

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

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

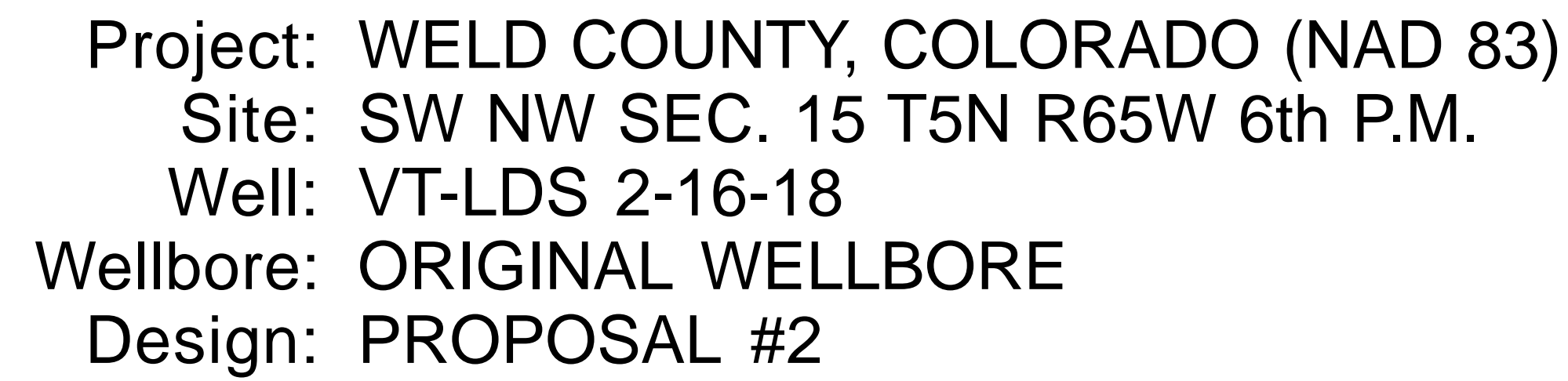
VT-LDS 2-16-18

ORIGINAL WELLBORE

09 March, 2016

Plan: PROPOSAL #2





The map displays a grid of proposed local coordinates (Northings and Westings) with various geological features and data points. A red line indicates the proposed local North direction. A green line shows the magnetic field direction. A blue line represents the magnetic field strength. A green line indicates the magnetic field dip angle. A green line shows the magnetic field date. A green line displays the magnetic field model.

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3583.0	3901.7	PARKMAN
4132.0	4549.1	SUSSEX
4823.0	5363.9	SHANNON
6703.0	7617.4	SHARON SPRINGS
6723.0	7654.7	NIOBRARA
6865.0	8183.2	NIO B TARGET

