

# **SandRidge Energy**

**North Park Basin**

**T7N-R80W-S16**

**Ray Ranch 0780 8-16H**

**Wellbore #1**

**Plan: Design #1**

## **Standard Survey Report**

**08 July, 2016**

# SandRidge Energy

## Survey Report

<b>Company:</b>	SandRidge Energy	<b>Local Co-ordinate Reference:</b>	Well Ray Ranch 0780 8-16H
<b>Project:</b>	North Park Basin	<b>TVD Reference:</b>	KB @ 8152.0usft
<b>Site:</b>	T7N-R80W-S16	<b>MD Reference:</b>	KB @ 8152.0usft
<b>Well:</b>	Ray Ranch 0780 8-16H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDMProd

<b>Project</b>	North Park Basin		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		T7N-R80W-S16			
Site Position:		Northing:	1,453,179.12 usft	Latitude:	40° 34' 26.505 N
From:	Map	Easting:	2,754,928.85 usft	Longitude:	106° 22' 55.973 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	-0.57 °

Well	Ray Ranch 0780 8-16H					
Well Position	+N/-S	0.0 usft	Northing:	1,453,239.12 usft	Latitude:	40° 34' 27.098 N
	+E/-W	0.0 usft	Easting:	2,754,928.85 usft	Longitude:	106° 22' 55.981 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	8,136.0 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>
	IGRF200510	12/31/2009	9.88	66.97	53,186

<b>Design</b>	Design #1				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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	360.00	

<b>Survey Tool Program</b>	<b>Date</b>	7/8/2016			
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.0	12,392.7	Design #1 (Wellbore #1)	Sperry MWD	Fixed:v2:standard declination	

<b>Planned Survey</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Vertical Section (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00	

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<b>Project:</b>	North Park Basin	<b>TVD Reference:</b>	KB @ 8152.0usft
<b>Site:</b>	T7N-R80W-S16	<b>MD Reference:</b>	KB @ 8152.0usft
<b>Well:</b>	Ray Ranch 0780 8-16H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDMProd

### Planned 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)
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Start Build 2.00</b>									
2,600.0	2.00	228.81	2,600.0	-1.1	-1.3	-1.1	2.00	2.00	0.00
2,700.0	4.00	228.81	2,699.8	-4.6	-5.3	-4.6	2.00	2.00	0.00
2,800.0	6.00	228.81	2,799.5	-10.3	-11.8	-10.3	2.00	2.00	0.00
2,900.0	8.00	228.81	2,898.7	-18.4	-21.0	-18.4	2.00	2.00	0.00
3,000.0	10.00	228.81	2,997.5	-28.7	-32.8	-28.7	2.00	2.00	0.00
3,100.0	12.00	228.81	3,095.6	-41.2	-47.1	-41.2	2.00	2.00	0.00
3,151.7	13.03	228.81	3,146.1	-48.6	-55.5	-48.6	2.00	2.00	0.00
<b>Start 4386.2 hold at 3151.7 MD</b>									
3,200.0	13.03	228.81	3,193.1	-55.8	-63.7	-55.8	0.00	0.00	0.00
3,300.0	13.03	228.81	3,290.6	-70.6	-80.7	-70.6	0.00	0.00	0.00
3,400.0	13.03	228.81	3,388.0	-85.5	-97.7	-85.5	0.00	0.00	0.00
3,500.0	13.03	228.81	3,485.4	-100.3	-114.7	-100.3	0.00	0.00	0.00
3,600.0	13.03	228.81	3,582.8	-115.2	-131.6	-115.2	0.00	0.00	0.00
3,700.0	13.03	228.81	3,680.3	-130.0	-148.6	-130.0	0.00	0.00	0.00
3,800.0	13.03	228.81	3,777.7	-144.9	-165.6	-144.9	0.00	0.00	0.00
3,900.0	13.03	228.81	3,875.1	-159.7	-182.6	-159.7	0.00	0.00	0.00
4,000.0	13.03	228.81	3,972.5	-174.6	-199.5	-174.6	0.00	0.00	0.00
4,100.0	13.03	228.81	4,070.0	-189.4	-216.5	-189.4	0.00	0.00	0.00
4,200.0	13.03	228.81	4,167.4	-204.3	-233.5	-204.3	0.00	0.00	0.00
4,300.0	13.03	228.81	4,264.8	-219.1	-250.4	-219.1	0.00	0.00	0.00
4,400.0	13.03	228.81	4,362.2	-234.0	-267.4	-234.0	0.00	0.00	0.00
4,500.0	13.03	228.81	4,459.7	-248.8	-284.4	-248.8	0.00	0.00	0.00
4,600.0	13.03	228.81	4,557.1	-263.7	-301.4	-263.7	0.00	0.00	0.00
4,700.0	13.03	228.81	4,654.5	-278.5	-318.3	-278.5	0.00	0.00	0.00
4,800.0	13.03	228.81	4,751.9	-293.4	-335.3	-293.4	0.00	0.00	0.00
4,900.0	13.03	228.81	4,849.4	-308.2	-352.3	-308.2	0.00	0.00	0.00
5,000.0	13.03	228.81	4,946.8	-323.1	-369.3	-323.1	0.00	0.00	0.00

