

EXTRACTION OIL & GAS

Weld County

Sec 18-T2N-R68W

RINN VALLEY EAST N17-20-13C

ORIGINAL WELLBORE

Plan: PROPOSAL 1

Standard Planning Report

19 March, 2018



Project: Weld County
Site: Sec 18-T2N-R68W
Well: RINN VALLEY EAST N17-20-13C
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: 52224.1snT
Dip Angle: 66.60°
Date: 6/12/2017
Model: IGRF2015

WELL DETAILS: RINN VALLEY EAST N17-20-13C

+N/-S	+E/-W	Northing	Easting	4938.00	Latitude	Longitude	Slot
0.00	0.00	1291283.03	3129019.27		40° 7' 55.358 N	105° 2' 18.866 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	500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	
3	1513.67	20.27	98.72	1492.65	-26.91	175.42	2.00	98.72	-37.32	
4	6248.71	20.27	98.72	5934.35	-275.71	1797.15	0.00	0.00	-382.34	
5	7262.38	0.00	0.00	6927.00	-302.62	1972.57	2.00	180.00	-419.66	
6	7292.38	0.00	0.00	6957.00	-302.62	1972.57	0.00	0.00	-419.66	
7	8192.45	90.00	0.03	7530.00	270.38	1972.91	10.00	0.03	152.30	RVE N17-13C - LP
8	8292.45	90.00	0.03	7530.00	370.38	1972.97	0.00	0.00	252.12	
9	8544.16	90.00	355.00	7530.00	621.77	1962.07	2.00	-90.00	503.71	
10	8844.16	90.00	355.00	7530.00	920.63	1935.93	0.00	0.00	803.60	
11	9111.65	90.00	0.35	7530.00	1187.80	1925.08	2.00	90.00	1070.94	RVE N17-13C - PBHL
12	17872.59	90.00	0.35	7530.00	9948.58					

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3477.00	3629.07	PARKMAN
4047.00	4236.72	SUSSEX
4452.00	4668.46	SHANNON
7242.00	7590.67	NIOBRARA
7270.00	7623.50	NIO B TARGET
7510.00	8040.61	FORT HAYS
7530.00	8192.45	CODELL

ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	Start Build 2.00
1513.67	20.27	98.72	1492.65	-26.91	175.42	-37.32	177.48	Start 4735.03 hold at 1513.67 MD
6248.71	20.27	98.72	5934.35	-275.71	1797.15	-382.34	1818.18	Start Drop -2.00
7262.38	0.00	0.00	6927.00	-302.62	1972.57	-419.66	1995.65	Start 30.00 hold at 7262.38 MD
7292.38	0.00	0.00	6957.00	-302.62	1972.57	-419.66	1995.65	Start DLS 10.00 TFO 0.03
8192.45	90.00	0.03	7530.00	270.38	1972.91	152.30	2568.65	Start 100.00 hold at 8192.45 MD
8292.45	90.00	0.03	7530.00	370.38	1972.97	252.12	2668.65	Start DLS 2.00 TFO -90.00
8544.16	90.00	355.00	7530.00	621.77	1962.07	503.71	2920.36	Start 300.00 hold at 8544.16 MD
8844.16	90.00	355.00	7530.00	920.63	1935.93	803.60	3220.36	Start Turn 2.00
9111.65	90.00	0.35	7530.00	1187.80	1925.08	1070.94	3487.85	Start 8760.94 hold at 9111.65 MD
17872.59	90.00	0.35	7530.00	9948.58	1978.57	9812.95	12248.79	TD at 17872.59

