

JUN 01 2015

WV GEOLOGICAL SURVEY
MORGANTOWN, WV



Antero Resources
Freeland Unit 2H
Tyler County WV
Northing: 14294927.15
Easting: 1642331.42
As Drilled

WELL DETAILS: Freeland Unit 2H

+N/S	+E/W	Northing	Easting	Ground Level:	Slot
0.0	0.0	14294927.15	1642331.42	1021.0	
				Latitude	
				80° 59' 35.611" W	

PROJECT DETAILS: Tyler County WV

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

REFERENCE INFORMATION

Coordinate (N/E) Reference: Well Freeland Unit 2H, Grid North
Well Slot (N/E) Reference: Slot 1642331.42, Grid North
Magnetic North: -8.35°
Date: 5/29/2014
Model: BCGM2014



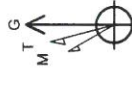
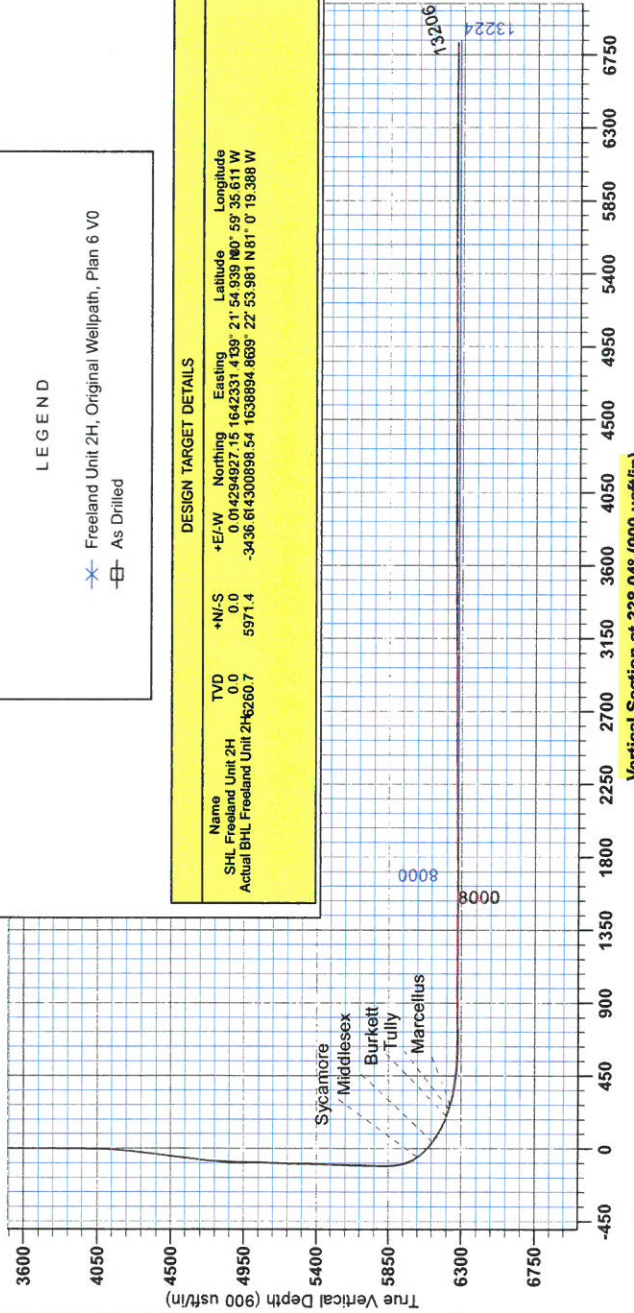
Genie Lightfoot
14.27 July 29 2014
Scientific Drilling
421 South Eadie Lane
Oklahoma City, OK 73128