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<b>Well:</b>	Ray Ranch 0780 8-16H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDMProd

### Planned 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)
5,100.0	13.03	228.81	5,044.2	-337.9	-386.2	-337.9	0.00	0.00	0.00
5,200.0	13.03	228.81	5,141.6	-352.8	-403.2	-352.8	0.00	0.00	0.00
5,300.0	13.03	228.81	5,239.0	-367.6	-420.2	-367.6	0.00	0.00	0.00
5,400.0	13.03	228.81	5,336.5	-382.5	-437.1	-382.5	0.00	0.00	0.00
5,500.0	13.03	228.81	5,433.9	-397.3	-454.1	-397.3	0.00	0.00	0.00
5,600.0	13.03	228.81	5,531.3	-412.2	-471.1	-412.2	0.00	0.00	0.00
5,700.0	13.03	228.81	5,628.7	-427.1	-488.1	-427.1	0.00	0.00	0.00
5,800.0	13.03	228.81	5,726.2	-441.9	-505.0	-441.9	0.00	0.00	0.00
5,900.0	13.03	228.81	5,823.6	-456.8	-522.0	-456.8	0.00	0.00	0.00
6,000.0	13.03	228.81	5,921.0	-471.6	-539.0	-471.6	0.00	0.00	0.00
6,100.0	13.03	228.81	6,018.4	-486.5	-555.9	-486.5	0.00	0.00	0.00
6,200.0	13.03	228.81	6,115.9	-501.3	-572.9	-501.3	0.00	0.00	0.00
6,300.0	13.03	228.81	6,213.3	-516.2	-589.9	-516.2	0.00	0.00	0.00
6,400.0	13.03	228.81	6,310.7	-531.0	-606.9	-531.0	0.00	0.00	0.00
6,500.0	13.03	228.81	6,408.1	-545.9	-623.8	-545.9	0.00	0.00	0.00
6,600.0	13.03	228.81	6,505.6	-560.7	-640.8	-560.7	0.00	0.00	0.00
6,700.0	13.03	228.81	6,603.0	-575.6	-657.8	-575.6	0.00	0.00	0.00
6,800.0	13.03	228.81	6,700.4	-590.4	-674.8	-590.4	0.00	0.00	0.00
6,900.0	13.03	228.81	6,797.8	-605.3	-691.7	-605.3	0.00	0.00	0.00
7,000.0	13.03	228.81	6,895.2	-620.1	-708.7	-620.1	0.00	0.00	0.00
7,100.0	13.03	228.81	6,992.7	-635.0	-725.7	-635.0	0.00	0.00	0.00
7,200.0	13.03	228.81	7,090.1	-649.8	-742.6	-649.8	0.00	0.00	0.00
7,300.0	13.03	228.81	7,187.5	-664.7	-759.6	-664.7	0.00	0.00	0.00
7,400.0	13.03	228.81	7,284.9	-679.5	-776.6	-679.5	0.00	0.00	0.00
7,500.0	13.03	228.81	7,382.4	-694.4	-793.6	-694.4	0.00	0.00	0.00
7,537.9	13.03	228.81	7,419.3	-700.0	-800.0	-700.0	0.00	0.00	0.00
<b>Start DLS 8.00 TFO 106.33</b>									
7,550.0	12.79	233.01	7,431.1	-701.7	-802.1	-701.7	8.00	-1.98	34.70
7,600.0	12.56	251.28	7,479.9	-706.8	-811.7	-706.8	8.00	-0.47	36.54
7,650.0	13.54	268.53	7,528.6	-708.7	-822.7	-708.7	8.00	1.96	34.50
7,700.0	15.50	282.49	7,577.0	-707.4	-835.1	-707.4	8.00	3.93	27.93
7,750.0	18.13	292.95	7,624.9	-702.9	-848.7	-702.9	8.00	5.26	20.91
7,800.0	21.18	300.66	7,672.0	-695.3	-863.7	-695.3	8.00	6.10	15.43
7,850.0	24.50	306.45	7,718.1	-684.5	-879.8	-684.5	8.00	6.63	11.56
7,900.0	27.99	310.90	7,762.9	-670.6	-897.0	-670.6	8.00	6.97	8.90
7,950.0	31.58	314.42	7,806.3	-653.8	-915.2	-653.8	8.00	7.20	7.04
8,000.0	35.26	317.28	7,848.0	-634.0	-934.4	-634.0	8.00	7.35	5.72
8,012.3	36.17	317.90	7,858.0	-628.7	-939.2	-628.7	8.00	7.43	5.08
<b>Niobrara</b>									
8,050.0	38.99	319.66	7,887.9	-611.4	-954.4	-611.4	8.00	7.48	4.66
8,100.0	42.77	321.69	7,925.7	-586.1	-975.1	-586.1	8.00	7.55	4.05
8,150.0	46.57	323.44	7,961.2	-558.2	-996.4	-558.2	8.00	7.61	3.51
8,200.0	50.40	324.99	7,994.4	-527.8	-1,018.3	-527.8	8.00	7.66	3.09
8,250.0	54.25	326.37	8,024.9	-495.1	-1,040.6	-495.1	8.00	7.69	2.77

