

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

VETTING 20

ORIGINAL WELLBORE

09 March, 2016

Plan: PROPOSAL #2

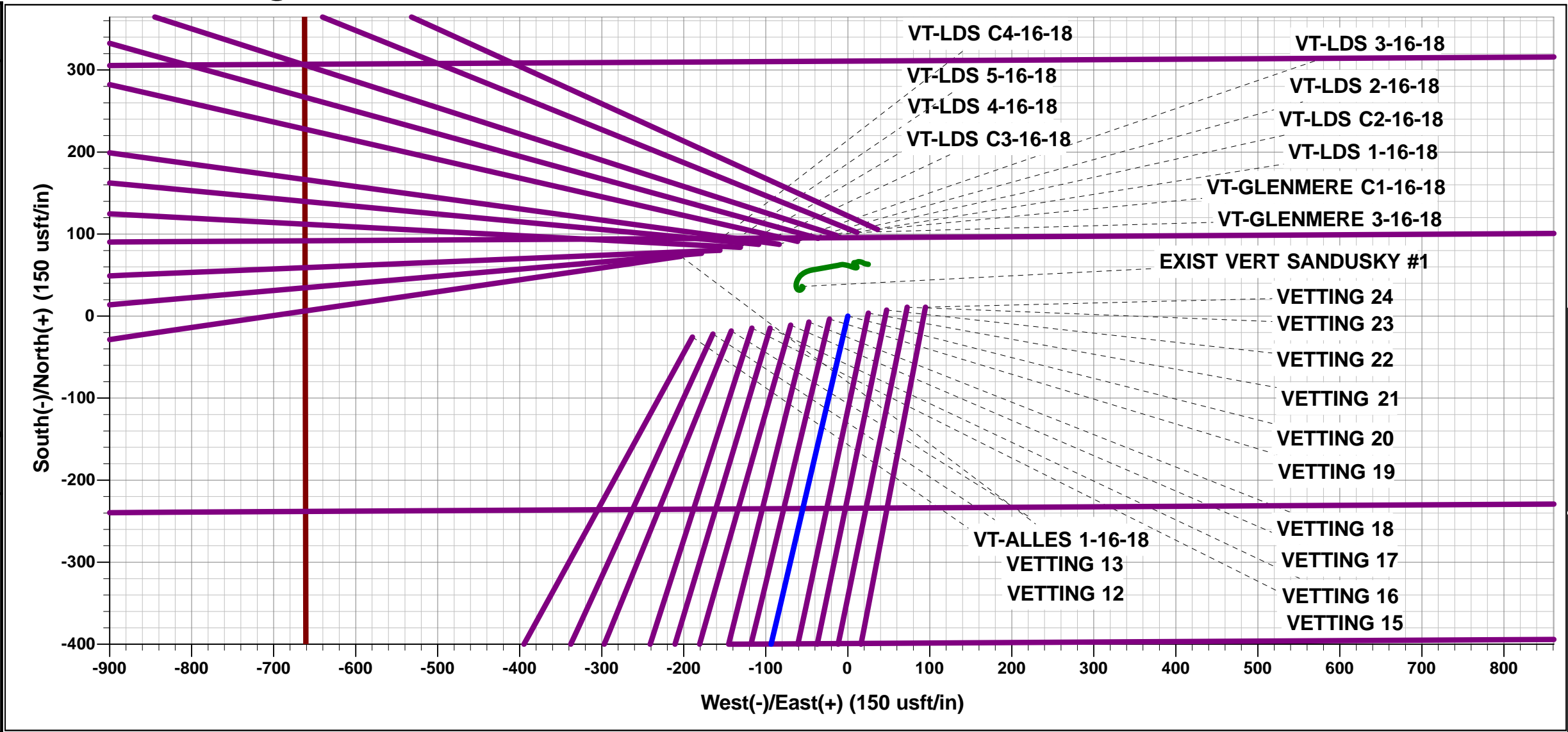




Project: WELD COUNTY, COLORADO (NAD 83)
Site: SW NW SEC. 15 T5N R65W 6th P.M.
Well: VETTING 20
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

ANNOTATIONS										
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation		
900.0	900.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)		
1600.0	1607.2	14.14	193.14	-84.6	-19.7	40.6	86.8	9 5/8" SURFACE CASING		
1663.1	1672.2	14.14	193.14	-100.0	-23.4	48.1	102.7	END OF TANGENT		
2562.3	2661.7	33.93	193.14	-490.6	-114.5	235.7	503.8	EOB TO 33.93° INC		
4662.8	5193.4	33.93	193.14	-1866.9	-435.8	896.9	1917.1	END OF TANGENT		
6262.0	6890.1	0.00	0.00	-2342.1	-546.7	1125.2	2405.0	EOD TO VERTICAL		
6292.0	6920.1	0.00	0.00	-2342.1	-546.7	1125.2	2405.0	KOP (10°/100ft BUR)		
6865.0	7820.2	90.00	269.96	-2342.5	-1119.8	1679.4	2978.1	LANDING PNT - VETTING 20		
6865.0	15616.6	90.00	269.96	-2348.2	-8916.2	9220.2	10774.5	BHL - VETTING 20		

