

PDC ENERGY

**WELD COUNTY, COLORADO
NE SW SEC. 21 T4N R67W 6th P.M.
SHARON 21N-234**

ORIGINAL WELLBORE

28 March, 2016

Plan: PROPOSAL #1



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHARON 21N-234
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4951.5usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4951.5usft (Original Well Elev)
Site:	NE SW SEC. 21 T4N R67W 6th P.M.	North Reference:	True
Well:	SHARON 21N-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Project	WELD COUNTY, COLORADO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

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

Well	SHARON 21N-234		
Well Position	+N-S	90.0 usft	Northing:
	+E-W	0.6 usft	Easting:
Position Uncertainty		0.0 usft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

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

Design	PROPOSAL #1				
Audit Notes:					
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)	
	0.0	0.0	0.0	280.69	

Plan Sections											
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	-4,951.5	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	-4,551.5	0.0	0.0	0.00	0.00	0.00	0.00	
1,164.2	15.28	28.34	1,155.2	-3,796.3	89.2	48.1	2.00	2.00	0.00	28.34	
5,757.1	15.28	28.34	5,585.6	634.1	1,154.7	622.9	0.00	0.00	0.00	0.00	
6,521.3	0.00	0.00	6,340.8	1,389.3	1,243.9	671.0	2.00	-2.00	0.00	180.00	
6,551.3	0.00	0.00	6,370.8	1,419.3	1,243.9	671.0	0.00	0.00	0.00	0.00	KOP - SHARON 21
7,677.7	90.11	270.00	7,087.0	2,135.5	1,243.9	-46.6	8.00	8.00	-7.99	270.00	HZ LANDING PNT
14,221.4	90.12	270.00	7,074.0	2,122.5	1,243.9	-6,590.3	0.00	0.00	0.00	-0.74	BHL - SHARON 211

