



# Archer Directional Drilling Services

## Survey Report



**Company:** Sandridge Energy, INC.(mid-con.)  
**Project:** Gray County (KA27N)  
**Site:** Sec 19-T26S-R29W  
**Well:** Bleumer 2629 1-19H  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Bleumer 2629 1-19H  
**TVD Reference:** KB @ 2745.0usft  
**MD Reference:** KB @ 2745.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

<b>Project</b>	Gray County (KA27N)		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Kansas South 1502		

<b>Site</b>	Sec 19-T26S-R29W				
<b>Site Position:</b>	<b>Northing:</b>	411,892.24 usft	<b>Latitude:</b>	37° 46' 49.528 N	
<b>From:</b> Map	<b>Easting:</b>	1,414,672.96 usft	<b>Longitude:</b>	100° 31' 31.586 W	
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b>	-1.24 °

<b>Well</b>	Bleumer 2629 1-19H					
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	411,892.24 usft	<b>Latitude:</b>	37° 46' 49.528 N
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	1,414,672.96 usft	<b>Longitude:</b>	100° 31' 31.586 W
<b>Position Uncertainty</b>	0.0 usft	<b>Wellhead Elevation:</b>	usft	<b>Ground Level:</b>	2,725.0 usft	

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2012/05/08	6.17	65.51	52,050

<b>Design</b>	Wellbore #1				
<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	181.66	

<b>Survey Program</b>	<b>Date</b>	2012/06/06			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
251.0	751.0	Gyro (Wellbore #1)	MWD	MWD - Standard	
1,107.0	9,351.0	Archer Survey (Wellbore #1)	MWD	MWD - Standard	

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
251.0	0.60	317.60	251.0	1.0	-0.9	-0.9	0.24	0.24	0.00	
466.0	0.50	317.60	466.0	2.5	-2.3	-2.4	0.05	-0.05	0.00	
751.0	0.40	317.60	751.0	4.1	-3.8	-4.0	0.04	-0.04	0.00	
1,107.0	0.40	317.60	1,107.0	6.0	-5.5	-5.8	0.00	0.00	0.00	
<b>First Archer Survey</b>										
1,584.0	0.60	341.50	1,584.0	9.6	-7.4	-9.4	0.06	0.04	5.01	
2,053.0	0.40	27.70	2,052.9	13.4	-7.4	-13.1	0.09	-0.04	9.85	
2,523.0	0.60	322.00	2,522.9	16.8	-8.1	-16.5	0.12	0.04	-13.98	
2,994.0	0.40	287.60	2,993.9	19.2	-11.2	-18.9	0.07	-0.04	-7.30	



