



Antero Resources  
Langford Unit 2H  
Ritchie County WV  
Northing: 14233074.36  
Easting: 1668360.48  
As Drilled

**WELL DETAILS:** Langford Unit 2H  
Ground Level: 1075.0  
Northing: 14233074.36  
Easting: 1668360.48  
Longitude: 80° 54' 43.50" W  
Latitude: 39° 11' 42.200" N

**REFERENCE INFORMATION**  
Coordinate (N/E) Reference: Well Langford Unit 2H Grid North  
System (V/S) Reference: SRS - (GDA, GSE) 1075 • AS 22 @ 1100 duft  
Measurement Method: Minimum 24" (L) 1075 • AS 22 @ 1100 duft  
Canadian Method: Minimum 24" (L) 1075 • AS 22 @ 1100 duft

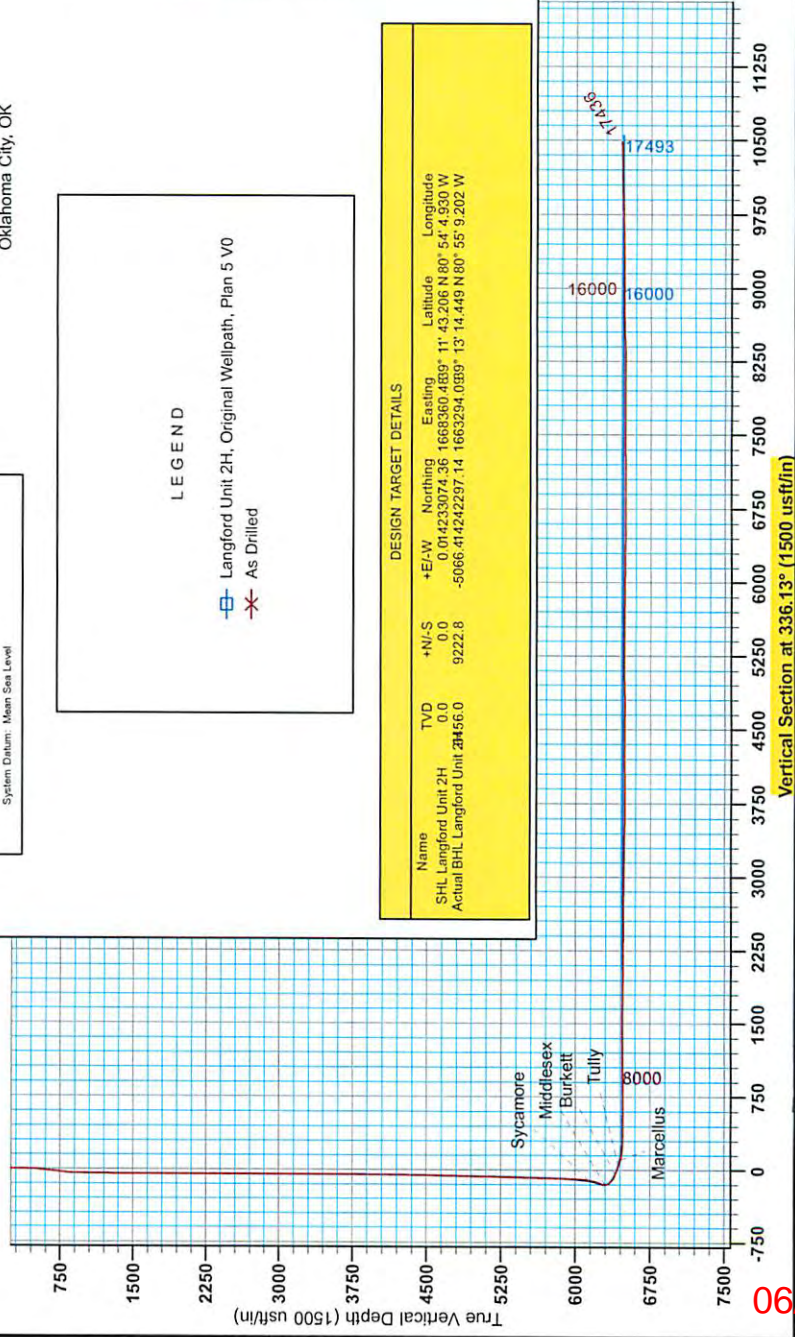
**PROJECT DETAILS:** Ritchie County WV  
Geoidals System: Universal Transverse Mercator (US Survey Feet)  
Datum: NAD 1983 (NAD83 CONUS)  
Ellipsoid: Clarke 1866  
Zone: Zone 17N (84 W to 78 W)  
System Datum: Mean Sea Level