LEGEND

- Freeiland Unit 2H, Original Wellpath, Plan 6 V0
- As Drilled

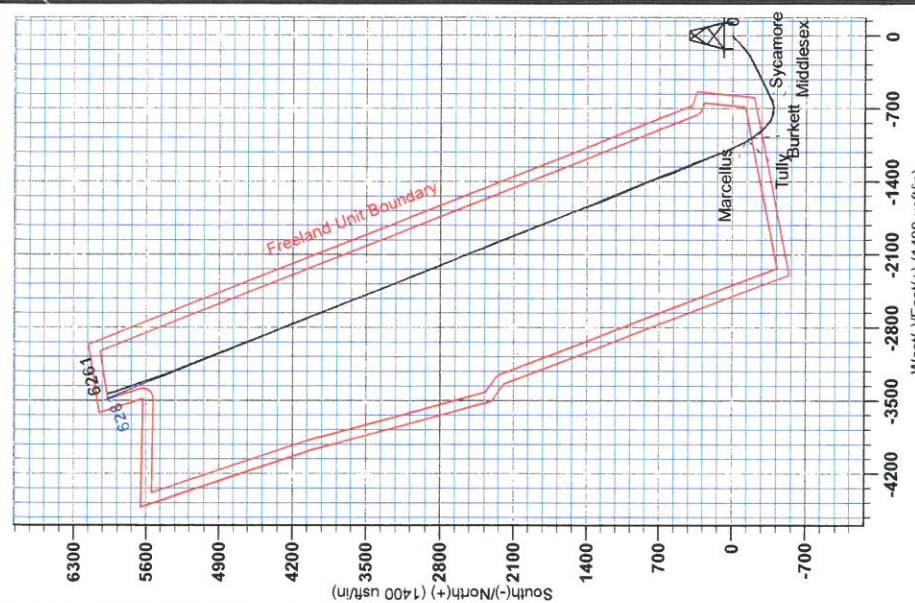
DESIGN TARGET DETAILS

Name	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
SHL Freeland Unit 2H	0.0	0.0	0.0	14294927.15	1642331.42	21° 54' 59.980" N	80° 59' 35.611" W
Actual BHL Freeland Unit 2H	260.7	5971.4	-3436.6	14300896.54	1636894.869	22° 53' 56.1" N	81° 0' 19.368" W



To convert Magnetic North to Grid, Subtract 8.35°
To convert True North to Grid, Subtract 0.00°

Magnetic Field
Strength: 52226.2817
Declination: 8.35
Date: 5/29/2014
Model: BCGM2014





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Antero Resources

Tyler County WV
Freeland/Plum/Woodworth Pad
Freeland Unit 2H
Original Wellpath

Design: As Drilled

EOW Completion Report

29 July, 2014



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EOW Completion Report



Company: Antero Resources	Local Co-ordinate Reference: Well Freeland Unit 2H
Project: Tyler County WV	TVD Reference: Frontier 25: GL 1021 + 28KB @ 1049.0usft
Site: Freeland/Plum/Woodworth Pad	MD Reference: Frontier 25: GL 1021 + 28KB @ 1049.0usft
Well: Freeland Unit 2H	North Reference: Grid
Wellbore: Original Wellpath	Survey Calculation Method: Minimum Curvature
Design: As Drilled	Database: Oklahoma District

Project	Tyler County WV, Tyler Co West Virginia		
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	Freeland/Plum/Woodworth Pad				
Site Position:		Northing:	14,294,927.15 usft	Latitude:	39° 21' 54.939 N
From:	Map	Easting:	1,642,331.42 usft	Longitude:	80° 59' 35.611 W
Position Uncertainty:	2.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.00 °

Well	Freeland Unit 2H					
Well Position	+N/-S	0.0 usft	Northing:	14,294,927.15 usft	Latitude:	39° 21' 54.939 N
	+E/-W	0.0 usft	Easting:	1,642,331.42 usft	Longitude:	80° 59' 35.611 W
Position Uncertainty	2.0 usft		Wellhead Elevation:	1,049.0 usft	Ground Level:	1,021.0 usft

