

PDC ENERGY

**WELD COUNTY, COLORADO
SW NW SEC. 10 T5N R64W 6th P.M.
WACKER 10G-302**

ORIGINAL WELLBORE

03 February, 2016

Plan: PROPOSAL #1



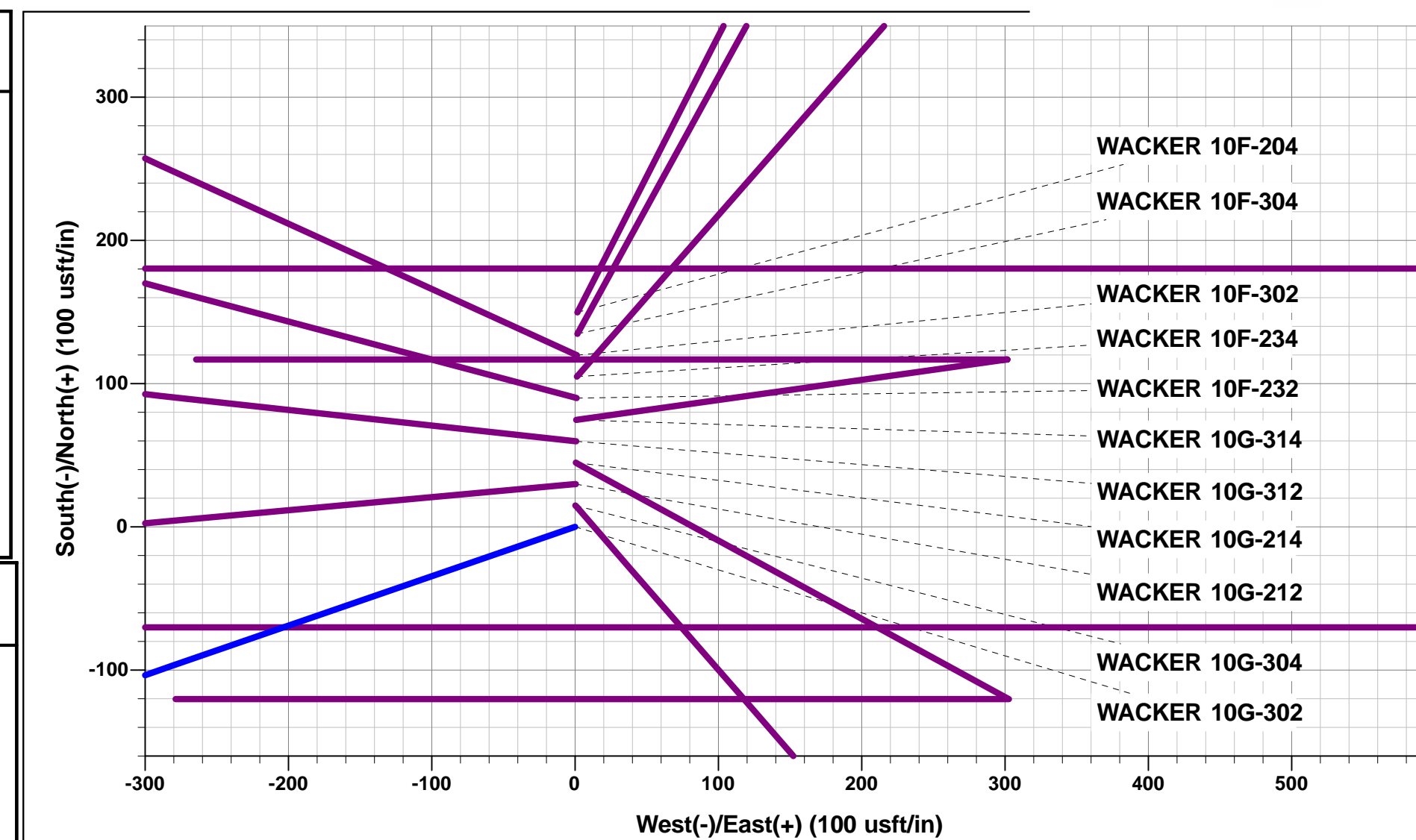


Project: WELD COUNTY, COLORADO
Site: SW NW SEC. 10 T5N R64W 6th P.M.
Well: WACKER 10G-302
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1