WELLBORE TARGET DETAILS (LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
KOP - VETTING 20	6292.0	-2342.1	-546.7	40.394621	-104.658463	
LANDING PNT - VETTING 20	6865.0	-2342.5	-1119.7	40.394620	-104.660520	
BHL - VETTING 20	6865.0	-2348.2	-8916.2	40.394600	-104.688510	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3583.0	3892.0	PARKMAN
4132.0	4553.7	SUSSEX
4823.0	5382.5	SHANNON
6703.0	7378.4	SHARON SPRINGS
6723.0	7407.9	NIOBRARA
6865.0	7820.2	NIO B TARGET

PROPOSED LOCAL COORDINATES		
SHL: 1982ft FNL & 663ft FWL of Sec 15		
LP: 990ft FSL & 460ft FEL of Sec 16		
BHL: 990ft FNL & 2344ft FWL of Sec 17		

T

M

Azimuths to True North

Magnetic North: 8.32°

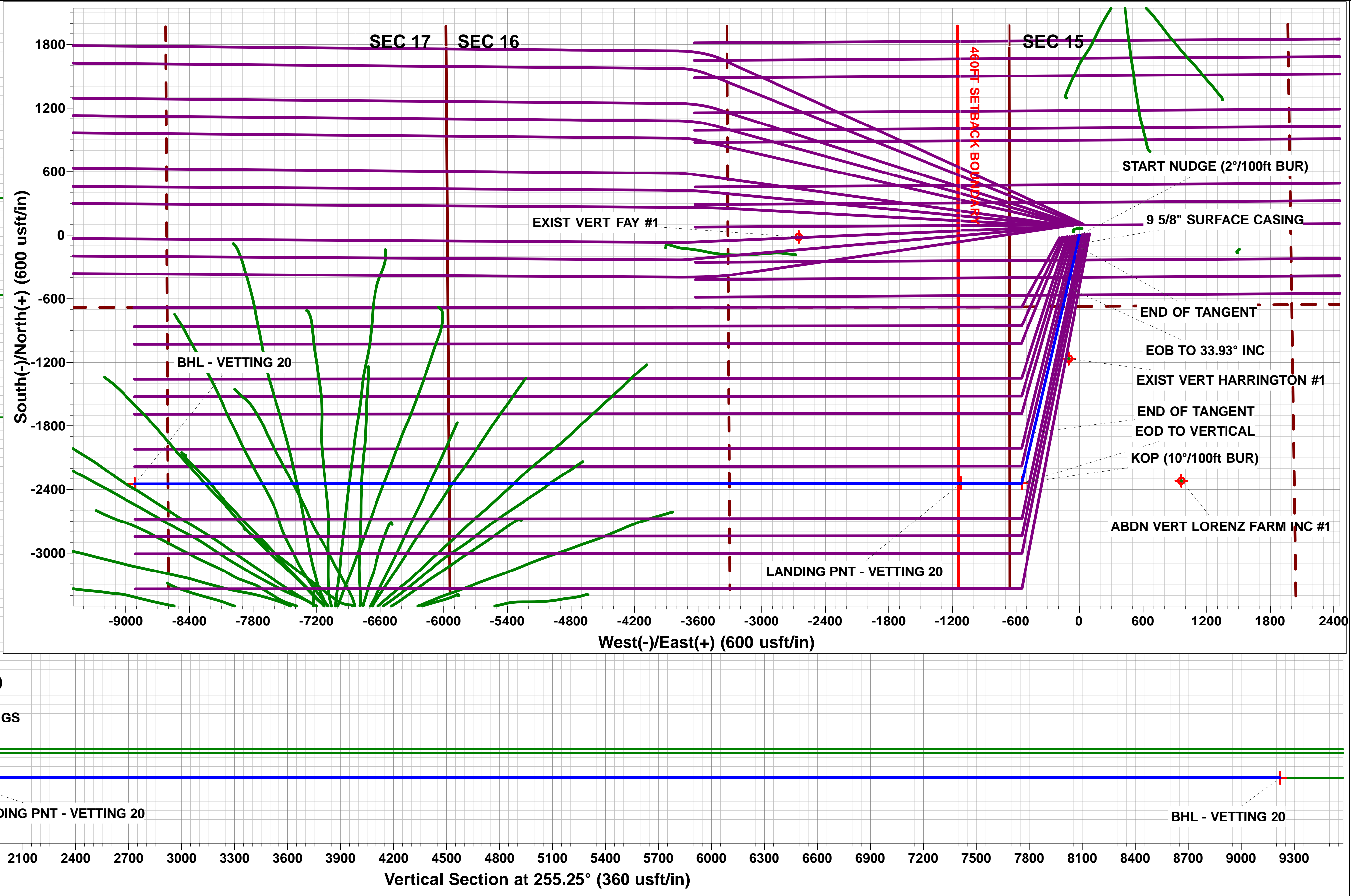
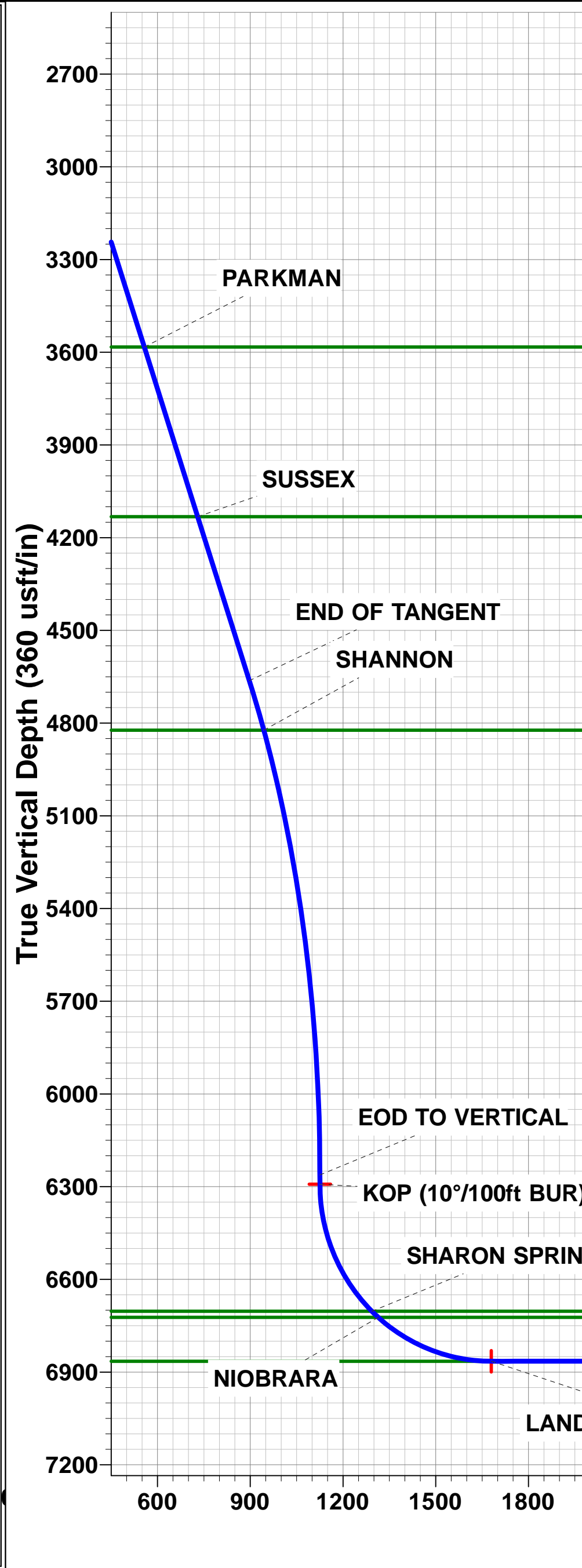
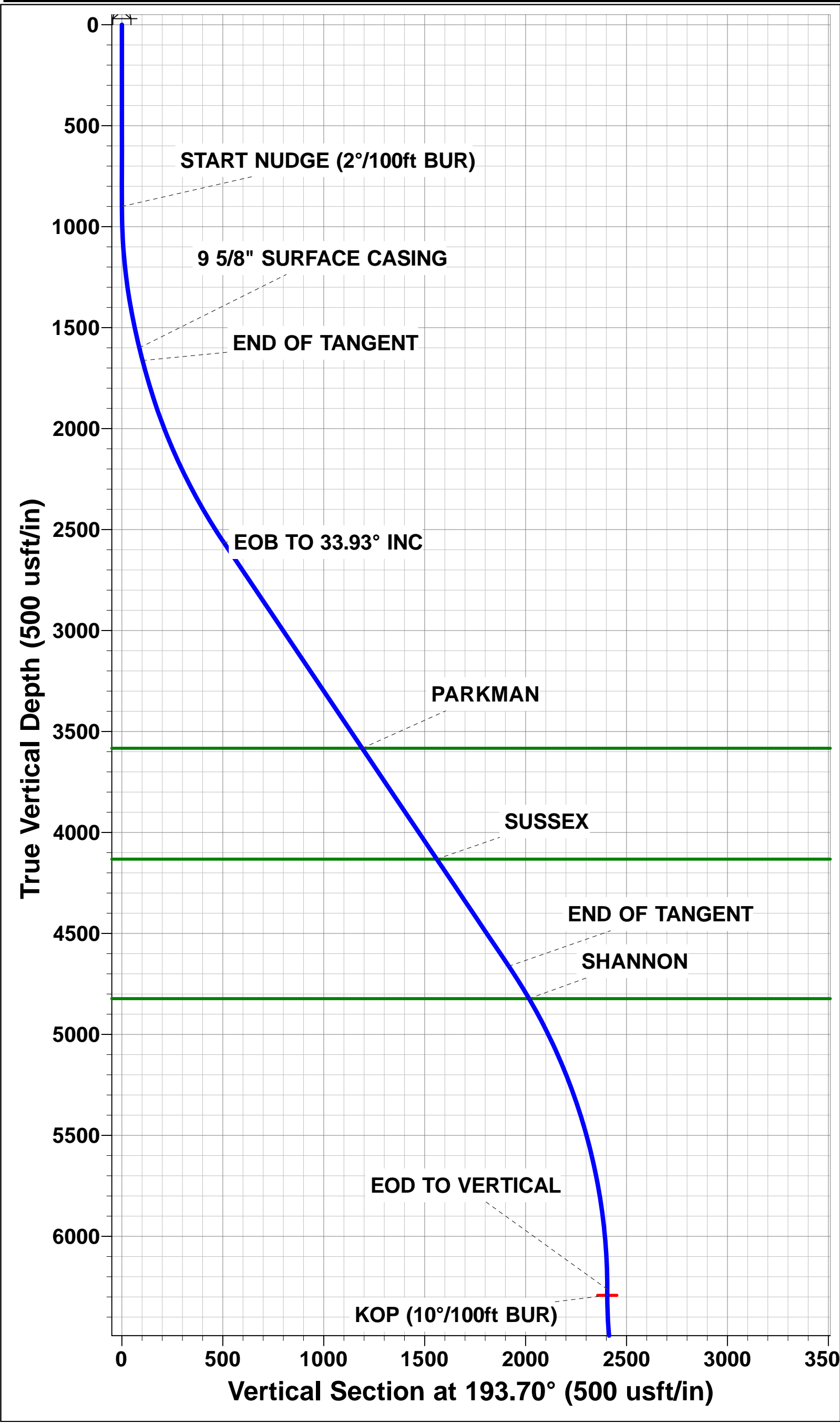
Magnetic Field

