

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

VETTING 18

ORIGINAL WELLBORE

09 March, 2016

Plan: PROPOSAL #2

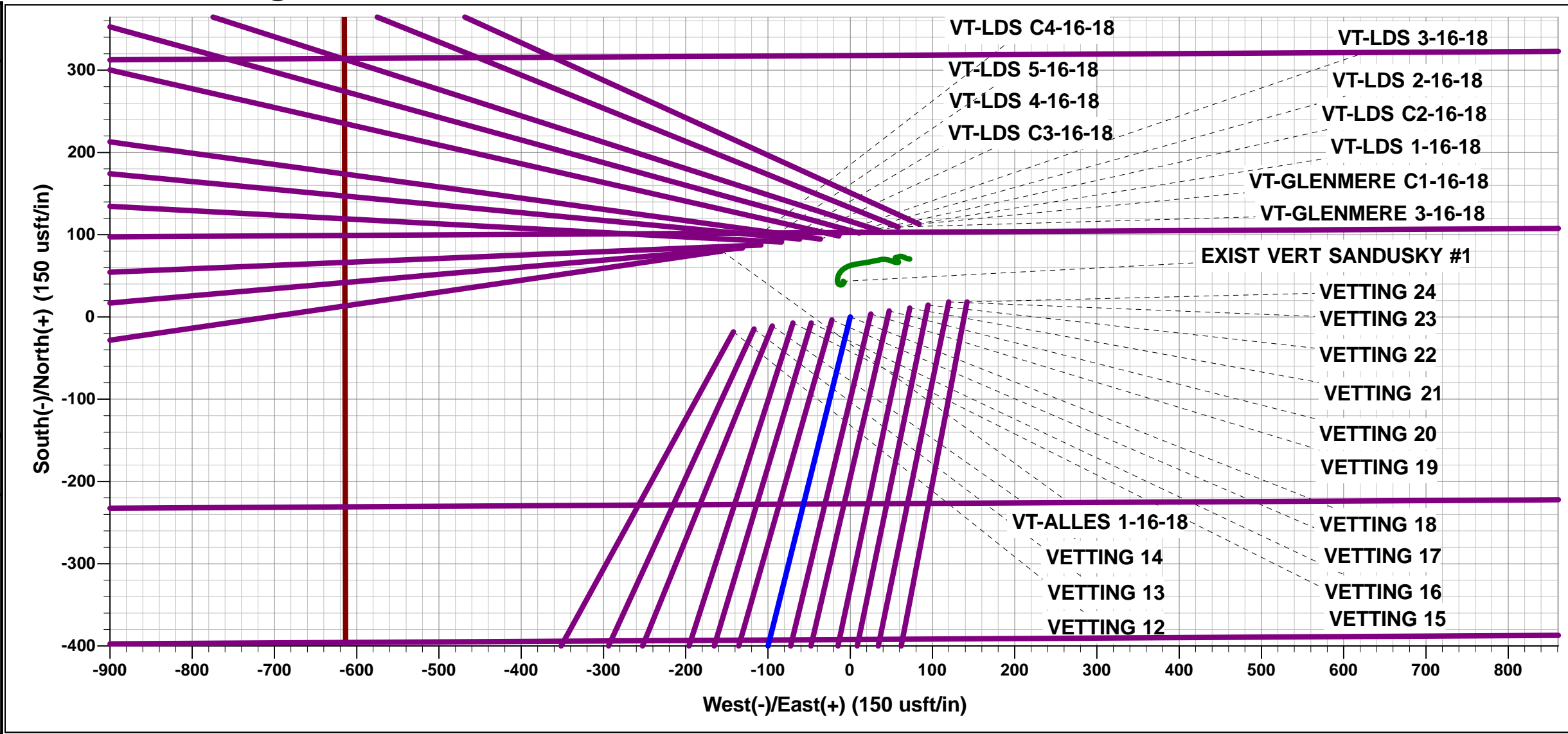




Project: WELD COUNTY, COLORADO (NAD 83)
Site: SW NW SEC. 15 T5N R65W 6th P.M.
Well: VETTING 18
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #2

ANNOTATIONS										
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation		
700.0	700.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)		
1600.0	1615.5	18.31	194.00	-140.7	-35.1	65.4	145.0	9 5/8" SURFACE CASING		
1661.7	1680.5	18.31	194.00	-160.5	-40.0	74.6	165.5	END OF TANGENT		
2021.6	2069.5	26.09	194.00	-303.1	-75.6	140.8	312.3	EOB TO 26.09° INC		
5003.1	5389.3	26.09	194.00	-1719.7	-428.7	798.7	1772.3	END OF TANGENT		
6263.0	6693.8	0.00	194.00	-2003.0	-499.3	930.3	2064.3	EOD TO VERTICAL		
6293.0	6723.8	0.00	0.00	-2003.0	-499.3	930.3	2064.3	KOP (10°/100ft BUR)		
6866.0	7623.9	90.00	269.93	-2003.7	-1072.4	1489.3	2637.3	LANDING PNT - VETTING 18		
6866.0	15420.3	90.00	269.93	-2013.0	-8868.7	9094.3	10433.6	BHL - VETTING 18		

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - VETTING 18	6293.0	-2003.0	-499.3	40.395532	-104.658463
LANDING PNT - VETTING 18	6866.0	-2003.7	-1072.4	40.395530	-104.660520
BHL - VETTING 18	6866.0	-2013.0	-8868.7	40.395500	-104.688510



