

# **EXTRACTION OIL & GAS**

**WELD COUNTY, COLORADO (NAD 83)**

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

**VETTING 15**

**ORIGINAL WELLBORE**

**09 March, 2016**

**Plan: PROPOSAL #2**

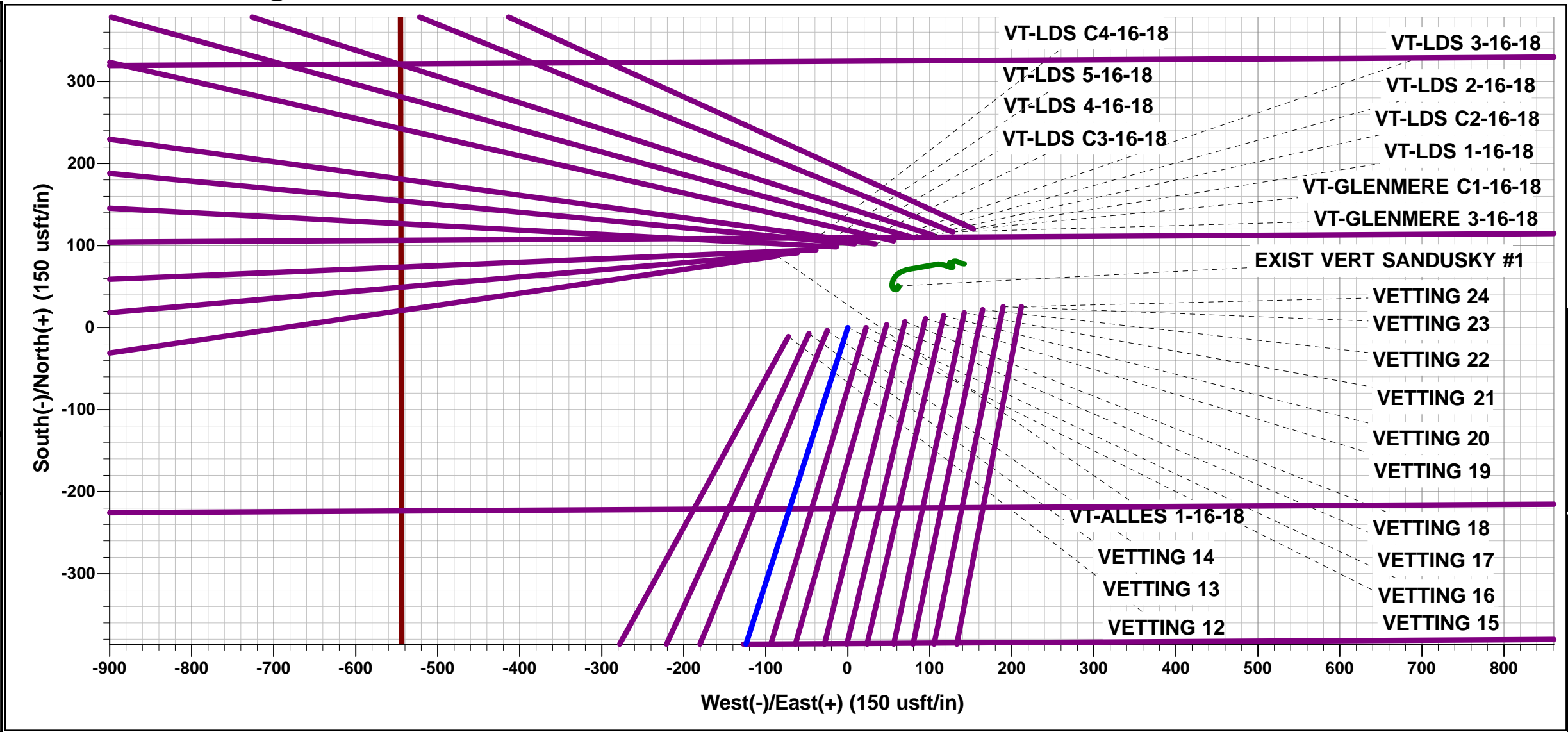




Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SW NW SEC. 15 T5N R65W 6th P.M.  
Well: VETTING 15  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #2

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation	
400.0	400.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)	
1162.2	1171.5	15.43	197.83	-98.3	-31.6	46.1	103.3	EOB TO 15.43° INC	
5499.8	5671.3	15.43	197.83	-1238.0	-398.1	580.7	1300.4	END OF TANGENT	
6262.0	6442.8	0.00	0.00	-1336.3	-429.7	626.8	1403.7	EOD TO VERTICAL	
6292.0	6472.8	0.00	0.00	-1336.3	-429.7	626.8	1403.7	KOP (10°/100ft BUR)	
6865.0	7372.8	90.00	269.93	-1337.0	-1002.7	1193.3	1976.7	LANDING PNT - VETTING 15	
6865.0	15171.7	90.00	269.93	-1346.4	-8801.6	8904.0	9775.6	BHL - VETTING 15	

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - VETTING 15	6292.0	-1336.3	-429.7	40.397342	-104.658463
LANDING PNT - VETTING 15	6865.0	-1337.0	-1002.7	40.397340	-104.660520
BHL - VETTING 15	6865.0	-1346.4	-8801.6	40.397310	-104.688520