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## Survey Report

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<b>Site:</b>	T7N-R80W-S16	<b>MD Reference:</b>	KB @ 8152.0usft
<b>Well:</b>	Ray Ranch 0780 8-16H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDMPProd

### Planned 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)
8,300.0	58.11	327.63	8,052.7	-460.3	-1,063.2	-460.3	8.00	7.72	2.51
8,324.4	60.00	328.20	8,065.3	-442.6	-1,074.3	-442.6	8.00	7.74	2.35
<b>Start 150.0 hold at 8324.4 MD</b>									
8,400.0	60.00	328.20	8,103.1	-386.9	-1,108.8	-386.9	0.00	0.00	0.00
8,474.4	60.00	328.20	8,140.3	-332.2	-1,142.8	-332.2	0.00	0.00	0.00
<b>Start DLS 10.00 TFO 51.12</b>									
8,500.0	61.63	330.47	8,152.8	-312.9	-1,154.2	-312.9	10.00	6.35	8.85
8,550.0	64.91	334.70	8,175.3	-273.3	-1,174.7	-273.3	10.00	6.56	8.46
8,600.0	68.30	338.70	8,195.1	-231.2	-1,192.9	-231.2	10.00	6.78	8.01
8,650.0	71.78	342.52	8,212.2	-186.8	-1,208.4	-186.8	10.00	6.97	7.63
8,700.0	75.34	346.18	8,226.4	-140.7	-1,221.4	-140.7	10.00	7.11	7.33
8,750.0	78.95	349.73	8,237.5	-93.0	-1,231.5	-93.0	10.00	7.22	7.10
8,800.0	82.60	353.19	8,245.5	-44.2	-1,238.8	-44.2	10.00	7.30	6.92
8,850.0	86.28	356.60	8,250.4	5.3	-1,243.3	5.3	10.00	7.36	6.81
8,900.5	90.00	0.00	8,252.0	55.7	-1,244.7	55.7	10.00	7.38	6.75
<b>Start 3492.2 hold at 8900.5 MD</b>									
9,000.0	90.00	0.00	8,252.0	155.3	-1,244.7	155.3	0.00	0.00	0.00
9,100.0	90.00	0.00	8,252.0	255.3	-1,244.7	255.3	0.00	0.00	0.00
9,200.0	90.00	0.00	8,252.0	355.3	-1,244.7	355.3	0.00	0.00	0.00
9,300.0	90.00	0.00	8,252.0	455.3	-1,244.7	455.3	0.00	0.00	0.00