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3584.0	3809.2	PARKMAN
4133.0	4420.5	SUSSEX
4824.0	5189.9	SHANNON
6704.0	7182.1	SHARON SPRINGS
6724.0	7211.6	NIOBRARA
6866.0	7623.9	NIO B TARGET

PROPOSED LOCAL COORDINATES		
SHL: 1988ft FNL & 615ft FWL of Sec 15		
LP: 1320ft FSL & 460ft FEL of Sec 16		
BHL: 1320ft FNL & 2343ft FWL of Sec 17		

T M

Azimuths to True North

Magnetic North: 8.32°

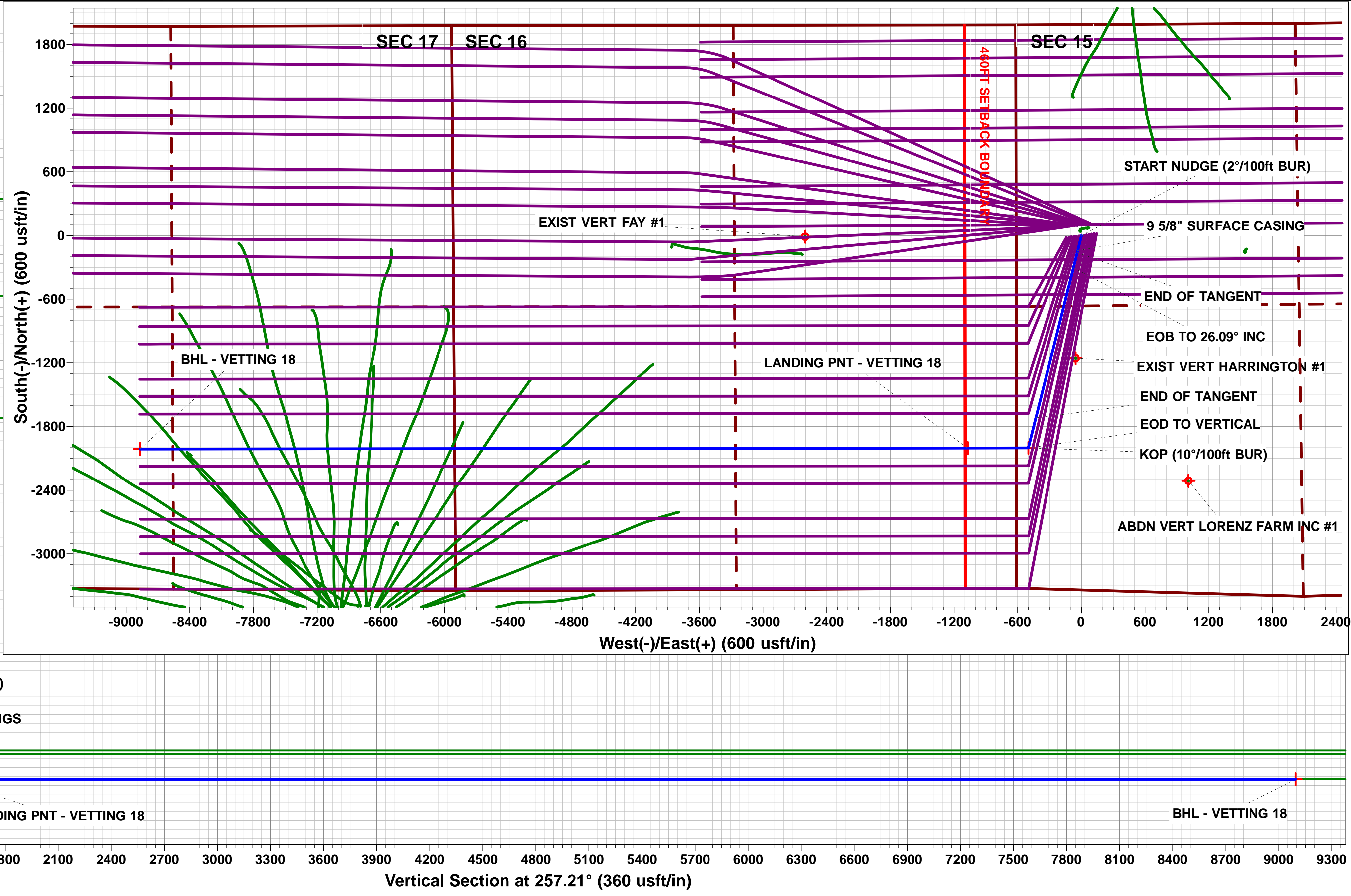
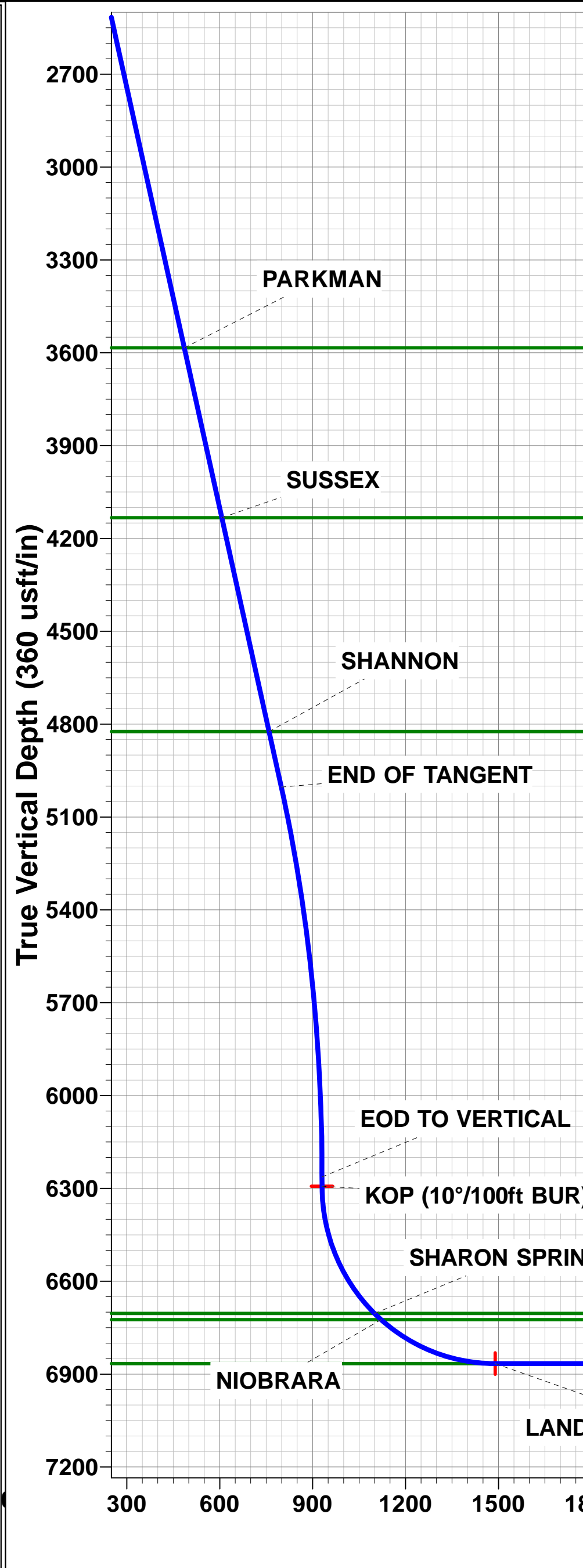
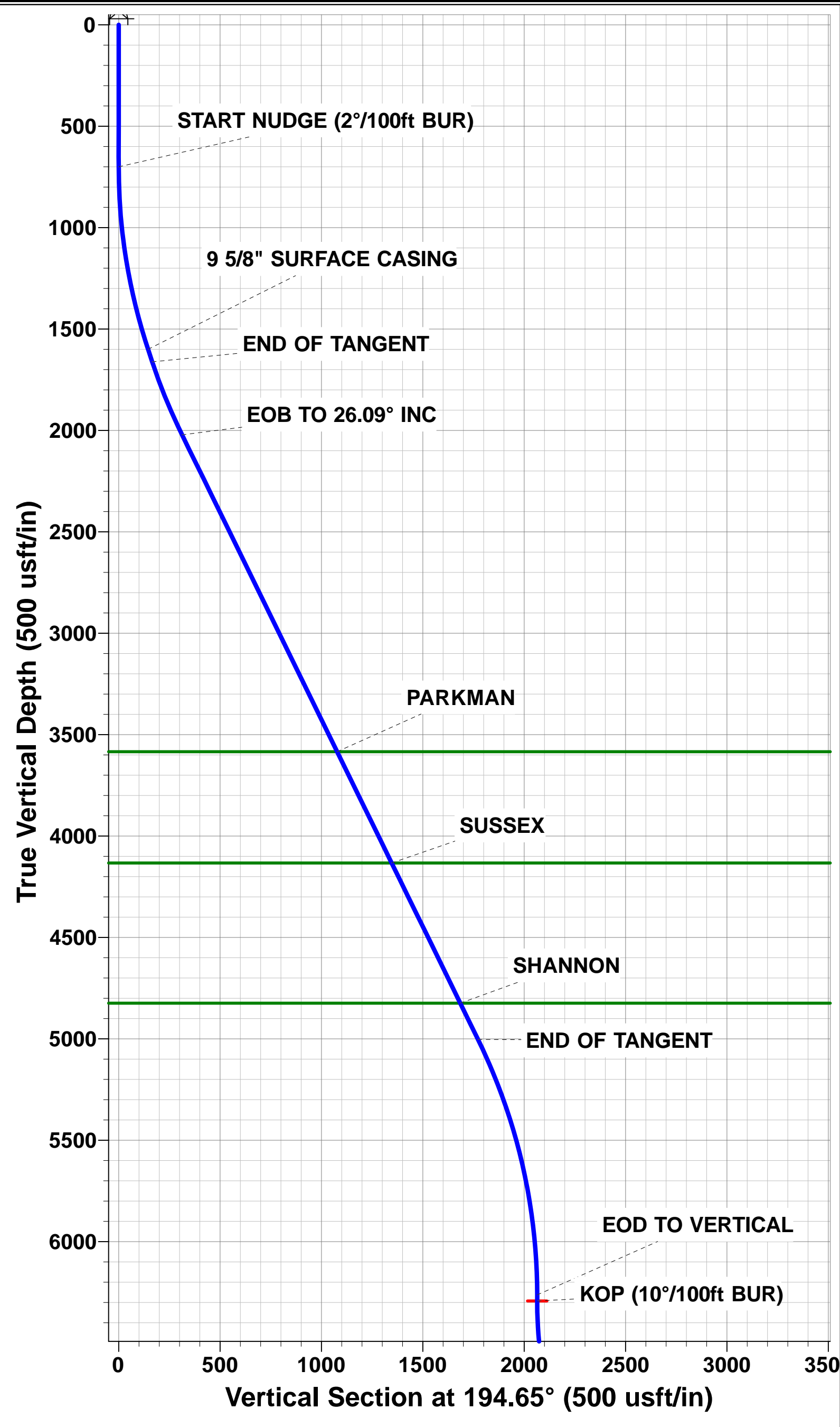
Magnetic Field