PROPOSED LOCAL COORDINATES

SHL: 1889ft FNL & 602ft FWL of Sec 15

LP: 1061ft FNL & 2191ft FWL of Sec 16

BHL: 990ft FNL & 460ft FWL of Sec 18

Magnetic Field

Strength: 52585.3snT

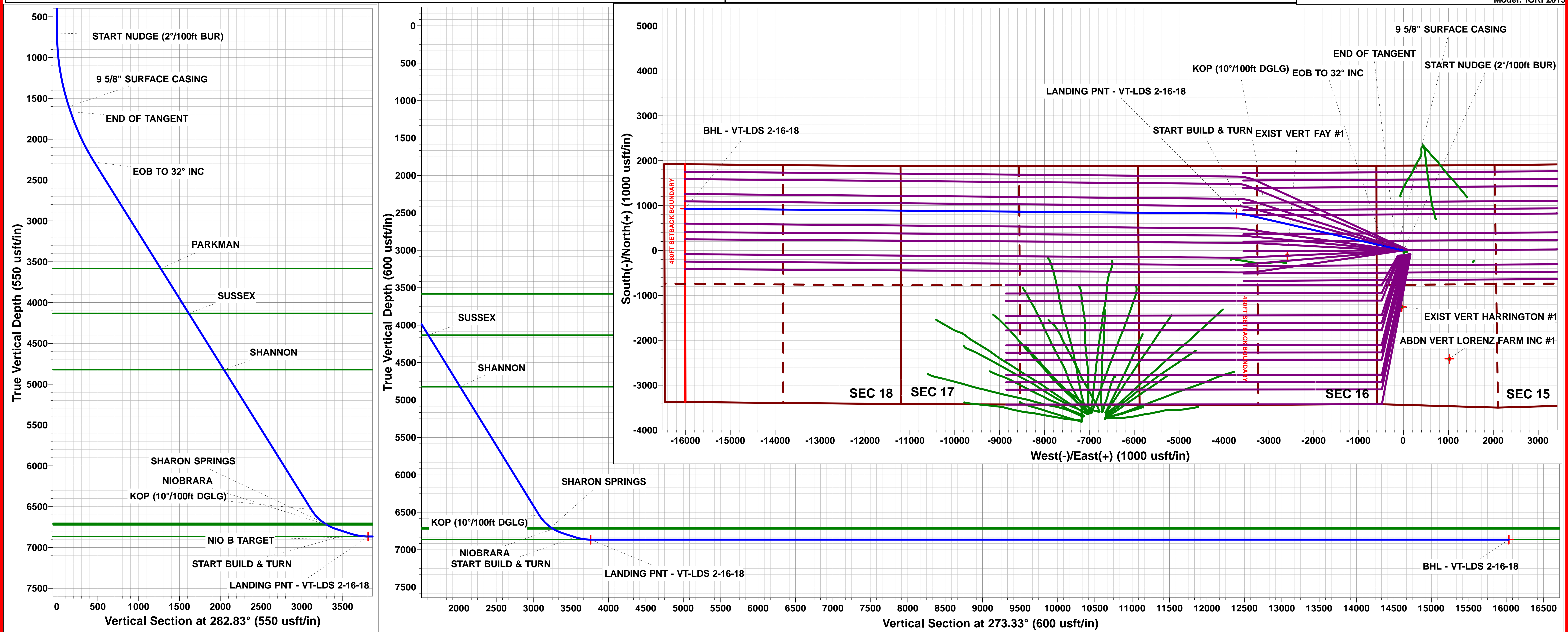
Dip Angle: 66.91°

Date: 20/11/2015

Model: IGRF2015

Azimuths to True North

Magnetic North: 8.32°



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VT-LDS 2-16-18
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:	VT-LDS 2-16-18	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	VT-LDS 2-16-18		
Well Position	+N/-S	116.6 usft	Northing:
	+E/-W	128.1 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 (°)
	0.0	0.0	0.0	273.33

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	282.83	1,600.0	-3,064.0	32.2	-141.4	2.00	2.00	0.00	282.83	
1,680.5	18.31	282.83	1,661.7	-3,002.3	36.7	-161.3	0.00	0.00	0.00	0.00	
2,365.0	32.00	282.83	2,279.8	-2,384.2	101.2	-444.4	2.00	2.00	0.00	0.00	
7,381.0	32.00	282.83	6,533.6	1,869.6	691.4	-3,036.1	0.00	0.00	0.00	0.00	
7,783.9	72.29	282.83	6,775.8	2,111.8	760.7	-3,339.9	10.00	10.00	0.00	0.00	
7,968.5	72.29	282.83	6,832.0	2,168.0	799.7	-3,511.4	0.00	0.00	0.00	0.00	
8,183.2	90.00	270.50	6,865.0	2,201.0	823.6	-3,720.9	10.00	8.25	-5.75	-35.71	LANDING PNT - V1
20,471.3	90.00	270.50	6,865.0	2,201.0	930.5	-16,008.5	0.00	0.00	0.00	0.00	BHL - VT-LDS 2-16

