

PDC ENERGY

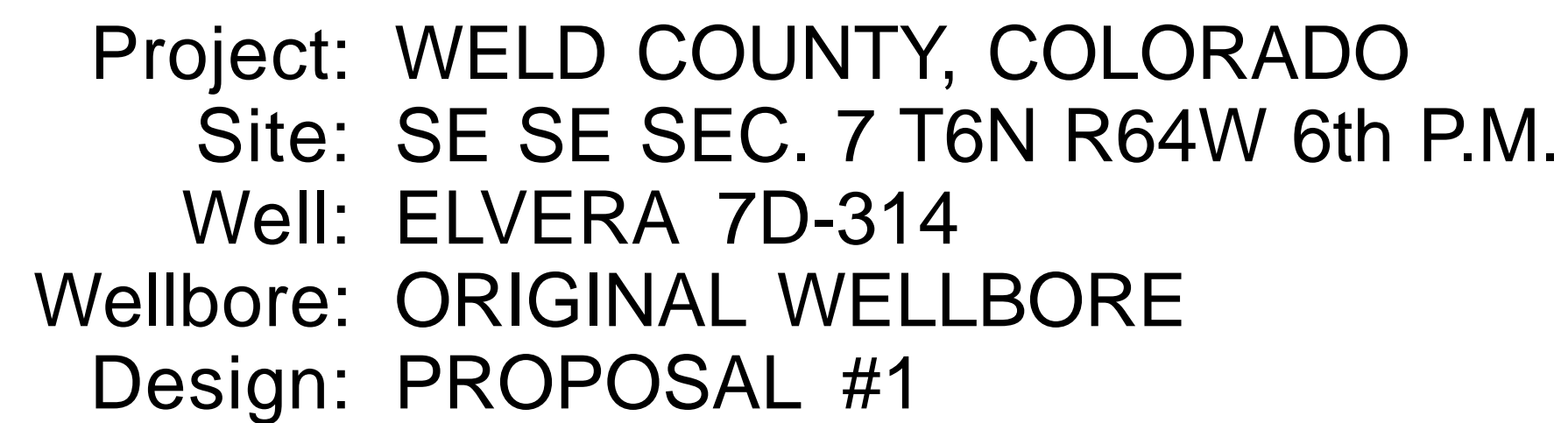
**WELD COUNTY, COLORADO
SE SE SEC. 7 T6N R64W 6th P.M.
ELVERA 7D-314**

ORIGINAL WELLBORE

03 March, 2016

Plan: PROPOSAL #1





PROPOSED LOCAL COORDINATES:

SHL: 1136ft FSL & 927ft FEL of Sec 7

7" ICP *NEW*: 1639.8ft FSL & 270ft FEL of Sec 7

BHL: 1704ft FSL & 0ft FWL of Sec 7

South(-)/North(+) (100 usf/in)

West(-)/East(+) (100 usf/in)