Strength: 52585.2snT

Dip Angle: 66.91°

Date: 20/11/2015

Model: IGRF2015



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VETTING 18
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VETTING 18	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 18		
Well Position	+N-S	18.2 usft	Northing:
	+E-W	142.0 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	20/11/2015	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 (°)
	1.0	0.0	0.0	257.21

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	
700.0	0.00	0.00	700.0	-3,964.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,615.5	18.31	194.00	1,600.0	-3,064.0	-140.7	-35.1	2.00	2.00	0.00	194.00	
1,680.5	18.31	194.00	1,661.7	-3,002.3	-160.5	-40.0	0.00	0.00	0.00	0.00	
2,069.5	26.09	194.00	2,021.6	-2,642.4	-303.1	-75.6	2.00	2.00	0.00	0.00	
5,389.3	26.09	194.00	5,003.1	339.1	-1,719.7	-428.7	0.00	0.00	0.00	0.00	
6,693.8	0.00	0.00	6,263.0	1,599.0	-2,003.0	-499.3	2.00	-2.00	0.00	180.00	
6,723.8	0.00	0.00	6,293.0	1,629.0	-2,003.0	-499.3	0.00	0.00	0.00	0.00	KOP - VETTING 18
7,623.9	90.00	269.93	6,866.0	2,202.0	-2,003.7	-1,072.4	10.00	10.00	-10.01	269.93	LANDING PNT - VE
15,420.3	90.00	269.93	6,866.0	2,202.0	-2,013.0	-8,868.7	0.00	0.00	0.00	143.56	BHL - VETTING 18

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VETTING 18
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VETTING 18	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
START NUDGE (2°/100ft BUR)										
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	2.00	194.00	800.0	3,864.02	-1.7	-0.4	0.8	2.00	2.00	0.00
900.0	4.00	194.00	899.8	3,764.16	-6.8	-1.7	3.1	2.00	2.00	0.00
1,000.0	6.00	194.00	999.5	3,664.55	-15.2	-3.8	7.1	2.00	2.00	0.00
1,100.0	8.00	194.00	1,098.7	3,565.30	-27.1	-6.7	12.6	2.00	2.00	0.00
1,200.0	10.00	194.00	1,197.5	3,466.53	-42.2	-10.5	19.6	2.00	2.00	0.00
1,300.0	12.00	194.00	1,295.6	3,368.38	-60.7	-15.1	28.2	2.00	2.00	0.00
1,400.0	14.00	194.00	1,393.1	3,270.94	-82.6	-20.6	38.4	2.00	2.00	0.00
1,500.0	16.00	194.00	1,489.6	3,174.36	-107.7	-26.8	50.0	2.00	2.00	0.00
1,600.0	18.00	194.00	1,585.3	3,078.73	-136.0	-33.9	63.2	2.00	2.00	0.00
9 5/8" SURFACE CASING										
1,615.5	18.31	194.00	1,600.0	3,064.00	-140.7	-35.1	65.4	2.00	2.00	0.00
END OF TANGENT										
1,680.5	18.31	194.00	1,661.7	3,002.29	-160.5	-40.0	74.6	0.00	0.00	0.00
1,700.0	18.70	194.00	1,680.2	2,983.80	-166.6	-41.5	77.4	2.00	2.00	-0.01
1,800.0	20.70	194.00	1,774.3	2,889.66	-199.3	-49.7	92.6	2.00	2.00	0.00
1,900.0	22.70	194.00	1,867.2	2,796.75	-235.1	-58.6	109.2	2.00	2.00	0.00
2,000.0	24.70	194.00	1,958.8	2,705.19	-274.1	-68.3	127.3	2.00	2.00	0.00
EOB TO 26.09° INC										
2,069.5	26.09	194.00	2,021.6	2,642.41	-303.1	-75.6	140.8	2.00	2.00	0.00
2,100.0	26.09	194.00	2,049.0	2,615.02	-316.1	-78.8	146.8	0.00	0.00	0.00
2,200.0	26.09	194.00	2,138.8	2,525.20	-358.7	-89.4	166.6	0.00	0.00	0.00
2,300.0	26.09	194.00	2,228.6	2,435.39	-401.4	-100.1	186.4	0.00	0.00	0.00
2,400.0	26.09	194.00	2,318.4	2,345.58	-444.1	-110.7	206.3	0.00	0.00	0.00
2,500.0	26.09	194.00	2,408.2	2,255.77	-486.8	-121.4	226.1	0.00	0.00	0.00
2,600.0	26.09	194.00	2,498.0	2,165.96	-529.4	-132.0	245.9	0.00	0.00	0.00
2,700.0	26.09	194.00	2,587.8	2,076.15	-572.1	-142.6	265.7	0.00	0.00	0.00
2,800.0	26.09	194.00	2,677.7	1,986.34	-614.8	-153.3	285.5	0.00	0.00	0.00
2,900.0	26.09	194.00	2,767.5	1,896.53	-657.5	-163.9	305.4	0.00	0.00	0.00
3,000.0	26.09	194.00	2,857.3	1,806.72	-700.1	-174.5	325.2	0.00	0.00	0.00
3,100.0	26.09	194.00	2,947.1	1,716.91	-742.8	-185.2	345.0	0.00	0.00	0.00
3,200.0	26.09	194.00	3,036.9	1,627.10	-785.5	-195.8	364.8	0.00	0.00	0.00
3,300.0	26.09	194.00	3,126.7	1,537.29	-828.1	-206.5	384.6	0.00	0.00	0.00
3,400.0	26.09	194.00	3,216.5	1,447.48	-870.8	-217.1	404.5	0.00	0.00	0.00
3,500.0	26.09	194.00	3,306.3	1,357.67	-913.5	-227.7	424.3	0.00	0.00	0.00
3,600.0	26.09	194.00	3,396.1	1,267.86	-956.2	-238.4	444.1	0.00	0.00	0.00
3,700.0	26.09	194.00	3,485.9	1,178.05	-998.8	-249.0	463.9	0.00	0.00	0.00
3,800.0	26.09	194.00	3,575.8	1,088.24	-1,041.5	-259.6	483.7	0.00	0.00	0.00
PARKMAN										
3,809.2	26.09	194.00	3,584.0	1,080.00	-1,045.4	-260.6	485.6	0.00	0.00	0.00
3,900.0	26.09	194.00	3,665.6	998.43	-1,084.2	-270.3	503.6	0.00	0.00	0.00
4,000.0	26.09	194.00	3,755.4	908.62	-1,126.9	-280.9	523.4	0.00	0.00	0.00
4,100.0	26.09	194.00	3,845.2	818.81	-1,169.5	-291.6	543.2	0.00	0.00	0.00
4,200.0	26.09	194.00	3,935.0	729.00	-1,212.2	-302.2	563.0	0.00	0.00	0.00
4,300.0	26.09	194.00	4,024.8	639.19	-1,254.9	-312.8	582.8	0.00	0.00	0.00
4,400.0	26.09	194.00	4,114.6	549.38	-1,297.5	-323.5	602.7	0.00	0.00	0.00