# Archer Directional Drilling Services

## Survey Report



**Company:** Sandridge Energy, INC.(mid-con.)  
**Project:** Gray County (KA27N)  
**Site:** Sec 19-T26S-R29W  
**Well:** Bleumer 2629 1-19H  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Bleumer 2629 1-19H  
**TVD Reference:** KB @ 2745.0usft  
**MD Reference:** KB @ 2745.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,470.0	0.30	317.90	3,469.9	20.6	-13.7	-20.2	0.04	-0.02	6.37
3,757.0	0.40	329.10	3,756.9	22.0	-14.7	-21.6	0.04	0.03	3.90
3,852.0	0.30	329.80	3,851.9	22.5	-15.0	-22.1	0.11	-0.11	0.74
3,948.0	0.50	303.20	3,947.9	23.0	-15.4	-22.5	0.28	0.21	-27.71
4,044.0	0.40	284.30	4,043.9	23.3	-16.1	-22.8	0.19	-0.10	-19.69
4,076.0	0.20	245.20	4,075.9	23.3	-16.3	-22.8	0.86	-0.63	-122.19
4,108.0	1.20	185.60	4,107.9	22.9	-16.4	-22.5	3.48	3.13	-186.25
4,140.0	2.70	180.40	4,139.9	21.9	-16.4	-21.4	4.72	4.69	-16.25
4,172.0	4.50	179.40	4,171.8	19.8	-16.4	-19.4	5.63	5.63	-3.13
4,204.0	6.90	177.00	4,203.6	16.7	-16.3	-16.2	7.54	7.50	-7.50
4,236.0	9.40	175.50	4,235.3	12.1	-16.0	-11.7	7.84	7.81	-4.69
4,268.0	11.50	176.50	4,266.8	6.4	-15.6	-5.9	6.59	6.56	3.13
4,300.0	12.70	176.80	4,298.1	-0.3	-15.2	0.8	3.76	3.75	0.94
4,331.0	14.40	178.20	4,328.2	-7.6	-14.9	8.0	5.58	5.48	4.52
4,363.0	16.30	182.10	4,359.1	-16.1	-14.9	16.5	6.75	5.94	12.19
4,395.0	18.50	184.20	4,389.6	-25.6	-15.4	26.1	7.15	6.88	6.56
4,427.0	21.00	184.10	4,419.7	-36.4	-16.2	36.9	7.81	7.81	-0.31
4,459.0	23.60	182.80	4,449.3	-48.5	-17.0	49.0	8.27	8.13	-4.06
4,491.0	26.60	181.60	4,478.3	-62.1	-17.5	62.6	9.51	9.38	-3.75
4,523.0	29.50	180.60	4,506.5	-77.1	-17.7	77.6	9.18	9.06	-3.13
4,555.0	32.40	179.80	4,534.0	-93.6	-17.8	94.1	9.15	9.06	-2.50
4,587.0	34.50	179.30	4,560.7	-111.2	-17.7	111.7	6.62	6.56	-1.56
4,619.0	36.40	179.00	4,586.7	-129.8	-17.4	130.2	5.96	5.94	-0.94
4,651.0	38.10	179.20	4,612.2	-149.1	-17.1	149.6	5.33	5.31	0.63
4,683.0	40.10	179.50	4,637.0	-169.3	-16.9	169.7	6.28	6.25	0.94
4,715.0	42.90	179.30	4,661.0	-190.5	-16.6	190.9	8.76	8.75	-0.63
4,747.0	45.70	178.90	4,683.9	-212.9	-16.3	213.2	8.79	8.75	-1.25
4,779.0	48.40	178.60	4,705.7	-236.3	-15.8	236.6	8.47	8.44	-0.94
4,810.0	49.30	178.50	4,726.1	-259.6	-15.2	259.9	2.91	2.90	-0.32
4,842.0	49.60	178.30	4,746.9	-283.9	-14.5	284.2	1.05	0.94	-0.63
4,874.0	49.60	177.80	4,767.6	-308.3	-13.7	308.5	1.19	0.00	-1.56
4,906.0	49.50	176.90	4,788.4	-332.6	-12.5	332.8	2.16	-0.31	-2.81
4,938.0	49.10	176.80	4,809.3	-356.8	-11.2	357.0	1.27	-1.25	-0.31
4,970.0	48.90	176.20	4,830.3	-380.9	-9.7	381.0	1.55	-0.63	-1.88
5,002.0	49.60	176.70	4,851.2	-405.1	-8.2	405.2	2.49	2.19	1.56
5,034.0	52.60	177.10	4,871.2	-430.0	-6.9	430.0	9.43	9.38	1.25
5,066.0	55.90	177.30	4,889.9	-455.9	-5.6	455.9	10.32	10.31	0.63
5,098.0	59.10	177.80	4,907.1	-482.9	-4.5	482.8	10.09	10.00	1.56
5,130.0	62.00	178.70	4,922.9	-510.7	-3.6	510.6	9.39	9.06	2.81
5,162.0	64.30	180.00	4,937.3	-539.3	-3.3	539.1	8.05	7.19	4.06
5,194.0	66.50	180.60	4,950.6	-568.4	-3.5	568.2	7.08	6.88	1.88
5,225.0	68.90	181.10	4,962.4	-597.0	-3.9	596.9	7.88	7.74	1.61
5,257.0	71.40	181.30	4,973.3	-627.1	-4.5	627.0	7.83	7.81	0.63