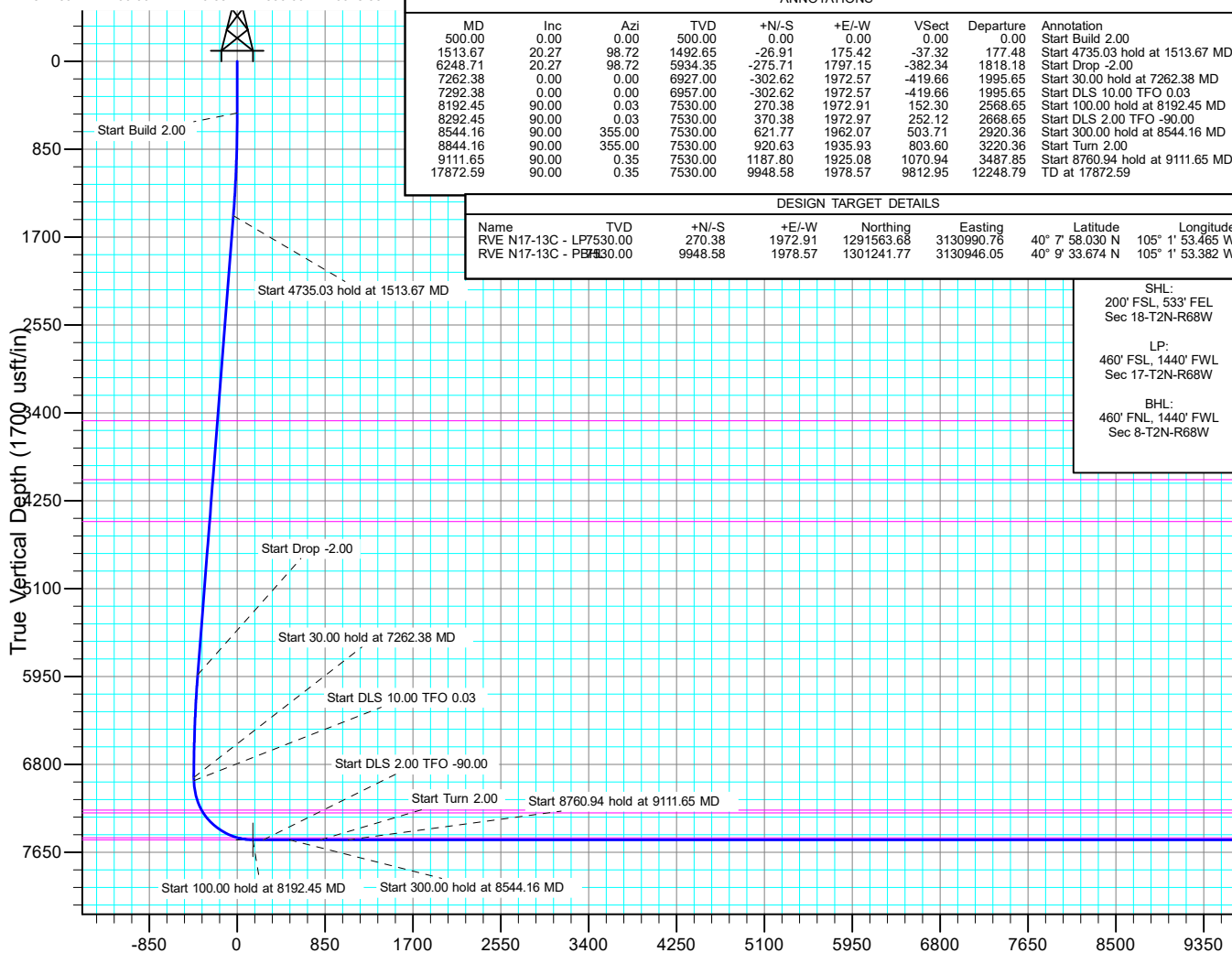
DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
RVE N17-13C - LP	7530.00	270.38	1972.91	1291563.68	3130990.76	40° 7' 58.030 N	105° 1' 53.465 W
RVE N17-13C - PBHL	9948.58	1978.57	1301241.77	3130946.05	40° 9' 33.674 N	105° 1' 53.382 W	