Planning Report



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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VETTING 18	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)
SUSSEX										
4,420.5	26.09	194.00	4,133.0	531.00	-1,306.3	-325.7	606.7	0.00	0.00	0.00
4,500.0	26.09	194.00	4,204.4	459.57	-1,340.2	-334.1	622.5	0.00	0.00	0.00
4,600.0	26.09	194.00	4,294.2	369.76	-1,382.9	-344.8	642.3	0.00	0.00	0.00
4,700.0	26.09	194.00	4,384.0	279.95	-1,425.6	-355.4	662.1	0.00	0.00	0.00
4,800.0	26.09	194.00	4,473.9	190.14	-1,468.2	-366.0	681.9	0.00	0.00	0.00
4,900.0	26.09	194.00	4,563.7	100.33	-1,510.9	-376.7	701.8	0.00	0.00	0.00
5,000.0	26.09	194.00	4,653.5	10.52	-1,553.6	-387.3	721.6	0.00	0.00	0.00
5,100.0	26.09	194.00	4,743.3	-79.29	-1,596.3	-397.9	741.4	0.00	0.00	0.00
SHANNON										
5,189.9	26.09	194.00	4,824.0	-160.00	-1,634.6	-407.5	759.2	0.00	0.00	0.00
5,200.0	26.09	194.00	4,833.1	-169.10	-1,638.9	-408.6	761.2	0.00	0.00	0.00
5,300.0	26.09	194.00	4,922.9	-258.91	-1,681.6	-419.2	781.0	0.00	0.00	0.00
END OF TANGENT										
5,389.3	26.09	194.00	5,003.1	-339.11	-1,719.7	-428.7	798.7	0.00	0.00	0.00
5,400.0	25.88	194.00	5,012.7	-348.73	-1,724.3	-429.9	800.9	2.00	-2.00	0.00
5,500.0	23.88	194.00	5,103.4	-439.44	-1,765.1	-440.0	819.8	2.00	-2.00	0.00
5,600.0	21.88	194.00	5,195.6	-531.57	-1,802.8	-449.4	837.3	2.00	-2.00	0.00
5,700.0	19.88	194.00	5,289.0	-625.00	-1,837.4	-458.1	853.4	2.00	-2.00	0.00
5,800.0	17.88	194.00	5,383.6	-719.62	-1,868.8	-465.9	868.0	2.00	-2.00	0.00
5,900.0	15.88	194.00	5,479.3	-815.31	-1,896.9	-472.9	881.1	2.00	-2.00	0.00
6,000.0	13.88	194.00	5,576.0	-911.95	-1,921.8	-479.1	892.6	2.00	-2.00	0.00
6,100.0	11.88	194.00	5,673.4	-1,009.43	-1,943.5	-484.5	902.7	2.00	-2.00	0.00
6,200.0	9.88	194.00	5,771.6	-1,107.63	-1,961.8	-489.1	911.2	2.00	-2.00	0.00
6,300.0	7.88	194.00	5,870.4	-1,206.43	-1,976.7	-492.8	918.1	2.00	-2.00	0.00
6,400.0	5.88	194.00	5,969.7	-1,305.70	-1,988.4	-495.7	923.5	2.00	-2.00	0.00
6,500.0	3.88	194.00	6,069.3	-1,405.34	-1,996.6	-497.7	927.3	2.00	-2.00	0.00
6,600.0	1.88	194.00	6,169.2	-1,505.21	-2,001.5	-499.0	929.6	2.00	-2.00	0.00
EOD TO VERTICAL										
6,693.8	0.00	194.00	6,263.0	-1,598.99	-2,003.0	-499.3	930.3	2.00	-2.00	0.00
6,700.0	0.00	0.00	6,269.2	-1,605.19	-2,003.0	-499.3	930.3	0.00	0.00	0.00
KOP (10°/100ft BUR)										
6,723.8	0.00	0.00	6,293.0	-1,628.99	-2,003.0	-499.3	930.3	0.00	0.00	0.00
6,800.0	7.62	269.93	6,369.0	-1,704.97	-2,003.0	-504.4	935.2	10.00	10.00	0.00
6,900.0	17.62	269.93	6,466.4	-1,802.43	-2,003.0	-526.2	956.5	10.00	10.00	0.00
7,000.0	27.62	269.93	6,558.6	-1,894.62	-2,003.0	-564.6	994.0	10.00	10.00	0.00
7,100.0	37.62	269.93	6,642.7	-1,978.74	-2,003.1	-618.4	1,046.5	10.00	10.00	0.00
SHARON SPRINGS										