Wellbore	Original Wellpath				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2014	5/29/2014	-8.35	66.96	52,328

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	338.04	

Survey Program	Date 7/29/2014				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	3,710.5	Survey #1 Def Gyro to Int (Original Wellpa	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
3,725.0	4,760.7	Survey #2 Def Gyro to 4760.7 (Original W	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
4,856.0	13,206.0	Survey #3 MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1	

Survey	MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
	0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00
	100.0	0.60	270.90	100.0	0.0	-0.5	0.2	0.60
	200.0	0.32	285.78	200.0	0.1	-1.3	0.6	0.30
	300.0	0.17	271.88	300.0	0.2	-1.7	0.8	0.16
	400.0	0.11	286.80	400.0	0.2	-2.0	0.9	0.07
	500.0	0.08	235.11	500.0	0.2	-2.1	1.0	0.09
	600.0	0.30	262.94	600.0	0.1	-2.4	1.0	0.23
	700.0	0.14	245.58	700.0	0.0	-2.8	1.1	0.17
	800.0	0.13	278.62	800.0	0.0	-3.0	1.1	0.08
	900.0	0.15	281.92	900.0	0.0	-3.3	1.3	0.02

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North Reference: Grid
Survey Calculation Method: Minimum Curvature
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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
1,000.0	0.11	291.05	1,000.0	0.1	-3.5	1.4	0.04
1,100.0	0.13	139.72	1,100.0	0.1	-3.5	1.4	0.23
1,200.0	0.18	176.13	1,200.0	-0.2	-3.4	1.1	0.11
1,300.0	0.11	218.27	1,300.0	-0.4	-3.5	0.9	0.12
1,400.0	0.07	170.50	1,400.0	-0.6	-3.5	0.8	0.08
1,500.0	0.11	277.75	1,500.0	-0.6	-3.6	0.8	0.15
1,600.0	0.10	134.30	1,600.0	-0.6	-3.6	0.8	0.20
1,700.0	0.15	148.62	1,700.0	-0.8	-3.5	0.6	0.06
1,800.0	0.16	148.71	1,800.0	-1.1	-3.4	0.3	0.01
