

# **PDC ENERGY**

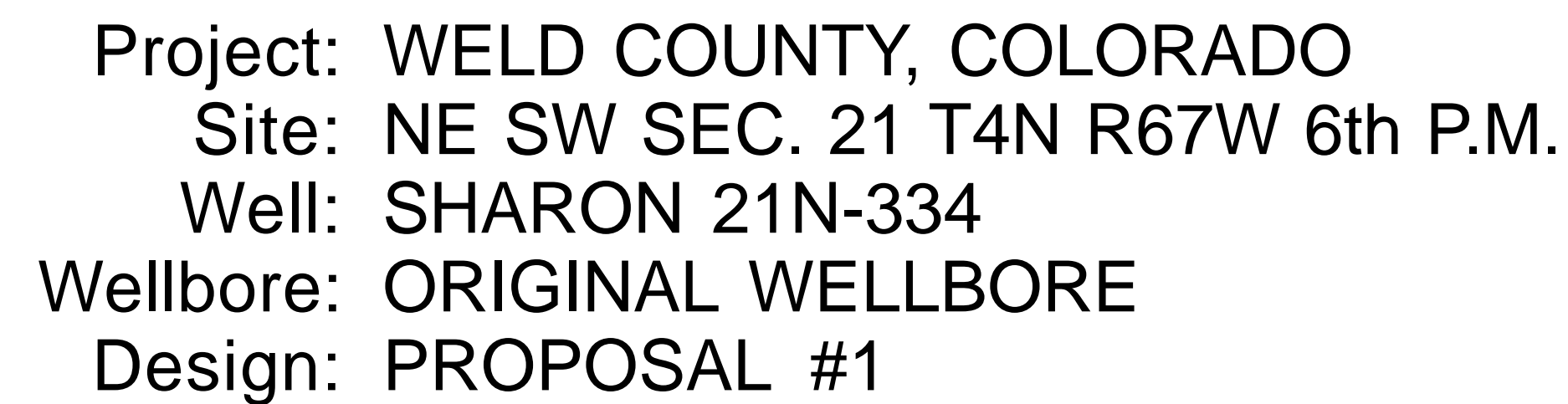
**WELD COUNTY, COLORADO  
NE SW SEC. 21 T4N R67W 6th P.M.  
SHARON 21N-334**

