

# **PDC ENERGY**

**WELD COUNTY, COLORADO  
SW NW SEC. 10 T5N R64W 6th P.M.  
WACKER 10G-312**

## **ORIGINAL WELLBORE**

**04 February, 2016**

**Plan: PROPOSAL #1**





Project: WELD COUNTY, COLORADO  
Site: SW NW SEC. 10 T5N R64W 6th P.M.  
Well: WACKER 10G-312  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #1

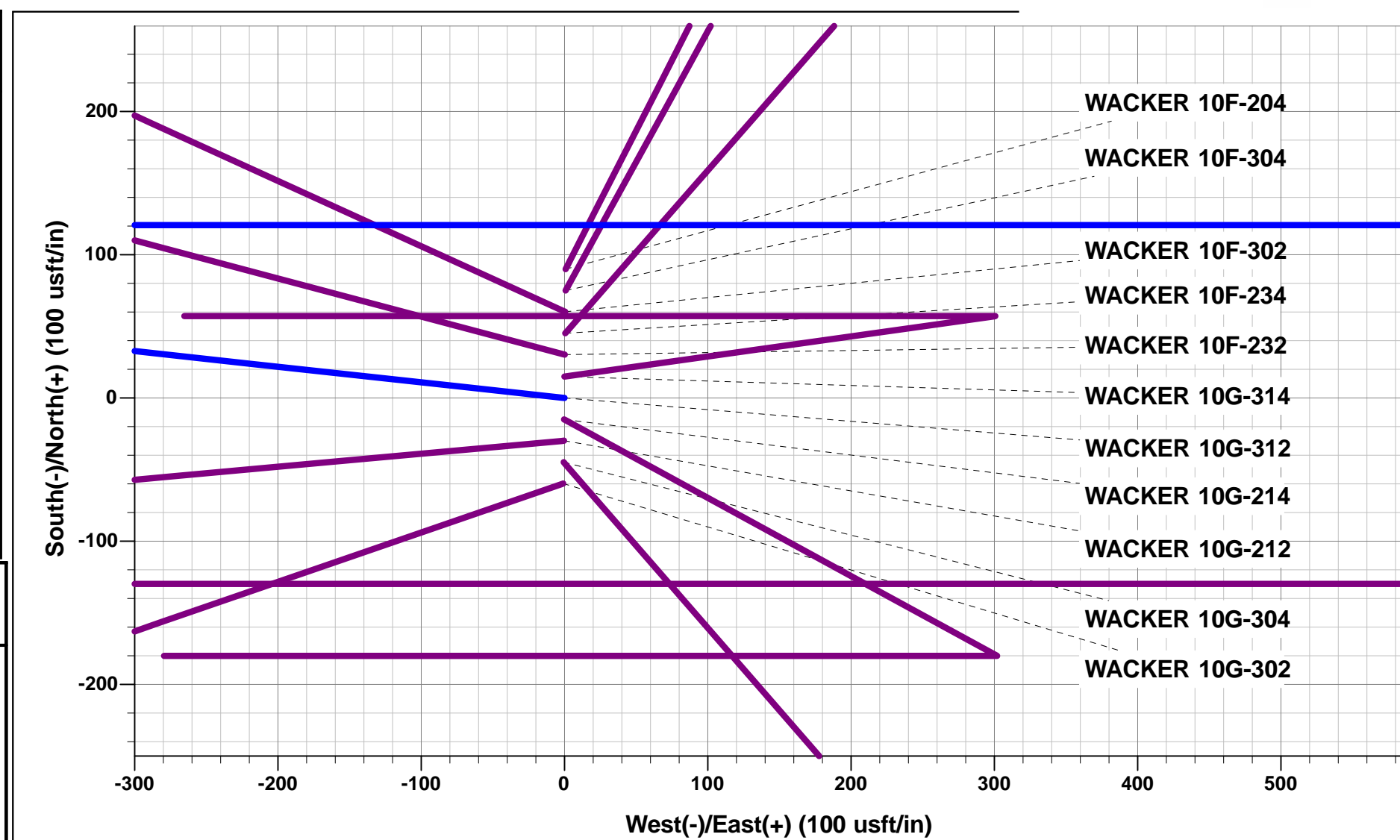


#### ANNOTATIONS

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: 2107ft FNL & 396ft FWL of Sec 10
1600.0	1600.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2"/100ft BUR)
2470.0	2484.0	17.68	276.23	14.7	-134.5	-134.0	135.3	EOB TO 17.68° INC
5108.9	5253.6	17.68	276.23	105.9	-970.7	-967.3	976.5	END OF TANGENT
5978.9	6137.6	0.00	0.00	120.6	-1105.2	-1101.4	1111.8	EOD TO VERTICAL
6008.9	6167.6	0.00	0.00	120.6	-1105.2	-1101.4	1111.8	KOP (8"/100ft BUR)
6725.0	7304.8	90.98	90.00	120.6	-376.8	-373.3	1840.2	LANDING PNT *NEW*: 1984.9ft FNL & 20ft FWL of Sec 10
6645.0	11969.5	90.99	90.00	120.6	4287.1	4288.8	6504.1	BHL: 2010ft FNL & 500ft FEL of Sec 10