# Archer Directional Drilling Services

## Survey Report



**Company:** Sandridge Energy, INC.(mid-con.)  
**Project:** Gray County (KA27N)  
**Site:** Sec 19-T26S-R29W  
**Well:** Bleumer 2629 1-19H  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Bleumer 2629 1-19H  
**TVD Reference:** KB @ 2745.0usft  
**MD Reference:** KB @ 2745.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,289.0	73.40	181.70	4,982.9	-657.6	-5.3	657.5	6.36	6.25	1.25
5,321.0	75.60	181.80	4,991.5	-688.4	-6.2	688.3	6.88	6.88	0.31
5,353.0	77.70	181.60	4,998.9	-719.6	-7.2	719.5	6.59	6.56	-0.63
5,385.0	79.90	181.70	5,005.1	-750.9	-8.1	750.9	6.88	6.88	0.31
5,476.0	83.70	180.40	5,018.1	-841.0	-9.7	840.9	4.41	4.18	-1.43
5,507.0	84.10	179.90	5,021.4	-871.8	-9.8	871.7	2.06	1.29	-1.61
5,538.0	85.00	180.40	5,024.3	-902.7	-9.9	902.6	3.32	2.90	1.61
5,569.0	86.40	180.70	5,026.6	-933.6	-10.2	933.5	4.62	4.52	0.97
5,601.0	87.70	181.00	5,028.3	-965.5	-10.7	965.4	4.17	4.06	0.94
5,632.0	88.60	181.10	5,029.3	-996.5	-11.2	996.4	2.92	2.90	0.32
5,663.0	90.20	180.90	5,029.6	-1,027.5	-11.8	1,027.4	5.20	5.16	-0.65
5,694.0	91.20	180.90	5,029.2	-1,058.5	-12.3	1,058.4	3.23	3.23	0.00
5,726.0	91.70	181.10	5,028.4	-1,090.5	-12.8	1,090.4	1.68	1.56	0.63
5,757.0	91.10	180.90	5,027.7	-1,121.5	-13.3	1,121.4	2.04	-1.94	-0.65
5,788.0	92.40	181.30	5,026.7	-1,152.4	-13.9	1,152.4	4.39	4.19	1.29
5,820.0	94.50	181.30	5,024.8	-1,184.4	-14.7	1,184.3	6.56	6.56	0.00
5,851.0	95.00	181.80	5,022.2	-1,215.3	-15.5	1,215.2	2.28	1.61	1.61
5,882.0	95.00	181.90	5,019.5	-1,246.1	-16.5	1,246.1	0.32	0.00	0.32
5,914.0	94.20	181.70	5,017.0	-1,278.0	-17.5	1,278.0	2.58	-2.50	-0.63
5,945.0	92.40	181.40	5,015.2	-1,308.9	-18.3	1,308.9	5.89	-5.81	-0.97
5,976.0	92.00	181.70	5,014.0	-1,339.9	-19.2	1,339.9	1.61	-1.29	0.97
6,008.0	92.50	181.60	5,012.7	-1,371.9	-20.1	1,371.9	1.59	1.56	-0.31
6,039.0	93.10	181.50	5,011.2	-1,402.8	-20.9	1,402.8	1.96	1.94	-0.32
6,070.0	92.60	181.30	5,009.7	-1,433.8	-21.7	1,433.8	1.74	-1.61	-0.65
6,101.0	90.90	180.90	5,008.7	-1,464.7	-22.3	1,464.8	5.63	-5.48	-1.29
6,133.0	89.00	181.70	5,008.7	-1,496.7	-23.0	1,496.8	6.44	-5.94	2.50
6,164.0	88.70	181.80	5,009.4	-1,527.7	-24.0	1,527.8	1.02	-0.97	0.32
6,195.0	89.10	181.70	5,010.0	-1,558.7	-24.9	1,558.8	1.33	1.29	-0.32
6,227.0	89.50	181.30	5,010.4	-1,590.7	-25.7	1,590.8	1.77	1.25	-1.25
6,258.0	89.90	182.00	5,010.5	-1,621.7	-26.6	1,621.8	2.60	1.29	2.26
6,289.0	90.20	182.00	5,010.5	-1,652.6	-27.7	1,652.8	0.97	0.97	0.00
6,320.0	90.60	182.10	5,010.3	-1,683.6	-28.8	1,683.8	1.33	1.29	0.32
6,352.0	91.00	182.70	5,009.8	-1,715.6	-30.2	1,715.8	2.25	1.25	1.88
6,383.0	91.60	182.80	5,009.1	-1,746.6	-31.7	1,746.7	1.96	1.94	0.32
6,414.0	92.00	182.50	5,008.1	-1,777.5	-33.1	1,777.7	1.61	1.29	-0.97
6,446.0	91.60	182.80	5,007.1	-1,809.5	-34.6	1,809.7	1.56	-1.25	0.94
6,477.0	90.40	183.10	5,006.6	-1,840.4	-36.2	1,840.7	3.99	-3.87	0.97
6,508.0	90.70	183.20	5,006.3	-1,871.4	-37.9	1,871.7	1.02	0.97	0.32
6,539.0	91.00	183.30	5,005.8	-1,902.3	-39.6	1,902.7	1.02	0.97	0.32
6,571.0	90.80	183.30	5,005.3	-1,934.3	-41.5	1,934.6	0.63	-0.63	0.00
6,602.0	89.70	183.70	5,005.2	-1,965.2	-43.4	1,965.6	3.78	-3.55	1.29
6,633.0	88.00	183.30	5,005.8	-1,996.1	-45.2	1,996.6	5.63	-5.48	-1.29
6,665.0	87.60	183.70	5,007.1	-2,028.0	-47.2	2,028.6	1.77	-1.25	1.25