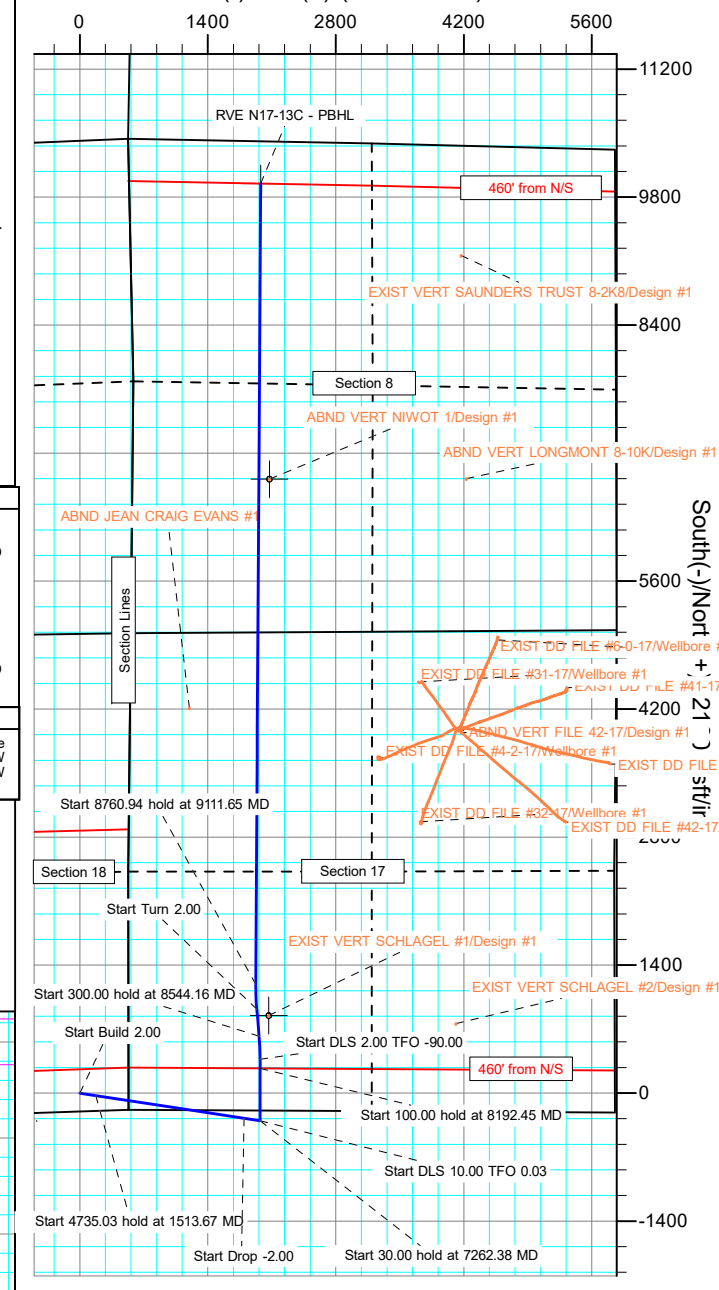
SHL:
200' FSL, 533' FEL
Sec 18-T2N-R68W

LP:
460' FSL, 1440' FWL
Sec 17-T2N-R68W

BHL:
460' FNL, 1440' FWL
Sec 8-T2N-R68W



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



Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well RINN VALLEY EAST N17-20-13C
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4963.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4963.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-13C	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 N17-20-13C					
Well Position	+N/-S	181.41 usft	Northing:	1,291,283.03 usft	Latitude:	40° 7' 55.358 N
	+E/-W	-533.22 usft	Easting:	3,129,019.27 usft	Longitude:	105° 2' 18.866 W
Position Uncertainty		0.00 usft	Wellhead Elevation:		Ground Level:	4,938.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	6/12/2017	8.33	66.60	52,224.12302880

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	356.58

Plan Survey Tool Program			Date	3/19/2018	
Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks	
1	0.00	17,872.16	PROPOSAL 1 (ORIGINAL WELL	MWD OWSG	
			OWSG MWD - Standard		

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4963.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4963.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-13C	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	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,513.67	20.27	98.72	1,492.65	-26.91	175.42	2.00	2.00	0.00	98.72	
6,248.71	20.27	98.72	5,934.35	-275.71	1,797.15	0.00	0.00	0.00	0.00	
7,262.38	0.00	0.00	6,927.00	-302.62	1,972.57	2.00	-2.00	0.00	180.00	
7,292.38	0.00	0.00	6,957.00	-302.62	1,972.57	0.00	0.00	0.00	0.00	
8,192.45	90.00	0.03	7,530.00	270.38	1,972.91	10.00	10.00	0.00	0.03	RVE N17-13C - LP
8,292.45	90.00	0.03	7,530.00	370.38	1,972.97	0.00	0.00	0.00	0.00	
8,544.16	90.00	355.00	7,530.00	621.77	1,962.07	2.00	0.00	-2.00	-90.00	
8,844.16	90.00	355.00	7,530.00	920.63	1,935.93	0.00	0.00	0.00	0.00	
9,111.65	90.00	0.35	7,530.00	1,187.80	1,925.08	2.00	0.00	2.00	90.00	RVE N17-13C - PBHL
17,872.59	90.00	0.35	7,530.00	9,948.58	1,978.57	0.00	0.00	0.00	0.00	RVE N17-13C - PBHL