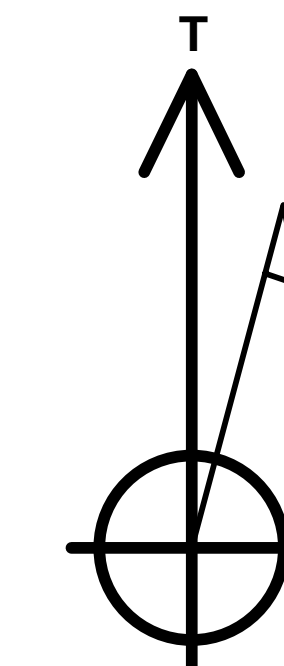
#### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - WACKER 10G-312	6008.9	120.6	-1105.2	40.415551	-104.548210
LANDING PNT *NEW* - WACKER 10G-312	6725.0	120.6	-376.8	40.415551	-104.545594
BHL - WACKER 10G-312	6645.0	120.6	4287.1	40.415550	-104.528845



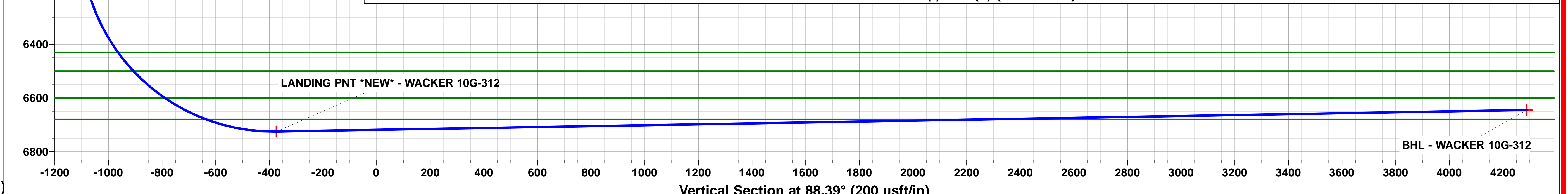
