

EXTRACTION OIL & GAS

WELD COUNTY, COLORADO (NAD 83)

NW SW SEC. 21 T2N R67W 6th P.M.

LEONARD 3N

ORIGINAL WELLBORE

27 March, 2017

Plan: PROPOSAL #1

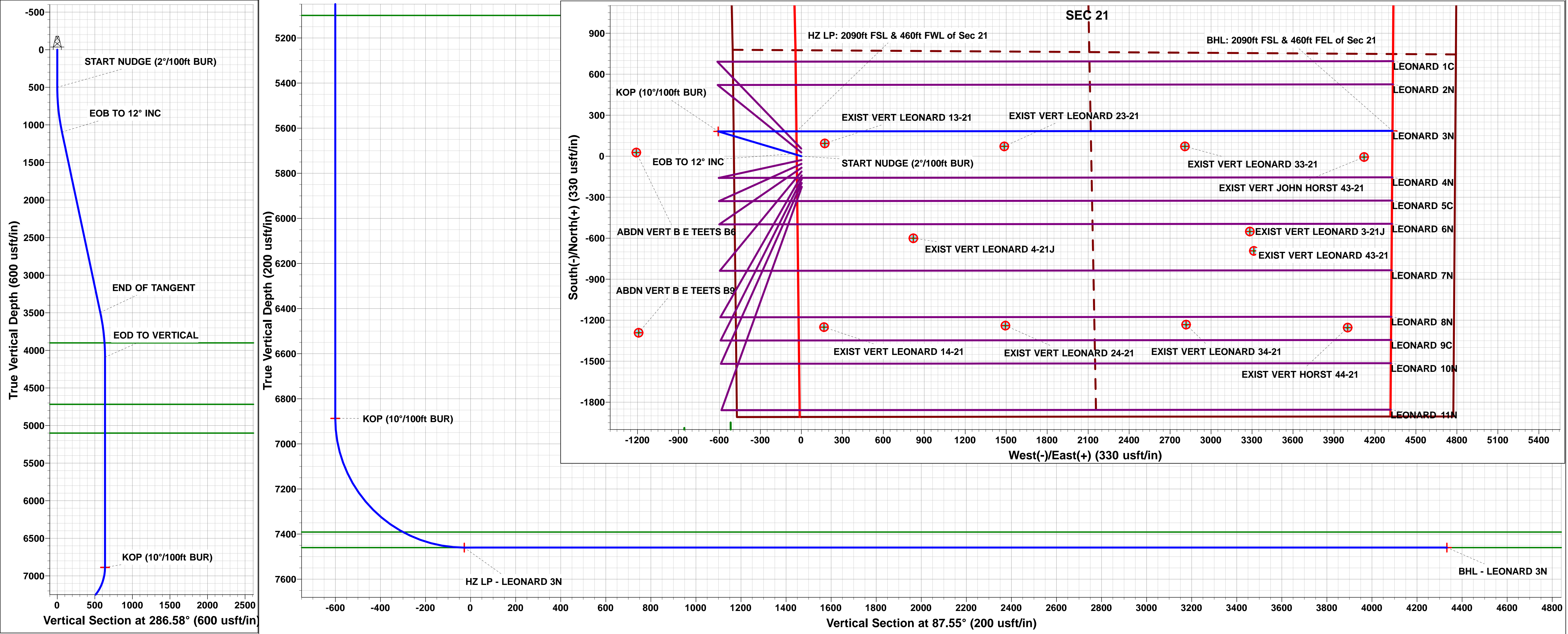
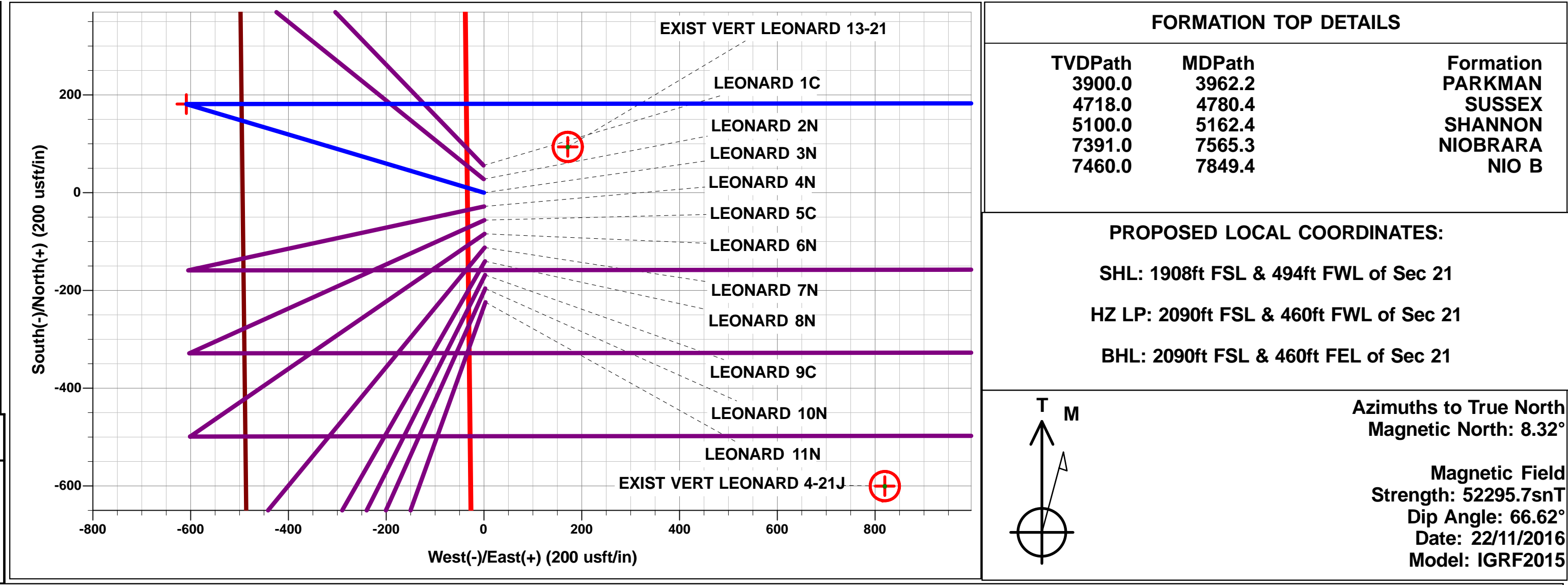