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: 2167ft FNL & 395ft FWL of Sec 10
1000.0	1000.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1765.5	1774.9	15.50	250.97	-34.0	-98.5	-95.1	104.2	EOB TO 15.5° INC
5213.4	5352.9	15.50	250.97	-345.6	-1002.3	-967.9	1060.2	END OF TANGENT
5978.9	6127.8	0.00	0.00	-379.6	-1100.7	-1063.0	1164.4	EOD TO VERTICAL
6008.9	6157.8	0.00	0.00	-379.6	-1100.7	-1063.0	1164.4	KOP (8°/100ft BUR)
6725.0	7295.0	90.98	90.00	-379.6	-372.3	-337.4	1892.8	LANDING PNT *NEW*: 2545ft FNL & 20ft FWL of Sec 10
6645.0	11955.0	90.99	90.00	-379.6	4286.9	4303.7	6552.0	BHL *NEW*: 2570.1ft FNL & 500ft FEL of Sec 10

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - WACKER 10G-302	6008.9	-379.6	-1100.7	40.414014	-104.548197
LANDING PNT *NEW* - WACKER 10G-302	6725.0	-379.6	-372.3	40.414014	-104.545581
BHL *NEW* - WACKER 10G-302	6645.0	-379.6	4286.9	40.414013	-104.528849

