

EXTRACTION OIL & GAS

Weld County

Sec 18-T2N-R68W

RINN VALLEY EAST N17-20-9N

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

19 March, 2018



Project: Weld County
Site: Sec 18-T2N-R68W
Well: RINN VALLEY EAST N17-20-9N
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL 1

PROJECT DETAILS: Weld County
Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level



Azimuths to True North
Magnetic North: 8.33°
Magnetic Field
Strength: 52224.2snT
Dip Angle: 66.60°
Date: 6/12/2017
Model: IGRF2015

WELL DETAILS: RINN VALLEY EAST N17-20-9N

+N/-S	+E/-W	Northing	Easting	4936.00	Latitude	Longitude	Slot
0.00	0.00	1291283.25	3129131.12		40° 7' 55.355 N	105° 2' 17.426 W	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	
3	1765.05	33.30	95.57	1672.87	-45.66	468.18	2.00	95.57	-125.05	
4	5870.47	33.30	95.57	5104.18	-264.48	2711.57	0.00	0.00	-724.28	
5	7535.52	0.00	0.00	6677.05	-310.14	3179.75	2.00	180.00	-849.33	
6	7565.52	0.00	0.00	6707.05	-310.14	3179.75	0.00	0.00	-849.33	
7	8465.55	90.00	0.02	7280.00	262.86	3179.98	10.00	0.02	-284.81	RVE N17-9N - LP
8	10465.55	90.00	0.02	7279.83	2262.86	3180.80	0.00	0.00	1685.59	
9	11066.72	90.00	348.00	7279.81	2859.65	3118.20	2.00	-90.02	2284.29	
10	11366.72	90.00	348.00	7279.81	3153.09	3055.83	0.00	0.00	2584.08	
11	12055.74	90.00	1.78	7279.81	3837.72	2994.61	2.00	90.00	3269.09	RVE N17-9N - PBHL
12	18144.53	90.00	1.78	7280.00	9923.57	3183.78	0.00	0.00	9232.95	RVE N17-9N - PBHL

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3477.00	3923.62	PARKMAN
4047.00	4605.60	SUSSEX
4452.00	5090.17	SHANNON
7242.00	8255.66	NIOBRARA
7270.00	8358.30	NIO B TARGET

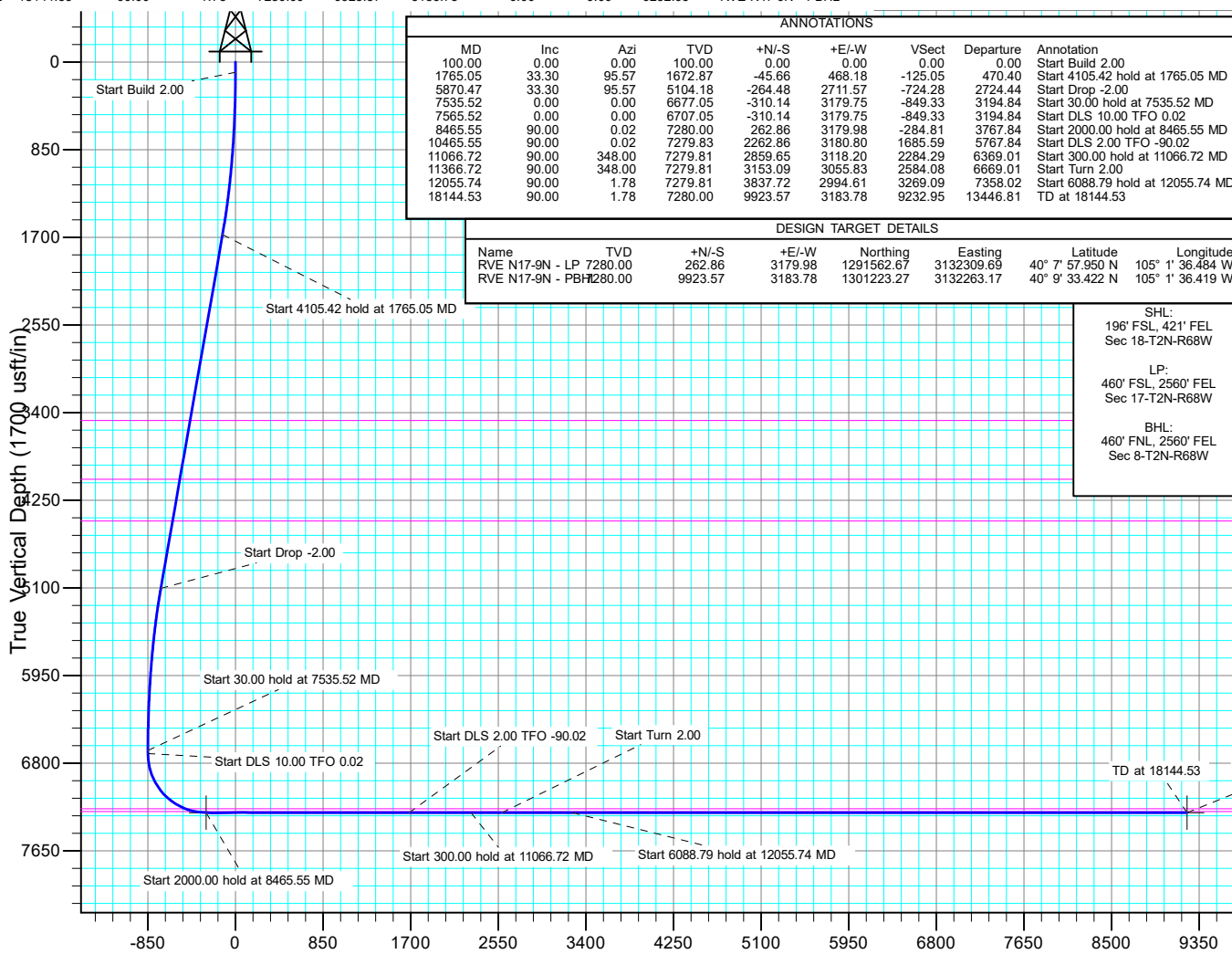
ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	Start Build 2.00
1765.05	33.30	95.57	1672.87	-45.66	468.18	-125.05	470.40	Start 4105.42 hold at 1765.05 MD
5870.47	33.30	95.57	5104.18	-264.48	2711.57	-724.28	2724.44	Start Drop -2.00
7535.52	0.00	0.00	6677.05	-310.14	3179.75	-849.33	3194.84	Start 30.00 hold at 7535.52 MD
7565.52	0.00	0.00	6707.05	-310.14	3179.75	-849.33	3194.84	Start DLS 10.00 TFO 0.02
8465.55	90.00	0.02	7280.00	262.86	3179.98	-284.81	3767.84	Start 2000.00 hold at 8465.55 MD
10465.55	90.00	0.02	7279.83	2262.86	3180.80	1685.59	5767.84	Start DLS 2.00 TFO -90.02
11066.72	90.00	348.00	7279.81	2859.65	3118.20	2284.29	6369.01	Start 300.00 hold at 11066.72 MD
11366.72	90.00	348.00	7279.81	3153.09	3055.83	2584.08	6669.01	Start Turn 2.00
12055.74	90.00	1.78	7279.81	3837.72	2994.61	3269.09	7358.02	Start 6088.79 hold at 12055.74 MD
18144.53	90.00	1.78	7280.00	9923.57	3183.78	9232.95	13446.81	TD at 18144.53