Project: WELD COUNTY, COLORADO (NAD 83)
Site: NW SW SEC. 21 T2N R67W 6th P.M.
Well: LEONARD 3N
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation	
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 1908ft FSL & 494ft FWL of Sec 21	
500.0	500.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)	
1095.5	1099.9	12.00	286.58	17.9	-60.0	-59.2	62.6	EOB TO 12° INC	
3495.5	3553.4	12.00	286.58	163.4	-548.8	-541.3	572.6	END OF TANGENT	
4091.0	4153.4	0.00	0.00	181.3	-608.8	-600.5	635.2	EOD TO VERTICAL	
6887.0	6949.4	0.00	0.00	181.3	-608.8	-600.5	635.2	KOP (10°/100ft BUR)	
7460.0	7849.4	90.00	89.95	181.8	-35.8	-28.0	1208.2	HZ LP: 2090ft FSL & 460ft FWL of Sec 21	
7460.0	12213.8	90.00	89.95	185.5	4328.6	4332.6	5572.6	BHL: 2090ft FSL & 460ft FEL of Sec 21	

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - LEONARD 3N	6887.0	181.3	-608.8	40.122221	-104.905460
HZ LP - LEONARD 3N	7460.0	181.8	-35.8	40.122222	-104.903411
BHL - LEONARD 3N	7460.0	185.5	4328.6	40.122231	-104.887805



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well LEONARD 3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 5018.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5018.0usft (Original Well Elev)
Site:	NW SW SEC. 21 T2N R67W 6th P.M.	North Reference:	True
Well:	LEONARD 3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