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHARON 21N-234
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4951.5usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4951.5usft (Original Well Elev)
Site:	NE SW SEC. 21 T4N R67W 6th P.M.	North Reference:	True
Well:	SHARON 21N-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
SHL: 2342ft FSL & 2207ft FWL of Sec 21										
0.0	0.00	0.00	0.0	4,951.50	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,851.50	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,751.50	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,651.50	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
400.0	0.00	0.00	400.0	4,551.50	0.0	0.0	0.0	0.00	0.00	0.00
500.0	2.00	28.34	500.0	4,451.52	1.5	0.8	-0.5	2.00	2.00	0.00
600.0	4.00	28.34	599.8	4,351.66	6.1	3.3	-2.1	2.00	2.00	0.00
700.0	6.00	28.34	699.5	4,252.05	13.8	7.5	-4.8	2.00	2.00	0.00
800.0	8.00	28.34	798.7	4,152.80	24.5	13.2	-8.5	2.00	2.00	0.00
900.0	10.00	28.34	897.5	4,054.03	38.3	20.7	-13.2	2.00	2.00	0.00
1,000.0	12.00	28.34	995.6	3,955.88	55.1	29.7	-19.0	2.00	2.00	0.00
1,100.0	14.00	28.34	1,093.1	3,858.44	74.9	40.4	-25.8	2.00	2.00	0.00
EOB TO 15.28° INC										
1,164.2	15.28	28.34	1,155.2	3,796.34	89.2	48.1	-30.7	2.00	2.00	0.00
1,200.0	15.28	28.34	1,189.7	3,761.80	97.5	52.6	-33.6	0.00	0.00	0.00
1,300.0	15.28	28.34	1,286.2	3,665.33	120.7	65.1	-41.6	0.00	0.00	0.00
1,400.0	15.28	28.34	1,382.6	3,568.87	143.9	77.6	-49.6	0.00	0.00	0.00
1,500.0	15.28	28.34	1,479.1	3,472.41	167.1	90.1	-57.6	0.00	0.00	0.00
1,600.0	15.28	28.34	1,575.6	3,375.94	190.3	102.6	-65.6	0.00	0.00	0.00
1,700.0	15.28	28.34	1,672.0	3,279.48	213.5	115.2	-73.6	0.00	0.00	0.00
1,800.0	15.28	28.34	1,768.5	3,183.02	236.7	127.7	-81.6	0.00	0.00	0.00
1,900.0	15.28	28.34	1,864.9	3,086.55	259.9	140.2	-89.6	0.00	0.00	0.00
2,000.0	15.28	28.34	1,961.4	2,990.09	283.1	152.7	-97.5	0.00	0.00	0.00
2,100.0	15.28	28.34	2,057.9	2,893.63	306.3	165.2	-105.5	0.00	0.00	0.00
2,200.0	15.28	28.34	2,154.3	2,797.17	329.5	177.7	-113.5	0.00	0.00	0.00
2,300.0	15.28	28.34	2,250.8	2,700.70	352.7	190.2	-121.5	0.00	0.00	0.00
2,400.0	15.28	28.34	2,347.3	2,604.24	375.9	202.8	-129.5	0.00	0.00	0.00
2,500.0	15.28	28.34	2,443.7	2,507.78	399.1	215.3	-137.5	0.00	0.00	0.00
2,600.0	15.28	28.34	2,540.2	2,411.31	422.3	227.8	-145.5	0.00	0.00	0.00
2,700.0	15.28	28.34	2,636.7	2,314.85	445.5	240.3	-153.5	0.00	0.00	0.00
2,800.0	15.28	28.34	2,733.1	2,218.39	468.7	252.8	-161.5	0.00	0.00	0.00
2,900.0	15.28	28.34	2,829.6	2,121.92	491.9	265.3	-169.5	0.00	0.00	0.00
3,000.0	15.28	28.34	2,926.0	2,025.46	515.1	277.9	-177.5	0.00	0.00	0.00
3,100.0	15.28	28.34	3,022.5	1,929.00	538.3	290.4	-185.5	0.00	0.00	0.00
3,200.0	15.28	28.34	3,119.0	1,832.53	561.5	302.9	-193.5	0.00	0.00	0.00
3,300.0	15.28	28.34	3,215.4	1,736.07	584.7	315.4	-201.5	0.00	0.00	0.00