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Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
Well:	VT-LDS 2-16-18	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	282.83	800.0	3,864.02	0.4	-1.7	1.7	2.00	2.00	0.00
900.0	4.00	282.83	899.8	3,764.16	1.5	-6.8	6.9	2.00	2.00	0.00
1,000.0	6.00	282.83	999.5	3,664.55	3.5	-15.3	15.5	2.00	2.00	0.00
1,100.0	8.00	282.83	1,098.7	3,565.30	6.2	-27.2	27.5	2.00	2.00	0.00
1,200.0	10.00	282.83	1,197.5	3,466.53	9.7	-42.4	42.9	2.00	2.00	0.00
1,300.0	12.00	282.83	1,295.6	3,368.38	13.9	-61.0	61.7	2.00	2.00	0.00
1,400.0	14.00	282.83	1,393.1	3,270.94	18.9	-83.0	83.9	2.00	2.00	0.00
1,500.0	16.00	282.83	1,489.6	3,174.36	24.6	-108.2	109.5	2.00	2.00	0.00
1,600.0	18.00	282.83	1,585.3	3,078.73	31.1	-136.7	138.3	2.00	2.00	0.00
9 5/8" SURFACE CASING										
1,615.5	18.31	282.83	1,600.0	3,064.00	32.2	-141.4	143.1	2.00	2.00	0.00
END OF TANGENT										
1,680.5	18.31	282.83	1,661.7	3,002.29	36.7	-161.3	163.2	0.00	0.00	0.00
1,700.0	18.70	282.83	1,680.2	2,983.80	38.1	-167.4	169.3	2.00	2.00	0.00
1,800.0	20.70	282.83	1,774.3	2,889.66	45.6	-200.2	202.5	2.00	2.00	0.00
1,900.0	22.70	282.83	1,867.2	2,796.75	53.8	-236.3	239.0	2.00	2.00	0.00
2,000.0	24.70	282.83	1,958.8	2,705.19	62.7	-275.5	278.6	2.00	2.00	0.00
2,100.0	26.70	282.83	2,048.9	2,615.09	72.4	-317.8	321.4	2.00	2.00	0.00
2,200.0	28.70	282.83	2,137.4	2,526.55	82.7	-363.1	367.3	2.00	2.00	0.00
2,300.0	30.70	282.83	2,224.3	2,439.69	93.7	-411.4	416.1	2.00	2.00	0.00
EOB TO 32" INC										
2,365.0	32.00	282.83	2,279.8	2,384.18	101.2	-444.4	449.5	2.00	2.00	0.00
2,400.0	32.00	282.83	2,309.5	2,354.50	105.3	-462.4	467.8	0.00	0.00	0.00
2,500.0	32.00	282.83	2,394.3	2,269.70	117.1	-514.1	520.0	0.00	0.00	0.00
2,600.0	32.00	282.83	2,479.1	2,184.89	128.9	-565.8	572.3	0.00	0.00	0.00
2,700.0	32.00	282.83	2,563.9	2,100.09	140.6	-617.4	624.6	0.00	0.00	0.00
2,800.0	32.00	282.83	2,648.7	2,015.28	152.4	-669.1	676.8	0.00	0.00	0.00
2,900.0	32.00	282.83	2,733.5	1,930.48	164.2	-720.8	729.1	0.00	0.00	0.00
3,000.0	32.00	282.83	2,818.3	1,845.67	175.9	-772.4	781.4	0.00	0.00	0.00
3,100.0	32.00	282.83	2,903.1	1,760.87	187.7	-824.1	833.6	0.00	0.00	0.00
3,200.0	32.00	282.83	2,987.9	1,676.06	199.5	-875.8	885.9	0.00	0.00	0.00
3,300.0	32.00	282.83	3,072.7	1,591.26	211.2	-927.5	938.2	0.00	0.00	0.00
3,400.0	32.00	282.83	3,157.5	1,506.45	223.0	-979.1	990.4	0.00	0.00	0.00
3,500.0	32.00	282.83	3,242.4	1,421.65	234.8	-1,030.8	1,042.7	0.00	0.00	0.00
3,600.0	32.00	282.83	3,327.2	1,336.84	246.5	-1,082.5	1,094.9	0.00	0.00	0.00
3,700.0	32.00	282.83	3,412.0	1,252.04	258.3	-1,134.1	1,147.2	0.00	0.00	0.00
3,800.0	32.00	282.83	3,496.8	1,167.24	270.1	-1,185.8	1,199.5	0.00	0.00	0.00
3,900.0	32.00	282.83	3,581.6	1,082.43	281.8	-1,237.5	1,251.7	0.00	0.00	0.00
PARKMAN										
3,901.7	32.00	282.83	3,583.0	1,081.00	282.0	-1,238.3	1,252.6	0.00	0.00	0.00
4,000.0	32.00	282.83	3,666.4	997.63	293.6	-1,289.1	1,304.0	0.00	0.00	0.00
4,100.0	32.00	282.83	3,751.2	912.82	305.4	-1,340.8	1,356.3	0.00	0.00	0.00
4,200.0	32.00	282.83	3,836.0	828.02	317.1	-1,392.5	1,408.5	0.00	0.00	0.00
4,300.0	32.00	282.83	3,920.8	743.21	328.9	-1,444.1	1,460.8	0.00	0.00	0.00
4,400.0	32.00	282.83	4,005.6	658.41	340.7	-1,495.8	1,513.1	0.00	0.00	0.00

