

# **PDC ENERGY**

**WELD COUNTY, COLORADO  
NE SW SEC. 21 T4N R67W 6th P.M.  
SHARON 210-404**

**ORIGINAL WELLBORE**

**17 May, 2016**

**Plan: PROPOSAL #2**



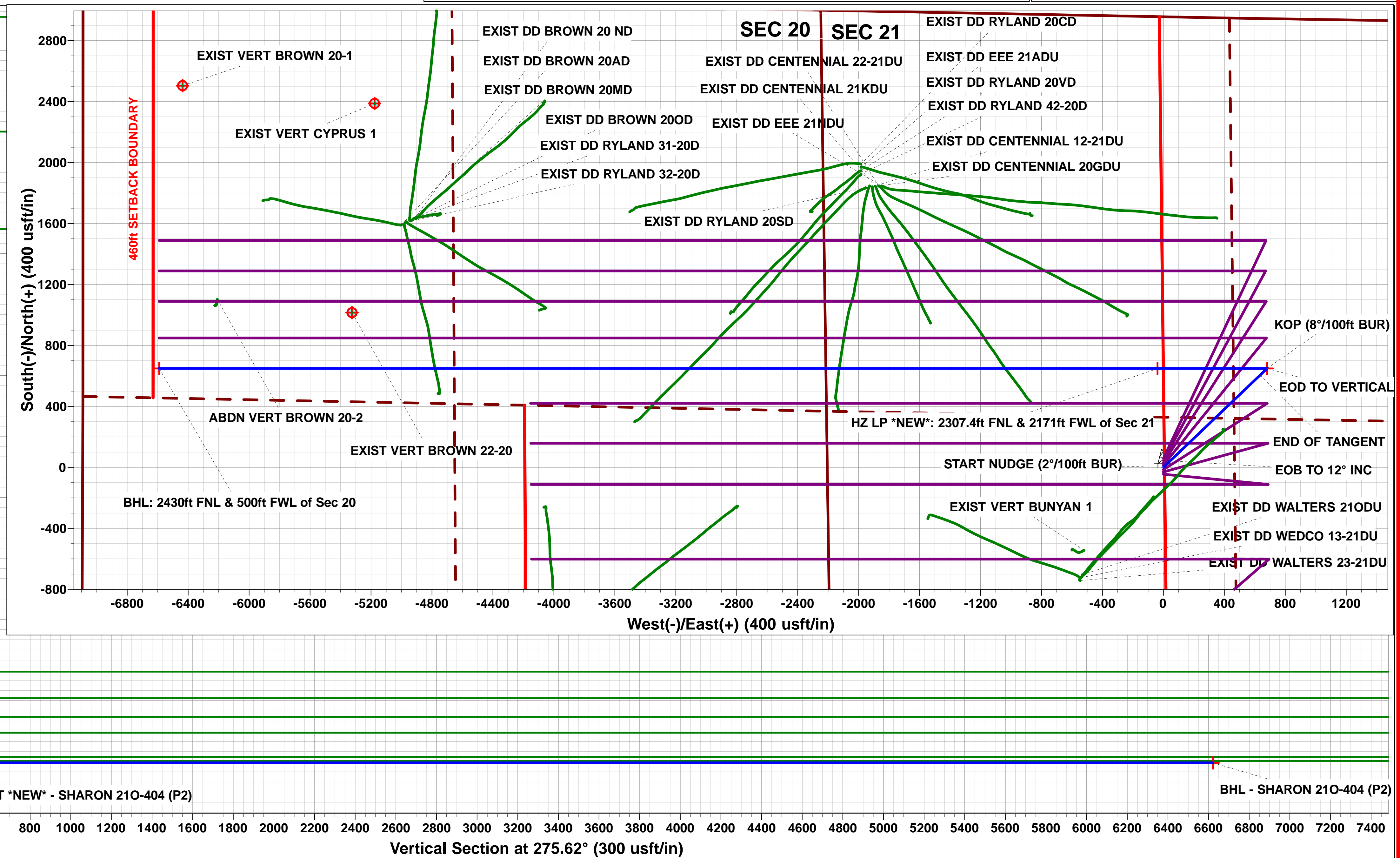
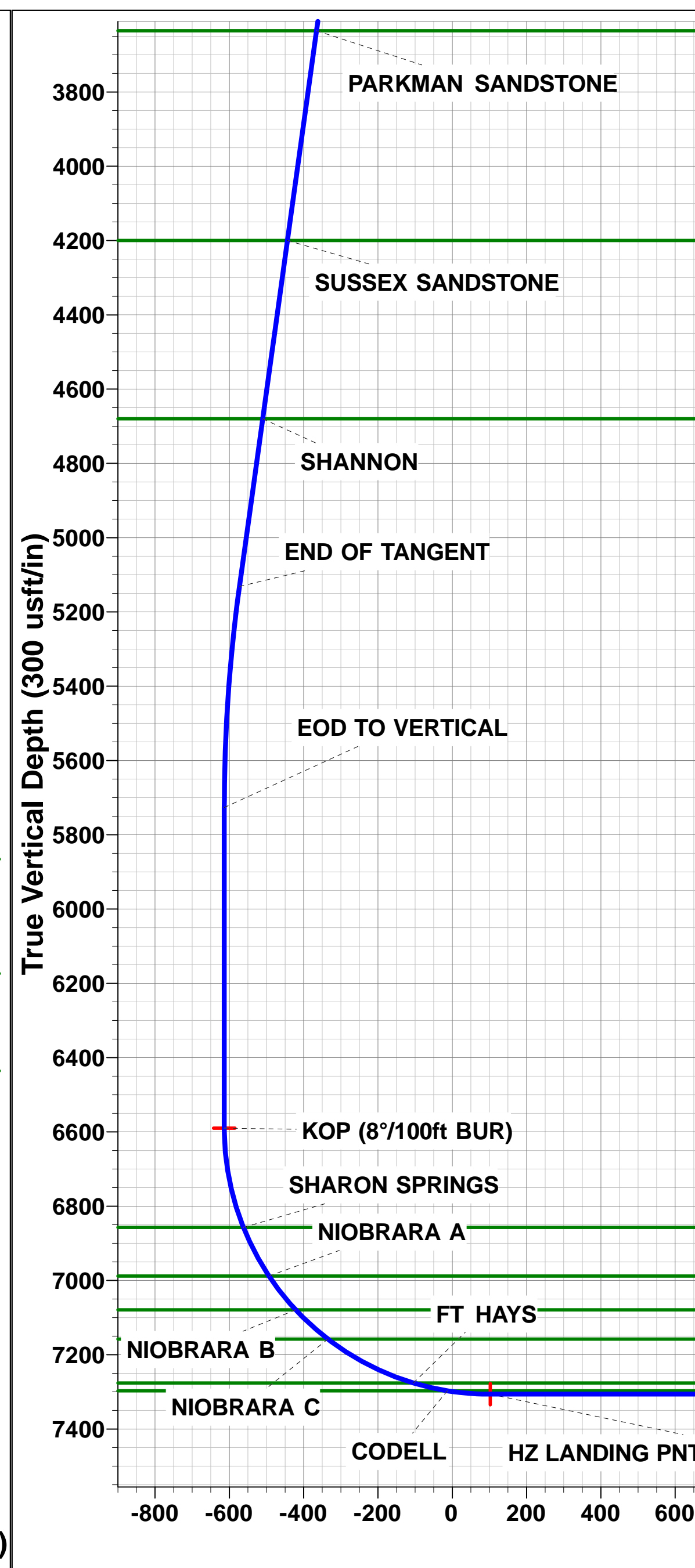