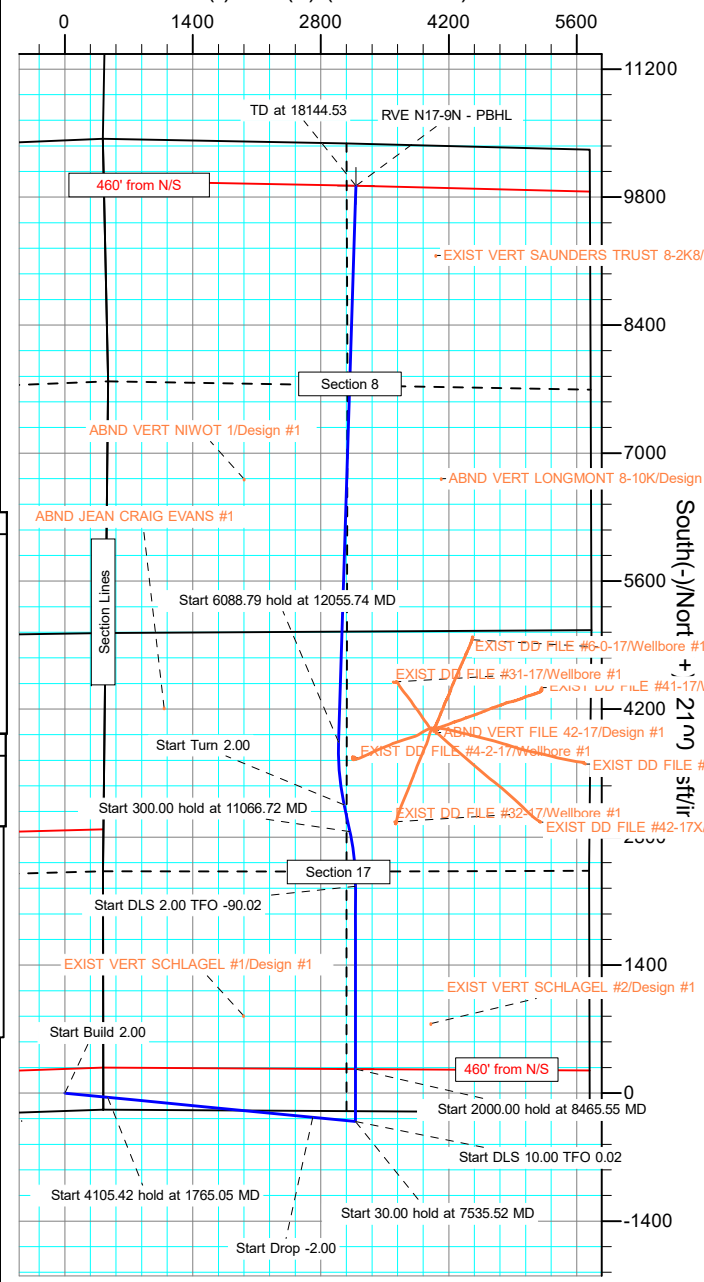
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RVE N17-9N - LP	7280.00	262.86	3179.98	1291562.67	3132309.69	40° 7' 57.950 N	105° 1' 36.484 W
RVE N17-9N - PBHL	7280.00	9923.57	3183.78	1301223.27	3132263.17	40° 9' 33.422 N	105° 1' 36.419 W

