

PDC ENERGY

**WELD COUNTY, COLORADO
SE SW SEC. 21 T4N R67W 6th P.M.
WALTERS 21P-234**

ORIGINAL WELLBORE

26 March, 2016

Plan: PROPOSAL #1





Project: WELD COUNTY, COLORADO
Site: SE SW SEC. 21 T4N R67W 6th P.M.
Well: WALTERS 21P-234
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

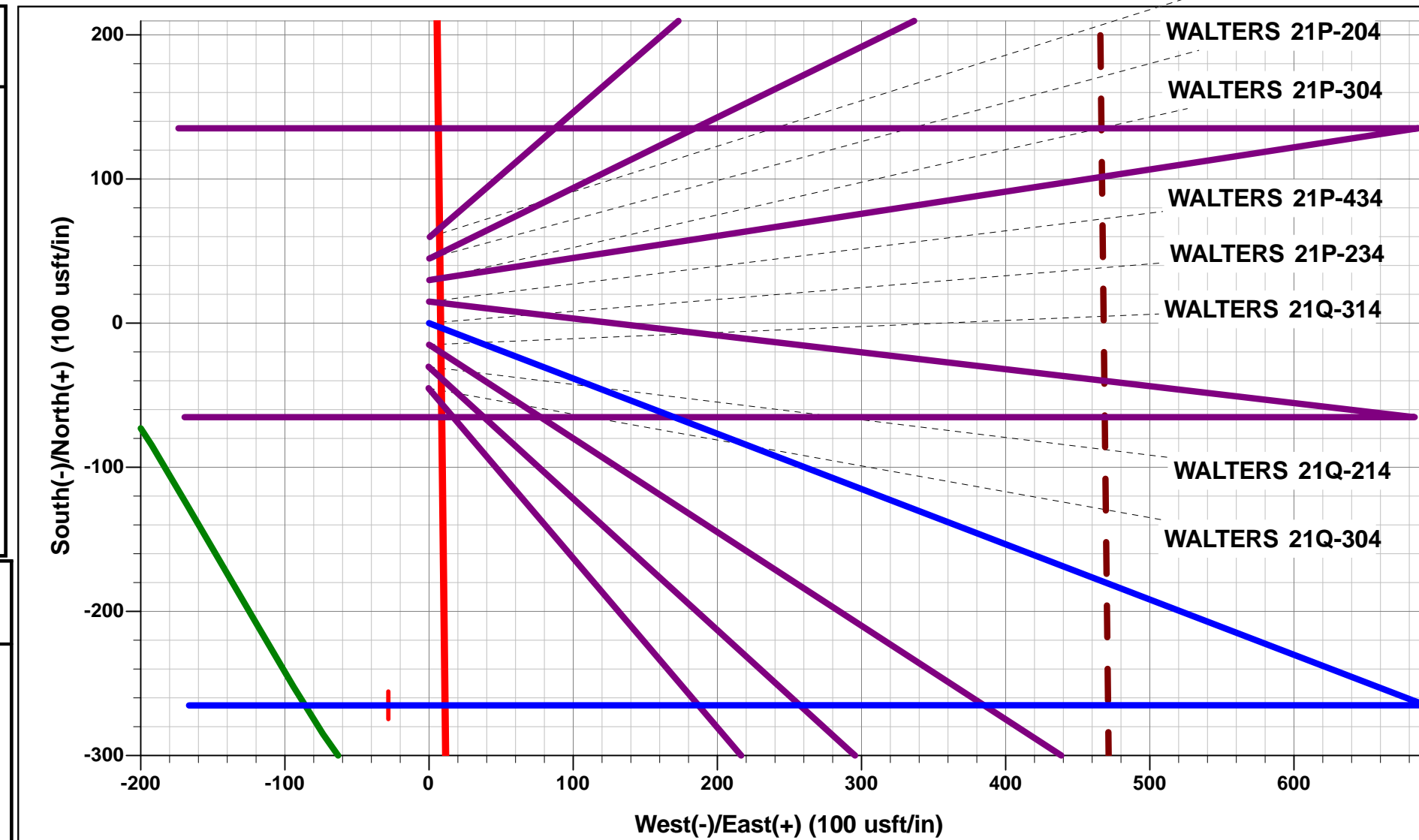


ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 1046ft FSL & 2201ft FWL of Sec 21
600.0	600.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1195.8	1200.1	12.00	110.98	-22.4	58.5	-56.9	62.6	EOB TO 12° INC
4090.0	4159.1	12.00	110.98	-242.8	633.0	-616.3	678.0	END OF TANGENT
4685.8	4759.3	0.00	0.00	-265.2	691.5	-673.2	740.6	EOD TO VERTICAL
6359.8	6433.3	0.00	0.00	-265.2	691.5	-673.2	740.6	KOP (8°/100ft BUR)
7076.0	7561.7	90.28	270.00	-265.2	-28.2	45.0	1460.3	HZ LP *NEW*: 780ft FSL & 2168ft FWL of Sec 21
7056.0	11688.2	90.28	270.00	-265.2	-4154.6	4163.0	5586.7	BHL: 710ft FSL & 1956ft FEL of Sec 20