1,900.0	0.20	126.12	1,900.0	-1.3	-3.2	0.0	0.08
2,000.0	0.16	181.50	2,000.0	-1.5	-3.0	-0.3	0.17
2,100.0	0.11	118.79	2,100.0	-1.7	-2.9	-0.5	0.15
2,200.0	0.03	32.00	2,200.0	-1.7	-2.8	-0.5	0.11
2,300.0	0.25	142.53	2,300.0	-1.9	-2.7	-0.7	0.26
2,400.0	0.09	345.15	2,400.0	-2.0	-2.6	-0.9	0.33
2,500.0	0.16	0.28	2,500.0	-1.8	-2.6	-0.7	0.08
2,600.0	0.10	64.46	2,600.0	-1.6	-2.5	-0.5	0.15
2,700.0	0.10	78.20	2,700.0	-1.5	-2.4	-0.5	0.02
2,800.0	0.14	7.68	2,800.0	-1.4	-2.3	-0.4	0.14
2,900.0	0.12	275.43	2,900.0	-1.3	-2.3	-0.3	0.19
3,000.0	0.07	260.83	3,000.0	-1.3	-2.5	-0.2	0.06
3,100.0	0.19	270.48	3,100.0	-1.3	-2.7	-0.2	0.12
3,200.0	0.17	300.97	3,200.0	-1.2	-3.0	0.0	0.10
3,300.0	0.04	116.38	3,300.0	-1.1	-3.1	0.1	0.21
3,400.0	0.03	15.15	3,400.0	-1.1	-3.1	0.1	0.05
3,500.0	0.10	306.47	3,500.0	-1.0	-3.1	0.2	0.09
3,600.0	0.17	89.05	3,600.0	-1.0	-3.1	0.2	0.26
3,700.0	0.18	147.51	3,700.0	-1.1	-2.8	0.0	0.17
3,710.5	0.18	118.10	3,710.5	-1.1	-2.8	0.0	0.87
3,725.0	0.07	165.35	3,725.0	-1.2	-2.8	0.0	0.98
3,750.0	0.53	215.81	3,750.0	-1.3	-2.9	-0.1	1.95
3,775.0	0.97	220.25	3,775.0	-1.5	-3.1	-0.3	1.77
3,800.0	1.32	225.04	3,800.0	-1.9	-3.4	-0.5	1.45
3,825.0	2.03	232.41	3,825.0	-2.4	-4.0	-0.7	2.96
3,850.0	2.51	241.10	3,849.9	-2.9	-4.8	-0.9	2.36
3,875.0	3.07	242.97	3,874.9	-3.5	-5.9	-1.0	2.27
3,900.0	3.66	240.57	3,899.9	-4.2	-7.2	-1.2	2.43
3,925.0	4.03	239.28	3,924.8	-5.0	-8.6	-1.4	1.52
3,950.0	4.86	235.61	3,949.7	-6.0	-10.2	-1.8	3.51
3,975.0	5.47	235.96	3,974.6	-7.3	-12.1	-2.3	2.44
4,000.0	5.78	237.39	3,999.5	-8.7	-14.1	-2.7	1.36
4,025.0	6.33	237.32	4,024.4	-10.1	-16.4	-3.2	2.20
4,050.0	6.82	237.98	4,049.2	-11.6	-18.8	-3.7	1.98
4,075.0	7.23	237.99	4,074.0	-13.2	-21.4	-4.3	1.64
4,100.0	7.73	236.63	4,098.8	-15.0	-24.1	-4.9	2.12