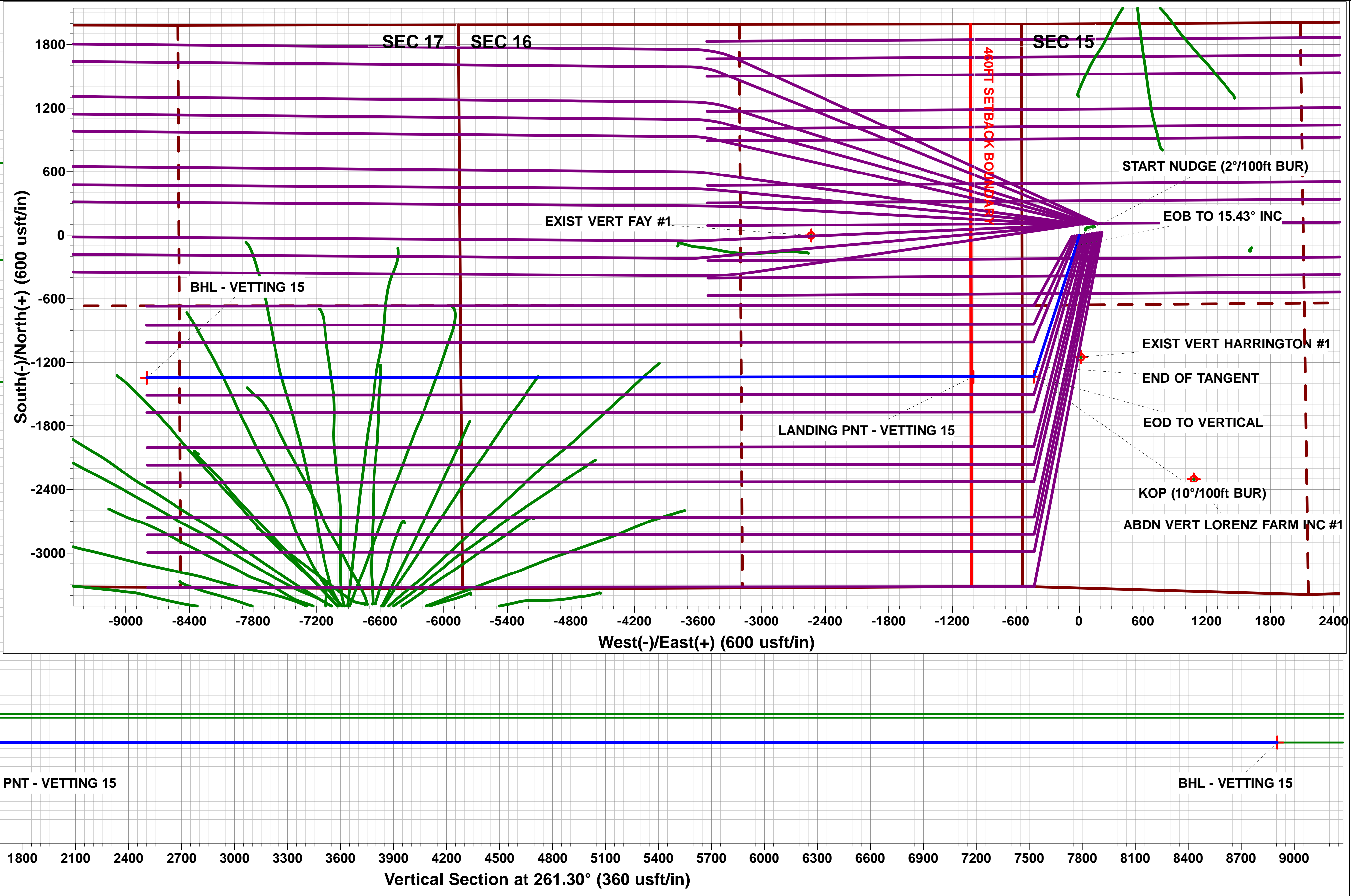
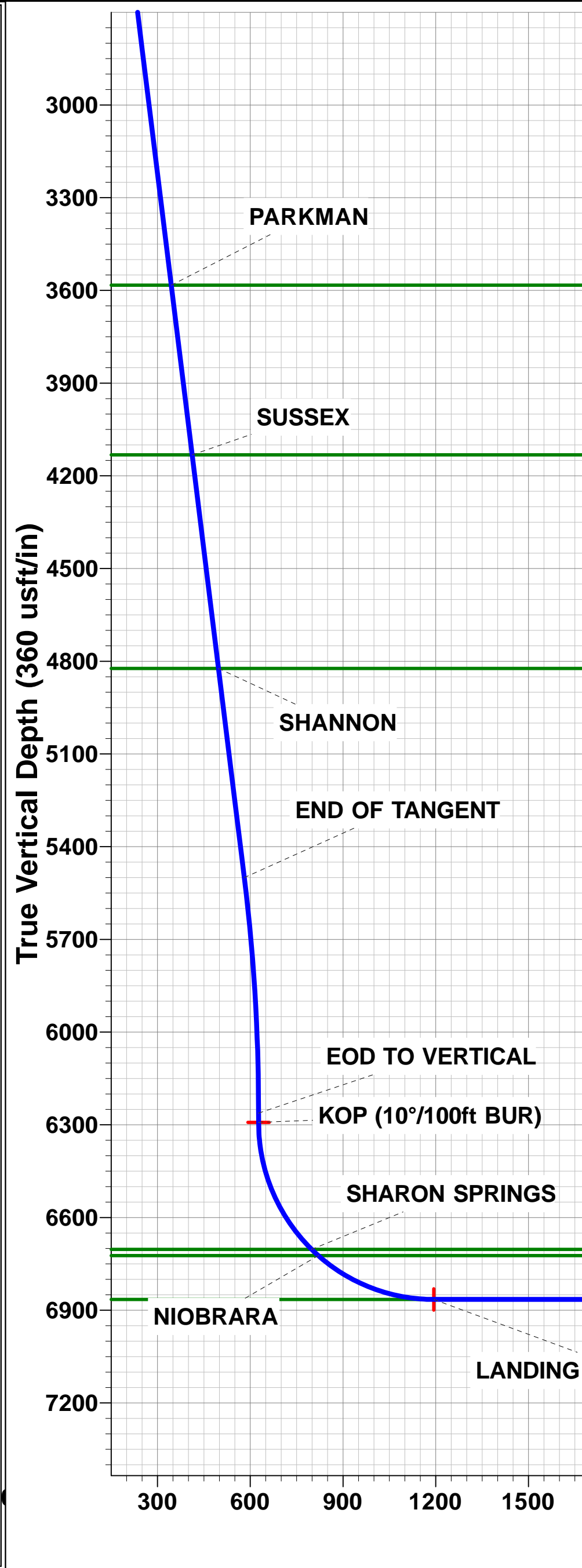
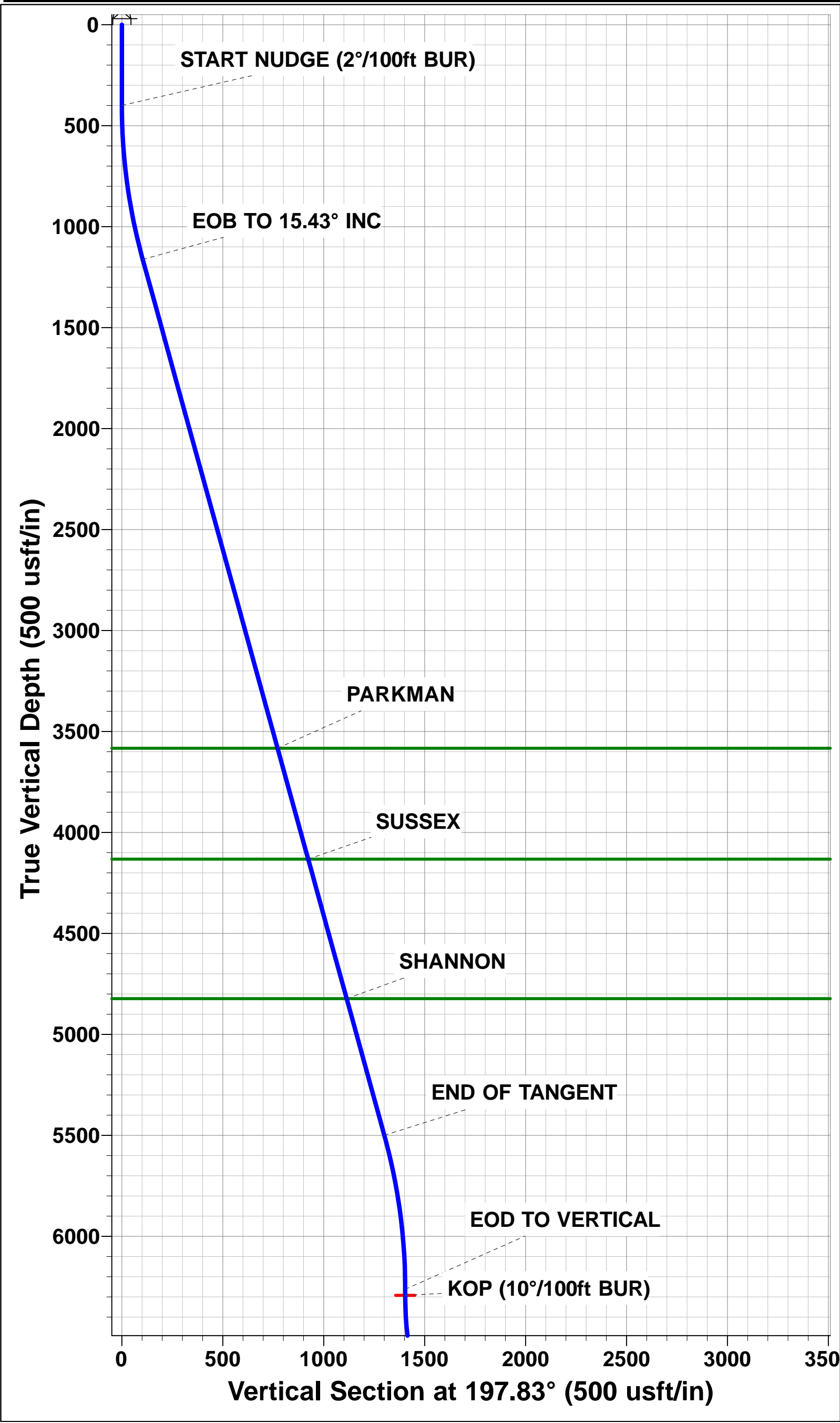
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3583.0	3682.8	PARKMAN
4132.0	4252.3	SUSSEX
4823.0	4969.2	SHANNON
6703.0	6931.1	SHARON SPRINGS
6723.0	6960.6	NIOBRARA
6865.0	7372.8	NIO B TARGET