## **ORIGINAL WELLBORE**

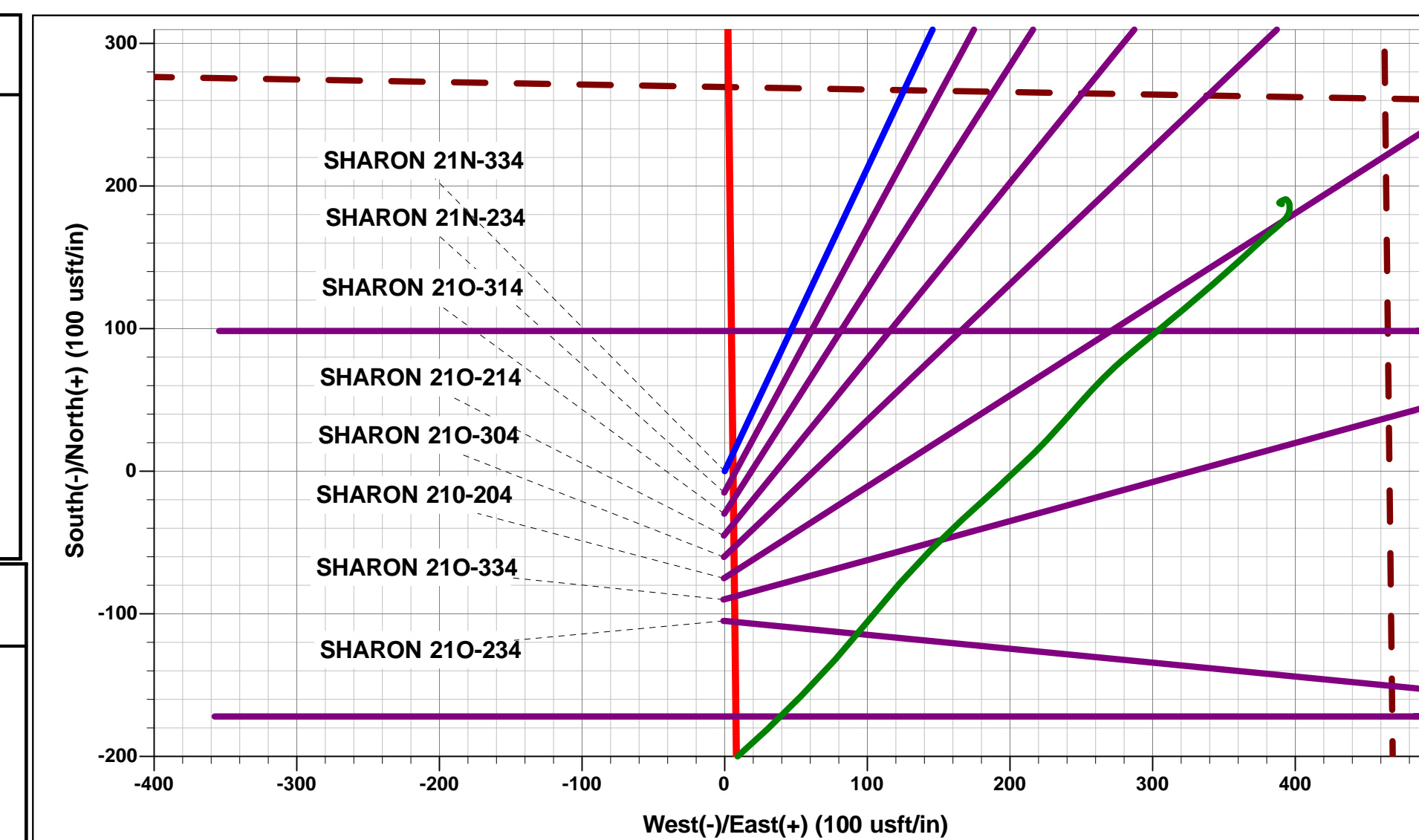
**28 March, 2016**

**Plan: PROPOSAL #1**





ANNOTATIONS									
	TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation
	0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 2357ft FSL & 2207ft FWL of Sec 21
	300.0	300.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
	1115.8	1127.2	16.54	25.21	107.3	50.5	-26.6	118.6	EOB TO 16.54° INC
	5634.1	5840.7	16.54	25.21	1321.7	622.3	-328.1	1460.9	END OF TANGENT
	6449.9	6668.0	0.00	0.00	1429.0	672.8	-354.7	1579.5	EOD TO VERTICAL
	6479.9	6698.0	0.00	0.00	1429.0	672.8	-354.7	1579.5	KOP (8°/100ft BUR)
	7196.0	7828.6	90.46	270.00	1429.0	-49.1	350.8	2301.4	HZ LP *NEW*: 1467.8ft FNL & 2176ft FWL of Sec 21
	7143.0	14370.2	90.47	270.00	1429.0	-6590.5	6743.6	8842.7	BHL: 1590ft FNL & 500ft FWL of Sec 20
WELLBORE TARGET DETAILS (LAT/LONG)									
	Name			TVD	+N/-S	+E/-W		Latitude	Longitude
	KOP - SHARON 21N-334			6479.9	1429.0	672.8		40.301503	-104.895187
	HZ LANDING PNT *NEW* - SHARON 21N-334			7196.0	1429.0	-49.1		40.301504	-104.897775
	BHL - SHARON 21N-334			7143.0	1429.0	-6590.5		40.301501	-104.921227

