

Sandridge Energy, INC.(mid-con.)

Gray County, KS (NAD27)

Sec 33-T27S-R29W

Yost 2729 1-33H/ Job #04104-431-22/ Lariat 20

Wellbore #1

Design: Wellbore #1

Standard Survey Report

04 March, 2013

Archer Survey Report

Company:	Sandridge Energy, INC.(mid-con.)	Local Co-ordinate Reference:	Well Yost 2729 1-33H/ Job #04104-431-22/ Lariat 20
Project:	Gray County, KS (NAD27)	TVD Reference:	WELL @ 2765.0usft (Original Well Elev)
Site:	Sec 33-T27S-R29W	MD Reference:	WELL @ 2765.0usft (Original Well Elev)
Well:	Yost 2729 1-33H/ Job #04104-431-22/ Lariat 20	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Gray County, KS (NAD27)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	Kansas South 1502		

Site	Sec 33-T27S-R29W				
Site Position:		Northing:	364,146.00 usft	Latitude:	37° 38' 58.525 N
From:	Map	Easting:	1,419,133.00 usft	Longitude:	100° 30' 23.246 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-1.23 °

Well	Yost 2729 1-33H/ Job #04104-431-22/ Lariat 20					
Well Position	+N/-S	0.0 usft	Northing:	369,155.60 usft	Latitude:	37° 39' 48.535 N
	+E/-W	0.0 usft	Easting:	1,421,447.81 usft	Longitude:	100° 29' 55.804 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	2,747.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2013/02/12	6.05	65.39	51,904

Design	Wellbore #1				
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	180.86	

Survey Program	Date	2013/03/04			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
1,703.0	9,033.0	Archer MWD Surveys (Wellbore #1)	MWD	MWD - Standard	