SHL:
196' FSL 421' FEL
Sec 18-T2N-R68W
LP:
460' FSL 2560' FEL
Sec 17-T2N-R68W
BHL:
460' FNL 2560' FEL
Sec 8-T2N-R68W



West(-)/East(+) (2100 usft/in)



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well RINN VALLEY EAST N17-20-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4961.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4961.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Project	Weld County		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec 18-T2N-R68W			
Site Position:		Northing:	1,291,104.41 usft	Latitude:	40° 7' 53.566 N
From:	Lat/Long	Easting:	3,129,553.43 usft	Longitude:	105° 2' 12.001 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.200 in	Grid Convergence:	0.30 °

Well	RINN VALLEY EAST N17-20-9N					
Well Position	+N/-S	181.04 usft	Northing:	1,291,283.25 usft	Latitude:	40° 7' 55.355 N
	+E/-W	-421.37 usft	Easting:	3,129,131.12 usft	Longitude:	105° 2' 17.426 W
Position Uncertainty	0.00 usft		Wellhead Elevation:		Ground Level:	4,936.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/12/2017	8.33	66.60	52,224.18162523

Design	PROPOSAL 1				
Audit Notes:					
Version:		Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	350.15	

Plan Survey Tool Program	Date	3/19/2018			
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	18,144.53	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG	
			OWSG MWD - Standard		

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Project:	Weld County	MD Reference:	KB 25' @ 4961.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,765.05	33.30	95.57	1,672.87	-45.66	468.18	2.00	2.00	0.00	95.57	
5,870.47	33.30	95.57	5,104.18	-264.48	2,711.57	0.00	0.00	0.00	0.00	
7,535.52	0.00	0.00	6,677.05	-310.14	3,179.75	2.00	-2.00	0.00	180.00	
7,565.52	0.00	0.00	6,707.05	-310.14	3,179.75	0.00	0.00	0.00	0.00	
8,465.55	90.00	0.02	7,280.00	262.86	3,179.98	10.00	10.00	0.00	0.02	RVE N17-9N - LP
10,465.55	90.00	0.02	7,279.83	2,262.86	3,180.80	0.00	0.00	0.00	0.00	
11,066.72	90.00	348.00	7,279.81	2,859.65	3,118.20	2.00	0.00	-2.00	-90.02	
11,366.72	90.00	348.00	7,279.81	3,153.09	3,055.83	0.00	0.00	0.00	0.00	
12,055.74	90.00	1.78	7,279.81	3,837.72	2,994.61	2.00	0.00	2.00	90.00	RVE N17-9N - PBHL
18,144.53	90.00	1.78	7,280.00	9,923.57	3,183.78	0.00	0.00	0.00	0.00	RVE N17-9N - PBHL