ELVERA 7S-332

ELVERA 7D-212

ELVERA 7D-312

ELVERA 7D-402

ELVERA 7S-334

ELVERA 7D-314

ELVERA 7D-404

T

M

Azimuths to True North

Magnetic North: 8.26°

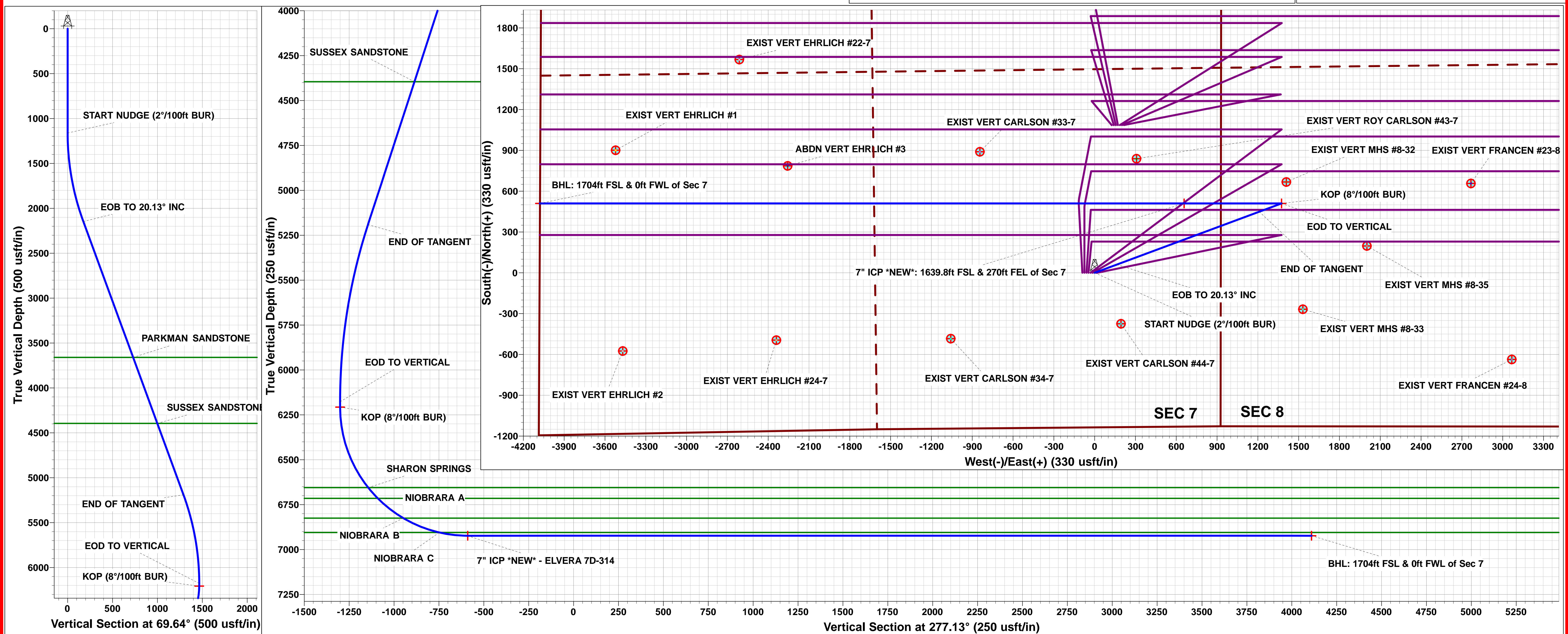
Magnetic Field

Strength: 52609.5snT

Dip Angle: 66.99°

Date: 01/03/2016

Model: IGRF2015



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well ELVERA 7D-314
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4748.0usft
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4748.0usft
Site:	SE SE SEC. 7 T6N R64W 6th P.M.	North Reference:	True
Well:	ELVERA 7D-314	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	SE SE SEC. 7 T6N R64W 6th P.M.		
Site Position:		Northing:	1,424,981.51 usft
From:	Lat/Long	Easting:	3,253,921.44 usft
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000ft
		Latitude:	40.496387
		Longitude:	-104.586973
		Grid Convergence:	0.59 °

Well	ELVERA 7D-314		
Well Position	+N/-S	0.3 usft	Northing:
	+E/-W	-15.0 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	01/03/2016	8.26	66.99	52,609

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	277.13

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	-4,748.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,161.0	0.00	0.00	1,161.0	-3,587.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,167.6	20.13	69.64	2,147.0	-2,601.0	60.9	164.1	2.00	2.00	0.00	69.64	
5,409.4	20.13	69.64	5,190.8	442.8	449.1	1,210.2	0.00	0.00	0.00	0.00	
6,416.0	0.00	0.00	6,176.8	1,428.8	510.0	1,374.3	2.00	-2.00	0.00	180.00	
6,446.0	0.00	0.00	6,206.8	1,458.8	510.0	1,374.3	0.00	0.00	0.00	0.00	KOP - ELVERA 7D-
7,571.1	90.00	270.00	6,923.0	2,175.0	510.0	658.1	8.00	8.00	-8.00	270.00	7" ICP *NEW* - EL
12,307.2	90.00	270.00	6,923.0	2,175.0	510.0	-4,078.0	0.00	0.00	0.00	0.00	BHL - ELVERA 7D-