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)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
1,703.0	0.50	188.20	1,703.0	-7.4	-1.1	7.4	0.03	0.03	0.00	
First Archer MWD Survey										
1,889.0	0.40	115.60	1,889.0	-8.4	-0.6	8.4	0.29	-0.05	-39.03	
2,367.0	0.40	170.30	2,367.0	-10.8	1.2	10.8	0.08	0.00	11.44	
2,842.0	0.70	203.80	2,841.9	-15.1	0.3	15.1	0.09	0.06	7.05	
3,317.0	1.50	196.40	3,316.9	-23.7	-2.6	23.7	0.17	0.17	-1.56	
3,792.0	1.00	198.50	3,791.7	-33.6	-5.7	33.7	0.11	-0.11	0.44	
4,047.0	1.30	218.60	4,046.7	-38.0	-8.2	38.1	0.20	0.12	7.88	
4,138.0	1.70	210.60	4,137.7	-39.9	-9.5	40.1	0.50	0.44	-8.79	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)	
4,169.0	1.70	191.50	4,168.6	-40.8	-9.9	40.9	1.82	0.00	-61.61	
4,201.0	2.90	173.70	4,200.6	-42.1	-9.9	42.2	4.32	3.75	-55.63	
4,232.0	4.70	168.70	4,231.5	-44.1	-9.5	44.2	5.90	5.81	-16.13	
4,264.0	6.30	165.60	4,263.4	-47.1	-8.8	47.2	5.08	5.00	-9.69	
4,296.0	7.70	170.00	4,295.2	-50.9	-8.0	51.0	4.68	4.38	13.75	
4,328.0	9.20	173.20	4,326.8	-55.5	-7.4	55.6	4.91	4.69	10.00	
4,359.0	11.60	170.10	4,357.3	-61.1	-6.5	61.2	7.95	7.74	-10.00	
4,391.0	14.20	167.70	4,388.5	-68.1	-5.1	68.1	8.29	8.13	-7.50	
4,422.0	15.90	168.50	4,418.4	-76.0	-3.5	76.0	5.52	5.48	2.58	
4,454.0	17.10	169.70	4,449.1	-84.9	-1.8	84.9	3.90	3.75	3.75	
4,486.0	19.70	167.50	4,479.5	-94.8	0.2	94.8	8.41	8.13	-6.88	
4,517.0	22.50	166.50	4,508.4	-105.6	2.8	105.6	9.11	9.03	-3.23	
4,549.0	25.00	168.00	4,537.7	-118.2	5.6	118.1	8.04	7.81	4.69	
4,581.0	27.20	167.80	4,566.4	-132.0	8.6	131.8	6.88	6.88	-0.63	
4,612.0	29.20	168.60	4,593.7	-146.3	11.5	146.1	6.57	6.45	2.58	
4,644.0	31.20	169.70	4,621.4	-162.1	14.6	161.9	6.48	6.25	3.44	
4,676.0	33.60	171.10	4,648.4	-179.0	17.4	178.7	7.86	7.50	4.38	
4,707.0	35.90	171.40	4,673.9	-196.5	20.1	196.2	7.44	7.42	0.97	
4,739.0	37.20	173.50	4,699.6	-215.4	22.6	215.0	5.64	4.06	6.56	
4,771.0	38.90	173.70	4,724.8	-235.0	24.8	234.6	5.33	5.31	0.63	
4,802.0	41.50	172.20	4,748.5	-254.8	27.3	254.4	8.95	8.39	-4.84	
4,834.0	44.40	172.60	4,771.9	-276.4	30.1	276.0	9.10	9.06	1.25	
4,866.0	46.20	172.70	4,794.4	-299.0	33.1	298.5	5.63	5.63	0.31	
4,897.0	47.70	173.30	4,815.5	-321.5	35.8	320.9	5.04	4.84	1.94	
4,929.0	49.80	174.20	4,836.6	-345.4	38.4	344.8	6.89	6.56	2.81	
4,960.0	50.00	173.90	4,856.6	-369.0	40.9	368.3	0.98	0.65	-0.97	
4,992.0	49.70	173.90	4,877.2	-393.3	43.5	392.6	0.94	-0.94	0.00	
5,024.0	49.00	172.70	4,898.1	-417.4	46.3	416.7	3.59	-2.19	-3.75	
5,055.0	49.00	173.00	4,918.4	-440.6	49.2	439.8	0.73	0.00	0.97	
5,087.0	48.90	172.30	4,939.4	-464.6	52.3	463.7	1.68	-0.31	-2.19	
5,119.0	48.70	172.10	4,960.5	-488.4	55.6	487.5	0.78	-0.63	-0.63	
5,150.0	50.50	172.50	4,980.6	-511.8	58.7	510.9	5.89	5.81	1.29	
5,182.0	53.10	172.50	5,000.4	-536.7	62.0	535.8	8.13	8.13	0.00	
5,214.0	56.00	173.30	5,019.0	-562.6	65.2	561.6	9.29	9.06	2.50	
5,245.0	59.80	173.30	5,035.4	-588.7	68.3	587.6	12.26	12.26	0.00	
5,277.0	63.20	173.80	5,050.7	-616.6	71.5	615.5	10.71	10.63	1.56	
5,309.0	65.60	175.50	5,064.5	-645.4	74.2	644.2	8.90	7.50	5.31	
5,340.0	68.80	177.10	5,076.5	-673.9	76.0	672.7	11.37	10.32	5.16	
5,372.0	72.00	178.50	5,087.3	-704.0	77.1	702.8	10.82	10.00	4.38	
5,403.0	74.10	180.20	5,096.3	-733.6	77.5	732.4	8.57	6.77	5.48	
5,435.0	77.40	181.70	5,104.2	-764.6	77.0	763.4	11.27	10.31	4.69	
5,467.0	81.50	182.40	5,110.0	-796.1	75.8	794.9	12.99	12.81	2.19	