3,400.0	15.28	28.34	3,311.9	1,639.61	607.9	327.9	-209.5	0.00	0.00	0.00
3,500.0	15.28	28.34	3,408.4	1,543.14	631.1	340.4	-217.5	0.00	0.00	0.00
3,600.0	15.28	28.34	3,504.8	1,446.68	654.3	352.9	-225.5	0.00	0.00	0.00
3,700.0	15.28	28.34	3,601.3	1,350.22	677.5	365.5	-233.5	0.00	0.00	0.00
PARKMAN SANDSTONE										
3,735.0	15.28	28.34	3,635.0	1,316.50	685.6	369.8	-236.3	0.00	0.00	0.00
3,800.0	15.28	28.34	3,697.7	1,253.75	700.7	378.0	-241.5	0.00	0.00	0.00
3,900.0	15.28	28.34	3,794.2	1,157.29	723.9	390.5	-249.4	0.00	0.00	0.00
4,000.0	15.28	28.34	3,890.7	1,060.83	747.1	403.0	-257.4	0.00	0.00	0.00
4,100.0	15.28	28.34	3,987.1	964.36	770.3	415.5	-265.4	0.00	0.00	0.00
4,200.0	15.28	28.34	4,083.6	867.90	793.5	428.0	-273.4	0.00	0.00	0.00
4,300.0	15.28	28.34	4,180.1	771.44	816.7	440.5	-281.4	0.00	0.00	0.00
SUSSEX SANDSTONE										
4,320.7	15.28	28.34	4,200.0	751.50	821.5	443.1	-283.1	0.00	0.00	0.00
4,400.0	15.28	28.34	4,276.5	674.97	839.9	453.1	-289.4	0.00	0.00	0.00
4,500.0	15.28	28.34	4,373.0	578.51	863.1	465.6	-297.4	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHARON 21N-234
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4951.5usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4951.5usft (Original Well Elev)
Site:	NE SW SEC. 21 T4N R67W 6th P.M.	North Reference:	True
Well:	SHARON 21N-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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	15.28	28.34	4,469.5	482.05	886.3	478.1	-305.4	0.00	0.00	0.00
4,700.0	15.28	28.34	4,565.9	385.59	909.5	490.6	-313.4	0.00	0.00	0.00
4,800.0	15.28	28.34	4,662.4	289.12	932.7	503.1	-321.4	0.00	0.00	0.00
SHANNON										
4,818.3	15.28	28.34	4,680.0	271.50	936.9	505.4	-322.9	0.00	0.00	0.00
4,900.0	15.28	28.34	4,758.8	192.66	955.9	515.6	-329.4	0.00	0.00	0.00
5,000.0	15.28	28.34	4,855.3	96.20	979.1	528.1	-337.4	0.00	0.00	0.00
5,100.0	15.28	28.34	4,951.8	-0.27	1,002.3	540.7	-345.4	0.00	0.00	0.00
5,200.0	15.28	28.34	5,048.2	-96.73	1,025.5	553.2	-353.4	0.00	0.00	0.00
5,300.0	15.28	28.34	5,144.7	-193.19	1,048.7	565.7	-361.4	0.00	0.00	0.00
5,400.0	15.28	28.34	5,241.2	-289.66	1,071.9	578.2	-369.4	0.00	0.00	0.00
5,500.0	15.28	28.34	5,337.6	-386.12	1,095.1	590.7	-377.4	0.00	0.00	0.00
5,600.0	15.28	28.34	5,434.1	-482.58	1,118.3	603.2	-385.4	0.00	0.00	0.00
5,700.0	15.28	28.34	5,530.5	-579.05	1,141.5	615.7	-393.4	0.00	0.00	0.00
END OF TANGENT										
5,757.1	15.28	28.34	5,585.6	-634.14	1,154.7	622.9	-397.9	0.00	0.00	0.00
5,800.0	14.43	28.34	5,627.1	-675.59	1,164.4	628.1	-401.3	2.00	-2.00	0.00
5,900.0	12.43	28.34	5,724.4	-772.86	1,184.8	639.1	-408.3	2.00	-2.00	0.00
6,000.0	10.43	28.34	5,822.4	-870.87	1,202.3	648.5	-414.3	2.00	-2.00	0.00
6,100.0	8.43	28.34	5,921.0	-969.51	1,216.7	656.3	-419.3	2.00	-2.00	0.00
6,200.0	6.43	28.34	6,020.2	-1,068.67	1,228.1	662.5	-423.2	2.00	-2.00	0.00