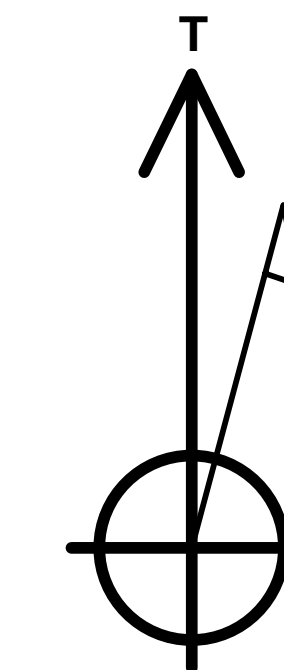
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - WALTERS 21P-234	6359.8	-265.2	691.5	40.293251	-104.895073
HZ LANDING PNT *NEW* - WALTERS 21P-234	7076.0	-265.2	-28.2	40.293251	-104.897653
BHL - WALTERS 21P-234	7056.0	-265.2	-4154.6	40.293250	-104.912445



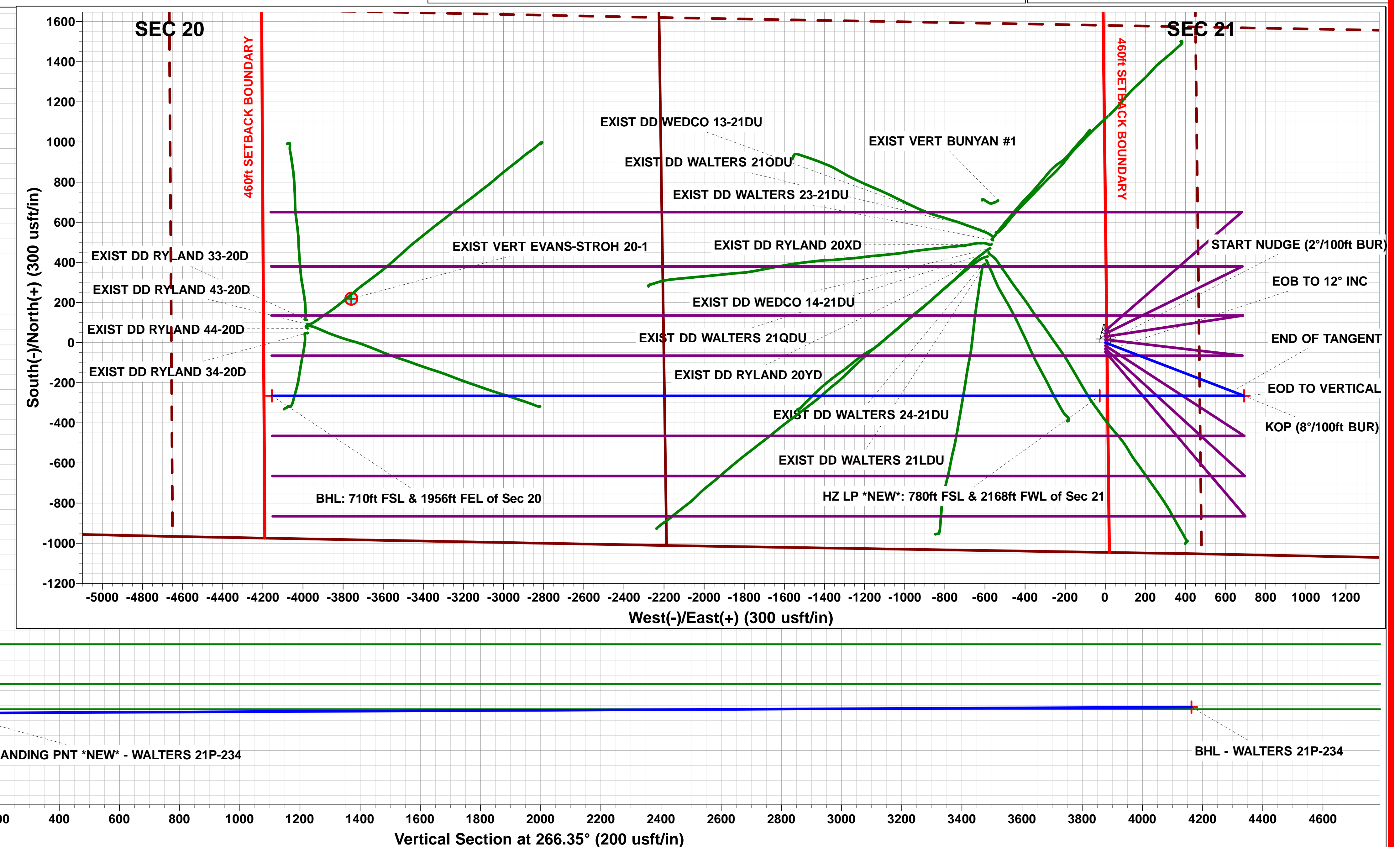
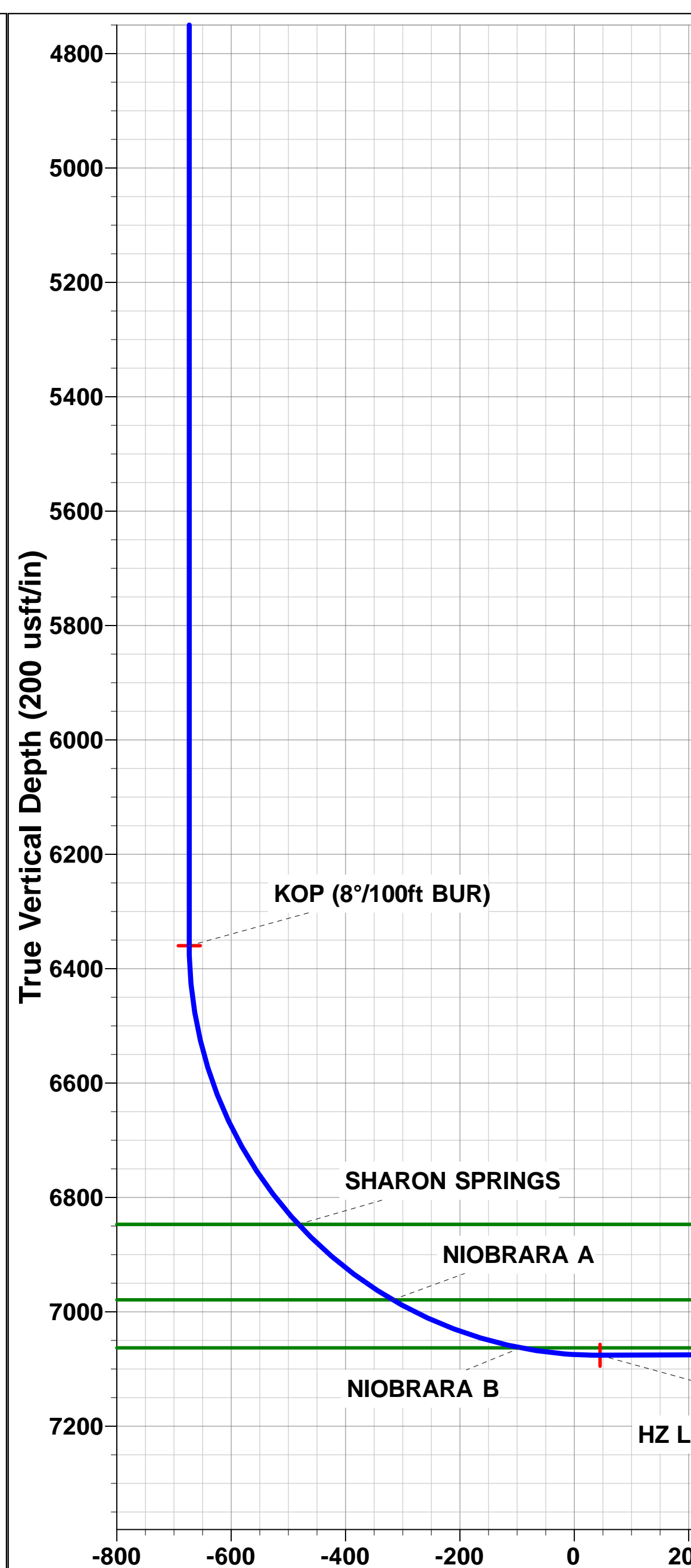
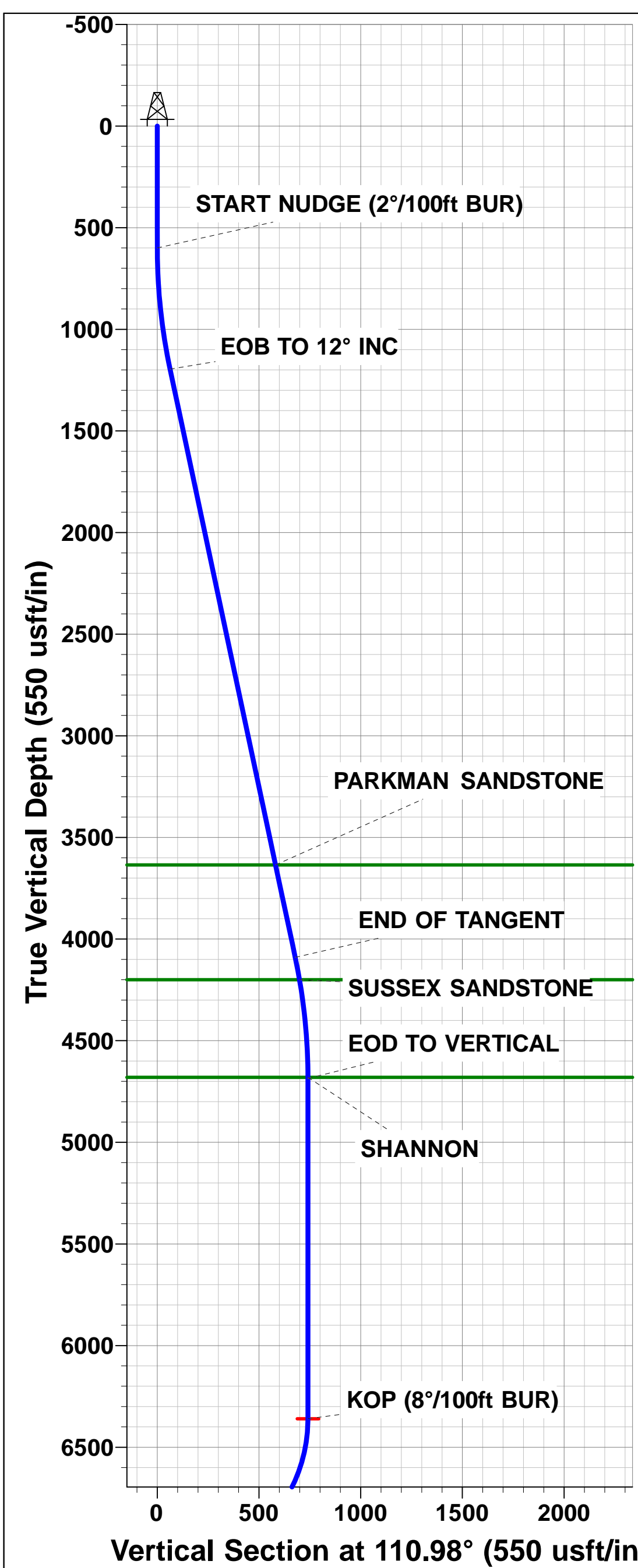
PROPOSED LOCAL COORDINATES:

SHL: 1046ft FSL & 2201ft FWL of Sec 21
HZ LP *NEW*: 780ft FSL & 2168ft FWL of Sec 21
BHL: 710ft FSL & 1956ft FEL of Sec 20



Azimuths to True North
Magnetic North: 8.40°

Magnetic Field
Strength: 52461.9snT
Dip Angle: 66.78°
Date: 26/03/2016
Model: IGRF2015



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well WALTERS 21P-234
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4952.5usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4952.5usft (Original Well Elev)
Site:	SE SW SEC. 21 T4N R67W 6th P.M.	North Reference:	True
Well:	WALTERS 21P-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		SE SW SEC. 21 T4N R67W 6th P.M.			
Site Position:		Northing:	1,350,463.38 usft	Latitude:	40.293855
From:	Lat/Long	Easting:	3,168,049.14 usft	Longitude:	-104.897553
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000ft	Grid Convergence:	0.39 °

Well	WALTERS 21P-234					
Well Position	+N/-S	45.2 usft	Northing:	1,350,508.55 usft	Latitude:	40.293979
	+E/-W	0.3 usft	Easting:	3,168,049.11 usft	Longitude:	-104.897552
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	4,939.0 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	26/03/2016	8.40	66.78	52,462

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 (°)
	7,056.0	0.0	0.0	266.35

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	-4,952.5	0.0	0.0	0.00	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	-4,352.5	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.1	12.00	110.98	1,195.8	-3,756.7	-22.4	58.5	2.00	2.00	0.00	110.98	
4,159.1	12.00	110.98	4,090.0	-862.5	-242.8	633.0	0.00	0.00	0.00	0.00	
4,759.3	0.00	0.00	4,685.8	-266.7	-265.2	691.5	2.00	-2.00	0.00	180.00	
6,433.3	0.00	0.00	6,359.8	1,407.3	-265.2	691.5	0.00	0.00	0.00	0.00	KOP - WALTERS 2
7,561.7	90.28	270.00	7,076.0	2,123.5	-265.2	-28.2	8.00	8.00	-7.98	270.00	HZ LANDING PNT
11,688.2	90.28	270.00	7,056.0	2,103.5	-265.2	-4,154.6	0.00	0.00	0.00	0.00	BHL - WALTERS 2