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Project:	Weld County	MD Reference:	KB 25' @ 4961.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
200.00	2.00	95.57	199.98	-0.17	1.74	-0.46	2.00	2.00	0.00
300.00	4.00	95.57	299.84	-0.68	6.95	-1.86	2.00	2.00	0.00
400.00	6.00	95.57	399.45	-1.52	15.62	-4.17	2.00	2.00	0.00
500.00	8.00	95.57	498.70	-2.71	27.75	-7.41	2.00	2.00	0.00
600.00	10.00	95.57	597.47	-4.22	43.32	-11.57	2.00	2.00	0.00
700.00	12.00	95.57	695.62	-6.08	62.31	-16.64	2.00	2.00	0.00
800.00	14.00	95.57	793.06	-8.26	84.69	-22.62	2.00	2.00	0.00
900.00	16.00	95.57	889.64	-10.77	110.45	-29.50	2.00	2.00	0.00
1,000.00	18.00	95.57	985.27	-13.61	139.55	-37.27	2.00	2.00	0.00
1,100.00	20.00	95.57	1,079.82	-16.77	171.95	-45.93	2.00	2.00	0.00
1,200.00	22.00	95.57	1,173.17	-20.25	207.62	-55.46	2.00	2.00	0.00
1,300.00	24.00	95.57	1,265.21	-24.04	246.50	-65.84	2.00	2.00	0.00
1,400.00	26.00	95.57	1,355.84	-28.15	288.56	-77.08	2.00	2.00	0.00
1,500.00	28.00	95.57	1,444.94	-32.55	333.75	-89.15	2.00	2.00	0.00
1,600.00	30.00	95.57	1,532.39	-37.26	382.00	-102.03	2.00	2.00	0.00
1,700.00	32.00	95.57	1,618.11	-42.26	433.26	-115.73	2.00	2.00	0.00
1,765.05	33.30	95.57	1,672.87	-45.66	468.18	-125.05	2.00	2.00	0.00
Start 4105.42 hold at 1765.05 MD									
1,800.00	33.30	95.57	1,702.09	-47.53	487.28	-130.16	0.00	0.00	0.00
1,900.00	33.30	95.57	1,785.67	-52.86	541.93	-144.75	0.00	0.00	0.00
2,000.00	33.30	95.57	1,869.25	-58.19	596.57	-159.35	0.00	0.00	0.00
2,100.00	33.30	95.57	1,952.83	-63.52	651.22	-173.94	0.00	0.00	0.00
2,200.00	33.30	95.57	2,036.41	-68.85	705.86	-188.54	0.00	0.00	0.00
2,300.00	33.30	95.57	2,119.99	-74.18	760.50	-203.14	0.00	0.00	0.00
2,400.00	33.30	95.57	2,203.57	-79.51	815.15	-217.73	0.00	0.00	0.00
2,500.00	33.30	95.57	2,287.15	-84.84	869.79	-232.33	0.00	0.00	0.00
2,600.00	33.30	95.57	2,370.73	-90.17	924.44	-246.92	0.00	0.00	0.00
2,700.00	33.30	95.57	2,454.31	-95.50	979.08	-261.52	0.00	0.00	0.00
2,800.00	33.30	95.57	2,537.88	-100.83	1,033.73	-276.11	0.00	0.00	0.00
2,900.00	33.30	95.57	2,621.46	-106.16	1,088.37	-290.71	0.00	0.00	0.00
3,000.00	33.30	95.57	2,705.04	-111.49	1,143.02	-305.31	0.00	0.00	0.00
3,100.00	33.30	95.57	2,788.62	-116.81	1,197.66	-319.90	0.00	0.00	0.00
3,200.00	33.30	95.57	2,872.20	-122.14	1,252.30	-334.50	0.00	0.00	0.00
3,300.00	33.30	95.57	2,955.78	-127.47	1,306.95	-349.09	0.00	0.00	0.00
3,400.00	33.30	95.57	3,039.36	-132.80	1,361.59	-363.69	0.00	0.00	0.00
3,500.00	33.30	95.57	3,122.94	-138.13	1,416.24	-378.29	0.00	0.00	0.00
3,600.00	33.30	95.57	3,206.52	-143.46	1,470.88	-392.88	0.00	0.00	0.00
3,700.00	33.30	95.57	3,290.10	-148.79	1,525.53	-407.48	0.00	0.00	0.00
3,800.00	33.30	95.57	3,373.68	-154.12	1,580.17	-422.07	0.00	0.00	0.00
3,900.00	33.30	95.57	3,457.26	-159.45	1,634.82	-436.67	0.00	0.00	0.00
3,923.62	33.30	95.57	3,477.00	-160.71	1,647.72	-440.12	0.00	0.00	0.00
PARKMAN									
4,000.00	33.30	95.57	3,540.84	-164.78	1,689.46	-451.27	0.00	0.00	0.00
4,100.00	33.30	95.57	3,624.42	-170.11	1,744.10	-465.86	0.00	0.00	0.00
4,200.00	33.30	95.57	3,708.00	-175.44	1,798.75	-480.46	0.00	0.00	0.00
4,300.00	33.30	95.57	3,791.58	-180.77	1,853.39	-495.05	0.00	0.00	0.00
4,400.00	33.30	95.57	3,875.16	-186.10	1,908.04	-509.65	0.00	0.00	0.00
4,500.00	33.30	95.57	3,958.74	-191.43	1,962.68	-524.24	0.00	0.00	0.00
4,600.00	33.30	95.57	4,042.32	-196.76	2,017.33	-538.84	0.00	0.00	0.00
4,605.60	33.30	95.57	4,047.00	-197.06	2,020.39	-539.66	0.00	0.00	0.00
SUSSEX									

