1,682,054.47	39° 17' 55.442 N	80° 51' 10.148 W
15,347.0	90.34	342.02	6,641.8	8,805.2	-1,153.1	14,270,824.47	1,682,025.99	39° 17' 56.287 N	80° 51' 10.509 W
15,436.0	90.85	342.83	6,640.9	8,890.1	-1,179.9	14,270,909.31	1,681,999.12	39° 17' 57.126 N	80° 51' 10.849 W
15,526.0	90.28	342.50	6,640.0	8,976.0	-1,206.8	14,270,995.22	1,681,972.31	39° 17' 57.976 N	80° 51' 11.189 W
15,616.0	88.87	342.62	6,640.7	9,061.9	-1,233.7	14,271,081.08	1,681,945.33	39° 17' 58.825 N	80° 51' 11.530 W
15,705.0	89.84	342.25	6,641.7	9,146.7	-1,260.6	14,271,165.92	1,681,918.48	39° 17' 59.665 N	80° 51' 11.870 W
15,795.0	90.92	342.17	6,641.1	9,232.4	-1,288.1	14,271,251.58	1,681,890.99	39° 18' 0.512 N	80° 51' 12.218 W
15,885.0	91.02	341.46	6,639.5	9,317.9	-1,316.2	14,271,337.08	1,681,862.91	39° 18' 1.358 N	80° 51' 12.574 W
15,975.0	90.45	342.02	6,638.4	9,403.3	-1,344.4	14,271,422.54	1,681,834.71	39° 18' 2.203 N	80° 51' 12.931 W
16,064.0	90.41	341.80	6,637.7	9,487.9	-1,372.0	14,271,507.13	1,681,807.07	39° 18' 3.040 N	80° 51' 13.281 W
16,154.0	90.04	340.70	6,637.4	9,573.1	-1,400.9	14,271,592.36	1,681,778.15	39° 18' 3.883 N	80° 51' 13.647 W
16,244.0	90.55	339.20	6,636.9	9,657.7	-1,431.8	14,271,676.90	1,681,747.29	39° 18' 4.720 N	80° 51' 14.038 W
16,334.0	90.51	339.27	6,636.1	9,741.8	-1,463.7	14,271,761.05	1,681,715.39	39° 18' 5.552 N	80° 51' 14.442 W
16,347.0	90.48	339.21	6,635.9	9,754.0	-1,468.3	14,271,773.23	1,681,710.77	39° 18' 5.673 N	80° 51' 14.501 W
Last SDI MWD @ 16347									
16,411.0	90.48	339.21	6,635.4	9,813.8	-1,491.0	14,271,833.03	1,681,688.06	39° 18' 6.264 N	80° 51' 14.788 W
Projection To Bit @ 16411 MD / 6635 TVD									

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
6,847.0	6,509.6	Middlesex @ 6847		0.00		
7,021.0	6,629.4	Burket @ 7021		0.00		
7,089.0	6,658.5	Tully @ 7089		0.00		
7,202.0	6,691.7	Marcellus @ 7202		0.00		

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Survey Report - Geographic



Company:	Antero Resources	Local Co-ordinate Reference:	Well Hormels Unit 2H
Project:	Doddridge County WV	TVD Reference:	Precision 525: 1164' GL + 19' KB @ 1183.0usft
Site:	McGill Pad: Hormels/Mash/Nero/Vonda/Wilhelm	MD Reference:	Precision 525: 1164' GL + 19' KB @ 1183.0usft
Well:	Hormels Unit 2H	North Reference:	Grid
Wellbore:	ST1	Survey Calculation Method:	Minimum Curvature
Design:	ST1	Database:	Antero NE

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
16,347.0	6,635.9	9,754.0	-1,468.3	Last SDI MWD @ 16347
16,411.0	6,635.4	9,813.8	-1,491.0	Projection To Bit @ 16411 MD / 6635 TVD

Checked By: _____ Approved By: _____ Date: _____

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