6,300.0	4.43	28.34	6,119.7	-1,168.22	1,236.4	666.9	-426.1	2.00	-2.00	0.00
6,400.0	2.43	28.34	6,219.5	-1,268.03	1,241.6	669.8	-427.9	2.00	-2.00	0.00
6,500.0	0.43	28.34	6,319.5	-1,368.00	1,243.8	671.0	-428.6	2.00	-2.00	0.00
EOD TO VERTICAL										
6,521.3	0.00	0.00	6,340.8	-1,389.30	1,243.9	671.0	-428.6	2.00	-2.00	0.00
KOP (8°/100ft BUR)										
6,551.3	0.00	0.00	6,370.8	-1,419.30	1,243.9	671.0	-428.6	0.00	0.00	0.00
6,600.0	3.90	270.00	6,419.5	-1,467.96	1,243.9	669.3	-427.0	8.00	8.00	0.00
6,700.0	11.90	270.00	6,518.4	-1,566.93	1,243.9	655.6	-413.5	8.00	8.00	0.00
6,800.0	19.90	270.00	6,614.5	-1,663.03	1,243.9	628.3	-386.6	8.00	8.00	0.00
6,900.0	27.90	270.00	6,705.9	-1,754.38	1,243.9	587.8	-346.9	8.00	8.00	0.00
7,000.0	35.90	270.00	6,790.7	-1,839.21	1,243.9	535.0	-295.0	8.00	8.00	0.00
SHARON SPRINGS										
7,085.7	42.75	270.00	6,857.0	-1,905.50	1,243.9	480.7	-241.6	8.00	8.00	0.00
7,100.0	43.90	270.00	6,867.4	-1,915.87	1,243.9	470.9	-232.0	8.00	8.00	0.00
7,200.0	51.90	270.00	6,934.4	-1,982.87	1,243.9	396.8	-159.2	8.00	8.00	0.00
NIORARA A										
7,295.3	59.52	270.00	6,988.0	-2,036.50	1,243.9	318.1	-81.9	8.00	8.00	0.00
7,300.0	59.90	270.00	6,990.4	-2,038.89	1,243.9	314.0	-77.9	8.00	8.00	0.00
7,400.0	67.90	270.00	7,034.4	-2,082.86	1,243.9	224.3	10.3	8.00	8.00	0.00
7,500.0	75.90	270.00	7,065.4	-2,113.91	1,243.9	129.3	103.6	8.00	8.00	0.00
NIORARA B										
7,569.2	81.43	270.00	7,079.0	-2,127.50	1,243.9	61.6	170.2	8.00	8.00	0.00
7,600.0	83.90	270.00	7,082.9	-2,131.44	1,243.9	31.0	200.3	8.00	8.00	0.00
HZ LP *NEW*: 1667.8ft FNL & 2176ft FWL of Sec 21										
7,677.7	90.11	270.00	7,087.0	-2,135.50	1,243.9	-46.6	276.5	8.00	8.00	0.00
7,700.0	90.11	270.00	7,087.0	-2,135.46	1,243.9	-68.9	298.4	0.00	0.00	0.00
7,800.0	90.11	270.00	7,086.8	-2,135.26	1,243.9	-168.9	396.7	0.00	0.00	0.00
7,900.0	90.11	270.00	7,086.6	-2,135.07	1,243.9	-268.9	494.9	0.00	0.00	0.00
8,000.0	90.11	270.00	7,086.4	-2,134.88	1,243.9	-368.9	593.2	0.00	0.00	0.00
8,100.0	90.11	270.00	7,086.2	-2,134.68	1,243.9	-468.9	691.5	0.00	0.00	0.00
8,200.0	90.11	270.00	7,086.0	-2,134.49	1,243.9	-568.9	789.7	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHARON 21N-234
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4951.5usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4951.5usft (Original Well Elev)
Site:	NE SW SEC. 21 T4N R67W 6th P.M.	North Reference:	True
Well:	SHARON 21N-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
8,300.0	90.11	270.00	7,085.8	-2,134.30	1,243.9	-668.9	888.0	0.00	0.00	0.00
8,400.0	90.11	270.00	7,085.6	-2,134.10	1,243.9	-768.9	986.3	0.00	0.00	0.00
8,500.0	90.11	270.00	7,085.4	-2,133.91	1,243.9	-868.9	1,084.5	0.00	0.00	0.00
8,600.0	90.11	270.00	7,085.2	-2,133.72	1,243.9	-968.9	1,182.8	0.00	0.00	0.00
8,700.0	90.11	270.00	7,085.0	-2,133.52	1,243.9	-1,068.9	1,281.1	0.00	0.00	0.00