Planning Report



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Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4952.5usft (Original Well Elev)
Site:	SE SW SEC. 21 T4N R67W 6th P.M.	North Reference:	True
Well:	WALTERS 21P-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: 1046ft FSL & 2201ft FWL of Sec 21										
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
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	0.00	0.00	400.0	4,552.50	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,452.50	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
600.0	0.00	0.00	600.0	4,352.50	0.0	0.0	0.0	0.00	0.00	0.00
700.0	2.00	110.98	700.0	4,252.52	-0.6	1.6	-1.6	2.00	2.00	0.00
800.0	4.00	110.98	799.8	4,152.66	-2.5	6.5	-6.3	2.00	2.00	0.00
900.0	6.00	110.98	899.5	4,053.05	-5.6	14.7	-14.3	2.00	2.00	0.00
1,000.0	8.00	110.98	998.7	3,953.80	-10.0	26.0	-25.3	2.00	2.00	0.00
1,100.0	10.00	110.98	1,097.5	3,855.03	-15.6	40.6	-39.6	2.00	2.00	0.00
1,200.0	12.00	110.98	1,195.6	3,756.88	-22.4	58.5	-56.9	2.00	2.00	0.00
EOB TO 12° INC										
1,200.1	12.00	110.98	1,195.8	3,756.74	-22.4	58.5	-56.9	2.00	2.00	0.00
1,300.0	12.00	110.98	1,293.4	3,659.06	-29.9	77.9	-75.8	0.00	0.00	0.00
1,400.0	12.00	110.98	1,391.3	3,561.25	-37.3	97.3	-94.7	0.00	0.00	0.00
1,500.0	12.00	110.98	1,489.1	3,463.44	-44.8	116.7	-113.6	0.00	0.00	0.00
1,600.0	12.00	110.98	1,586.9	3,365.62	-52.2	136.1	-132.5	0.00	0.00	0.00
1,700.0	12.00	110.98	1,684.7	3,267.81	-59.7	155.5	-151.4	0.00	0.00	0.00
1,800.0	12.00	110.98	1,782.5	3,169.99	-67.1	175.0	-170.3	0.00	0.00	0.00
1,900.0	12.00	110.98	1,880.3	3,072.18	-74.5	194.4	-189.2	0.00	0.00	0.00
2,000.0	12.00	110.98	1,978.1	2,974.37	-82.0	213.8	-208.1	0.00	0.00	0.00
2,100.0	12.00	110.98	2,075.9	2,876.55	-89.4	233.2	-227.0	0.00	0.00	0.00
2,200.0	12.00	110.98	2,173.8	2,778.74	-96.9	252.6	-245.9	0.00	0.00	0.00
2,300.0	12.00	110.98	2,271.6	2,680.93	-104.3	272.0	-264.8	0.00	0.00	0.00
2,400.0	12.00	110.98	2,369.4	2,583.11	-111.8	291.5	-283.7	0.00	0.00	0.00
2,500.0	12.00	110.98	2,467.2	2,485.30	-119.2	310.9	-302.6	0.00	0.00	0.00
2,600.0	12.00	110.98	2,565.0	2,387.48	-126.7	330.3	-321.5	0.00	0.00	0.00
2,700.0	12.00	110.98	2,662.8	2,289.67	-134.1	349.7	-340.5	0.00	0.00	0.00
2,800.0	12.00	110.98	2,760.6	2,191.86	-141.6	369.1	-359.4	0.00	0.00	0.00
2,900.0	12.00	110.98	2,858.5	2,094.04	-149.0	388.5	-378.3	0.00	0.00	0.00
3,000.0	12.00	110.98	2,956.3	1,996.23	-156.5	408.0	-397.2	0.00	0.00	0.00
3,100.0	12.00	110.98	3,054.1	1,898.42	-163.9	427.4	-416.1	0.00	0.00	0.00
3,200.0	12.00	110.98	3,151.9	1,800.60	-171.4	446.8	-435.0	0.00	0.00	0.00
3,300.0	12.00	110.98	3,249.7	1,702.79	-178.8	466.2	-453.9	0.00	0.00	0.00
3,400.0	12.00	110.98	3,347.5	1,604.97	-186.2	485.6	-472.8	0.00	0.00	0.00
3,500.0	12.00	110.98	3,445.3	1,507.16	-193.7	505.0	-491.7	0.00	0.00	0.00
3,600.0	12.00	110.98	3,543.2	1,409.35	-201.1	524.5	-510.6	0.00	0.00	0.00
PARKMAN SANDSTONE										
3,693.9	12.00	110.98	3,635.0	1,317.50	-208.1	542.7	-528.3	0.00	0.00	0.00
3,700.0	12.00	110.98	3,641.0	1,311.53	-208.6	543.9	-529.5	0.00	0.00	0.00
3,800.0	12.00	110.98	3,738.8	1,213.72	-216.0	563.3	-548.4	0.00	0.00	0.00
3,900.0	12.00	110.98	3,836.6	1,115.91	-223.5	582.7	-567.3	0.00	0.00	0.00
4,000.0	12.00	110.98	3,934.4	1,018.09	-230.9	602.1	-586.2	0.00	0.00	0.00
4,100.0	12.00	110.98	4,032.2	920.28	-238.4	621.5	-605.1	0.00	0.00	0.00
END OF TANGENT										
4,159.1	12.00	110.98	4,090.0	862.46	-242.8	633.0	-616.3	0.00	0.00	0.00
4,200.0	11.19	110.98	4,130.1	822.41	-245.7	640.7	-623.7	2.00	-2.00	0.00
SUSSEX SANDSTONE										
4,271.1	9.76	110.98	4,200.0	752.50	-250.3	652.8	-635.5	2.00	-2.00	0.00