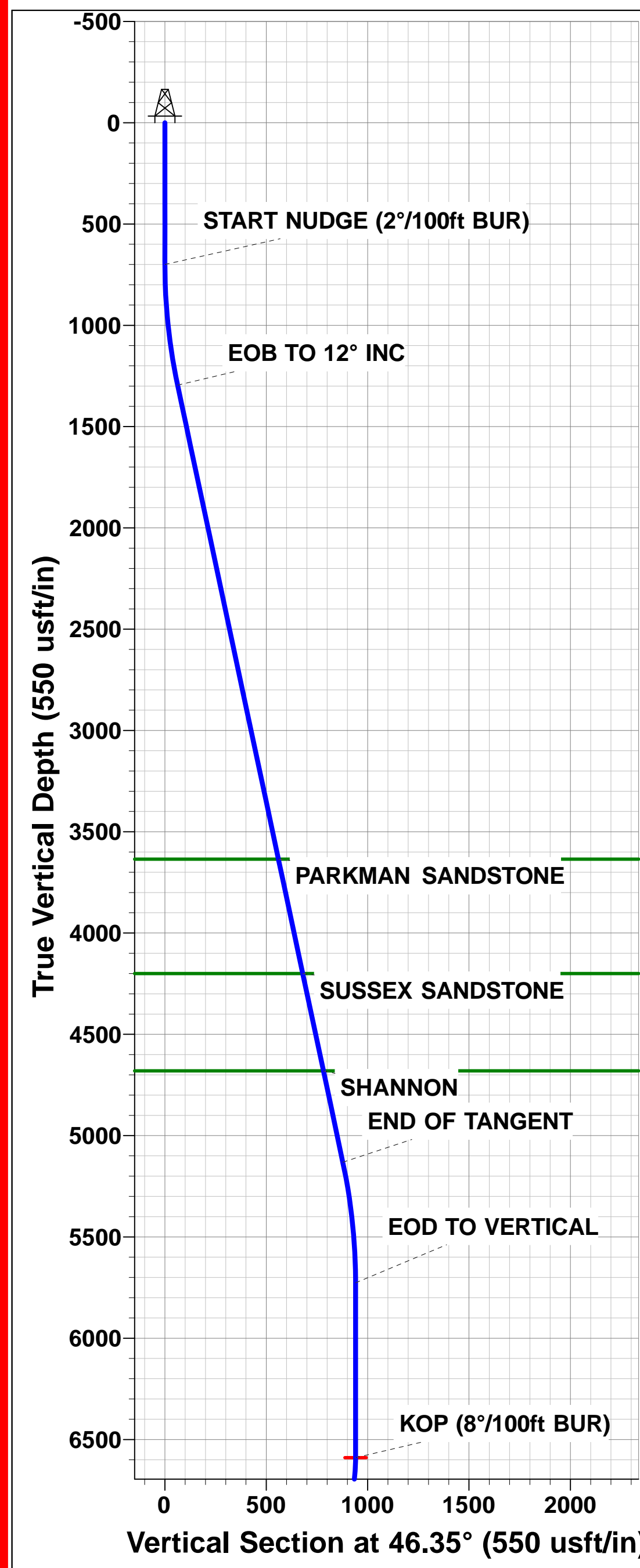
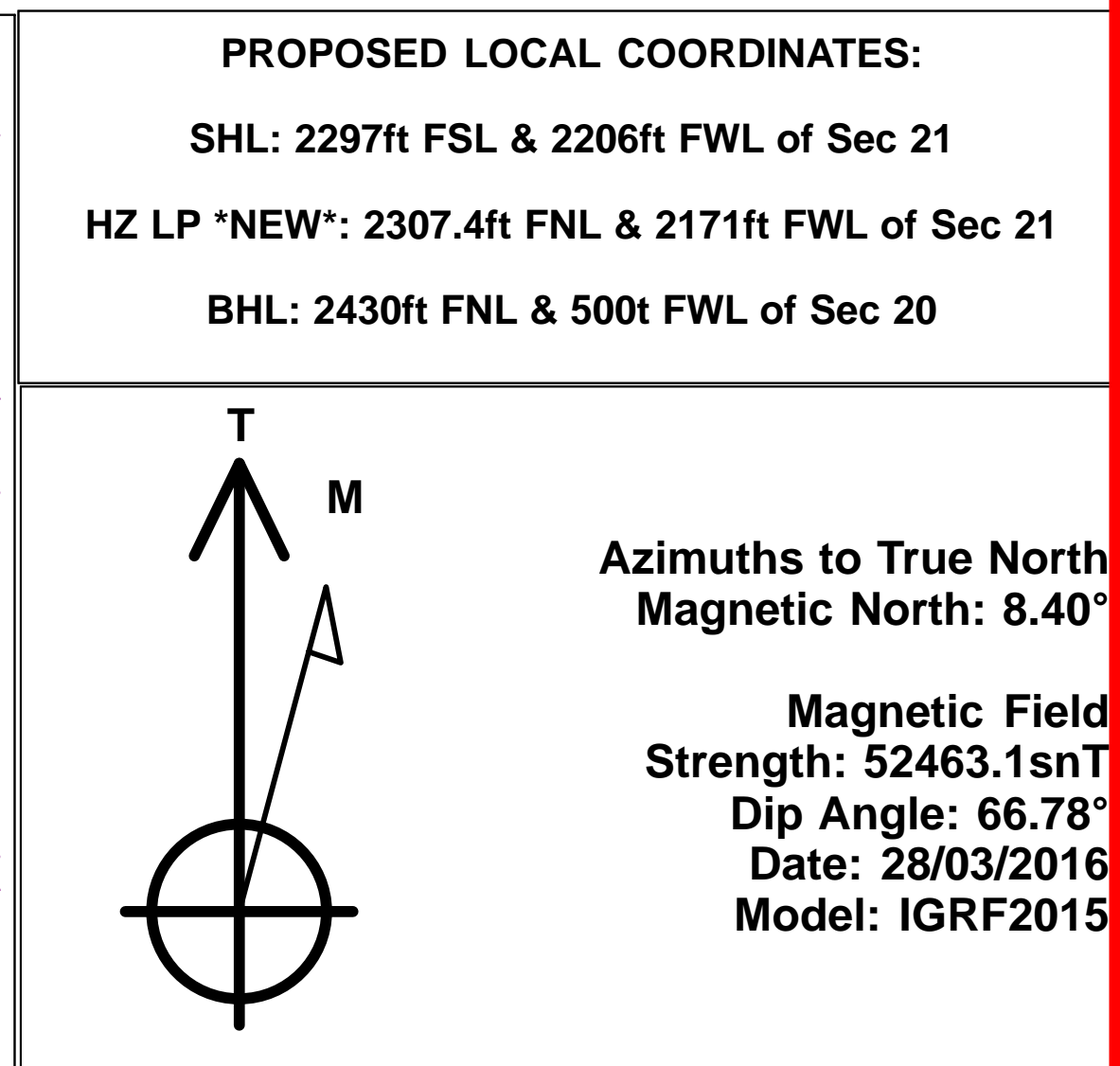
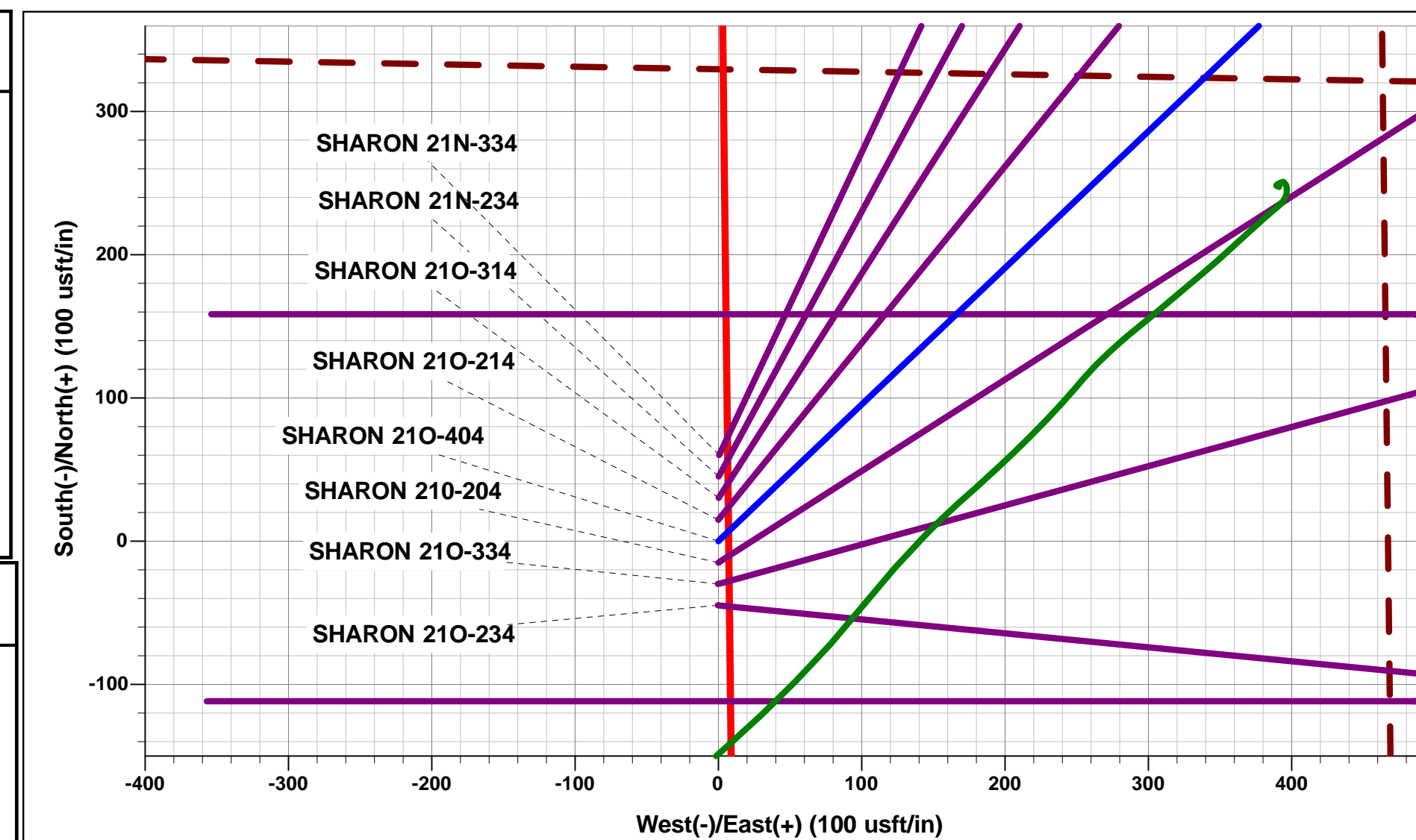