8,800.0	90.11	270.00	7,084.8	-2,133.33	1,243.9	-1,168.9	1,379.3	0.00	0.00	0.00
8,900.0	90.11	270.00	7,084.6	-2,133.13	1,243.9	-1,268.9	1,477.6	0.00	0.00	0.00
9,000.0	90.11	270.00	7,084.4	-2,132.94	1,243.9	-1,368.9	1,575.8	0.00	0.00	0.00
9,100.0	90.11	270.00	7,084.2	-2,132.74	1,243.9	-1,468.9	1,674.1	0.00	0.00	0.00
9,200.0	90.11	270.00	7,084.0	-2,132.55	1,243.9	-1,568.9	1,772.4	0.00	0.00	0.00
9,300.0	90.11	270.00	7,083.8	-2,132.35	1,243.9	-1,668.9	1,870.6	0.00	0.00	0.00
9,400.0	90.11	270.00	7,083.7	-2,132.15	1,243.9	-1,768.9	1,968.9	0.00	0.00	0.00
9,500.0	90.11	270.00	7,083.5	-2,131.96	1,243.9	-1,868.9	2,067.2	0.00	0.00	0.00
9,600.0	90.11	270.00	7,083.3	-2,131.76	1,243.9	-1,968.9	2,165.4	0.00	0.00	0.00
9,700.0	90.11	270.00	7,083.1	-2,131.57	1,243.9	-2,068.9	2,263.7	0.00	0.00	0.00
9,800.0	90.11	270.00	7,082.9	-2,131.37	1,243.9	-2,168.9	2,362.0	0.00	0.00	0.00
9,900.0	90.11	270.00	7,082.7	-2,131.17	1,243.9	-2,268.9	2,460.2	0.00	0.00	0.00
10,000.0	90.11	270.00	7,082.5	-2,130.98	1,243.9	-2,368.9	2,558.5	0.00	0.00	0.00
10,100.0	90.11	270.00	7,082.3	-2,130.78	1,243.9	-2,468.9	2,656.8	0.00	0.00	0.00
10,200.0	90.11	270.00	7,082.1	-2,130.58	1,243.9	-2,568.9	2,755.0	0.00	0.00	0.00
10,300.0	90.11	270.00	7,081.9	-2,130.38	1,243.9	-2,668.9	2,853.3	0.00	0.00	0.00
10,400.0	90.11	270.00	7,081.7	-2,130.19	1,243.9	-2,768.9	2,951.6	0.00	0.00	0.00
10,500.0	90.11	270.00	7,081.5	-2,129.99	1,243.9	-2,868.9	3,049.8	0.00	0.00	0.00
10,600.0	90.11	270.00	7,081.3	-2,129.79	1,243.9	-2,968.9	3,148.1	0.00	0.00	0.00
10,700.0	90.11	270.00	7,081.1	-2,129.59	1,243.9	-3,068.9	3,246.3	0.00	0.00	0.00
10,800.0	90.11	270.00	7,080.9	-2,129.39	1,243.9	-3,168.9	3,344.6	0.00	0.00	0.00
10,900.0	90.11	270.00	7,080.7	-2,129.20	1,243.9	-3,268.9	3,442.9	0.00	0.00	0.00
11,000.0	90.11	270.00	7,080.5	-2,129.00	1,243.9	-3,368.9	3,541.1	0.00	0.00	0.00
11,100.0	90.11	270.00	7,080.3	-2,128.80	1,243.9	-3,468.9	3,639.4	0.00	0.00	0.00
11,200.0	90.11	270.00	7,080.1	-2,128.60	1,243.9	-3,568.9	3,737.7	0.00	0.00	0.00
11,300.0	90.11	270.00	7,079.9	-2,128.40	1,243.9	-3,668.9	3,835.9	0.00	0.00	0.00
11,400.0	90.11	270.00	7,079.7	-2,128.20	1,243.9	-3,768.9	3,934.2	0.00	0.00	0.00
11,500.0	90.11	270.00	7,079.5	-2,128.00	1,243.9	-3,868.9	4,032.5	0.00	0.00	0.00
11,600.0	90.11	270.00	7,079.3	-2,127.80	1,243.9	-3,968.9	4,130.7	0.00	0.00	0.00
11,700.0	90.11	270.00	7,079.1	-2,127.60	1,243.9	-4,068.9	4,229.0	0.00	0.00	0.00
11,800.0	90.11	270.00	7,078.9	-2,127.40	1,243.9	-4,168.9	4,327.3	0.00	0.00	0.00
11,900.0	90.11	270.00	7,078.7	-2,127.20	1,243.9	-4,268.9	4,425.5	0.00	0.00	0.00
12,000.0	90.11	270.00	7,078.5	-2,127.00	1,243.9	-4,368.9	4,523.8	0.00	0.00	0.00
12,100.0	90.12	270.00	7,078.3	-2,126.80	1,243.9	-4,468.9	4,622.1	0.00	0.00	0.00
12,200.0	90.12	270.00	7,078.1	-2,126.60	1,243.9	-4,568.9	4,720.3	0.00	0.00	0.00