Strength: 52584.9snT

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 20
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 20	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 20		
Well Position	+N/-S	25.5 usft	Northing:
	+E/-W	189.4 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	40.401050
		Longitude:	-104.656500
		Ground Level:	4,648.0 usft

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	255.25

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	
900.0	0.00	0.00	900.0	-3,764.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,607.2	14.14	193.14	1,600.0	-3,064.0	-84.6	-19.7	2.00	2.00	0.00	193.14	
1,672.2	14.14	193.14	1,663.0	-3,001.0	-100.0	-23.4	0.00	0.00	0.00	0.00	
2,661.7	33.93	193.14	2,562.3	-2,101.7	-490.6	-114.5	2.00	2.00	0.00	0.00	
5,193.4	33.93	193.14	4,662.8	-1.2	-1,866.9	-435.8	0.00	0.00	0.00	0.00	
6,890.1	0.00	0.00	6,262.0	1,598.0	-2,342.1	-546.7	2.00	-2.00	0.00	180.00	
6,920.1	0.00	0.00	6,292.0	1,628.0	-2,342.1	-546.7	0.00	0.00	0.00	0.00	KOP - VETTING 20
7,820.2	90.00	269.96	6,865.0	2,201.0	-2,342.5	-1,119.7	10.00	10.00	-10.00	269.96	LANDING PNT - VE
15,616.6	90.00	269.96	6,865.0	2,201.0	-2,348.2	-8,916.2	0.00	0.00	0.00	142.39	BHL - VETTING 20

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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 20	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
START NUDGE (2°/100ft BUR)										
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	2.00	193.14	1,000.0	3,664.02	-1.7	-0.4	0.8	2.00	2.00	0.00
1,100.0	4.00	193.14	1,099.8	3,564.16	-6.8	-1.6	3.3	2.00	2.00	0.00
1,200.0	6.00	193.14	1,199.5	3,464.55	-15.3	-3.6	7.3	2.00	2.00	0.00
1,300.0	8.00	193.14	1,298.7	3,365.30	-27.1	-6.3	13.0	2.00	2.00	0.00
1,400.0	10.00	193.14	1,397.5	3,266.53	-42.4	-9.9	20.4	2.00	2.00	0.00
1,500.0	12.00	193.14	1,495.6	3,168.38	-61.0	-14.2	29.3	2.00	2.00	0.00
1,600.0	14.00	193.14	1,593.1	3,070.94	-82.9	-19.3	39.8	2.00	2.00	0.00
9 5/8" SURFACE CASING										
1,607.2	14.14	193.14	1,600.0	3,063.96	-84.6	-19.7	40.6	1.99	1.99	0.00
END OF TANGENT										
1,672.2	14.14	193.14	1,663.1	3,000.93	-100.0	-23.4	48.1	0.00	0.00	0.00
1,700.0	14.70	193.14	1,690.0	2,974.01	-106.8	-24.9	51.3	2.00	2.00	0.00
1,800.0	16.70	193.14	1,786.3	2,877.74	-133.1	-31.1	64.0	2.00	2.00	0.00
1,900.0	18.70	193.14	1,881.5	2,782.48	-162.7	-38.0	78.2	2.00	2.00	0.00
2,000.0	20.70	193.14	1,975.7	2,688.34	-195.6	-45.7	94.0	2.00	2.00	0.00
2,100.0	22.70	193.14	2,068.6	2,595.43	-231.6	-54.1	111.3	2.00	2.00	0.00
2,200.0	24.70	193.14	2,160.1	2,503.87	-270.7	-63.2	130.1	2.00	2.00	0.00
2,300.0	26.70	193.14	2,250.2	2,413.77	-312.9	-73.1	150.3	2.00	2.00	0.00
2,400.0	28.70	193.14	2,338.8	2,325.23	-358.2	-83.6	172.1	2.00	2.00	0.00
2,500.0	30.70	193.14	2,425.6	2,238.37	-406.4	-94.9	195.3	2.00	2.00	0.00
2,600.0	32.70	193.14	2,510.7	2,153.30	-457.6	-106.8	219.8	2.00	2.00	0.00
EOB TO 33.93° INC										
2,661.7	33.93	193.14	2,562.3	2,101.74	-490.6	-114.5	235.7	2.00	2.00	0.00
2,700.0	33.93	193.14	2,594.0	2,069.96	-511.4	-119.4	245.7	0.00	0.00	0.00
2,800.0	33.93	193.14	2,677.0	1,986.99	-565.8	-132.1	271.8	0.00	0.00	0.00
2,900.0	33.93	193.14	2,760.0	1,904.02	-620.2	-144.8	297.9	0.00	0.00	0.00
3,000.0	33.93	193.14	2,842.9	1,821.06	-674.5	-157.5	324.1	0.00	0.00	0.00
3,100.0	33.93	193.14	2,925.9	1,738.09	-728.9	-170.2	350.2	0.00	0.00	0.00
3,200.0	33.93	193.14	3,008.9	1,655.12	-783.3	-182.8	376.3	0.00	0.00	0.00
3,300.0	33.93	193.14	3,091.8	1,572.15	-837.6	-195.5	402.4	0.00	0.00	0.00
3,400.0	33.93	193.14	3,174.8	1,489.18	-892.0	-208.2	428.5	0.00	0.00	0.00
3,500.0	33.93	193.14	3,257.8	1,406.22	-946.3	-220.9	454.6	0.00	0.00	0.00
3,600.0	33.93	193.14	3,340.8	1,323.25	-1,000.7	-233.6	480.8	0.00	0.00	0.00
3,700.0	33.93	193.14	3,423.7	1,240.28	-1,055.1	-246.3	506.9	0.00	0.00	0.00
3,800.0	33.93	193.14	3,506.7	1,157.31	-1,109.4	-259.0	533.0	0.00	0.00	0.00
PARKMAN										
3,892.0	33.93	193.14	3,583.0	1,081.00	-1,159.4	-270.7	557.0	0.00	0.00	0.00
3,900.0	33.93	193.14	3,589.7	1,074.34	-1,163.8	-271.7	559.1	0.00	0.00	0.00
4,000.0	33.93	193.14	3,672.6	991.37	-1,218.1	-284.4	585.2	0.00	0.00	0.00
4,100.0	33.93	193.14	3,755.6	908.41	-1,272.5	-297.1	611.3	0.00	0.00	0.00
4,200.0	33.93	193.14	3,838.6	825.44	-1,326.9	-309.7	637.5	0.00	0.00	0.00
4,300.0	33.93	193.14	3,921.5	742.47	-1,381.2	-322.4	663.6	0.00	0.00	0.00
4,400.0	33.93	193.14	4,004.5	659.50	-1,435.6	-335.1	689.7	0.00	0.00	0.00