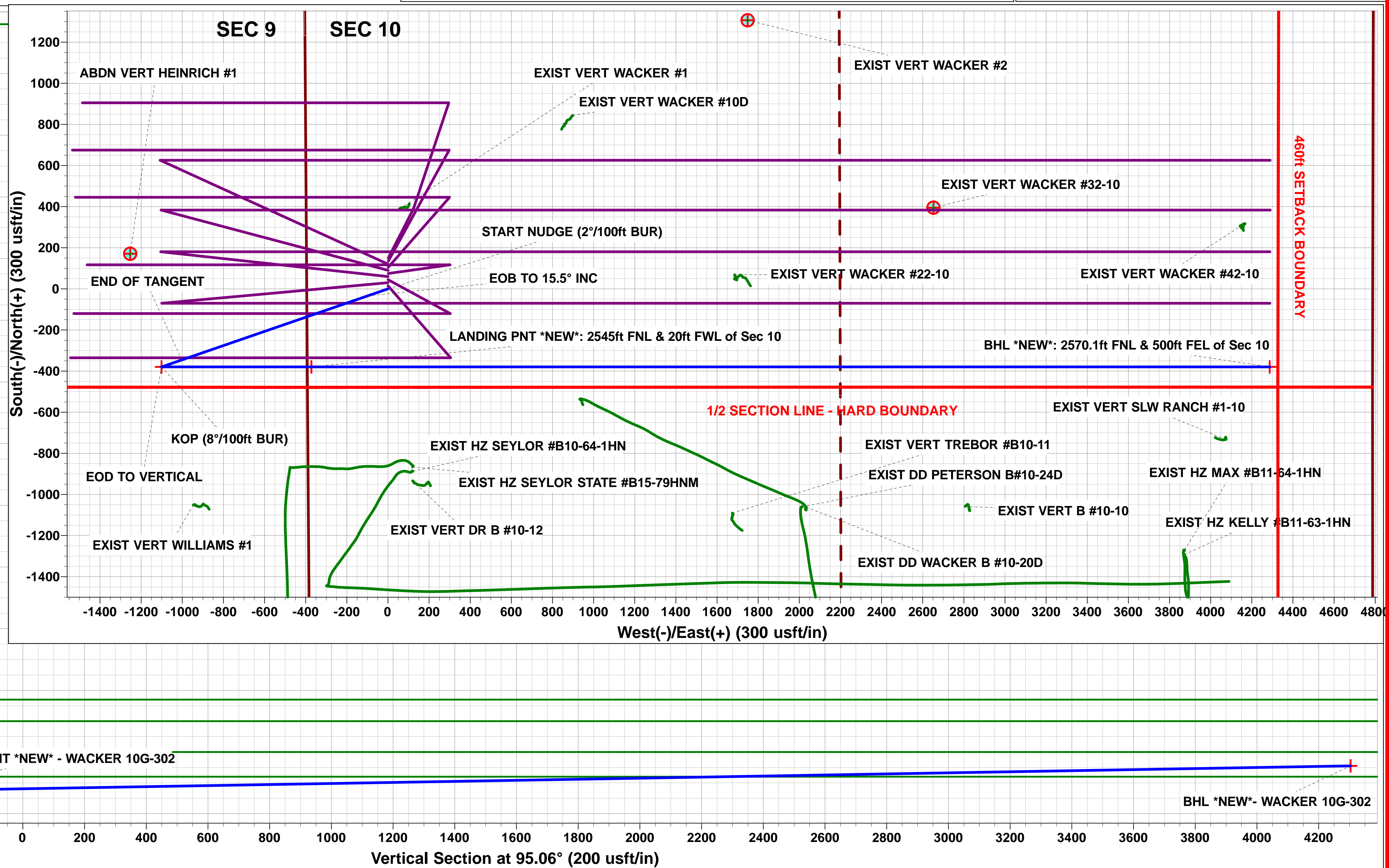
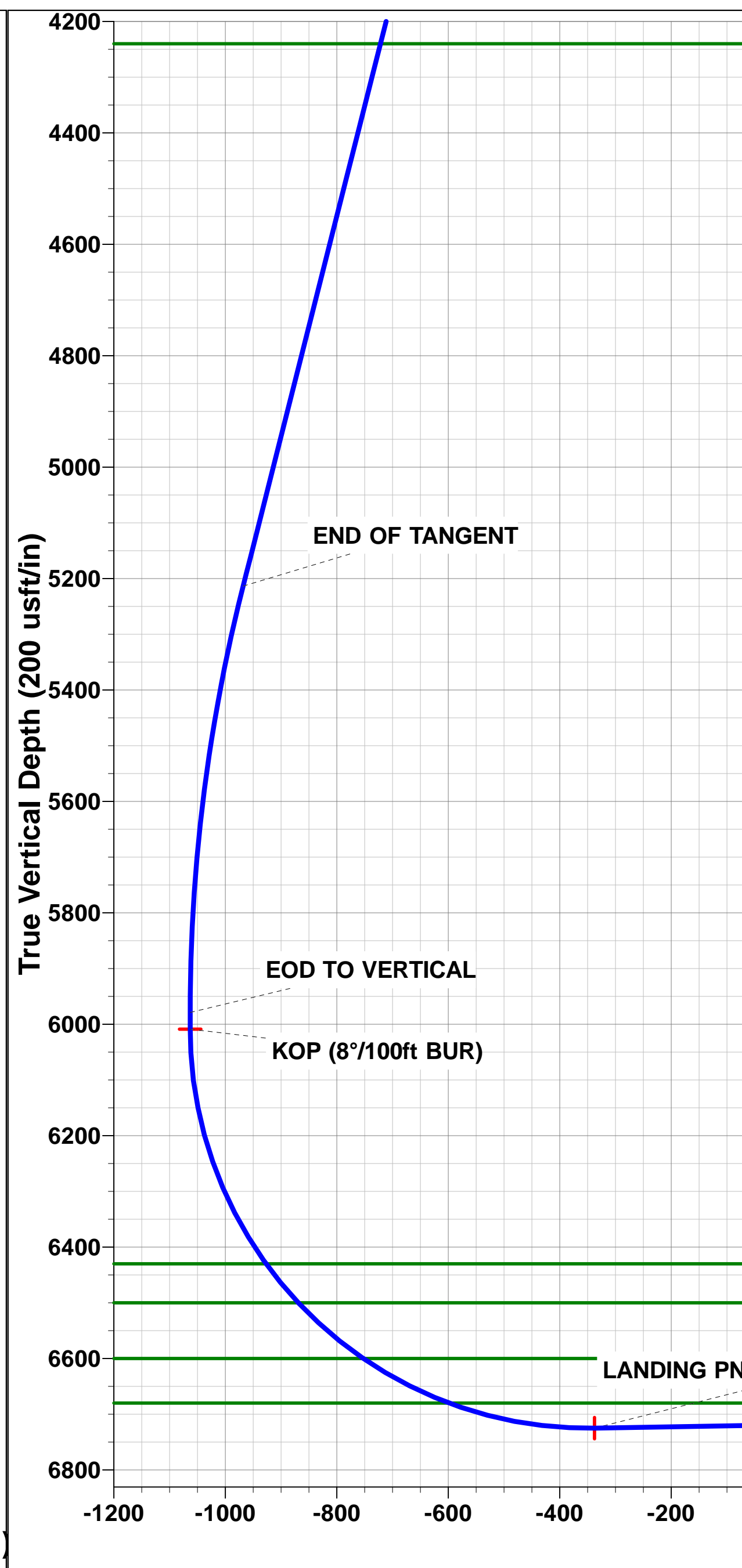
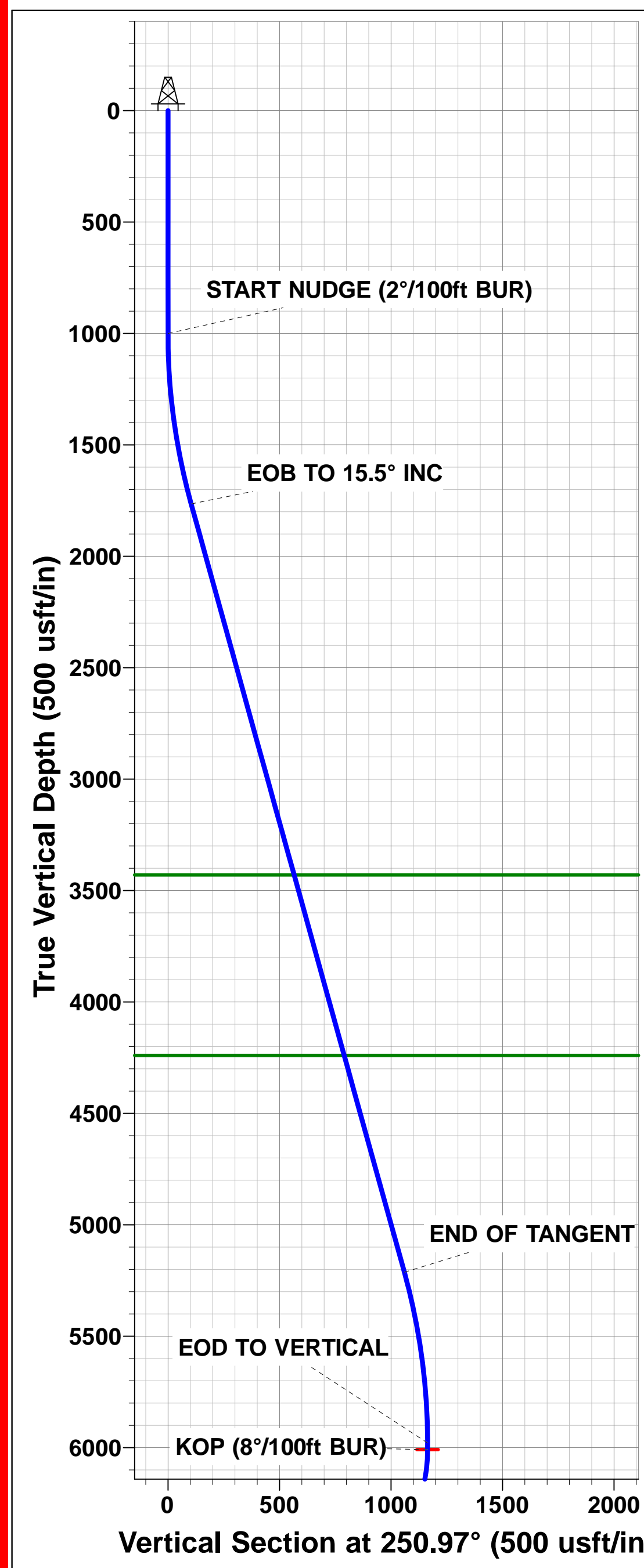