12,300.0	90.12	270.00	7,077.9	-2,126.40	1,243.9	-4,668.9	4,818.6	0.00	0.00	0.00
12,400.0	90.12	270.00	7,077.7	-2,126.20	1,243.9	-4,768.9	4,916.8	0.00	0.00	0.00
12,500.0	90.12	270.00	7,077.5	-2,126.00	1,243.9	-4,868.9	5,015.1	0.00	0.00	0.00
12,600.0	90.12	270.00	7,077.3	-2,125.79	1,243.9	-4,968.9	5,113.4	0.00	0.00	0.00
12,700.0	90.12	270.00	7,077.1	-2,125.59	1,243.9	-5,068.9	5,211.6	0.00	0.00	0.00
12,800.0	90.12	270.00	7,076.9	-2,125.39	1,243.9	-5,168.9	5,309.9	0.00	0.00	0.00
12,900.0	90.12	270.00	7,076.7	-2,125.19	1,243.9	-5,268.9	5,408.2	0.00	0.00	0.00
13,000.0	90.12	270.00	7,076.5	-2,124.99	1,243.9	-5,368.9	5,506.4	0.00	0.00	0.00
13,100.0	90.12	270.00	7,076.3	-2,124.78	1,243.9	-5,468.9	5,604.7	0.00	0.00	0.00
13,200.0	90.12	270.00	7,076.1	-2,124.58	1,243.9	-5,568.9	5,703.0	0.00	0.00	0.00
13,300.0	90.12	270.00	7,075.9	-2,124.38	1,243.9	-5,668.9	5,801.2	0.00	0.00	0.00
13,400.0	90.12	270.00	7,075.7	-2,124.17	1,243.9	-5,768.9	5,899.5	0.00	0.00	0.00
13,500.0	90.12	270.00	7,075.5	-2,123.97	1,243.9	-5,868.9	5,997.8	0.00	0.00	0.00
13,600.0	90.12	270.00	7,075.3	-2,123.77	1,243.9	-5,968.9	6,096.0	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well SHARON 21N-234
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4951.5usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4951.5usft (Original Well Elev)
Site:	NE SW SEC. 21 T4N R67W 6th P.M.	North Reference:	True
Well:	SHARON 21N-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
13,700.0	90.12	270.00	7,075.1	-2,123.56	1,243.9	-6,068.9	6,194.3	0.00	0.00	0.00
13,800.0	90.12	270.00	7,074.9	-2,123.36	1,243.9	-6,168.9	6,292.6	0.00	0.00	0.00
13,900.0	90.12	270.00	7,074.7	-2,123.16	1,243.9	-6,268.9	6,390.8	0.00	0.00	0.00
14,000.0	90.12	270.00	7,074.5	-2,122.95	1,243.9	-6,368.9	6,489.1	0.00	0.00	0.00
14,100.0	90.12	270.00	7,074.2	-2,122.75	1,243.9	-6,468.9	6,587.3	0.00	0.00	0.00
14,200.0	90.12	270.00	7,074.0	-2,122.54	1,243.9	-6,568.9	6,685.6	0.00	0.00	0.00
BHL:1790ft FNL & 500ft FWL of Sec 20										
14,221.4	90.12	270.00	7,074.0	-2,122.50	1,243.9	-6,590.3	6,706.6	0.00	0.00	0.00

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,735.0	3,635.0	PARKMAN SANDSTONE				
4,320.7	4,200.0	SUSSEX SANDSTONE				
4,818.3	4,680.0	SHANNON				
7,085.7	6,857.0	SHARON SPRINGS				
7,295.3	6,988.0	NIOBRARA A				
7,569.2	7,079.0	NIOBRARA B				

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 2342ft FSL & 2207ft FWL of Sec 21
400.0	400.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,164.2	1,155.2	89.2	48.1	EOB TO 15.28° INC
5,757.1	5,585.6	1,154.7	622.9	END OF TANGENT
6,521.3	6,340.8	1,243.9	671.0	EOD TO VERTICAL
6,551.3	6,370.8	1,243.9	671.0	KOP (8°/100ft BUR)
7,677.7	7,087.0	1,243.9	-46.6	HZ LP *NEW*: 1667.8ft FNL & 2176ft FWL of Sec 21
14,221.4	7,074.0	1,243.9	-6,590.3	BHL:1790ft FNL & 500ft FWL of Sec 20