Planning Report

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4961.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4961.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.00	33.30	95.57	4,125.90	-202.09	2,071.97	-553.44	0.00	0.00	0.00
4,800.00	33.30	95.57	4,209.48	-207.42	2,126.62	-568.03	0.00	0.00	0.00
4,900.00	33.30	95.57	4,293.06	-212.75	2,181.26	-582.63	0.00	0.00	0.00
5,000.00	33.30	95.57	4,376.64	-218.08	2,235.90	-597.22	0.00	0.00	0.00
5,090.17	33.30	95.57	4,452.00	-222.89	2,285.17	-610.38	0.00	0.00	0.00
SHANNON									
5,100.00	33.30	95.57	4,460.22	-223.41	2,290.55	-611.82	0.00	0.00	0.00
5,200.00	33.30	95.57	4,543.80	-228.74	2,345.19	-626.42	0.00	0.00	0.00
5,300.00	33.30	95.57	4,627.38	-234.07	2,399.84	-641.01	0.00	0.00	0.00
5,400.00	33.30	95.57	4,710.96	-239.40	2,454.48	-655.61	0.00	0.00	0.00
5,500.00	33.30	95.57	4,794.54	-244.73	2,509.13	-670.20	0.00	0.00	0.00
5,600.00	33.30	95.57	4,878.12	-250.06	2,563.77	-684.80	0.00	0.00	0.00
5,700.00	33.30	95.57	4,961.70	-255.39	2,618.42	-699.39	0.00	0.00	0.00
5,800.00	33.30	95.57	5,045.28	-260.72	2,673.06	-713.99	0.00	0.00	0.00
5,870.47	33.30	95.57	5,104.18	-264.48	2,711.57	-724.28	0.00	0.00	0.00
Start Drop -2.00									
5,900.00	32.71	95.57	5,128.94	-266.04	2,727.58	-728.55	2.00	-2.00	0.00
6,000.00	30.71	95.57	5,214.01	-271.14	2,779.89	-742.53	2.00	-2.00	0.00
6,100.00	28.71	95.57	5,300.86	-275.95	2,829.21	-755.70	2.00	-2.00	0.00
6,200.00	26.71	95.57	5,389.38	-280.46	2,875.49	-768.06	2.00	-2.00	0.00
6,300.00	24.71	95.57	5,479.48	-284.68	2,918.67	-779.59	2.00	-2.00	0.00
6,400.00	22.71	95.57	5,571.03	-288.58	2,958.69	-790.28	2.00	-2.00	0.00
6,500.00	20.71	95.57	5,663.94	-292.17	2,995.50	-800.12	2.00	-2.00	0.00
6,600.00	18.71	95.57	5,758.07	-295.44	3,029.07	-809.08	2.00	-2.00	0.00
6,700.00	16.71	95.57	5,853.33	-298.40	3,059.34	-817.17	2.00	-2.00	0.00
6,800.00	14.71	95.57	5,949.59	-301.02	3,086.29	-824.37	2.00	-2.00	0.00
6,900.00	12.71	95.57	6,046.73	-303.33	3,109.88	-830.67	2.00	-2.00	0.00
7,000.00	10.71	95.57	6,144.65	-305.30	3,130.08	-836.06	2.00	-2.00	0.00
7,100.00	8.71	95.57	6,243.21	-306.93	3,146.87	-840.55	2.00	-2.00	0.00
7,200.00	6.71	95.57	6,342.30	-308.23	3,160.22	-844.11	2.00	-2.00	0.00
7,300.00	4.71	95.57	6,441.80	-309.20	3,170.12	-846.76	2.00	-2.00	0.00
7,400.00	2.71	95.57	6,541.58	-309.83	3,176.56	-848.48	2.00	-2.00	0.00
7,500.00	0.71	95.57	6,641.53	-310.12	3,179.53	-849.27	2.00	-2.00	0.00
7,535.52	0.00	0.00	6,677.05	-310.14	3,179.75	-849.33	2.00	-2.00	-269.08
Start 30.00 hold at 7535.52 MD									
7,565.52	0.00	0.00	6,707.05	-310.14	3,179.75	-849.33	0.00	0.00	0.00
Start DLS 10.00 TFO 0.02									
7,600.00	3.45	0.02	6,741.51	-309.10	3,179.75	-848.31	10.00	10.00	0.00
7,650.00	8.45	0.02	6,791.23	-303.92	3,179.75	-843.21	10.00	10.00	0.00
7,700.00	13.45	0.02	6,840.30	-294.43	3,179.76	-833.85	10.00	10.00	0.00
7,750.00	18.45	0.02	6,888.36	-280.70	3,179.76	-820.32	10.00	10.00	0.00
7,800.00	23.45	0.02	6,935.04	-262.82	3,179.77	-802.72	10.00	10.00	0.00
7,850.00	28.45	0.02	6,979.99	-240.95	3,179.78	-781.17	10.00	10.00	0.00
7,900.00	33.45	0.02	7,022.86	-215.25	3,179.79	-755.84	10.00	10.00	0.00
7,950.00	38.45	0.02	7,063.32	-185.90	3,179.80	-726.93	10.00	10.00	0.00
8,000.00	43.45	0.02	7,101.07	-153.14	3,179.81	-694.66	10.00	10.00	0.00
8,050.00	48.45	0.02	7,135.83	-117.22	3,179.83	-659.27	10.00	10.00	0.00
8,100.00	53.45	0.02	7,167.32	-78.40	3,179.84	-621.02	10.00	10.00	0.00
8,150.00	58.45	0.02	7,195.30	-36.99	3,179.86	-580.22	10.00	10.00	0.00
8,200.00	63.45	0.02	7,219.58	6.71	3,179.88	-537.17	10.00	10.00	0.00
8,250.00	68.45	0.02	7,239.95	52.35	3,179.90	-492.20	10.00	10.00	0.00
8,255.66	69.02	0.02	7,242.00	57.63	3,179.90	-487.01	10.00	10.00	0.00
NIOBRARA									