Planning Report



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Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4748.0usft
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4748.0usft
Site:	SE SE SEC. 7 T6N R64W 6th P.M.	North Reference:	True
Well:	ELVERA 7D-314	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: 1136ft FSL & 927ft FEL of Sec 7										
0.0	0.00	0.00	0.0	4,748.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,648.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,548.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,448.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,348.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,248.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,148.00	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	4,048.00	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	3,948.00	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	3,848.00	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	3,748.00	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	3,648.00	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
1,161.0	0.00	0.00	1,161.0	3,587.00	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.78	69.64	1,200.0	3,548.00	0.1	0.2	-0.2	2.00	2.00	0.00
1,300.0	2.78	69.64	1,299.9	3,448.05	1.2	3.2	-3.0	2.00	2.00	0.00
1,400.0	4.78	69.64	1,399.7	3,348.28	3.5	9.3	-8.8	2.00	2.00	0.00
1,500.0	6.78	69.64	1,499.2	3,248.79	7.0	18.8	-17.8	2.00	2.00	0.00
1,600.0	8.78	69.64	1,598.3	3,149.72	11.7	31.5	-29.8	2.00	2.00	0.00
1,700.0	10.78	69.64	1,696.8	3,051.17	17.6	47.4	-44.8	2.00	2.00	0.00
1,800.0	12.78	69.64	1,794.7	2,953.29	24.7	66.5	-63.0	2.00	2.00	0.00
1,900.0	14.78	69.64	1,891.8	2,856.17	33.0	88.9	-84.1	2.00	2.00	0.00
2,000.0	16.78	69.64	1,988.1	2,759.94	42.4	114.4	-108.2	2.00	2.00	0.00
2,100.0	18.78	69.64	2,083.3	2,664.72	53.1	143.0	-135.3	2.00	2.00	0.00
EOB TO 20.13° INC										
2,167.6	20.13	69.64	2,147.0	2,600.96	60.9	164.1	-155.3	2.00	2.00	0.00
2,200.0	20.13	69.64	2,177.4	2,570.56	64.8	174.6	-165.2	0.00	0.00	0.00
2,300.0	20.13	69.64	2,271.3	2,476.67	76.8	206.8	-195.7	0.00	0.00	0.00
2,400.0	20.13	69.64	2,365.2	2,382.78	88.7	239.1	-226.2	0.00	0.00	0.00
2,500.0	20.13	69.64	2,459.1	2,288.89	100.7	271.4	-256.8	0.00	0.00	0.00
2,600.0	20.13	69.64	2,553.0	2,195.00	112.7	303.6	-287.3	0.00	0.00	0.00
2,700.0	20.13	69.64	2,646.9	2,101.12	124.7	335.9	-317.8	0.00	0.00	0.00
2,800.0	20.13	69.64	2,740.8	2,007.23	136.6	368.2	-348.4	0.00	0.00	0.00
2,900.0	20.13	69.64	2,834.7	1,913.34	148.6	400.4	-378.9	0.00	0.00	0.00
3,000.0	20.13	69.64	2,928.6	1,819.45	160.6	432.7	-409.4	0.00	0.00	0.00
3,100.0	20.13	69.64	3,022.4	1,725.56	172.6	465.0	-440.0	0.00	0.00	0.00
3,200.0	20.13	69.64	3,116.3	1,631.67	184.5	497.2	-470.5	0.00	0.00	0.00
3,300.0	20.13	69.64	3,210.2	1,537.78	196.5	529.5	-501.0	0.00	0.00	0.00
3,400.0	20.13	69.64	3,304.1	1,443.89	208.5	561.8	-531.6	0.00	0.00	0.00
3,500.0	20.13	69.64	3,398.0	1,350.00	220.5	594.0	-562.1	0.00	0.00	0.00
3,600.0	20.13	69.64	3,491.9	1,256.11	232.4	626.3	-592.6	0.00	0.00	0.00
3,700.0	20.13	69.64	3,585.8	1,162.22	244.4	658.6	-623.2	0.00	0.00	0.00
PARKMAN SANDSTONE										
3,779.0	20.13	69.64	3,660.0	1,088.00	253.9	684.1	-647.3	0.00	0.00	0.00
3,800.0	20.13	69.64	3,679.7	1,068.33	256.4	690.9	-653.7	0.00	0.00	0.00
3,900.0	20.13	69.64	3,773.6	974.44	268.4	723.1	-684.2	0.00	0.00	0.00
4,000.0	20.13	69.64	3,867.5	880.55	280.3	755.4	-714.8	0.00	0.00	0.00
4,100.0	20.13	69.64	3,961.3	786.66	292.3	787.7	-745.3	0.00	0.00	0.00
4,200.0	20.13	69.64	4,055.2	692.77	304.3	819.9	-775.8	0.00	0.00	0.00
4,300.0	20.13	69.64	4,149.1	598.88	316.3	852.2	-806.4	0.00	0.00	0.00
4,400.0	20.13	69.64	4,243.0	504.99	328.2	884.5	-836.9	0.00	0.00	0.00
4,500.0	20.13	69.64	4,336.9	411.10	340.2	916.7	-867.4	0.00	0.00	0.00
SUSSEX SANDSTONE										