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Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
4,125.0	8.61	233.61	4,123.6	-17.0	-27.0	-5.7	3.92
4,150.0	9.58	228.33	4,148.2	-19.5	-30.1	-6.9	5.11
4,175.0	10.58	225.16	4,172.9	-22.5	-33.3	-8.4	4.57
4,200.0	11.79	223.00	4,197.4	-26.0	-36.6	-10.4	5.12
4,225.0	12.94	222.13	4,221.8	-29.9	-40.3	-12.7	4.66
4,250.0	14.22	221.36	4,246.1	-34.3	-44.2	-15.3	5.17
4,275.0	15.63	221.12	4,270.3	-39.2	-48.4	-18.2	5.65
4,300.0	16.65	220.33	4,294.3	-44.4	-52.9	-21.4	4.17
4,325.0	17.22	222.16	4,318.2	-49.9	-57.7	-24.7	3.12
4,350.0	18.11	225.14	4,342.0	-55.4	-63.0	-27.8	5.07
4,375.0	18.92	227.39	4,365.7	-60.9	-68.7	-30.8	4.32
4,400.0	19.74	228.34	4,389.3	-66.4	-74.8	-33.6	3.51
4,425.0	20.14	229.31	4,412.8	-72.0	-81.3	-36.4	2.08
4,450.0	20.66	229.95	4,436.2	-77.7	-87.9	-39.2	2.26
4,475.0	21.35	230.53	4,459.6	-83.4	-94.8	-41.9	2.88
4,500.0	22.27	230.76	4,482.8	-89.3	-102.0	-44.7	3.70
4,525.0	22.69	230.54	4,505.9	-95.4	-109.4	-47.6	1.71
4,550.0	22.47	229.53	4,529.0	-101.5	-116.7	-50.5	1.78
4,575.0	22.30	228.94	4,552.1	-107.8	-123.9	-53.6	1.13
4,600.0	22.49	228.93	4,575.2	-114.0	-131.1	-56.7	0.76
4,625.0	22.88	229.31	4,598.3	-120.3	-138.4	-59.8	1.67
4,650.0	23.02	229.70	4,621.3	-126.6	-145.8	-62.9	0.83
4,675.0	23.04	229.43	4,644.3	-133.0	-153.3	-66.0	0.43
4,700.0	22.82	229.64	4,667.3	-139.3	-160.7	-69.1	0.94
4,725.0	21.79	231.46	4,690.5	-145.3	-168.0	-72.0	4.96
4,750.0	21.24	232.09	4,713.7	-151.0	-175.2	-74.5	2.39
4,760.7	21.09	233.23	4,723.7	-153.4	-178.3	-75.6	4.09
4,917.0	21.10	245.92	4,869.6	-181.7	-226.5	-83.8	2.92
4,949.0	20.84	243.81	4,899.5	-186.6	-236.9	-84.4	2.50
4,980.0	20.49	241.87	4,928.5	-191.5	-246.6	-85.4	2.48
5,012.0	21.10	241.87	4,958.4	-196.9	-256.6	-86.6	1.91
5,044.0	21.37	244.60	4,988.2	-202.1	-267.0	-87.6	3.20
5,076.0	21.63	246.97	5,018.0	-206.9	-277.7	-88.1	2.83
5,108.0	21.77	246.55	5,047.7	-211.6	-288.5	-88.3	0.65
5,139.0	21.90	244.60	5,076.5	-216.4	-299.0	-88.8	2.38
5,171.0	22.51	243.54	5,106.1	-221.6	-309.9	-89.7	2.28
5,203.0	23.04	242.40	5,135.6	-227.3	-320.9	-90.8	2.16
5,235.0	23.57	240.73	5,165.0	-233.3	-332.1	-92.2	2.65
5,266.0	24.09	240.82	5,193.4	-239.4	-343.0	-93.8	1.68
5,298.0	24.53	242.23	5,222.5	-245.7	-354.6	-95.3	2.28
5,329.0	24.97	244.16	5,250.7	-251.6	-366.2	-96.4	2.97
5,361.0	25.06	246.97	5,279.7	-257.1	-378.5	-97.0	3.72
5,392.0	24.97	247.76	5,307.8	-262.2	-390.6	-97.1	1.12
5,423.0	23.74	248.11	5,336.0	-267.0	-402.4	-97.1	3.99