Project: WELD COUNTY, COLORADO  
Site: NE SW SEC. 21 T4N R67W 6th P.M.  
Well: SHARON 210-404  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #2



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: 2297ft FSL & 2206ft FWL of Sec 21	
700.0	700.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)	
1295.5	1299.9	12.00	46.35	43.2	45.3	-40.8	62.6	EOB TO 12° INC	
5131.3	5221.3	12.00	46.35	605.8	635.1	-572.7	877.7	END OF TANGENT	
5726.8	5821.2	0.00	0.00	649.0	680.4	-613.5	940.3	EOD TO VERTICAL	
6589.8	6684.2	0.00	0.00	649.0	680.4	-613.5	940.3	KOP (8°/100ft BUR)	
7306.0	7809.2	90.00	270.00	649.0	-35.8	99.2	1656.5	HZ LP *NEW*: 2307.4ft FNL & 2171ft FWL of Sec 21	
7306.0	14363.6	90.00	270.00	649.0	-6590.2	6622.0	8210.8	BHL: 2430ft FNL & 500ft FWL of Sec 20	

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - SHARON 210-404 (P2)	6589.8	649.0	680.4	40.299197	-104.895162
BHL - SHARON 210-404 (P2)	7306.0	649.0	-6590.2	40.299195	-104.921227
HZ LANDING PNT *NEW* - SHARON 210-404 (P2)	7306.0	649.0	-38.8	40.299197	-104.897740



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SHARON 21O-404
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4950.5usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4950.5usft (Original Well Elev)
<b>Site:</b>	NE SW SEC. 21 T4N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	SHARON 21O-404	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

<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 21O-404		
<b>Well Position</b>	<b>+N/-S</b>	44.8 usft	<b>Northing:</b>
	<b>+E/-W</b>	0.3 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 #2			
<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>
	7,306.0	0.0	0.0	275.62

<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	-4,950.5	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	0.00	0.00	700.0	-4,250.5	0.0	0.0	0.00	0.00	0.00	0.00	
1,299.9	12.00	46.35	1,295.5	-3,655.0	43.2	45.3	2.00	2.00	0.00	46.35	
5,221.3	12.00	46.35	5,131.3	180.8	605.8	635.1	0.00	0.00	0.00	0.00	
5,821.2	0.00	0.00	5,726.8	776.3	649.0	680.4	2.00	-2.00	0.00	180.00	
6,684.2	0.00	0.00	6,589.8	1,639.3	649.0	680.4	0.00	0.00	0.00	0.00	KOP - SHARON 21
7,809.2	90.00	270.00	7,306.0	2,355.5	649.0	-35.8	8.00	8.00	0.00	270.00	
14,363.6	90.00	270.00	7,306.0	2,355.5	649.0	-6,590.2	0.00	0.00	0.00	0.00	BHL - SHARON 21

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SHARON 21O-404
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4950.5usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4950.5usft (Original Well Elev)
<b>Site:</b>	NE SW SEC. 21 T4N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	SHARON 21O-404	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