Genie Lightfoot  
13:47, September 08 2014  
Scientific Drilling  
421 South Eagle Lane  
Oklahoma City, OK

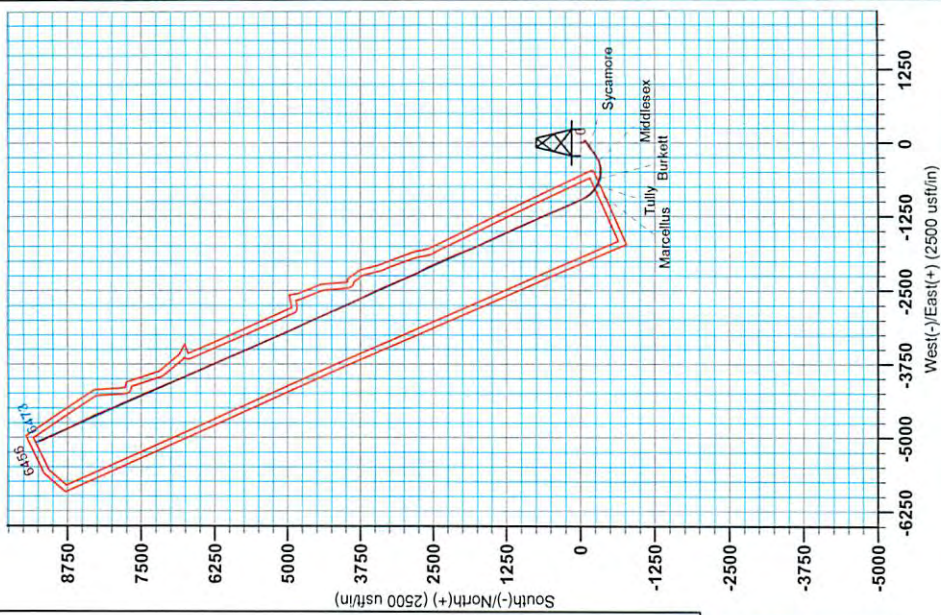
**LEGEND**  
-□- Langford Unit 2H, Original Wellpath, Plan 5 V0  
-x- As Drilled

DESIGN TARGET DETAILS							
Name	+N/-S	TVD	+E/-W	Northing	Easting	Latitude	Longitude
SHL Langford Unit 2H	0.0	0.0	0.0	014233074.36	1668360.48	11° 43' 20.6" N	80° 54' 43.50" W
Actual BHL Langford Unit 2H	56.0	9222.8	-50666.41	4242297.14	1663294.08	13° 14' 44.9" N	80° 55' 9.202" W



To convert Magnetic North to Grid, Subtract 8.48"  
To convert True North to Grid, Subtract 0.00"

Magnetic Field  
Strength: 52238.68nT  
Dip Angle: 66.80°  
Date: 08/27/2014  
Model: BGG12013



06/05/2015

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# Antero Resources

Ritchie County WV  
DeBerry/Rufus/Langford  
Langford Unit 2H  
Original Wellpath

Design: As Drilled

## EOW Completion Report

08 September, 2014

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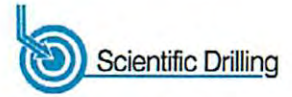


06/05/2015





EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Langford Unit 2H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Patterson 347: GL 1075' + KB 25 @ 1100.0usft
<b>Site:</b>	DeBerry/Rufus/Langford	<b>MD Reference:</b>	Patterson 347: GL 1075' + KB 25 @ 1100.0usft
<b>Well:</b>	Langford Unit 2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

<b>Project</b>	Ritchie County WV, Ritchie County WV, WV North		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Fee	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Zone 17N (84 W to 78 W)		