Planning Report



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Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4952.5usft (Original Well Elev)
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Well:	WALTERS 21P-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)
4,300.0	9.19	110.98	4,228.5	723.99	-252.0	657.2	-639.8	2.00	-2.00	0.00
4,400.0	7.19	110.98	4,327.5	625.01	-257.1	670.5	-652.8	2.00	-2.00	0.00
4,500.0	5.19	110.98	4,426.9	525.60	-261.0	680.6	-662.5	2.00	-2.00	0.00
4,600.0	3.19	110.98	4,526.6	425.87	-263.6	687.4	-669.2	2.00	-2.00	0.00
4,700.0	1.19	110.98	4,626.6	325.95	-265.0	690.9	-672.6	2.00	-2.00	0.00
SHANNON										
4,753.5	0.12	110.98	4,680.0	272.50	-265.2	691.5	-673.2	2.00	-2.00	0.00
EOD TO VERTICAL										
4,759.3	0.00	0.00	4,685.8	266.70	-265.2	691.5	-673.2	2.00	-2.00	0.00
4,800.0	0.00	0.00	4,726.5	225.95	-265.2	691.5	-673.2	0.00	0.00	0.00
4,900.0	0.00	0.00	4,826.5	125.95	-265.2	691.5	-673.2	0.00	0.00	0.00
5,000.0	0.00	0.00	4,926.5	25.95	-265.2	691.5	-673.2	0.00	0.00	0.00
5,100.0	0.00	0.00	5,026.5	-74.05	-265.2	691.5	-673.2	0.00	0.00	0.00
5,200.0	0.00	0.00	5,126.5	-174.05	-265.2	691.5	-673.2	0.00	0.00	0.00
5,300.0	0.00	0.00	5,226.5	-274.05	-265.2	691.5	-673.2	0.00	0.00	0.00
5,400.0	0.00	0.00	5,326.5	-374.05	-265.2	691.5	-673.2	0.00	0.00	0.00
5,500.0	0.00	0.00	5,426.5	-474.05	-265.2	691.5	-673.2	0.00	0.00	0.00
5,600.0	0.00	0.00	5,526.5	-574.05	-265.2	691.5	-673.2	0.00	0.00	0.00
5,700.0	0.00	0.00	5,626.5	-674.05	-265.2	691.5	-673.2	0.00	0.00	0.00
5,800.0	0.00	0.00	5,726.5	-774.05	-265.2	691.5	-673.2	0.00	0.00	0.00
5,900.0	0.00	0.00	5,826.5	-874.05	-265.2	691.5	-673.2	0.00	0.00	0.00
6,000.0	0.00	0.00	5,926.5	-974.05	-265.2	691.5	-673.2	0.00	0.00	0.00
6,100.0	0.00	0.00	6,026.5	-1,074.05	-265.2	691.5	-673.2	0.00	0.00	0.00
6,200.0	0.00	0.00	6,126.5	-1,174.05	-265.2	691.5	-673.2	0.00	0.00	0.00
6,300.0	0.00	0.00	6,226.5	-1,274.05	-265.2	691.5	-673.2	0.00	0.00	0.00
6,400.0	0.00	0.00	6,326.5	-1,374.05	-265.2	691.5	-673.2	0.00	0.00	0.00
KOP (8°/100ft BUR)										
6,433.3	0.00	0.00	6,359.8	-1,407.30	-265.2	691.5	-673.2	0.00	0.00	0.00
6,500.0	5.34	270.00	6,426.5	-1,473.95	-265.2	688.4	-670.1	8.00	8.00	0.00
6,600.0	13.34	270.00	6,525.0	-1,572.55	-265.2	672.2	-653.9	8.00	8.00	0.00
6,700.0	21.34	270.00	6,620.4	-1,667.92	-265.2	642.4	-624.2	8.00	8.00	0.00
6,800.0	29.34	270.00	6,710.7	-1,758.23	-265.2	599.6	-581.5	8.00	8.00	0.00
6,900.0	37.34	270.00	6,794.2	-1,841.71	-265.2	544.7	-526.7	8.00	8.00	0.00
SHARON SPRINGS										
6,969.0	42.86	270.00	6,847.0	-1,894.50	-265.2	500.3	-482.3	8.00	8.00	0.00
7,000.0	45.34	270.00	6,869.2	-1,916.73	-265.2	478.7	-460.9	8.00	8.00	0.00