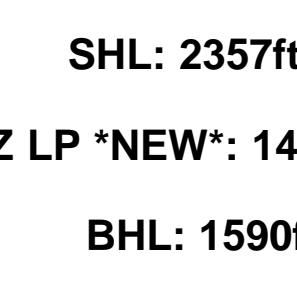


**PROPOSED LOCAL COORDINATES:**

**SHL: 2357ft FSL & 2207ft FWL of Sec 21**

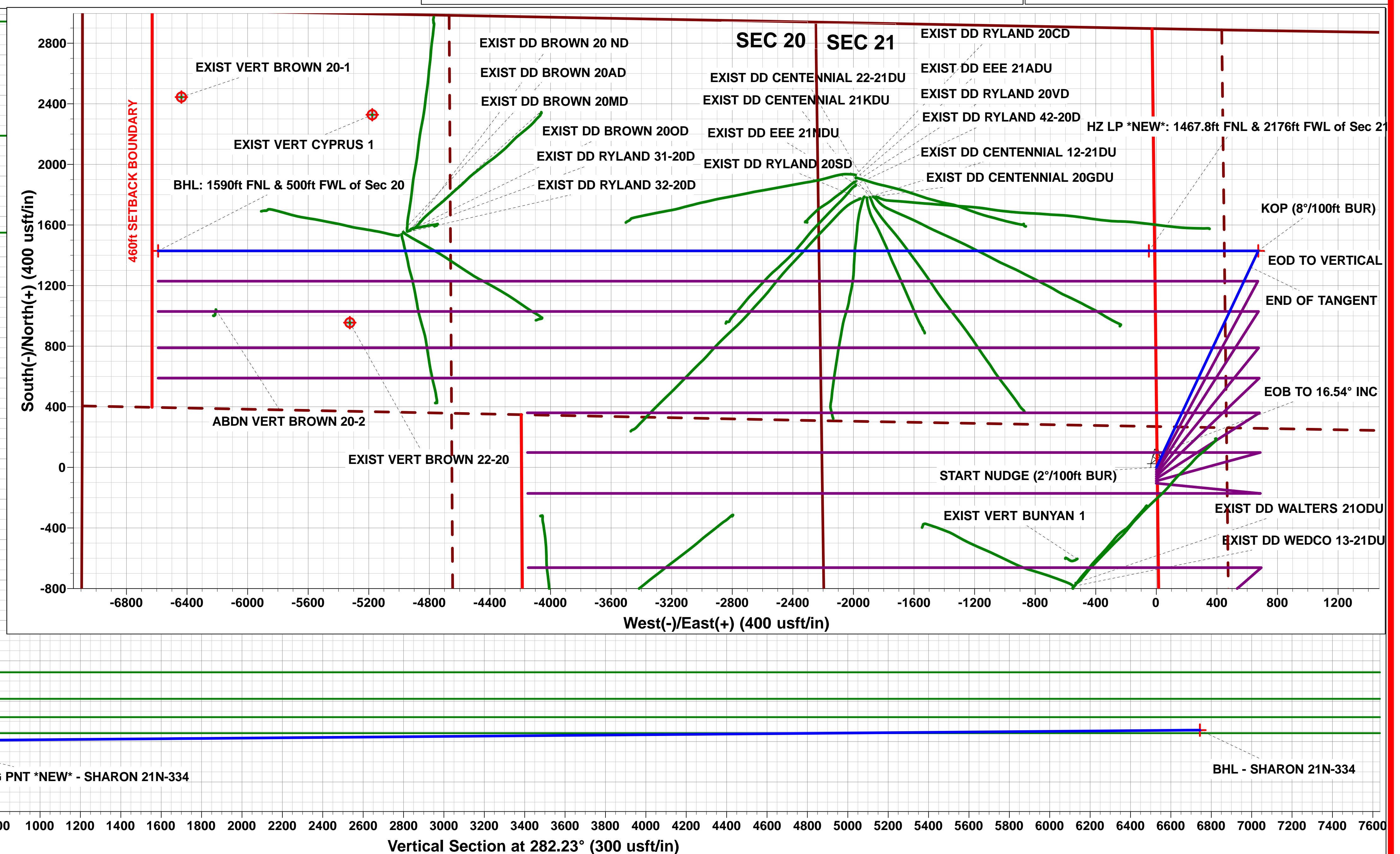
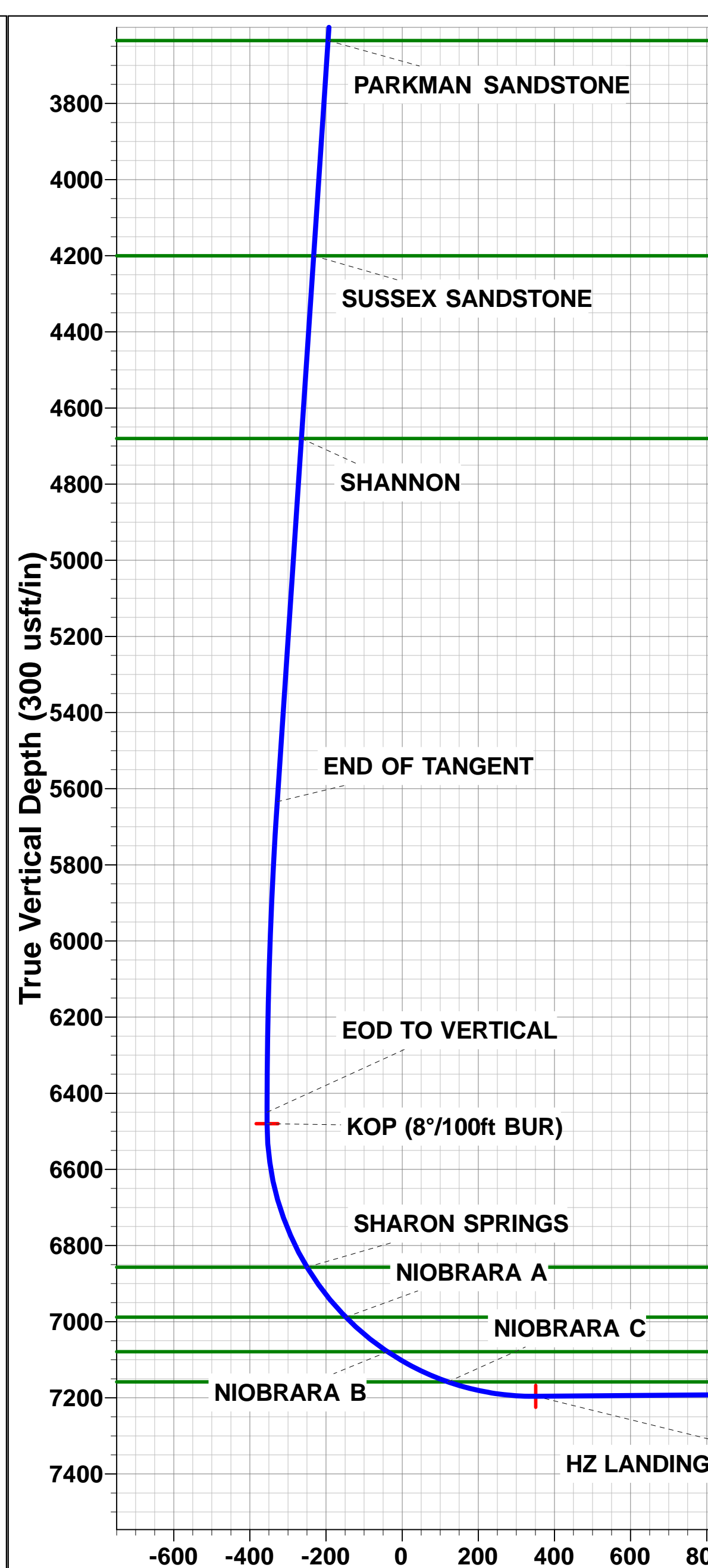
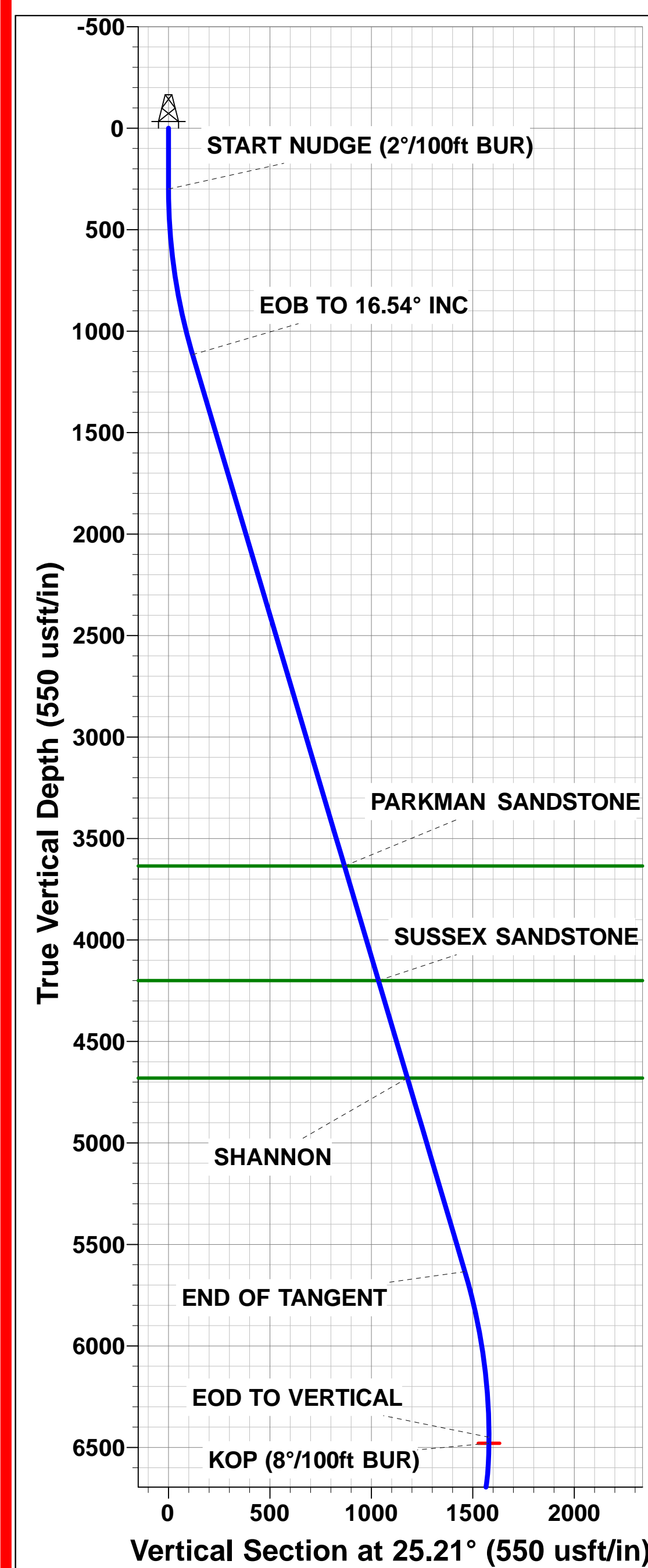
**HZ LP \*NEW\*: 1467.8ft FNL & 2176ft FWL of Sec 21**