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Well:	VETTING 20	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	33.93	193.14	4,087.5	576.53	-1,490.0	-347.8	715.8	0.00	0.00	0.00
SUSSEX										
4,553.7	33.93	193.14	4,132.0	532.00	-1,519.1	-354.6	729.8	0.00	0.00	0.00
4,600.0	33.93	193.14	4,170.4	493.57	-1,544.3	-360.5	741.9	0.00	0.00	0.00
4,700.0	33.93	193.14	4,253.4	410.60	-1,598.7	-373.2	768.0	0.00	0.00	0.00
4,800.0	33.93	193.14	4,336.4	327.63	-1,653.0	-385.9	794.2	0.00	0.00	0.00
4,900.0	33.93	193.14	4,419.3	244.66	-1,707.4	-398.6	820.3	0.00	0.00	0.00
5,000.0	33.93	193.14	4,502.3	161.69	-1,761.8	-411.3	846.4	0.00	0.00	0.00
5,100.0	33.93	193.14	4,585.3	78.72	-1,816.1	-424.0	872.5	0.00	0.00	0.00
END OF TANGENT										
5,193.4	33.93	193.14	4,662.8	1.23	-1,866.9	-435.8	896.9	0.00	0.00	0.00
5,200.0	33.80	193.14	4,668.2	-4.25	-1,870.5	-436.6	898.6	2.00	-2.00	0.00
5,300.0	31.80	193.14	4,752.3	-88.30	-1,923.2	-449.0	924.0	2.00	-2.00	0.00
SHANNON										
5,382.5	30.15	193.14	4,823.0	-159.00	-1,964.6	-458.6	943.8	2.00	-2.00	0.00
5,400.0	29.80	193.14	4,838.2	-174.19	-1,973.1	-460.6	947.9	2.00	-2.00	0.00
5,500.0	27.80	193.14	4,925.8	-261.81	-2,020.0	-471.6	970.5	2.00	-2.00	0.00
5,600.0	25.80	193.14	5,015.1	-351.07	-2,063.9	-481.8	991.6	2.00	-2.00	0.00
5,700.0	23.80	193.14	5,105.8	-441.84	-2,104.8	-491.3	1,011.2	2.00	-2.00	0.00
5,800.0	21.80	193.14	5,198.0	-534.02	-2,142.5	-500.1	1,029.3	2.00	-2.00	0.00
5,900.0	19.80	193.14	5,291.5	-627.49	-2,177.1	-508.2	1,045.9	2.00	-2.00	0.00
6,000.0	17.80	193.14	5,386.2	-722.15	-2,208.5	-515.5	1,061.0	2.00	-2.00	0.00
6,100.0	15.80	193.14	5,481.9	-817.88	-2,236.6	-522.1	1,074.5	2.00	-2.00	0.00
6,200.0	13.80	193.14	5,578.6	-914.56	-2,261.5	-527.9	1,086.5	2.00	-2.00	0.00
6,300.0	11.80	193.14	5,676.1	-1,012.06	-2,283.1	-533.0	1,096.8	2.00	-2.00	0.00
6,400.0	9.80	193.14	5,774.3	-1,110.29	-2,301.3	-537.2	1,105.6	2.00	-2.00	0.00
6,500.0	7.80	193.14	5,873.1	-1,209.10	-2,316.2	-540.7	1,112.8	2.00	-2.00	0.00
6,600.0	5.80	193.14	5,972.4	-1,308.40	-2,327.8	-543.4	1,118.3	2.00	-2.00	0.00
6,700.0	3.80	193.14	6,072.0	-1,408.04	-2,335.9	-545.3	1,122.2	2.00	-2.00	0.00
6,800.0	1.80	193.14	6,171.9	-1,507.92	-2,340.7	-546.4	1,124.5	2.00	-2.00	0.00
EOD TO VERTICAL										
6,890.1	0.00	0.00	6,262.0	-1,598.00	-2,342.1	-546.7	1,125.2	2.00	-2.00	0.00
6,900.0	0.00	0.00	6,271.9	-1,607.90	-2,342.1	-546.7	1,125.2	0.00	0.00	0.00
KOP (10°/100ft BUR)										
6,920.1	0.00	0.00	6,292.0	-1,628.00	-2,342.1	-546.7	1,125.2	0.00	0.00	0.00
7,000.0	7.99	269.96	6,371.6	-1,707.64	-2,342.1	-552.3	1,130.6	10.00	10.00	0.00
7,100.0	17.99	269.96	6,469.0	-1,804.96	-2,342.1	-574.7	1,152.3	10.00	10.00	0.00
7,200.0	27.99	269.96	6,560.9	-1,896.90	-2,342.1	-613.7	1,190.0	10.00	10.00	0.00