PROPOSED LOCAL COORDINATES		
SHL: 1997ft FNL & 544ft FWL of Sec 15		
LP: 1980ft FSL & 460ft FEL of Sec 16		
BHL: 1980ft FNL & 2339ft 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



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

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

<b>Well</b>	VETTING 15		
<b>Well Position</b>	<b>+N-S</b>	10.9 usft	<b>Northing:</b>
	<b>+E-W</b>	72.4 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	20/11/2015	8.32	66.91	52,585

<b>Design</b>	PROPOSAL #2			
<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>
	0.0	0.0	0.0	261.30

<b>Plan Sections</b>											
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	
400.0	0.00	0.00	400.0	-4,264.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,171.5	15.43	197.83	1,162.2	-3,501.8	-98.3	-31.6	2.00	2.00	0.00	197.83	
5,671.3	15.43	197.83	5,499.8	835.8	-1,238.0	-398.1	0.00	0.00	0.00	0.00	
6,442.8	0.00	0.00	6,262.0	1,598.0	-1,336.3	-429.7	2.00	-2.00	0.00	180.00	
6,472.8	0.00	0.00	6,292.0	1,628.0	-1,336.3	-429.7	0.00	0.00	0.00	0.00	KOP - VETTING 15
7,372.8	90.00	269.93	6,865.0	2,201.0	-1,337.0	-1,002.7	10.00	10.00	-10.01	269.93	LANDING PNT - VE
15,171.7	90.00	269.93	6,865.0	2,201.0	-1,346.4	-8,801.6	0.00	0.00	0.00	0.00	BHL - VETTING 15

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VETTING 15
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 15 T5N R65W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	VETTING 15	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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
START NUDGE (2°/100ft BUR)										
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	2.00	197.83	500.0	4,164.02	-1.7	-0.5	0.8	2.00	2.00	0.00
600.0	4.00	197.83	599.8	4,064.16	-6.6	-2.1	3.1	2.00	2.00	0.00
700.0	6.00	197.83	699.5	3,964.55	-14.9	-4.8	7.0	2.00	2.00	0.00
800.0	8.00	197.83	798.7	3,865.30	-26.5	-8.5	12.5	2.00	2.00	0.00
900.0	10.00	197.83	897.5	3,766.53	-41.4	-13.3	19.4	2.00	2.00	0.00
1,000.0	12.00	197.83	995.6	3,668.38	-59.6	-19.2	28.0	2.00	2.00	0.00
1,100.0	14.00	197.83	1,093.1	3,570.94	-81.0	-26.1	38.0	2.00	2.00	0.00
EOB TO 15.43° INC										
1,171.5	15.43	197.83	1,162.2	3,501.79	-98.3	-31.6	46.1	2.00	2.00	0.00
1,200.0	15.43	197.83	1,189.7	3,474.32	-105.5	-33.9	49.5	0.00	0.00	0.00
1,300.0	15.43	197.83	1,286.1	3,377.92	-130.8	-42.1	61.4	0.00	0.00	0.00
1,400.0	15.43	197.83	1,382.5	3,281.53	-156.2	-50.2	73.3	0.00	0.00	0.00
1,500.0	15.43	197.83	1,478.9	3,185.13	-181.5	-58.4	85.1	0.00	0.00	0.00
1,600.0	15.43	197.83	1,575.3	3,088.74	-206.8	-66.5	97.0	0.00	0.00	0.00
1,700.0	15.43	197.83	1,671.7	2,992.34	-232.2	-74.7	108.9	0.00	0.00	0.00
1,800.0	15.43	197.83	1,768.1	2,895.94	-257.5	-82.8	120.8	0.00	0.00	0.00
1,900.0	15.43	197.83	1,864.5	2,799.55	-282.8	-90.9	132.7	0.00	0.00	0.00
2,000.0	15.43	197.83	1,960.8	2,703.15	-308.1	-99.1	144.5	0.00	0.00	0.00
2,100.0	15.43	197.83	2,057.2	2,606.76	-333.5	-107.2	156.4	0.00	0.00	0.00
2,200.0	15.43	197.83	2,153.6	2,510.36	-358.8	-115.4	168.3	0.00	0.00	0.00
2,300.0	15.43	197.83	2,250.0	2,413.96	-384.1	-123.5	180.2	0.00	0.00	0.00
2,400.0	15.43	197.83	2,346.4	2,317.57	-409.5	-131.7	192.1	0.00	0.00	0.00
2,500.0	15.43	197.83	2,442.8	2,221.17	-434.8	-139.8	203.9	0.00	0.00	0.00
2,600.0	15.43	197.83	2,539.2	2,124.78	-460.1	-148.0	215.8	0.00	0.00	0.00
2,700.0	15.43	197.83	2,635.6	2,028.38	-485.4	-156.1	227.7	0.00	0.00	0.00
2,800.0	15.43	197.83	2,732.0	1,931.99	-510.8	-164.2	239.6	0.00	0.00	0.00
2,900.0	15.43	197.83	2,828.4	1,835.59	-536.1	-172.4	251.5	0.00	0.00	0.00
3,000.0	15.43	197.83	2,924.8	1,739.19	-561.4	-180.5	263.4	0.00	0.00	0.00
3,100.0	15.43	197.83	3,021.2	1,642.80	-586.7	-188.7	275.2	0.00	0.00	0.00
3,200.0	15.43	197.83	3,117.6	1,546.40	-612.1	-196.8	287.1	0.00	0.00	0.00
3,300.0	15.43	197.83	3,214.0	1,450.01	-637.4	-205.0	299.0	0.00	0.00	0.00
3,400.0	15.43	197.83	3,310.4	1,353.61	-662.7	-213.1	310.9	0.00	0.00	0.00
3,500.0	15.43	197.83	3,406.8	1,257.21	-688.1	-221.3	322.8	0.00	0.00	0.00
3,600.0	15.43	197.83	3,503.2	1,160.82	-713.4	-229.4	334.6	0.00	0.00	0.00
PARKMAN										
3,682.8	15.43	197.83	3,583.0	1,081.00	-734.4	-236.2	344.5	0.00	0.00	0.00
3,700.0	15.43	197.83	3,599.6	1,064.42	-738.7	-237.6	346.5	0.00	0.00	0.00
3,800.0	15.43	197.83	3,696.0	968.03	-764.0	-245.7	358.4	0.00	0.00	0.00
3,900.0	15.43	197.83	3,792.4	871.63	-789.4	-253.8	370.3	0.00	0.00	0.00
4,000.0	15.43	197.83	3,888.8	775.23	-814.7	-262.0	382.2	0.00	0.00	0.00
4,100.0	15.43	197.83	3,985.2	678.84	-840.0	-270.1	394.0	0.00	0.00	0.00
4,200.0	15.43	197.83	4,081.6	582.44	-865.4	-278.3	405.9	0.00	0.00	0.00
SUSSEX										
4,252.3	15.43	197.83	4,132.0	532.00	-878.6	-282.5	412.1	0.00	0.00	0.00
4,300.0	15.43	197.83	4,178.0	486.05	-890.7	-286.4	417.8	0.00	0.00	0.00
4,400.0	15.43	197.83	4,274.3	389.65	-916.0	-294.6	429.7	0.00	0.00	0.00
4,500.0	15.43	197.83	4,370.7	293.26	-941.3	-302.7	441.6	0.00	0.00	0.00
4,600.0	15.43	197.83	4,467.1	196.86	-966.7	-310.9	453.4	0.00	0.00	0.00