7,100.0	53.34	270.00	6,934.3	-1,981.83	-265.2	402.9	-385.2	8.00	8.00	0.00
NIORARA A										
7,181.2	59.83	270.00	6,979.0	-2,026.50	-265.2	335.2	-317.6	8.00	8.00	0.00
7,200.0	61.34	270.00	6,988.3	-2,035.75	-265.2	318.8	-301.3	8.00	8.00	0.00
7,300.0	69.34	270.00	7,029.9	-2,077.44	-265.2	228.0	-210.6	8.00	8.00	0.00
7,400.0	77.34	270.00	7,058.6	-2,106.09	-265.2	132.3	-115.1	8.00	8.00	0.00
NIORARA B										
7,421.6	79.06	270.00	7,063.0	-2,110.50	-265.2	111.2	-94.1	8.00	8.00	0.00
7,500.0	85.34	270.00	7,073.6	-2,121.14	-265.2	33.5	-16.5	8.00	8.00	0.00
HZ LP *NEW*: 780ft FSL & 2168ft FWL of Sec 21										
7,561.7	90.28	270.00	7,076.0	-2,123.50	-265.2	-28.2	45.0	8.00	8.00	0.00
7,600.0	90.28	270.00	7,075.8	-2,123.31	-265.2	-66.4	83.2	0.00	0.00	0.00
7,700.0	90.28	270.00	7,075.3	-2,122.83	-265.2	-166.4	183.0	0.00	0.00	0.00
7,800.0	90.28	270.00	7,074.8	-2,122.35	-265.2	-266.4	282.8	0.00	0.00	0.00
7,900.0	90.28	270.00	7,074.4	-2,121.86	-265.2	-366.4	382.6	0.00	0.00	0.00
8,000.0	90.28	270.00	7,073.9	-2,121.38	-265.2	-466.4	482.4	0.00	0.00	0.00
8,100.0	90.28	270.00	7,073.4	-2,120.89	-265.2	-566.4	582.2	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well WALTERS 21P-234
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4952.5usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4952.5usft (Original Well Elev)
Site:	SE SW SEC. 21 T4N R67W 6th P.M.	North Reference:	True
Well:	WALTERS 21P-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)
8,200.0	90.28	270.00	7,072.9	-2,120.41	-265.2	-666.4	682.0	0.00	0.00	0.00
8,300.0	90.28	270.00	7,072.4	-2,119.93	-265.2	-766.4	781.8	0.00	0.00	0.00
8,400.0	90.28	270.00	7,071.9	-2,119.44	-265.2	-866.4	881.6	0.00	0.00	0.00
8,500.0	90.28	270.00	7,071.5	-2,118.96	-265.2	-966.4	981.4	0.00	0.00	0.00
8,600.0	90.28	270.00	7,071.0	-2,118.47	-265.2	-1,066.4	1,081.2	0.00	0.00	0.00
8,700.0	90.28	270.00	7,070.5	-2,117.99	-265.2	-1,166.4	1,181.0	0.00	0.00	0.00
8,800.0	90.28	270.00	7,070.0	-2,117.51	-265.2	-1,266.4	1,280.7	0.00	0.00	0.00
8,900.0	90.28	270.00	7,069.5	-2,117.02	-265.2	-1,366.4	1,380.5	0.00	0.00	0.00
9,000.0	90.28	270.00	7,069.0	-2,116.54	-265.2	-1,466.4	1,480.3	0.00	0.00	0.00
9,100.0	90.28	270.00	7,068.6	-2,116.05	-265.2	-1,566.4	1,580.1	0.00	0.00	0.00
9,200.0	90.28	270.00	7,068.1	-2,115.57	-265.2	-1,666.4	1,679.9	0.00	0.00	0.00
9,300.0	90.28	270.00	7,067.6	-2,115.09	-265.2	-1,766.4	1,779.7	0.00	0.00	0.00
9,400.0	90.28	270.00	7,067.1	-2,114.60	-265.2	-1,866.4	1,879.5	0.00	0.00	0.00
9,500.0	90.28	270.00	7,066.6	-2,114.12	-265.2	-1,966.4	1,979.3	0.00	0.00	0.00
9,600.0	90.28	270.00	7,066.1	-2,113.63	-265.2	-2,066.4	2,079.1	0.00	0.00	0.00
9,700.0	90.28	270.00	7,065.6	-2,113.15	-265.2	-2,166.4	2,178.9	0.00	0.00	0.00