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Survey									
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5,498.0	85.00	183.60	5,113.7	-826.8	74.2	825.6	11.93	11.29	3.87
5,551.0	87.10	183.90	5,117.3	-879.6	70.8	878.4	4.00	3.96	0.57
5,581.0	87.60	183.90	5,118.7	-909.5	68.7	908.3	1.67	1.67	0.00
5,612.0	87.60	183.90	5,120.0	-940.4	66.6	939.3	0.00	0.00	0.00
5,642.0	89.20	183.90	5,120.9	-970.3	64.6	969.2	5.33	5.33	0.00
5,673.0	90.00	183.80	5,121.1	-1,001.2	62.5	1,000.2	2.60	2.58	-0.32
5,703.0	90.50	183.40	5,120.9	-1,031.2	60.6	1,030.1	2.13	1.67	-1.33
5,734.0	90.70	183.20	5,120.6	-1,062.1	58.8	1,061.1	0.91	0.65	-0.65
5,764.0	91.10	183.30	5,120.1	-1,092.1	57.1	1,091.1	1.37	1.33	0.33
5,795.0	91.50	183.80	5,119.4	-1,123.0	55.2	1,122.0	2.07	1.29	1.61
5,825.0	91.10	183.40	5,118.8	-1,152.9	53.3	1,152.0	1.89	-1.33	-1.33
5,856.0	90.90	183.10	5,118.2	-1,183.9	51.6	1,183.0	1.16	-0.65	-0.97
5,887.0	90.80	183.20	5,117.8	-1,214.8	49.9	1,213.9	0.46	-0.32	0.32
5,917.0	90.90	183.20	5,117.3	-1,244.8	48.2	1,243.9	0.33	0.33	0.00
5,948.0	90.50	183.10	5,116.9	-1,275.7	46.5	1,274.9	1.33	-1.29	-0.32
5,978.0	90.10	182.70	5,116.8	-1,305.7	45.0	1,304.9	1.89	-1.33	-1.33
6,009.0	90.30	182.70	5,116.7	-1,336.6	43.5	1,335.8	0.65	0.65	0.00
6,039.0	91.10	182.50	5,116.3	-1,366.6	42.2	1,365.8	2.75	2.67	-0.67
6,070.0	91.30	182.60	5,115.7	-1,397.6	40.8	1,396.8	0.72	0.65	0.32
6,101.0	91.40	182.40	5,114.9	-1,428.5	39.4	1,427.8	0.72	0.32	-0.65
6,131.0	91.40	182.30	5,114.2	-1,458.5	38.2	1,457.8	0.33	0.00	-0.33
6,162.0	91.70	182.20	5,113.4	-1,489.5	37.0	1,488.7	1.02	0.97	-0.32
6,192.0	92.00	182.40	5,112.4	-1,519.4	35.8	1,518.7	1.20	1.00	0.67
6,222.0	92.10	182.50	5,111.3	-1,549.4	34.5	1,548.7	0.47	0.33	0.33
6,253.0	92.10	182.40	5,110.2	-1,580.3	33.2	1,579.7	0.32	0.00	-0.32
6,283.0	91.30	183.10	5,109.3	-1,610.3	31.7	1,609.6	3.54	-2.67	2.33
6,314.0	91.00	183.10	5,108.7	-1,641.2	30.1	1,640.6	0.97	-0.97	0.00
6,344.0	91.30	183.60	5,108.1	-1,671.2	28.3	1,670.6	1.94	1.00	1.67
6,375.0	91.60	183.10	5,107.3	-1,702.1	26.5	1,701.5	1.88	0.97	-1.61
6,405.0	90.80	183.20	5,106.6	-1,732.1	24.8	1,731.5	2.69	-2.67	0.33
6,436.0	89.90	183.40	5,106.5	-1,763.0	23.1	1,762.5	2.97	-2.90	0.65
6,466.0	89.90	183.50	5,106.5	-1,792.9	21.3	1,792.4	0.33	0.00	0.33
6,497.0	89.50	183.10	5,106.7	-1,823.9	19.5	1,823.4	1.82	-1.29	-1.29
6,527.0	89.40	183.10	5,107.0	-1,853.9	17.8	1,853.4	0.33	-0.33	0.00
6,558.0	89.40	182.70	5,107.3	-1,884.8	16.3	1,884.4	1.29	0.00	-1.29
6,588.0	89.40	182.80	5,107.6	-1,914.8	14.8	1,914.3	0.33	0.00	0.33
6,619.0	89.40	182.70	5,107.9	-1,945.7	13.3	1,945.3	0.32	0.00	-0.32
6,649.0	89.80	182.70	5,108.1	-1,975.7	11.9	1,975.3	1.33	1.33	0.00
6,695.0	90.30	182.80	5,108.1	-2,021.6	9.7	2,021.3	1.11	1.09	0.22
6,744.0	90.70	182.40	5,107.7	-2,070.6	7.5	2,070.3	1.15	0.82	-0.82
6,790.0	90.40	182.10	5,107.2	-2,116.6	5.7	2,116.2	0.92	-0.65	-0.65
6,839.0	88.70	180.90	5,107.6	-2,165.5	4.4	2,165.2	4.25	-3.47	-2.45
6,885.0	88.70	180.50	5,108.7	-2,211.5	3.9	2,211.2	0.87	0.00	-0.87