<b>Site</b>	DeBerry/Rufus/Langford, Site Center: Deberry 1H				
<b>Site Position:</b>	<b>Northing:</b>	14,233,087.17 usft	<b>Latitude:</b>	39° 11' 43.333 N	
<b>From:</b>	<b>Easting:</b>	1,668,409.26 usft	<b>Longitude:</b>	80° 54' 4.310 W	
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16"	<b>Grid Convergence:</b>	0.06 °

<b>Well</b>	Langford Unit 2H					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	14,233,074.36 usft	<b>Latitude:</b>	39° 11' 43.206 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,668,360.48 usft	<b>Longitude:</b>	80° 54' 4.930 W
<b>Position Uncertainty</b>	2.0 usft	<b>Wellhead Elevation:</b>	1,100.0 usft	<b>Ground Level:</b>	1,075.0 usft	

<b>Wellbore</b>	Original Wellpath
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2013	4/21/2014	-8.42	66.80	52,239

<b>Design</b>	As Drilled				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0

<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	336.13

<b>Survey Program</b>	<b>Date</b>	9/8/2014		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
114.0	5,717.0	Survey #4 Def Gyro to KOP (Original Well	SDI Standard Keeper	Scientific Drilling Intl. Standard Wireline Keeper
5,717.5	17,436.0	Survey #5 SDI MWD (Original Wellpath)	SDI MWD	Scientific Drilling Intl. MWD - Standard ver 1.0.1

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
114.0	0.38	132.84	114.0	-0.3	0.3	-0.3	0.33
214.0	0.47	133.41	214.0	-0.8	0.8	-1.0	0.09
314.0	0.34	92.32	314.0	-1.1	1.4	-1.5	0.31
414.0	0.57	102.97	414.0	-1.2	2.2	-2.0	0.24
514.0	4.61	170.62	513.9	-5.3	3.3	-6.2	4.42
614.0	6.61	170.73	613.4	-14.9	4.9	-15.6	2.00
714.0	6.78	171.06	712.7	-26.4	6.8	-26.9	0.17
814.0	6.09	169.71	812.1	-37.5	8.6	-37.8	0.71
914.0	1.68	101.21	911.9	-43.0	11.0	-43.8	5.69
1,014.0	1.58	105.70	1,011.8	-43.6	13.8	-45.5	0.16