## 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: 2297ft FSL &amp; 2206ft FWL of Sec 21</b>										
0.0	0.00	0.00	0.0	4,950.50	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,850.50	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,750.50	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,650.50	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,550.50	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,450.50	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,350.50	0.0	0.0	0.0	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
700.0	0.00	0.00	700.0	4,250.50	0.0	0.0	0.0	0.00	0.00	0.00
800.0	2.00	46.35	800.0	4,150.52	1.2	1.3	-1.1	2.00	2.00	0.00
900.0	4.00	46.35	899.8	4,050.66	4.8	5.0	-4.6	2.00	2.00	0.00
1,000.0	6.00	46.35	999.5	3,951.05	10.8	11.4	-10.2	2.00	2.00	0.00
1,100.0	8.00	46.35	1,098.7	3,851.80	19.2	20.2	-18.2	2.00	2.00	0.00
1,200.0	10.00	46.35	1,197.5	3,753.03	30.0	31.5	-28.4	2.00	2.00	0.00
<b>EOB TO 12° INC</b>										
1,299.9	12.00	46.35	1,295.5	3,655.01	43.2	45.3	-40.8	2.00	2.00	0.00
1,300.0	12.00	46.35	1,295.6	3,654.88	43.2	45.3	-40.8	0.03	0.03	0.00
1,400.0	12.00	46.35	1,393.4	3,557.06	57.6	60.3	-54.4	0.00	0.00	0.00
1,500.0	12.00	46.35	1,491.3	3,459.25	71.9	75.4	-68.0	0.00	0.00	0.00
1,600.0	12.00	46.35	1,589.1	3,361.43	86.3	90.4	-81.5	0.00	0.00	0.00
1,700.0	12.00	46.35	1,686.9	3,263.61	100.6	105.5	-95.1	0.00	0.00	0.00
1,800.0	12.00	46.35	1,784.7	3,165.80	114.9	120.5	-108.7	0.00	0.00	0.00
1,900.0	12.00	46.35	1,882.5	3,067.98	129.3	135.5	-122.2	0.00	0.00	0.00
2,000.0	12.00	46.35	1,980.3	2,970.17	143.6	150.6	-135.8	0.00	0.00	0.00
2,100.0	12.00	46.35	2,078.1	2,872.35	158.0	165.6	-149.3	0.00	0.00	0.00
2,200.0	12.00	46.35	2,176.0	2,774.54	172.3	180.7	-162.9	0.00	0.00	0.00
2,300.0	12.00	46.35	2,273.8	2,676.72	186.7	195.7	-176.5	0.00	0.00	0.00
2,400.0	12.00	46.35	2,371.6	2,578.90	201.0	210.8	-190.0	0.00	0.00	0.00
2,500.0	12.00	46.35	2,469.4	2,481.09	215.4	225.8	-203.6	0.00	0.00	0.00
2,600.0	12.00	46.35	2,567.2	2,383.27	229.7	240.8	-217.2	0.00	0.00	0.00
2,700.0	12.00	46.35	2,665.0	2,285.46	244.1	255.9	-230.7	0.00	0.00	0.00
2,800.0	12.00	46.35	2,762.9	2,187.64	258.4	270.9	-244.3	0.00	0.00	0.00
2,900.0	12.00	46.35	2,860.7	2,089.83	272.8	286.0	-257.9	0.00	0.00	0.00
3,000.0	12.00	46.35	2,958.5	1,992.01	287.1	301.0	-271.4	0.00	0.00	0.00
3,100.0	12.00	46.35	3,056.3	1,894.19	301.5	316.0	-285.0	0.00	0.00	0.00
3,200.0	12.00	46.35	3,154.1	1,796.38	315.8	331.1	-298.5	0.00	0.00	0.00
3,300.0	12.00	46.35	3,251.9	1,698.56	330.2	346.1	-312.1	0.00	0.00	0.00
3,400.0	12.00	46.35	3,349.8	1,600.75	344.5	361.2	-325.7	0.00	0.00	0.00
3,500.0	12.00	46.35	3,447.6	1,502.93	358.8	376.2	-339.2	0.00	0.00	0.00
3,600.0	12.00	46.35	3,545.4	1,405.12	373.2	391.2	-352.8	0.00	0.00	0.00
<b>PARKMAN SANDSTONE</b>										
3,691.6	12.00	46.35	3,635.0	1,315.50	386.3	405.0	-365.2	0.00	0.00	0.00
3,700.0	12.00	46.35	3,643.2	1,307.30	387.5	406.3	-366.4	0.00	0.00	0.00
3,800.0	12.00	46.35	3,741.0	1,209.48	401.9	421.3	-379.9	0.00	0.00	0.00
3,900.0	12.00	46.35	3,838.8	1,111.67	416.2	436.4	-393.5	0.00	0.00	0.00
4,000.0	12.00	46.35	3,936.6	1,013.85	430.6	451.4	-407.0	0.00	0.00	0.00
4,100.0	12.00	46.35	4,034.5	916.04	444.9	466.5	-420.6	0.00	0.00	0.00
4,200.0	12.00	46.35	4,132.3	818.22	459.3	481.5	-434.2	0.00	0.00	0.00
<b>SUSSEX SANDSTONE</b>										
4,269.2	12.00	46.35	4,200.0	750.50	469.2	491.9	-443.6	0.00	0.00	0.00
4,300.0	12.00	46.35	4,230.1	720.41	473.6	496.5	-447.7	0.00	0.00	0.00
4,400.0	12.00	46.35	4,327.9	622.59	488.0	511.6	-461.3	0.00	0.00	0.00
4,500.0	12.00	46.35	4,425.7	524.77	502.3	526.6	-474.9	0.00	0.00	0.00



# Planning Report



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<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4950.5usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4950.5usft (Original Well Elev)
<b>Site:</b>	NE SW SEC. 21 T4N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	SHARON 21O-404	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