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5,454.0	22.69	247.15	5,364.5	-271.6	-413.7	-97.2	3.60
5,483.0	22.42	245.83	5,391.3	-276.1	-423.9	-97.5	1.98
5,515.0	22.42	244.07	5,420.9	-281.2	-435.0	-98.2	2.10
5,547.0	23.83	243.11	5,450.3	-286.8	-446.2	-99.2	4.56
5,579.0	25.32	242.23	5,479.4	-293.0	-458.1	-100.4	4.79
5,611.0	26.38	242.40	5,508.2	-299.4	-470.4	-101.8	3.32
5,643.0	27.62	243.37	5,536.7	-306.1	-483.3	-103.1	4.11
5,674.0	28.93	244.95	5,564.0	-312.5	-496.6	-104.1	4.87
5,706.0	29.81	246.88	5,591.9	-318.9	-510.9	-104.7	4.04
5,737.0	29.90	247.24	5,618.8	-324.9	-525.1	-104.9	0.65
5,769.0	30.04	246.35	5,646.5	-331.2	-539.8	-105.3	1.46
5,802.0	30.43	245.04	5,675.0	-338.0	-554.9	-106.0	2.32
5,833.0	30.44	245.38	5,701.8	-344.6	-569.2	-106.7	0.56
5,865.0	28.93	244.42	5,729.6	-351.3	-583.5	-107.6	4.95
5,897.0	28.67	245.04	5,757.6	-357.9	-597.5	-108.5	1.24
5,928.0	29.15	245.64	5,784.7	-364.1	-611.1	-109.2	1.81
5,951.0	29.19	246.36	5,804.8	-368.7	-621.3	-109.6	1.54
5,992.0	27.61	246.88	5,840.9	-376.4	-639.2	-110.1	3.90
6,024.0	28.75	254.09	5,869.1	-381.5	-653.5	-109.4	11.21
6,055.0	31.66	260.60	5,895.9	-384.8	-668.7	-106.9	14.12
6,087.0	35.53	263.85	5,922.5	-387.2	-686.2	-102.5	13.33
6,118.0	38.69	268.24	5,947.3	-388.5	-704.9	-96.7	13.30
6,149.0	40.92	274.82	5,971.1	-387.9	-724.7	-88.8	15.37
6,181.0	42.56	281.34	5,995.0	-384.9	-745.7	-78.1	14.49
6,213.0	43.88	288.19	6,018.3	-379.3	-766.9	-65.0	15.22
6,235.0	45.29	292.16	6,034.0	-374.0	-781.4	-54.6	14.19
Sycamore							
6,244.0	45.90	293.73	6,040.3	-371.5	-787.3	-50.1	14.19
6,276.0	49.07	298.48	6,061.9	-361.1	-808.5	-32.5	14.75
6,307.0	51.18	303.57	6,081.8	-348.8	-828.8	-13.6	14.32
6,338.0	52.94	308.32	6,100.9	-334.5	-848.6	7.2	13.35
6,370.0	55.66	310.87	6,119.5	-317.9	-868.6	30.0	10.68
6,383.0	56.55	311.85	6,126.8	-310.8	-876.7	39.6	9.25
Middlesex							
6,402.0	57.86	313.24	6,137.1	-300.0	-888.5	54.1	9.25
6,434.0	60.45	317.24	6,153.5	-280.5	-907.8	79.4	13.44
6,466.0	62.52	320.45	6,168.8	-259.3	-926.3	105.9	10.93
6,498.0	64.46	322.56	6,183.1	-236.9	-944.1	133.4	8.46
6,529.0	66.92	324.84	6,195.8	-214.1	-960.8	160.7	10.39
6,561.0	69.38	326.69	6,207.7	-189.5	-977.5	189.8	9.37
6,573.0	70.07	327.19	6,211.9	-180.1	-983.7	200.8	6.96
Burkett							
6,593.0	71.23	328.01	6,218.5	-164.2	-993.8	219.4	6.96
6,618.0	72.53	329.11	6,226.3	-143.9	-1,006.2	242.8	6.68
Tully							