Planning Report



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Well:	ELVERA 7D-314	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)
4,561.9	20.13	69.64	4,395.0	353.00	347.6	936.7	-886.3	0.00	0.00	0.00
4,600.0	20.13	69.64	4,430.8	317.21	352.2	949.0	-898.0	0.00	0.00	0.00
4,700.0	20.13	69.64	4,524.7	223.32	364.2	981.3	-928.5	0.00	0.00	0.00
4,800.0	20.13	69.64	4,618.6	129.43	376.1	1,013.5	-959.0	0.00	0.00	0.00
4,900.0	20.13	69.64	4,712.5	35.54	388.1	1,045.8	-989.6	0.00	0.00	0.00
5,000.0	20.13	69.64	4,806.4	-58.35	400.1	1,078.1	-1,020.1	0.00	0.00	0.00
5,100.0	20.13	69.64	4,900.2	-152.24	412.1	1,110.3	-1,050.6	0.00	0.00	0.00
5,200.0	20.13	69.64	4,994.1	-246.13	424.0	1,142.6	-1,081.2	0.00	0.00	0.00
5,300.0	20.13	69.64	5,088.0	-340.02	436.0	1,174.9	-1,111.7	0.00	0.00	0.00
5,400.0	20.13	69.64	5,181.9	-433.91	448.0	1,207.2	-1,142.2	0.00	0.00	0.00
END OF TANGENT										
5,409.4	20.13	69.64	5,190.8	-442.76	449.1	1,210.2	-1,145.1	0.00	0.00	0.00
5,500.0	18.32	69.64	5,276.3	-528.28	459.5	1,238.2	-1,171.6	2.00	-2.00	0.00
5,600.0	16.32	69.64	5,371.7	-623.74	469.8	1,266.1	-1,198.0	2.00	-2.00	0.00
5,700.0	14.32	69.64	5,468.2	-720.18	479.0	1,290.8	-1,221.4	2.00	-2.00	0.00
5,800.0	12.32	69.64	5,565.5	-817.49	487.1	1,312.4	-1,241.8	2.00	-2.00	0.00
5,900.0	10.32	69.64	5,663.5	-915.54	493.9	1,330.8	-1,259.3	2.00	-2.00	0.00
6,000.0	8.32	69.64	5,762.2	-1,014.21	499.5	1,346.0	-1,273.6	2.00	-2.00	0.00
6,100.0	6.32	69.64	5,861.4	-1,113.39	503.9	1,358.0	-1,284.9	2.00	-2.00	0.00
6,200.0	4.32	69.64	5,961.0	-1,212.96	507.2	1,366.7	-1,293.2	2.00	-2.00	0.00
6,300.0	2.32	69.64	6,060.8	-1,312.78	509.2	1,372.1	-1,298.3	2.00	-2.00	0.00
6,400.0	0.32	69.64	6,160.8	-1,412.75	510.0	1,374.3	-1,300.3	2.00	-2.00	0.00
EOD TO VERTICAL										
6,416.0	0.00	0.00	6,176.8	-1,428.80	510.0	1,374.3	-1,300.4	2.00	-2.00	0.00
KOP (8°/100ft BUR)										
