

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

SW NW SEC. 15 T5N R65W 6th P.M.

VETTING 23

ORIGINAL WELLBORE

09 March, 2016

Plan: PROPOSAL #2

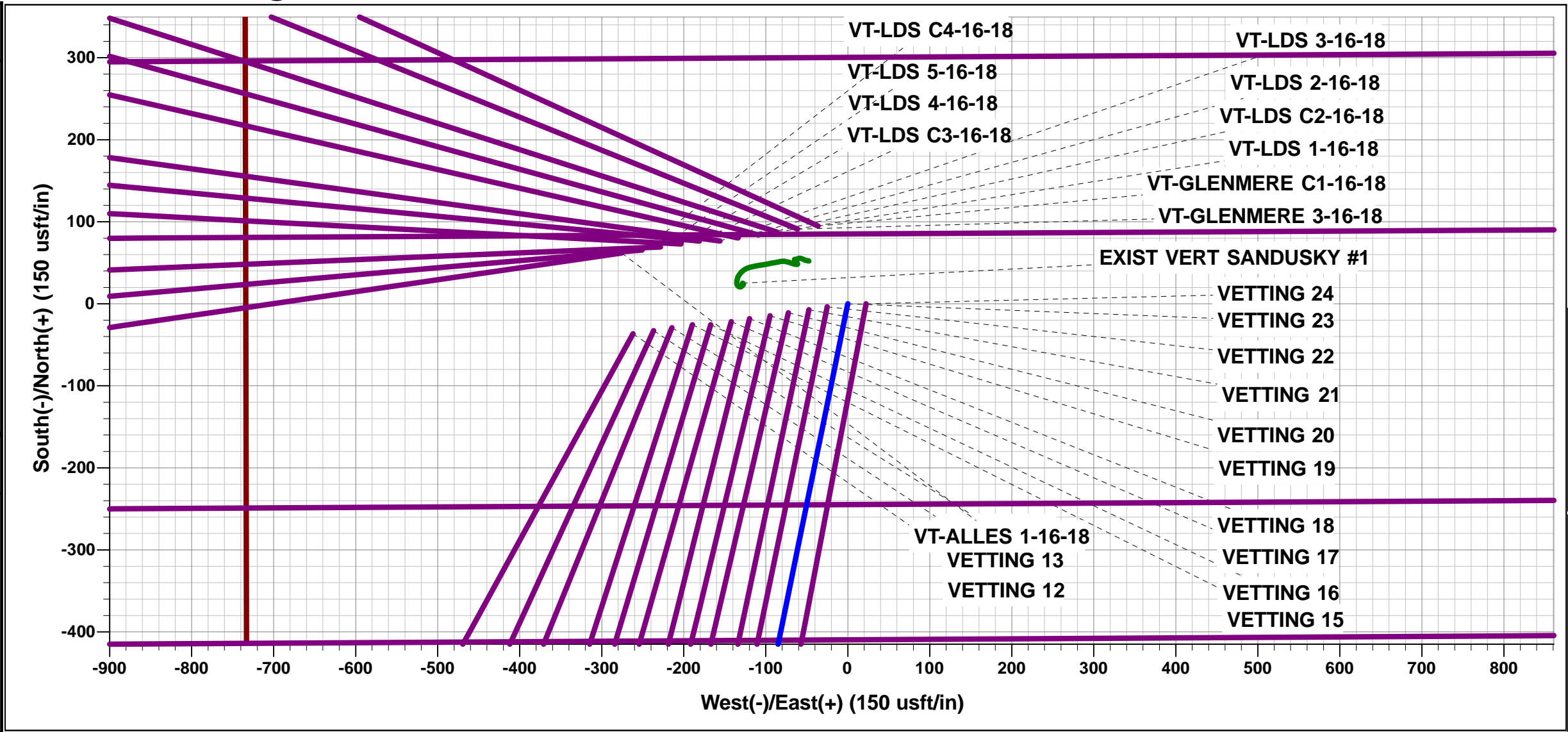




Project: WELD COUNTY, COLORADO (NAD 83)
Site: SW NW SEC. 15 T5N R65W 6th P.M.
Well: VETTING 23
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

ANNOTATIONS										
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation		
1200.0	1200.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)		
1600.0	1601.3	8.03	191.56	-27.5	-5.6	14.1	28.1	9 5/8" SURFACE CASING		
1664.4	1666.3	8.03	191.56	-36.4	-7.4	18.6	37.1	END OF TANGENT		
2984.6	3173.3	45.70	191.56	-691.6	-141.5	354.4	705.9	EOB TO 45.7° INC		
4621.7	5517.3	45.70	191.56	-2335.1	-477.8	1196.7	2383.5	END OF TANGENT		
6262.0	7345.4	0.00	191.56	-3012.4	-616.4	1543.8	3074.8	EOD TO VERTICAL		
6292.0	7375.4	0.00	0.00	-3012.4	-616.4	1543.8	3074.8	KOP (10°/100ft BUR)		
6865.0	8275.5	90.00	269.96	-3012.8	-1189.4	2087.1	3647.8	LANDING PNT - VETTING 23		
6865.0	16069.3	90.00	269.96	-3018.5	-8983.2	9476.8	11441.6	BHL - VETTING 23		