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Well:	VT-LDS 2-16-18	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)
4,500.0	32.00	282.83	4,090.4	573.60	352.4	-1,547.5	1,565.3	0.00	0.00	0.00
SUSSEX										
4,549.1	32.00	282.83	4,132.0	532.00	358.2	-1,572.8	1,591.0	0.00	0.00	0.00
4,600.0	32.00	282.83	4,175.2	488.80	364.2	-1,599.2	1,617.6	0.00	0.00	0.00
4,700.0	32.00	282.83	4,260.0	403.99	376.0	-1,650.8	1,669.9	0.00	0.00	0.00
4,800.0	32.00	282.83	4,344.8	319.19	387.7	-1,702.5	1,722.1	0.00	0.00	0.00
4,900.0	32.00	282.83	4,429.6	234.38	399.5	-1,754.2	1,774.4	0.00	0.00	0.00
5,000.0	32.00	282.83	4,514.4	149.58	411.3	-1,805.8	1,826.7	0.00	0.00	0.00
5,100.0	32.00	282.83	4,599.2	64.77	423.0	-1,857.5	1,878.9	0.00	0.00	0.00
5,200.0	32.00	282.83	4,684.0	-20.03	434.8	-1,909.2	1,931.2	0.00	0.00	0.00
5,300.0	32.00	282.83	4,768.8	-104.84	446.6	-1,960.8	1,983.4	0.00	0.00	0.00
SHANNON										
5,363.9	32.00	282.83	4,823.0	-159.00	454.1	-1,993.8	2,016.8	0.00	0.00	0.00
5,400.0	32.00	282.83	4,853.6	-189.64	458.3	-2,012.5	2,035.7	0.00	0.00	0.00
5,500.0	32.00	282.83	4,938.4	-274.45	470.1	-2,064.2	2,088.0	0.00	0.00	0.00
5,600.0	32.00	282.83	5,023.3	-359.25	481.9	-2,115.8	2,140.2	0.00	0.00	0.00
5,700.0	32.00	282.83	5,108.1	-444.06	493.6	-2,167.5	2,192.5	0.00	0.00	0.00
5,800.0	32.00	282.83	5,192.9	-528.86	505.4	-2,219.2	2,244.8	0.00	0.00	0.00
5,900.0	32.00	282.83	5,277.7	-613.67	517.2	-2,270.8	2,297.0	0.00	0.00	0.00
6,000.0	32.00	282.83	5,362.5	-698.47	528.9	-2,322.5	2,349.3	0.00	0.00	0.00
6,100.0	32.00	282.83	5,447.3	-783.28	540.7	-2,374.2	2,401.6	0.00	0.00	0.00
6,200.0	32.00	282.83	5,532.1	-868.08	552.5	-2,425.9	2,453.8	0.00	0.00	0.00
6,300.0	32.00	282.83	5,616.9	-952.89	564.2	-2,477.5	2,506.1	0.00	0.00	0.00
6,400.0	32.00	282.83	5,701.7	-1,037.69	576.0	-2,529.2	2,558.4	0.00	0.00	0.00
6,500.0	32.00	282.83	5,786.5	-1,122.49	587.8	-2,580.9	2,610.6	0.00	0.00	0.00
6,600.0	32.00	282.83	5,871.3	-1,207.30	599.5	-2,632.5	2,662.9	0.00	0.00	0.00
6,700.0	32.00	282.83	5,956.1	-1,292.10	611.3	-2,684.2	2,715.2	0.00	0.00	0.00
6,800.0	32.00	282.83	6,040.9	-1,376.91	623.1	-2,735.9	2,767.4	0.00	0.00	0.00
6,900.0	32.00	282.83	6,125.7	-1,461.71	634.8	-2,787.5	2,819.7	0.00	0.00	0.00
7,000.0	32.00	282.83	6,210.5	-1,546.52	646.6	-2,839.2	2,871.9	0.00	0.00	0.00
7,100.0	32.00	282.83	6,295.3	-1,631.32	658.4	-2,890.9	2,924.2	0.00	0.00	0.00
7,200.0	32.00	282.83	6,380.1	-1,716.13	670.1	-2,942.5	2,976.5	0.00	0.00	0.00
7,300.0	32.00	282.83	6,464.9	-1,800.93	681.9	-2,994.2	3,028.7	0.00	0.00	0.00
KOP (10°/100ft DGLG)										
7,381.0	32.00	282.83	6,533.6	-1,869.63	691.4	-3,036.1	3,071.1	0.00	0.00	0.00
7,400.0	33.90	282.83	6,549.6	-1,885.57	693.7	-3,046.1	3,081.3	10.00	10.00	0.00
7,500.0	43.90	282.83	6,627.3	-1,963.29	707.7	-3,107.3	3,143.1	10.00	10.00	0.00
7,600.0	53.90	282.83	6,692.9	-2,028.95	724.4	-3,180.7	3,217.3	10.00	10.00	0.00
SHARON SPRINGS										
7,617.4	55.64	282.83	6,703.0	-2,039.00	727.5	-3,194.6	3,231.4	10.00	10.00	0.00
NIOBRARA										
7,654.7	59.37	282.83	6,723.0	-2,059.00	734.5	-3,225.2	3,262.4	10.00	10.00	0.00
7,700.0	63.90	282.83	6,744.5	-2,080.54	743.4	-3,264.1	3,301.7	10.00	10.00	0.00
7,783.9	72.29	282.83	6,775.8	-2,111.81	760.7	-3,339.9	3,378.4	10.00	10.00	0.00
7,800.0	72.29	282.83	6,780.7	-2,116.70	764.1	-3,354.8	3,393.5	0.00	0.00	0.00
7,900.0	72.29	282.83	6,811.1	-2,147.12	785.2	-3,447.7	3,487.5	0.00	0.00	0.00
START BUILD & TURN										
7,968.5	72.29	282.83	6,832.0	-2,167.96	799.7	-3,511.3	3,551.8	0.00	0.00	0.00
8,000.0	74.86	280.93	6,840.9	-2,176.87	805.9	-3,540.9	3,581.7	9.99	8.14	-6.04
8,100.0	83.09	275.15	6,860.0	-2,195.99	819.6	-3,638.0	3,679.4	10.00	8.24	-5.78
LANDING PNT - VT-LDS 2-16-18 - NIO B TARGET										
8,183.2	90.00	270.50	6,865.0	-2,201.00	823.6	-3,720.9	3,762.4	10.00	8.30	-5.59
8,200.0	90.00	270.50	6,865.0	-2,201.00	823.8	-3,737.7	3,779.2	0.00	0.00	0.00