6,446.0	0.00	0.00	6,206.8	-1,458.80	510.0	1,374.3	-1,300.4	0.00	0.00	0.00
6,500.0	4.32	270.00	6,260.7	-1,512.70	510.0	1,372.3	-1,298.4	8.00	8.00	0.00
6,600.0	12.32	270.00	6,359.6	-1,611.57	510.0	1,357.8	-1,284.0	8.00	8.00	0.00
6,700.0	20.32	270.00	6,455.5	-1,707.46	510.0	1,329.7	-1,256.2	8.00	8.00	0.00
6,800.0	28.32	270.00	6,546.5	-1,798.52	510.0	1,288.6	-1,215.3	8.00	8.00	0.00
6,900.0	36.32	270.00	6,631.0	-1,882.96	510.0	1,235.2	-1,162.3	8.00	8.00	0.00
SHARON SPRINGS										
6,930.3	38.74	270.00	6,655.0	-1,907.00	510.0	1,216.7	-1,144.0	8.00	8.00	0.00
7,000.0	44.32	270.00	6,707.1	-1,959.15	510.0	1,170.5	-1,098.2	8.00	8.00	0.00
NIORARA A										
7,011.1	45.20	270.00	6,715.0	-1,967.00	510.0	1,162.8	-1,090.5	8.00	8.00	0.00
7,100.0	52.32	270.00	6,773.6	-2,025.60	510.0	1,095.9	-1,024.2	8.00	8.00	0.00
NIORARA B										
7,192.0	59.67	270.00	6,825.0	-2,077.00	510.0	1,019.7	-948.5	8.00	8.00	0.00
7,200.0	60.32	270.00	6,829.0	-2,081.01	510.0	1,012.8	-941.7	8.00	8.00	0.00
7,300.0	68.32	270.00	6,872.3	-2,124.32	510.0	922.7	-852.3	8.00	8.00	0.00
7,400.0	76.32	270.00	6,902.7	-2,154.67	510.0	827.5	-757.8	8.00	8.00	0.00
NIORARA C										
7,410.1	77.13	270.00	6,905.0	-2,157.00	510.0	817.7	-748.0	8.00	8.00	0.00
7,500.0	84.32	270.00	6,919.5	-2,171.48	510.0	729.0	-660.1	8.00	8.00	0.00
7" ICP *NEW*: 1639.8ft FSL & 270ft FEL of Sec 7										
7,571.1	90.00	270.00	6,923.0	-2,175.00	510.0	658.1	-589.7	8.00	8.00	0.00
7,600.0	90.00	270.00	6,923.0	-2,175.00	510.0	629.2	-561.0	0.00	0.00	0.00
7,700.0	90.00	270.00	6,923.0	-2,175.00	510.0	529.2	-461.8	0.00	0.00	0.00
7,800.0	90.00	270.00	6,923.0	-2,175.00	510.0	429.2	-362.5	0.00	0.00	0.00
7,900.0	90.00	270.00	6,923.0	-2,175.00	510.0	329.2	-263.3	0.00	0.00	0.00
8,000.0	90.00	270.00	6,923.0	-2,175.00	510.0	229.2	-164.1	0.00	0.00	0.00
8,100.0	90.00	270.00	6,923.0	-2,175.00	510.0	129.2	-64.9	0.00	0.00	0.00