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VETTING 15
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 15 T5N R65W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	VETTING 15	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
4,700.0	15.43	197.83	4,563.5	100.46	-992.0	-319.0	465.3	0.00	0.00	0.00
4,800.0	15.43	197.83	4,659.9	4.07	-1,017.3	-327.1	477.2	0.00	0.00	0.00
4,900.0	15.43	197.83	4,756.3	-92.33	-1,042.6	-335.3	489.1	0.00	0.00	0.00
<b>SHANNON</b>										
<b>4,969.2</b>	<b>15.43</b>	<b>197.83</b>	<b>4,823.0</b>	<b>-159.00</b>	<b>-1,060.2</b>	<b>-340.9</b>	<b>497.3</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,000.0	15.43	197.83	4,852.7	-188.72	-1,068.0	-343.4	501.0	0.00	0.00	0.00
5,100.0	15.43	197.83	4,949.1	-285.12	-1,093.3	-351.6	512.9	0.00	0.00	0.00
5,200.0	15.43	197.83	5,045.5	-381.52	-1,118.6	-359.7	524.7	0.00	0.00	0.00
5,300.0	15.43	197.83	5,141.9	-477.91	-1,144.0	-367.9	536.6	0.00	0.00	0.00
5,400.0	15.43	197.83	5,238.3	-574.31	-1,169.3	-376.0	548.5	0.00	0.00	0.00
5,500.0	15.43	197.83	5,334.7	-670.70	-1,194.6	-384.2	560.4	0.00	0.00	0.00
5,600.0	15.43	197.83	5,431.1	-767.10	-1,219.9	-392.3	572.3	0.00	0.00	0.00
<b>END OF TANGENT</b>										
<b>5,671.3</b>	<b>15.43</b>	<b>197.83</b>	<b>5,499.8</b>	<b>-835.83</b>	<b>-1,238.0</b>	<b>-398.1</b>	<b>580.7</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,700.0	14.86	197.83	5,527.5	-863.53	-1,245.1	-400.4	584.1	2.00	-2.00	0.00
5,800.0	12.86	197.83	5,624.6	-960.62	-1,267.9	-407.7	594.8	2.00	-2.00	0.00
5,900.0	10.86	197.83	5,722.5	-1,058.48	-1,287.5	-414.0	603.9	2.00	-2.00	0.00
6,000.0	8.86	197.83	5,821.0	-1,157.00	-1,303.8	-419.3	611.6	2.00	-2.00	0.00
6,100.0	6.86	197.83	5,920.1	-1,256.06	-1,316.8	-423.4	617.7	2.00	-2.00	0.00
6,200.0	4.86	197.83	6,019.5	-1,355.53	-1,326.5	-426.6	622.2	2.00	-2.00	0.00
6,300.0	2.86	197.83	6,119.3	-1,455.30	-1,332.9	-428.6	625.2	2.00	-2.00	0.00
6,400.0	0.86	197.83	6,219.2	-1,555.24	-1,336.0	-429.6	626.7	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
<b>6,442.8</b>	<b>0.00</b>	<b>0.00</b>	<b>6,262.0</b>	<b>-1,598.04</b>	<b>-1,336.3</b>	<b>-429.7</b>	<b>626.8</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
<b>KOP (10°/100ft BUR)</b>										
<b>6,472.8</b>	<b>0.00</b>	<b>0.00</b>	<b>6,292.0</b>	<b>-1,628.04</b>	<b>-1,336.3</b>	<b>-429.7</b>	<b>626.8</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
6,500.0	2.72	269.93	6,319.2	-1,655.23	-1,336.3	-430.4	627.5	10.01	10.01	0.00
6,600.0	12.72	269.93	6,418.2	-1,754.20	-1,336.3	-443.8	640.7	10.00	10.00	0.00
6,700.0	22.72	269.93	6,513.3	-1,849.33	-1,336.3	-474.2	670.8	10.00	10.00	0.00
6,800.0	32.72	269.93	6,601.7	-1,937.74	-1,336.4	-520.6	716.7	10.00	10.00	0.00
6,900.0	42.72	269.93	6,680.7	-2,016.74	-1,336.5	-581.8	777.2	10.00	10.00	0.00
<b>SHARON SPRINGS</b>										