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6,934.0	89.30	180.30	5,109.5	-2,260.5	3.5	2,260.2	1.29	1.22	-0.41	
6,980.0	89.30	180.70	5,110.1	-2,306.5	3.1	2,306.2	0.87	0.00	0.87	
7,029.0	89.50	181.10	5,110.6	-2,355.5	2.3	2,355.2	0.91	0.41	0.82	
7,075.0	89.70	181.00	5,110.9	-2,401.5	1.5	2,401.2	0.49	0.43	-0.22	
7,124.0	90.30	181.00	5,110.9	-2,450.5	0.6	2,450.2	1.22	1.22	0.00	
7,170.0	90.50	181.10	5,110.6	-2,496.5	-0.2	2,496.2	0.49	0.43	0.22	
7,219.0	90.80	181.00	5,110.0	-2,545.5	-1.1	2,545.2	0.65	0.61	-0.20	
7,265.0	91.30	181.00	5,109.2	-2,591.4	-1.9	2,591.2	1.09	1.09	0.00	
7,314.0	91.60	181.10	5,107.9	-2,640.4	-2.8	2,640.2	0.65	0.61	0.20	
7,360.0	92.90	181.80	5,106.1	-2,686.4	-4.0	2,686.1	3.21	2.83	1.52	
7,409.0	92.60	181.60	5,103.8	-2,735.3	-5.4	2,735.1	0.74	-0.61	-0.41	
7,455.0	91.30	182.10	5,102.2	-2,781.2	-6.9	2,781.0	3.03	-2.83	1.09	
7,504.0	90.30	182.40	5,101.5	-2,830.2	-8.8	2,830.0	2.13	-2.04	0.61	
7,550.0	89.80	182.50	5,101.5	-2,876.2	-10.8	2,876.0	1.11	-1.09	0.22	
7,599.0	89.20	182.40	5,101.9	-2,925.1	-12.9	2,925.0	1.24	-1.22	-0.20	
7,644.0	89.00	182.40	5,102.6	-2,970.1	-14.8	2,970.0	0.44	-0.44	0.00	
7,694.0	89.50	182.70	5,103.3	-3,020.0	-17.0	3,019.9	1.17	1.00	0.60	
7,739.0	89.80	182.50	5,103.6	-3,065.0	-19.0	3,064.9	0.80	0.67	-0.44	
7,789.0	89.90	182.40	5,103.7	-3,114.9	-21.2	3,114.9	0.28	0.20	-0.20	
7,834.0	90.20	182.60	5,103.7	-3,159.9	-23.1	3,159.9	0.80	0.67	0.44	
7,884.0	90.50	183.10	5,103.3	-3,209.8	-25.6	3,209.8	1.17	0.60	1.00	
7,929.0	89.40	182.60	5,103.4	-3,254.8	-27.9	3,254.8	2.69	-2.44	-1.11	
7,979.0	90.60	182.80	5,103.4	-3,304.7	-30.2	3,304.8	2.43	2.40	0.40	
8,024.0	90.90	182.50	5,102.8	-3,349.6	-32.3	3,349.8	0.94	0.67	-0.67	
8,074.0	90.40	182.00	5,102.2	-3,399.6	-34.3	3,399.7	1.41	-1.00	-1.00	
8,119.0	89.70	181.20	5,102.2	-3,444.6	-35.5	3,444.7	2.36	-1.56	-1.78	
8,169.0	88.90	181.20	5,102.8	-3,494.6	-36.6	3,494.7	1.60	-1.60	0.00	
8,214.0	87.80	180.50	5,104.1	-3,539.5	-37.2	3,539.7	2.90	-2.44	-1.56	
8,264.0	87.50	180.40	5,106.1	-3,589.5	-37.6	3,589.7	0.63	-0.60	-0.20	
8,309.0	87.30	180.20	5,108.2	-3,634.5	-37.9	3,634.6	0.63	-0.44	-0.44	
8,359.0	87.30	179.70	5,110.5	-3,684.4	-37.8	3,684.6	1.00	0.00	-1.00	
8,404.0	88.40	179.20	5,112.2	-3,729.4	-37.4	3,729.5	2.68	2.44	-1.11	
8,454.0	89.70	179.50	5,113.1	-3,779.4	-36.8	3,779.5	2.67	2.60	0.60	
8,499.0	90.80	178.80	5,112.9	-3,824.3	-36.1	3,824.5	2.90	2.44	-1.56	
8,549.0	91.30	178.70	5,111.9	-3,874.3	-35.0	3,874.4	1.02	1.00	-0.20	
8,594.0	91.60	178.10	5,110.8	-3,919.3	-33.8	3,919.4	1.49	0.67	-1.33	
8,644.0	93.50	177.70	5,108.6	-3,969.2	-32.0	3,969.2	3.88	3.80	-0.80	
8,689.0	94.70	177.60	5,105.4	-4,014.1	-30.1	4,014.1	2.68	2.67	-0.22	
8,739.0	95.20	177.40	5,101.1	-4,063.8	-28.0	4,063.8	1.08	1.00	-0.40	
8,784.0	95.70	177.70	5,096.8	-4,108.6	-26.0	4,108.5	1.29	1.11	0.67	
8,833.0	95.80	178.40	5,091.9	-4,157.3	-24.4	4,157.2	1.44	0.20	1.43	
8,879.0	95.60	179.50	5,087.3	-4,203.1	-23.5	4,202.9	2.42	-0.43	2.39	