Planning Report



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Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4748.0usft
Site:	SE SE SEC. 7 T6N R64W 6th P.M.	North Reference:	True
Well:	ELVERA 7D-314	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)
8,200.0	90.00	270.00	6,923.0	-2,175.00	510.0	29.2	34.4	0.00	0.00	0.00
8,300.0	90.00	270.00	6,923.0	-2,175.00	510.0	-70.8	133.6	0.00	0.00	0.00
8,400.0	90.00	270.00	6,923.0	-2,175.00	510.0	-170.8	232.8	0.00	0.00	0.00
8,500.0	90.00	270.00	6,923.0	-2,175.00	510.0	-270.8	332.0	0.00	0.00	0.00
8,600.0	90.00	270.00	6,923.0	-2,175.00	510.0	-370.8	431.3	0.00	0.00	0.00
8,700.0	90.00	270.00	6,923.0	-2,175.00	510.0	-470.8	530.5	0.00	0.00	0.00
8,800.0	90.00	270.00	6,923.0	-2,175.00	510.0	-570.8	629.7	0.00	0.00	0.00
8,900.0	90.00	270.00	6,923.0	-2,175.00	510.0	-670.8	729.0	0.00	0.00	0.00
9,000.0	90.00	270.00	6,923.0	-2,175.00	510.0	-770.8	828.2	0.00	0.00	0.00
9,100.0	90.00	270.00	6,923.0	-2,175.00	510.0	-870.8	927.4	0.00	0.00	0.00
9,200.0	90.00	270.00	6,923.0	-2,175.00	510.0	-970.8	1,026.6	0.00	0.00	0.00
9,300.0	90.00	270.00	6,923.0	-2,175.00	510.0	-1,070.8	1,125.9	0.00	0.00	0.00
9,400.0	90.00	270.00	6,923.0	-2,175.00	510.0	-1,170.8	1,225.1	0.00	0.00	0.00
9,500.0	90.00	270.00	6,923.0	-2,175.00	510.0	-1,270.8	1,324.3	0.00	0.00	0.00
9,600.0	90.00	270.00	6,923.0	-2,175.00	510.0	-1,370.8	1,423.5	0.00	0.00	0.00
9,700.0	90.00	270.00	6,923.0	-2,175.00	510.0	-1,470.8	1,522.8	0.00	0.00	0.00
9,800.0	90.00	270.00	6,923.0	-2,175.00	510.0	-1,570.8	1,622.0	0.00	0.00	0.00
9,900.0	90.00	270.00	6,923.0	-2,175.00	510.0	-1,670.8	1,721.2	0.00	0.00	0.00
10,000.0	90.00	270.00	6,923.0	-2,175.00	510.0	-1,770.8	1,820.5	0.00	0.00	0.00
10,100.0	90.00	270.00	6,923.0	-2,175.00	510.0	-1,870.8	1,919.7	0.00	0.00	0.00
10,200.0	90.00	270.00	6,923.0	-2,175.00	510.0	-1,970.8	2,018.9	0.00	0.00	0.00
10,300.0	90.00	270.00	6,923.0	-2,175.00	510.0	-2,070.8	2,118.1	0.00	0.00	0.00
10,400.0	90.00	270.00	6,923.0	-2,175.00	510.0	-2,170.8	2,217.4	0.00	0.00	0.00
10,500.0	90.00	270.00	6,923.0	-2,175.00	510.0	-2,270.8	2,316.6	0.00	0.00	0.00
10,600.0	90.00	270.00	6,923.0	-2,175.00	510.0	-2,370.8	2,415.8	0.00	0.00	0.00
10,700.0	90.00	270.00	6,923.0	-2,175.00	510.0	-2,470.8	2,515.0	0.00	0.00	0.00
10,800.0	90.00	270.00	6,923.0	-2,175.00	510.0	-2,570.8	2,614.3	0.00	0.00	0.00