Planning Report

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Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4963.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4963.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-13C	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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
600.00	2.00	98.72	599.98	-0.26	1.72	-0.37	2.00	2.00	0.00
700.00	4.00	98.72	699.84	-1.06	6.90	-1.47	2.00	2.00	0.00
800.00	6.00	98.72	799.45	-2.38	15.51	-3.30	2.00	2.00	0.00
900.00	8.00	98.72	898.70	-4.23	27.56	-5.86	2.00	2.00	0.00
1,000.00	10.00	98.72	997.47	-6.60	43.02	-9.15	2.00	2.00	0.00
1,100.00	12.00	98.72	1,095.62	-9.49	61.88	-13.16	2.00	2.00	0.00
1,200.00	14.00	98.72	1,193.06	-12.90	84.11	-17.89	2.00	2.00	0.00
1,300.00	16.00	98.72	1,289.64	-16.83	109.69	-23.34	2.00	2.00	0.00
1,400.00	18.00	98.72	1,385.27	-21.26	138.59	-29.49	2.00	2.00	0.00
1,500.00	20.00	98.72	1,479.82	-26.20	170.77	-36.33	2.00	2.00	0.00
1,513.67	20.27	98.72	1,492.65	-26.91	175.42	-37.32	2.00	2.00	0.00
Start 4735.03 hold at 1513.67 MD									
1,600.00	20.27	98.72	1,573.63	-31.45	204.99	-43.61	0.00	0.00	0.00
1,700.00	20.27	98.72	1,667.44	-36.70	239.24	-50.90	0.00	0.00	0.00
1,800.00	20.27	98.72	1,761.24	-41.96	273.49	-58.18	0.00	0.00	0.00
1,900.00	20.27	98.72	1,855.05	-47.21	307.74	-65.47	0.00	0.00	0.00
2,000.00	20.27	98.72	1,948.85	-52.47	341.99	-72.76	0.00	0.00	0.00
2,100.00	20.27	98.72	2,042.66	-57.72	376.24	-80.04	0.00	0.00	0.00
2,200.00	20.27	98.72	2,136.46	-62.97	410.49	-87.33	0.00	0.00	0.00
2,300.00	20.27	98.72	2,230.27	-68.23	444.74	-94.62	0.00	0.00	0.00
2,400.00	20.27	98.72	2,324.07	-73.48	478.99	-101.90	0.00	0.00	0.00
2,500.00	20.27	98.72	2,417.88	-78.74	513.24	-109.19	0.00	0.00	0.00
2,600.00	20.27	98.72	2,511.68	-83.99	547.49	-116.48	0.00	0.00	0.00
2,700.00	20.27	98.72	2,605.49	-89.25	581.73	-123.76	0.00	0.00	0.00
2,800.00	20.27	98.72	2,699.29	-94.50	615.98	-131.05	0.00	0.00	0.00
2,900.00	20.27	98.72	2,793.10	-99.75	650.23	-138.34	0.00	0.00	0.00
3,000.00	20.27	98.72	2,886.90	-105.01	684.48	-145.62	0.00	0.00	0.00
3,100.00	20.27	98.72	2,980.71	-110.26	718.73	-152.91	0.00	0.00	0.00
3,200.00	20.27	98.72	3,074.51	-115.52	752.98	-160.20	0.00	0.00	0.00
3,300.00	20.27	98.72	3,168.32	-120.77	787.23	-167.48	0.00	0.00	0.00
3,400.00	20.27	98.72	3,262.12	-126.03	821.48	-174.77	0.00	0.00	0.00
3,500.00	20.27	98.72	3,355.92	-131.28	855.73	-182.06	0.00	0.00	0.00
3,600.00	20.27	98.72	3,449.73	-136.54	889.98	-189.34	0.00	0.00	0.00
3,629.07	20.27	98.72	3,477.00	-138.06	899.94	-191.46	0.00	0.00	0.00
PARKMAN									
3,700.00	20.27	98.72	3,543.53	-141.79	924.23	-196.63	0.00	0.00	0.00
3,800.00	20.27	98.72	3,637.34	-147.04	958.48	-203.92	0.00	0.00	0.00
3,900.00	20.27	98.72	3,731.14	-152.30	992.73	-211.20	0.00	0.00	0.00
4,000.00	20.27	98.72	3,824.95	-157.55	1,026.98	-218.49	0.00	0.00	0.00
4,100.00	20.27	98.72	3,918.75	-162.81	1,061.23	-225.78	0.00	0.00	0.00
4,200.00	20.27	98.72	4,012.56	-168.06	1,095.48	-233.06	0.00	0.00	0.00
4,236.72	20.27	98.72	4,047.00	-169.99	1,108.05	-235.74	0.00	0.00	0.00
SUSSEX									
4,300.00	20.27	98.72	4,106.36	-173.32	1,129.73	-240.35	0.00	0.00	0.00
4,400.00	20.27	98.72	4,200.17	-178.57	1,163.98	-247.64	0.00	0.00	0.00
4,500.00	20.27	98.72	4,293.97	-183.82	1,198.23	-254.92	0.00	0.00	0.00
4,600.00	20.27	98.72	4,387.78	-189.08	1,232.48	-262.21	0.00	0.00	0.00