PROPOSED LOCAL COORDINATES:

SHL: 2167ft FNL & 395ft FWL of Sec 10
HZ LP *NEW*: 2545ft FNL & 20ft FWL of Sec 10
BHL*NEW*: 2570.1ft FNL & 500ft FEL of Sec 10

Azimuths to True North
Magnetic North: 8.24°

Magnetic Field
Strength: 52581.4snT
Dip Angle: 66.94°
Date: 02/02/2016
Model: IGRF2015



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well WACKER 10G-302
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Site:	SW NW SEC. 10 T5N R64W 6th P.M.	North Reference:	True
Well:	WACKER 10G-302	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	SW NW SEC. 10 T5N R64W 6th P.M.		
Site Position:		Northing:	1,395,629.17 usft
From:	Lat/Long	Easting:	3,266,123.73 usft
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000ft
		Latitude:	40.415467
		Longitude:	-104.544238
		Grid Convergence:	0.62 °

Well	WACKER 10G-302		
Well Position	+N/-S	-149.7 usft	Northing:
	+E/-W	-1.7 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	40.415056
		Longitude:	-104.544244
		Ground Level:	4,611.0 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	02/02/2016	8.24	66.94	52,581

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	95.06

Plan Sections											
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	
1,000.0	0.00	0.00	1,000.0	-3,624.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,774.9	15.50	250.97	1,765.5	-2,858.5	-34.0	-98.5	2.00	2.00	0.00	250.97	
5,352.9	15.50	250.97	5,213.4	589.4	-345.6	-1,002.3	0.00	0.00	0.00	0.00	
6,127.8	0.00	0.00	5,978.9	1,354.9	-379.6	-1,100.7	2.00	-2.00	0.00	180.00	
6,157.8	0.00	0.00	6,008.9	1,384.9	-379.6	-1,100.7	0.00	0.00	0.00	0.00	KOP - WACKER 10
7,295.0	90.98	90.00	6,725.0	2,101.0	-379.6	-372.3	8.00	8.00	7.91	90.00	LANDING PNT *NE
11,955.0	90.99	90.00	6,645.0	2,021.0	-379.6	4,286.9	0.00	0.00	0.00	-8.16	BHL *NEW*- WACKER