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Site:	SW NW SEC. 15 T5N R65W 6th P.M.	North Reference:	True
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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)
8,300.0	90.00	270.50	6,865.0	-2,201.00	824.6	-3,837.7	3,879.0	0.00	0.00	0.00
8,400.0	90.00	270.50	6,865.0	-2,201.00	825.5	-3,937.6	3,978.9	0.00	0.00	0.00
8,500.0	90.00	270.50	6,865.0	-2,201.00	826.4	-4,037.6	4,078.8	0.00	0.00	0.00
8,600.0	90.00	270.50	6,865.0	-2,201.00	827.3	-4,137.6	4,178.7	0.00	0.00	0.00
8,700.0	90.00	270.50	6,865.0	-2,201.00	828.1	-4,237.6	4,278.6	0.00	0.00	0.00
8,800.0	90.00	270.50	6,865.0	-2,201.00	829.0	-4,337.6	4,378.4	0.00	0.00	0.00
8,900.0	90.00	270.50	6,865.0	-2,201.00	829.9	-4,437.6	4,478.3	0.00	0.00	0.00
9,000.0	90.00	270.50	6,865.0	-2,201.00	830.7	-4,537.6	4,578.2	0.00	0.00	0.00
9,100.0	90.00	270.50	6,865.0	-2,201.00	831.6	-4,637.6	4,678.1	0.00	0.00	0.00
9,200.0	90.00	270.50	6,865.0	-2,201.00	832.5	-4,737.6	4,777.9	0.00	0.00	0.00
9,300.0	90.00	270.50	6,865.0	-2,201.00	833.3	-4,837.6	4,877.8	0.00	0.00	0.00
9,400.0	90.00	270.50	6,865.0	-2,201.00	834.2	-4,937.6	4,977.7	0.00	0.00	0.00
9,500.0	90.00	270.50	6,865.0	-2,201.00	835.1	-5,037.6	5,077.6	0.00	0.00	0.00
9,600.0	90.00	270.50	6,865.0	-2,201.00	836.0	-5,137.6	5,177.5	0.00	0.00	0.00
9,700.0	90.00	270.50	6,865.0	-2,201.00	836.8	-5,237.6	5,277.3	0.00	0.00	0.00
9,800.0	90.00	270.50	6,865.0	-2,201.00	837.7	-5,337.6	5,377.2	0.00	0.00	0.00
9,900.0	90.00	270.50	6,865.0	-2,201.00	838.6	-5,437.6	5,477.1	0.00	0.00	0.00
10,000.0	90.00	270.50	6,865.0	-2,201.00	839.4	-5,537.6	5,577.0	0.00	0.00	0.00
10,100.0	90.00	270.50	6,865.0	-2,201.00	840.3	-5,637.6	5,676.8	0.00	0.00	0.00
10,200.0	90.00	270.50	6,865.0	-2,201.00	841.2	-5,737.6	5,776.7	0.00	0.00	0.00
10,300.0	90.00	270.50	6,865.0	-2,201.00	842.1	-5,837.6	5,876.6	0.00	0.00	0.00
10,400.0	90.00	270.50	6,865.0	-2,201.00	842.9	-5,937.6	5,976.5	0.00	0.00	0.00
10,500.0	90.00	270.50	6,865.0	-2,201.00	843.8	-6,037.6	6,076.4	0.00	0.00	0.00
10,600.0	90.00	270.50	6,865.0	-2,201.00	844.7	-6,137.6	6,176.2	0.00	0.00	0.00
10,700.0	90.00	270.50	6,865.0	-2,201.00	845.5	-6,237.6	6,276.1	0.00	0.00	0.00
10,800.0	90.00	270.50	6,865.0	-2,201.00	846.4	-6,337.6	6,376.0	0.00	0.00	0.00
10,900.0	90.00	270.50	6,865.0	-2,201.00	847.3	-6,437.6	6,475.9	0.00	0.00	0.00
11,000.0	90.00	270.50	6,865.0	-2,201.00	848.1	-6,537.6	6,575.8	0.00	0.00	0.00
11,100.0	90.00	270.50	6,865.0	-2,201.00	849.0	-6,637.5	6,675.6	0.00	0.00	0.00
11,200.0	90.00	270.50	6,865.0	-2,201.00	849.9	-6,737.5	6,775.5	0.00	0.00	0.00
11,300.0	90.00	270.50	6,865.0	-2,201.00	850.8	-6,837.5	6,875.4	0.00	0.00	0.00
11,400.0	90.00	270.50	6,865.0	-2,201.00	851.6	-6,937.5	6,975.3	0.00	0.00	0.00