Planning Report

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Project:	Weld County	MD Reference:	KB 25' @ 4963.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-13C	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)
4,668.46	20.27	98.72	4,452.00	-192.68	1,255.92	-267.20	0.00	0.00	0.00
SHANNON									
4,700.00	20.27	98.72	4,481.58	-194.33	1,266.73	-269.49	0.00	0.00	0.00
4,800.00	20.27	98.72	4,575.39	-199.59	1,300.97	-276.78	0.00	0.00	0.00
4,900.00	20.27	98.72	4,669.19	-204.84	1,335.22	-284.07	0.00	0.00	0.00
5,000.00	20.27	98.72	4,763.00	-210.10	1,369.47	-291.35	0.00	0.00	0.00
5,100.00	20.27	98.72	4,856.80	-215.35	1,403.72	-298.64	0.00	0.00	0.00
5,200.00	20.27	98.72	4,950.61	-220.60	1,437.97	-305.93	0.00	0.00	0.00
5,300.00	20.27	98.72	5,044.41	-225.86	1,472.22	-313.21	0.00	0.00	0.00
5,400.00	20.27	98.72	5,138.22	-231.11	1,506.47	-320.50	0.00	0.00	0.00
5,500.00	20.27	98.72	5,232.02	-236.37	1,540.72	-327.79	0.00	0.00	0.00
5,600.00	20.27	98.72	5,325.83	-241.62	1,574.97	-335.07	0.00	0.00	0.00
5,700.00	20.27	98.72	5,419.63	-246.88	1,609.22	-342.36	0.00	0.00	0.00
5,800.00	20.27	98.72	5,513.44	-252.13	1,643.47	-349.65	0.00	0.00	0.00
5,900.00	20.27	98.72	5,607.24	-257.39	1,677.72	-356.93	0.00	0.00	0.00
6,000.00	20.27	98.72	5,701.05	-262.64	1,711.97	-364.22	0.00	0.00	0.00
6,100.00	20.27	98.72	5,794.85	-267.89	1,746.22	-371.51	0.00	0.00	0.00
6,200.00	20.27	98.72	5,888.66	-273.15	1,780.47	-378.79	0.00	0.00	0.00
6,248.71	20.27	98.72	5,934.35	-275.71	1,797.15	-382.34	0.00	0.00	0.00
Start Drop -2.00									
6,300.00	19.25	98.72	5,982.62	-278.34	1,814.29	-385.99	2.00	-2.00	0.00
6,400.00	17.25	98.72	6,077.59	-283.09	1,845.24	-392.57	2.00	-2.00	0.00
6,500.00	15.25	98.72	6,173.59	-287.33	1,872.89	-398.46	2.00	-2.00	0.00
6,600.00	13.25	98.72	6,270.51	-291.06	1,897.22	-403.63	2.00	-2.00	0.00
6,700.00	11.25	98.72	6,368.22	-294.28	1,918.19	-408.09	2.00	-2.00	0.00
6,800.00	9.25	98.72	6,466.62	-296.97	1,935.77	-411.83	2.00	-2.00	0.00
6,900.00	7.25	98.72	6,565.59	-299.15	1,949.95	-414.85	2.00	-2.00	0.00
7,000.00	5.25	98.72	6,664.99	-300.80	1,960.71	-417.14	2.00	-2.00	0.00
7,100.00	3.25	98.72	6,764.71	-301.92	1,968.03	-418.70	2.00	-2.00	0.00
7,200.00	1.25	98.72	6,864.62	-302.52	1,971.90	-419.52	2.00	-2.00	0.00
7,262.38	0.00	0.00	6,927.00	-302.62	1,972.57	-419.66	2.00	-2.00	0.00
Start 30.00 hold at 7262.38 MD									
7,292.38	0.00	0.00	6,957.00	-302.62	1,972.57	-419.66	0.00	0.00	0.00
Start DLS 10.00 TFO 0.03									
7,300.00	0.76	0.03	6,964.62	-302.57	1,972.57	-419.61	10.00	10.00	0.00
7,350.00	5.76	0.03	7,014.52	-299.73	1,972.58	-416.77	10.00	10.00	0.00
7,400.00	10.76	0.03	7,063.99	-292.54	1,972.58	-409.61	10.00	10.00	0.00
7,450.00	15.76	0.03	7,112.64	-281.08	1,972.59	-398.16	10.00	10.00	0.00
7,500.00	20.76	0.03	7,160.11	-265.42	1,972.60	-382.53	10.00	10.00	0.00
7,550.00	25.76	0.03	7,206.03	-245.68	1,972.61	-362.82	10.00	10.00	0.00
7,590.67	29.83	0.03	7,242.00	-226.72	1,972.62	-343.90	10.00	10.00	0.00
NIOBRARA									
7,600.00	30.76	0.03	7,250.05	-222.01	1,972.62	-339.20	10.00	10.00	0.00
7,623.50	33.11	0.03	7,270.00	-209.58	1,972.63	-326.79	10.00	10.00	0.00
NIO B TARGET									
7,650.00	35.76	0.03	7,291.85	-194.60	1,972.64	-311.84	10.00	10.00	0.00
7,700.00	40.76	0.03	7,331.10	-163.65	1,972.66	-280.94	10.00	10.00	0.00
7,750.00	45.76	0.03	7,367.50	-129.39	1,972.68	-246.75	10.00	10.00	0.00
7,800.00	50.76	0.03	7,400.78	-92.10	1,972.70	-209.52	10.00	10.00	0.00
7,850.00	55.76	0.03	7,430.68	-52.04	1,972.72	-169.54	10.00	10.00	0.00
7,900.00	60.76	0.03	7,456.98	-9.53	1,972.75	-127.11	10.00	10.00	0.00
7,950.00	65.76	0.03	7,479.47	35.10	1,972.77	-82.55	10.00	10.00	0.00
8,000.00	70.76	0.03	7,497.99	81.53	1,972.80	-36.21	10.00	10.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well RINN VALLEY EAST N17-20-13C