7,182.1	45.83	269.93	6,704.0	-2,040.00	-2,003.2	-673.1	1,099.8	10.00	10.00	0.00
7,200.0	47.62	269.93	6,716.2	-2,052.24	-2,003.2	-686.1	1,112.5	10.00	10.00	0.00
NIOBRARA										
7,211.6	48.78	269.93	6,724.0	-2,060.00	-2,003.2	-694.7	1,120.9	10.00	10.00	0.00
7,300.0	57.61	269.93	6,776.9	-2,112.88	-2,003.3	-765.4	1,189.9	10.00	10.00	0.00
7,400.0	67.61	269.93	6,822.8	-2,158.82	-2,003.4	-854.1	1,276.4	10.00	10.00	0.00
7,500.0	77.61	269.93	6,852.7	-2,188.66	-2,003.5	-949.4	1,369.3	10.00	10.00	0.00
7,600.0	87.61	269.93	6,865.5	-2,201.50	-2,003.7	-1,048.5	1,466.0	10.00	10.00	0.00
LANDING PNT - VETTING 18 - NIO B TARGET										
7,623.9	90.00	269.93	6,866.0	-2,202.00	-2,003.7	-1,072.4	1,489.3	10.00	10.00	0.00
7,700.0	90.00	269.93	6,866.0	-2,201.99	-2,003.8	-1,148.5	1,563.5	0.00	0.00	0.00
7,800.0	90.00	269.93	6,866.0	-2,201.99	-2,003.9	-1,248.5	1,661.1	0.00	0.00	0.00
7,900.0	90.00	269.93	6,866.0	-2,201.98	-2,004.0	-1,348.5	1,758.6	0.00	0.00	0.00
8,000.0	90.00	269.93	6,866.0	-2,201.97	-2,004.2	-1,448.5	1,856.1	0.00	0.00	0.00
8,100.0	90.00	269.93	6,866.0	-2,201.96	-2,004.3	-1,548.5	1,953.7	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VETTING 18
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VETTING 18	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	269.93	6,866.0	-2,201.96	-2,004.4	-1,648.5	2,051.2	0.00	0.00	0.00
8,300.0	90.00	269.93	6,865.9	-2,201.95	-2,004.5	-1,748.5	2,148.8	0.00	0.00	0.00
8,400.0	90.00	269.93	6,865.9	-2,201.94	-2,004.7	-1,848.5	2,246.3	0.00	0.00	0.00
8,500.0	90.00	269.93	6,865.9	-2,201.94	-2,004.8	-1,948.5	2,343.9	0.00	0.00	0.00
8,600.0	90.00	269.93	6,865.9	-2,201.93	-2,004.9	-2,048.5	2,441.4	0.00	0.00	0.00
8,700.0	90.00	269.93	6,865.9	-2,201.92	-2,005.0	-2,148.5	2,539.0	0.00	0.00	0.00
8,800.0	90.00	269.93	6,865.9	-2,201.92	-2,005.2	-2,248.5	2,636.5	0.00	0.00	0.00
8,900.0	90.00	269.93	6,865.9	-2,201.91	-2,005.3	-2,348.5	2,734.1	0.00	0.00	0.00
9,000.0	90.00	269.93	6,865.9	-2,201.91	-2,005.4	-2,448.5	2,831.6	0.00	0.00	0.00
9,100.0	90.00	269.93	6,865.9	-2,201.90	-2,005.5	-2,548.5	2,929.2	0.00	0.00	0.00
9,200.0	90.00	269.93	6,865.9	-2,201.90	-2,005.6	-2,648.5	3,026.7	0.00	0.00	0.00
9,300.0	90.00	269.93	6,865.9	-2,201.89	-2,005.8	-2,748.5	3,124.3	0.00	0.00	0.00
9,400.0	90.00	269.93	6,865.9	-2,201.89	-2,005.9	-2,848.5	3,221.8	0.00	0.00	0.00
9,500.0	90.00	269.93	6,865.9	-2,201.88	-2,006.0	-2,948.5	3,319.3	0.00	0.00	0.00
9,600.0	90.00	269.93	6,865.9	-2,201.88	-2,006.1	-3,048.5	3,416.9	0.00	0.00	0.00
9,700.0	90.00	269.93	6,865.9	-2,201.87	-2,006.3	-3,148.5	3,514.4	0.00	0.00	0.00
9,800.0	90.00	269.93	6,865.9	-2,201.87	-2,006.4	-3,248.5	3,612.0	0.00	0.00	0.00
9,900.0	90.00	269.93	6,865.9	-2,201.87	-2,006.5	-3,348.5	3,709.5	0.00	0.00	0.00
10,000.0	90.00	269.93	6,865.9	-2,201.86	-2,006.6	-3,448.5	3,807.1	0.00	0.00	0.00