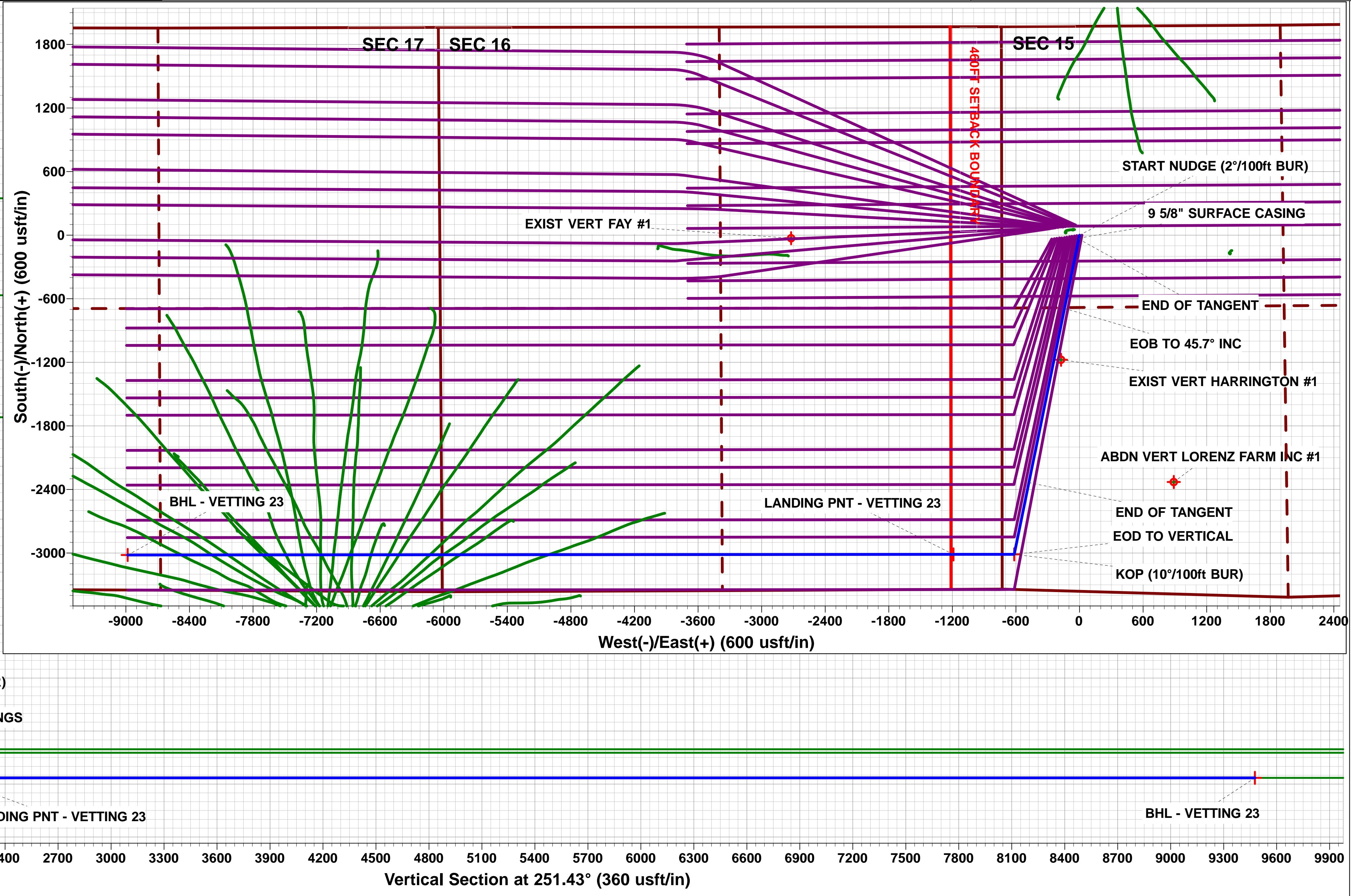
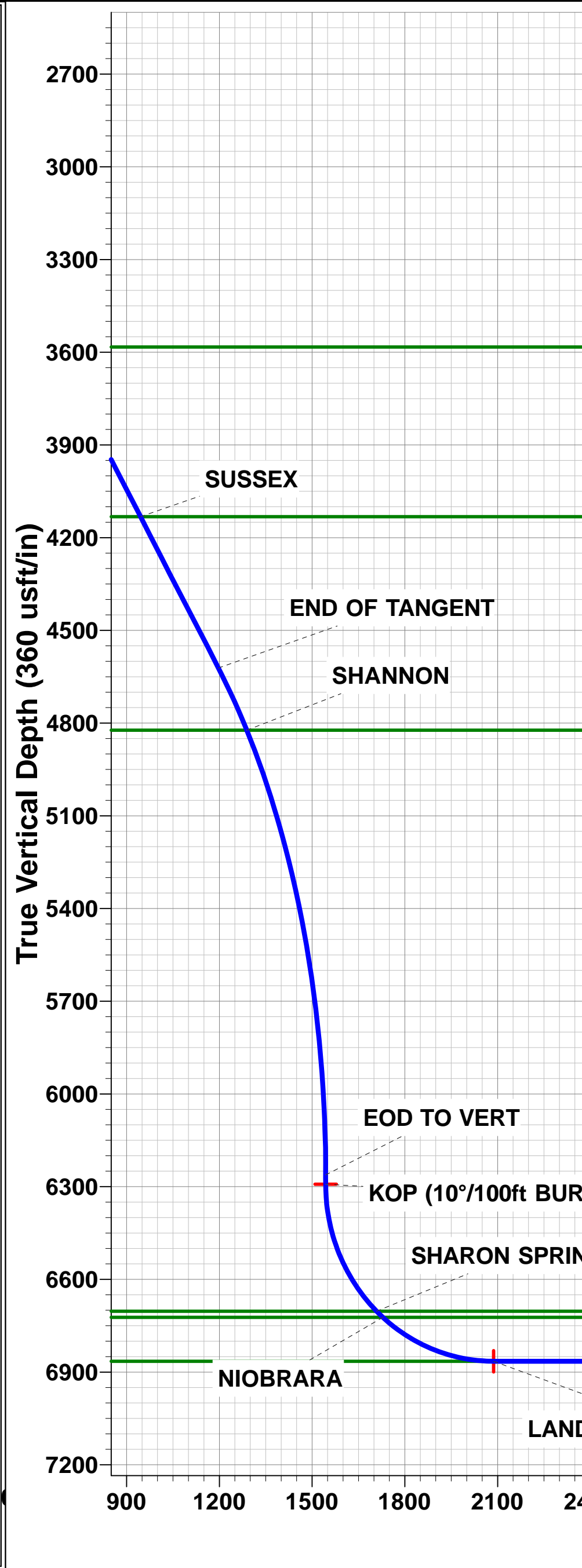
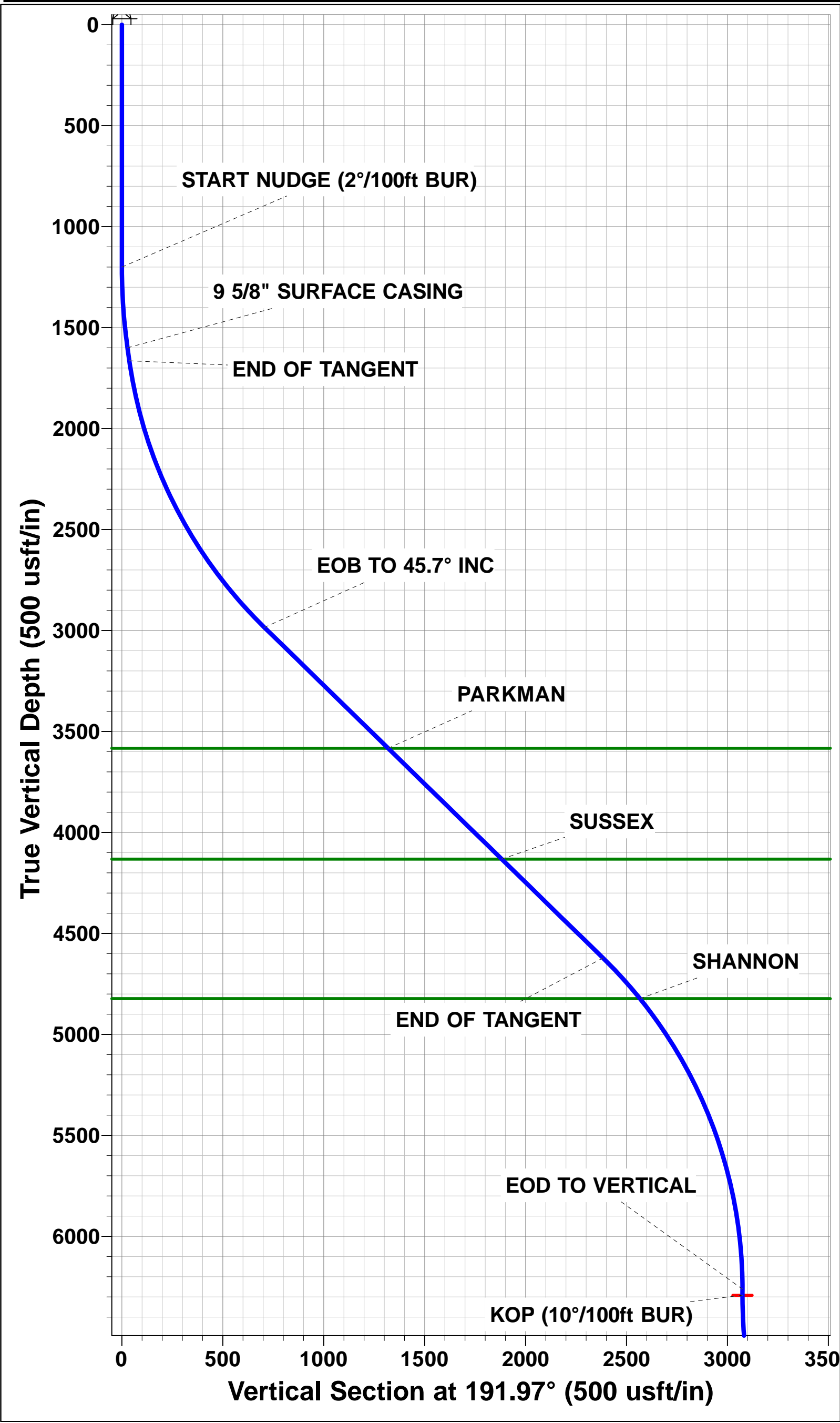
WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - VETTING 23	6292.0	-3012.4	-616.4	40.392811	-104.658453
LANDING PNT - VETTING 23	6865.0	-3012.8	-1189.4	40.392810	-104.660510
BHL - VETTING 23	6865.0	-3018.5	-8983.3	40.392790	-104.688490