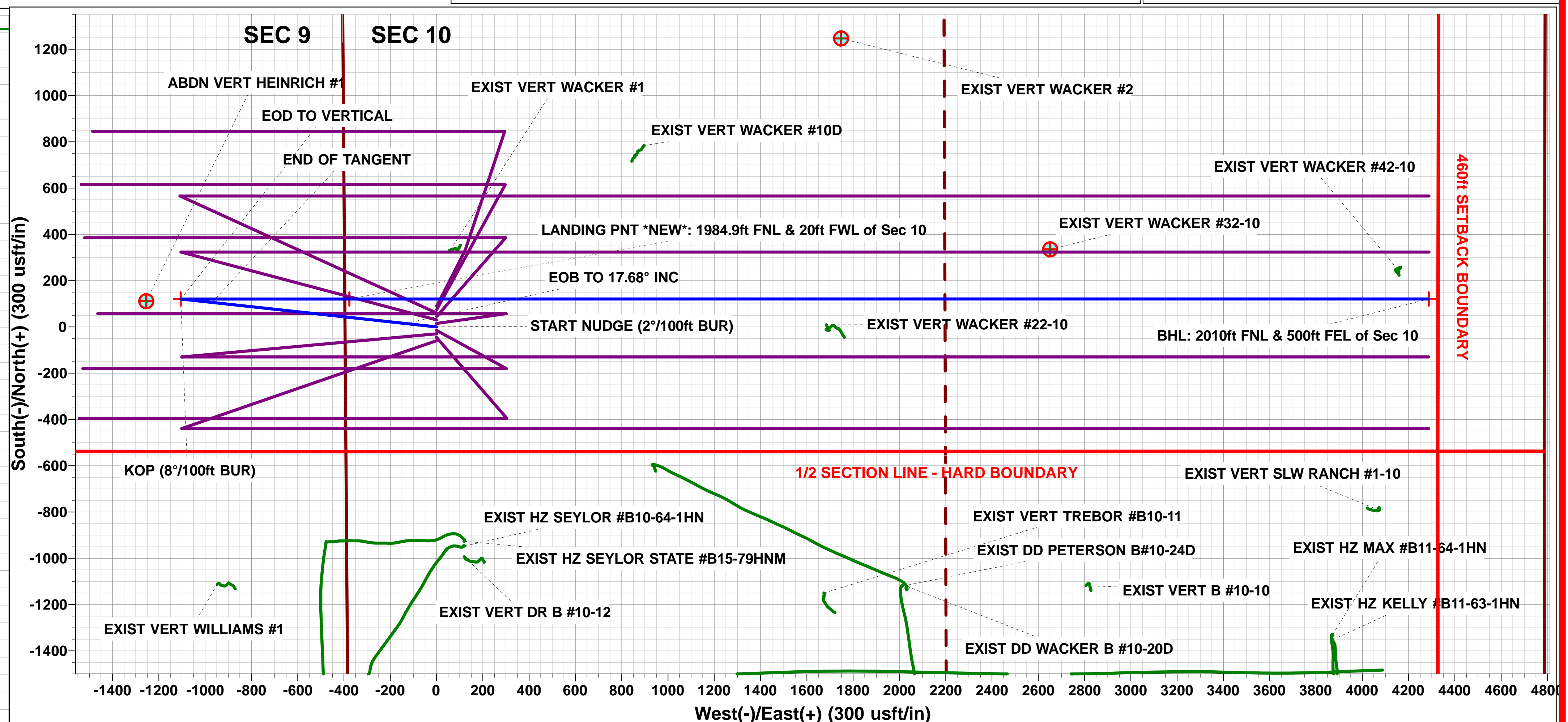
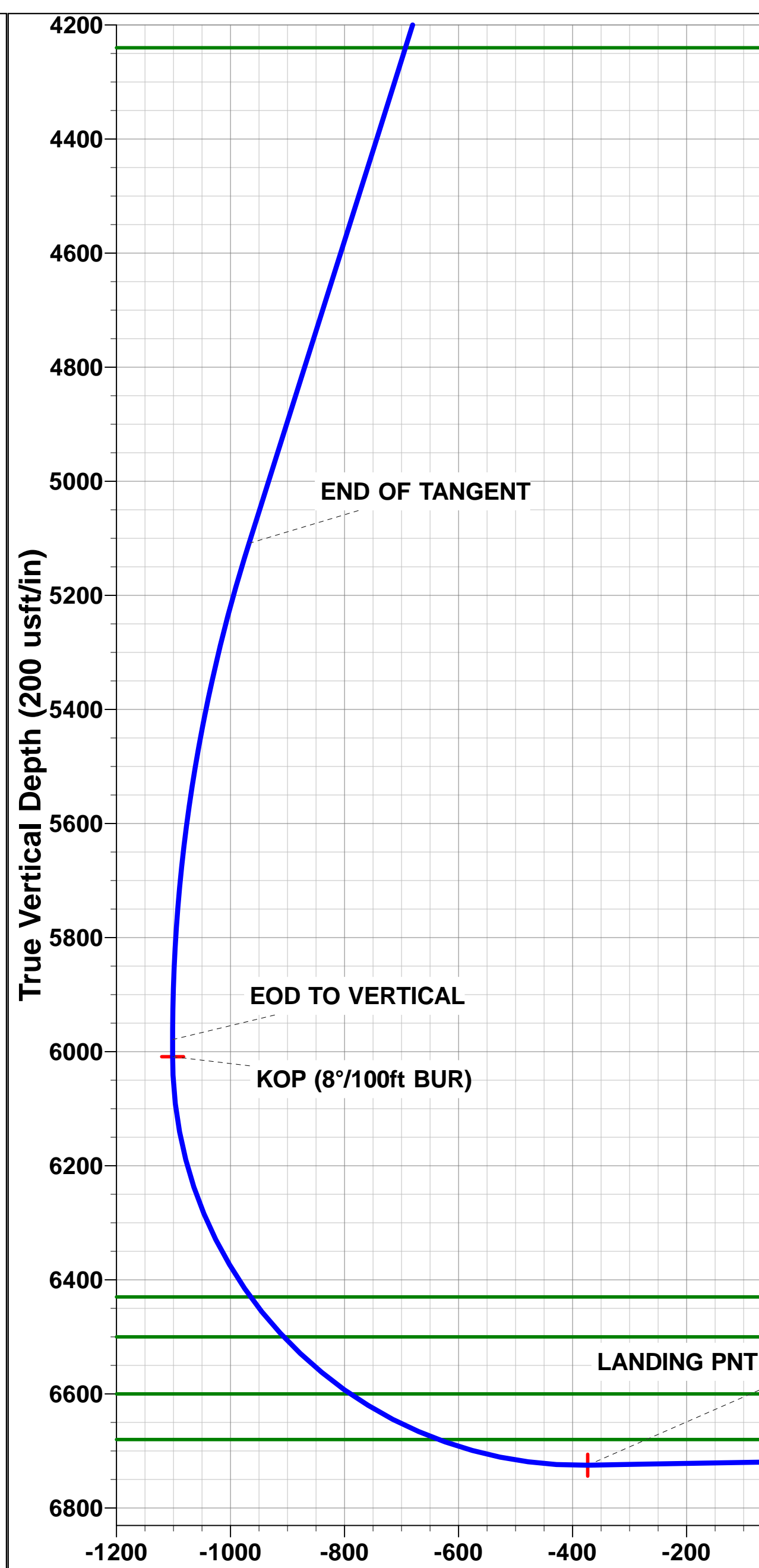
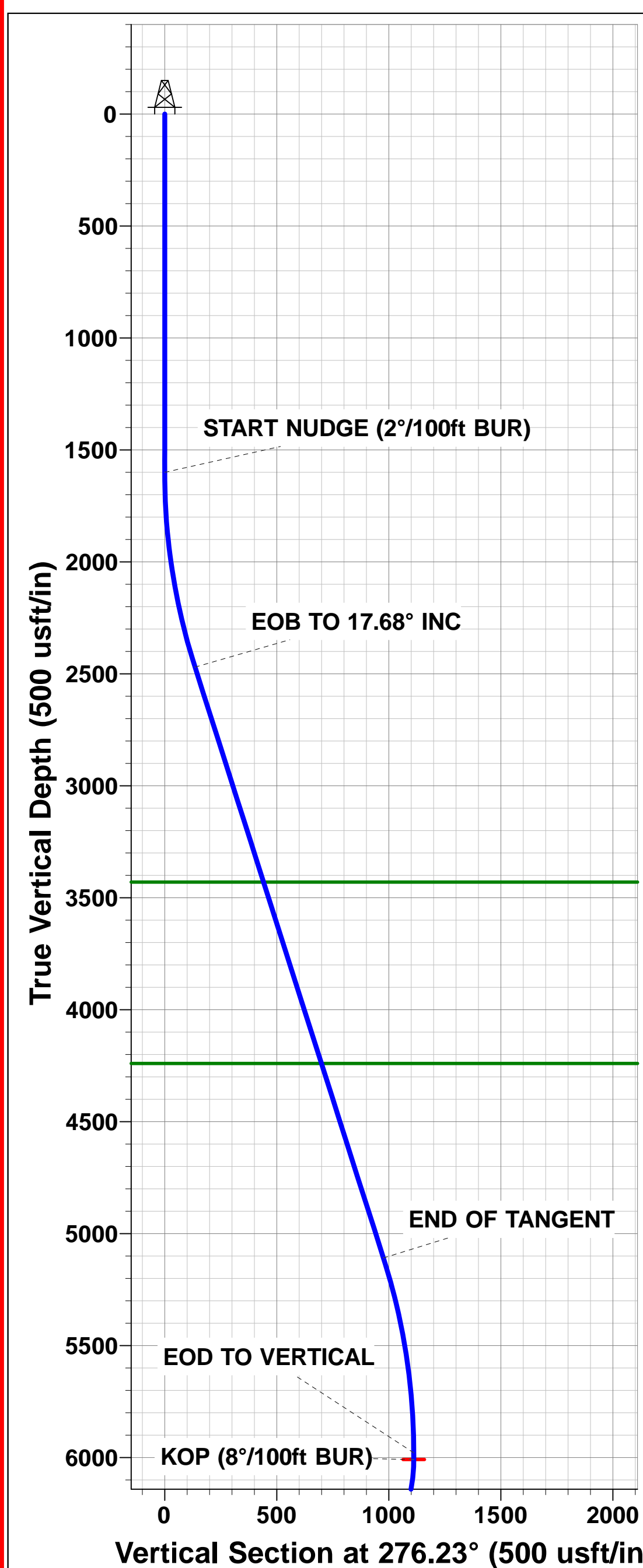
#### PROPOSED LOCAL COORDINATES:

SHL: 2107ft FNL & 396ft FWL of Sec 10  
HZ LP \*NEW\*: 1984.9ft FNL & 20ft FWL of Sec 10  
BHL: 2010ft FNL & 500ft FEL of Sec 10



Azimuths to True North  
Magnetic North: 8.24°

Magnetic Field  
Strength: 52580.9snT  
Dip Angle: 66.94°  
Date: 04/02/2016  
Model: IGRF2015



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WACKER 10G-312
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 10 T5N R64W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	WACKER 10G-312	<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>	SW NW SEC. 10 T5N R64W 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	1,395,629.17 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,266,123.73 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	1.10000ft
		<b>Latitude:</b>	40.415467
		<b>Longitude:</b>	-104.544238
		<b>Grid Convergence:</b>	0.62 °

<b>Well</b>	WACKER 10G-312		
<b>Well Position</b>	<b>+N/-S</b>	-90.0 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	04/02/2016	8.24	66.94	52,581

<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>
	6,645.0	0.0	0.0	88.39

<b>Plan Sections</b>											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	-4,624.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	-3,024.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,484.0	17.68	276.23	2,470.0	-2,154.0	14.7	-134.5	2.00	2.00	0.00	276.23	
5,253.6	17.68	276.23	5,108.9	484.9	105.9	-970.7	0.00	0.00	0.00	0.00	
6,137.6	0.00	0.00	5,978.9	1,354.9	120.6	-1,105.2	2.00	-2.00	0.00	180.00	
6,167.6	0.00	0.00	6,008.9	1,384.9	120.6	-1,105.2	0.00	0.00	0.00	0.00	KOP - WACKER 1C
7,304.8	90.98	90.00	6,725.0	2,101.0	120.6	-376.8	8.00	8.00	7.91	90.00	LANDING PNT *NE
11,969.5	90.99	90.00	6,645.0	2,021.0	120.6	4,287.1	0.00	0.00	0.00	-0.34	BHL - WACKER 10

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WACKER 10G-312
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 10 T5N R64W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	WACKER 10G-312	<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: 2107ft FNL &amp; 396ft FWL of Sec 10</b>										
0.0	0.00	0.00	0.0	4,624.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,524.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,424.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,324.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,224.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,124.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,024.00	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	3,924.00	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	3,824.00	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	3,724.00	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	3,624.00	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	3,524.00	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	3,424.00	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	3,324.00	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	3,224.00	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	3,124.00	0.0	0.0	0.0	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
1,600.0	0.00	0.00	1,600.0	3,024.00	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	2.00	276.23	1,700.0	2,924.02	0.2	-1.7	-1.7	2.00	2.00	0.00
1,800.0	4.00	276.23	1,799.8	2,824.16	0.8	-6.9	-6.9	2.00	2.00	0.00
1,900.0	6.00	276.23	1,899.5	2,724.55	1.7	-15.6	-15.5	2.00	2.00	0.00
2,000.0	8.00	276.23	1,998.7	2,625.30	3.0	-27.7	-27.6	2.00	2.00	0.00
2,100.0	10.00	276.23	2,097.5	2,526.53	4.7	-43.3	-43.1	2.00	2.00	0.00
2,200.0	12.00	276.23	2,195.6	2,428.38	6.8	-62.2	-62.0	2.00	2.00	0.00
2,300.0	14.00	276.23	2,293.1	2,330.94	9.2	-84.6	-84.3	2.00	2.00	0.00
2,400.0	16.00	276.23	2,389.6	2,234.36	12.0	-110.3	-109.9	2.00	2.00	0.00
<b>EOB TO 17.68° INC</b>										
2,484.0	17.68	276.23	2,470.0	2,153.96	14.7	-134.5	-134.0	2.00	2.00	0.00
2,500.0	17.68	276.23	2,485.3	2,138.72	15.2	-139.3	-138.9	0.00	0.00	0.00
2,600.0	17.68	276.23	2,580.6	2,043.44	18.5	-169.5	-168.9	0.00	0.00	0.00
2,700.0	17.68	276.23	2,675.8	1,948.16	21.8	-199.7	-199.0	0.00	0.00	0.00
2,800.0	17.68	276.23	2,771.1	1,852.89	25.1	-229.9	-229.1	0.00	0.00	0.00
2,900.0	17.68	276.23	2,866.4	1,757.61	28.4	-260.1	-259.2	0.00	0.00	0.00
3,000.0	17.68	276.23	2,961.7	1,662.33	31.7	-290.3	-289.3	0.00	0.00	0.00
3,100.0	17.68	276.23	3,056.9	1,567.06	35.0	-320.5	-319.4	0.00	0.00	0.00
3,200.0	17.68	276.23	3,152.2	1,471.78	38.3	-350.7	-349.5	0.00	0.00	0.00
3,300.0	17.68	276.23	3,247.5	1,376.50	41.6	-380.9	-379.5	0.00	0.00	0.00
3,400.0	17.68	276.23	3,342.8	1,281.23	44.9	-411.1	-409.6	0.00	0.00	0.00
<b>PARKMAN SANDSTONE</b>										
3,491.6	17.68	276.23	3,430.0	1,194.00	47.9	-438.7	-437.2	0.00	0.00	0.00
3,500.0	17.68	276.23	3,438.0	1,185.95	48.1	-441.3	-439.7	0.00	0.00	0.00
3,600.0	17.68	276.23	3,533.3	1,090.67	51.4	-471.4	-469.8	0.00	0.00	0.00
3,700.0	17.68	276.23	3,628.6	995.40	54.7	-501.6	-499.9	0.00	0.00	0.00
3,800.0	17.68	276.23	3,723.9	900.12	58.0	-531.8	-530.0	0.00	0.00	0.00
3,900.0	17.68	276.23	3,819.2	804.84	61.3	-562.0	-560.1	0.00	0.00	0.00
4,000.0	17.68	276.23	3,914.4	709.57	64.6	-592.2	-590.2	0.00	0.00	0.00
4,100.0	17.68	276.23	4,009.7	614.29	67.9	-622.4	-620.2	0.00	0.00	0.00
4,200.0	17.68	276.23	4,105.0	519.01	71.2	-652.6	-650.3	0.00	0.00	0.00
4,300.0	17.68	276.23	4,200.3	423.74	74.5	-682.8	-680.4	0.00	0.00	0.00
<b>SUSSEX SANDSTONE</b>										
4,341.7	17.68	276.23	4,240.0	384.00	75.9	-695.4	-693.0	0.00	0.00	0.00
4,400.0	17.68	276.23	4,295.5	328.46	77.8	-713.0	-710.5	0.00	0.00	0.00
4,500.0	17.68	276.23	4,390.8	233.18	81.1	-743.2	-740.6	0.00	0.00	0.00