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Site: Freeland/Plum/Woodworth Pad
Well: Freeland Unit 2H
Wellbore: Original Wellpath
Design: As Drilled

Local Co-ordinate Reference: Well Freeland Unit 2H
TVD Reference: Frontier 25: GL 1021 + 28KB @ 1049.0usft
MD Reference: Frontier 25: GL 1021 + 28KB @ 1049.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
6,625.0	72.90	329.41	6,228.4	-138.2	-1,009.6	249.4	6.68
6,644.0	74.35	330.22	6,233.7	-122.4	-1,018.8	267.5	8.67
Marcellus							
6,656.0	75.27	330.73	6,236.9	-112.3	-1,024.5	278.9	8.67
6,689.0	77.29	331.96	6,244.7	-84.2	-1,039.8	310.8	7.11
6,720.0	79.14	333.28	6,251.0	-57.3	-1,053.8	341.0	7.28
6,751.0	81.07	335.30	6,256.3	-29.7	-1,067.0	371.4	8.94
6,783.0	82.13	337.06	6,261.0	-0.8	-1,079.8	403.1	6.37
6,815.0	83.19	338.03	6,265.1	28.5	-1,092.0	434.8	4.47
6,847.0	83.54	338.29	6,268.8	58.1	-1,103.8	466.6	1.36
6,879.0	83.98	338.20	6,272.3	87.6	-1,115.6	498.4	1.40
6,911.0	86.09	338.20	6,275.1	117.2	-1,127.4	530.3	6.59
6,943.0	88.11	338.20	6,276.7	146.9	-1,139.3	562.3	6.31
7,024.0	90.40	337.85	6,277.7	222.0	-1,169.6	643.2	2.86
7,119.0	90.31	336.62	6,277.1	309.6	-1,206.3	738.2	1.30
7,214.0	90.48	335.48	6,276.5	396.4	-1,244.9	833.2	1.21
7,309.0	90.04	337.59	6,276.1	483.5	-1,282.7	928.1	2.27
7,403.0	89.52	339.70	6,276.4	571.1	-1,317.0	1,022.1	2.31
7,499.0	89.78	339.96	6,277.0	661.2	-1,350.1	1,118.1	0.38
7,594.0	89.96	339.26	6,277.2	750.2	-1,383.2	1,213.0	0.76
7,690.0	89.78	338.20	6,277.4	839.7	-1,418.0	1,309.0	1.12
7,784.0	89.52	336.09	6,278.0	926.3	-1,454.5	1,403.0	2.26
7,880.0	89.52	338.11	6,278.8	1,014.7	-1,491.8	1,499.0	2.10
7,973.0	90.31	338.47	6,278.9	1,101.1	-1,526.2	1,592.0	0.93
8,069.0	90.31	337.59	6,278.4	1,190.1	-1,562.2	1,688.0	0.92
8,164.0	91.36	339.70	6,277.0	1,278.6	-1,596.7	1,783.0	2.48
8,259.0	90.57	339.70	6,275.4	1,367.7	-1,629.7	1,877.9	0.83
8,354.0	90.13	337.59	6,274.9	1,456.2	-1,664.3	1,972.9	2.27
8,450.0	90.31	338.64	6,274.5	1,545.2	-1,700.1	2,068.9	1.11
8,545.0	91.28	338.55	6,273.2	1,633.7	-1,734.7	2,163.9	1.03
8,641.0	90.40	337.76	6,271.8	1,722.8	-1,770.5	2,259.9	1.23
8,735.0	90.66	338.91	6,270.9	1,810.1	-1,805.2	2,353.9	1.25
8,825.0	90.40	338.82	6,270.1	1,894.1	-1,837.6	2,443.8	0.31
8,917.0	89.69	338.64	6,270.0	1,979.8	-1,871.0	2,535.8	0.80
9,007.0	89.43	338.38	6,270.7	2,063.5	-1,903.9	2,625.8	0.41
9,097.0	90.40	338.11	6,270.8	2,147.1	-1,937.3	2,715.8	1.12
9,188.0	90.66	337.24	6,270.0	2,231.3	-1,971.9	2,806.8	1.00
9,279.0	90.04	337.15	6,269.4	2,315.2	-2,007.1	2,897.8	0.69
9,369.0	89.78	336.62	6,269.6	2,398.0	-2,042.5	2,987.8	0.66
9,459.0	89.69	338.47	6,270.0	2,481.1	-2,076.8	3,077.8	2.06
9,550.0	90.84	338.55	6,269.6	2,565.8	-2,110.2	3,168.8	1.27
9,641.0	90.71	337.83	6,268.3	2,650.3	-2,144.0	3,259.8	0.80
9,731.0	91.01	337.85	6,267.0	2,733.6	-2,177.9	3,349.8	0.33
9,823.0	90.66	338.20	6,265.6	2,818.9	-2,212.4	3,441.7	0.54
9,917.0	90.66	337.94	6,264.6	2,906.1	-2,247.5	3,535.7	0.28



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EOW Completion Report



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Design: As Drilled

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GEOLOGICAL SURVEY
MORGANTOWN, WV