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well WACKER 10G-302
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Site:	SW NW SEC. 10 T5N R64W 6th P.M.	North Reference:	True
Well:	WACKER 10G-302	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: 2167ft FNL & 395ft FWL of Sec 10										
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
START NUDGE (2°/100ft BUR)										
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	2.00	250.97	1,100.0	3,524.02	-0.6	-1.6	-1.6	2.00	2.00	0.00
1,200.0	4.00	250.97	1,199.8	3,424.16	-2.3	-6.6	-6.4	2.00	2.00	0.00
1,300.0	6.00	250.97	1,299.5	3,324.55	-5.1	-14.8	-14.3	2.00	2.00	0.00
1,400.0	8.00	250.97	1,398.7	3,225.30	-9.1	-26.4	-25.5	2.00	2.00	0.00
1,500.0	10.00	250.97	1,497.5	3,126.53	-14.2	-41.1	-39.7	2.00	2.00	0.00
1,600.0	12.00	250.97	1,595.6	3,028.38	-20.4	-59.2	-57.2	2.00	2.00	0.00
1,700.0	14.00	250.97	1,693.1	2,930.94	-27.7	-80.4	-77.7	2.00	2.00	0.00
EOB TO 15.5° INC										
1,774.9	15.50	250.97	1,765.5	2,858.54	-34.0	-98.5	-95.1	2.00	2.00	0.00
1,800.0	15.50	250.97	1,789.7	2,834.33	-36.1	-104.8	-101.2	0.00	0.00	0.00
1,900.0	15.50	250.97	1,886.0	2,737.96	-44.9	-130.1	-125.6	0.00	0.00	0.00
2,000.0	15.50	250.97	1,982.4	2,641.60	-53.6	-155.3	-150.0	0.00	0.00	0.00
2,100.0	15.50	250.97	2,078.8	2,545.23	-62.3	-180.6	-174.4	0.00	0.00	0.00
2,200.0	15.50	250.97	2,175.1	2,448.87	-71.0	-205.9	-198.8	0.00	0.00	0.00
2,300.0	15.50	250.97	2,271.5	2,352.51	-79.7	-231.1	-223.2	0.00	0.00	0.00
2,400.0	15.50	250.97	2,367.9	2,256.14	-88.4	-256.4	-247.6	0.00	0.00	0.00
2,500.0	15.50	250.97	2,464.2	2,159.78	-97.1	-281.6	-272.0	0.00	0.00	0.00
2,600.0	15.50	250.97	2,560.6	2,063.41	-105.8	-306.9	-296.4	0.00	0.00	0.00
2,700.0	15.50	250.97	2,657.0	1,967.05	-114.5	-332.2	-320.8	0.00	0.00	0.00
2,800.0	15.50	250.97	2,753.3	1,870.68	-123.3	-357.4	-345.1	0.00	0.00	0.00
2,900.0	15.50	250.97	2,849.7	1,774.32	-132.0	-382.7	-369.5	0.00	0.00	0.00
3,000.0	15.50	250.97	2,946.0	1,677.96	-140.7	-407.9	-393.9	0.00	0.00	0.00
3,100.0	15.50	250.97	3,042.4	1,581.59	-149.4	-433.2	-418.3	0.00	0.00	0.00
3,200.0	15.50	250.97	3,138.8	1,485.23	-158.1	-458.4	-442.7	0.00	0.00	0.00
3,300.0	15.50	250.97	3,235.1	1,388.86	-166.8	-483.7	-467.1	0.00	0.00	0.00
3,400.0	15.50	250.97	3,331.5	1,292.50	-175.5	-509.0	-491.5	0.00	0.00	0.00
3,500.0	15.50	250.97	3,427.9	1,196.13	-184.2	-534.2	-515.9	0.00	0.00	0.00
PARKMAN SANDSTONE										
3,502.2	15.50	250.97	3,430.0	1,194.00	-184.4	-534.8	-516.4	0.00	0.00	0.00
3,600.0	15.50	250.97	3,524.2	1,099.77	-192.9	-559.5	-540.3	0.00	0.00	0.00
3,700.0	15.50	250.97	3,620.6	1,003.41	-201.6	-584.7	-564.7	0.00	0.00	0.00
3,800.0	15.50	250.97	3,717.0	907.04	-210.4	-610.0	-589.1	0.00	0.00	0.00
3,900.0	15.50	250.97	3,813.3	810.68	-219.1	-635.3	-613.5	0.00	0.00	0.00
4,000.0	15.50	250.97	3,909.7	714.31	-227.8	-660.5	-637.9	0.00	0.00	0.00
4,100.0	15.50	250.97	4,006.1	617.95	-236.5	-685.8	-662.3	0.00	0.00	0.00
4,200.0	15.50	250.97	4,102.4	521.59	-245.2	-711.0	-686.6	0.00	0.00	0.00
4,300.0	15.50	250.97	4,198.8	425.22	-253.9	-736.3	-711.0	0.00	0.00	0.00
SUSSEX SANDSTONE										
4,342.8	15.50	250.97	4,240.0	384.00	-257.6	-747.1	-721.5	0.00	0.00	0.00
4,400.0	15.50	250.97	4,295.1	328.86	-262.6	-761.6	-735.4	0.00	0.00	0.00
4,500.0	15.50	250.97	4,391.5	232.49	-271.3	-786.8	-759.8	0.00	0.00	0.00