# Planning Report



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<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 10 T5N R64W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	WACKER 10G-312	<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	17.68	276.23	4,486.1	137.91	84.4	-773.3	-770.7	0.00	0.00	0.00
4,700.0	17.68	276.23	4,581.4	42.63	87.7	-803.5	-800.8	0.00	0.00	0.00
4,800.0	17.68	276.23	4,676.6	-52.65	91.0	-833.7	-830.8	0.00	0.00	0.00
4,900.0	17.68	276.23	4,771.9	-147.92	94.3	-863.9	-860.9	0.00	0.00	0.00
5,000.0	17.68	276.23	4,867.2	-243.20	97.6	-894.1	-891.0	0.00	0.00	0.00
5,100.0	17.68	276.23	4,962.5	-338.48	100.9	-924.3	-921.1	0.00	0.00	0.00
5,200.0	17.68	276.23	5,057.8	-433.76	104.2	-954.5	-951.2	0.00	0.00	0.00
<b>END OF TANGENT</b>										
<b>5,253.6</b>	<b>17.68</b>	<b>276.23</b>	<b>5,108.9</b>	<b>-484.86</b>	<b>105.9</b>	<b>-970.7</b>	<b>-967.3</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,300.0	16.75	276.23	5,153.1	-529.14	107.4	-984.3	-980.9	2.00	-2.00	0.00
5,400.0	14.75	276.23	5,249.4	-625.38	110.4	-1,011.3	-1,007.8	2.00	-2.00	0.00
5,500.0	12.75	276.23	5,346.5	-722.51	112.9	-1,034.9	-1,031.4	2.00	-2.00	0.00
5,600.0	10.75	276.23	5,444.4	-820.41	115.1	-1,055.2	-1,051.5	2.00	-2.00	0.00
5,700.0	8.75	276.23	5,543.0	-918.96	117.0	-1,072.0	-1,068.3	2.00	-2.00	0.00
5,800.0	6.75	276.23	5,642.0	-1,018.04	118.4	-1,085.4	-1,081.7	2.00	-2.00	0.00
5,900.0	4.75	276.23	5,741.5	-1,117.53	119.5	-1,095.4	-1,091.6	2.00	-2.00	0.00
6,000.0	2.75	276.23	5,841.3	-1,217.31	120.2	-1,101.9	-1,098.1	2.00	-2.00	0.00
6,100.0	0.75	276.23	5,941.3	-1,317.26	120.6	-1,105.0	-1,101.1	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
<b>6,137.6</b>	<b>0.00</b>	<b>0.00</b>	<b>5,978.9</b>	<b>-1,354.90</b>	<b>120.6</b>	<b>-1,105.2</b>	<b>-1,101.4</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
<b>KOP (8°/100ft BUR)</b>										
<b>6,167.6</b>	<b>0.00</b>	<b>0.00</b>	<b>6,008.9</b>	<b>-1,384.90</b>	<b>120.6</b>	<b>-1,105.2</b>	<b>-1,101.4</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
6,200.0	2.59	90.00	6,041.2	-1,417.25	120.6	-1,104.5	-1,100.6	8.00	8.00	0.00
6,300.0	10.59	90.00	6,140.5	-1,516.51	120.6	-1,093.0	-1,089.2	8.00	8.00	0.00
6,400.0	18.59	90.00	6,237.2	-1,613.20	120.6	-1,067.8	-1,064.0	8.00	8.00	0.00