9,800.0	90.28	270.00	7,065.2	-2,112.67	-265.2	-2,266.4	2,278.7	0.00	0.00	0.00
9,900.0	90.28	270.00	7,064.7	-2,112.18	-265.2	-2,366.4	2,378.5	0.00	0.00	0.00
10,000.0	90.28	270.00	7,064.2	-2,111.70	-265.2	-2,466.4	2,478.3	0.00	0.00	0.00
10,100.0	90.28	270.00	7,063.7	-2,111.21	-265.2	-2,566.4	2,578.1	0.00	0.00	0.00
10,200.0	90.28	270.00	7,063.2	-2,110.73	-265.2	-2,666.4	2,677.9	0.00	0.00	0.00
10,300.0	90.28	270.00	7,062.7	-2,110.25	-265.2	-2,766.4	2,777.7	0.00	0.00	0.00
10,400.0	90.28	270.00	7,062.3	-2,109.76	-265.2	-2,866.4	2,877.5	0.00	0.00	0.00
10,500.0	90.28	270.00	7,061.8	-2,109.28	-265.2	-2,966.4	2,977.3	0.00	0.00	0.00
10,600.0	90.28	270.00	7,061.3	-2,108.79	-265.2	-3,066.4	3,077.1	0.00	0.00	0.00
10,700.0	90.28	270.00	7,060.8	-2,108.31	-265.2	-3,166.4	3,176.9	0.00	0.00	0.00
10,800.0	90.28	270.00	7,060.3	-2,107.83	-265.2	-3,266.4	3,276.7	0.00	0.00	0.00
10,900.0	90.28	270.00	7,059.8	-2,107.34	-265.2	-3,366.4	3,376.5	0.00	0.00	0.00
11,000.0	90.28	270.00	7,059.4	-2,106.86	-265.2	-3,466.4	3,476.3	0.00	0.00	0.00
11,100.0	90.28	270.00	7,058.9	-2,106.37	-265.2	-3,566.4	3,576.0	0.00	0.00	0.00
11,200.0	90.28	270.00	7,058.4	-2,105.89	-265.2	-3,666.4	3,675.8	0.00	0.00	0.00
11,300.0	90.28	270.00	7,057.9	-2,105.41	-265.2	-3,766.4	3,775.6	0.00	0.00	0.00
11,400.0	90.28	270.00	7,057.4	-2,104.92	-265.2	-3,866.4	3,875.4	0.00	0.00	0.00
11,500.0	90.28	270.00	7,056.9	-2,104.44	-265.2	-3,966.4	3,975.2	0.00	0.00	0.00
11,600.0	90.28	270.00	7,056.5	-2,103.95	-265.2	-4,066.4	4,075.0	0.00	0.00	0.00
BHL: 710ft FSL & 1956ft FEL of Sec 20										
11,688.2	90.28	270.00	7,056.0	-2,103.50	-265.2	-4,154.6	4,163.0	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,693.9	3,635.0	PARKMAN SANDSTONE			
4,271.1	4,200.0	SUSSEX SANDSTONE			
4,753.5	4,680.0	SHANNON			
6,969.0	6,847.0	SHARON SPRINGS			
7,181.2	6,979.0	NIOBRARA A			
7,421.6	7,063.0	NIOBRARA B			

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well WALTERS 21P-234
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4952.5usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4952.5usft (Original Well Elev)
Site:	SE SW SEC. 21 T4N R67W 6th P.M.	North Reference:	True
Well:	WALTERS 21P-234	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 1046ft FSL & 2201ft FWL of Sec 21
600.0	600.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,200.1	1,195.8	-22.4	58.5	EOB TO 12° INC
4,159.1	4,090.0	-242.8	633.0	END OF TANGENT
4,759.3	4,685.8	-265.2	691.5	EOD TO VERTICAL
6,433.3	6,359.8	-265.2	691.5	KOP (8°/100ft BUR)
7,561.7	7,076.0	-265.2	-28.2	HZ LP *NEW*: 780ft FSL & 2168ft FWL of Sec 21
11,688.2	7,056.0	-265.2	-4,154.6	BHL: 710ft FSL & 1956ft FEL of Sec 20