9,400.0	90.00	0.00	8,252.0	555.3	-1,244.7	555.3	0.00	0.00	0.00
9,500.0	90.00	0.00	8,252.0	655.3	-1,244.7	655.3	0.00	0.00	0.00
9,600.0	90.00	0.00	8,252.0	755.3	-1,244.7	755.3	0.00	0.00	0.00
9,700.0	90.00	0.00	8,252.0	855.3	-1,244.7	855.3	0.00	0.00	0.00
9,800.0	90.00	0.00	8,252.0	955.3	-1,244.7	955.3	0.00	0.00	0.00
9,900.0	90.00	0.00	8,252.0	1,055.3	-1,244.7	1,055.3	0.00	0.00	0.00
10,000.0	90.00	0.00	8,252.0	1,155.3	-1,244.7	1,155.3	0.00	0.00	0.00
10,100.0	90.00	0.00	8,252.0	1,255.3	-1,244.7	1,255.3	0.00	0.00	0.00
10,200.0	90.00	0.00	8,252.0	1,355.3	-1,244.7	1,355.3	0.00	0.00	0.00
10,300.0	90.00	0.00	8,252.0	1,455.3	-1,244.7	1,455.3	0.00	0.00	0.00
10,400.0	90.00	0.00	8,252.0	1,555.3	-1,244.7	1,555.3	0.00	0.00	0.00
10,500.0	90.00	0.00	8,252.0	1,655.3	-1,244.7	1,655.3	0.00	0.00	0.00
10,600.0	90.00	0.00	8,252.0	1,755.3	-1,244.7	1,755.3	0.00	0.00	0.00
10,700.0	90.00	0.00	8,252.0	1,855.3	-1,244.7	1,855.3	0.00	0.00	0.00
10,800.0	90.00	0.00	8,252.0	1,955.3	-1,244.7	1,955.3	0.00	0.00	0.00
10,900.0	90.00	0.00	8,252.0	2,055.3	-1,244.7	2,055.3	0.00	0.00	0.00
11,000.0	90.00	0.00	8,252.0	2,155.3	-1,244.7	2,155.3	0.00	0.00	0.00
11,100.0	90.00	0.00	8,252.0	2,255.3	-1,244.7	2,255.3	0.00	0.00	0.00
11,200.0	90.00	0.00	8,252.0	2,355.3	-1,244.6	2,355.3	0.00	0.00	0.00
11,300.0	90.00	0.00	8,252.0	2,455.3	-1,244.6	2,455.3	0.00	0.00	0.00
11,400.0	90.00	0.00	8,252.0	2,555.3	-1,244.6	2,555.3	0.00	0.00	0.00
11,500.0	90.00	0.00	8,252.0	2,655.3	-1,244.6	2,655.3	0.00	0.00	0.00
11,600.0	90.00	0.00	8,252.0	2,755.3	-1,244.6	2,755.3	0.00	0.00	0.00
11,700.0	90.00	0.00	8,252.0	2,855.3	-1,244.6	2,855.3	0.00	0.00	0.00