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	NW SW SEC. 21 T2N R67W 6th P.M.		
Site Position:		Northing:	1,287,804.83 usft
From:	Lat/Long	Easting:	3,166,871.56 usft
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000ft
		Latitude:	40.121876
		Longitude:	-104.903286
		Grid Convergence:	0.39 °

Well	LEONARD 3N		
Well Position	+N/-S	-55.7 usft	Northing:
	+E/-W	0.8 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	22/11/2016	8.32	66.62	52,296

Design	PROPOSAL #1			
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	87.55

Plan Sections											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	-5,018.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	-4,518.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,099.9	12.00	286.58	1,095.6	-3,922.4	17.9	-60.0	2.00	2.00	0.00	286.58	
3,553.4	12.00	286.58	3,495.4	-1,522.6	163.4	-548.8	0.00	0.00	0.00	0.00	
4,153.4	0.00	0.00	4,091.0	-927.0	181.3	-608.8	2.00	-2.00	0.00	180.00	
6,949.4	0.00	0.00	6,887.0	1,869.0	181.3	-608.8	0.00	0.00	0.00	0.00	KOP - LEONARD 3
7,849.4	90.00	89.95	7,460.0	2,442.0	181.8	-35.8	10.00	10.00	9.99	89.95	HZ LP - LEONARD
12,213.8	90.00	89.95	7,460.0	2,442.0	185.5	4,328.6	0.00	0.00	0.00	107.07	BHL - LEONARD 3I

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well LEONARD 3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 5018.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5018.0usft (Original Well Elev)
Site:	NW SW SEC. 21 T2N R67W 6th P.M.	North Reference:	True
Well:	LEONARD 3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