**BHL: 1590ft FNL & 500t FWL of Sec 20**



**Azimuths to True North  
Magnetic North: 8.40°**

**Magnetic Field  
Strength: 52463.1snT  
Dip Angle: 66.78°  
Date: 28/03/2016  
Model: IGRF2015**



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SHARON 21N-334
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4952.5usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4952.5usft (Original Well Elev)
<b>Site:</b>	NE SW SEC. 21 T4N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	SHARON 21N-334	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

<b>Project</b>	WELD COUNTY, COLORADO		
<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		Using geodetic scale factor

<b>Site</b>	NE SW SEC. 21 T4N R67W 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	1,351,715.69 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,168,026.97 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	1.10000ft
		<b>Latitude:</b>	40.297293
		<b>Longitude:</b>	-104.897602
		<b>Grid Convergence:</b>	0.39 °

<b>Well</b>	SHARON 21N-334		
<b>Well Position</b>	<b>+N/-S</b>	104.9 usft	<b>Northing:</b>
	<b>+E/-W</b>	0.8 usft	<b>Easting:</b>
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	28/03/2016	8.40	66.78	52,463

<b>Design</b>	PROPOSAL #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>	
	7,143.0	0.0	0.0	282.23	

<b>Plan Sections</b>											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100usf)	Turn Rate (°/100usf)	TFO (°)	Target
0.0	0.00	0.00	0.0	-4,952.5	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	-4,652.5	0.0	0.0	0.00	0.00	0.00	0.00	
1,127.2	16.54	25.21	1,115.8	-3,836.7	107.3	50.5	2.00	2.00	0.00	25.21	
5,840.7	16.54	25.21	5,634.1	681.6	1,321.7	622.3	0.00	0.00	0.00	0.00	
6,668.0	0.00	0.00	6,449.9	1,497.4	1,429.0	672.8	2.00	-2.00	0.00	180.00	
6,698.0	0.00	0.00	6,479.9	1,527.4	1,429.0	672.8	0.00	0.00	0.00	0.00	KOP - SHARON 21
7,828.6	90.46	270.00	7,196.0	2,243.5	1,429.0	-49.1	8.00	8.00	-7.96	270.00	HZ LANDING PNT
14,370.2	90.47	270.00	7,143.0	2,190.5	1,429.0	-6,590.5	0.00	0.00	0.00	-7.00	BHL - SHARON 211