# SandRidge Energy

## Survey Report

<b>Company:</b>	SandRidge Energy	<b>Local Co-ordinate Reference:</b>	Well Ray Ranch 0780 8-16H
<b>Project:</b>	North Park Basin	<b>TVD Reference:</b>	KB @ 8152.0usft
<b>Site:</b>	T7N-R80W-S16	<b>MD Reference:</b>	KB @ 8152.0usft
<b>Well:</b>	Ray Ranch 0780 8-16H	<b>North Reference:</b>	Grid
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Design #1	<b>Database:</b>	EDMProd

### Planned 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)
11,800.0	90.00	0.00	8,252.0	2,955.3	-1,244.6	2,955.3	0.00	0.00	0.00
11,900.0	90.00	0.00	8,252.0	3,055.3	-1,244.6	3,055.3	0.00	0.00	0.00
12,000.0	90.00	0.00	8,252.0	3,155.3	-1,244.6	3,155.3	0.00	0.00	0.00
12,100.0	90.00	0.00	8,252.0	3,255.3	-1,244.6	3,255.3	0.00	0.00	0.00
12,200.0	90.00	0.00	8,252.0	3,355.3	-1,244.6	3,355.3	0.00	0.00	0.00
12,300.0	90.00	0.00	8,252.0	3,455.3	-1,244.6	3,455.3	0.00	0.00	0.00
12,392.7	90.00	0.00	8,252.0	3,548.0	-1,244.6	3,548.0	0.00	0.00	0.00
TD at 12392.7									

### Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Ray Ranch 8-16H - plan hits target center - Point	0.00	360.00	8,252.0	3,548.0	-1,244.6	1,456,787.09	2,753,684.25	40° 35' 2.033 N	106° 23' 12.569 W

### Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
8,012.3	7,858.0	Niobrara		0.00	

### Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
2500	2500	0	0	Start Build 2.00	
3152	3146	-49	-56	Start 4386.2 hold at 3151.7 MD	
7538	7419	-700	-800	Start DLS 8.00 TFO 106.33	
8324	8065	-443	-1074	Start 150.0 hold at 8324.4 MD	
8474	8140	-332	-1143	Start DLS 10.00 TFO 51.12	
8900	8252	56	-1245	Start 3492.2 hold at 8900.5 MD	
12,393	8252	3548	-1245	TD at 12392.7	

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

PROJECT DETAILS: North Park Basin


Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Northern Zone

System Datum: Mean Sea Level

G

T

M



Azimuths to Grid North  
True North: 0.57°  
Magnetic North: 10.45°

Magnetic Field  
Strength: 53186.4snT  
Dip Angle: 66.97°  
Date: 12/31/2009  
Model: IGRF200510