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EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Langford Unit 2H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Patterson 347: GL 1075' + KB 25 @ 1100.0usft
<b>Site:</b>	DeBerry/Rufus/Langford	<b>MD Reference:</b>	Patterson 347: GL 1075' + KB 25 @ 1100.0usft
<b>Well:</b>	Langford Unit 2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
1,114.0	1.19	107.44	1,111.8	-44.3	16.1	-47.0	0.39	
1,214.0	0.90	98.98	1,211.8	-44.8	17.9	-48.2	0.33	
1,314.0	0.68	89.22	1,311.8	-44.9	19.2	-48.8	0.26	
1,414.0	0.44	72.68	1,411.8	-44.7	20.2	-49.1	0.29	
1,514.0	0.49	98.33	1,511.8	-44.7	21.0	-49.4	0.21	
1,614.0	0.39	96.53	1,611.8	-44.8	21.7	-49.8	0.10	
1,714.0	0.11	98.34	1,711.8	-44.8	22.2	-50.0	0.28	
1,814.0	0.07	152.25	1,811.8	-44.9	22.3	-50.1	0.09	
1,914.0	0.02	194.20	1,911.7	-45.0	22.3	-50.2	0.06	
2,014.0	0.11	217.48	2,011.7	-45.1	22.3	-50.2	0.09	
2,114.0	0.14	198.82	2,111.7	-45.3	22.2	-50.4	0.05	
2,214.0	0.05	155.94	2,211.7	-45.4	22.1	-50.5	0.11	
2,314.0	0.13	224.17	2,311.7	-45.5	22.1	-50.6	0.12	
2,414.0	0.13	228.08	2,411.7	-45.7	21.9	-50.7	0.01	
2,514.0	0.07	189.40	2,511.7	-45.8	21.8	-50.8	0.09	
2,614.0	0.11	264.49	2,611.7	-45.9	21.7	-50.8	0.11	
2,714.0	0.15	248.95	2,711.7	-46.0	21.5	-50.7	0.05	
2,814.0	0.33	255.98	2,811.7	-46.1	21.1	-50.7	0.18	
2,914.0	0.28	252.20	2,911.7	-46.2	20.6	-50.6	0.05	
3,014.0	0.24	260.64	3,011.7	-46.3	20.1	-50.5	0.06	
3,114.0	0.31	260.84	3,111.7	-46.4	19.7	-50.4	0.07	
3,214.0	0.33	247.51	3,211.7	-46.6	19.1	-50.3	0.08	
3,314.0	0.37	253.62	3,311.7	-46.8	18.6	-50.3	0.05	
3,414.0	0.50	189.55	3,411.7	-47.3	18.2	-50.6	0.47	
3,514.0	0.32	253.57	3,511.7	-47.8	17.8	-50.9	0.46	
3,614.0	0.30	240.16	3,611.7	-48.0	17.3	-50.9	0.08	
3,714.0	0.21	204.67	3,711.7	-48.3	17.0	-51.1	0.18	
3,814.0	0.12	157.50	3,811.7	-48.6	17.0	-51.3	0.16	
3,914.0	0.17	113.72	3,911.7	-48.7	17.2	-51.5	0.12	
4,014.0	0.21	134.36	4,011.7	-48.9	17.4	-51.8	0.08	
4,114.0	0.21	116.04	4,111.7	-49.1	17.7	-52.1	0.07	
4,214.0	0.36	120.90	4,211.7	-49.4	18.2	-52.5	0.15	
4,314.0	0.79	120.50	4,311.7	-49.9	19.0	-53.3	0.43	
4,414.0	0.99	124.88	4,411.7	-50.7	20.3	-54.6	0.21	
4,514.0	1.03	125.53	4,511.7	-51.7	21.8	-56.1	0.04	
4,614.0	1.19	128.00	4,611.7	-52.9	23.3	-57.8	0.17	
4,714.0	1.32	128.86	4,711.7	-54.3	25.0	-59.8	0.13	
4,814.0	1.40	131.16	4,811.6	-55.8	26.9	-61.9	0.10	
4,914.0	1.49	131.94	4,911.6	-57.5	28.8	-64.2	0.09	
5,014.0	1.53	133.17	5,011.6	-59.2	30.7	-66.6	0.05	
5,114.0	1.68	131.91	5,111.5	-61.1	32.8	-69.2	0.15	
5,214.0	1.67	133.84	5,211.5	-63.1	34.9	-71.8	0.06	
5,314.0	1.63	134.06	5,311.4	-65.0	37.0	-74.5	0.04	
5,414.0	1.71	131.43	5,411.4	-67.0	39.1	-77.2	0.11	

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<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey

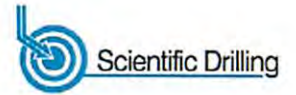
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
5,514.0	1.58	132.12	5,511.4	-69.0	41.3	-79.8	0.13
5,614.0	1.51	134.54	5,611.3	-70.9	43.2	-82.3	0.10
5,714.0	1.31	133.20	5,711.3	-72.6	45.0	-84.6	0.20
5,764.0	1.77	196.53	5,761.3	-73.7	45.2	-85.7	3.33
5,795.0	3.93	220.94	5,792.2	-75.0	44.4	-86.5	7.84
5,827.0	6.32	232.36	5,824.1	-76.9	42.2	-87.4	8.08
5,858.0	8.43	233.09	5,854.8	-79.3	39.1	-88.3	6.81
5,889.0	11.16	234.50	5,885.4	-82.4	34.8	-89.4	8.84
5,921.0	13.56	236.68	5,916.6	-86.2	29.2	-90.7	7.64
5,952.0	16.47	239.39	5,946.6	-90.5	22.3	-91.8	9.65
5,984.0	19.45	240.46	5,977.0	-95.4	13.8	-92.8	9.37
6,015.0	22.70	239.61	6,005.9	-101.0	4.1	-94.0	10.53
6,046.0	25.75	238.29	6,034.2	-107.5	-6.8	-95.6	9.99
6,078.0	29.95	237.87	6,062.5	-115.5	-19.4	-97.7	13.14
6,109.0	33.39	237.82	6,088.9	-124.1	-33.2	-100.1	11.10
6,141.0	36.99	237.65	6,115.0	-134.0	-48.8	-102.8	11.25
6,172.0	41.19	235.29	6,139.1	-144.8	-65.1	-106.0	14.37
6,175.0	41.55	235.13	6,141.3	-145.9	-66.7	-106.4	12.38
<b>Sycamore</b>							
6,203.0	44.87	233.69	6,161.7	-157.1	-82.3	-110.3	12.38
6,235.0	48.52	233.78	6,183.7	-170.8	-101.1	-115.3	11.41
6,266.0	52.63	233.76	6,203.4	-185.0	-120.4	-120.4	13.26
6,298.0	56.95	233.67	6,221.8	-200.4	-141.4	-126.1	13.50
6,329.0	61.45	233.94	6,237.7	-216.2	-162.9	-131.7	14.54
6,360.0	66.37	233.79	6,251.3	-232.6	-185.4	-137.7	15.88
6,392.0	70.56	235.64	6,263.1	-249.8	-209.7	-143.5	14.15
6,423.0	71.67	237.77	6,273.1	-265.9	-234.2	-148.3	7.42
6,455.0	71.85	240.97	6,283.1	-281.3	-260.4	-151.9	9.51
6,486.0	72.03	244.83	6,292.7	-294.8	-286.6	-153.6	11.85
6,510.0	71.89	246.67	6,300.2	-304.1	-307.4	-153.7	7.33
<b>Middlesex</b>							
6,518.0	71.85	247.29	6,302.6	-307.1	-314.4	-153.6	7.33
6,549.0	70.89	252.52	6,312.6	-317.2	-342.0	-151.7	16.28
6,580.0	70.65	257.62	6,322.8	-324.7	-370.2	-147.1	15.55
6,611.0	70.31	261.33	6,333.1	-330.1	-399.0	-140.4	11.33
6,643.0	69.79	264.44	6,344.1	-333.8	-428.8	-131.7	9.28
6,674.0	69.98	268.00	6,354.7	-335.7	-457.8	-121.7	10.80
6,706.0	70.44	270.77	6,365.6	-336.0	-488.0	-109.8	8.27
6,737.0	71.49	274.90	6,375.7	-334.6	-517.2	-96.7	13.04
6,768.0	72.35	279.01	6,385.3	-331.0	-546.5	-81.6	12.90
6,800.0	73.79	282.65	6,394.6	-325.3	-576.5	-64.2	11.78
6,831.0	74.39	285.90	6,403.1	-317.9	-605.4	-45.7	10.27
6,837.0	74.51	286.31	6,404.7	-316.3	-605.4	-42.0	6.83
<b>Burkett</b>							
6,863.0	75.02	288.07	6,411.6	-308.9	-634.9	-25.6	6.83