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Well:	WACKER 10G-302	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	15.50	250.97	4,487.9	136.13	-280.0	-812.1	-784.2	0.00	0.00	0.00
4,700.0	15.50	250.97	4,584.2	39.76	-288.8	-837.3	-808.6	0.00	0.00	0.00
4,800.0	15.50	250.97	4,680.6	-56.60	-297.5	-862.6	-833.0	0.00	0.00	0.00
4,900.0	15.50	250.97	4,777.0	-152.96	-306.2	-887.9	-857.4	0.00	0.00	0.00
5,000.0	15.50	250.97	4,873.3	-249.33	-314.9	-913.1	-881.8	0.00	0.00	0.00
5,100.0	15.50	250.97	4,969.7	-345.69	-323.6	-938.4	-906.2	0.00	0.00	0.00
5,200.0	15.50	250.97	5,066.1	-442.06	-332.3	-963.6	-930.6	0.00	0.00	0.00
5,300.0	15.50	250.97	5,162.4	-538.42	-341.0	-988.9	-955.0	0.00	0.00	0.00
END OF TANGENT										
5,352.9	15.50	250.97	5,213.4	-589.44	-345.6	-1,002.3	-967.9	0.00	0.00	0.00
5,400.0	14.56	250.97	5,258.9	-634.89	-349.6	-1,013.8	-979.0	2.00	-2.00	0.00
5,500.0	12.56	250.97	5,356.1	-732.10	-357.3	-1,036.0	-1,000.4	2.00	-2.00	0.00
5,600.0	10.56	250.97	5,454.1	-830.06	-363.8	-1,054.9	-1,018.7	2.00	-2.00	0.00
5,700.0	8.56	250.97	5,552.7	-928.67	-369.2	-1,070.6	-1,033.9	2.00	-2.00	0.00
5,800.0	6.56	250.97	5,651.8	-1,027.80	-373.5	-1,083.0	-1,045.9	2.00	-2.00	0.00
5,900.0	4.56	250.97	5,751.3	-1,127.32	-376.6	-1,092.2	-1,054.7	2.00	-2.00	0.00
6,000.0	2.56	250.97	5,851.1	-1,227.13	-378.7	-1,098.0	-1,060.4	2.00	-2.00	0.00
6,100.0	0.56	250.97	5,951.1	-1,327.08	-379.5	-1,100.6	-1,062.8	2.00	-2.00	0.00
EOD TO VERTICAL										
6,127.8	0.00	0.00	5,978.9	-1,354.90	-379.6	-1,100.7	-1,063.0	2.00	-2.00	0.00
KOP (8°/100ft BUR)										
6,157.8	0.00	0.00	6,008.9	-1,384.90	-379.6	-1,100.7	-1,063.0	0.00	0.00	0.00
6,200.0	3.37	90.00	6,051.1	-1,427.06	-379.6	-1,099.5	-1,061.7	8.00	8.00	0.00
6,300.0	11.37	90.00	6,150.2	-1,526.15	-379.6	-1,086.7	-1,049.0	8.00	8.00	0.00
6,400.0	19.37	90.00	6,246.5	-1,622.49	-379.6	-1,060.2	-1,022.6	8.00	8.00	0.00
6,500.0	27.37	90.00	6,338.2	-1,714.21	-379.6	-1,020.5	-983.1	8.00	8.00	0.00
6,600.0	35.37	90.00	6,423.5	-1,799.52	-379.6	-968.5	-931.3	8.00	8.00	0.00
SHARON SPRINGS										
6,608.0	36.01	90.00	6,430.0	-1,806.00	-379.6	-963.9	-926.6	8.00	8.00	0.00
NIOBRARA A										
6,699.0	43.29	90.00	6,500.0	-1,876.00	-379.6	-905.9	-868.8	8.00	8.00	0.00
6,700.0	43.37	90.00	6,500.8	-1,876.76	-379.6	-905.1	-868.1	8.00	8.00	0.00
6,800.0	51.37	90.00	6,568.4	-1,944.43	-379.6	-831.6	-794.9	8.00	8.00	0.00
NIOBRARA B										
6,853.1	55.62	90.00	6,600.0	-1,976.00	-379.6	-789.0	-752.4	8.00	8.00	0.00
6,900.0	59.37	90.00	6,625.2	-2,001.20	-379.6	-749.4	-713.0	8.00	8.00	0.00
7,000.0	67.37	90.00	6,670.0	-2,045.98	-379.6	-660.1	-624.0	8.00	8.00	0.00
NIOBRARA C										
7,027.3	69.56	90.00	6,680.0	-2,056.00	-379.6	-634.7	-598.7	8.00	8.00	0.00
7,100.0	75.37	90.00	6,701.9	-2,077.89	-379.6	-565.4	-529.7	8.00	8.00	0.00
7,200.0	83.37	90.00	6,720.3	-2,096.32	-379.6	-467.2	-431.9	8.00	8.00	0.00
LANDING PNT *NEW*: 2545ft FNL & 20ft FWL of Sec 10										
7,295.0	90.98	90.00	6,725.0	-2,101.00	-379.6	-372.3	-337.4	8.00	8.00	0.00
7,300.0	90.98	90.00	6,724.9	-2,100.92	-379.6	-367.4	-332.5	0.00	0.00	0.00
7,400.0	90.98	90.00	6,723.2	-2,099.21	-379.6	-267.4	-232.9	0.00	0.00	0.00
7,500.0	90.98	90.00	6,721.5	-2,097.51	-379.6	-167.4	-133.3	0.00	0.00	0.00
7,600.0	90.98	90.00	6,719.8	-2,095.80	-379.6	-67.4	-33.7	0.00	0.00	0.00
7,700.0	90.98	90.00	6,718.1	-2,094.10	-379.6	32.6	65.9	0.00	0.00	0.00
7,800.0	90.98	90.00	6,716.4	-2,092.39	-379.6	132.6	165.5	0.00	0.00	0.00
7,900.0	90.98	90.00	6,714.7	-2,090.69	-379.6	232.5	265.1	0.00	0.00	0.00