7,300.0	37.99	269.96	6,644.7	-1,980.67	-2,342.1	-668.1	1,242.6	10.00	10.00	0.00
SHARON SPRINGS										
7,378.4	45.83	269.96	6,703.0	-2,039.00	-2,342.2	-720.5	1,293.2	10.00	10.00	0.00
7,400.0	47.99	269.96	6,717.7	-2,053.73	-2,342.2	-736.2	1,308.5	10.00	10.00	0.00
NIOBRARA										
7,407.9	48.78	269.96	6,723.0	-2,059.00	-2,342.2	-742.1	1,314.2	10.00	10.00	0.00
7,500.0	57.99	269.96	6,777.9	-2,113.86	-2,342.3	-816.0	1,385.6	10.00	10.00	0.00
7,600.0	67.99	269.96	6,823.2	-2,159.22	-2,342.3	-904.9	1,471.6	10.00	10.00	0.00
7,700.0	77.98	269.96	6,852.4	-2,188.45	-2,342.4	-1,000.4	1,564.0	10.00	10.00	0.00
7,800.0	87.98	269.96	6,864.6	-2,200.65	-2,342.5	-1,099.6	1,659.9	10.00	10.00	0.00
LANDING PNT - VETTING 20 - NIO B TARGET										
7,820.2	90.00	269.96	6,865.0	-2,201.00	-2,342.5	-1,119.7	1,679.4	10.00	10.00	0.00
7,900.0	90.00	269.96	6,865.0	-2,201.00	-2,342.5	-1,199.6	1,756.6	0.00	0.00	0.00
8,000.0	90.00	269.96	6,865.0	-2,201.00	-2,342.6	-1,299.6	1,853.3	0.00	0.00	0.00
8,100.0	90.00	269.96	6,865.0	-2,200.99	-2,342.7	-1,399.6	1,950.1	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VETTING 20
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 20	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)
8,200.0	90.00	269.96	6,865.0	-2,200.99	-2,342.8	-1,499.6	2,046.8	0.00	0.00	0.00
8,300.0	90.00	269.96	6,865.0	-2,200.99	-2,342.8	-1,599.6	2,143.5	0.00	0.00	0.00
8,400.0	90.00	269.96	6,865.0	-2,200.99	-2,342.9	-1,699.6	2,240.2	0.00	0.00	0.00
8,500.0	90.00	269.96	6,865.0	-2,200.98	-2,343.0	-1,799.6	2,336.9	0.00	0.00	0.00
8,600.0	90.00	269.96	6,865.0	-2,200.98	-2,343.1	-1,899.6	2,433.7	0.00	0.00	0.00
8,700.0	90.00	269.96	6,865.0	-2,200.98	-2,343.1	-1,999.6	2,530.4	0.00	0.00	0.00
8,800.0	90.00	269.96	6,865.0	-2,200.98	-2,343.2	-2,099.6	2,627.1	0.00	0.00	0.00
8,900.0	90.00	269.96	6,865.0	-2,200.98	-2,343.3	-2,199.6	2,723.8	0.00	0.00	0.00
9,000.0	90.00	269.96	6,865.0	-2,200.98	-2,343.4	-2,299.6	2,820.5	0.00	0.00	0.00
9,100.0	90.00	269.96	6,865.0	-2,200.97	-2,343.4	-2,399.6	2,917.3	0.00	0.00	0.00
9,200.0	90.00	269.96	6,865.0	-2,200.97	-2,343.5	-2,499.6	3,014.0	0.00	0.00	0.00
9,300.0	90.00	269.96	6,865.0	-2,200.97	-2,343.6	-2,599.6	3,110.7	0.00	0.00	0.00
9,400.0	90.00	269.96	6,865.0	-2,200.97	-2,343.7	-2,699.6	3,207.4	0.00	0.00	0.00
9,500.0	90.00	269.96	6,865.0	-2,200.97	-2,343.7	-2,799.6	3,304.2	0.00	0.00	0.00
9,600.0	90.00	269.96	6,865.0	-2,200.97	-2,343.8	-2,899.6	3,400.9	0.00	0.00	0.00
9,700.0	90.00	269.96	6,865.0	-2,200.97	-2,343.9	-2,999.6	3,497.6	0.00	0.00	0.00
9,800.0	90.00	269.96	6,865.0	-2,200.96	-2,344.0	-3,099.6	3,594.3	0.00	0.00	0.00
9,900.0	90.00	269.96	6,865.0	-2,200.96	-2,344.0	-3,199.6	3,691.0	0.00	0.00	0.00
10,000.0	90.00	269.96	6,865.0	-2,200.96	-2,344.1	-3,299.6	3,787.8	0.00	0.00	0.00