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3583.0	4030.1	PARKMAN
4132.0	4816.2	SUSSEX
4823.0	5789.7	SHANNON
6703.0	7833.8	SHARON SPRINGS
6723.0	7863.3	NIobrara
6865.0	8275.5	NIO B TARGET

PROPOSED LOCAL COORDINATES		
SHL: 1972ft FNL & 734ft FWL of Sec 15		
LP: 330ft FSL & 460ft FEL of Sec 16		
BHL: 660ft FSL & 2346ft FWL of Sec 17		

Azimuths to True North	
Magnetic North: 8.32°	
Magnetic Field Strength: 52585.0nT	
Dip Angle: 66.91°	
Date: 21/11/2015	
Model: IGRF2015	



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VETTING 23
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VETTING 23	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

Project	WELD COUNTY, COLORADO (NAD 83)		
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. 15 T5N R65W 6th P.M.		
Site Position:		Northing:	1,390,032.91 usft
From:	Lat/Long	Easting:	3,234,727.17 usft
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000ft
		Latitude:	40.400980
		Longitude:	-104.657180
		Grid Convergence:	0.54 °

Well	VETTING 23		
Well Position	+N/-S	36.4 usft	Northing:
	+E/-W	261.8 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	21/11/2015	8.32	66.91	52,585

Design	PROPOSAL #2			
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	251.43

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	-4,664.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	-3,464.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,601.3	8.03	191.56	1,600.0	-3,064.0	-27.5	-5.6	2.00	2.00	0.00	191.56	
1,666.3	8.03	191.56	1,664.4	-2,999.6	-36.4	-7.4	0.00	0.00	0.00	0.00	
3,173.3	45.70	191.56	2,984.7	-1,679.3	-691.6	-141.5	2.50	2.50	0.00	0.00	
5,517.3	45.70	191.56	4,621.7	-42.3	-2,335.2	-477.8	0.00	0.00	0.00	0.00	
7,345.4	0.00	0.00	6,262.0	1,598.0	-3,012.4	-616.4	2.50	-2.50	0.00	180.00	
7,375.4	0.00	0.00	6,292.0	1,628.0	-3,012.4	-616.4	0.00	0.00	0.00	0.00	KOP - VETTING 23
8,275.5	90.00	269.96	6,865.0	2,201.0	-3,012.8	-1,189.4	10.00	10.00	-10.00	269.96	LANDING PNT - VE
16,069.4	90.00	269.96	6,865.0	2,201.0	-3,018.5	-8,983.3	0.00	0.00	0.00	0.00	BHL - VETTING 23

Planning Report



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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VETTING 23	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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)
0.0	0.00	0.00	0.0	4,664.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,564.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,464.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,364.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,264.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,164.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,064.00	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	3,964.00	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	3,864.00	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	3,764.00	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	3,664.00	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	3,564.00	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
1,200.0	0.00	0.00	1,200.0	3,464.00	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	2.00	191.56	1,300.0	3,364.02	-1.7	-0.3	0.9	2.00	2.00	0.00
1,400.0	4.00	191.56	1,399.8	3,264.16	-6.8	-1.4	3.5	2.00	2.00	0.00
1,500.0	6.00	191.56	1,499.5	3,164.55	-15.4	-3.1	7.9	2.00	2.00	0.00
1,600.0	8.00	191.56	1,598.7	3,065.30	-27.3	-5.6	14.0	2.00	2.00	0.00
9 5/8" SURFACE CASING										
1,601.3	8.03	191.56	1,600.0	3,064.01	-27.5	-5.6	14.1	2.00	2.00	0.00
END OF TANGENT										
1,666.3	8.03	191.56	1,664.4	2,999.65	-36.4	-7.4	18.6	0.00	0.00	0.00
1,700.0	8.87	191.56	1,697.7	2,966.31	-41.2	-8.4	21.1	2.50	2.50	0.01
1,800.0	11.37	191.56	1,796.1	2,867.88	-58.4	-12.0	29.9	2.50	2.50	0.00
1,900.0	13.87	191.56	1,893.7	2,770.30	-79.8	-16.3	40.9	2.50	2.50	0.00
2,000.0	16.37	191.56	1,990.2	2,673.77	-105.4	-21.6	54.0	2.50	2.50	0.00
2,100.0	18.87	191.56	2,085.5	2,578.47	-135.0	-27.6	69.2	2.50	2.50	0.00
2,200.0	21.37	191.56	2,179.4	2,484.58	-168.7	-34.5	86.5	2.50	2.50	0.00
2,300.0	23.87	191.56	2,271.7	2,392.27	-206.4	-42.2	105.8	2.50	2.50	0.00
2,400.0	26.37	191.56	2,362.3	2,301.74	-248.0	-50.7	127.1	2.50	2.50	0.00
2,500.0	28.87	191.56	2,450.9	2,213.14	-293.4	-60.0	150.4	2.50	2.50	0.00
2,600.0	31.37	191.56	2,537.4	2,126.65	-342.6	-70.1	175.6	2.50	2.50	0.00
2,700.0	33.87	191.56	2,621.6	2,042.43	-395.4	-80.9	202.6	2.50	2.50	0.00
2,800.0	36.37	191.56	2,703.4	1,960.64	-451.7	-92.4	231.5	2.50	2.50	0.00
2,900.0	38.87	191.56	2,782.6	1,881.43	-511.5	-104.7	262.1	2.50	2.50	0.00
3,000.0	41.37	191.56	2,859.0	1,804.97	-574.6	-117.6	294.5	2.50	2.50	0.00
3,100.0	43.87	191.56	2,932.6	1,731.39	-641.0	-131.2	328.5	2.50	2.50	0.00
EOB TO 45.7° INC										
3,173.3	45.70	191.56	2,984.6	1,679.36	-691.6	-141.5	354.4	2.50	2.50	0.00
3,200.0	45.70	191.56	3,003.3	1,660.72	-710.3	-145.3	364.0	0.00	0.00	0.00
3,300.0	45.70	191.56	3,073.1	1,590.88	-780.4	-159.7	399.9	0.00	0.00	0.00
3,400.0	45.70	191.56	3,143.0	1,521.04	-850.5	-174.0	435.9	0.00	0.00	0.00
3,500.0	45.70	191.56	3,212.8	1,451.20	-920.6	-188.4	471.8	0.00	0.00	0.00
3,600.0	45.70	191.56	3,282.6	1,381.36	-990.8	-202.7	507.7	0.00	0.00	0.00
3,700.0	45.70	191.56	3,352.5	1,311.52	-1,060.9	-217.1	543.7	0.00	0.00	0.00
3,800.0	45.70	191.56	3,422.3	1,241.68	-1,131.0	-231.4	579.6	0.00	0.00	0.00
3,900.0	45.70	191.56	3,492.2	1,171.84	-1,201.1	-245.8	615.6	0.00	0.00	0.00
4,000.0	45.70	191.56	3,562.0	1,102.00	-1,271.2	-260.1	651.5	0.00	0.00	0.00
PARKMAN										
4,030.1	45.70	191.56	3,583.0	1,081.00	-1,292.3	-264.4	662.3	0.00	0.00	0.00
4,100.0	45.70	191.56	3,631.8	1,032.16	-1,341.4	-274.5	687.4	0.00	0.00	0.00
4,200.0	45.70	191.56	3,701.7	962.33	-1,411.5	-288.8	723.4	0.00	0.00	0.00
4,300.0	45.70	191.56	3,771.5	892.49	-1,481.6	-303.2	759.3	0.00	0.00	0.00
4,400.0	45.70	191.56	3,841.4	822.65	-1,551.7	-317.5	795.2	0.00	0.00	0.00