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SHARON 21N-334
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4952.5usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4952.5usft (Original Well Elev)
<b>Site:</b>	NE SW SEC. 21 T4N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	SHARON 21N-334	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>SHL: 2357ft FSL &amp; 2207ft FWL of Sec 21</b>										
0.0	0.00	0.00	0.0	4,952.50	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,852.50	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,752.50	0.0	0.0	0.0	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
300.0	0.00	0.00	300.0	4,652.50	0.0	0.0	0.0	0.00	0.00	0.00
400.0	2.00	25.21	400.0	4,552.52	1.6	0.7	-0.4	2.00	2.00	0.00
500.0	4.00	25.21	499.8	4,452.66	6.3	3.0	-1.6	2.00	2.00	0.00
600.0	6.00	25.21	599.5	4,353.05	14.2	6.7	-3.5	2.00	2.00	0.00
700.0	8.00	25.21	698.7	4,253.80	25.2	11.9	-6.3	2.00	2.00	0.00
800.0	10.00	25.21	797.5	4,155.03	39.4	18.5	-9.8	2.00	2.00	0.00
900.0	12.00	25.21	895.6	4,056.88	56.6	26.7	-14.1	2.00	2.00	0.00
1,000.0	14.00	25.21	993.1	3,959.44	77.0	36.2	-19.1	2.00	2.00	0.00
1,100.0	16.00	25.21	1,089.6	3,862.86	100.4	47.3	-24.9	2.00	2.00	0.00
<b>EOB TO 16.54° INC</b>										
1,127.2	16.54	25.21	1,115.8	3,836.70	107.3	50.5	-26.6	2.00	2.00	0.00
1,200.0	16.54	25.21	1,185.5	3,766.96	126.1	59.3	-31.3	0.00	0.00	0.00
1,300.0	16.54	25.21	1,281.4	3,671.10	151.8	71.5	-37.7	0.00	0.00	0.00
1,400.0	16.54	25.21	1,377.3	3,575.24	177.6	83.6	-44.1	0.00	0.00	0.00
1,500.0	16.54	25.21	1,473.1	3,479.38	203.3	95.7	-50.5	0.00	0.00	0.00
1,600.0	16.54	25.21	1,569.0	3,383.52	229.1	107.9	-56.9	0.00	0.00	0.00
1,700.0	16.54	25.21	1,664.8	3,287.66	254.9	120.0	-63.3	0.00	0.00	0.00
1,800.0	16.54	25.21	1,760.7	3,191.80	280.6	132.1	-69.7	0.00	0.00	0.00
1,900.0	16.54	25.21	1,856.6	3,095.94	306.4	144.3	-76.1	0.00	0.00	0.00
2,000.0	16.54	25.21	1,952.4	3,000.08	332.2	156.4	-82.5	0.00	0.00	0.00
2,100.0	16.54	25.21	2,048.3	2,904.22	357.9	168.5	-88.8	0.00	0.00	0.00
2,200.0	16.54	25.21	2,144.1	2,808.36	383.7	180.7	-95.2	0.00	0.00	0.00
2,300.0	16.54	25.21	2,240.0	2,712.50	409.5	192.8	-101.6	0.00	0.00	0.00
2,400.0	16.54	25.21	2,335.9	2,616.64	435.2	204.9	-108.0	0.00	0.00	0.00
2,500.0	16.54	25.21	2,431.7	2,520.79	461.0	217.0	-114.4	0.00	0.00	0.00
2,600.0	16.54	25.21	2,527.6	2,424.93	486.8	229.2	-120.8	0.00	0.00	0.00
2,700.0	16.54	25.21	2,623.4	2,329.07	512.5	241.3	-127.2	0.00	0.00	0.00
2,800.0	16.54	25.21	2,719.3	2,233.21	538.3	253.4	-133.6	0.00	0.00	0.00
2,900.0	16.54	25.21	2,815.2	2,137.35	564.0	265.6	-140.0	0.00	0.00	0.00
3,000.0	16.54	25.21	2,911.0	2,041.49	589.8	277.7	-146.4	0.00	0.00	0.00
3,100.0	16.54	25.21	3,006.9	1,945.63	615.6	289.8	-152.8	0.00	0.00	0.00
3,200.0	16.54	25.21	3,102.7	1,849.77	641.3	302.0	-159.2	0.00	0.00	0.00
3,300.0	16.54	25.21	3,198.6	1,753.91	667.1	314.1	-165.6	0.00	0.00	0.00
3,400.0	16.54	25.21	3,294.5	1,658.05	692.9	326.2	-172.0	0.00	0.00	0.00
3,500.0	16.54	25.21	3,390.3	1,562.19	718.6	338.3	-178.4	0.00	0.00	0.00
3,600.0	16.54	25.21	3,486.2	1,466.33	744.4	350.5	-184.8	0.00	0.00	0.00
3,700.0	16.54	25.21	3,582.0	1,370.47	770.2	362.6	-191.2	0.00	0.00	0.00
<b>PARKMAN SANDSTONE</b>										
3,755.3	16.54	25.21	3,635.0	1,317.50	784.4	369.3	-194.7	0.00	0.00	0.00
3,800.0	16.54	25.21	3,677.9	1,274.61	795.9	374.7	-197.6	0.00	0.00	0.00
3,900.0	16.54	25.21	3,773.7	1,178.75	821.7	386.9	-204.0	0.00	0.00	0.00
4,000.0	16.54	25.21	3,869.6	1,082.89	847.4	399.0	-210.4	0.00	0.00	0.00
4,100.0	16.54	25.21	3,965.5	987.03	873.2	411.1	-216.8	0.00	0.00	0.00
4,200.0	16.54	25.21	4,061.3	891.17	899.0	423.3	-223.2	0.00	0.00	0.00
4,300.0	16.54	25.21	4,157.2	795.31	924.7	435.4	-229.5	0.00	0.00	0.00
<b>SUSSEX SANDSTONE</b>										
4,344.7	16.54	25.21	4,200.0	752.50	936.2	440.8	-232.4	0.00	0.00	0.00
4,400.0	16.54	25.21	4,253.0	699.45	950.5	447.5	-235.9	0.00	0.00	0.00
4,500.0	16.54	25.21	4,348.9	603.59	976.3	459.6	-242.3	0.00	0.00	0.00