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4963.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4963.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-13C	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)	
8,040.61	74.82	0.03	7,510.00	120.31	1,972.83	2.50	10.00	10.00	0.00	
FORT HAYS										
8,050.00	75.76	0.03	7,512.39	129.40	1,972.83	11.57	10.00	10.00	0.00	
8,100.00	80.76	0.03	7,522.56	178.33	1,972.86	60.42	10.00	10.00	0.00	
8,150.00	85.76	0.03	7,528.43	227.97	1,972.89	109.97	10.00	10.00	0.00	
8,192.45	90.00	0.03	7,530.00	270.38	1,972.91	152.30	10.00	10.00	0.00	
Start 100.00 hold at 8192.45 MD - CODELL										
8,200.00	90.00	0.03	7,530.00	277.93	1,972.92	159.84	0.00	0.00	0.00	
8,292.45	90.00	0.03	7,530.00	370.38	1,972.97	252.12	0.00	0.00	0.00	
Start DLS 2.00 TFO -90.00										
8,300.00	90.00	359.88	7,530.00	377.93	1,972.97	259.66	2.00	0.00	-2.00	
8,400.00	90.00	357.88	7,530.00	477.91	1,971.02	359.57	2.00	0.00	-2.00	
8,500.00	90.00	355.88	7,530.00	577.76	1,965.58	459.56	2.00	0.00	-2.00	
8,544.16	90.00	355.00	7,530.00	621.77	1,962.07	503.71	2.00	0.00	-2.00	
Start 300.00 hold at 8544.16 MD										
8,600.00	90.00	355.00	7,530.00	677.40	1,957.21	559.53	0.00	0.00	0.00	
8,700.00	90.00	355.00	7,530.00	777.02	1,948.49	659.50	0.00	0.00	0.00	
8,800.00	90.00	355.00	7,530.00	876.64	1,939.78	759.46	0.00	0.00	0.00	
8,844.16	90.00	355.00	7,530.00	920.63	1,935.93	803.60	0.00	0.00	0.00	
Start Turn 2.00										
8,900.00	90.00	356.12	7,530.00	976.31	1,931.60	859.43	2.00	0.00	2.00	
9,000.00	90.00	358.12	7,530.00	1,076.17	1,926.57	959.42	2.00	0.00	2.00	
9,100.00	90.00	0.12	7,530.00	1,176.16	1,925.03	1,059.32	2.00	0.00	2.00	
9,111.65	90.00	0.35	7,530.00	1,187.80	1,925.08	1,070.94	2.00	0.00	2.00	
Start 8760.94 hold at 9111.65 MD										
9,200.00	90.00	0.35	7,530.00	1,276.16	1,925.62	1,159.10	0.00	0.00	0.00	
9,300.00	90.00	0.35	7,530.00	1,376.15	1,926.23	1,258.89	0.00	0.00	0.00	
9,400.00	90.00	0.35	7,530.00	1,476.15	1,926.84	1,358.67	0.00	0.00	0.00	
9,500.00	90.00	0.35	7,530.00	1,576.15	1,927.45	1,458.46	0.00	0.00	0.00	
9,600.00	90.00	0.35	7,530.00	1,676.15	1,928.06	1,558.24	0.00	0.00	0.00	
9,700.00	90.00	0.35	7,530.00	1,776.15	1,928.67	1,658.02	0.00	0.00	0.00	
9,800.00	90.00	0.35	7,530.00	1,876.14	1,929.28	1,757.81	0.00	0.00	0.00	
9,900.00	90.00	0.35	7,530.00	1,976.14	1,929.89	1,857.59	0.00	0.00	0.00	
10,000.00	90.00	0.35	7,530.00	2,076.14	1,930.50	1,957.37	0.00	0.00	0.00	
10,100.00	90.00	0.35	7,530.00	2,176.14	1,931.11	2,057.16	0.00	0.00	0.00	
10,200.00	90.00	0.35	7,530.00	2,276.14	1,931.72	2,156.94	0.00	0.00	0.00	
10,300.00	90.00	0.35	7,530.00	2,376.14	1,932.33	2,256.73	0.00	0.00	0.00	
10,400.00	90.00	0.35	7,530.00	2,476.13	1,932.95	2,356.51	0.00	0.00	0.00	
10,500.00	90.00	0.35	7,530.00	2,576.13	1,933.56	2,456.29	0.00	0.00	0.00	
10,600.00	90.00	0.35	7,530.00	2,676.13	1,934.17	2,556.08	0.00	0.00	0.00	
10,700.00	90.00	0.35	7,530.00	2,776.13	1,934.78	2,655.86	0.00	0.00	0.00	
10,800.00	90.00	0.35	7,530.00	2,876.13	1,935.39	2,755.65	0.00	0.00	0.00	
10,900.00	90.00	0.35	7,530.00	2,976.12	1,936.00	2,855.43	0.00	0.00	0.00	
11,000.00	90.00	0.35	7,530.00	3,076.12	1,936.61	2,955.21	0.00	0.00	0.00	
11,100.00	90.00	0.35	7,530.00	3,176.12	1,937.22	3,055.00	0.00	0.00	0.00	
11,200.00	90.00	0.35	7,530.00	3,276.12	1,937.83	3,154.78	0.00	0.00	0.00	
11,300.00	90.00	0.35	7,530.00	3,376.12	1,938.44	3,254.57	0.00	0.00	0.00	
11,400.00	90.00	0.35	7,530.00	3,476.11	1,939.05	3,354.35	0.00	0.00	0.00	
11,500.00	90.00	0.35	7,530.00	3,576.11	1,939.66	3,454.13	0.00	0.00	0.00	
11,600.00	90.00	0.35	7,530.00	3,676.11	1,940.27	3,553.92	0.00	0.00	0.00	
11,700.00	90.00	0.35	7,530.00	3,776.11	1,940.88	3,653.70	0.00	0.00	0.00	
11,800.00	90.00	0.35	7,530.00	3,876.11	1,941.49	3,753.49	0.00	0.00	0.00	
11,900.00	90.00	0.35	7,530.00	3,976.11	1,942.10	3,853.27	0.00	0.00	0.00	