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
10,011.0	89.96	338.20	6,264.0	2,993.3	-2,282.6	3,629.7	0.79
10,106.0	90.24	337.92	6,263.9	3,081.4	-2,318.1	3,724.7	0.42
10,200.0	89.87	337.15	6,263.8	3,168.3	-2,354.0	3,818.7	0.91
10,294.0	89.78	338.47	6,264.1	3,255.4	-2,389.5	3,912.7	1.41
10,387.0	90.67	338.60	6,263.7	3,341.9	-2,423.5	4,005.7	0.97
10,482.0	90.57	338.20	6,262.7	3,430.2	-2,458.5	4,100.7	0.43
10,576.0	89.78	338.20	6,262.4	3,517.5	-2,493.4	4,194.7	0.84
10,670.0	90.22	337.41	6,262.4	3,604.5	-2,528.9	4,288.7	0.96
10,764.0	89.87	338.11	6,262.3	3,691.5	-2,564.5	4,382.7	0.83
10,858.0	90.31	338.38	6,262.2	3,778.8	-2,599.3	4,476.7	0.55
10,953.0	89.96	337.94	6,262.0	3,867.0	-2,634.7	4,571.7	0.59
11,047.0	89.60	338.99	6,262.3	3,954.5	-2,669.2	4,665.7	1.18
11,141.0	90.04	339.17	6,262.6	4,042.3	-2,702.7	4,759.7	0.51
11,236.0	90.04	338.55	6,262.5	4,130.9	-2,737.0	4,854.7	0.65
11,331.0	89.52	338.11	6,262.9	4,219.2	-2,772.1	4,949.7	0.72
11,425.0	90.22	337.24	6,263.1	4,306.1	-2,807.8	5,043.7	1.19
11,519.0	90.92	337.59	6,262.2	4,392.9	-2,843.9	5,137.7	0.83
11,612.0	89.87	338.38	6,261.5	4,479.1	-2,878.7	5,230.7	1.41
11,706.0	90.92	338.64	6,260.9	4,566.6	-2,913.2	5,324.6	1.15
11,800.0	91.10	338.47	6,259.2	4,654.0	-2,947.5	5,418.6	0.26
11,895.0	90.04	338.47	6,258.3	4,742.4	-2,982.4	5,513.6	1.12
11,989.0	89.34	337.85	6,258.8	4,829.7	-3,017.4	5,607.6	0.99
12,083.0	89.43	337.06	6,259.8	4,916.5	-3,053.4	5,701.6	0.85
12,177.0	90.13	338.64	6,260.2	5,003.5	-3,088.8	5,795.6	1.84
12,271.0	91.10	338.91	6,259.2	5,091.2	-3,122.9	5,889.6	1.07
12,365.0	88.81	337.76	6,259.2	5,178.5	-3,157.6	5,983.6	2.73
12,459.0	89.69	336.97	6,260.5	5,265.3	-3,193.7	6,077.6	1.26
12,553.0	90.13	340.58	6,260.6	5,352.9	-3,227.8	6,171.5	3.87
12,647.0	89.96	339.61	6,260.5	5,441.2	-3,259.8	6,265.5	1.05
12,741.0	91.28	341.10	6,259.5	5,529.8	-3,291.4	6,359.4	2.12
12,835.0	89.52	341.72	6,258.9	5,618.9	-3,321.3	6,453.2	1.99
12,929.0	88.90	340.93	6,260.2	5,707.9	-3,351.4	6,547.1	1.07
13,023.0	89.43	340.84	6,261.5	5,796.7	-3,382.2	6,640.9	0.57
13,118.0	90.13	342.42	6,261.9	5,886.9	-3,412.1	6,735.7	1.82
13,147.0	90.84	344.18	6,261.7	5,914.6	-3,420.5	6,764.6	6.54
13,206.0	91.02	344.18	6,260.7	5,971.4	-3,436.6	6,823.3	0.31



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Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,235.0	6,034.0	-374.0	-781.4	Sycamore
6,383.0	6,126.8	-310.8	-876.7	Middlesex
6,573.0	6,211.9	-180.1	-983.7	Burkett
6,618.0	6,226.3	-143.9	-1,006.2	Tully
6,644.0	6,233.7	-122.4	-1,018.8	Marcellus

Checked By: _____ Approved By: _____ Date: _____

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 MORGANTOWN, WV