11,500.0	90.00	270.50	6,865.0	-2,201.00	852.5	-7,037.5	7,075.1	0.00	0.00	0.00
11,600.0	90.00	270.50	6,865.0	-2,201.00	853.4	-7,137.5	7,175.0	0.00	0.00	0.00
11,700.0	90.00	270.50	6,865.0	-2,201.00	854.2	-7,237.5	7,274.9	0.00	0.00	0.00
11,800.0	90.00	270.50	6,865.0	-2,201.00	855.1	-7,337.5	7,374.8	0.00	0.00	0.00
11,900.0	90.00	270.50	6,865.0	-2,201.00	856.0	-7,437.5	7,474.7	0.00	0.00	0.00
12,000.0	90.00	270.50	6,865.0	-2,201.00	856.8	-7,537.5	7,574.5	0.00	0.00	0.00
12,100.0	90.00	270.50	6,865.0	-2,201.00	857.7	-7,637.5	7,674.4	0.00	0.00	0.00
12,200.0	90.00	270.50	6,865.0	-2,201.00	858.6	-7,737.5	7,774.3	0.00	0.00	0.00
12,300.0	90.00	270.50	6,865.0	-2,201.00	859.5	-7,837.5	7,874.2	0.00	0.00	0.00
12,400.0	90.00	270.50	6,865.0	-2,201.00	860.3	-7,937.5	7,974.0	0.00	0.00	0.00
12,500.0	90.00	270.50	6,865.0	-2,201.00	861.2	-8,037.5	8,073.9	0.00	0.00	0.00
12,600.0	90.00	270.50	6,865.0	-2,201.00	862.1	-8,137.5	8,173.8	0.00	0.00	0.00
12,700.0	90.00	270.50	6,865.0	-2,201.00	862.9	-8,237.5	8,273.7	0.00	0.00	0.00
12,800.0	90.00	270.50	6,865.0	-2,201.00	863.8	-8,337.5	8,373.6	0.00	0.00	0.00
12,900.0	90.00	270.50	6,865.0	-2,201.00	864.7	-8,437.5	8,473.4	0.00	0.00	0.00
13,000.0	90.00	270.50	6,865.0	-2,201.00	865.5	-8,537.5	8,573.3	0.00	0.00	0.00
13,100.0	90.00	270.50	6,865.0	-2,201.00	866.4	-8,637.5	8,673.2	0.00	0.00	0.00
13,200.0	90.00	270.50	6,865.0	-2,201.00	867.3	-8,737.5	8,773.1	0.00	0.00	0.00
13,300.0	90.00	270.50	6,865.0	-2,201.00	868.2	-8,837.5	8,873.0	0.00	0.00	0.00
13,400.0	90.00	270.50	6,865.0	-2,201.00	869.0	-8,937.5	8,972.8	0.00	0.00	0.00
13,500.0	90.00	270.50	6,865.0	-2,201.00	869.9	-9,037.5	9,072.7	0.00	0.00	0.00
13,600.0	90.00	270.50	6,865.0	-2,201.00	870.8	-9,137.5	9,172.6	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VT-LDS 2-16-18
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:	VT-LDS 2-16-18	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)
13,700.0	90.00	270.50	6,865.0	-2,201.00	871.6	-9,237.4	9,272.5	0.00	0.00	0.00
13,800.0	90.00	270.50	6,865.0	-2,201.00	872.5	-9,337.4	9,372.3	0.00	0.00	0.00
13,900.0	90.00	270.50	6,865.0	-2,201.00	873.4	-9,437.4	9,472.2	0.00	0.00	0.00
14,000.0	90.00	270.50	6,865.0	-2,201.00	874.2	-9,537.4	9,572.1	0.00	0.00	0.00
14,100.0	90.00	270.50	6,865.0	-2,201.00	875.1	-9,637.4	9,672.0	0.00	0.00	0.00
14,200.0	90.00	270.50	6,865.0	-2,201.00	876.0	-9,737.4	9,771.9	0.00	0.00	0.00
14,300.0	90.00	270.50	6,865.0	-2,201.00	876.9	-9,837.4	9,871.7	0.00	0.00	0.00
14,400.0	90.00	270.50	6,865.0	-2,201.00	877.7	-9,937.4	9,971.6	0.00	0.00	0.00
14,500.0	90.00	270.50	6,865.0	-2,201.00	878.6	-10,037.4	10,071.5	0.00	0.00	0.00
14,600.0	90.00	270.50	6,865.0	-2,201.00	879.5	-10,137.4	10,171.4	0.00	0.00	0.00
14,700.0	90.00	270.50	6,865.0	-2,201.00	880.3	-10,237.4	10,271.2	0.00	0.00	0.00