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well RINN VALLEY EAST N17-20-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4961.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4961.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
8,300.00	73.45	0.02	7,256.26	99.60	3,179.92	-445.66	10.00	10.00	0.00	
8,350.00	78.45	0.02	7,268.40	148.09	3,179.94	-397.89	10.00	10.00	0.00	
8,358.30	79.28	0.02	7,270.00	156.23	3,179.94	-389.86	10.00	10.00	0.00	
NIO B TARGET										
8,400.00	83.45	0.02	7,276.26	197.45	3,179.96	-349.26	10.00	10.00	0.00	
8,450.00	88.45	0.02	7,279.79	247.31	3,179.98	-300.13	10.00	10.00	0.00	
8,465.55	90.00	0.02	7,280.00	262.86	3,179.98	-284.81	10.00	10.00	0.00	
Start 2000.00 hold at 8465.55 MD										
8,500.00	90.00	0.02	7,280.00	297.31	3,180.00	-250.88	0.00	0.00	0.00	
8,600.00	90.00	0.02	7,279.99	397.31	3,180.04	-152.36	0.00	0.00	0.00	
8,700.00	90.00	0.02	7,279.98	497.31	3,180.08	-53.84	0.00	0.00	0.00	
8,800.00	90.00	0.02	7,279.97	597.31	3,180.12	44.68	0.00	0.00	0.00	
8,900.00	90.00	0.02	7,279.96	697.31	3,180.16	143.20	0.00	0.00	0.00	
9,000.00	90.00	0.02	7,279.96	797.31	3,180.20	241.72	0.00	0.00	0.00	
9,100.00	90.00	0.02	7,279.95	897.31	3,180.24	340.24	0.00	0.00	0.00	
9,200.00	90.00	0.02	7,279.94	997.31	3,180.28	438.76	0.00	0.00	0.00	
9,300.00	90.00	0.02	7,279.93	1,097.31	3,180.32	537.28	0.00	0.00	0.00	
9,400.00	90.00	0.02	7,279.92	1,197.31	3,180.37	635.80	0.00	0.00	0.00	
9,500.00	90.00	0.02	7,279.91	1,297.31	3,180.41	734.32	0.00	0.00	0.00	
9,600.00	90.00	0.02	7,279.91	1,397.31	3,180.45	832.84	0.00	0.00	0.00	
9,700.00	90.00	0.02	7,279.90	1,497.31	3,180.49	931.36	0.00	0.00	0.00	
9,800.00	90.00	0.02	7,279.89	1,597.31	3,180.53	1,029.88	0.00	0.00	0.00	
9,900.00	90.00	0.02	7,279.88	1,697.31	3,180.57	1,128.40	0.00	0.00	0.00	
10,000.00	90.00	0.02	7,279.87	1,797.31	3,180.61	1,226.92	0.00	0.00	0.00	
10,100.00	90.00	0.02	7,279.86	1,897.31	3,180.65	1,325.44	0.00	0.00	0.00	
10,200.00	90.00	0.02	7,279.86	1,997.31	3,180.69	1,423.96	0.00	0.00	0.00	
10,300.00	90.00	0.02	7,279.85	2,097.31	3,180.73	1,522.48	0.00	0.00	0.00	
10,400.00	90.00	0.02	7,279.84	2,197.31	3,180.77	1,621.00	0.00	0.00	0.00	
10,465.55	90.00	0.02	7,279.83	2,262.86	3,180.80	1,685.59	0.00	0.00	0.00	
Start DLS 2.00 TFO -90.02										
10,500.00	90.00	359.33	7,279.83	2,297.30	3,180.61	1,719.56	2.00	0.00	-2.00	
10,600.00	90.00	357.33	7,279.82	2,397.26	3,177.70	1,818.54	2.00	0.00	-2.00	
10,700.00	90.00	355.33	7,279.82	2,497.05	3,171.31	1,917.95	2.00	0.00	-2.00	
10,800.00	90.00	353.33	7,279.81	2,596.55	3,161.44	2,017.68	2.00	0.00	-2.00	
10,900.00	90.00	351.33	7,279.81	2,695.66	3,148.10	2,117.60	2.00	0.00	-2.00	
11,000.00	90.00	349.33	7,279.81	2,794.23	3,131.31	2,217.60	2.00	0.00	-2.00	
11,066.72	90.00	348.00	7,279.81	2,859.65	3,118.20	2,284.29	2.00	0.00	-2.00	
Start 300.00 hold at 11066.72 MD										
11,100.00	90.00	348.00	7,279.81	2,892.20	3,111.28	2,317.55	0.00	0.00	0.00	
11,200.00	90.00	348.00	7,279.81	2,990.02	3,090.49	2,417.48	0.00	0.00	0.00	
11,300.00	90.00	348.00	7,279.81	3,087.83	3,069.70	2,517.41	0.00	0.00	0.00	
11,366.72	90.00	348.00	7,279.81	3,153.09	3,055.83	2,584.08	0.00	0.00	0.00	
Start Turn 2.00										
11,400.00	90.00	348.67	7,279.81	3,185.68	3,049.10	2,617.34	2.00	0.00	2.00	
11,500.00	90.00	350.67	7,279.81	3,284.06	3,031.16	2,717.33	2.00	0.00	2.00	
11,600.00	90.00	352.67	7,279.81	3,383.00	3,016.66	2,817.29	2.00	0.00	2.00	