10,100.0	90.00	269.96	6,865.0	-2,200.96	-2,344.2	-3,399.6	3,884.5	0.00	0.00	0.00
10,200.0	90.00	269.96	6,865.0	-2,200.96	-2,344.3	-3,499.6	3,981.2	0.00	0.00	0.00
10,300.0	90.00	269.96	6,865.0	-2,200.96	-2,344.3	-3,599.6	4,077.9	0.00	0.00	0.00
10,400.0	90.00	269.96	6,865.0	-2,200.96	-2,344.4	-3,699.6	4,174.6	0.00	0.00	0.00
10,500.0	90.00	269.96	6,865.0	-2,200.96	-2,344.5	-3,799.6	4,271.4	0.00	0.00	0.00
10,600.0	90.00	269.96	6,865.0	-2,200.96	-2,344.6	-3,899.6	4,368.1	0.00	0.00	0.00
10,700.0	90.00	269.96	6,865.0	-2,200.96	-2,344.6	-3,999.6	4,464.8	0.00	0.00	0.00
10,800.0	90.00	269.96	6,865.0	-2,200.95	-2,344.7	-4,099.6	4,561.5	0.00	0.00	0.00
10,900.0	90.00	269.96	6,865.0	-2,200.95	-2,344.8	-4,199.6	4,658.3	0.00	0.00	0.00
11,000.0	90.00	269.96	6,865.0	-2,200.95	-2,344.8	-4,299.6	4,755.0	0.00	0.00	0.00
11,100.0	90.00	269.96	6,865.0	-2,200.95	-2,344.9	-4,399.6	4,851.7	0.00	0.00	0.00
11,200.0	90.00	269.96	6,865.0	-2,200.95	-2,345.0	-4,499.6	4,948.4	0.00	0.00	0.00
11,300.0	90.00	269.96	6,865.0	-2,200.95	-2,345.1	-4,599.6	5,045.1	0.00	0.00	0.00
11,400.0	90.00	269.96	6,865.0	-2,200.95	-2,345.1	-4,699.6	5,141.9	0.00	0.00	0.00
11,500.0	90.00	269.96	6,865.0	-2,200.95	-2,345.2	-4,799.6	5,238.6	0.00	0.00	0.00
11,600.0	90.00	269.96	6,865.0	-2,200.95	-2,345.3	-4,899.6	5,335.3	0.00	0.00	0.00
11,700.0	90.00	269.96	6,865.0	-2,200.95	-2,345.4	-4,999.6	5,432.0	0.00	0.00	0.00
11,800.0	90.00	269.96	6,865.0	-2,200.95	-2,345.4	-5,099.6	5,528.7	0.00	0.00	0.00
11,900.0	90.00	269.96	6,865.0	-2,200.95	-2,345.5	-5,199.6	5,625.5	0.00	0.00	0.00
12,000.0	90.00	269.96	6,865.0	-2,200.95	-2,345.6	-5,299.6	5,722.2	0.00	0.00	0.00
12,100.0	90.00	269.96	6,865.0	-2,200.95	-2,345.7	-5,399.6	5,818.9	0.00	0.00	0.00
12,200.0	90.00	269.96	6,865.0	-2,200.95	-2,345.7	-5,499.6	5,915.6	0.00	0.00	0.00
12,300.0	90.00	269.96	6,865.0	-2,200.95	-2,345.8	-5,599.6	6,012.3	0.00	0.00	0.00
12,400.0	90.00	269.96	6,865.0	-2,200.95	-2,345.9	-5,699.6	6,109.1	0.00	0.00	0.00
12,500.0	90.00	269.96	6,865.0	-2,200.95	-2,345.9	-5,799.6	6,205.8	0.00	0.00	0.00
12,600.0	90.00	269.96	6,865.0	-2,200.95	-2,346.0	-5,899.6	6,302.5	0.00	0.00	0.00
12,700.0	90.00	269.96	6,865.0	-2,200.96	-2,346.1	-5,999.6	6,399.2	0.00	0.00	0.00
12,800.0	90.00	269.96	6,865.0	-2,200.96	-2,346.2	-6,099.6	6,496.0	0.00	0.00	0.00
12,900.0	90.00	269.96	6,865.0	-2,200.96	-2,346.2	-6,199.6	6,592.7	0.00	0.00	0.00
13,000.0	90.00	269.96	6,865.0	-2,200.96	-2,346.3	-6,299.6	6,689.4	0.00	0.00	0.00
13,100.0	90.00	269.96	6,865.0	-2,200.96	-2,346.4	-6,399.6	6,786.1	0.00	0.00	0.00
13,200.0	90.00	269.96	6,865.0	-2,200.96	-2,346.5	-6,499.6	6,882.8	0.00	0.00	0.00
13,300.0	90.00	269.96	6,865.0	-2,200.96	-2,346.5	-6,599.6	6,979.6	0.00	0.00	0.00
13,400.0	90.00	269.96	6,865.0	-2,200.96	-2,346.6	-6,699.6	7,076.3	0.00	0.00	0.00