Archer Survey Report

Company:	Sandridge Energy, INC.(mid-con.)	Local Co-ordinate Reference:	Well Yost 2729 1-33H/ Job #04104-431-22/ Lariat 20
Project:	Gray County, KS (NAD27)	TVD Reference:	WELL @ 2765.0usft (Original Well Elev)
Site:	Sec 33-T27S-R29W	MD Reference:	WELL @ 2765.0usft (Original Well Elev)
Well:	Yost 2729 1-33H/ Job #04104-431-22/ Lariat 20	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	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)
8,928.0	94.90	180.70	5,082.8	-4,251.9	-23.6	4,251.7	2.83	-1.43	2.45
8,974.0	93.60	181.90	5,079.4	-4,297.7	-24.7	4,297.6	3.84	-2.83	2.61
8,983.0	93.10	182.50	5,078.9	-4,306.7	-25.0	4,306.6	8.67	-5.56	6.67
Last Archer MWD Survey									
9,033.0	93.10	182.50	5,076.2	-4,356.6	-27.2	4,356.5	0.00	0.00	0.00
Projection to TD - PBHL Yost 1-33H									

Design Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
1,703.0	1,703.0	-7.4	-1.1	First Archer MWD Survey	
8,983.0	5,078.9	-4,306.7	-25.0	Last Archer MWD Survey	
9,033.0	5,076.2	-4,356.6	-27.2	Projection to TD	

Checked By: _____	Approved By: _____	Date: _____
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