# Planning Report



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<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4952.5usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4952.5usft (Original Well Elev)
<b>Site:</b>	NE SW SEC. 21 T4N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	SHARON 21N-334	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,600.0	16.54	25.21	4,444.8	507.73	1,002.0	471.8	-248.7	0.00	0.00	0.00
4,700.0	16.54	25.21	4,540.6	411.87	1,027.8	483.9	-255.1	0.00	0.00	0.00
4,800.0	16.54	25.21	4,636.5	316.01	1,053.6	496.0	-261.5	0.00	0.00	0.00
<b>SHANNON</b>										
<b>4,845.4</b>	<b>16.54</b>	<b>25.21</b>	<b>4,680.0</b>	<b>272.50</b>	<b>1,065.3</b>	<b>501.5</b>	<b>-264.4</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,900.0	16.54	25.21	4,732.3	220.15	1,079.3	508.2	-267.9	0.00	0.00	0.00
5,000.0	16.54	25.21	4,828.2	124.29	1,105.1	520.3	-274.3	0.00	0.00	0.00
5,100.0	16.54	25.21	4,924.1	28.43	1,130.9	532.4	-280.7	0.00	0.00	0.00
5,200.0	16.54	25.21	5,019.9	-67.43	1,156.6	544.6	-287.1	0.00	0.00	0.00
5,300.0	16.54	25.21	5,115.8	-163.29	1,182.4	556.7	-293.5	0.00	0.00	0.00
5,400.0	16.54	25.21	5,211.6	-259.14	1,208.1	568.8	-299.9	0.00	0.00	0.00
5,500.0	16.54	25.21	5,307.5	-355.00	1,233.9	580.9	-306.3	0.00	0.00	0.00
5,600.0	16.54	25.21	5,403.4	-450.86	1,259.7	593.1	-312.7	0.00	0.00	0.00
5,700.0	16.54	25.21	5,499.2	-546.72	1,285.4	605.2	-319.1	0.00	0.00	0.00
5,800.0	16.54	25.21	5,595.1	-642.58	1,311.2	617.3	-325.5	0.00	0.00	0.00
<b>END OF TANGENT</b>										
<b>5,840.7</b>	<b>16.54</b>	<b>25.21</b>	<b>5,634.1</b>	<b>-681.60</b>	<b>1,321.7</b>	<b>622.3</b>	<b>-328.1</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,900.0	15.36	25.21	5,691.1	-738.61	1,336.4	629.2	-331.7	2.00	-2.00	0.00
6,000.0	13.36	25.21	5,788.0	-835.49	1,358.9	639.8	-337.3	2.00	-2.00	0.00
6,100.0	11.36	25.21	5,885.7	-933.16	1,378.2	648.9	-342.1	2.00	-2.00	0.00
6,200.0	9.36	25.21	5,984.0	-1,031.53	1,394.5	656.6	-346.2	2.00	-2.00	0.00
6,300.0	7.36	25.21	6,083.0	-1,130.46	1,407.7	662.7	-349.4	2.00	-2.00	0.00
6,400.0	5.36	25.21	6,182.3	-1,229.84	1,417.7	667.5	-351.9	2.00	-2.00	0.00
6,500.0	3.36	25.21	6,282.0	-1,329.55	1,424.5	670.7	-353.6	2.00	-2.00	0.00
6,600.0	1.36	25.21	6,382.0	-1,429.46	1,428.3	672.5	-354.5	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
<b>6,668.0</b>	<b>0.00</b>	<b>0.00</b>	<b>6,449.9</b>	<b>-1,497.40</b>	<b>1,429.0</b>	<b>672.8</b>	<b>-354.7</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
<b>KOP (8°/100ft BUR)</b>										
<b>6,698.0</b>	<b>0.00</b>	<b>0.00</b>	<b>6,479.9</b>	<b>-1,527.40</b>	<b>1,429.0</b>	<b>672.8</b>	<b>-354.7</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
6,700.0	0.16	270.00	6,481.9	-1,529.45	1,429.0	672.8	-354.7	8.00	8.00	0.00
6,800.0	8.16	270.00	6,581.6	-1,629.10	1,429.0	665.5	-347.6	8.00	8.00	0.00
6,900.0	16.17	270.00	6,679.3	-1,726.78	1,429.0	644.5	-327.0	8.00	8.00	0.00
7,000.0	24.17	270.00	6,773.1	-1,820.57	1,429.0	610.0	-293.4	8.00	8.00	0.00
<b>SHARON SPRINGS</b>										
<b>7,095.1</b>	<b>31.78</b>	<b>270.00</b>	<b>6,857.0</b>	<b>-1,904.50</b>	<b>1,429.0</b>	<b>565.5</b>	<b>-249.8</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
7,100.0	32.17	270.00	6,861.2	-1,908.66	1,429.0	562.9	-247.3	8.00	8.00	0.00
7,200.0	40.17	270.00	6,941.8	-1,989.32	1,429.0	503.9	-189.7	8.00	8.00	0.00
<b>NIOBRARA A</b>										
<b>7,262.8</b>	<b>45.20</b>	<b>270.00</b>	<b>6,988.0</b>	<b>-2,035.50</b>	<b>1,429.0</b>	<b>461.3</b>	<b>-148.0</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
7,300.0	48.17	270.00	7,013.5	-2,060.99	1,429.0	434.3	-121.6	8.00	8.00	0.00
7,400.0	56.17	270.00	7,074.8	-2,122.28	1,429.0	355.4	-44.5	8.00	8.00	0.00
<b>NIOBRARA B</b>										
<b>7,407.6</b>	<b>56.78</b>	<b>270.00</b>	<b>7,079.0</b>	<b>-2,126.50</b>	<b>1,429.0</b>	<b>349.0</b>	<b>-38.3</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