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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VETTING 23	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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)
4,500.0	45.70	191.56	3,911.2	752.81	-1,621.8	-331.9	831.2	0.00	0.00	0.00
4,600.0	45.70	191.56	3,981.0	682.97	-1,692.0	-346.2	867.1	0.00	0.00	0.00
4,700.0	45.70	191.56	4,050.9	613.13	-1,762.1	-360.6	903.0	0.00	0.00	0.00
4,800.0	45.70	191.56	4,120.7	543.29	-1,832.2	-374.9	939.0	0.00	0.00	0.00
SUSSEX										
4,816.2	45.70	191.56	4,132.0	532.00	-1,843.5	-377.2	944.8	0.00	0.00	0.00
4,900.0	45.70	191.56	4,190.5	473.45	-1,902.3	-389.3	974.9	0.00	0.00	0.00
5,000.0	45.70	191.56	4,260.4	403.61	-1,972.4	-403.6	1,010.8	0.00	0.00	0.00
5,100.0	45.70	191.56	4,330.2	333.77	-2,042.5	-418.0	1,046.8	0.00	0.00	0.00
5,200.0	45.70	191.56	4,400.1	263.94	-2,112.7	-432.3	1,082.7	0.00	0.00	0.00
5,300.0	45.70	191.56	4,469.9	194.10	-2,182.8	-446.7	1,118.6	0.00	0.00	0.00
5,400.0	45.70	191.56	4,539.7	124.26	-2,252.9	-461.0	1,154.6	0.00	0.00	0.00
5,500.0	45.70	191.56	4,609.6	54.42	-2,323.0	-475.4	1,190.5	0.00	0.00	0.00
END OF TANGENT										
5,517.3	45.70	191.56	4,621.7	42.34	-2,335.1	-477.8	1,196.7	0.00	0.00	0.00
5,600.0	43.64	191.56	4,680.5	-16.48	-2,392.1	-489.5	1,225.9	2.50	-2.50	0.00
5,700.0	41.14	191.56	4,754.3	-90.33	-2,458.1	-503.0	1,259.8	2.50	-2.50	0.00
SHANNON										
5,789.7	38.89	191.56	4,823.0	-159.00	-2,514.6	-514.6	1,288.7	2.50	-2.50	0.00
5,800.0	38.64	191.56	4,831.1	-167.06	-2,521.0	-515.9	1,291.9	2.50	-2.50	0.00
5,900.0	36.14	191.56	4,910.5	-246.51	-2,580.4	-528.0	1,322.4	2.50	-2.50	0.00
6,000.0	33.64	191.56	4,992.5	-328.53	-2,636.5	-539.5	1,351.1	2.50	-2.50	0.00
6,100.0	31.14	191.56	5,077.0	-412.97	-2,688.9	-550.2	1,378.0	2.50	-2.50	0.00
6,200.0	28.64	191.56	5,163.7	-499.67	-2,737.8	-560.2	1,403.0	2.50	-2.50	0.00
6,300.0	26.14	191.56	5,252.5	-588.45	-2,782.8	-569.4	1,426.1	2.50	-2.50	0.00
6,400.0	23.64	191.56	5,343.2	-679.16	-2,824.0	-577.9	1,447.3	2.50	-2.50	0.00
6,500.0	21.14	191.56	5,435.6	-771.62	-2,861.3	-585.5	1,466.4	2.50	-2.50	0.00
6,600.0	18.64	191.56	5,529.6	-865.65	-2,894.7	-592.3	1,483.5	2.50	-2.50	0.00
6,700.0	16.14	191.56	5,625.1	-961.07	-2,923.9	-598.3	1,498.5	2.50	-2.50	0.00
6,800.0	13.64	191.56	5,721.7	-1,057.71	-2,949.1	-603.5	1,511.4	2.50	-2.50	0.00
6,900.0	11.14	191.56	5,819.4	-1,155.37	-2,970.1	-607.8	1,522.1	2.50	-2.50	0.00
7,000.0	8.64	191.56	5,917.9	-1,253.88	-2,986.9	-611.2	1,530.7	2.50	-2.50	0.00
7,100.0	6.14	191.56	6,017.0	-1,353.04	-2,999.5	-613.8	1,537.2	2.50	-2.50	0.00
7,200.0	3.64	191.56	6,116.7	-1,452.67	-3,007.9	-615.5	1,541.5	2.50	-2.50	0.00
7,300.0	1.14	191.56	6,216.6	-1,552.58	-3,011.9	-616.3	1,543.6	2.50	-2.50	0.00
EOD TO VERTICAL										
7,345.4	0.00	191.56	6,262.0	-1,597.97	-3,012.4	-616.4	1,543.8	2.50	-2.50	0.00
KOP (10°/100ft BUR)										
7,375.4	0.00	0.00	6,292.0	-1,627.97	-3,012.4	-616.4	1,543.8	0.00	0.00	0.00
7,400.0	2.46	269.96	6,316.6	-1,652.57	-3,012.4	-616.9	1,544.3	9.99	9.99	0.00
7,500.0	12.46	269.96	6,415.6	-1,751.59	-3,012.4	-629.9	1,556.6	10.00	10.00	0.00
7,600.0	22.46	269.96	6,510.9	-1,846.87	-3,012.4	-659.9	1,585.0	10.00	10.00	0.00
7,700.0	32.45	269.96	6,599.5	-1,935.49	-3,012.5	-705.9	1,628.6	10.00	10.00	0.00
7,800.0	42.45	269.96	6,678.8	-2,014.77	-3,012.5	-766.6	1,686.2	10.00	10.00	0.00
SHARON SPRINGS										
7,833.8	45.83	269.96	6,703.0	-2,039.00	-3,012.5	-790.2	1,708.5	10.00	10.00	0.00
NIOBRARA										
7,863.3	48.78	269.96	6,723.0	-2,059.00	-3,012.5	-811.8	1,729.1	10.00	10.00	0.00
7,900.0	52.45	269.96	6,746.3	-2,082.31	-3,012.6	-840.2	1,756.0	10.00	10.00	0.00
8,000.0	62.45	269.96	6,800.0	-2,136.04	-3,012.6	-924.4	1,835.8	10.00	10.00	0.00
8,100.0	72.45	269.96	6,838.3	-2,174.34	-3,012.7	-1,016.7	1,923.3	10.00	10.00	0.00
8,200.0	82.45	269.96	6,860.0	-2,196.03	-3,012.7	-1,114.1	2,015.7	10.00	10.00	0.00
LANDING PNT - VETTING 23 - NIO B TARGET										