8,000.0	90.98	90.00	6,713.0	-2,088.98	-379.6	332.5	364.7	0.00	0.00	0.00
8,100.0	90.98	90.00	6,711.3	-2,087.27	-379.6	432.5	464.3	0.00	0.00	0.00
8,200.0	90.98	90.00	6,709.6	-2,085.56	-379.6	532.5	563.9	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well WACKER 10G-302
Company:	PDC ENERGY	TVD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Site:	SW NW SEC. 10 T5N R64W 6th P.M.	North Reference:	True
Well:	WACKER 10G-302	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	90.98	90.00	6,707.9	-2,083.86	-379.6	632.5	663.5	0.00	0.00	0.00
8,400.0	90.98	90.00	6,706.1	-2,082.15	-379.6	732.5	763.1	0.00	0.00	0.00
8,500.0	90.98	90.00	6,704.4	-2,080.44	-379.6	832.5	862.7	0.00	0.00	0.00
8,600.0	90.98	90.00	6,702.7	-2,078.73	-379.6	932.4	962.3	0.00	0.00	0.00
8,700.0	90.98	90.00	6,701.0	-2,077.02	-379.6	1,032.4	1,061.9	0.00	0.00	0.00
8,800.0	90.98	90.00	6,699.3	-2,075.30	-379.6	1,132.4	1,161.5	0.00	0.00	0.00
8,900.0	90.98	90.00	6,697.6	-2,073.59	-379.6	1,232.4	1,261.1	0.00	0.00	0.00
9,000.0	90.98	90.00	6,695.9	-2,071.88	-379.6	1,332.4	1,360.7	0.00	0.00	0.00
9,100.0	90.98	90.00	6,694.2	-2,070.17	-379.6	1,432.4	1,460.3	0.00	0.00	0.00
9,200.0	90.98	90.00	6,692.5	-2,068.45	-379.6	1,532.4	1,559.9	0.00	0.00	0.00
9,300.0	90.98	90.00	6,690.7	-2,066.74	-379.6	1,632.3	1,659.5	0.00	0.00	0.00
9,400.0	90.98	90.00	6,689.0	-2,065.02	-379.6	1,732.3	1,759.1	0.00	0.00	0.00
9,500.0	90.98	90.00	6,687.3	-2,063.31	-379.6	1,832.3	1,858.7	0.00	0.00	0.00
9,600.0	90.98	90.00	6,685.6	-2,061.59	-379.6	1,932.3	1,958.2	0.00	0.00	0.00
9,700.0	90.98	90.00	6,683.9	-2,059.87	-379.6	2,032.3	2,057.8	0.00	0.00	0.00
9,800.0	90.98	90.00	6,682.2	-2,058.16	-379.6	2,132.3	2,157.4	0.00	0.00	0.00
9,900.0	90.98	90.00	6,680.4	-2,056.44	-379.6	2,232.3	2,257.0	0.00	0.00	0.00
10,000.0	90.98	90.00	6,678.7	-2,054.72	-379.6	2,332.2	2,356.6	0.00	0.00	0.00
10,100.0	90.99	90.00	6,677.0	-2,053.00	-379.6	2,432.2	2,456.2	0.00	0.00	0.00
10,200.0	90.99	90.00	6,675.3	-2,051.28	-379.6	2,532.2	2,555.8	0.00	0.00	0.00
10,300.0	90.99	90.00	6,673.6	-2,049.56	-379.6	2,632.2	2,655.4	0.00	0.00	0.00
10,400.0	90.99	90.00	6,671.8	-2,047.84	-379.6	2,732.2	2,755.0	0.00	0.00	0.00
10,500.0	90.99	90.00	6,670.1	-2,046.12	-379.6	2,832.2	2,854.6	0.00	0.00	0.00
10,600.0	90.99	90.00	6,668.4	-2,044.40	-379.6	2,932.1	2,954.2	0.00	0.00	0.00
10,700.0	90.99	90.00	6,666.7	-2,042.67	-379.6	3,032.1	3,053.8	0.00	0.00	0.00
10,800.0	90.99	90.00	6,664.9	-2,040.95	-379.6	3,132.1	3,153.4	0.00	0.00	0.00
10,900.0	90.99	90.00	6,663.2	-2,039.22	-379.6	3,232.1	3,253.0	0.00	0.00	0.00
11,000.0	90.99	90.00	6,661.5	-2,037.50	-379.6	3,332.1	3,352.6	0.00	0.00	0.00
11,100.0	90.99	90.00	6,659.8	-2,035.77	-379.6	3,432.1	3,452.2	0.00	0.00	0.00
11,200.0	90.99	90.00	6,658.0	-2,034.05	-379.6	3,532.1	3,551.8	0.00	0.00	0.00
11,300.0	90.99	90.00	6,656.3	-2,032.32	-379.6	3,632.0	3,651.4	0.00	0.00	0.00
11,400.0	90.99	90.00	6,654.6	-2,030.60	-379.6	3,732.0	3,751.0	0.00	0.00	0.00
11,500.0	90.99	90.00	6,652.9	-2,028.87	-379.6	3,832.0	3,850.6	0.00	0.00	0.00
11,600.0	90.99	90.00	6,651.1	-2,027.14	-379.6	3,932.0	3,950.2	0.00	0.00	0.00
11,700.0	90.99	90.00	6,649.4	-2,025.41	-379.6	4,032.0	4,049.8	0.00	0.00	0.00
11,800.0	90.99	90.00	6,647.7	-2,023.68	-379.6	4,132.0	4,149.3	0.00	0.00	0.00
11,900.0	90.99	90.00	6,646.0	-2,021.95	-379.6	4,232.0	4,248.9	0.00	0.00	0.00
BHL *NEW*: 2570.1ft FNL & 500ft FEL of Sec 10										
11,955.0	90.99	90.00	6,645.0	-2,021.00	-379.6	4,286.9	4,303.7	0.00	0.00	0.00