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<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	
6,894.0	74.94	290.76	6,419.6	-299.0	-663.2	-5.0	8.38	
6,925.0	74.41	293.98	6,427.8	-287.6	-690.8	16.6	10.16	
6,957.0	74.64	296.76	6,436.3	-274.4	-718.7	39.9	8.40	
6,958.0	74.70	296.86	6,436.6	-273.9	-719.5	40.7	11.52	
<b>Tully</b>								
6,988.0	76.43	299.95	6,444.1	-260.1	-745.1	63.6	11.52	
7,020.0	78.12	303.47	6,451.1	-243.7	-771.6	89.4	11.96	
7,043.0	79.40	305.54	6,455.6	-230.9	-790.2	108.6	10.45	
<b>Marcellus</b>								
7,051.0	79.85	306.26	6,457.0	-226.3	-796.6	115.4	10.45	
7,082.0	80.61	308.91	6,462.3	-207.7	-820.8	142.2	8.77	
7,114.0	82.33	313.06	6,467.1	-186.9	-844.7	170.9	13.91	
7,145.0	84.22	317.00	6,470.7	-165.1	-866.4	199.6	14.02	
7,176.0	86.28	320.62	6,473.3	-141.9	-886.8	229.1	13.40	
7,208.0	87.89	325.07	6,474.9	-116.4	-906.1	260.2	14.77	
7,229.0	88.69	327.04	6,475.5	-99.0	-917.8	280.8	10.12	
7,323.0	89.26	333.16	6,477.2	-17.6	-964.6	374.3	6.54	
7,417.0	90.44	334.37	6,477.4	66.7	-1,006.2	468.2	1.80	
7,511.0	90.00	334.77	6,477.1	151.6	-1,046.5	562.1	0.63	
7,605.0	90.40	336.50	6,476.7	237.2	-1,085.3	656.1	1.89	
7,699.0	90.07	338.10	6,476.4	324.0	-1,121.6	750.1	1.74	
7,793.0	90.64	337.44	6,475.8	411.0	-1,157.1	844.1	0.93	
7,887.0	89.46	334.82	6,475.7	496.9	-1,195.2	938.1	3.06	
7,982.0	90.00	335.83	6,476.1	583.2	-1,234.8	1,033.0	1.21	
8,076.0	90.70	336.25	6,475.6	669.1	-1,273.0	1,127.0	0.87	
8,170.0	90.37	338.09	6,474.7	755.8	-1,309.5	1,221.0	1.99	
8,264.0	90.27	337.25	6,474.2	842.7	-1,345.2	1,315.0	0.90	
8,358.0	90.91	336.62	6,473.2	929.2	-1,382.0	1,409.0	0.96	
8,452.0	89.90	336.24	6,472.5	1,015.4	-1,419.6	1,503.0	1.15	
8,546.0	89.26	336.35	6,473.2	1,101.4	-1,457.4	1,597.0	0.69	
8,641.0	89.63	336.14	6,474.1	1,188.4	-1,495.6	1,692.0	0.45	
8,735.0	89.13	335.33	6,475.2	1,274.1	-1,534.3	1,785.9	1.01	
8,829.0	89.53	335.83	6,476.3	1,359.6	-1,573.1	1,879.9	0.68	
8,923.0	90.17	336.11	6,476.5	1,445.5	-1,611.4	1,973.9	0.74	
9,018.0	89.06	336.11	6,477.1	1,532.3	-1,649.9	2,068.9	1.17	
9,112.0	89.23	335.27	6,478.5	1,618.0	-1,688.6	2,162.9	0.91	
9,206.0	89.90	334.51	6,479.3	1,703.1	-1,728.5	2,256.9	1.08	
9,300.0	89.90	336.09	6,479.4	1,788.5	-1,767.7	2,350.9	1.68	
9,394.0	88.96	335.24	6,480.4	1,874.2	-1,806.5	2,444.9	1.35	
9,488.0	90.27	339.76	6,481.0	1,961.0	-1,842.4	2,538.8	5.01	
9,581.0	89.09	339.23	6,481.5	2,048.1	-1,875.0	2,631.6	1.39	
9,676.0	89.73	338.48	6,482.5	2,136.7	-1,909.3	2,726.5	1.04	
9,770.0	89.33	337.67	6,483.3	2,223.9	-1,944.4	2,820.5	0.96	
9,864.0	89.16	336.66	6,484.5	2,310.5	-1,980.9	2,914.4	1.09	
9,959.0	89.20	336.90	6,485.9	2,397.8	-2,018.3	3,009.4	0.26	

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EOW Completion Report



<b>Company:</b>	Antero Resources	<b>Local Co-ordinate Reference:</b>	Well Langford Unit 2H
<b>Project:</b>	Ritchie County WV	<b>TVD Reference:</b>	Patterson 347: GL 1075' + KB 25 @ 1100.0usft
<b>Site:</b>	DeBerry/Rufus/Langford	<b>MD Reference:</b>	Patterson 347: GL 1075' + KB 25 @ 1100.0usft
<b>Well:</b>	Langford Unit 2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