14,800.0	90.00	270.50	6,865.0	-2,201.00	881.2	-10,337.4	10,371.1	0.00	0.00	0.00
14,900.0	90.00	270.50	6,865.0	-2,201.00	882.1	-10,437.4	10,471.0	0.00	0.00	0.00
15,000.0	90.00	270.50	6,865.0	-2,201.00	882.9	-10,537.4	10,570.9	0.00	0.00	0.00
15,100.0	90.00	270.50	6,865.0	-2,201.00	883.8	-10,637.4	10,670.8	0.00	0.00	0.00
15,200.0	90.00	270.50	6,865.0	-2,201.00	884.7	-10,737.4	10,770.6	0.00	0.00	0.00
15,300.0	90.00	270.50	6,865.0	-2,201.00	885.6	-10,837.4	10,870.5	0.00	0.00	0.00
15,400.0	90.00	270.50	6,865.0	-2,201.00	886.4	-10,937.4	10,970.4	0.00	0.00	0.00
15,500.0	90.00	270.50	6,865.0	-2,201.00	887.3	-11,037.4	11,070.3	0.00	0.00	0.00
15,600.0	90.00	270.50	6,865.0	-2,201.00	888.2	-11,137.4	11,170.1	0.00	0.00	0.00
15,700.0	90.00	270.50	6,865.0	-2,201.00	889.0	-11,237.4	11,270.0	0.00	0.00	0.00
15,800.0	90.00	270.50	6,865.0	-2,201.00	889.9	-11,337.4	11,369.9	0.00	0.00	0.00
15,900.0	90.00	270.50	6,865.0	-2,201.00	890.8	-11,437.4	11,469.8	0.00	0.00	0.00
16,000.0	90.00	270.50	6,865.0	-2,201.00	891.6	-11,537.4	11,569.7	0.00	0.00	0.00
16,100.0	90.00	270.50	6,865.0	-2,201.00	892.5	-11,637.4	11,669.5	0.00	0.00	0.00
16,200.0	90.00	270.50	6,865.0	-2,201.00	893.4	-11,737.4	11,769.4	0.00	0.00	0.00
16,300.0	90.00	270.50	6,865.0	-2,201.00	894.3	-11,837.4	11,869.3	0.00	0.00	0.00
16,400.0	90.00	270.50	6,865.0	-2,201.00	895.1	-11,937.3	11,969.2	0.00	0.00	0.00
16,500.0	90.00	270.50	6,865.0	-2,201.00	896.0	-12,037.3	12,069.1	0.00	0.00	0.00
16,600.0	90.00	270.50	6,865.0	-2,201.00	896.9	-12,137.3	12,168.9	0.00	0.00	0.00
16,700.0	90.00	270.50	6,865.0	-2,201.00	897.7	-12,237.3	12,268.8	0.00	0.00	0.00
16,800.0	90.00	270.50	6,865.0	-2,201.00	898.6	-12,337.3	12,368.7	0.00	0.00	0.00
16,900.0	90.00	270.50	6,865.0	-2,201.00	899.5	-12,437.3	12,468.6	0.00	0.00	0.00
17,000.0	90.00	270.50	6,865.0	-2,201.00	900.3	-12,537.3	12,568.4	0.00	0.00	0.00
17,100.0	90.00	270.50	6,865.0	-2,201.00	901.2	-12,637.3	12,668.3	0.00	0.00	0.00
17,200.0	90.00	270.50	6,865.0	-2,201.00	902.1	-12,737.3	12,768.2	0.00	0.00	0.00
17,300.0	90.00	270.50	6,865.0	-2,201.00	903.0	-12,837.3	12,868.1	0.00	0.00	0.00
17,400.0	90.00	270.50	6,865.0	-2,201.00	903.8	-12,937.3	12,968.0	0.00	0.00	0.00
17,500.0	90.00	270.50	6,865.0	-2,201.00	904.7	-13,037.3	13,067.8	0.00	0.00	0.00
17,600.0	90.00	270.50	6,865.0	-2,201.00	905.6	-13,137.3	13,167.7	0.00	0.00	0.00
17,700.0	90.00	270.50	6,865.0	-2,201.00	906.4	-13,237.3	13,267.6	0.00	0.00	0.00
17,800.0	90.00	270.50	6,865.0	-2,201.00	907.3	-13,337.3	13,367.5	0.00	0.00	0.00
17,900.0	90.00	270.50	6,865.0	-2,201.00	908.2	-13,437.3	13,467.3	0.00	0.00	0.00
18,000.0	90.00	270.50	6,865.0	-2,201.00	909.0	-13,537.3	13,567.2	0.00	0.00	0.00
18,100.0	90.00	270.50	6,865.0	-2,201.00	909.9	-13,637.3	13,667.1	0.00	0.00	0.00