13,500.0	90.00	269.96	6,865.0	-2,200.96	-2,346.7	-6,799.6	7,173.0	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VETTING 20
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 20	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	-2,200.96	-2,346.7	-6,899.6	7,269.7	0.00	0.00	0.00
13,700.0	90.00	269.96	6,865.0	-2,200.96	-2,346.8	-6,999.6	7,366.4	0.00	0.00	0.00
13,800.0	90.00	269.96	6,865.0	-2,200.97	-2,346.9	-7,099.6	7,463.2	0.00	0.00	0.00
13,900.0	90.00	269.96	6,865.0	-2,200.97	-2,347.0	-7,199.6	7,559.9	0.00	0.00	0.00
14,000.0	90.00	269.96	6,865.0	-2,200.97	-2,347.0	-7,299.6	7,656.6	0.00	0.00	0.00
14,100.0	90.00	269.96	6,865.0	-2,200.97	-2,347.1	-7,399.6	7,753.3	0.00	0.00	0.00
14,200.0	90.00	269.96	6,865.0	-2,200.97	-2,347.2	-7,499.6	7,850.0	0.00	0.00	0.00
14,300.0	90.00	269.96	6,865.0	-2,200.97	-2,347.2	-7,599.6	7,946.8	0.00	0.00	0.00
14,400.0	90.00	269.96	6,865.0	-2,200.97	-2,347.3	-7,699.6	8,043.5	0.00	0.00	0.00
14,500.0	90.00	269.96	6,865.0	-2,200.98	-2,347.4	-7,799.6	8,140.2	0.00	0.00	0.00
14,600.0	90.00	269.96	6,865.0	-2,200.98	-2,347.5	-7,899.6	8,236.9	0.00	0.00	0.00
14,700.0	90.00	269.96	6,865.0	-2,200.98	-2,347.5	-7,999.6	8,333.7	0.00	0.00	0.00
14,800.0	90.00	269.96	6,865.0	-2,200.98	-2,347.6	-8,099.6	8,430.4	0.00	0.00	0.00
14,900.0	90.00	269.96	6,865.0	-2,200.98	-2,347.7	-8,199.6	8,527.1	0.00	0.00	0.00
15,000.0	90.00	269.96	6,865.0	-2,200.99	-2,347.7	-8,299.6	8,623.8	0.00	0.00	0.00
15,100.0	90.00	269.96	6,865.0	-2,200.99	-2,347.8	-8,399.6	8,720.5	0.00	0.00	0.00
15,200.0	90.00	269.96	6,865.0	-2,200.99	-2,347.9	-8,499.6	8,817.3	0.00	0.00	0.00
15,300.0	90.00	269.96	6,865.0	-2,200.99	-2,348.0	-8,599.6	8,914.0	0.00	0.00	0.00
15,400.0	90.00	269.96	6,865.0	-2,200.99	-2,348.0	-8,699.6	9,010.7	0.00	0.00	0.00
15,500.0	90.00	269.96	6,865.0	-2,201.00	-2,348.1	-8,799.6	9,107.4	0.00	0.00	0.00
15,600.0	90.00	269.96	6,865.0	-2,201.00	-2,348.2	-8,899.6	9,204.1	0.00	0.00	0.00
BHL - VETTING 20										
15,616.6	90.00	269.96	6,865.0	-2,201.00	-2,348.2	-8,916.2	9,220.2	0.00	0.00	0.00

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,892.0	3,583.0	PARKMAN				
4,553.7	4,132.0	SUSSEX				
5,382.5	4,823.0	SHANNON				
7,378.4	6,703.0	SHARON SPRINGS				
7,407.9	6,723.0	NIOBRARA				
7,820.2	6,865.0	NIO B TARGET				

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
900.0	900.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,607.2	1,600.0	-84.6	-19.7	9 5/8" SURFACE CASING
1,672.2	1,663.1	-100.0	-23.4	END OF TANGENT
2,661.7	2,562.3	-490.6	-114.5	EOB TO 33.93° INC
5,193.4	4,662.8	-1,866.9	-435.8	END OF TANGENT
6,890.1	6,262.0	-2,342.1	-546.7	EOD TO VERTICAL
6,920.1	6,292.0	-2,342.1	-546.7	KOP (10°/100ft BUR)
7,820.2	6,865.0	-2,342.5	-1,119.8	LANDING PNT - VETTING 20
15,616.6	6,865.0	-2,348.2	-8,916.2	BHL - VETTING 20