# Archer Directional Drilling Services

## Survey Report



**Company:** Sandridge Energy, INC.(mid-con.)  
**Project:** Gray County (KA27N)  
**Site:** Sec 19-T26S-R29W  
**Well:** Bleumer 2629 1-19H  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Bleumer 2629 1-19H  
**TVD Reference:** KB @ 2745.0usft  
**MD Reference:** KB @ 2745.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
6,696.0	87.90	183.80	5,008.3	-2,059.0	-49.2	2,059.5	1.02	0.97	0.32
6,727.0	88.20	183.90	5,009.3	-2,089.9	-51.3	2,090.5	1.02	0.97	0.32
6,758.0	88.90	183.10	5,010.1	-2,120.8	-53.2	2,121.4	3.43	2.26	-2.58
6,773.0	88.90	183.50	5,010.4	-2,135.8	-54.1	2,136.4	2.67	0.00	2.67
6,790.0	89.20	183.10	5,010.7	-2,152.7	-55.0	2,153.4	2.94	1.76	-2.35
6,821.0	89.40	183.20	5,011.1	-2,183.7	-56.7	2,184.4	0.72	0.65	0.32
6,853.0	89.90	183.10	5,011.3	-2,215.6	-58.5	2,216.4	1.59	1.56	-0.31
6,885.0	90.20	183.30	5,011.2	-2,247.6	-60.3	2,248.4	1.13	0.94	0.63
6,917.0	90.60	183.40	5,011.0	-2,279.5	-62.2	2,280.4	1.29	1.25	0.31
6,949.0	91.00	182.60	5,010.6	-2,311.5	-63.8	2,312.4	2.79	1.25	-2.50
6,980.0	91.50	182.60	5,009.9	-2,342.4	-65.2	2,343.4	1.61	1.61	0.00
7,012.0	91.60	182.80	5,009.0	-2,374.4	-66.7	2,375.3	0.70	0.31	0.63
7,043.0	92.00	182.60	5,008.0	-2,405.4	-68.2	2,406.3	1.44	1.29	-0.65
7,075.0	92.40	182.80	5,006.8	-2,437.3	-69.7	2,438.3	1.40	1.25	0.63
7,107.0	92.50	183.10	5,005.4	-2,469.2	-71.4	2,470.3	0.99	0.31	0.94
7,139.0	91.70	182.20	5,004.3	-2,501.2	-72.8	2,502.2	3.76	-2.50	-2.81
7,170.0	91.60	181.50	5,003.4	-2,532.1	-73.8	2,533.2	2.28	-0.32	-2.26
7,202.0	91.90	181.90	5,002.4	-2,564.1	-74.8	2,565.2	1.56	0.94	1.25
7,234.0	92.00	181.50	5,001.3	-2,596.1	-75.7	2,597.2	1.29	0.31	-1.25
7,266.0	92.30	181.60	5,000.1	-2,628.0	-76.6	2,629.2	0.99	0.94	0.31
7,298.0	93.00	181.80	4,998.6	-2,660.0	-77.5	2,661.1	2.27	2.19	0.63
7,330.0	91.90	181.50	4,997.3	-2,691.9	-78.5	2,693.1	3.56	-3.44	-0.94