6,500.0	26.59	90.00	6,329.5	-1,705.46	120.6	-1,029.5	-1,025.7	8.00	8.00	0.00
6,600.0	34.59	90.00	6,415.5	-1,791.47	120.6	-978.6	-974.8	8.00	8.00	0.00
<b>SHARON SPRINGS</b>										
<b>6,617.8</b>	<b>36.01</b>	<b>90.00</b>	<b>6,430.0</b>	<b>-1,806.00</b>	<b>120.6</b>	<b>-968.3</b>	<b>-964.6</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
6,700.0	42.59	90.00	6,493.6	-1,869.57	120.6	-916.3	-912.5	8.00	8.00	0.00
<b>NIOBRARA A</b>										
<b>6,708.8</b>	<b>43.29</b>	<b>90.00</b>	<b>6,500.0</b>	<b>-1,876.00</b>	<b>120.6</b>	<b>-910.3</b>	<b>-906.6</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
6,800.0	50.59	90.00	6,562.2	-1,938.24	120.6	-843.7	-840.0	8.00	8.00	0.00
<b>NIOBRARA B</b>										
<b>6,862.9</b>	<b>55.62</b>	<b>90.00</b>	<b>6,600.0</b>	<b>-1,976.00</b>	<b>120.6</b>	<b>-793.4</b>	<b>-789.7</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
6,900.0	58.59	90.00	6,620.1	-1,996.14	120.6	-762.3	-758.6	8.00	8.00	0.00
7,000.0	66.59	90.00	6,666.1	-2,042.14	120.6	-673.6	-669.9	8.00	8.00	0.00
<b>NIOBRARA C</b>										
<b>7,037.1</b>	<b>69.56</b>	<b>90.00</b>	<b>6,680.0</b>	<b>-2,056.00</b>	<b>120.6</b>	<b>-639.1</b>	<b>-635.5</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
7,100.0	74.59	90.00	6,699.3	-2,075.35	120.6	-579.3	-575.7	8.00	8.00	0.00
7,200.0	82.59	90.00	6,719.1	-2,095.12	120.6	-481.4	-477.8	8.00	8.00	0.00
7,300.0	90.59	90.00	6,725.1	-2,101.07	120.6	-381.6	-378.1	8.00	8.00	0.00
<b>LANDING PNT *NEW*: 1984.9ft FNL &amp; 20ft FWL of Sec 10</b>										
<b>7,304.8</b>	<b>90.98</b>	<b>90.00</b>	<b>6,725.0</b>	<b>-2,101.00</b>	<b>120.6</b>	<b>-376.8</b>	<b>-373.3</b>	<b>8.00</b>	<b>8.00</b>	<b>0.00</b>
7,400.0	90.98	90.00	6,723.4	-2,099.38	120.6	-281.7	-278.2	0.00	0.00	0.00
7,500.0	90.98	90.00	6,721.7	-2,097.68	120.6	-181.7	-178.2	0.00	0.00	0.00
7,600.0	90.98	90.00	6,720.0	-2,095.97	120.6	-81.7	-78.3	0.00	0.00	0.00
7,700.0	90.98	90.00	6,718.3	-2,094.27	120.6	18.3	21.7	0.00	0.00	0.00
7,800.0	90.98	90.00	6,716.6	-2,092.56	120.6	118.3	121.6	0.00	0.00	0.00
7,900.0	90.98	90.00	6,714.9	-2,090.86	120.6	218.3	221.6	0.00	0.00	0.00
8,000.0	90.98	90.00	6,713.1	-2,089.15	120.6	318.3	321.5	0.00	0.00	0.00
8,100.0	90.98	90.00	6,711.4	-2,087.44	120.6	418.2	421.5	0.00	0.00	0.00
8,200.0	90.98	90.00	6,709.7	-2,085.74	120.6	518.2	521.4	0.00	0.00	0.00