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,502.2	3,430.0	PARKMAN SANDSTONE				
4,342.8	4,240.0	SUSSEX SANDSTONE				
6,608.0	6,430.0	SHARON SPRINGS				
6,699.0	6,500.0	NIOBRARA A				
6,853.1	6,600.0	NIOBRARA B				
7,027.3	6,680.0	NIOBRARA C				

Planning Report



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Project:	WELD COUNTY, COLORADO	MD Reference:	KB-EST @ 4624.0usft (Original Well Elev)
Site:	SW NW SEC. 10 T5N R64W 6th P.M.	North Reference:	True
Well:	WACKER 10G-302	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: 2167ft FNL & 395ft FWL of Sec 10
1,000.0	1,000.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,774.9	1,765.5	-34.0	-98.5	EOB TO 15.5° INC
5,352.9	5,213.4	-345.6	-1,002.3	END OF TANGENT
6,127.8	5,978.9	-379.6	-1,100.7	EOD TO VERTICAL
6,157.8	6,008.9	-379.6	-1,100.7	KOP (8°/100ft BUR)
7,295.0	6,725.0	-379.6	-372.3	LANDING PNT *NEW*: 2545ft FNL & 20ft FWL of Sec 10
11,955.0	6,645.0	-379.6	4,286.9	BHL *NEW*: 2570.1ft FNL & 500ft FEL of Sec 10