<b>6,931.1</b>	<b>45.83</b>	<b>269.93</b>	<b>6,703.0</b>	<b>-2,039.00</b>	<b>-1,336.5</b>	<b>-603.5</b>	<b>798.6</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>NIOBRARA</b>										
<b>6,960.6</b>	<b>48.78</b>	<b>269.93</b>	<b>6,723.0</b>	<b>-2,059.00</b>	<b>-1,336.5</b>	<b>-625.1</b>	<b>820.0</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,000.0	52.72	269.93	6,747.9	-2,083.93	-1,336.6	-655.6	850.2	10.00	10.00	0.00
7,100.0	62.72	269.93	6,801.3	-2,137.27	-1,336.7	-740.1	933.7	10.00	10.00	0.00
7,200.0	72.72	269.93	6,839.1	-2,175.13	-1,336.8	-832.5	1,025.1	10.00	10.00	0.00
7,300.0	82.72	269.93	6,860.4	-2,196.38	-1,336.9	-930.1	1,121.5	10.00	10.00	0.00
<b>LANDING PNT - VETTING 15 - NIO B TARGET</b>										
<b>7,372.8</b>	<b>90.00</b>	<b>269.93</b>	<b>6,865.0</b>	<b>-2,201.00</b>	<b>-1,337.0</b>	<b>-1,002.7</b>	<b>1,193.4</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,400.0	90.00	269.93	6,865.0	-2,201.00	-1,337.0	-1,029.9	1,220.2	0.00	0.00	0.00
7,500.0	90.00	269.93	6,865.0	-2,201.00	-1,337.1	-1,129.9	1,319.1	0.00	0.00	0.00
7,600.0	90.00	269.93	6,865.0	-2,201.00	-1,337.3	-1,229.9	1,418.0	0.00	0.00	0.00
7,700.0	90.00	269.93	6,865.0	-2,201.00	-1,337.4	-1,329.9	1,516.8	0.00	0.00	0.00
7,800.0	90.00	269.93	6,865.0	-2,201.00	-1,337.5	-1,429.9	1,615.7	0.00	0.00	0.00
7,900.0	90.00	269.93	6,865.0	-2,201.00	-1,337.6	-1,529.9	1,714.6	0.00	0.00	0.00
8,000.0	90.00	269.93	6,865.0	-2,201.00	-1,337.7	-1,629.9	1,813.4	0.00	0.00	0.00
8,100.0	90.00	269.93	6,865.0	-2,201.00	-1,337.9	-1,729.9	1,912.3	0.00	0.00	0.00
8,200.0	90.00	269.93	6,865.0	-2,201.00	-1,338.0	-1,829.9	2,011.2	0.00	0.00	0.00
8,300.0	90.00	269.93	6,865.0	-2,201.00	-1,338.1	-1,929.9	2,110.0	0.00	0.00	0.00
8,400.0	90.00	269.93	6,865.0	-2,201.00	-1,338.2	-2,029.9	2,208.9	0.00	0.00	0.00
8,500.0	90.00	269.93	6,865.0	-2,201.00	-1,338.4	-2,129.9	2,307.8	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VETTING 15
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 15 T5N R65W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	VETTING 15	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
8,600.0	90.00	269.93	6,865.0	-2,201.00	-1,338.5	-2,229.9	2,406.6	0.00	0.00	0.00
8,700.0	90.00	269.93	6,865.0	-2,201.00	-1,338.6	-2,329.9	2,505.5	0.00	0.00	0.00
8,800.0	90.00	269.93	6,865.0	-2,201.00	-1,338.7	-2,429.9	2,604.4	0.00	0.00	0.00
8,900.0	90.00	269.93	6,865.0	-2,201.00	-1,338.8	-2,529.9	2,703.2	0.00	0.00	0.00
9,000.0	90.00	269.93	6,865.0	-2,201.00	-1,339.0	-2,629.9	2,802.1	0.00	0.00	0.00
9,100.0	90.00	269.93	6,865.0	-2,201.00	-1,339.1	-2,729.9	2,901.0	0.00	0.00	0.00
9,200.0	90.00	269.93	6,865.0	-2,201.00	-1,339.2	-2,829.9	2,999.8	0.00	0.00	0.00
9,300.0	90.00	269.93	6,865.0	-2,201.00	-1,339.3	-2,929.9	3,098.7	0.00	0.00	0.00
9,400.0	90.00	269.93	6,865.0	-2,201.00	-1,339.4	-3,029.9	3,197.6	0.00	0.00	0.00
9,500.0	90.00	269.93	6,865.0	-2,201.00	-1,339.6	-3,129.9	3,296.5	0.00	0.00	0.00