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)
SHL: 1908ft FSL & 494ft FWL of Sec 21										
0.0	0.00	0.00	0.0	5,018.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,918.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,818.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,718.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,618.00	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
500.0	0.00	0.00	500.0	4,518.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	2.00	286.58	600.0	4,418.02	0.5	-1.7	-1.6	2.00	2.00	0.00
700.0	4.00	286.58	699.8	4,318.16	2.0	-6.7	-6.6	2.00	2.00	0.00
800.0	6.00	286.58	799.5	4,218.55	4.5	-15.0	-14.8	2.00	2.00	0.00
900.0	8.00	286.58	898.7	4,119.30	8.0	-26.7	-26.4	2.00	2.00	0.00
1,000.0	10.00	286.58	997.5	4,020.53	12.4	-41.7	-41.1	2.00	2.00	0.00
EOB TO 12° INC										
1,099.9	12.00	286.58	1,095.5	3,922.45	17.9	-60.0	-59.2	2.00	2.00	0.00
1,100.0	12.00	286.58	1,095.6	3,922.38	17.9	-60.0	-59.2	0.04	0.04	0.00
1,200.0	12.00	286.58	1,193.4	3,824.56	23.8	-79.9	-78.8	0.00	0.00	0.00
1,300.0	12.00	286.58	1,291.3	3,726.75	29.7	-99.8	-98.5	0.00	0.00	0.00
1,400.0	12.00	286.58	1,389.1	3,628.93	35.7	-119.8	-118.1	0.00	0.00	0.00
1,500.0	12.00	286.58	1,486.9	3,531.12	41.6	-139.7	-137.8	0.00	0.00	0.00
1,600.0	12.00	286.58	1,584.7	3,433.30	47.5	-159.6	-157.4	0.00	0.00	0.00
1,700.0	12.00	286.58	1,682.5	3,335.49	53.5	-179.5	-177.1	0.00	0.00	0.00
1,800.0	12.00	286.58	1,780.3	3,237.67	59.4	-199.5	-196.7	0.00	0.00	0.00
1,900.0	12.00	286.58	1,878.1	3,139.85	65.3	-219.4	-216.4	0.00	0.00	0.00
2,000.0	12.00	286.58	1,976.0	3,042.04	71.3	-239.3	-236.0	0.00	0.00	0.00
2,100.0	12.00	286.58	2,073.8	2,944.22	77.2	-259.2	-255.7	0.00	0.00	0.00
2,200.0	12.00	286.58	2,171.6	2,846.41	83.1	-279.2	-275.3	0.00	0.00	0.00
2,300.0	12.00	286.58	2,269.4	2,748.59	89.1	-299.1	-295.0	0.00	0.00	0.00
2,400.0	12.00	286.58	2,367.2	2,650.78	95.0	-319.0	-314.7	0.00	0.00	0.00
2,500.0	12.00	286.58	2,465.0	2,552.96	100.9	-338.9	-334.3	0.00	0.00	0.00
2,600.0	12.00	286.58	2,562.9	2,455.15	106.9	-358.9	-354.0	0.00	0.00	0.00
2,700.0	12.00	286.58	2,660.7	2,357.33	112.8	-378.8	-373.6	0.00	0.00	0.00
2,800.0	12.00	286.58	2,758.5	2,259.52	118.7	-398.7	-393.3	0.00	0.00	0.00
2,900.0	12.00	286.58	2,856.3	2,161.70	124.7	-418.6	-412.9	0.00	0.00	0.00
3,000.0	12.00	286.58	2,954.1	2,063.89	130.6	-438.6	-432.6	0.00	0.00	0.00
3,100.0	12.00	286.58	3,051.9	1,966.07	136.5	-458.5	-452.2	0.00	0.00	0.00
3,200.0	12.00	286.58	3,149.7	1,868.26	142.5	-478.4	-471.9	0.00	0.00	0.00
3,300.0	12.00	286.58	3,247.6	1,770.44	148.4	-498.3	-491.5	0.00	0.00	0.00
3,400.0	12.00	286.58	3,345.4	1,672.62	154.3	-518.2	-511.2	0.00	0.00	0.00
3,500.0	12.00	286.58	3,443.2	1,574.81	160.3	-538.2	-530.8	0.00	0.00	0.00
END OF TANGENT										
3,553.4	12.00	286.58	3,495.5	1,522.55	163.4	-548.8	-541.3	0.00	0.00	0.00
3,600.0	11.07	286.58	3,541.1	1,476.92	166.1	-557.7	-550.1	2.00	-2.00	0.00
3,700.0	9.07	286.58	3,639.5	1,378.46	171.1	-574.5	-566.6	2.00	-2.00	0.00
3,800.0	7.07	286.58	3,738.5	1,279.46	175.1	-587.9	-579.9	2.00	-2.00	0.00
3,900.0	5.07	286.58	3,838.0	1,180.02	178.1	-598.1	-589.9	2.00	-2.00	0.00
PARKMAN										
3,962.2	3.82	286.58	3,900.0	1,118.00	179.5	-602.7	-594.5	2.00	-2.00	0.00
4,000.0	3.07	286.58	3,937.7	1,080.28	180.1	-604.9	-596.6	2.00	-2.00	0.00
4,100.0	1.07	286.58	4,037.7	980.35	181.2	-608.3	-600.0	2.00	-2.00	0.00
EOD TO VERTICAL										
4,153.4	0.00	0.00	4,091.0	927.00	181.3	-608.8	-600.5	2.00	-2.00	137.61
4,200.0	0.00	0.00	4,137.6	880.35	181.3	-608.8	-600.5	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well LEONARD 3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 5018.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5018.0usft (Original Well Elev)
Site:	NW SW SEC. 21 T2N R67W 6th P.M.	North Reference:	True
Well:	LEONARD 3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