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well RINN VALLEY EAST N17-20-13C
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4963.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4963.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-13C	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)
12,000.00	90.00	0.35	7,530.00	4,076.10	1,942.72	3,953.05	0.00	0.00	0.00
12,100.00	90.00	0.35	7,530.00	4,176.10	1,943.33	4,052.84	0.00	0.00	0.00
12,200.00	90.00	0.35	7,530.00	4,276.10	1,943.94	4,152.62	0.00	0.00	0.00
12,300.00	90.00	0.35	7,530.00	4,376.10	1,944.55	4,252.41	0.00	0.00	0.00
12,400.00	90.00	0.35	7,530.00	4,476.10	1,945.16	4,352.19	0.00	0.00	0.00
12,500.00	90.00	0.35	7,530.00	4,576.09	1,945.77	4,451.97	0.00	0.00	0.00
12,600.00	90.00	0.35	7,530.00	4,676.09	1,946.38	4,551.76	0.00	0.00	0.00
12,700.00	90.00	0.35	7,530.00	4,776.09	1,946.99	4,651.54	0.00	0.00	0.00
12,800.00	90.00	0.35	7,530.00	4,876.09	1,947.60	4,751.32	0.00	0.00	0.00
12,900.00	90.00	0.35	7,530.00	4,976.09	1,948.21	4,851.11	0.00	0.00	0.00
13,000.00	90.00	0.35	7,530.00	5,076.08	1,948.82	4,950.89	0.00	0.00	0.00
13,100.00	90.00	0.35	7,530.00	5,176.08	1,949.43	5,050.68	0.00	0.00	0.00
13,200.00	90.00	0.35	7,530.00	5,276.08	1,950.04	5,150.46	0.00	0.00	0.00
13,300.00	90.00	0.35	7,530.00	5,376.08	1,950.65	5,250.24	0.00	0.00	0.00
13,400.00	90.00	0.35	7,530.00	5,476.08	1,951.26	5,350.03	0.00	0.00	0.00
13,500.00	90.00	0.35	7,530.00	5,576.08	1,951.87	5,449.81	0.00	0.00	0.00
13,600.00	90.00	0.35	7,530.00	5,676.07	1,952.48	5,549.60	0.00	0.00	0.00
13,700.00	90.00	0.35	7,530.00	5,776.07	1,953.10	5,649.38	0.00	0.00	0.00
13,800.00	90.00	0.35	7,530.00	5,876.07	1,953.71	5,749.16	0.00	0.00	0.00
13,900.00	90.00	0.35	7,530.00	5,976.07	1,954.32	5,848.95	0.00	0.00	0.00
14,000.00	90.00	0.35	7,530.00	6,076.07	1,954.93	5,948.73	0.00	0.00	0.00
14,100.00	90.00	0.35	7,530.00	6,176.06	1,955.54	6,048.52	0.00	0.00	0.00
14,200.00	90.00	0.35	7,530.00	6,276.06	1,956.15	6,148.30	0.00	0.00	0.00
14,300.00	90.00	0.35	7,530.00	6,376.06	1,956.76	6,248.08	0.00	0.00	0.00
14,400.00	90.00	0.35	7,530.00	6,476.06	1,957.37	6,347.87	0.00	0.00	0.00
14,500.00	90.00	0.35	7,530.00	6,576.06	1,957.98	6,447.65	0.00	0.00	0.00
14,600.00	90.00	0.35	7,530.00	6,676.05	1,958.59	6,547.44	0.00	0.00	0.00
14,700.00	90.00	0.35	7,530.00	6,776.05	1,959.20	6,647.22	0.00	0.00	0.00
14,800.00	90.00	0.35	7,530.00	6,876.05	1,959.81	6,747.00	0.00	0.00	0.00
14,900.00	90.00	0.35	7,530.00	6,976.05	1,960.42	6,846.79	0.00	0.00	0.00
15,000.00	90.00	0.35	7,530.00	7,076.05	1,961.03	6,946.57	0.00	0.00	0.00
15,100.00	90.00	0.35	7,530.00	7,176.05	1,961.64	7,046.36	0.00	0.00	0.00
15,200.00	90.00	0.35	7,530.00	7,276.04	1,962.25	7,146.14	0.00	0.00	0.00
15,300.00	90.00	0.35	7,530.00	7,376.04	1,962.86	7,245.92	0.00	0.00	0.00
15,400.00	90.00	0.35	7,530.00	7,476.04	1,963.48	7,345.71	0.00	0.00	0.00
15,500.00	90.00	0.35	7,530.00	7,576.04	1,964.09	7,445.49	0.00	0.00	0.00
15,600.00	90.00	0.35	7,530.00	7,676.04	1,964.70	7,545.27	0.00	0.00	0.00
15,700.00	90.00	0.35	7,530.00	7,776.03	1,965.31	7,645.06	0.00	0.00	0.00
15,800.00	90.00	0.35	7,530.00	7,876.03	1,965.92	7,744.84	0.00	0.00	0.00
15,900.00	90.00	0.35	7,530.00	7,976.03	1,966.53	7,844.63	0.00	0.00	0.00
16,000.00	90.00	0.35	7,530.00	8,076.03	1,967.14	7,944.41	0.00	0.00	0.00
16,100.00	90.00	0.35	7,530.00	8,176.03	1,967.75	8,044.19	0.00	0.00	0.00
16,200.00	90.00	0.35	7,530.00	8,276.03	1,968.36	8,143.98	0.00	0.00	0.00
16,300.00	90.00	0.35	7,530.00	8,376.02	1,968.97	8,243.76	0.00	0.00	0.00
16,400.00	90.00	0.35	7,530.00	8,476.02	1,969.58	8,343.55	0.00	0.00	0.00
16,500.00	90.00	0.35	7,530.00	8,576.02	1,970.19	8,443.33	0.00	0.00	0.00
16,600.00	90.00	0.35	7,530.00	8,676.02	1,970.80	8,543.11	0.00	0.00	0.00
16,700.00	90.00	0.35	7,530.00	8,776.02	1,971.41	8,642.90	0.00	0.00	0.00
16,800.00	90.00	0.35	7,530.00	8,876.01	1,972.02	8,742.68	0.00	0.00	0.00
16,900.00	90.00	0.35	7,530.00	8,976.01	1,972.63	8,842.47	0.00	0.00	0.00
17,000.00	90.00	0.35	7,530.00	9,076.01	1,973.25	8,942.25	0.00	0.00	0.00
17,100.00	90.00	0.35	7,530.00	9,176.01	1,973.86	9,042.03	0.00	0.00	0.00
17,200.00	90.00	0.35	7,530.00	9,276.01	1,974.47	9,141.82	0.00	0.00	0.00
17,300.00	90.00	0.35	7,530.00	9,376.00	1,975.08	9,241.60	0.00	0.00	0.00