9,600.0	90.00	269.93	6,865.0	-2,201.00	-1,339.7	-3,229.9	3,395.3	0.00	0.00	0.00
9,700.0	90.00	269.93	6,865.0	-2,201.00	-1,339.8	-3,329.9	3,494.2	0.00	0.00	0.00
9,800.0	90.00	269.93	6,865.0	-2,201.00	-1,339.9	-3,429.9	3,593.1	0.00	0.00	0.00
9,900.0	90.00	269.93	6,865.0	-2,201.00	-1,340.0	-3,529.9	3,691.9	0.00	0.00	0.00
10,000.0	90.00	269.93	6,865.0	-2,201.00	-1,340.2	-3,629.9	3,790.8	0.00	0.00	0.00
10,100.0	90.00	269.93	6,865.0	-2,201.00	-1,340.3	-3,729.9	3,889.7	0.00	0.00	0.00
10,200.0	90.00	269.93	6,865.0	-2,201.00	-1,340.4	-3,829.9	3,988.5	0.00	0.00	0.00
10,300.0	90.00	269.93	6,865.0	-2,201.00	-1,340.5	-3,929.9	4,087.4	0.00	0.00	0.00
10,400.0	90.00	269.93	6,865.0	-2,201.00	-1,340.6	-4,029.9	4,186.3	0.00	0.00	0.00
10,500.0	90.00	269.93	6,865.0	-2,201.00	-1,340.8	-4,129.9	4,285.1	0.00	0.00	0.00
10,600.0	90.00	269.93	6,865.0	-2,201.00	-1,340.9	-4,229.9	4,384.0	0.00	0.00	0.00
10,700.0	90.00	269.93	6,865.0	-2,201.00	-1,341.0	-4,329.9	4,482.9	0.00	0.00	0.00
10,800.0	90.00	269.93	6,865.0	-2,201.00	-1,341.1	-4,429.9	4,581.7	0.00	0.00	0.00
10,900.0	90.00	269.93	6,865.0	-2,201.00	-1,341.3	-4,529.9	4,680.6	0.00	0.00	0.00
11,000.0	90.00	269.93	6,865.0	-2,201.00	-1,341.4	-4,629.9	4,779.5	0.00	0.00	0.00
11,100.0	90.00	269.93	6,865.0	-2,201.00	-1,341.5	-4,729.9	4,878.3	0.00	0.00	0.00
11,200.0	90.00	269.93	6,865.0	-2,201.00	-1,341.6	-4,829.9	4,977.2	0.00	0.00	0.00
11,300.0	90.00	269.93	6,865.0	-2,201.00	-1,341.7	-4,929.9	5,076.1	0.00	0.00	0.00
11,400.0	90.00	269.93	6,865.0	-2,201.00	-1,341.9	-5,029.9	5,175.0	0.00	0.00	0.00
11,500.0	90.00	269.93	6,865.0	-2,201.00	-1,342.0	-5,129.9	5,273.8	0.00	0.00	0.00
11,600.0	90.00	269.93	6,865.0	-2,201.00	-1,342.1	-5,229.9	5,372.7	0.00	0.00	0.00
11,700.0	90.00	269.93	6,865.0	-2,201.00	-1,342.2	-5,329.9	5,471.6	0.00	0.00	0.00
11,800.0	90.00	269.93	6,865.0	-2,201.00	-1,342.3	-5,429.9	5,570.4	0.00	0.00	0.00
11,900.0	90.00	269.93	6,865.0	-2,201.00	-1,342.5	-5,529.9	5,669.3	0.00	0.00	0.00
12,000.0	90.00	269.93	6,865.0	-2,201.00	-1,342.6	-5,629.9	5,768.2	0.00	0.00	0.00
12,100.0	90.00	269.93	6,865.0	-2,201.00	-1,342.7	-5,729.9	5,867.0	0.00	0.00	0.00
12,200.0	90.00	269.93	6,865.0	-2,201.00	-1,342.8	-5,829.9	5,965.9	0.00	0.00	0.00
12,300.0	90.00	269.93	6,865.0	-2,201.00	-1,342.9	-5,929.9	6,064.8	0.00	0.00	0.00
12,400.0	90.00	269.93	6,865.0	-2,201.00	-1,343.1	-6,029.9	6,163.6	0.00	0.00	0.00
12,500.0	90.00	269.93	6,865.0	-2,201.00	-1,343.2	-6,129.9	6,262.5	0.00	0.00	0.00
12,600.0	90.00	269.93	6,865.0	-2,201.00	-1,343.3	-6,229.9	6,361.4	0.00	0.00	0.00
12,700.0	90.00	269.93	6,865.0	-2,201.01	-1,343.4	-6,329.9	6,460.2	0.00	0.00	0.00
12,800.0	90.00	269.93	6,865.0	-2,201.01	-1,343.6	-6,429.9	6,559.1	0.00	0.00	0.00
12,900.0	90.00	269.93	6,865.0	-2,201.01	-1,343.7	-6,529.9	6,658.0	0.00	0.00	0.00
13,000.0	90.00	269.93	6,865.0	-2,201.01	-1,343.8	-6,629.9	6,756.8	0.00	0.00	0.00