10,100.0	90.00	269.93	6,865.9	-2,201.86	-2,006.8	-3,548.5	3,904.6	0.00	0.00	0.00
10,200.0	90.00	269.93	6,865.9	-2,201.86	-2,006.9	-3,648.5	4,002.2	0.00	0.00	0.00
10,300.0	90.00	269.93	6,865.9	-2,201.86	-2,007.0	-3,748.5	4,099.7	0.00	0.00	0.00
10,400.0	90.00	269.93	6,865.9	-2,201.85	-2,007.1	-3,848.5	4,197.3	0.00	0.00	0.00
10,500.0	90.00	269.93	6,865.9	-2,201.85	-2,007.2	-3,948.5	4,294.8	0.00	0.00	0.00
10,600.0	90.00	269.93	6,865.8	-2,201.85	-2,007.4	-4,048.5	4,392.4	0.00	0.00	0.00
10,700.0	90.00	269.93	6,865.8	-2,201.85	-2,007.5	-4,148.5	4,489.9	0.00	0.00	0.00
10,800.0	90.00	269.93	6,865.8	-2,201.84	-2,007.6	-4,248.5	4,587.5	0.00	0.00	0.00
10,900.0	90.00	269.93	6,865.8	-2,201.84	-2,007.7	-4,348.5	4,685.0	0.00	0.00	0.00
11,000.0	90.00	269.93	6,865.8	-2,201.84	-2,007.9	-4,448.5	4,782.5	0.00	0.00	0.00
11,100.0	90.00	269.93	6,865.8	-2,201.84	-2,008.0	-4,548.5	4,880.1	0.00	0.00	0.00
11,200.0	90.00	269.93	6,865.8	-2,201.84	-2,008.1	-4,648.5	4,977.6	0.00	0.00	0.00
11,300.0	90.00	269.93	6,865.8	-2,201.84	-2,008.2	-4,748.5	5,075.2	0.00	0.00	0.00
11,400.0	90.00	269.93	6,865.8	-2,201.84	-2,008.3	-4,848.5	5,172.7	0.00	0.00	0.00
11,500.0	90.00	269.93	6,865.8	-2,201.84	-2,008.5	-4,948.5	5,270.3	0.00	0.00	0.00
11,600.0	90.00	269.93	6,865.8	-2,201.84	-2,008.6	-5,048.5	5,367.8	0.00	0.00	0.00
11,700.0	90.00	269.93	6,865.8	-2,201.84	-2,008.7	-5,148.5	5,465.4	0.00	0.00	0.00
11,800.0	90.00	269.93	6,865.8	-2,201.84	-2,008.8	-5,248.5	5,562.9	0.00	0.00	0.00
11,900.0	90.00	269.93	6,865.8	-2,201.84	-2,008.9	-5,348.5	5,660.5	0.00	0.00	0.00
12,000.0	90.00	269.93	6,865.8	-2,201.84	-2,009.1	-5,448.5	5,758.0	0.00	0.00	0.00
12,100.0	90.00	269.93	6,865.8	-2,201.84	-2,009.2	-5,548.5	5,855.5	0.00	0.00	0.00
12,200.0	90.00	269.93	6,865.8	-2,201.84	-2,009.3	-5,648.5	5,953.1	0.00	0.00	0.00
12,300.0	90.00	269.93	6,865.8	-2,201.85	-2,009.4	-5,748.5	6,050.6	0.00	0.00	0.00
12,400.0	90.00	269.93	6,865.8	-2,201.85	-2,009.5	-5,848.5	6,148.2	0.00	0.00	0.00
12,500.0	90.00	269.93	6,865.8	-2,201.85	-2,009.6	-5,948.5	6,245.7	0.00	0.00	0.00
12,600.0	90.00	269.93	6,865.9	-2,201.85	-2,009.8	-6,048.5	6,343.3	0.00	0.00	0.00
12,700.0	90.00	269.93	6,865.9	-2,201.85	-2,009.9	-6,148.5	6,440.8	0.00	0.00	0.00
12,800.0	90.00	269.93	6,865.9	-2,201.86	-2,010.0	-6,248.5	6,538.4	0.00	0.00	0.00
12,900.0	90.00	269.93	6,865.9	-2,201.86	-2,010.1	-6,348.5	6,635.9	0.00	0.00	0.00
13,000.0	90.00	269.93	6,865.9	-2,201.86	-2,010.2	-6,448.5	6,733.5	0.00	0.00	0.00
13,100.0	90.00	269.93	6,865.9	-2,201.87	-2,010.4	-6,548.5	6,831.0	0.00	0.00	0.00
13,200.0	90.00	269.93	6,865.9	-2,201.87	-2,010.5	-6,648.5	6,928.6	0.00	0.00	0.00
13,300.0	90.00	269.93	6,865.9	-2,201.87	-2,010.6	-6,748.5	7,026.1	0.00	0.00	0.00
13,400.0	90.00	269.93	6,865.9	-2,201.88	-2,010.7	-6,848.4	7,123.6	0.00	0.00	0.00