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VETTING 23
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VETTING 23	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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)
8,275.5	90.00	269.96	6,865.0	-2,201.00	-3,012.8	-1,189.4	2,087.1	10.00	10.00	0.00
8,300.0	90.00	269.96	6,865.0	-2,201.00	-3,012.8	-1,213.9	2,110.3	0.00	0.00	0.00
8,400.0	90.00	269.96	6,865.0	-2,201.00	-3,012.9	-1,313.9	2,205.1	0.00	0.00	0.00
8,500.0	90.00	269.96	6,865.0	-2,201.00	-3,013.0	-1,413.9	2,299.9	0.00	0.00	0.00
8,600.0	90.00	269.96	6,865.0	-2,201.00	-3,013.0	-1,513.9	2,394.8	0.00	0.00	0.00
8,700.0	90.00	269.96	6,865.0	-2,201.00	-3,013.1	-1,613.9	2,489.6	0.00	0.00	0.00
8,800.0	90.00	269.96	6,865.0	-2,201.00	-3,013.2	-1,713.9	2,584.4	0.00	0.00	0.00
8,900.0	90.00	269.96	6,865.0	-2,201.00	-3,013.3	-1,813.9	2,679.2	0.00	0.00	0.00
9,000.0	90.00	269.96	6,865.0	-2,201.00	-3,013.3	-1,913.9	2,774.0	0.00	0.00	0.00
9,100.0	90.00	269.96	6,865.0	-2,201.00	-3,013.4	-2,013.9	2,868.8	0.00	0.00	0.00
9,200.0	90.00	269.96	6,865.0	-2,201.01	-3,013.5	-2,113.9	2,963.7	0.00	0.00	0.00
9,300.0	90.00	269.96	6,865.0	-2,201.01	-3,013.5	-2,213.9	3,058.5	0.00	0.00	0.00
9,400.0	90.00	269.96	6,865.0	-2,201.01	-3,013.6	-2,313.9	3,153.3	0.00	0.00	0.00
9,500.0	90.00	269.96	6,865.0	-2,201.01	-3,013.7	-2,413.9	3,248.1	0.00	0.00	0.00
9,600.0	90.00	269.96	6,865.0	-2,201.01	-3,013.8	-2,513.9	3,342.9	0.00	0.00	0.00
9,700.0	90.00	269.96	6,865.0	-2,201.01	-3,013.8	-2,613.9	3,437.7	0.00	0.00	0.00
9,800.0	90.00	269.96	6,865.0	-2,201.01	-3,013.9	-2,713.9	3,532.5	0.00	0.00	0.00
9,900.0	90.00	269.96	6,865.0	-2,201.01	-3,014.0	-2,813.9	3,627.4	0.00	0.00	0.00
10,000.0	90.00	269.96	6,865.0	-2,201.01	-3,014.1	-2,913.9	3,722.2	0.00	0.00	0.00
10,100.0	90.00	269.96	6,865.0	-2,201.01	-3,014.1	-3,013.9	3,817.0	0.00	0.00	0.00
10,200.0	90.00	269.96	6,865.0	-2,201.01	-3,014.2	-3,113.9	3,911.8	0.00	0.00	0.00
10,300.0	90.00	269.96	6,865.0	-2,201.01	-3,014.3	-3,213.9	4,006.6	0.00	0.00	0.00
10,400.0	90.00	269.96	6,865.0	-2,201.01	-3,014.3	-3,313.9	4,101.4	0.00	0.00	0.00
10,500.0	90.00	269.96	6,865.0	-2,201.01	-3,014.4	-3,413.9	4,196.2	0.00	0.00	0.00
10,600.0	90.00	269.96	6,865.0	-2,201.01	-3,014.5	-3,513.9	4,291.1	0.00	0.00	0.00
10,700.0	90.00	269.96	6,865.0	-2,201.01	-3,014.6	-3,613.9	4,385.9	0.00	0.00	0.00
10,800.0	90.00	269.96	6,865.0	-2,201.01	-3,014.6	-3,713.9	4,480.7	0.00	0.00	0.00