13,100.0	90.00	269.93	6,865.0	-2,201.01	-1,343.9	-6,729.9	6,855.7	0.00	0.00	0.00
13,200.0	90.00	269.93	6,865.0	-2,201.01	-1,344.0	-6,829.9	6,954.6	0.00	0.00	0.00
13,300.0	90.00	269.93	6,865.0	-2,201.01	-1,344.2	-6,929.9	7,053.5	0.00	0.00	0.00
13,400.0	90.00	269.93	6,865.0	-2,201.01	-1,344.3	-7,029.9	7,152.3	0.00	0.00	0.00
13,500.0	90.00	269.93	6,865.0	-2,201.01	-1,344.4	-7,129.9	7,251.2	0.00	0.00	0.00
13,600.0	90.00	269.93	6,865.0	-2,201.01	-1,344.5	-7,229.9	7,350.1	0.00	0.00	0.00
13,700.0	90.00	269.93	6,865.0	-2,201.01	-1,344.6	-7,329.9	7,448.9	0.00	0.00	0.00
13,800.0	90.00	269.93	6,865.0	-2,201.01	-1,344.8	-7,429.9	7,547.8	0.00	0.00	0.00
13,900.0	90.00	269.93	6,865.0	-2,201.01	-1,344.9	-7,529.9	7,646.7	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well VETTING 15
<b>Company:</b>	EXTRACTION OIL & GAS	<b>TVD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4664.0usft (Original Well Elev)
<b>Site:</b>	SW NW SEC. 15 T5N R65W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	VETTING 15	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	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)
14,000.0	90.00	269.93	6,865.0	-2,201.01	-1,345.0	-7,629.9	7,745.5	0.00	0.00	0.00
14,100.0	90.00	269.93	6,865.0	-2,201.01	-1,345.1	-7,729.9	7,844.4	0.00	0.00	0.00
14,200.0	90.00	269.93	6,865.0	-2,201.01	-1,345.2	-7,829.9	7,943.3	0.00	0.00	0.00
14,300.0	90.00	269.93	6,865.0	-2,201.01	-1,345.4	-7,929.9	8,042.1	0.00	0.00	0.00
14,400.0	90.00	269.93	6,865.0	-2,201.01	-1,345.5	-8,029.9	8,141.0	0.00	0.00	0.00
14,500.0	90.00	269.93	6,865.0	-2,201.01	-1,345.6	-8,129.9	8,239.9	0.00	0.00	0.00
14,600.0	90.00	269.93	6,865.0	-2,201.01	-1,345.7	-8,229.9	8,338.7	0.00	0.00	0.00
14,700.0	90.00	269.93	6,865.0	-2,201.01	-1,345.9	-8,329.9	8,437.6	0.00	0.00	0.00
14,800.0	90.00	269.93	6,865.0	-2,201.01	-1,346.0	-8,429.9	8,536.5	0.00	0.00	0.00
14,900.0	90.00	269.93	6,865.0	-2,201.01	-1,346.1	-8,529.9	8,635.3	0.00	0.00	0.00
15,000.0	90.00	269.93	6,865.0	-2,201.01	-1,346.2	-8,629.9	8,734.2	0.00	0.00	0.00
15,100.0	90.00	269.93	6,865.0	-2,201.01	-1,346.3	-8,729.9	8,833.1	0.00	0.00	0.00
<b>BHL - VETTING 15</b>										
<b>15,171.7</b>	<b>90.00</b>	<b>269.93</b>	<b>6,865.0</b>	<b>-2,201.01</b>	<b>-1,346.4</b>	<b>-8,801.6</b>	<b>8,904.0</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,682.8	3,583.0	PARKMAN			
4,252.3	4,132.0	SUSSEX			
4,969.2	4,823.0	SHANNON			
6,931.1	6,703.0	SHARON SPRINGS			
6,960.6	6,723.0	NIOBRARA			
7,372.8	6,865.0	NIO B TARGET			

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
400.0	400.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,171.5	1,162.2	-98.3	-31.6	EOB TO 15.43° INC
5,671.3	5,499.8	-1,238.0	-398.1	END OF TANGENT
6,442.8	6,262.0	-1,336.3	-429.7	EOD TO VERTICAL
6,472.8	6,292.0	-1,336.3	-429.7	KOP (10°/100ft BUR)
7,372.8	6,865.0	-1,337.0	-1,002.7	LANDING PNT - VETTING 15
15,171.7	6,865.0	-1,346.4	-8,801.6	BHL - VETTING 15