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	12.00	46.35	4,523.5	426.96	516.7	541.7	-488.4	0.00	0.00	0.00
4,700.0	12.00	46.35	4,621.4	329.14	531.0	556.7	-502.0	0.00	0.00	0.00
<b>SHANNON</b>										
<b>4,760.0</b>	<b>12.00</b>	<b>46.35</b>	<b>4,680.0</b>	<b>270.50</b>	<b>539.6</b>	<b>565.7</b>	<b>-510.1</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,800.0	12.00	46.35	4,719.2	231.33	545.4	571.7	-515.5	0.00	0.00	0.00
4,900.0	12.00	46.35	4,817.0	133.51	559.7	586.8	-529.1	0.00	0.00	0.00
5,000.0	12.00	46.35	4,914.8	35.70	574.1	601.8	-542.7	0.00	0.00	0.00
5,100.0	12.00	46.35	5,012.6	-62.12	588.4	616.9	-556.2	0.00	0.00	0.00
5,200.0	12.00	46.35	5,110.4	-159.94	602.8	631.9	-569.8	0.00	0.00	0.00
<b>END OF TANGENT</b>										
<b>5,221.3</b>	<b>12.00</b>	<b>46.35</b>	<b>5,131.3</b>	<b>-180.81</b>	<b>605.8</b>	<b>635.1</b>	<b>-572.7</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,300.0	10.42	46.35	5,208.5	-257.97	616.4	646.2	-582.7	2.00	-2.00	0.00
5,400.0	8.42	46.35	5,307.1	-356.61	627.7	658.0	-593.4	2.00	-2.00	0.00
5,500.0	6.42	46.35	5,406.3	-455.77	636.6	667.4	-601.8	2.00	-2.00	0.00
5,600.0	4.42	46.35	5,505.8	-555.32	643.1	674.2	-607.9	2.00	-2.00	0.00
5,700.0	2.42	46.35	5,605.6	-655.13	647.2	678.5	-611.8	2.00	-2.00	0.00
5,800.0	0.42	46.35	5,705.6	-755.10	648.9	680.3	-613.5	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
<b>5,821.2</b>	<b>0.00</b>	<b>0.00</b>	<b>5,726.8</b>	<b>-776.30</b>	<b>649.0</b>	<b>680.4</b>	<b>-613.5</b>	<b>2.00</b>	<b>-2.00</b>	<b>-218.61</b>
5,900.0	0.00	0.00	5,805.6	-855.10	649.0	680.4	-613.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,905.6	-955.10	649.0	680.4	-613.5	0.00	0.00	0.00
6,100.0	0.00	0.00	6,005.6	-1,055.10	649.0	680.4	-613.5	0.00	0.00	0.00
6,200.0	0.00	0.00	6,105.6	-1,155.10	649.0	680.4	-613.5	0.00	0.00	0.00
6,300.0	0.00	0.00	6,205.6	-1,255.10	649.0	680.4	-613.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,305.6	-1,355.10	649.0	680.4	-613.5	0.00	0.00	0.00
6,500.0	0.00	0.00	6,405.6	-1,455.10	649.0	680.4	-613.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,505.6	-1,555.10	649.0	680.4	-613.5	0.00	0.00	0.00
<b>KOP (8°/100ft BUR)</b>										
<b>6,684.2</b>	<b>0.00</b>	<b>0.00</b>	<b>6,589.8</b>	<b>-1,639.30</b>	<b>649.0</b>	<b>680.4</b>	<b>-613.5</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
6,700.0	1.26	270.00	6,605.6	-1,655.09	649.0	680.2	-613.3	8.00	8.00	0.00
6,800.0	9.26	270.00	6,705.1	-1,754.59	649.0	671.1	-604.2	8.00	8.00	0.00
6,900.0	17.26	270.00	6,802.3	-1,851.85	649.0	648.1	-581.4	8.00	8.00	0.00
<b>SHARON SPRINGS</b>										
<b>6,958.0</b>	<b>21.91</b>	<b>270.00</b>	<b>6,857.0</b>	<b>-1,906.50</b>	<b>649.0</b>	<b>628.7</b>	<b>-562.1</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
7,000.0	25.26	270.00	6,895.5	-1,944.96	649.0	611.9	-545.3	8.00	8.00	0.00
7,100.0	33.26	270.00	6,982.6	-2,032.13	649.0	563.1	-496.7	8.00	8.00	0.00
<b>NIOBRARA A</b>										
<b>7,106.4</b>	<b>33.78</b>	<b>270.00</b>	<b>6,988.0</b>	<b>-2,037.50</b>	<b>649.0</b>	<b>559.5</b>	<b>-493.2</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
7,200.0	41.26	270.00	7,062.2	-2,111.65	649.0	502.6	-436.5	8.00	8.00	0.00
<b>NIOBRARA B</b>										
<b>7,222.7</b>	<b>43.08</b>	<b>270.00</b>	<b>7,079.0</b>	<b>-2,128.50</b>	<b>649.0</b>	<b>487.3</b>	<b>-421.3</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
7,300.0	49.26	270.00	7,132.5	-2,181.98	649.0	431.6	-365.9	8.00	8.00	0.00
<b>NIOBRARA C</b>										
<b>7,340.5</b>	<b>52.50</b>	<b>270.00</b>	<b>7,158.0</b>	<b>-2,207.50</b>	<b>649.0</b>	<b>400.2</b>	<b>-334.7</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
7,400.0	57.26	270.00	7,192.2	-2,241.74	649.0	351.5	-286.2	8.00	8.00	0.00
7,500.0	65.26	270.00	7,240.3	-2,289.78	649.0	263.9	-199.0	8.00	8.00	0.00
7,600.0	73.26	270.00	7,275.7	-2,325.16	649.0	170.4	-106.0	8.00	8.00	0.00
<b>FT HAYS</b>										
<b>7,601.2</b>	<b>73.36</b>	<b>270.00</b>	<b>7,276.0</b>	<b>-2,325.50</b>	<b>649.0</b>	<b>169.3</b>	<b>-104.9</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
<b>CODELL</b>										
<b>7,695.6</b>	<b>80.91</b>	<b>270.00</b>	<b>7,297.0</b>	<b>-2,346.50</b>	<b>649.0</b>	<b>77.4</b>	<b>-13.4</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
7,700.0	81.26	270.00	7,297.7	-2,347.19	649.0	73.0	-9.0	8.00	8.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well SHARON 21O-404
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4950.5usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4950.5usft (Original Well Elev)
<b>Site:</b>	NE SW SEC. 21 T4N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	SHARON 21O-404	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