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)
4,300.0	0.00	0.00	4,237.6	780.35	181.3	-608.8	-600.5	0.00	0.00	0.00
4,400.0	0.00	0.00	4,337.6	680.35	181.3	-608.8	-600.5	0.00	0.00	0.00
4,500.0	0.00	0.00	4,437.6	580.35	181.3	-608.8	-600.5	0.00	0.00	0.00
4,600.0	0.00	0.00	4,537.6	480.35	181.3	-608.8	-600.5	0.00	0.00	0.00
4,700.0	0.00	0.00	4,637.6	380.35	181.3	-608.8	-600.5	0.00	0.00	0.00
SUSSEX										
4,780.4	0.00	0.00	4,718.0	300.00	181.3	-608.8	-600.5	0.00	0.00	0.00
4,800.0	0.00	0.00	4,737.6	280.35	181.3	-608.8	-600.5	0.00	0.00	0.00
4,900.0	0.00	0.00	4,837.6	180.35	181.3	-608.8	-600.5	0.00	0.00	0.00
5,000.0	0.00	0.00	4,937.6	80.35	181.3	-608.8	-600.5	0.00	0.00	0.00
5,100.0	0.00	0.00	5,037.6	-19.65	181.3	-608.8	-600.5	0.00	0.00	0.00
SHANNON										
5,162.4	0.00	0.00	5,100.0	-82.00	181.3	-608.8	-600.5	0.00	0.00	0.00
5,200.0	0.00	0.00	5,137.6	-119.65	181.3	-608.8	-600.5	0.00	0.00	0.00
5,300.0	0.00	0.00	5,237.6	-219.65	181.3	-608.8	-600.5	0.00	0.00	0.00
5,400.0	0.00	0.00	5,337.6	-319.65	181.3	-608.8	-600.5	0.00	0.00	0.00
5,500.0	0.00	0.00	5,437.6	-419.65	181.3	-608.8	-600.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,537.6	-519.65	181.3	-608.8	-600.5	0.00	0.00	0.00
5,700.0	0.00	0.00	5,637.6	-619.65	181.3	-608.8	-600.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,737.6	-719.65	181.3	-608.8	-600.5	0.00	0.00	0.00
5,900.0	0.00	0.00	5,837.6	-819.65	181.3	-608.8	-600.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,937.6	-919.65	181.3	-608.8	-600.5	0.00	0.00	0.00
6,100.0	0.00	0.00	6,037.6	-1,019.65	181.3	-608.8	-600.5	0.00	0.00	0.00
6,200.0	0.00	0.00	6,137.6	-1,119.65	181.3	-608.8	-600.5	0.00	0.00	0.00
6,300.0	0.00	0.00	6,237.6	-1,219.65	181.3	-608.8	-600.5	0.00	0.00	0.00
6,400.0	0.00	0.00	6,337.6	-1,319.65	181.3	-608.8	-600.5	0.00	0.00	0.00
6,500.0	0.00	0.00	6,437.6	-1,419.65	181.3	-608.8	-600.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,537.6	-1,519.65	181.3	-608.8	-600.5	0.00	0.00	0.00
6,700.0	0.00	0.00	6,637.6	-1,619.65	181.3	-608.8	-600.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,737.6	-1,719.65	181.3	-608.8	-600.5	0.00	0.00	0.00
6,900.0	0.00	0.00	6,837.6	-1,819.65	181.3	-608.8	-600.5	0.00	0.00	0.00
KOP (10°/100ft BUR)										
6,949.4	0.00	0.00	6,887.0	-1,869.00	181.3	-608.8	-600.5	0.00	0.00	0.00
7,000.0	5.06	89.95	6,937.6	-1,919.58	181.3	-606.6	-598.2	10.00	10.00	0.00
7,100.0	15.06	89.95	7,035.9	-2,017.92	181.3	-589.1	-580.8	10.00	10.00	0.00
7,200.0	25.06	89.95	7,129.7	-2,111.73	181.4	-554.8	-546.6	10.00	10.00	0.00
7,300.0	35.06	89.95	7,216.2	-2,198.17	181.4	-504.8	-496.6	10.00	10.00	0.00
7,400.0	45.06	89.95	7,292.6	-2,274.61	181.4	-440.5	-432.4	10.00	10.00	0.00
7,500.0	55.06	89.95	7,356.7	-2,338.72	181.5	-364.0	-355.9	10.00	10.00	0.00
NIOBRARA										
7,565.3	61.59	89.95	7,391.0	-2,373.00	181.6	-308.4	-300.4	10.00	10.00	0.00
7,600.0	65.06	89.95	7,406.6	-2,388.57	181.6	-277.4	-269.4	10.00	10.00	0.00
7,700.0	75.06	89.95	7,440.6	-2,422.63	181.7	-183.5	-175.6	10.00	10.00	0.00
7,800.0	85.06	89.95	7,457.9	-2,439.87	181.8	-85.2	-77.3	10.00	10.00	0.00
HZ LP: 2090ft FSL & 460ft FWL of Sec 21 - NIO B										
7,849.4	90.00	89.95	7,460.0	-2,442.00	181.8	-35.8	-28.0	10.00	10.00	0.00
7,900.0	90.00	89.95	7,460.0	-2,442.00	181.8	14.8	22.6	0.00	0.00	0.00
8,000.0	90.00	89.95	7,460.0	-2,442.00	181.9	114.8	122.5	0.00	0.00	0.00
8,100.0	90.00	89.95	7,460.0	-2,442.00	182.0	214.8	222.4	0.00	0.00	0.00
8,200.0	90.00	89.95	7,460.0	-2,442.00	182.1	314.8	322.3	0.00	0.00	0.00
8,300.0	90.00	89.95	7,460.0	-2,442.00	182.2	414.8	422.2	0.00	0.00	0.00
8,400.0	90.00	89.95	7,460.0	-2,442.00	182.3	514.8	522.1	0.00	0.00	0.00
8,500.0	90.00	89.95	7,460.0	-2,442.00	182.4	614.8	622.0	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well LEONARD 3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 5018.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5018.0usft (Original Well Elev)
Site:	NW SW SEC. 21 T2N R67W 6th P.M.	North Reference:	True
Well:	LEONARD 3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