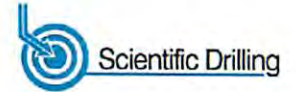
Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
10,053.0	89.50	333.90	6,486.9	2,483.2	-2,057.4	3,103.4	3.21
10,147.0	89.77	333.53	6,487.5	2,567.5	-2,099.1	3,197.3	0.49
10,241.0	89.97	332.45	6,487.7	2,651.3	-2,141.7	3,291.2	1.17
10,335.0	89.03	333.22	6,488.6	2,734.9	-2,184.7	3,385.0	1.29
10,429.0	88.96	334.99	6,490.2	2,819.4	-2,225.7	3,478.9	1.88
10,524.0	89.33	336.54	6,491.6	2,906.1	-2,264.7	3,573.9	1.68
10,618.0	89.93	337.15	6,492.2	2,992.5	-2,301.6	3,667.9	0.91
10,712.0	90.27	338.58	6,492.1	3,079.6	-2,337.1	3,761.9	1.56
10,864.0	90.13	337.90	6,491.5	3,220.7	-2,393.4	3,913.8	0.46
10,899.0	90.44	337.84	6,491.4	3,253.1	-2,406.6	3,948.7	0.90
10,993.0	89.90	336.94	6,491.1	3,339.9	-2,442.7	4,042.7	1.12
11,087.0	90.47	337.13	6,490.8	3,426.5	-2,479.4	4,136.7	0.64
11,182.0	88.99	333.83	6,491.2	3,512.9	-2,518.8	4,231.7	3.81
11,276.0	89.36	334.11	6,492.6	3,597.3	-2,560.1	4,325.6	0.49
11,370.0	89.56	333.84	6,493.5	3,681.8	-2,601.3	4,419.5	0.36
11,464.0	90.00	334.74	6,493.8	3,766.5	-2,642.1	4,513.5	1.07
11,555.0	90.30	335.98	6,493.6	3,849.2	-2,680.0	4,604.5	1.40
11,645.0	90.54	335.62	6,492.9	3,931.3	-2,716.9	4,694.5	0.48
11,737.0	90.94	336.25	6,491.7	4,015.3	-2,754.4	4,786.5	0.81
11,829.0	90.57	334.08	6,490.5	4,098.8	-2,793.1	4,878.4	2.39
11,922.0	91.11	335.38	6,489.2	4,182.9	-2,832.8	4,971.4	1.51
12,014.0	89.80	336.63	6,488.4	4,266.9	-2,870.2	5,063.4	1.97
12,107.0	90.30	336.44	6,488.4	4,352.2	-2,907.2	5,156.4	0.58
12,199.0	90.90	336.66	6,487.4	4,436.6	-2,943.8	5,248.4	0.69
12,292.0	90.17	336.19	6,486.5	4,521.8	-2,981.0	5,341.4	0.93
12,384.0	89.09	336.20	6,487.1	4,606.0	-3,018.1	5,433.4	1.17
12,476.0	89.50	335.54	6,488.3	4,690.0	-3,055.8	5,525.4	0.84
12,567.0	88.83	335.97	6,489.6	4,772.9	-3,093.1	5,616.4	0.87
12,661.0	89.50	336.28	6,490.9	4,858.9	-3,131.2	5,710.3	0.79
12,755.0	89.77	336.57	6,491.5	4,945.0	-3,168.8	5,804.3	0.42
12,849.0	90.27	336.57	6,491.5	5,031.3	-3,206.1	5,898.3	0.53
12,944.0	89.03	336.59	6,492.1	5,118.4	-3,243.9	5,993.3	1.31
13,038.0	88.86	336.01	6,493.8	5,204.5	-3,281.7	6,087.3	0.64
13,132.0	89.19	336.04	6,495.4	5,290.4	-3,319.9	6,181.3	0.35
13,226.0	89.60	336.04	6,496.4	5,376.3	-3,358.0	6,275.3	0.44
13,320.0	89.78	335.35	6,496.9	5,461.9	-3,396.7	6,369.3	0.76
13,414.0	90.47	334.77	6,496.7	5,547.2	-3,436.4	6,463.3	0.96
13,508.0	89.87	336.47	6,496.4	5,632.8	-3,475.2	6,557.3	1.92
13,602.0	90.30	336.30	6,496.3	5,718.9	-3,512.8	6,651.3	0.49
13,696.0	89.76	337.21	6,496.3	5,805.3	-3,549.9	6,745.3	1.13
13,790.0	90.24	337.19	6,496.3	5,891.9	-3,586.3	6,839.3	0.51
13,884.0	89.60	337.65	6,496.4	5,978.7	-3,622.4	6,933.2	0.84
13,978.0	90.27	336.63	6,496.5	6,065.4	-3,659.9	7,027.2	1.30
14,072.0	89.87	335.77	6,496.4	6,151.4	-3,696.9	7,121.2	1.01