7,362.0	90.30	181.30	4,996.7	-2,723.9	-79.2	2,725.1	5.04	-5.00	-0.63
7,394.0	90.10	180.80	4,996.5	-2,755.9	-79.8	2,757.1	1.68	-0.63	-1.56
7,425.0	90.50	180.90	4,996.4	-2,786.9	-80.3	2,788.1	1.33	1.29	0.32
7,457.0	90.60	180.50	4,996.1	-2,818.9	-80.7	2,820.1	1.29	0.31	-1.25
7,489.0	91.10	181.00	4,995.6	-2,850.9	-81.1	2,852.1	2.21	1.56	1.56
7,521.0	91.50	180.50	4,994.9	-2,882.9	-81.5	2,884.1	2.00	1.25	-1.56
7,553.0	92.00	180.30	4,993.9	-2,914.9	-81.7	2,916.0	1.68	1.56	-0.63
7,586.0	92.70	180.60	4,992.5	-2,947.9	-82.0	2,949.0	2.31	2.12	0.91
7,618.0	91.70	181.00	4,991.3	-2,979.8	-82.5	2,981.0	3.37	-3.13	1.25
7,650.0	89.50	180.80	4,991.0	-3,011.8	-83.0	3,013.0	6.90	-6.88	-0.63
7,681.0	89.20	181.00	4,991.3	-3,042.8	-83.4	3,044.0	1.16	-0.97	0.65
7,713.0	89.50	180.60	4,991.7	-3,074.8	-83.9	3,075.9	1.56	0.94	-1.25
7,745.0	89.80	181.30	4,991.9	-3,106.8	-84.4	3,107.9	2.38	0.94	2.19
7,777.0	90.00	181.40	4,991.9	-3,138.8	-85.2	3,139.9	0.70	0.63	0.31
7,809.0	90.20	180.90	4,991.9	-3,170.8	-85.8	3,171.9	1.68	0.63	-1.56
7,841.0	90.60	181.60	4,991.7	-3,202.8	-86.5	3,203.9	2.52	1.25	2.19
7,873.0	91.10	181.20	4,991.2	-3,234.8	-87.3	3,235.9	2.00	1.56	-1.25
7,905.0	91.50	181.50	4,990.5	-3,266.7	-88.0	3,267.9	1.56	1.25	0.94
7,937.0	91.70	181.30	4,989.6	-3,298.7	-88.8	3,299.9	0.88	0.63	-0.63
7,969.0	92.20	181.00	4,988.5	-3,330.7	-89.5	3,331.9	1.82	1.56	-0.94
8,001.0	92.90	181.70	4,987.1	-3,362.7	-90.2	3,363.9	3.09	2.19	2.19
8,033.0	91.50	181.50	4,985.8	-3,394.6	-91.1	3,395.8	4.42	-4.38	-0.63



# Archer Directional Drilling Services

## Survey Report



**Company:** Sandridge Energy, INC.(mid-con.)  
**Project:** Gray County (KA27N)  
**Site:** Sec 19-T26S-R29W  
**Well:** Bleumer 2629 1-19H  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Bleumer 2629 1-19H  
**TVD Reference:** KB @ 2745.0usft  
**MD Reference:** KB @ 2745.0usft  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** EDM 5000.1 Single User Db

### Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,065.0	89.70	181.30	4,985.5	-3,426.6	-91.9	3,427.8	5.66	-5.63	-0.63
8,098.0	88.70	181.20	4,986.0	-3,459.6	-92.6	3,460.8	3.05	-3.03	-0.30
8,130.0	88.90	181.20	4,986.6	-3,491.6	-93.3	3,492.8	0.63	0.63	0.00
8,162.0	89.20	181.60	4,987.2	-3,523.6	-94.1	3,524.8	1.56	0.94	1.25
8,193.0	89.50	181.30	4,987.5	-3,554.6	-94.9	3,555.8	1.37	0.97	-0.97
8,225.0	89.90	181.90	4,987.7	-3,586.5	-95.7	3,587.8	2.25	1.25	1.88
8,257.0	90.00	181.50	4,987.7	-3,618.5	-96.7	3,619.8	1.29	0.31	-1.25
8,289.0	90.40	181.90	4,987.6	-3,650.5	-97.6	3,651.8	1.77	1.25	1.25
8,321.0	90.70	181.60	4,987.3	-3,682.5	-98.6	3,683.8	1.33	0.94	-0.94
8,353.0	91.00	182.00	4,986.8	-3,714.5	-99.6	3,715.8	1.56	0.94	1.25
8,385.0	91.30	181.70	4,986.2	-3,746.5	-100.7	3,747.8	1.33	0.94	-0.94
8,417.0	91.80	181.90	4,985.3	-3,778.4	-101.7	3,779.8	1.68	1.56	0.63
8,448.0	92.00	181.80	4,984.3	-3,809.4	-102.7	3,810.8	0.72	0.65	-0.32
8,480.0	92.00	182.00	4,983.2	-3,841.4	-103.7	3,842.8	0.62	0.00	0.63
8,512.0	91.70	181.30	4,982.1	-3,873.3	-104.6	3,874.7	2.38	-0.94	-2.19
8,544.0	90.40	181.40	4,981.5	-3,905.3	-105.4	3,906.7	4.07	-4.06	0.31
8,576.0	90.00	181.30	4,981.4	-3,937.3	-106.2	3,938.7	1.29	-1.25	-0.31
8,608.0	90.20	180.90	4,981.4	-3,969.3	-106.8	3,970.7	1.40	0.63	-1.25
8,640.0	90.80	181.30	4,981.1	-4,001.3	-107.4	4,002.7	2.25	1.88	1.25
8,672.0	90.70	180.90	4,980.7	-4,033.3	-108.0	4,034.7	1.29	-0.31	-1.25
8,704.0	90.90	180.70	4,980.2	-4,065.3	-108.4	4,066.7	0.88	0.63	-0.63
8,736.0	91.10	180.70	4,979.7	-4,097.3	-108.8	4,098.7	0.63	0.63	0.00
8,768.0	91.60	180.60	4,978.9	-4,129.3	-109.2	4,130.7	1.59	1.56	-0.31
8,863.0	91.50	179.40	4,976.3	-4,224.2	-109.2	4,225.6	1.27	-0.11	-1.26
8,958.0	92.00	179.00	4,973.4	-4,319.2	-107.9	4,320.5	0.67	0.53	-0.42
9,022.0	93.00	179.10	4,970.7	-4,383.1	-106.8	4,384.4	1.57	1.56	0.16
9,118.0	94.10	179.20	4,964.7	-4,478.9	-105.4	4,480.1	1.15	1.15	0.10
9,213.0	95.30	179.00	4,956.9	-4,573.6	-103.9	4,574.7	1.28	1.26	-0.21
9,293.0	95.30	178.40	4,949.5	-4,653.2	-102.1	4,654.2	0.75	0.00	-0.75
<b>Last Archer Survey</b>									
9,351.0	95.30	178.40	4,944.2	-4,710.9	-100.5	4,711.9	0.00	0.00	0.00
<b>Projection to TD</b>									

### Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,107.0	1,107.0	6.0	-5.5	First Archer Survey
9,293.0	4,949.5	-4,653.2	-102.1	Last Archer Survey
9,351.0	4,944.2	-4,710.9	-100.5	Projection to TD

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