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)
7,800.0	89.26	270.00	7,305.9	-2,355.44	649.0	-26.6	90.1	8.00	8.00	0.00
<b>HZ LP *NEW*: 2307.4ft FNL &amp; 2171ft FWL of Sec 21</b>										
<b>7,809.2</b>	<b>90.00</b>	<b>270.00</b>	<b>7,306.0</b>	<b>-2,355.50</b>	<b>649.0</b>	<b>-35.8</b>	<b>99.2</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
7,900.0	90.00	270.00	7,306.0	-2,355.50	649.0	-126.6	189.6	0.00	0.00	0.00
8,000.0	90.00	270.00	7,306.0	-2,355.50	649.0	-226.6	289.1	0.00	0.00	0.00
8,100.0	90.00	270.00	7,306.0	-2,355.50	649.0	-326.6	388.6	0.00	0.00	0.00
8,200.0	90.00	270.00	7,306.0	-2,355.50	649.0	-426.6	488.1	0.00	0.00	0.00
8,300.0	90.00	270.00	7,306.0	-2,355.50	649.0	-526.6	587.7	0.00	0.00	0.00
8,400.0	90.00	270.00	7,306.0	-2,355.50	649.0	-626.6	687.2	0.00	0.00	0.00
8,500.0	90.00	270.00	7,306.0	-2,355.50	649.0	-726.6	786.7	0.00	0.00	0.00
8,600.0	90.00	270.00	7,306.0	-2,355.50	649.0	-826.6	886.2	0.00	0.00	0.00
8,700.0	90.00	270.00	7,306.0	-2,355.50	649.0	-926.6	985.7	0.00	0.00	0.00
8,800.0	90.00	270.00	7,306.0	-2,355.50	649.0	-1,026.6	1,085.3	0.00	0.00	0.00
8,900.0	90.00	270.00	7,306.0	-2,355.50	649.0	-1,126.6	1,184.8	0.00	0.00	0.00
9,000.0	90.00	270.00	7,306.0	-2,355.50	649.0	-1,226.6	1,284.3	0.00	0.00	0.00
9,100.0	90.00	270.00	7,306.0	-2,355.50	649.0	-1,326.6	1,383.8	0.00	0.00	0.00
9,200.0	90.00	270.00	7,306.0	-2,355.50	649.0	-1,426.6	1,483.3	0.00	0.00	0.00
9,300.0	90.00	270.00	7,306.0	-2,355.50	649.0	-1,526.6	1,582.8	0.00	0.00	0.00
9,400.0	90.00	270.00	7,306.0	-2,355.50	649.0	-1,626.6	1,682.4	0.00	0.00	0.00
9,500.0	90.00	270.00	7,306.0	-2,355.50	649.0	-1,726.6	1,781.9	0.00	0.00	0.00
9,600.0	90.00	270.00	7,306.0	-2,355.50	649.0	-1,826.6	1,881.4	0.00	0.00	0.00
9,700.0	90.00	270.00	7,306.0	-2,355.50	649.0	-1,926.6	1,980.9	0.00	0.00	0.00
9,800.0	90.00	270.00	7,306.0	-2,355.50	649.0	-2,026.6	2,080.4	0.00	0.00	0.00
9,900.0	90.00	270.00	7,306.0	-2,355.50	649.0	-2,126.6	2,180.0	0.00	0.00	0.00
10,000.0	90.00	270.00	7,306.0	-2,355.50	649.0	-2,226.6	2,279.5	0.00	0.00	0.00
10,100.0	90.00	270.00	7,306.0	-2,355.50	649.0	-2,326.6	2,379.0	0.00	0.00	0.00
10,200.0	90.00	270.00	7,306.0	-2,355.50	649.0	-2,426.6	2,478.5	0.00	0.00	0.00
10,300.0	90.00	270.00	7,306.0	-2,355.50	649.0	-2,526.6	2,578.0	0.00	0.00	0.00
10,400.0	90.00	270.00	7,306.0	-2,355.50	649.0	-2,626.6	2,677.6	0.00	0.00	0.00
10,500.0	90.00	270.00	7,306.0	-2,355.50	649.0	-2,726.6	2,777.1	0.00	0.00	0.00
10,600.0	90.00	270.00	7,306.0	-2,355.50	649.0	-2,826.6	2,876.6	0.00	0.00	0.00
10,700.0	90.00	270.00	7,306.0	-2,355.50	649.0	-2,926.6	2,976.1	0.00	0.00	0.00
10,800.0	90.00	270.00	7,306.0	-2,355.50	649.0	-3,026.6	3,075.6	0.00	0.00	0.00
10,900.0	90.00	270.00	7,306.0	-2,355.50	649.0	-3,126.6	3,175.1	0.00	0.00	0.00
11,000.0	90.00	270.00	7,306.0	-2,355.50	649.0	-3,226.6	3,274.7	0.00	0.00	0.00
11,100.0	90.00	270.00	7,306.0	-2,355.50	649.0	-3,326.6	3,374.2	0.00	0.00	0.00
11,200.0	90.00	270.00	7,306.0	-2,355.50	649.0	-3,426.6	3,473.7	0.00	0.00	0.00
11,300.0	90.00	270.00	7,306.0	-2,355.50	649.0	-3,526.6	3,573.2	0.00	0.00	0.00
11,400.0	90.00	270.00	7,306.0	-2,355.50	649.0	-3,626.6	3,672.7	0.00	0.00	0.00
11,500.0	90.00	270.00	7,306.0	-2,355.50	649.0	-3,726.6	3,772.3	0.00	0.00	0.00
11,600.0	90.00	270.00	7,306.0	-2,355.50	649.0	-3,826.6	3,871.8	0.00	0.00	0.00
11,700.0	90.00	270.00	7,306.0	-2,355.50	649.0	-3,926.6	3,971.3	0.00	0.00	0.00
11,800.0	90.00	270.00	7,306.0	-2,355.50	649.0	-4,026.6	4,070.8	0.00	0.00	0.00
11,900.0	90.00	270.00	7,306.0	-2,355.50	649.0	-4,126.6	4,170.3	0.00	0.00	0.00
12,000.0	90.00	270.00	7,306.0	-2,355.50	649.0	-4,226.6	4,269.9	0.00	0.00	0.00
12,100.0	90.00	270.00	7,306.0	-2,355.50	649.0	-4,326.6	4,369.4	0.00	0.00	0.00
12,200.0	90.00	270.00	7,306.0	-2,355.50	649.0	-4,426.6	4,468.9	0.00	0.00	0.00
12,300.0	90.00	270.00	7,306.0	-2,355.50	649.0	-4,526.6	4,568.4	0.00	0.00	0.00
12,400.0	90.00	270.00	7,306.0	-2,355.50	649.0	-4,626.6	4,667.9	0.00	0.00	0.00
12,500.0	90.00	270.00	7,306.0	-2,355.50	649.0	-4,726.6	4,767.4	0.00	0.00	0.00
12,600.0	90.00	270.00	7,306.0	-2,355.50	649.0	-4,826.6	4,867.0	0.00	0.00	0.00
12,700.0	90.00	270.00	7,306.0	-2,355.50	649.0	-4,926.6	4,966.5	0.00	0.00	0.00
12,800.0	90.00	270.00	7,306.0	-2,355.50	649.0	-5,026.6	5,066.0	0.00	0.00	0.00
12,900.0	90.00	270.00	7,306.0	-2,355.50	649.0	-5,126.6	5,165.5	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 21O-404
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4950.5usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4950.5usft (Original Well Elev)
<b>Site:</b>	NE SW SEC. 21 T4N R67W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	SHARON 21O-404	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