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EOW Completion Report



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<b>Well:</b>	Langford Unit 2H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)
14,167.0	90.30	336.27	6,496.2	6,238.2	-3,735.5	7,216.2	0.69
14,261.0	90.64	336.44	6,495.5	6,324.3	-3,773.2	7,310.2	0.40
14,355.0	90.91	336.12	6,494.2	6,410.3	-3,811.0	7,404.2	0.45
14,449.0	89.36	336.06	6,494.0	6,496.2	-3,849.1	7,498.2	1.65
14,543.0	89.73	336.35	6,494.7	6,582.3	-3,887.0	7,592.2	0.50
14,637.0	90.44	336.11	6,494.6	6,668.3	-3,924.9	7,686.2	0.80
14,732.0	89.36	335.63	6,494.7	6,755.0	-3,963.7	7,781.2	1.24
14,826.0	90.07	336.47	6,495.2	6,840.9	-4,001.9	7,875.2	1.17
14,920.0	91.07	337.09	6,494.3	6,927.3	-4,039.0	7,969.2	1.25
15,014.0	90.64	337.19	6,492.9	7,013.9	-4,075.5	8,063.1	0.47
15,108.0	90.27	337.37	6,492.1	7,100.6	-4,111.8	8,157.1	0.44
15,203.0	89.70	336.54	6,492.2	7,188.0	-4,149.0	8,252.1	1.06
15,297.0	90.24	337.00	6,492.2	7,274.4	-4,186.0	8,346.1	0.75
15,391.0	91.14	336.88	6,491.1	7,360.8	-4,222.9	8,440.1	0.97
15,487.0	92.21	336.53	6,488.3	7,449.0	-4,260.8	8,536.0	1.17
15,581.0	90.81	336.20	6,485.8	7,535.1	-4,298.5	8,630.0	1.53
15,676.0	91.61	336.32	6,483.8	7,622.0	-4,336.7	8,725.0	0.85
15,770.0	88.69	335.95	6,483.5	7,708.0	-4,374.7	8,819.0	3.13
15,865.0	89.26	335.84	6,485.2	7,794.7	-4,413.5	8,913.9	0.61
15,960.0	90.23	335.78	6,485.7	7,881.3	-4,452.5	9,008.9	1.02
16,054.0	91.41	335.80	6,484.3	7,967.0	-4,491.0	9,102.9	1.26
16,150.0	90.40	337.04	6,482.8	8,055.0	-4,529.4	9,198.9	1.67
16,244.0	91.11	337.50	6,481.6	8,141.7	-4,565.7	9,292.9	0.90
16,339.0	91.58	337.31	6,479.3	8,229.4	-4,602.2	9,387.8	0.53
16,434.0	91.84	335.79	6,476.5	8,316.5	-4,640.0	9,482.8	1.62
16,528.0	91.07	334.27	6,474.1	8,401.7	-4,679.7	9,576.7	1.81
16,623.0	92.08	334.17	6,471.5	8,487.2	-4,721.0	9,671.6	1.07
16,718.0	90.47	333.98	6,469.4	8,572.6	-4,762.5	9,766.6	1.71
16,813.0	91.27	333.19	6,467.9	8,657.7	-4,804.7	9,861.4	1.18
16,907.0	91.14	333.70	6,466.0	8,741.7	-4,846.7	9,955.3	0.56
17,002.0	89.83	334.91	6,465.2	8,827.3	-4,887.9	10,050.3	1.88
17,096.0	90.37	336.00	6,465.0	8,912.8	-4,927.0	10,144.3	1.29
17,191.0	90.84	335.62	6,464.0	8,999.5	-4,965.9	10,239.3	0.64
17,285.0	91.54	335.78	6,462.0	9,085.2	-5,004.6	10,333.2	0.76
17,378.0	92.48	335.91	6,458.8	9,170.0	-5,042.6	10,426.2	1.02
17,417.0	92.86	335.70	6,457.0	9,205.5	-5,058.6	10,465.1	1.11
17,436.0	92.86	335.70	6,456.0	9,222.8	-5,066.4	10,484.1	0.00

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<b>Wellbore:</b>	Original Wellpath	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	As Drilled	<b>Database:</b>	Oklahoma District

**Design Annotations**

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
6,175.0	6,141.3	-145.9	-66.7	Sycamore
6,510.0	6,300.2	-304.1	-307.4	Middlesex
6,837.0	6,404.7	-316.3	-611.0	Burkett
6,958.0	6,436.6	-273.9	-719.5	Tully
7,043.0	6,455.6	-230.9	-790.2	Marcellus

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_

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