10,900.0	90.00	269.96	6,865.0	-2,201.01	-3,014.7	-3,813.9	4,575.5	0.00	0.00	0.00
11,000.0	90.00	269.96	6,865.0	-2,201.02	-3,014.8	-3,913.9	4,670.3	0.00	0.00	0.00
11,100.0	90.00	269.96	6,865.0	-2,201.02	-3,014.9	-4,013.9	4,765.1	0.00	0.00	0.00
11,200.0	90.00	269.96	6,865.0	-2,201.02	-3,014.9	-4,113.9	4,860.0	0.00	0.00	0.00
11,300.0	90.00	269.96	6,865.0	-2,201.02	-3,015.0	-4,213.9	4,954.8	0.00	0.00	0.00
11,400.0	90.00	269.96	6,865.0	-2,201.02	-3,015.1	-4,313.9	5,049.6	0.00	0.00	0.00
11,500.0	90.00	269.96	6,865.0	-2,201.02	-3,015.1	-4,413.9	5,144.4	0.00	0.00	0.00
11,600.0	90.00	269.96	6,865.0	-2,201.02	-3,015.2	-4,513.9	5,239.2	0.00	0.00	0.00
11,700.0	90.00	269.96	6,865.0	-2,201.02	-3,015.3	-4,613.9	5,334.0	0.00	0.00	0.00
11,800.0	90.00	269.96	6,865.0	-2,201.02	-3,015.4	-4,713.9	5,428.8	0.00	0.00	0.00
11,900.0	90.00	269.96	6,865.0	-2,201.02	-3,015.4	-4,813.9	5,523.7	0.00	0.00	0.00
12,000.0	90.00	269.96	6,865.0	-2,201.02	-3,015.5	-4,913.9	5,618.5	0.00	0.00	0.00
12,100.0	90.00	269.96	6,865.0	-2,201.02	-3,015.6	-5,013.9	5,713.3	0.00	0.00	0.00
12,200.0	90.00	269.96	6,865.0	-2,201.02	-3,015.6	-5,113.9	5,808.1	0.00	0.00	0.00
12,300.0	90.00	269.96	6,865.0	-2,201.02	-3,015.7	-5,213.9	5,902.9	0.00	0.00	0.00
12,400.0	90.00	269.96	6,865.0	-2,201.02	-3,015.8	-5,313.9	5,997.7	0.00	0.00	0.00
12,500.0	90.00	269.96	6,865.0	-2,201.02	-3,015.9	-5,413.9	6,092.5	0.00	0.00	0.00
12,600.0	90.00	269.96	6,865.0	-2,201.02	-3,015.9	-5,513.9	6,187.4	0.00	0.00	0.00
12,700.0	90.00	269.96	6,865.0	-2,201.02	-3,016.0	-5,613.9	6,282.2	0.00	0.00	0.00
12,800.0	90.00	269.96	6,865.0	-2,201.03	-3,016.1	-5,713.9	6,377.0	0.00	0.00	0.00
12,900.0	90.00	269.96	6,865.0	-2,201.03	-3,016.2	-5,813.9	6,471.8	0.00	0.00	0.00
13,000.0	90.00	269.96	6,865.0	-2,201.03	-3,016.2	-5,913.9	6,566.6	0.00	0.00	0.00
13,100.0	90.00	269.96	6,865.0	-2,201.03	-3,016.3	-6,013.9	6,661.4	0.00	0.00	0.00
13,200.0	90.00	269.96	6,865.0	-2,201.03	-3,016.4	-6,113.9	6,756.3	0.00	0.00	0.00
13,300.0	90.00	269.96	6,865.0	-2,201.03	-3,016.4	-6,213.9	6,851.1	0.00	0.00	0.00
13,400.0	90.00	269.96	6,865.0	-2,201.03	-3,016.5	-6,313.9	6,945.9	0.00	0.00	0.00
13,500.0	90.00	269.96	6,865.0	-2,201.03	-3,016.6	-6,413.9	7,040.7	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VETTING 23
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VETTING 23	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