11,700.00	90.00	354.67	7,279.81	3,482.38	3,005.63	2,917.10	2.00	0.00	2.00	
11,800.00	90.00	356.67	7,279.81	3,582.09	2,998.07	3,016.63	2.00	0.00	2.00	
11,900.00	90.00	358.67	7,279.81	3,682.00	2,994.00	3,115.77	2.00	0.00	2.00	
12,000.00	90.00	0.67	7,279.81	3,781.99	2,993.42	3,214.39	2.00	0.00	2.00	
12,055.74	90.00	1.78	7,279.81	3,837.72	2,994.61	3,269.09	2.00	0.00	2.00	
Start 6088.79 hold at 12055.74 MD										
12,100.00	90.00	1.78	7,279.81	3,881.96	2,995.98	3,312.44	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well RINN VALLEY EAST N17-20-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4961.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4961.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,200.00	90.00	1.78	7,279.81	3,981.91	2,999.09	3,410.39	0.00	0.00	0.00
12,300.00	90.00	1.78	7,279.81	4,081.86	3,002.19	3,508.34	0.00	0.00	0.00
12,400.00	90.00	1.78	7,279.81	4,181.82	3,005.30	3,606.29	0.00	0.00	0.00
12,500.00	90.00	1.78	7,279.81	4,281.77	3,008.41	3,704.24	0.00	0.00	0.00
12,600.00	90.00	1.78	7,279.81	4,381.72	3,011.52	3,802.19	0.00	0.00	0.00
12,700.00	90.00	1.78	7,279.81	4,481.67	3,014.62	3,900.13	0.00	0.00	0.00
12,800.00	90.00	1.78	7,279.81	4,581.62	3,017.73	3,998.08	0.00	0.00	0.00
12,900.00	90.00	1.78	7,279.81	4,681.57	3,020.84	4,096.03	0.00	0.00	0.00
13,000.00	90.00	1.78	7,279.81	4,781.53	3,023.94	4,193.98	0.00	0.00	0.00
13,100.00	90.00	1.78	7,279.81	4,881.48	3,027.05	4,291.93	0.00	0.00	0.00
13,200.00	90.00	1.78	7,279.81	4,981.43	3,030.16	4,389.87	0.00	0.00	0.00
13,300.00	90.00	1.78	7,279.81	5,081.38	3,033.26	4,487.82	0.00	0.00	0.00
13,400.00	90.00	1.78	7,279.81	5,181.33	3,036.37	4,585.77	0.00	0.00	0.00
13,500.00	90.00	1.78	7,279.81	5,281.28	3,039.48	4,683.72	0.00	0.00	0.00
13,600.00	90.00	1.78	7,279.81	5,381.24	3,042.58	4,781.67	0.00	0.00	0.00
13,700.00	90.00	1.78	7,279.81	5,481.19	3,045.69	4,879.61	0.00	0.00	0.00
13,800.00	90.00	1.78	7,279.81	5,581.14	3,048.80	4,977.56	0.00	0.00	0.00
13,900.00	90.00	1.78	7,279.81	5,681.09	3,051.90	5,075.51	0.00	0.00	0.00
14,000.00	90.00	1.78	7,279.81	5,781.04	3,055.01	5,173.46	0.00	0.00	0.00
14,100.00	90.00	1.78	7,279.81	5,880.99	3,058.12	5,271.41	0.00	0.00	0.00
14,200.00	90.00	1.78	7,279.81	5,980.95	3,061.22	5,369.36	0.00	0.00	0.00
14,300.00	90.00	1.78	7,279.81	6,080.90	3,064.33	5,467.30	0.00	0.00	0.00
14,400.00	90.00	1.78	7,279.81	6,180.85	3,067.44	5,565.25	0.00	0.00	0.00
14,500.00	90.00	1.78	7,279.81	6,280.80	3,070.55	5,663.20	0.00	0.00	0.00
14,600.00	90.00	1.78	7,279.81	6,380.75	3,073.65	5,761.15	0.00	0.00	0.00
14,700.00	90.00	1.78	7,279.81	6,480.70	3,076.76	5,859.10	0.00	0.00	0.00
14,800.00	90.00	1.78	7,279.81	6,580.66	3,079.87	5,957.04	0.00	0.00	0.00
14,900.00	90.00	1.78	7,279.81	6,680.61	3,082.97	6,054.99	0.00	0.00	0.00
15,000.00	90.00	1.78	7,279.81	6,780.56	3,086.08	6,152.94	0.00	0.00	0.00
15,100.00	90.00	1.78	7,279.81	6,880.51	3,089.19	6,250.89	0.00	0.00	0.00
15,200.00	90.00	1.78	7,279.81	6,980.46	3,092.29	6,348.84	0.00	0.00	0.00
15,300.00	90.00	1.78	7,279.81	7,080.42	3,095.40	6,446.78	0.00	0.00	0.00
15,400.00	90.00	1.78	7,279.81	7,180.37	3,098.51	6,544.73	0.00	0.00	0.00
15,500.00	90.00	1.78	7,279.81	7,280.32	3,101.61	6,642.68	0.00	0.00	0.00
15,600.00	90.00	1.78	7,279.81	7,380.27	3,104.72	6,740.63	0.00	0.00	0.00
15,700.00	90.00	1.78	7,279.81	7,480.22	3,107.83	6,838.58	0.00	0.00	0.00