Planning Report

Database:	EDT_32Bit_ODBC	Local Co-ordinate Reference:	Well RINN VALLEY EAST N17-20-13C
Company:	EXTRACTION OIL & GAS	TVD Reference:	KB 25' @ 4963.00usft
Project:	Weld County	MD Reference:	KB 25' @ 4963.00usft
Site:	Sec 18-T2N-R68W	North Reference:	True
Well:	RINN VALLEY EAST N17-20-13C	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)	
17,400.00	90.00	0.35	7,530.00	9,476.00	1,975.69	9,341.39	0.00	0.00	0.00	
17,500.00	90.00	0.35	7,530.00	9,576.00	1,976.30	9,441.17	0.00	0.00	0.00	
17,600.00	90.00	0.35	7,530.00	9,676.00	1,976.91	9,540.95	0.00	0.00	0.00	
17,700.00	90.00	0.35	7,530.00	9,776.00	1,977.52	9,640.74	0.00	0.00	0.00	
17,800.00	90.00	0.35	7,530.00	9,876.00	1,978.13	9,740.52	0.00	0.00	0.00	
17,872.59	90.00	0.35	7,530.00	9,948.58	1,978.57	9,812.95	0.00	0.00	0.00	
TD at 17872.59										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
RVE N17-13C - LP - plan hits target center - Point	0.00	0.00	7,530.00	270.38	1,972.91	1,291,563.68	3,130,990.76	40° 7' 58.030 N	105° 1' 53.465 W	
RVE N17-13C - PBHL - plan hits target center - Point	0.00	0.00	7,530.00	9,948.58	1,978.57	1,301,241.77	3,130,946.05	40° 9' 33.674 N	105° 1' 53.382 W	

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,629.07	3,477.00	PARKMAN				
4,236.72	4,047.00	SUSSEX				
4,668.46	4,452.00	SHANNON				
7,590.67	7,242.00	NIOBRARA				
7,623.50	7,270.00	NIO B TARGET				
8,040.61	7,510.00	FORT HAYS				
8,192.45	7,530.00	CODELL				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment	
500.00	500.00	0.00	0.00	Start Build 2.00	
1,513.67	1,492.65	-26.91	175.42	Start 4735.03 hold at 1513.67 MD	
6,248.71	5,934.35	-275.71	1,797.15	Start Drop -2.00	
7,262.38	6,927.00	-302.62	1,972.57	Start 30.00 hold at 7262.38 MD	
7,292.38	6,957.00	-302.62	1,972.57	Start DLS 10.00 TFO 0.03	
8,192.45	7,530.00	270.38	1,972.91	Start 100.00 hold at 8192.45 MD	
8,292.45	7,530.00	370.38	1,972.97	Start DLS 2.00 TFO -90.00	
8,544.16	7,530.00	621.77	1,962.07	Start 300.00 hold at 8544.16 MD	
8,844.16	7,530.00	920.63	1,935.93	Start Turn 2.00	
9,111.65	7,530.00	1,187.80	1,925.08	Start 8760.94 hold at 9111.65 MD	
17,872.59	7,530.00	9,948.58	1,978.57	TD at 17872.59	