18,200.0	90.00	270.50	6,865.0	-2,201.00	910.8	-13,737.3	13,767.0	0.00	0.00	0.00
18,300.0	90.00	270.50	6,865.0	-2,201.00	911.7	-13,837.3	13,866.9	0.00	0.00	0.00
18,400.0	90.00	270.50	6,865.0	-2,201.00	912.5	-13,937.3	13,966.7	0.00	0.00	0.00
18,500.0	90.00	270.50	6,865.0	-2,201.00	913.4	-14,037.3	14,066.6	0.00	0.00	0.00
18,600.0	90.00	270.50	6,865.0	-2,201.00	914.3	-14,137.3	14,166.5	0.00	0.00	0.00
18,700.0	90.00	270.50	6,865.0	-2,201.00	915.1	-14,237.3	14,266.4	0.00	0.00	0.00
18,800.0	90.00	270.50	6,865.0	-2,201.00	916.0	-14,337.3	14,366.3	0.00	0.00	0.00
18,900.0	90.00	270.50	6,865.0	-2,201.00	916.9	-14,437.3	14,466.1	0.00	0.00	0.00
19,000.0	90.00	270.50	6,865.0	-2,201.00	917.7	-14,537.2	14,566.0	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well VT-LDS 2-16-18
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:	VT-LDS 2-16-18	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)
19,100.0	90.00	270.50	6,865.0	-2,201.00	918.6	-14,637.2	14,665.9	0.00	0.00	0.00
19,200.0	90.00	270.50	6,865.0	-2,201.00	919.5	-14,737.2	14,765.8	0.00	0.00	0.00
19,300.0	90.00	270.50	6,865.0	-2,201.00	920.4	-14,837.2	14,865.6	0.00	0.00	0.00
19,400.0	90.00	270.50	6,865.0	-2,201.00	921.2	-14,937.2	14,965.5	0.00	0.00	0.00
19,500.0	90.00	270.50	6,865.0	-2,201.00	922.1	-15,037.2	15,065.4	0.00	0.00	0.00
19,600.0	90.00	270.50	6,865.0	-2,201.00	923.0	-15,137.2	15,165.3	0.00	0.00	0.00
19,700.0	90.00	270.50	6,865.0	-2,201.00	923.8	-15,237.2	15,265.2	0.00	0.00	0.00
19,800.0	90.00	270.50	6,865.0	-2,201.00	924.7	-15,337.2	15,365.0	0.00	0.00	0.00
19,900.0	90.00	270.50	6,865.0	-2,201.00	925.6	-15,437.2	15,464.9	0.00	0.00	0.00
20,000.0	90.00	270.50	6,865.0	-2,201.00	926.4	-15,537.2	15,564.8	0.00	0.00	0.00
20,100.0	90.00	270.50	6,865.0	-2,201.00	927.3	-15,637.2	15,664.7	0.00	0.00	0.00
20,200.0	90.00	270.50	6,865.0	-2,201.00	928.2	-15,737.2	15,764.5	0.00	0.00	0.00
20,300.0	90.00	270.50	6,865.0	-2,201.00	929.1	-15,837.2	15,864.4	0.00	0.00	0.00
20,400.0	90.00	270.50	6,865.0	-2,201.00	929.9	-15,937.2	15,964.3	0.00	0.00	0.00
BHL - VT-LDS 2-16-18										
20,471.3	90.00	270.50	6,865.0	-2,201.00	930.5	-16,008.5	16,035.5	0.00	0.00	0.00

Formations

MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,901.7	3,583.0	PARKMAN			
4,549.1	4,132.0	SUSSEX			
5,363.9	4,823.0	SHANNON			
7,617.4	6,703.0	SHARON SPRINGS			
7,654.7	6,723.0	NIOBRARA			
8,183.2	6,865.0	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	32.2	-141.4	9 5/8" SURFACE CASING
1,680.5	1,661.7	36.7	-161.3	END OF TANGENT
2,365.0	2,279.8	101.2	-444.4	EOB TO 32° INC
7,381.0	6,533.6	691.4	-3,036.1	KOP (10°/100ft DGLG)
7,968.5	6,832.0	799.7	-3,511.3	START BUILD & TURN
8,183.2	6,865.0	823.6	-3,720.9	LANDING PNT - VT-LDS 2-16-18
20,471.3	6,865.0	930.5	-16,008.5	BHL - VT-LDS 2-16-18