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)
13,000.0	90.00	270.00	7,306.0	-2,355.50	649.0	-5,226.6	5,265.0	0.00	0.00	0.00
13,100.0	90.00	270.00	7,306.0	-2,355.50	649.0	-5,326.6	5,364.6	0.00	0.00	0.00
13,200.0	90.00	270.00	7,306.0	-2,355.50	649.0	-5,426.6	5,464.1	0.00	0.00	0.00
13,300.0	90.00	270.00	7,306.0	-2,355.50	649.0	-5,526.6	5,563.6	0.00	0.00	0.00
13,400.0	90.00	270.00	7,306.0	-2,355.50	649.0	-5,626.6	5,663.1	0.00	0.00	0.00
13,500.0	90.00	270.00	7,306.0	-2,355.50	649.0	-5,726.6	5,762.6	0.00	0.00	0.00
13,600.0	90.00	270.00	7,306.0	-2,355.50	649.0	-5,826.6	5,862.1	0.00	0.00	0.00
13,700.0	90.00	270.00	7,306.0	-2,355.50	649.0	-5,926.6	5,961.7	0.00	0.00	0.00
13,800.0	90.00	270.00	7,306.0	-2,355.50	649.0	-6,026.6	6,061.2	0.00	0.00	0.00
13,900.0	90.00	270.00	7,306.0	-2,355.50	649.0	-6,126.6	6,160.7	0.00	0.00	0.00
14,000.0	90.00	270.00	7,306.0	-2,355.50	649.0	-6,226.6	6,260.2	0.00	0.00	0.00
14,100.0	90.00	270.00	7,306.0	-2,355.50	649.0	-6,326.6	6,359.7	0.00	0.00	0.00
14,200.0	90.00	270.00	7,306.0	-2,355.50	649.0	-6,426.6	6,459.3	0.00	0.00	0.00
14,300.0	90.00	270.00	7,306.0	-2,355.50	649.0	-6,526.6	6,558.8	0.00	0.00	0.00
<b>BHL: 2430ft FNL &amp; 500ft FWL of Sec 20</b>										
<b>14,363.6</b>	<b>90.00</b>	<b>270.00</b>	<b>7,306.0</b>	<b>-2,355.50</b>	<b>649.0</b>	<b>-6,590.2</b>	<b>6,622.0</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,691.6	3,635.0	PARKMAN SANDSTONE				
4,269.2	4,200.0	SUSSEX SANDSTONE				
4,760.0	4,680.0	SHANNON				
6,958.0	6,857.0	SHARON SPRINGS				
7,106.4	6,988.0	NIOBRARA A				
7,222.7	7,079.0	NIOBRARA B				
7,340.5	7,158.0	NIOBRARA C				
7,601.2	7,276.0	FT HAYS		0.00		
7,695.6	7,297.0	CODELL		0.00		

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 2297ft FSL & 2206ft FWL of Sec 21
700.0	700.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,299.9	1,295.5	43.2	45.3	EOB TO 12° INC
5,221.3	5,131.3	605.8	635.1	END OF TANGENT
5,821.2	5,726.8	649.0	680.4	EOD TO VERTICAL
6,684.2	6,589.8	649.0	680.4	KOP (8°/100ft BUR)
7,809.2	7,306.0	649.0	-35.8	HZ LP *NEW*: 2307.4ft FNL & 2171ft FWL of Sec 21
14,363.6	7,306.0	649.0	-6,590.2	BHL: 2430ft FNL & 500ft FWL of Sec 20