7,500.0	64.17	270.00	7,124.5	-2,171.98	1,429.0	268.7	40.2	8.00	8.00	0.00
<b>NIOBRARA C</b>										
<b>7,588.4</b>	<b>71.25</b>	<b>270.00</b>	<b>7,158.0</b>	<b>-2,205.50</b>	<b>1,429.0</b>	<b>186.9</b>	<b>120.1</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
7,600.0	72.17	270.00	7,161.6	-2,209.13	1,429.0	175.9	130.9	8.00	8.00	0.00
7,700.0	80.17	270.00	7,185.5	-2,233.01	1,429.0	78.9	225.7	8.00	8.00	0.00
7,800.0	88.17	270.00	7,195.7	-2,243.16	1,429.0	-20.5	322.8	8.00	8.00	0.00
<b>HZ LP *NEW*: 1467.8ft FNL &amp; 2176ft FWL of Sec 21</b>										
<b>7,828.6</b>	<b>90.46</b>	<b>270.00</b>	<b>7,196.0</b>	<b>-2,243.50</b>	<b>1,429.0</b>	<b>-49.1</b>	<b>350.8</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
7,900.0	90.46	270.00	7,195.4	-2,242.92	1,429.0	-120.5	420.6	0.00	0.00	0.00
8,000.0	90.46	270.00	7,194.6	-2,242.12	1,429.0	-220.5	518.3	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SHARON 21N-334
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4952.5usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4952.5usft (Original Well Elev)
<b>Site:</b>	NE SW SEC. 21 T4N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	SHARON 21N-334	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,100.0	90.46	270.00	7,193.8	-2,241.31	1,429.0	-320.5	616.0	0.00	0.00	0.00
8,200.0	90.46	270.00	7,193.0	-2,240.51	1,429.0	-420.5	713.7	0.00	0.00	0.00
8,300.0	90.46	270.00	7,192.2	-2,239.70	1,429.0	-520.5	811.5	0.00	0.00	0.00
8,400.0	90.46	270.00	7,191.4	-2,238.90	1,429.0	-620.5	909.2	0.00	0.00	0.00
8,500.0	90.46	270.00	7,190.6	-2,238.09	1,429.0	-720.5	1,006.9	0.00	0.00	0.00
8,600.0	90.46	270.00	7,189.8	-2,237.28	1,429.0	-820.5	1,104.6	0.00	0.00	0.00
8,700.0	90.46	270.00	7,189.0	-2,236.48	1,429.0	-920.5	1,202.4	0.00	0.00	0.00
8,800.0	90.46	270.00	7,188.2	-2,235.67	1,429.0	-1,020.5	1,300.1	0.00	0.00	0.00
8,900.0	90.46	270.00	7,187.4	-2,234.86	1,429.0	-1,120.5	1,397.8	0.00	0.00	0.00
9,000.0	90.46	270.00	7,186.6	-2,234.05	1,429.0	-1,220.5	1,495.5	0.00	0.00	0.00
9,100.0	90.46	270.00	7,185.7	-2,233.25	1,429.0	-1,320.4	1,593.3	0.00	0.00	0.00
9,200.0	90.46	270.00	7,184.9	-2,232.44	1,429.0	-1,420.4	1,691.0	0.00	0.00	0.00
9,300.0	90.46	270.00	7,184.1	-2,231.63	1,429.0	-1,520.4	1,788.7	0.00	0.00	0.00
9,400.0	90.46	270.00	7,183.3	-2,230.83	1,429.0	-1,620.4	1,886.4	0.00	0.00	0.00
9,500.0	90.46	270.00	7,182.5	-2,230.02	1,429.0	-1,720.4	1,984.2	0.00	0.00	0.00
9,600.0	90.46	270.00	7,181.7	-2,229.21	1,429.0	-1,820.4	2,081.9	0.00	0.00	0.00
9,700.0	90.46	270.00	7,180.9	-2,228.40	1,429.0	-1,920.4	2,179.6	0.00	0.00	0.00
9,800.0	90.46	270.00	7,180.1	-2,227.59	1,429.0	-2,020.4	2,277.3	0.00	0.00	0.00
9,900.0	90.46	270.00	7,179.3	-2,226.78	1,429.0	-2,120.4	2,375.1	0.00	0.00	0.00
10,000.0	90.46	270.00	7,178.5	-2,225.98	1,429.0	-2,220.4	2,472.8	0.00	0.00	0.00
10,100.0	90.46	270.00	7,177.7	-2,225.17	1,429.0	-2,320.4	2,570.5	0.00	0.00	0.00
10,200.0	90.46	270.00	7,176.9	-2,224.36	1,429.0	-2,420.4	2,668.3	0.00	0.00	0.00
10,300.0	90.46	270.00	7,176.0	-2,223.55	1,429.0	-2,520.4	2,766.0	0.00	0.00	0.00
10,400.0	90.46	270.00	7,175.2	-2,222.74	1,429.0	-2,620.4	2,863.7	0.00	0.00	0.00
10,500.0	90.46	270.00	7,174.4	-2,221.93	1,429.0	-2,720.4	2,961.4	0.00	0.00	0.00
10,600.0	90.46	270.00	7,173.6	-2,221.12	1,429.0	-2,820.4	3,059.2	0.00	0.00	0.00
10,700.0	90.46	270.00	7,172.8	-2,220.31	1,429.0	-2,920.4	3,156.9	0.00	0.00	0.00
10,800.0	90.46	270.00	7,172.0	-2,219.50	1,429.0	-3,020.4	3,254.6	0.00	0.00	0.00
10,900.0	90.46	270.00	7,171.2	-2,218.69	1,429.0	-3,120.4	3,352.3	0.00	0.00	0.00
11,000.0	90.46	270.00	7,170.4	-2,217.88	1,429.0	-3,220.4	3,450.1	0.00	0.00	0.00
11,100.0	90.46	270.00	7,169.6	-2,217.07	1,429.0	-3,320.4	3,547.8	0.00	0.00	0.00
11,200.0	90.46	270.00	7,168.8	-2,216.26	1,429.0	-3,420.4	3,645.5	0.00	0.00	0.00