10,900.0	90.00	270.00	6,923.0	-2,175.00	510.0	-2,670.8	2,713.5	0.00	0.00	0.00
11,000.0	90.00	270.00	6,923.0	-2,175.00	510.0	-2,770.8	2,812.7	0.00	0.00	0.00
11,100.0	90.00	270.00	6,923.0	-2,175.00	510.0	-2,870.8	2,911.9	0.00	0.00	0.00
11,200.0	90.00	270.00	6,923.0	-2,175.00	510.0	-2,970.8	3,011.2	0.00	0.00	0.00
11,300.0	90.00	270.00	6,923.0	-2,175.00	510.0	-3,070.8	3,110.4	0.00	0.00	0.00
11,400.0	90.00	270.00	6,923.0	-2,175.00	510.0	-3,170.8	3,209.6	0.00	0.00	0.00
11,500.0	90.00	270.00	6,923.0	-2,175.00	510.0	-3,270.8	3,308.9	0.00	0.00	0.00
11,600.0	90.00	270.00	6,923.0	-2,175.00	510.0	-3,370.8	3,408.1	0.00	0.00	0.00
11,700.0	90.00	270.00	6,923.0	-2,175.00	510.0	-3,470.8	3,507.3	0.00	0.00	0.00
11,800.0	90.00	270.00	6,923.0	-2,175.00	510.0	-3,570.8	3,606.5	0.00	0.00	0.00
11,900.0	90.00	270.00	6,923.0	-2,175.00	510.0	-3,670.8	3,705.8	0.00	0.00	0.00
12,000.0	90.00	270.00	6,923.0	-2,175.00	510.0	-3,770.8	3,805.0	0.00	0.00	0.00
12,100.0	90.00	270.00	6,923.0	-2,175.00	510.0	-3,870.8	3,904.2	0.00	0.00	0.00
12,200.0	90.00	270.00	6,923.0	-2,175.00	510.0	-3,970.8	4,003.4	0.00	0.00	0.00
12,300.0	90.00	270.00	6,923.0	-2,175.00	510.0	-4,070.8	4,102.7	0.00	0.00	0.00
BHL: 1704ft FSL & 0ft FWL of Sec 7										
12,307.2	90.00	270.00	6,923.0	-2,175.00	510.0	-4,078.0	4,109.8	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well ELVERA 7D-314
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4748.0usft
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4748.0usft
Site:	SE SE SEC. 7 T6N R64W 6th P.M.	North Reference:	True
Well:	ELVERA 7D-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,779.0	3,660.0	PARKMAN SANDSTONE			
4,561.9	4,395.0	SUSSEX SANDSTONE			
6,930.3	6,655.0	SHARON SPRINGS			
7,011.1	6,715.0	NIOBRARA A			
7,192.0	6,825.0	NIOBRARA B			
7,410.1	6,905.0	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: 1136ft FSL & 927ft FEL of Sec 7
1,161.0	1,161.0	0.0	0.0	START NUDGE (2°/100ft BUR)
2,167.6	2,147.0	60.9	164.1	EOB TO 20.13° INC
5,409.4	5,190.8	449.1	1,210.2	END OF TANGENT
6,416.0	6,176.8	510.0	1,374.3	EOD TO VERTICAL
6,446.0	6,206.8	510.0	1,374.3	KOP (8°/100ft BUR)
7,571.1	6,923.0	510.0	658.1	7" ICP *NEW*: 1639.8ft FSL & 270ft FEL of Sec 7
12,307.2	6,923.0	510.0	-4,078.0	BHL: 1704ft FSL & 0ft FWL of Sec 7