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)
13,600.0	90.00	269.96	6,865.0	-2,201.03	-3,016.7	-6,513.9	7,135.5	0.00	0.00	0.00
13,700.0	90.00	269.96	6,865.0	-2,201.03	-3,016.7	-6,613.9	7,230.3	0.00	0.00	0.00
13,800.0	90.00	269.96	6,865.0	-2,201.03	-3,016.8	-6,713.9	7,325.1	0.00	0.00	0.00
13,900.0	90.00	269.96	6,865.0	-2,201.03	-3,016.9	-6,813.9	7,420.0	0.00	0.00	0.00
14,000.0	90.00	269.96	6,865.0	-2,201.03	-3,017.0	-6,913.9	7,514.8	0.00	0.00	0.00
14,100.0	90.00	269.96	6,865.0	-2,201.03	-3,017.0	-7,013.9	7,609.6	0.00	0.00	0.00
14,200.0	90.00	269.96	6,865.0	-2,201.03	-3,017.1	-7,113.9	7,704.4	0.00	0.00	0.00
14,300.0	90.00	269.96	6,865.0	-2,201.03	-3,017.2	-7,213.9	7,799.2	0.00	0.00	0.00
14,400.0	90.00	269.96	6,865.0	-2,201.03	-3,017.2	-7,313.9	7,894.0	0.00	0.00	0.00
14,500.0	90.00	269.96	6,865.0	-2,201.03	-3,017.3	-7,413.9	7,988.8	0.00	0.00	0.00
14,600.0	90.00	269.96	6,865.0	-2,201.04	-3,017.4	-7,513.9	8,083.7	0.00	0.00	0.00
14,700.0	90.00	269.96	6,865.0	-2,201.04	-3,017.5	-7,613.9	8,178.5	0.00	0.00	0.00
14,800.0	90.00	269.96	6,865.0	-2,201.04	-3,017.5	-7,713.9	8,273.3	0.00	0.00	0.00
14,900.0	90.00	269.96	6,865.0	-2,201.04	-3,017.6	-7,813.9	8,368.1	0.00	0.00	0.00
15,000.0	90.00	269.96	6,865.0	-2,201.04	-3,017.7	-7,913.9	8,462.9	0.00	0.00	0.00
15,100.0	90.00	269.96	6,865.0	-2,201.04	-3,017.8	-8,013.9	8,557.7	0.00	0.00	0.00
15,200.0	90.00	269.96	6,865.0	-2,201.04	-3,017.8	-8,113.9	8,652.6	0.00	0.00	0.00
15,300.0	90.00	269.96	6,865.0	-2,201.04	-3,017.9	-8,213.9	8,747.4	0.00	0.00	0.00
15,400.0	90.00	269.96	6,865.0	-2,201.04	-3,018.0	-8,313.9	8,842.2	0.00	0.00	0.00
15,500.0	90.00	269.96	6,865.0	-2,201.04	-3,018.0	-8,413.9	8,937.0	0.00	0.00	0.00
15,600.0	90.00	269.96	6,865.0	-2,201.04	-3,018.1	-8,513.9	9,031.8	0.00	0.00	0.00
15,700.0	90.00	269.96	6,865.0	-2,201.04	-3,018.2	-8,613.9	9,126.6	0.00	0.00	0.00
15,800.0	90.00	269.96	6,865.0	-2,201.04	-3,018.3	-8,713.9	9,221.4	0.00	0.00	0.00
15,900.0	90.00	269.96	6,865.0	-2,201.04	-3,018.3	-8,813.9	9,316.3	0.00	0.00	0.00
16,000.0	90.00	269.96	6,865.0	-2,201.04	-3,018.4	-8,913.9	9,411.1	0.00	0.00	0.00
BHL - VETTING 23										
16,069.3	90.00	269.96	6,865.0	-2,201.04	-3,018.5	-8,983.2	9,476.8	0.00	0.00	0.00
16,069.4	90.00	269.96	6,865.0	-2,201.00	-3,018.5	-8,983.3	9,476.8	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,030.1	3,583.0	PARKMAN			
4,816.2	4,132.0	SUSSEX			
5,789.7	4,823.0	SHANNON			
7,833.8	6,703.0	SHARON SPRINGS			
7,863.3	6,723.0	NIOBRARA			
8,275.5	6,865.0	NIO B TARGET			

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VETTING 23
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft (Original Well Elev)
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VETTING 23	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #2		

Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,200.0	1,200.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,601.3	1,600.0	-27.5	-5.6	9 5/8" SURFACE CASING
1,666.3	1,664.4	-36.4	-7.4	END OF TANGENT
3,173.3	2,984.6	-691.6	-141.5	EOB TO 45.7° INC
5,517.3	4,621.7	-2,335.1	-477.8	END OF TANGENT
7,345.4	6,262.0	-3,012.4	-616.4	EOD TO VERTICAL
7,375.4	6,292.0	-3,012.4	-616.4	KOP (10°/100ft BUR)
8,275.5	6,865.0	-3,012.8	-1,189.4	LANDING PNT - VETTING 23
16,069.3	6,865.0	-3,018.5	-8,983.2	BHL - VETTING 23