15,800.00	90.00	1.78	7,279.81	7,580.17	3,110.93	6,936.53	0.00	0.00	0.00
15,900.00	90.00	1.78	7,279.81	7,680.13	3,114.04	7,034.47	0.00	0.00	0.00
16,000.00	90.00	1.78	7,279.81	7,780.08	3,117.15	7,132.42	0.00	0.00	0.00
16,100.00	90.00	1.78	7,279.81	7,880.03	3,120.26	7,230.37	0.00	0.00	0.00
16,200.00	90.00	1.78	7,279.81	7,979.98	3,123.36	7,328.32	0.00	0.00	0.00
16,300.00	90.00	1.78	7,279.81	8,079.93	3,126.47	7,426.27	0.00	0.00	0.00
16,400.00	90.00	1.78	7,279.81	8,179.88	3,129.58	7,524.21	0.00	0.00	0.00
16,500.00	90.00	1.78	7,279.81	8,279.84	3,132.68	7,622.16	0.00	0.00	0.00
16,600.00	90.00	1.78	7,279.81	8,379.79	3,135.79	7,720.11	0.00	0.00	0.00
16,700.00	90.00	1.78	7,279.81	8,479.74	3,138.90	7,818.06	0.00	0.00	0.00
16,800.00	90.00	1.78	7,279.81	8,579.69	3,142.00	7,916.01	0.00	0.00	0.00
16,900.00	90.00	1.78	7,279.81	8,679.64	3,145.11	8,013.95	0.00	0.00	0.00
17,000.00	90.00	1.78	7,279.81	8,779.59	3,148.22	8,111.90	0.00	0.00	0.00
17,100.00	90.00	1.78	7,279.81	8,879.55	3,151.32	8,209.85	0.00	0.00	0.00
17,200.00	90.00	1.78	7,279.81	8,979.50	3,154.43	8,307.80	0.00	0.00	0.00
17,300.00	90.00	1.78	7,279.81	9,079.45	3,157.54	8,405.75	0.00	0.00	0.00
17,400.00	90.00	1.78	7,279.81	9,179.40	3,160.64	8,503.70	0.00	0.00	0.00
17,500.00	90.00	1.78	7,279.81	9,279.35	3,163.75	8,601.64	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well RINN VALLEY EAST N17-20-9N
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4961.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4961.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-9N	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
17,600.00	90.00	1.78	7,279.81	9,379.31	3,166.86	8,699.59	0.00	0.00	0.00	
17,700.00	90.00	1.78	7,279.81	9,479.26	3,169.97	8,797.54	0.00	0.00	0.00	
17,800.00	90.00	1.78	7,279.81	9,579.21	3,173.07	8,895.49	0.00	0.00	0.00	
17,900.00	90.00	1.78	7,279.81	9,679.16	3,176.18	8,993.44	0.00	0.00	0.00	
18,000.00	90.00	1.78	7,279.81	9,779.11	3,179.29	9,091.38	0.00	0.00	0.00	
18,100.00	90.00	1.78	7,279.81	9,879.06	3,182.39	9,189.33	0.00	0.00	0.00	
18,144.53	90.00	1.78	7,280.00	9,923.57	3,183.78	9,232.95	0.00	0.00	0.00	
TD at 18144.53										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
RVE N17-9N - LP - hit/miss target - Shape	0.00	0.00	7,280.00	262.86	3,179.98	1,291,562.67	3,132,309.69	40° 7' 57.950 N	105° 1' 36.484 W	
RVE N17-9N - PBHL - plan hits target center - Point	0.00	0.00	7,280.00	9,923.57	3,183.78	1,301,223.27	3,132,263.17	40° 9' 33.422 N	105° 1' 36.419 W	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,923.62	3,477.00	PARKMAN				
4,605.60	4,047.00	SUSSEX				
5,090.17	4,452.00	SHANNON				
8,255.66	7,242.00	NIOBRARA				
8,358.30	7,270.00	NIO B TARGET				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
100.00	100.00	0.00	0.00	Start Build 2.00	
1,765.05	1,672.87	-45.66	468.18	Start 4105.42 hold at 1765.05 MD	
5,870.47	5,104.18	-264.48	2,711.57	Start Drop -2.00	
7,535.52	6,677.05	-310.14	3,179.75	Start 30.00 hold at 7535.52 MD	
7,565.52	6,707.05	-310.14	3,179.75	Start DLS 10.00 TFO 0.02	
8,465.55	7,280.00	262.86	3,179.98	Start 2000.00 hold at 8465.55 MD	
10,465.55	7,279.83	2,262.86	3,180.80	Start DLS 2.00 TFO -90.02	
11,066.72	7,279.81	2,859.65	3,118.20	Start 300.00 hold at 11066.72 MD	
11,366.72	7,279.81	3,153.09	3,055.83	Start Turn 2.00	
12,055.74	7,279.81	3,837.72	2,994.61	Start 6088.79 hold at 12055.74 MD	
18,144.53	7,280.00	9,923.57	3,183.78	TD at 18144.53	