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WACKER 10G-312
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 10 T5N R64W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	WACKER 10G-312	<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)
8,300.0	90.98	90.00	6,708.0	-2,084.03	120.6	618.2	621.4	0.00	0.00	0.00
8,400.0	90.98	90.00	6,706.3	-2,082.32	120.6	718.2	721.3	0.00	0.00	0.00
8,500.0	90.98	90.00	6,704.6	-2,080.61	120.6	818.2	821.2	0.00	0.00	0.00
8,600.0	90.98	90.00	6,702.9	-2,078.90	120.6	918.2	921.2	0.00	0.00	0.00
8,700.0	90.98	90.00	6,701.2	-2,077.19	120.6	1,018.1	1,021.1	0.00	0.00	0.00
8,800.0	90.98	90.00	6,699.5	-2,075.48	120.6	1,118.1	1,121.1	0.00	0.00	0.00
8,900.0	90.98	90.00	6,697.8	-2,073.77	120.6	1,218.1	1,221.0	0.00	0.00	0.00
9,000.0	90.98	90.00	6,696.1	-2,072.06	120.6	1,318.1	1,321.0	0.00	0.00	0.00
9,100.0	90.98	90.00	6,694.3	-2,070.35	120.6	1,418.1	1,420.9	0.00	0.00	0.00
9,200.0	90.98	90.00	6,692.6	-2,068.63	120.6	1,518.1	1,520.9	0.00	0.00	0.00
9,300.0	90.98	90.00	6,690.9	-2,066.92	120.6	1,618.1	1,620.8	0.00	0.00	0.00
9,400.0	90.98	90.00	6,689.2	-2,065.21	120.6	1,718.0	1,720.8	0.00	0.00	0.00
9,500.0	90.98	90.00	6,687.5	-2,063.49	120.6	1,818.0	1,820.7	0.00	0.00	0.00
9,600.0	90.98	90.00	6,685.8	-2,061.78	120.6	1,918.0	1,920.7	0.00	0.00	0.00
9,700.0	90.98	90.00	6,684.1	-2,060.06	120.6	2,018.0	2,020.6	0.00	0.00	0.00
9,800.0	90.98	90.00	6,682.3	-2,058.35	120.6	2,118.0	2,120.5	0.00	0.00	0.00
9,900.0	90.98	90.00	6,680.6	-2,056.63	120.6	2,218.0	2,220.5	0.00	0.00	0.00
10,000.0	90.98	90.00	6,678.9	-2,054.92	120.6	2,318.0	2,320.4	0.00	0.00	0.00
10,100.0	90.98	90.00	6,677.2	-2,053.20	120.6	2,417.9	2,420.4	0.00	0.00	0.00
10,200.0	90.98	90.00	6,675.5	-2,051.48	120.6	2,517.9	2,520.3	0.00	0.00	0.00
10,300.0	90.98	90.00	6,673.8	-2,049.76	120.6	2,617.9	2,620.3	0.00	0.00	0.00
10,400.0	90.98	90.00	6,672.0	-2,048.04	120.6	2,717.9	2,720.2	0.00	0.00	0.00
10,500.0	90.99	90.00	6,670.3	-2,046.32	120.6	2,817.9	2,820.2	0.00	0.00	0.00
10,600.0	90.99	90.00	6,668.6	-2,044.60	120.6	2,917.9	2,920.1	0.00	0.00	0.00
10,700.0	90.99	90.00	6,666.9	-2,042.88	120.6	3,017.9	3,020.1	0.00	0.00	0.00
10,800.0	90.99	90.00	6,665.2	-2,041.16	120.6	3,117.8	3,120.0	0.00	0.00	0.00
10,900.0	90.99	90.00	6,663.4	-2,039.44	120.6	3,217.8	3,219.9	0.00	0.00	0.00
11,000.0	90.99	90.00	6,661.7	-2,037.72	120.6	3,317.8	3,319.9	0.00	0.00	0.00
11,100.0	90.99	90.00	6,660.0	-2,036.00	120.6	3,417.8	3,419.8	0.00	0.00	0.00
11,200.0	90.99	90.00	6,658.3	-2,034.27	120.6	3,517.8	3,519.8	0.00	0.00	0.00
11,300.0	90.99	90.00	6,656.6	-2,032.55	120.6	3,617.8	3,619.7	0.00	0.00	0.00
11,400.0	90.99	90.00	6,654.8	-2,030.83	120.6	3,717.8	3,719.7	0.00	0.00	0.00
11,500.0	90.99	90.00	6,653.1	-2,029.10	120.6	3,817.7	3,819.6	0.00	0.00	0.00
11,600.0	90.99	90.00	6,651.4	-2,027.38	120.6	3,917.7	3,919.6	0.00	0.00	0.00
11,700.0	90.99	90.00	6,649.7	-2,025.65	120.6	4,017.7	4,019.5	0.00	0.00	0.00
11,800.0	90.99	90.00	6,647.9	-2,023.93	120.6	4,117.7	4,119.5	0.00	0.00	0.00
11,900.0	90.99	90.00	6,646.2	-2,022.20	120.6	4,217.7	4,219.4	0.00	0.00	0.00
<b>BHL: 2010ft FNL &amp; 500ft FEL of Sec 10</b>										
<b>11,969.5</b>	<b>90.99</b>	<b>90.00</b>	<b>6,645.0</b>	<b>-2,021.00</b>	<b>120.6</b>	<b>4,287.1</b>	<b>4,288.8</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,491.6	3,430.0	PARKMAN SANDSTONE				
4,341.7	4,240.0	SUSSEX SANDSTONE				
6,617.8	6,430.0	SHARON SPRINGS				
6,708.8	6,500.0	NIOBRARA A				
6,862.9	6,600.0	NIOBRARA B				
7,037.1	6,680.0	NIOBRARA C				

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well WACKER 10G-312
<b>Company:</b>	PDC ENERGY	<b>TVD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO	<b>MD Reference:</b>	KB-EST @ 4624.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 10 T5N R64W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	WACKER 10G-312	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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: 2107ft FNL & 396ft FWL of Sec 10
1,600.0	1,600.0	0.0	0.0	START NUDGE (2°/100ft BUR)
2,484.0	2,470.0	14.7	-134.5	EOB TO 17.68° INC
5,253.6	5,108.9	105.9	-970.7	END OF TANGENT
6,137.6	5,978.9	120.6	-1,105.2	EOD TO VERTICAL
6,167.6	6,008.9	120.6	-1,105.2	KOP (8°/100ft BUR)
7,304.8	6,725.0	120.6	-376.8	LANDING PNT *NEW*: 1984.9ft FNL & 20ft FWL of Sec 10
11,969.5	6,645.0	120.6	4,287.1	BHL: 2010ft FNL & 500ft FEL of Sec 10