CASING DETAILS

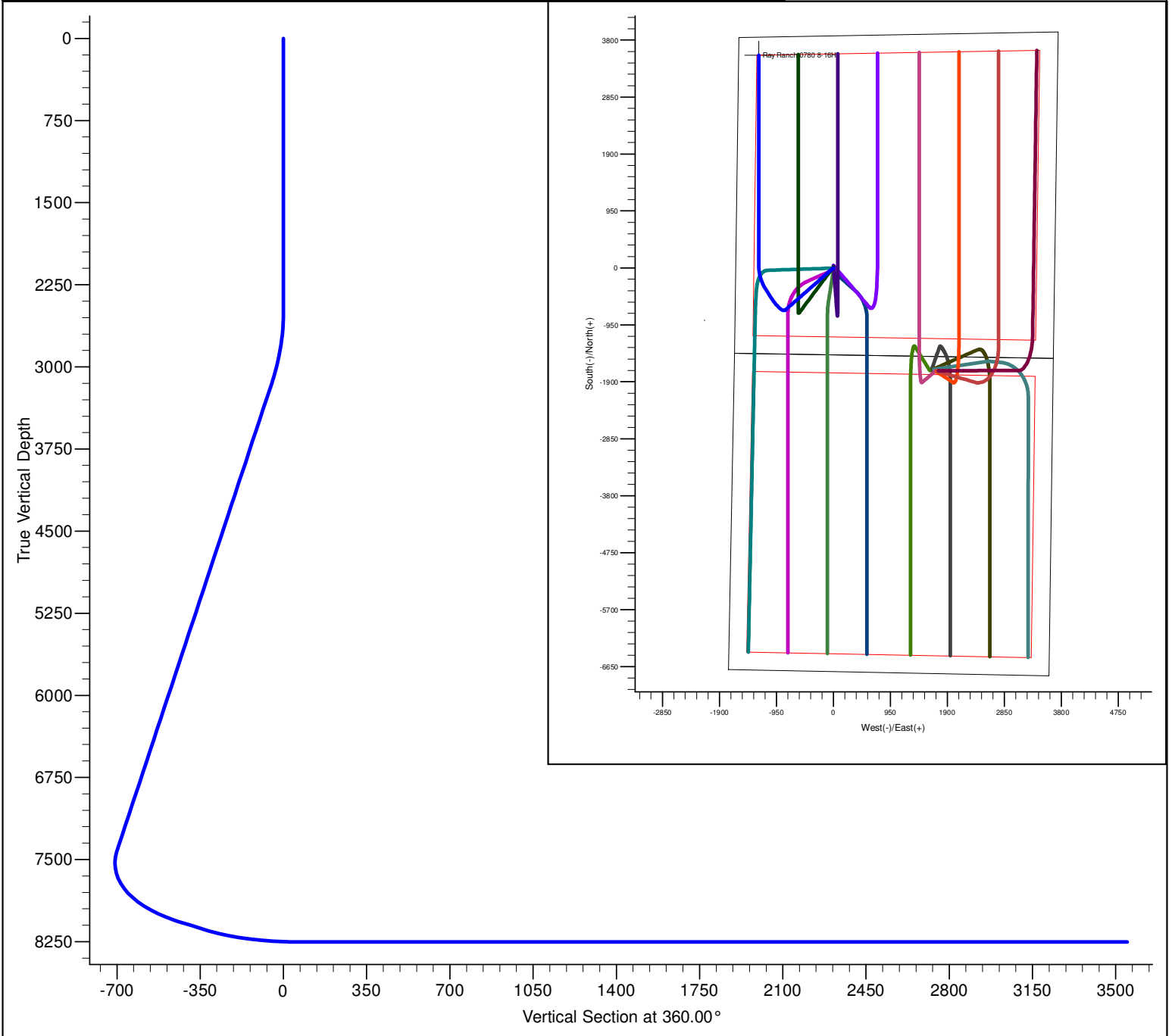
No casing data is available

DESIGN DETAILS: Design #1

0' Vertical Section coordinates

Type	Target	Azimuth	Origin	Type	N/S	E/W	From	TVD
User		360.00	Slot		0.0	0.0		0.0

Project: North Park Basin  
Site: T7N-R80W-S16  
Well: Ray Ranch 0780 8-16H  
Wellbore: Wellbore #1  
Design: Design #1



SECTION DETAILS												
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target		
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0			
2	2500.0	0.00	0.00	2500.0	0.0	0.0	0.00	0.00	0.0			
3	3151.7	13.03	228.81	3146.1	-48.6	-55.5	2.00	228.81	-48.6			
4	7537.9	13.03	228.81	7419.3	-700.0	-800.0	0.00	0.00	-700.0			
5	8324.4	60.00	328.20	8065.3	-442.6	-1074.3	8.00	106.33	-442.6			
6	8474.4	60.00	328.20	8140.3	-332.2	-1142.8	0.00	0.00	-332.2			
7	8900.5	90.00	0.00	8252.0	55.7	-1244.7	10.00	51.12	55.7	Ray Ranch 8-16H		
8	12392.7	90.00	0.00	8252.0	3548.0	-1244.6	0.00	0.00	3548.0	Ray Ranch 8-16H		