11,300.0	90.46	270.00	7,168.0	-2,215.45	1,429.0	-3,520.4	3,743.2	0.00	0.00	0.00
11,400.0	90.46	270.00	7,167.1	-2,214.64	1,429.0	-3,620.4	3,841.0	0.00	0.00	0.00
11,500.0	90.46	270.00	7,166.3	-2,213.83	1,429.0	-3,720.4	3,938.7	0.00	0.00	0.00
11,600.0	90.46	270.00	7,165.5	-2,213.02	1,429.0	-3,820.4	4,036.4	0.00	0.00	0.00
11,700.0	90.46	270.00	7,164.7	-2,212.21	1,429.0	-3,920.4	4,134.1	0.00	0.00	0.00
11,800.0	90.46	270.00	7,163.9	-2,211.40	1,429.0	-4,020.4	4,231.9	0.00	0.00	0.00
11,900.0	90.46	270.00	7,163.1	-2,210.59	1,429.0	-4,120.4	4,329.6	0.00	0.00	0.00
12,000.0	90.46	270.00	7,162.3	-2,209.77	1,429.0	-4,220.4	4,427.3	0.00	0.00	0.00
12,100.0	90.47	270.00	7,161.5	-2,208.96	1,429.0	-4,320.3	4,525.0	0.00	0.00	0.00
12,200.0	90.47	270.00	7,160.7	-2,208.15	1,429.0	-4,420.3	4,622.8	0.00	0.00	0.00
12,300.0	90.47	270.00	7,159.8	-2,207.34	1,429.0	-4,520.3	4,720.5	0.00	0.00	0.00
12,400.0	90.47	270.00	7,159.0	-2,206.53	1,429.0	-4,620.3	4,818.2	0.00	0.00	0.00
12,500.0	90.47	270.00	7,158.2	-2,205.72	1,429.0	-4,720.3	4,915.9	0.00	0.00	0.00
12,600.0	90.47	270.00	7,157.4	-2,204.90	1,429.0	-4,820.3	5,013.7	0.00	0.00	0.00
12,700.0	90.47	270.00	7,156.6	-2,204.09	1,429.0	-4,920.3	5,111.4	0.00	0.00	0.00
12,800.0	90.47	270.00	7,155.8	-2,203.28	1,429.0	-5,020.3	5,209.1	0.00	0.00	0.00
12,900.0	90.47	270.00	7,155.0	-2,202.47	1,429.0	-5,120.3	5,306.8	0.00	0.00	0.00
13,000.0	90.47	270.00	7,154.2	-2,201.65	1,429.0	-5,220.3	5,404.6	0.00	0.00	0.00
13,100.0	90.47	270.00	7,153.3	-2,200.84	1,429.0	-5,320.3	5,502.3	0.00	0.00	0.00
13,200.0	90.47	270.00	7,152.5	-2,200.03	1,429.0	-5,420.3	5,600.0	0.00	0.00	0.00
13,300.0	90.47	270.00	7,151.7	-2,199.21	1,429.0	-5,520.3	5,697.8	0.00	0.00	0.00
13,400.0	90.47	270.00	7,150.9	-2,198.40	1,429.0	-5,620.3	5,795.5	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SHARON 21N-334
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4952.5usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4952.5usft (Original Well Elev)
<b>Site:</b>	NE SW SEC. 21 T4N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	SHARON 21N-334	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
13,500.0	90.47	270.00	7,150.1	-2,197.59	1,429.0	-5,720.3	5,893.2	0.00	0.00	0.00
13,600.0	90.47	270.00	7,149.3	-2,196.77	1,429.0	-5,820.3	5,990.9	0.00	0.00	0.00
13,700.0	90.47	270.00	7,148.5	-2,195.96	1,429.0	-5,920.3	6,088.7	0.00	0.00	0.00
13,800.0	90.47	270.00	7,147.6	-2,195.14	1,429.0	-6,020.3	6,186.4	0.00	0.00	0.00
13,900.0	90.47	270.00	7,146.8	-2,194.33	1,429.0	-6,120.3	6,284.1	0.00	0.00	0.00
14,000.0	90.47	270.00	7,146.0	-2,193.52	1,429.0	-6,220.3	6,381.8	0.00	0.00	0.00
14,100.0	90.47	270.00	7,145.2	-2,192.70	1,429.0	-6,320.3	6,479.6	0.00	0.00	0.00
14,200.0	90.47	270.00	7,144.4	-2,191.89	1,429.0	-6,420.3	6,577.3	0.00	0.00	0.00
14,300.0	90.47	270.00	7,143.6	-2,191.07	1,429.0	-6,520.3	6,675.0	0.00	0.00	0.00
<b>BHL: 1590ft FNL &amp; 500ft FWL of Sec 20</b>										
<b>14,370.2</b>	<b>90.47</b>	<b>270.00</b>	<b>7,143.0</b>	<b>-2,190.50</b>	<b>1,429.0</b>	<b>-6,590.5</b>	<b>6,743.6</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,755.3	3,635.0	PARKMAN SANDSTONE				
4,344.7	4,200.0	SUSSEX SANDSTONE				
4,845.4	4,680.0	SHANNON				
7,095.1	6,857.0	SHARON SPRINGS				
7,262.8	6,988.0	NIOBRARA A				
7,407.6	7,079.0	NIOBRARA B				
7,588.4	7,158.0	NIOBRARA C				

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 2357ft FSL & 2207ft FWL of Sec 21
300.0	300.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,127.2	1,115.8	107.3	50.5	EOB TO 16.54° INC
5,840.7	5,634.1	1,321.7	622.3	END OF TANGENT
6,668.0	6,449.9	1,429.0	672.8	EOD TO VERTICAL
6,698.0	6,479.9	1,429.0	672.8	KOP (8°/100ft BUR)
7,828.6	7,196.0	1,429.0	-49.1	HZ LP *NEW*: 1467.8ft FNL & 2176ft FWL of Sec 21
14,370.2	7,143.0	1,429.0	-6,590.5	BHL: 1590ft FNL & 500ft FWL of Sec 20