13,500.0	90.00	269.93	6,865.9	-2,201.88	-2,010.8	-6,948.4	7,221.2	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VETTING 18
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 4664.0usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4664.0usft
Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VETTING 18	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	269.93	6,865.9	-2,201.89	-2,010.9	-7,048.4	7,318.7	0.00	0.00	0.00
13,700.0	90.00	269.93	6,865.9	-2,201.89	-2,011.1	-7,148.4	7,416.3	0.00	0.00	0.00
13,800.0	90.00	269.93	6,865.9	-2,201.89	-2,011.2	-7,248.4	7,513.8	0.00	0.00	0.00
13,900.0	90.00	269.93	6,865.9	-2,201.90	-2,011.3	-7,348.4	7,611.4	0.00	0.00	0.00
14,000.0	90.00	269.93	6,865.9	-2,201.90	-2,011.4	-7,448.4	7,708.9	0.00	0.00	0.00
14,100.0	90.00	269.93	6,865.9	-2,201.91	-2,011.5	-7,548.4	7,806.5	0.00	0.00	0.00
14,200.0	90.00	269.93	6,865.9	-2,201.92	-2,011.6	-7,648.4	7,904.0	0.00	0.00	0.00
14,300.0	90.00	269.93	6,865.9	-2,201.92	-2,011.8	-7,748.4	8,001.5	0.00	0.00	0.00
14,400.0	90.00	269.93	6,865.9	-2,201.93	-2,011.9	-7,848.4	8,099.1	0.00	0.00	0.00
14,500.0	90.00	269.93	6,865.9	-2,201.93	-2,012.0	-7,948.4	8,196.6	0.00	0.00	0.00
14,600.0	90.00	269.93	6,865.9	-2,201.94	-2,012.1	-8,048.4	8,294.2	0.00	0.00	0.00
14,700.0	90.00	269.93	6,865.9	-2,201.95	-2,012.2	-8,148.4	8,391.7	0.00	0.00	0.00
14,800.0	90.00	269.93	6,866.0	-2,201.95	-2,012.3	-8,248.4	8,489.3	0.00	0.00	0.00
14,900.0	90.00	269.93	6,866.0	-2,201.96	-2,012.4	-8,348.4	8,586.8	0.00	0.00	0.00
15,000.0	90.00	269.93	6,866.0	-2,201.97	-2,012.6	-8,448.4	8,684.4	0.00	0.00	0.00
15,100.0	90.00	269.93	6,866.0	-2,201.97	-2,012.7	-8,548.4	8,781.9	0.00	0.00	0.00
15,200.0	90.00	269.93	6,866.0	-2,201.98	-2,012.8	-8,648.4	8,879.5	0.00	0.00	0.00
15,300.0	90.00	269.93	6,866.0	-2,201.99	-2,012.9	-8,748.4	8,977.0	0.00	0.00	0.00
15,400.0	90.00	269.93	6,866.0	-2,202.00	-2,013.0	-8,848.4	9,074.5	0.00	0.00	0.00
BHL - VETTING 18										
15,420.3	90.00	269.93	6,866.0	-2,202.00	-2,013.0	-8,868.7	9,094.3	0.00	0.00	0.00

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,809.2	3,584.0	PARKMAN				
4,420.5	4,133.0	SUSSEX				
5,189.9	4,824.0	SHANNON				
7,182.1	6,704.0	SHARON SPRINGS				
7,211.6	6,724.0	NIOBRARA				
7,623.9	6,866.0	NIO B TARGET				

Plan Annotations					
MD (usft)	TVD (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
700.0	700.0	0.0	0.0	START NUDGE (2°/100ft BUR)	
1,615.5	1,600.0	-140.7	-35.1	9 5/8" SURFACE CASING	
1,680.5	1,661.7	-160.5	-40.0	END OF TANGENT	
2,069.5	2,021.6	-303.1	-75.6	EOB TO 26.09° INC	
5,389.3	5,003.1	-1,719.7	-428.7	END OF TANGENT	
6,693.8	6,263.0	-2,003.0	-499.3	EOD TO VERTICAL	
6,723.8	6,293.0	-2,003.0	-499.3	KOP (10°/100ft BUR)	
7,623.9	6,866.0	-2,003.7	-1,072.4	LANDING PNT - VETTING 18	
15,420.3	6,866.0	-2,013.0	-8,868.7	BHL - VETTING 18	