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	89.95	7,460.0	-2,442.00	182.4	714.8	721.9	0.00	0.00	0.00
8,700.0	90.00	89.95	7,460.0	-2,442.00	182.5	814.8	821.8	0.00	0.00	0.00
8,800.0	90.00	89.95	7,460.0	-2,442.00	182.6	914.8	921.8	0.00	0.00	0.00
8,900.0	90.00	89.95	7,460.0	-2,442.00	182.7	1,014.8	1,021.7	0.00	0.00	0.00
9,000.0	90.00	89.95	7,460.0	-2,442.00	182.8	1,114.8	1,121.6	0.00	0.00	0.00
9,100.0	90.00	89.95	7,460.0	-2,441.99	182.9	1,214.8	1,221.5	0.00	0.00	0.00
9,200.0	90.00	89.95	7,460.0	-2,441.99	182.9	1,314.8	1,321.4	0.00	0.00	0.00
9,300.0	90.00	89.95	7,460.0	-2,441.99	183.0	1,414.8	1,421.3	0.00	0.00	0.00
9,400.0	90.00	89.95	7,460.0	-2,441.99	183.1	1,514.8	1,521.2	0.00	0.00	0.00
9,500.0	90.00	89.95	7,460.0	-2,441.99	183.2	1,614.8	1,621.1	0.00	0.00	0.00
9,600.0	90.00	89.95	7,460.0	-2,441.99	183.3	1,714.8	1,721.1	0.00	0.00	0.00
9,700.0	90.00	89.95	7,460.0	-2,441.99	183.4	1,814.8	1,821.0	0.00	0.00	0.00
9,800.0	90.00	89.95	7,460.0	-2,441.99	183.4	1,914.8	1,920.9	0.00	0.00	0.00
9,900.0	90.00	89.95	7,460.0	-2,441.99	183.5	2,014.8	2,020.8	0.00	0.00	0.00
10,000.0	90.00	89.95	7,460.0	-2,441.99	183.6	2,114.8	2,120.7	0.00	0.00	0.00
10,100.0	90.00	89.95	7,460.0	-2,441.99	183.7	2,214.8	2,220.6	0.00	0.00	0.00
10,200.0	90.00	89.95	7,460.0	-2,441.99	183.8	2,314.8	2,320.5	0.00	0.00	0.00
10,300.0	90.00	89.95	7,460.0	-2,441.99	183.9	2,414.8	2,420.4	0.00	0.00	0.00
10,400.0	90.00	89.95	7,460.0	-2,441.99	184.0	2,514.8	2,520.3	0.00	0.00	0.00
10,500.0	90.00	89.95	7,460.0	-2,441.99	184.0	2,614.8	2,620.3	0.00	0.00	0.00
10,600.0	90.00	89.95	7,460.0	-2,441.99	184.1	2,714.8	2,720.2	0.00	0.00	0.00
10,700.0	90.00	89.95	7,460.0	-2,441.99	184.2	2,814.8	2,820.1	0.00	0.00	0.00
10,800.0	90.00	89.95	7,460.0	-2,441.99	184.3	2,914.8	2,920.0	0.00	0.00	0.00
10,900.0	90.00	89.95	7,460.0	-2,441.99	184.4	3,014.8	3,019.9	0.00	0.00	0.00
11,000.0	90.00	89.95	7,460.0	-2,441.99	184.5	3,114.8	3,119.8	0.00	0.00	0.00
11,100.0	90.00	89.95	7,460.0	-2,442.00	184.5	3,214.8	3,219.7	0.00	0.00	0.00
11,200.0	90.00	89.95	7,460.0	-2,442.00	184.6	3,314.8	3,319.6	0.00	0.00	0.00
11,300.0	90.00	89.95	7,460.0	-2,442.00	184.7	3,414.8	3,419.6	0.00	0.00	0.00
11,400.0	90.00	89.95	7,460.0	-2,442.00	184.8	3,514.8	3,519.5	0.00	0.00	0.00
11,500.0	90.00	89.95	7,460.0	-2,442.00	184.9	3,614.8	3,619.4	0.00	0.00	0.00
11,600.0	90.00	89.95	7,460.0	-2,442.00	184.9	3,714.8	3,719.3	0.00	0.00	0.00
11,700.0	90.00	89.95	7,460.0	-2,442.00	185.0	3,814.8	3,819.2	0.00	0.00	0.00
11,800.0	90.00	89.95	7,460.0	-2,442.00	185.1	3,914.8	3,919.1	0.00	0.00	0.00
11,900.0	90.00	89.95	7,460.0	-2,442.00	185.2	4,014.8	4,019.0	0.00	0.00	0.00
12,000.0	90.00	89.95	7,460.0	-2,442.00	185.3	4,114.8	4,118.9	0.00	0.00	0.00
12,100.0	90.00	89.95	7,460.0	-2,442.00	185.4	4,214.8	4,218.9	0.00	0.00	0.00
12,200.0	90.00	89.95	7,460.0	-2,442.00	185.4	4,314.8	4,318.8	0.00	0.00	0.00
BHL: 2090ft FSL & 460ft FEL of Sec 21										
12,213.8	90.00	89.95	7,460.0	-2,442.00	185.5	4,328.6	4,332.6	0.00	0.00	0.00

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,962.2	3,900.0	PARKMAN				
4,780.4	4,718.0	SUSSEX				
5,162.4	5,100.0	SHANNON				
7,565.3	7,391.0	NIOBRARA				
7,849.4	7,460.0	NIO B				

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well LEONARD 3N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB-EST @ 5018.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 5018.0usft (Original Well Elev)
Site:	NW SW SEC. 21 T2N R67W 6th P.M.	North Reference:	True
Well:	LEONARD 3N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Plan Annotations

MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 1908ft FSL & 494ft FWL of Sec 21
500.0	500.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,099.9	1,095.5	17.9	-60.0	EOB TO 12° INC
3,553.4	3,495.5	163.4	-548.8	END OF TANGENT
4,153.4	4,091.0	181.3	-608.8	EOD TO VERTICAL
6,949.4	6,887.0	181.3	-608.8	KOP (10°/100ft BUR)
7,849.4	7,460.0	181.8	-35.8	HZ LP: 2090ft FSL & 460ft FWL of Sec 21
12,213.8	7,460.0	185.5	4,328.6	BHL: 2090ft FSL & 460ft FEL of Sec 21